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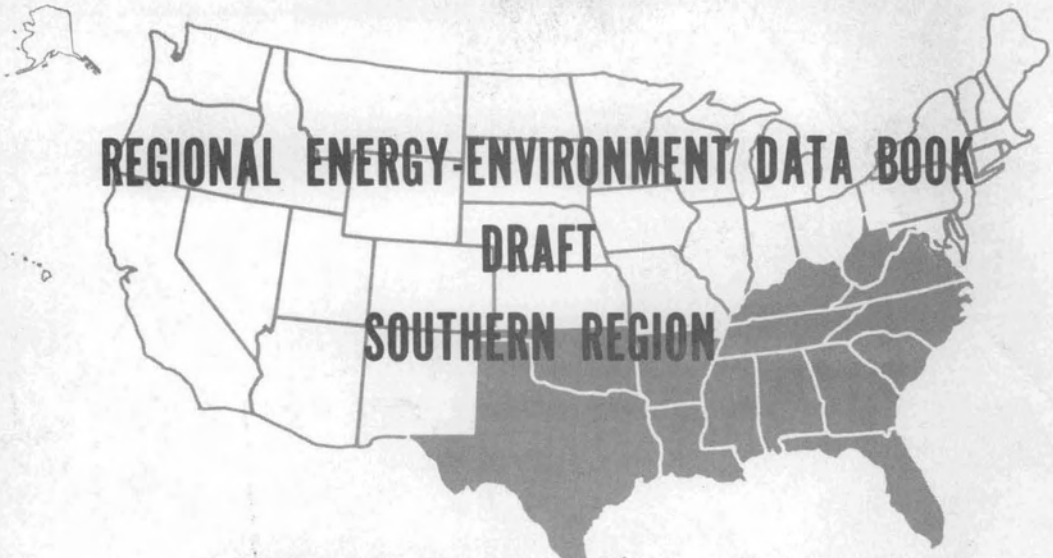

REGIONAL ENERGY-ENVIRONMENT DATA BOOK
DRAFT
SOUTHERN REGION

E. D. Copenhaver - R. J. Olson - P. L. Rice

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REGIONAL ENERGY-ENVIRONMENT DATA BOOK

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SOUTHERN REGION

Emily D. Copenhaver, Richard J. Olson, and Patricia L. Rice

Work sponsored by the Department of Energy,
Assistant Secretary for Environment,
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FOREWORD

Following the formation of the Department of Energy (DOE), Dr. James L. Liverman, the Department's Acting Assistant Secretary for Environment, established an Office of Technology Impacts (OTI). This office is under the direction of Dr. Peter A. House and serves as a focal point for the development and evaluation of environmental policies, plans, and programs. In FY 1978, OTI set up a Regional Characterization program to collect and publish available data relating to the energy, environmental, socioeconomic, and institutional characteristics of the various regions and functional subdivisions of the country. This issue of the Regional Energy/Environment Data Book represents an initial attempt to organize such data in a uniform format and is the forerunner of a more exhaustive set of Regional Characterization Documents to be developed by FY 1979.

The foundations of this program rest on a large, but fragmented data base that is now being brought together for the following purposes:

- Provide DOE with regional information for conducting generic impact studies
- Further define resoures available at the six national laboratories
- Provide a source book for the regions that can be used by local groups and institutions
- Permit and encourage data development within the regional offices
- Help laboratories develop relevant environmental and energy data for conducting case studies and preparing Regional Issue Identification Reports
- Identify the gaps in regional data bases so that DOE may be better able to allocate resources for data and program development.

This is the first time that a comprehensive data book has been assembled on a state-by-state and county basis. Six national laboratories (Argonne National Laboratory, Brookhaven National Laboratory, Los Alamos Scientific Laboratory, Lawrence Berkeley Laboratory, Oak Ridge

National Laboratory, and Pacific Northwest Laboratory) have participated in its preparation with the primary responsibility for coordination and development going to the Los Alamos Scientific Laboratory. The program was organized by dividing the country into six regions demarcated by state boundaries, and assigning each region to a specific laboratory. ORNL's region includes the following 14 Southern states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. No new data were developed; national government sources were emphasized for the sake of consistency and reliability. National data were shared among the laboratories, but regional gaps were inevitable. These gaps will be used to provide DOE with a basis for allocating resources to the laboratories for future data development and regional characterization activities.

ORNL-DWG 78-10575

THE SOUTH

DOE ACKNOWLEDGMENTS

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INTRODUCTION

The 14-state Southern region is notably diverse in physical environment, energy resources, population, and economic status. The physical environment includes deserts, tropical savannas, coastal zones, wetlands, coal-rich hills, and large river systems. With 29% of the conterminous U.S. land and 53% of the conterminous U.S. shorelines within its boundaries, approximately 90% of the South's lands are forests, cropland, or pasture/range.

The South has abundant water, relatively clean air, and mild climate. The South consumes only 25% of the total water used in the U.S., and there have been significant decreases in level of major atmospheric pollutants since 1971, when clean air legislation came into effect.

Though the region is increasing in population at about twice the rate of the nation, the growth rate varies markedly from state to state within the region (e.g., from 1970 to 1976, Florida increased 22%, West Virginia 3%). The overall economic status of the region is still relatively poor despite its recent high growth trends, influx of new industries, and the fact that 4 of its states produce over half of the total U.S. domestic energy production.

In 1975, 70% of all energy produced in the United States came from the Southern states, including 73% of nation's oil, 83% of its natural gas, 50% of the coal production, and 21% of its hydro-generating capacity. The South exported almost one-third of its 1975 energy production, even though the region consumed 22% more energy per capita than the national average. Some states supply much more energy than they consume (Kentucky, Louisiana, Texas, West Virginia); some produce very little energy, remaining dependent upon imported energy (Florida, Georgia, North Carolina, South Carolina); and the remainder are almost in balance between energy production and consumption.

There is growing concern about the dwindling of the region's energy reserves and future impacts of present energy exports from the region. The South has only 26% of its proven gas reserves remaining, 17% of its proven oil reserves, and only 20% of the nation's coal reserves.

The states of the Southern region, like others, are less willing to accept increasingly complex Federal guidelines and regulations without question. The appropriate roles for each to play in the Federal-state-local jurisdictional framework need to be given careful definition in order to ease conflict between differing objectives and needs in the organizational hierarchy. Mitigation strategies are needed to accomodate inequities, wherever they occur — between levels of government, between energy facilities and impacted areas, between areas with protected energy reserves and those consuming reserves rapidly.

This data book is organized into three chapters, dealing with energy, environmental, and institutional conditions in the region. The overviews attempt to place the accompanying tables and figures into perspective.

Many of the tables and maps within this document were created from data resources that have been developed at ORNL for regional energy and environmental assessment and planning studies. The Energy Division Regional Analysis Group, in collaboration with the Geographic Systems Group of the Computer Sciences Division, has developed data bases on water availability and other factors relating to energy facility siting. In addition, the Geographic Systems Group has developed cartographic display programs that were used to generate many of the maps in this document. The Geoecology Data Base within the Environmental Sciences Division contains over 700 environmental parameters for the South at the county level of resolution. Socioeconomic data have been collected within the Regional and Urban Studies Technical Information Center (RUSTIC), part of the Energy Division. The spatial data files developed by these and other ORNL projects have been recently described* (Shriner 1978, ORNL 5395) to encourage data exchange with groups having similar data needs.

Regional assessment and planning activities require diverse environmental data, such as those presented in this document, to be available at comparable temporal and spatial scales. Longterm averages are presented for climatic and other relatively stable attributes, whereas 1975 was

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*C. R. Shriner et al., *Spatial Data on Energy, Environmental, and Socioeconomic Themes at Oak Ridge National Laboratory: 1977 Inventory*, ORNL-5395, May 1978.

selected for the base year for production and consumption type data. Selecting a common spatial unit is more difficult. Various spatial units are defined by agencies to obtain units of the appropriate size and shape that are relatively homogeneous for the attributes of interest to a particular agency. Examples include Water Resource Council regions and aggregated subareas (ASA's), EPA Air Quality Control Regions (AQCR's), USDA Land Resource Regions, and NOAA state climatic divisions. Counties are well defined political units which have been used as spatial cells that can be aggregated to approximate airsheds (AQCR's), watersheds (ASA's), ecoregions, and other regions. Therefore, many data are available at the county scale in addition to the fact that many federal and state programs are administrated at the county level. Many of the tables and maps provide examples of the capability developed at ORNL to aggregate, analyze, and display data from the 1361 counties in the South for regional studies.

The National Laboratories have several efforts funded by OTI to identify data resources for regional and national studies, and to facilitate the exchange of data files. The Interlaboratory Working Group for Data Exchange (IWGDE) was initiated in 1974 on an informal basis with representatives from eight DOE Laboratories. Since then, a scheme for enchanging large data files has been developed as well as a continuing dialogue between Laboratories that has resulted in a significant number of data file exchanges. IWGDE is continuing to promote data sharing by developing Reference Data Bases. These geocoded, thematic files contain national level data and are in a form that is documented, transportable and usable. The Information Coordination Focal Points (ICFP) were established in 1977 to serve as individuals at each Laboratory that would have knowledge of the data resources within a Laboratory and the individuals in charge of various data files. The ICFPs have published an inventory of data bases, graphics packages, and models available at the DOE Laboratories.*

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*C. R. Shriner and L. J. Peck (eds.), *Inventory of Data Bases, Graphics Packages, and Models in Department of Energy Laboratories*, ORNL/EIS-144, September 1978.

CHAPTER I. PERSPECTIVES AND DATA ON ENERGY CONDITIONS

A. Regional Overview

Energy Production: Fossil Fuels

The availability of energy has played a critical role in the economic development of the South. With only 29% of the population, the region produced 70% of all energy produced in the nation in 1975, the base year for this study. The comparative advantage of the South has always been in its production of oil (73% of the U.S. total) and natural gas (83%). Production in the Gulf, Texas Panhandle, and Hugoton fields has been particularly important to the economies of Texas, Louisiana, and Oklahoma. In Louisiana, for example, 45% of all state revenues come from fees, taxes, and royalties on oil and gas production and refining, and one out of every ten jobs is directly oil-related.

Since 1973, however, both the national and regional production of hydrocarbons has been declining as annual production has outstripped new additions to reserves. Between 1973 and 1976 there was an upswing in drilling activity, but given the lag time between exploration and development, it will be another year or two before these productive efforts are rewarded.

The region's relative advantage is likely to decline in the future unless substantial new discoveries are made. The South has only 26% of its proven gas reserves remaining and only 17% of its proven oil reserves. By taking a broader view of the total resource base and including indicated and inferred reserves as well as a mean estimate of the undiscovered resource base, however, the region could have natural gas through 2005 and crude oil through 1998. This, of course, is contingent upon maintaining current production rates or matching any rate increases with additional increments to reserves.

Not surprisingly, the processing of crude oil and natural gas into refined products is also concentrated in the South. The region has 100 of the 256 oil refineries in the nation and possesses almost 47% of the crude oil refining capacity. The region became a net foreign importer

of crude oil (as did Texas) for the first time in 1975, but remains a net exporter of the major refined products. An even greater proportion of gas processing activity (81%) is concentrated in the South, primarily the Texas-Louisiana Gulf Coast area. Total input and output to processing plants peaked in 1972 and has since declined, though the number of plants has continued to increase.

The region accounts for about a third of the interstate and foreign shipments of crude oil and 70% of the intrastate shipments. The tanker is the primary transport mode for foreign shipments, but the pipeline accounts for 90% of all intrastate shipments and 77% of all interstate shipments. Over three-fourths of these shipments are to Illinois, Ohio, and Indiana. The largest exporting states are Louisiana and Wyoming. The largest net importer is Mississippi which routes its oil on to Kentucky and Ohio. There are no refineries in North and South Carolina and, therefore, no crude oil shipments in these states.

The South exported almost 40 million short tons of coal in 1975, primarily to Ohio, Michigan, and Pennsylvania (80%). About 8% of the coal produced regionally was utilized by mine-mouth generating plants. Kentucky and West Virginia led the region in coal exports, while Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee were net importers of coal. The region received coal from Illinois and Montana.

The region shipped 77% of its coal by rail, 13% by barge, and 19% by truck. The railway system of the South Atlantic region has a distinct northeast-southwest orientation with the secondary interconnecting lines running east-west. The major weakness in the energy transport network is in some of the rail facilities serving the coal fields of West Virginia. If coal production is increased in this state, improvements in the existing railroad lines, additional spur lines, rolling stock, and facilities will be required. One of the major concerns at present is the adequacy of the rail system in the East to support a doubling of coal production as President Carter has advocated. Eastern railroads have recently been plagued, of course, by an increasing number of derailments attributed to inadequate rail beds.

The region produces about half the nation's coal, primarily in the Appalachian area of Kentucky and West Virginia. Virginia and Arkansas are the only southern states known to have anthracite reserves. While depletion of coal reserves does not loom as an immediate problem, it is interesting to note that the region has only 20% of the coal reserves in the nation.

In summary, it appears that the South is likely to lose its comparative advantage in the production of fossil fuels. One reason for this is the rapid depletion of reserves to meet ever increasing demands for energy. The region has always been a major supplies of energy to others. In 1975 the South exported 40% of its natural gas, 25% of its coal, and 23% of its oil production to other regions. Overall, the South shipped almost a third of the fossil fuels it produced in 1975 outside the region. Enhanced conservation efforts could, therefore, help extend the life of the region's energy resources.

Energy Production: Non-Fossil Fuels

The South has 21% of the hydro-generating capacity in the nation, with most of it concentrated in Tennessee and Alabama. The pumped storage projects in the region have a potential conventional capacity of 738 mkw. Though not all of the hydro potential has been fully developed, it is not likely that hydro will ever become a major energy source for the region.

The fastest growing energy source in the region has been nuclear power which increased nine-fold between 1972 and 1975. Texas is the only state with active uranium deposits and milling facilities, but Florida has some uranium oxide deposits in its phosphates. In 1975 the region produced no uranium, but had 7 of the 41 nuclear plants in operation in the U.S. and 28% of the nuclear-generation capacity. By 1985 all states in the region, except West Virginia and Kentucky, are expected to have nuclear facilities.

The region is primarily dependent upon coal and natural gas for electrical generation (the region has 25% of the nation's power plants). Because the South is twice as dependent upon natural gas as the nation as a whole, it is inevitable that a conversion mandate will have a

substantial impact upon the future cost of electricity in the region. Louisiana and Texas, for example, are primarily dependent upon natural gas for generating electricity. The state of Texas, however, has ordered its utilities to convert to coal. Coal conversion is likely to influence the future development of energy transportation systems within the region.

In 1975 there was no production of oil shale in the region, but there are some deposits of oil shale in Tennessee. Another alternative energy source for Texas is the development of natural gas from geopressure zones. Total usable resources are estimated at 250 quadrillion BTUs. Ultimate production from the fairway underlying Brazoria county, where DOE is now drilling a geopressure well, may be as much as 1600 megawatts by the year 2000.

Generation of steam and/or electricity from the burning of solid wastes is now underway in Tennessee, Florida, Louisiana, Virginia, and West Virginia. The region has about a fourth of the agricultural residues generated nationally each year which can be converted to usable energy.

Energy Consumption

The South is not only a large producer of energy, it is a large consumer as well. With 29% of the U.S. population, it consumed 37% of the national consumption of fossil fuels in 1975. For all energy forms, the region consumed 22% more energy per capita than the national average. Louisiana, Texas, West Virginia, Oklahoma, and Alabama each consumed at least 20% more energy per capita than the national average. Florida, North Carolina, and Virginia, however, consumed at least 20% less energy per capita.

Total energy consumption increased in both the region and the nation between 1970 and 1975, but per capita consumption peaked in 1973 and declined thereafter. In the South, however, per capita consumption declined in 1974 but increased both absolutely and relatively in 1975. (In 1970 per capita consumption of the region was only 15% higher then the national average.)

The region is especially reliant upon petroleum and natural gas. The largest consuming sectors are industry and electric utilities which

together account for 62% of the total energy consumption of the region (nationally these sectors accounts for 52% of the total consumption).

On a per employee basis the industrial sector uses twice as much natural gas as the national average. The industrial sector of the West South Central census region uses almost half of the energy consumed in the South and depends upon natural gas for over three-fourths of its energy needs. The South Atlantic region, by contrast, is primarily reliant upon petroleum.

The employement mix within the sector is important to the determination of actual fuel mix. In the South approximately one-fourth of the employment and earned income is from manufacturing. Per employee energy usage in manufacturing was 62% higher than the national average in 1975 (consumption of natural gas was twice as great). Manufacturers in Louisiana, Texas, West Virginia, Arkansas, and Alabama consumed more than 40% more energy per worker than the U.S. average.* The region's chemical and petroleum industries are particularly large energy users. Because natural gas usage by the sector is so high, a conversion mandate, such as that proposed under the National Energy Plan, is likely to have significant impact on Southern manufacturing, particularly in the West South Central region.

The utilities of both the region and the nation were primarily dependent upon coal for electrical generation in 1975. In the South, however, reliance upon natural gas was again twice as much as the norm. Though nuclear played a relatively insignificant role for the region in 1970, nuclear generation on a per capita basis is now approximately the same in the South as elsewhere.

The residential-commercial sector of the South consumed 34% <u>less</u> energy per capita than the national average. The sector was primarily dependent upon natural gas but 12% less so than the U.S. Electricity usage in 1975 was 57% higher in the South than elsewhere, but it must be remembered that a large proportion of Southern utilities are gas-fired.

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*Comparisons are also available by 2-digit industry sector. Our analysis indicates the high energy usage is a function of the energy-intensiveness of industry as well as the greater availability and cheaper prices of energy.

Not all states in the region are homogeneous, of course. The residents of the South Atlantic region rely heavily upon fuel oil for space and water heating. Because of the moderate climate, residential users of the region tend to use less energy for space heating and more for air conditioning than the national norm.

Though the region has only 29% of the population, it has 31% of the motor vehicles and 36% of the trucks. The transportation sector accounted for about a fourth of the energy consumed in the South in 1975. The region has over 58% of the employees engaged in pipeline transportation of natural gas and petroleum and 44% of the marine employment. Per capita energy consumption by this sector was 11% higher in the region than the nation in 1970, but increased to a level which was 19% higher by 1975. Petroleum provides most of the energy requirements, but natural gas usage for pipeline transportation did account for 5% of the total energy consumed in the sector in 1975.

Energy Prices

Energy prices in the region vary from $.36 per million BTU paid for natural gas by the transportation sector to $8.35 paid for electricity by the residential sector. Relative to the nation, the South pays 22% less for natural gas and 11% less for electricity, but 11% more for coal.

Florida, however, pays 22% more for electricity on the average and Virginia, 11% more. Natural gas prices are lowest in Oklahoma, Louisiana, and Arkansas but relatively high in Virginia (46% more) and North Carolina (34% more). Mississippi pays 80% more for coal than the national average with its industrial sector paying over twice as much as the norm. Coal prices are relatively low in Kentucky and West Virginia.

Gasoline, distillate oil, and kerosene prices are about the same in the region as elsewhere. Prices paid for residual oil are about 16% less on the average, however. Diesel fuel prices are 41% higher in West Virginia, but 12% less in Texas. The average price paid for all energy is lowest in Arkansas, Texas, and Louisiana.

The greater availability and lower energy prices in the region have increased its attractiveness to industry and some economists argue they play a critical role in determining industrial location. Historically,

of course, energy costs for most firms have been a relatively insignificant portion of total industrial costs, but as the relative scarcity of energy increases, these costs are likely to become more important. Any resulting impacts on industrial location will likely be accompanied by changing patterns of regional population and economic growth. Such changes are obviously of concern to both state and federal policy makers.

Energy Flows

The South has always been a major exporter of energy, particularly natural gas (7-8 trillion cubic feet per year). Louisiana, Texas, and Oklhaoma are the largest net exporters of natural gas. (The only foreign shipments from the region are to Mexico.) The rest of the states in the region are net importers of gas. The pipeline is the cheapest and most important mode of natural gas transport, though gas may also be shipped in liquified form via truck or tanker. The majority of the region's shipments (57%) are to Kansas, Indiana, and Ohio, which in turn supply other states in the Midwest and northeast.

As long as interstate gas prices remain regulated, there will be an increasingly severe problem with curtailments as reserves are depleted and demands increase. Producer states in the region are concerned that they can be forced through long-term contracts or federal emergency energy legislation to provide cheap interstate natural gas to residential users in the Midwest and Northeast while their own industries and electric utilities are forced to pay substantially higher intrastate prices or eventually to import coal from the West. Such federal action would obviously reduce the comparative advantage of the region in attracting new industry and possibly lead to some out-migration of existing industry affecting economic growth in the region. Any advantage of lower energy prices resulting from market interaction could thus be cancelled by political intervention.

The South has traditionally been a net exporter of crude oil, but in 1975 the region consumed more crude oil than it produced. In 1976, for example, foreign oil supplied 35% of the total refinery receipts of Texas. This change was brought about by the increase in refinery capacity which was coupled with a decline in production of oil.

The region was a net importer of electricity in 1975 of almost two billion kilowatt hours, the bulk of the shipments being to Indiana, Kansas, and Ohio (88%) and the bulk of the receipts from Illinois, New Mexico, and Maryland (96%).

	Resolution of data presented	Finer resolution of available data
B. ENERGY PRODUCTION		
1. Natural Gas	1975 State — Map showing county-level production, and pipeline network.	Available at county level, but the voluminous to include in data book.
2. Natural Gas Liquids	1975 State	No finer resolution of 1975 data available at the laboratory.
3. Crude Oil and Petroleum	1975 State — Maps showing county-level production, and pipeline network. Maps of refining capacity and product pipeline network.	Available at county level.
4. Oil Shale	No production in Southern region in 1975.	
5. Coal	1975 State — Maps showing county-level production by type of coal.	Available at county level.
6. Uranium	No production in Southern region in 1975.	
7. Hydroelectric	1975 State — Map showing hydro capacity.	Available at county level. Insufficient time and resources for collecting county level data; also, 1970 production of industrial hydroelectric plants is unavailable, thus production trend since 1970 could not be calculated.
Nuclear	1975 State — Map showing hydro capacity.	
	Also, maps showing 1975 capacity of oil, gas, coal, and nuclear power plants.	
8. Geothermal	Gradient map for region.	No finer resolution available at the laboratory.
9. Solar	Solar radiation maps for region.	No finer resolution of data immediately available at laboratory.
10. Energy Supply Prices	1975 State	No finer resolution of data immediately available at laboratory.

	Resolution of data presented	Finer resolution of available data
C. CONSUMPTION		
1. Quantities consumed by state	1975 State — Map of 1975 per capita consumption and sectoral distribution	Available by BEA but not included in the data book
2. Regional consumption	1975 State	Available by BEA but not included in the data book.
3. Consumption trends	1970 — 1975 State consumption trends	Available by BEA but not included in the data book.
4. Storage	1975 State data from oil and gas	No finer resolution of data available at the laboratory.
D. REGIONAL ENERGY BALANCE		
1. Differential price	1975 State average prices	No finer resolution of data available at the laboratory.
2. Energy imported and exported	1975 State data for natural gas, coal, and crude oil. Electricity available for only 1974.	No finer resolution of data available at the laboratory.

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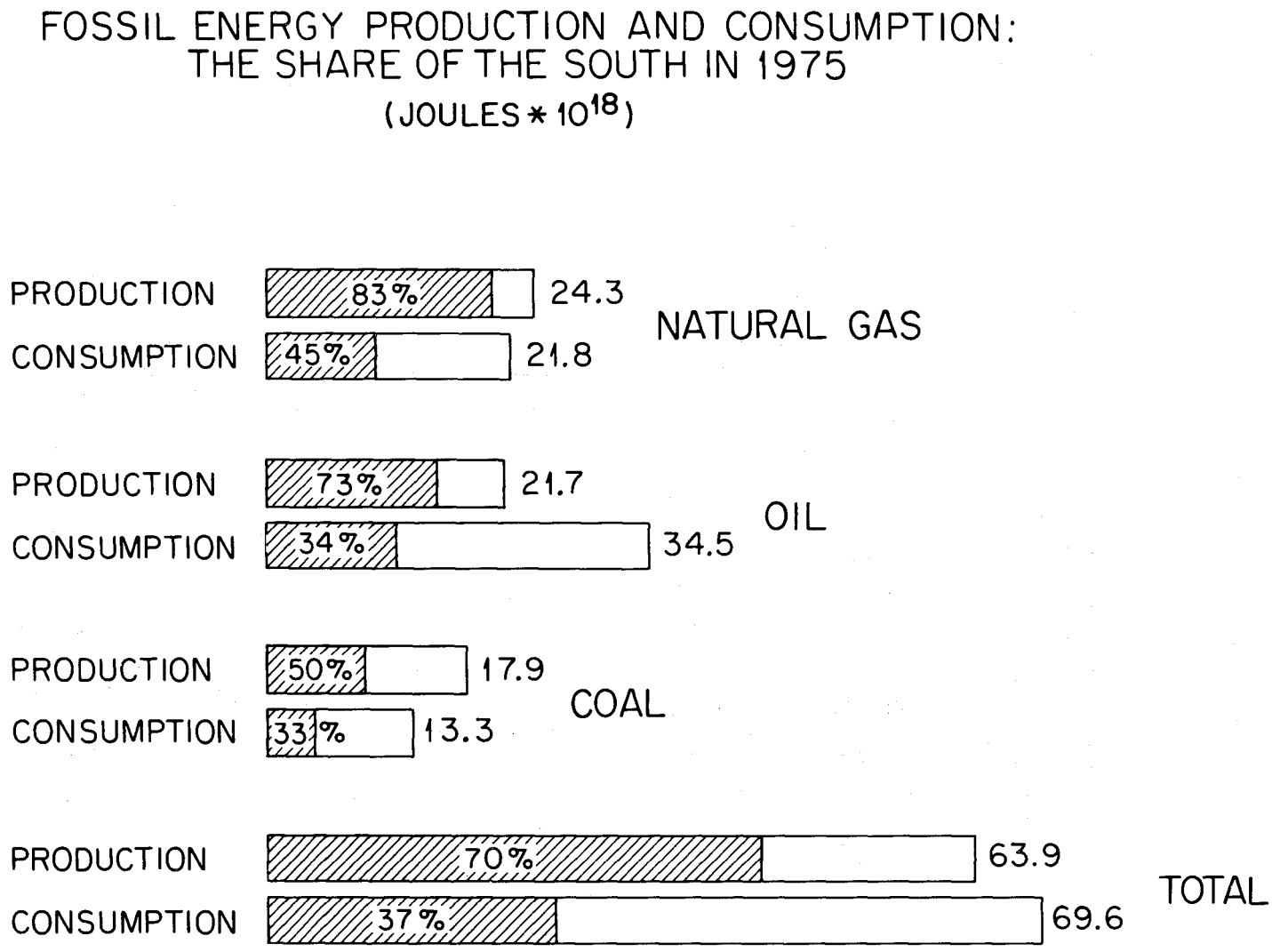

Fig. I-1. Fossil Energy Production and Consumption: The Share of the South in 1975.

TABLE I-1

ENERGY PRODUCTION TRENDS IN THE SOUTH

Year	Natural gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
1970	19,951.1	500.2	2,488.6	338.0	33.9	.005	535.9
1971	20,269.8	509.8	2,481.1	300.0	41.4	2.414	573.4
1972	20,229.2	526.5	2,520.2	318.1	44.3	5.343	638.9
1973	20,271.1	523.4	2,447.2	313.8	53.9	18.019	694.2
1974	19,109.3	505.1	2,305.5	311.8	50.9	31.581	701.5
1975	17,471.5	485.8	2,164.7	333.7	53.4	48.892	713.9

Source: Bureau of Mines.

TABLE I-2

1976 NATURAL GAS RESERVES IN THE SOUTH BY STATE
(BILLIONS OF CUBIC FEET)

	Inferred reserves	Proved reserves	Ultimate reserves
Alabama	495.6	707.2	813.7
Arkansas	1,234.2	1,728.3	4,886.2
Florida	275.4	257.5	438.7
Georgia	—	—	—
Kentucky	558.5	771.5	3,901.1
Louisiana	53,976.6	57,601.8	187,527.0
Mississippi	1,340.0	1,061.3	6,070.2
North Carolina	—	—	—
Oklahoma	12,211.8	12,435.3	58,060.7
South Carolina	—	—	—
Tennessee	—	6.6	—
Texas	49,136.2	64,651.4	268,688.3
Virginia	45.6	56.4	138.9
West Virginia	1,319.1	22,732.3	16,727.2
South	120,593.1	141,450.6	547,252.0
U.S.	158,242.5	216,026.1	730,465.1

Source: American Petroleum Institute.

TABLE I-3

1976 RESERVES OF NATURAL GAS LIQUIDS
(THOUSANDS OF BARRELS)

	Non-associated, proved	Associated proved	Total proved	Inferred
Alabama	237,012	4,132	241,144	328,915
Arkansas	3,520	3,759	7,279	10,919
Florida	0	37,422	37,422	45,548
Kentucky	41,132	0	41,132	59,006
Louisiana	1,359,678	263,156	1,622,834	1,086,176
Mississippi	9,118	4,653	13,771	31,335
Oklahoma	177,645	102,150	279,795	140,794
Texas	1,178,612	1,349,225	2,527,837	983,786
West Virginia	83,833	0	83,833	6,148
South	3,090,550	1,764,497	4,855,047	2,692,627
U.S.	3,857,728	2,544,239	6,401,967	3,501,321
	(80.1%)	(69.4%)	(75.8%)	(76.9%)

TABLE I-4

1976 OIL RESERVES IN THE SOUTH
(MILLIONS OF BARRELS)

	Indicated reserves	Inferred reserves	Proved reserves	Ultimate reserves
Alabama	4.0	72.7	53.3	228.1
Arkansas	11.6	140.1	93.4	1,499.9
Florida	1.1	303.8	249.6	445.1
Georgia	—	—	—	—
Kentucky	2.0	54.8	38.2	672.4
Louisiana	94.3	2,322.9	3,470.6	18,371.8
Mississippi	27.3	487.4	214.2	1,768.5
North Carolina	—	—	—	—
Oklahoma	246.6	597.1	1,186.6	12,505.4
South Carolina	—	—	—	—
Tennessee	—	—	1.9	6.1
Texas	1,485.7	3,590.7	9,226.3	50,084.1
Virginia	—	—	—	—
West Virginia	4.0	2.2	30.0	545.2
South	1,876.4	7,571.7	14,564.1	86,126.6
U.S.	4,376.1	16,922.7	30,942.2	142,792.4

Source: American Petroleum Institute.

TABLE I-5

1974 MEASURED AND INDICATED COAL RESERVES
POTENTIALLY MINABLE BY UNDERGROUND AND SURFACE METHODS
(MILLIONS OF TONS)

	Anthracite	Bituminous	Sub-bituminous	Lignite	Total
Alabama		1,755		1,027	2,782
Arkansas	96	537		32	665
Florida					
Georgia		1			1
Kentucky		25,541			25,541
Louisiana					
Mississippi					
North Carolina		32			32
Oklahoma		860			860
South Carolina					
Tennessee		487			487
Texas				3,272	3,272
Virginia	138	3,512			3,650
West Virginia		39,590			39,590
South	234	72,815		4,331	77,580
U.S.	7,384	232,896	168,281	28,163	436,725

Source: U.S. Bureau of Mines.

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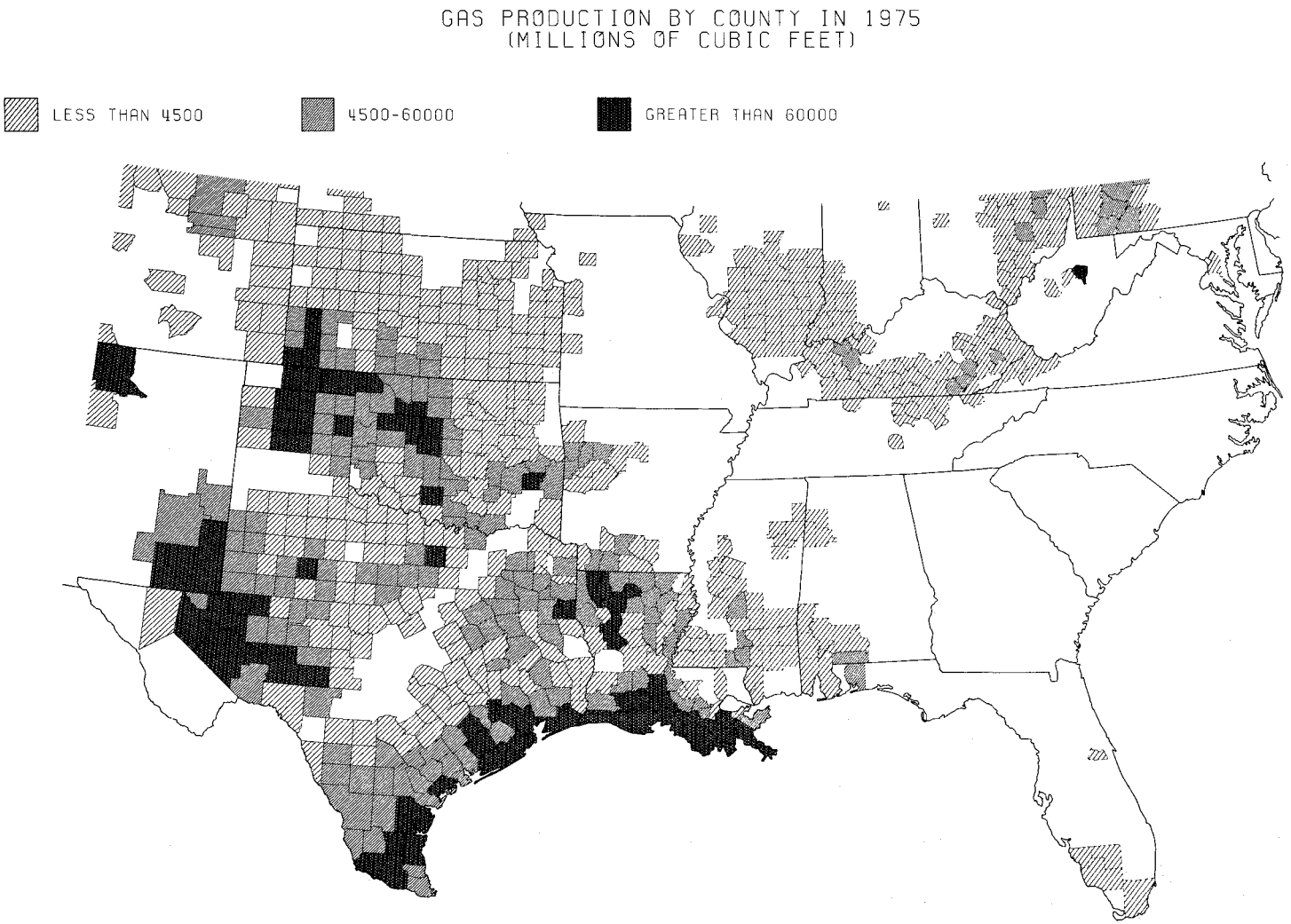


Fig. I-2. Gas Production by County in 1975. Source: Various state oil and gas agencies.

ORNL-DWG 76-10935

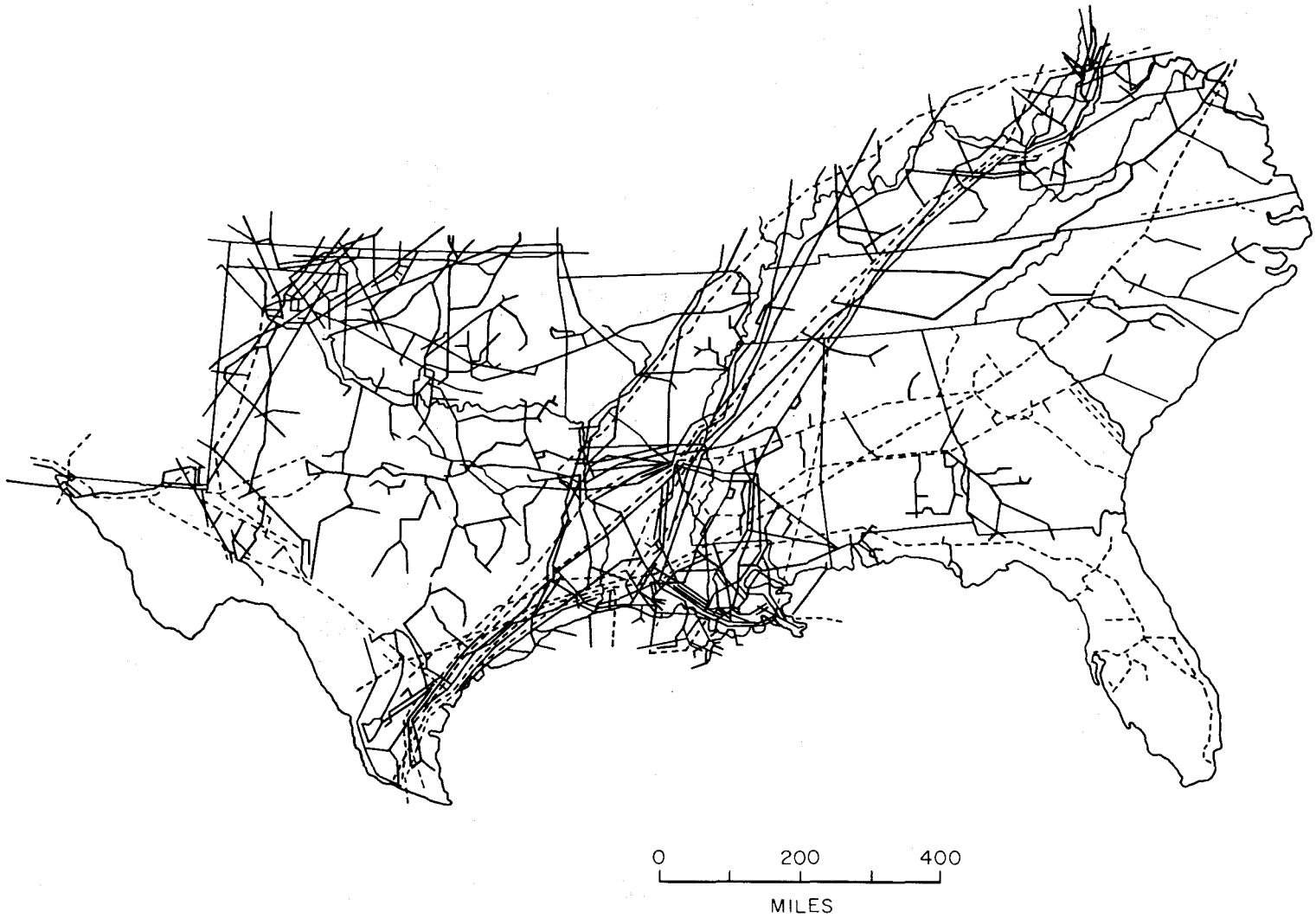


Fig. I-3. Natural Gas Pipelines. Source: Federal Power Commission map. Legend: ---- Pipelines with diameters of at least 36 inches; —— Pipelines with diameters of less than 36 inches.

ORNL-DWG 78-16109

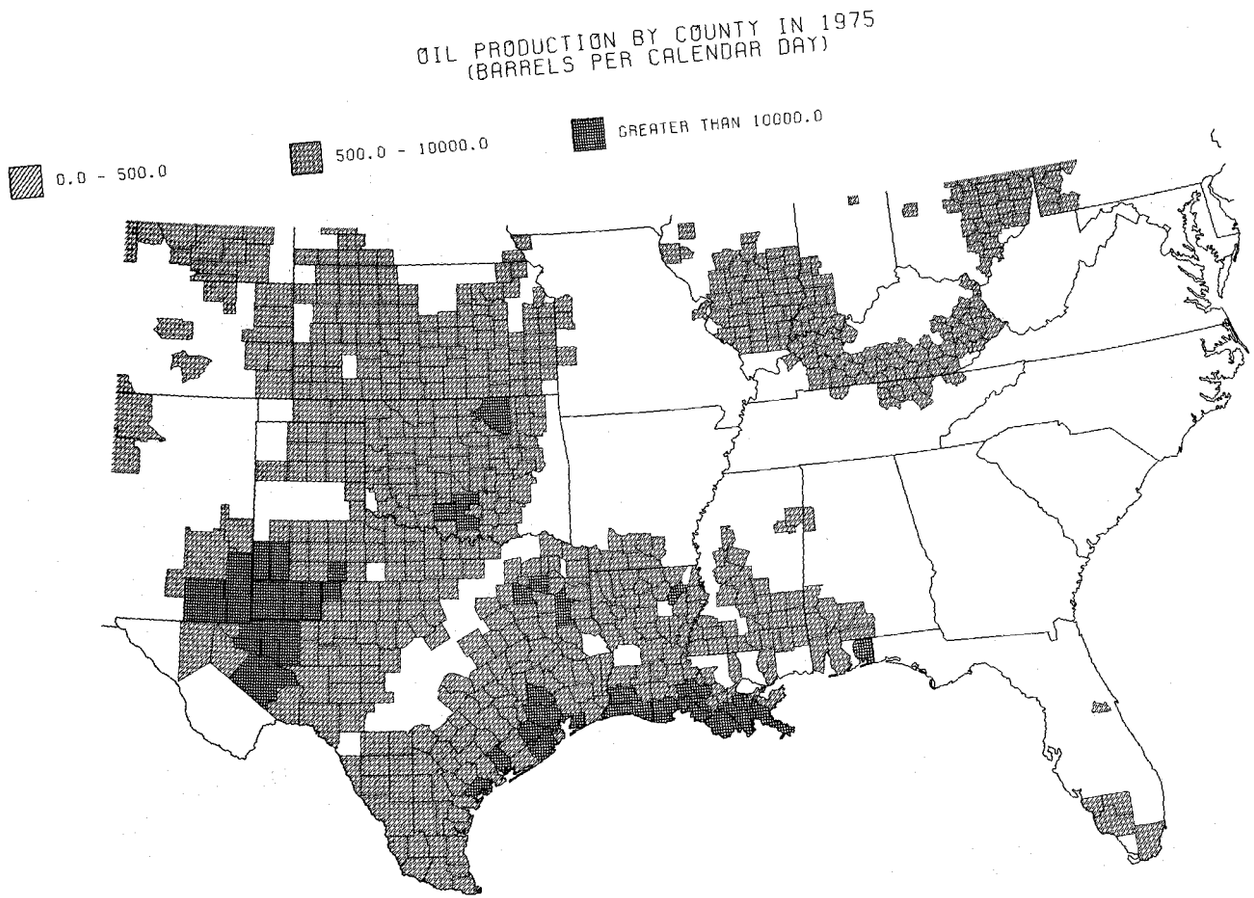
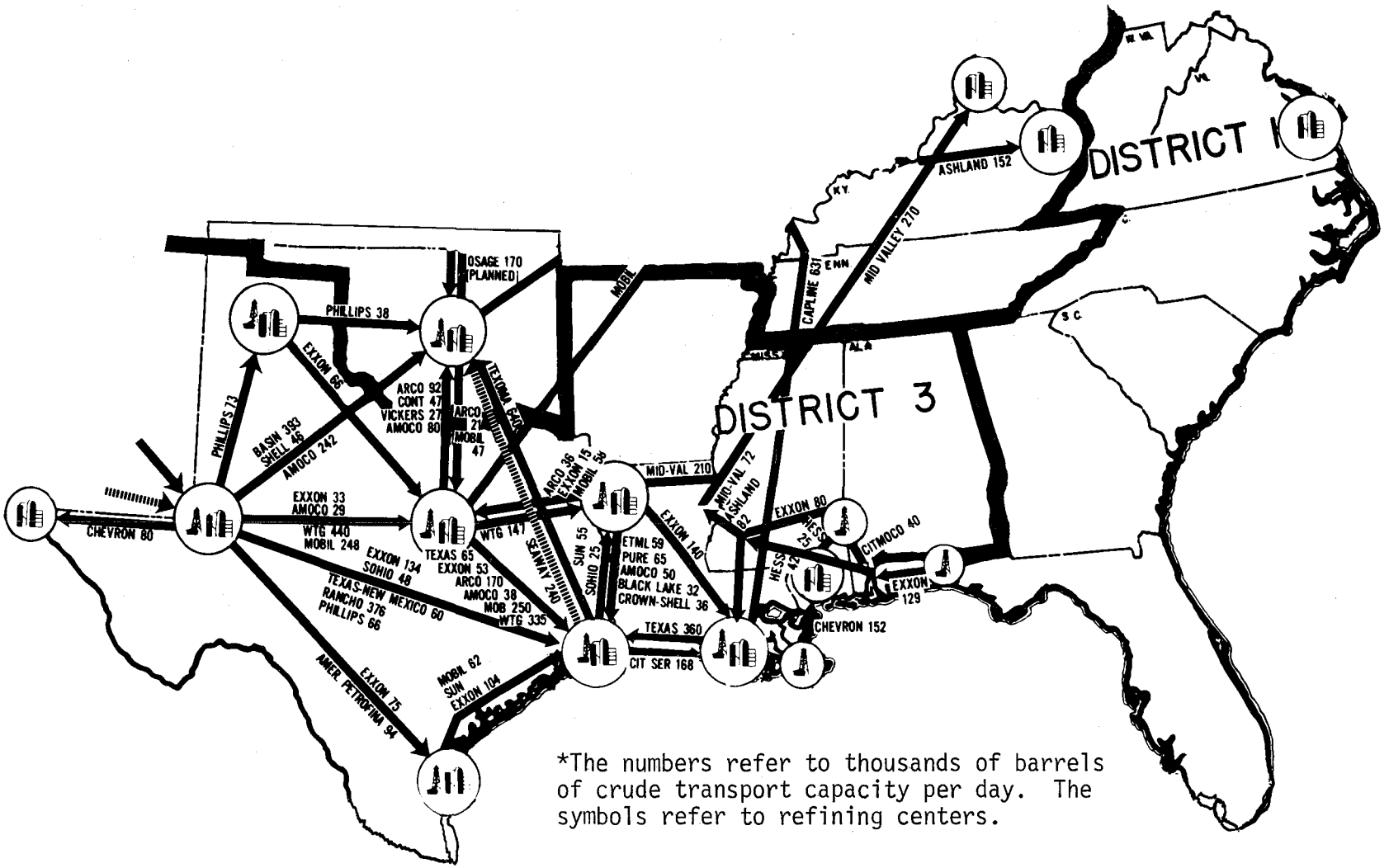


Fig. I-4. Oil Production by County in 1975. Source: Various state oil and gas agencies.



*The numbers refer to thousands of barrels of crude transport capacity per day. The symbols refer to refining centers.

Fig. I-5. Crude Pipeline Capacities in the South. Source: FEA map.

TABLE I-6

ENERGY PROCESSING IN THE SOUTH IN 1975

State	Crude oil		Natural gas		Electricity	
	Number of refineries	Capacity (bbl x 10^6/day)	Number of plants	Capacity (10^6 ft^3/day)	Number of plants	Capacity (GW)
Alabama	3	49.9	3	37.5	37	15.2
Arkansas	4	60.8	2	138.0	35	4.7
Florida	1	5.7	2	990.0	92	21.7
Georgia	2	18.0	0	0.0	54	12.1
Kentucky	3	164.0	2	895.0	33	12.1
Louisiana	19	1,753.1	112	22,610.0	59	11.6
Mississippi	5	329.5	8	561.7	25	4.0
North Carolina	0	0.0	0	0.0	76	15.0
Oklahoma	12	545.8	81	4,339.8	69	7.9
South Carolina	0	0.0	0	0.0	64	10.8
Tennessee	1	43.9	0	0.0	40	14.3
Texas	46	3,966.3	357	29,021.8	181	40.2
Virginia	1	53.0	0	0.0	50	9.8
West Virginia	3	19.5	4	368.5	21	12.0
Total						
South	100	7,009.5	571	58,962.3	836	191.4
United States	256	15,074.8	754	72,697.4	3,623	505.2
	(39%)	(46.5%)	(76%)	(81.1%)	(23.1%)	(37.9%)

Source: Oil and Gas Journal.

ORNL-DWG 78-10579

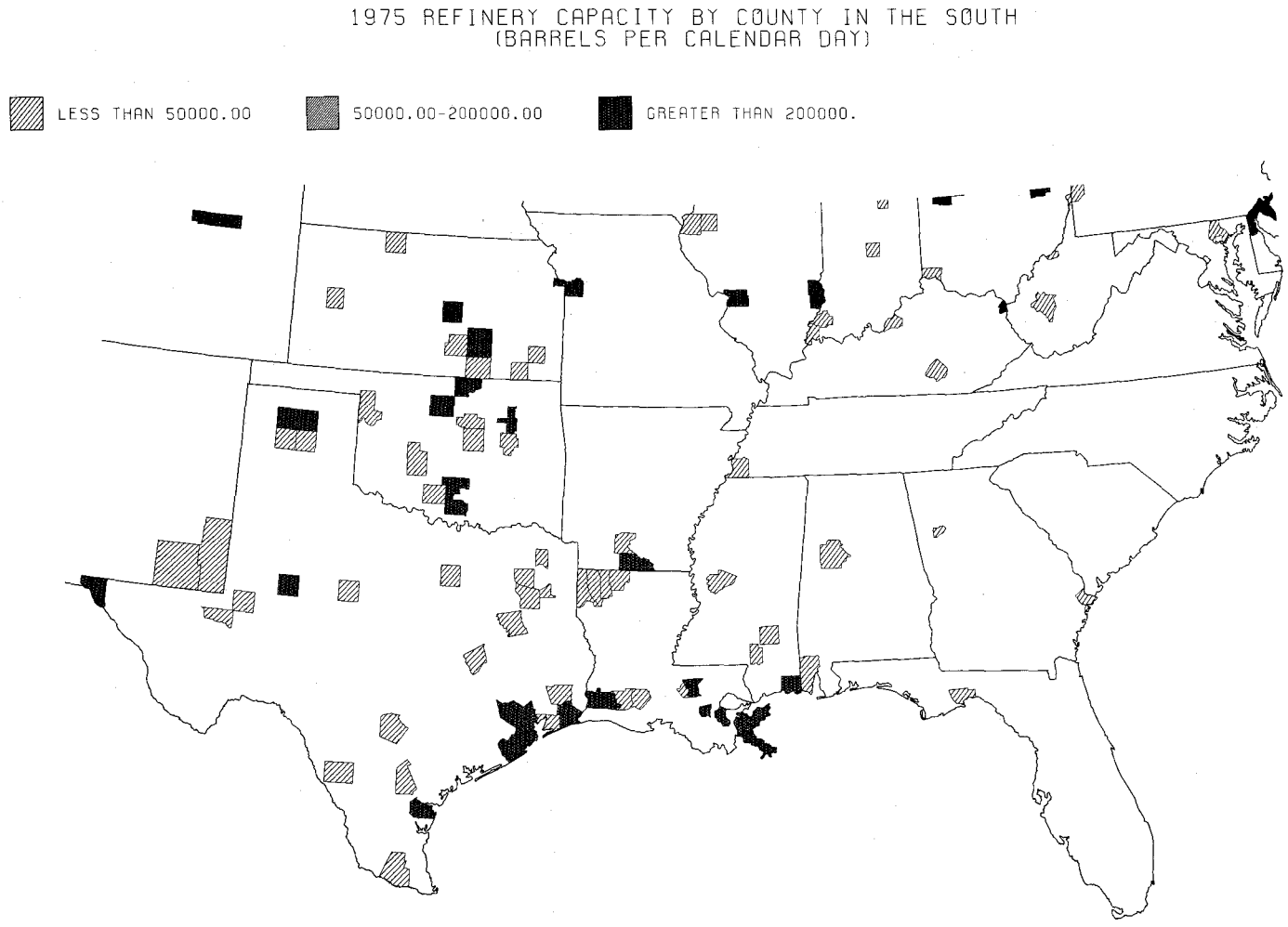


Fig. I-6. 1975 Refinery Capacity by County in the South.
Source: Oil and Gas Journal.

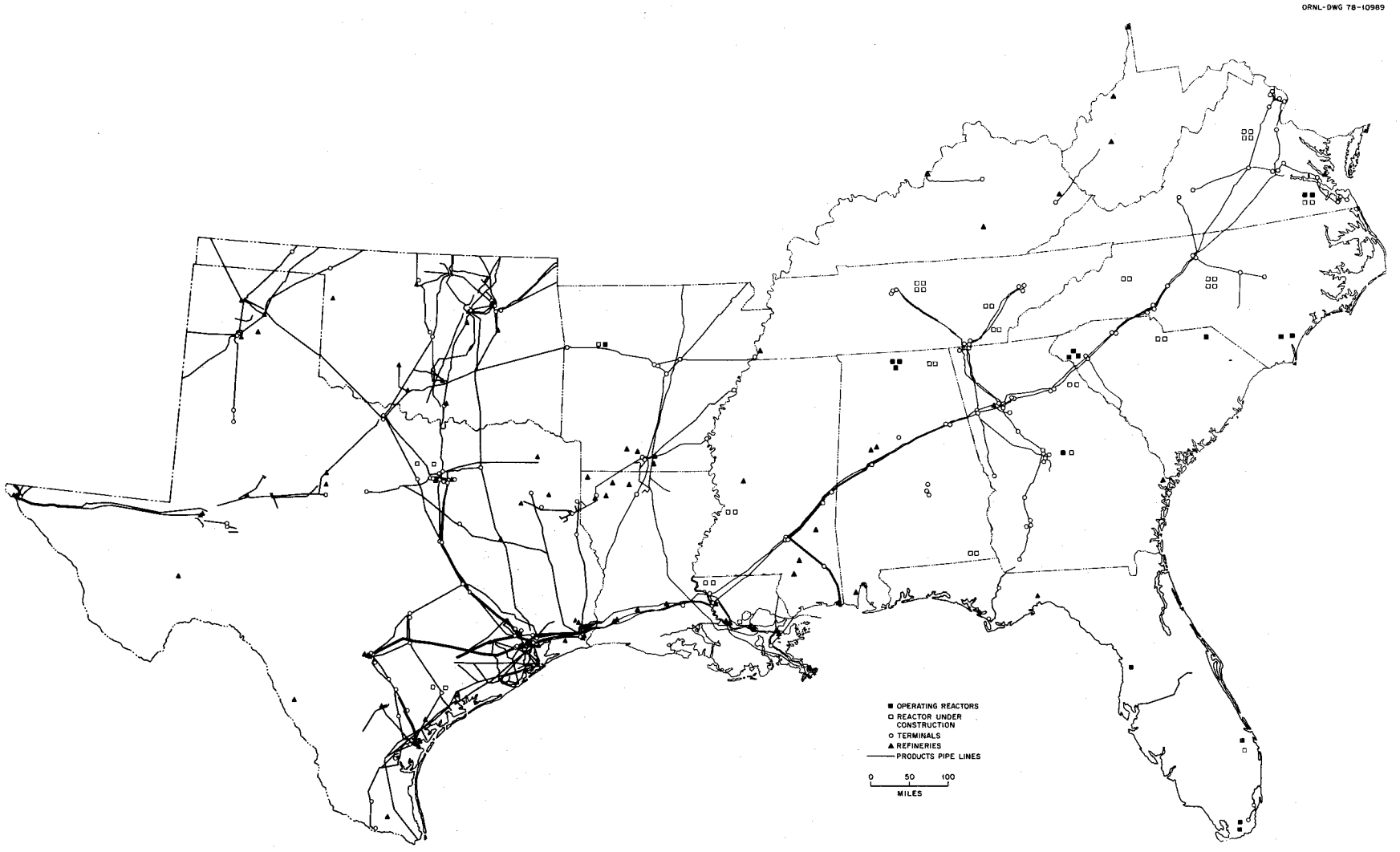


Fig. I-7. Product Pipelines in the South. Source: American Petroleum Institute map.

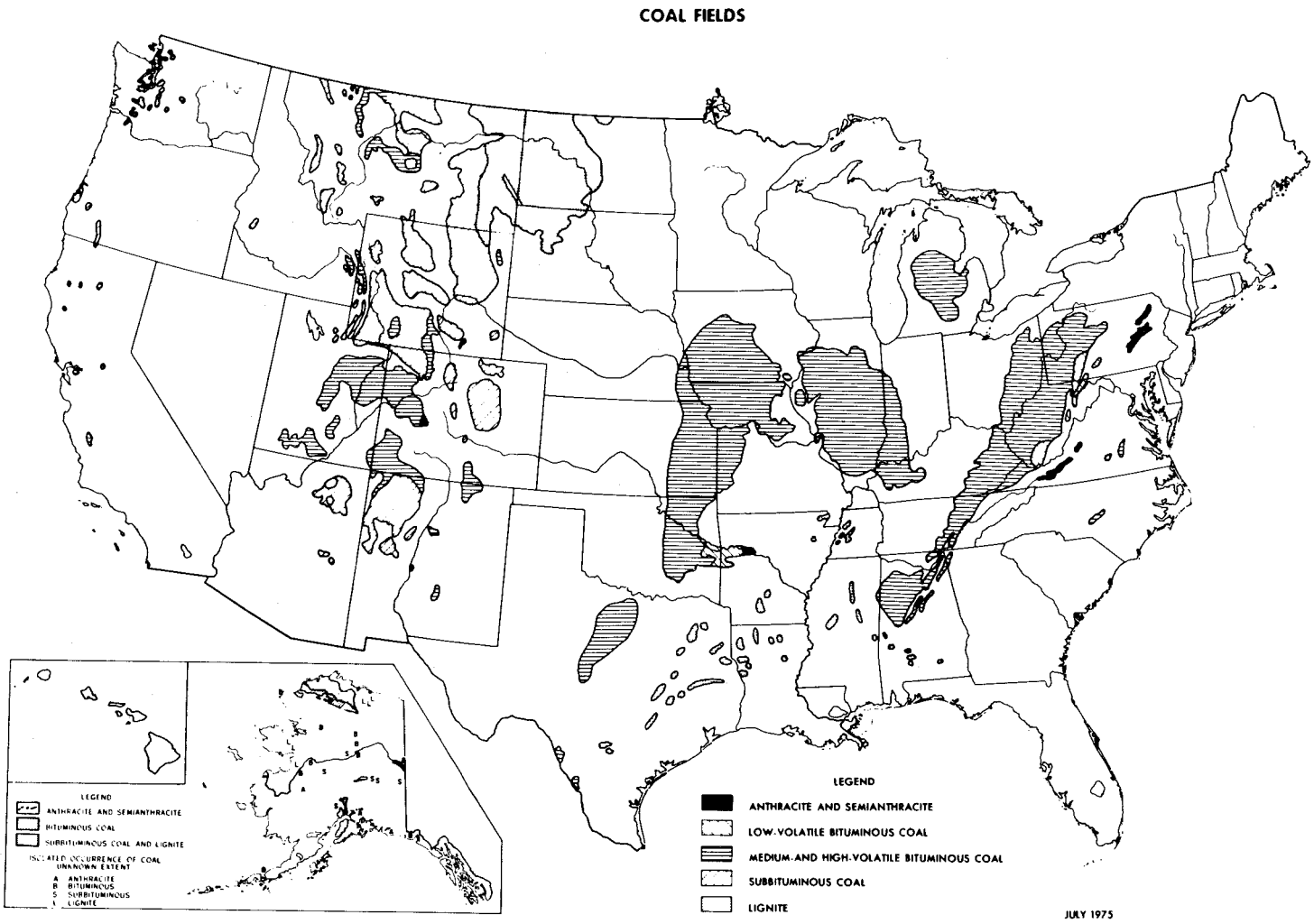


Fig. I-8. Coal Fields of the U.S. Source: USDA, The Nation's Renewable Resources — An Assessment: 1975 (1977).

ORNL-DWG 78-7431

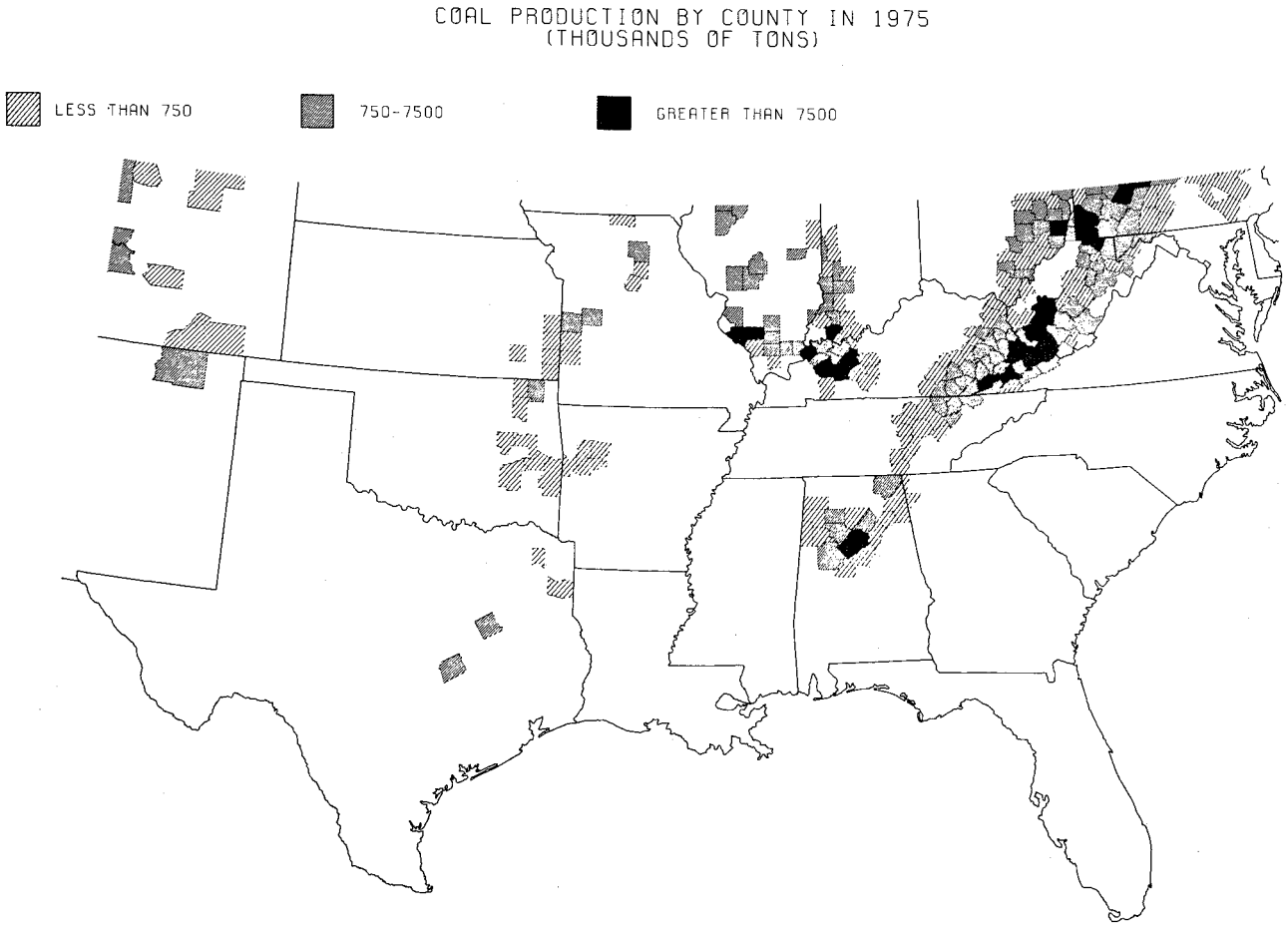


Fig. I-9. Coal Production by County in 1975. Source: Bureau of Mines.

ORNL-DWG 78-921

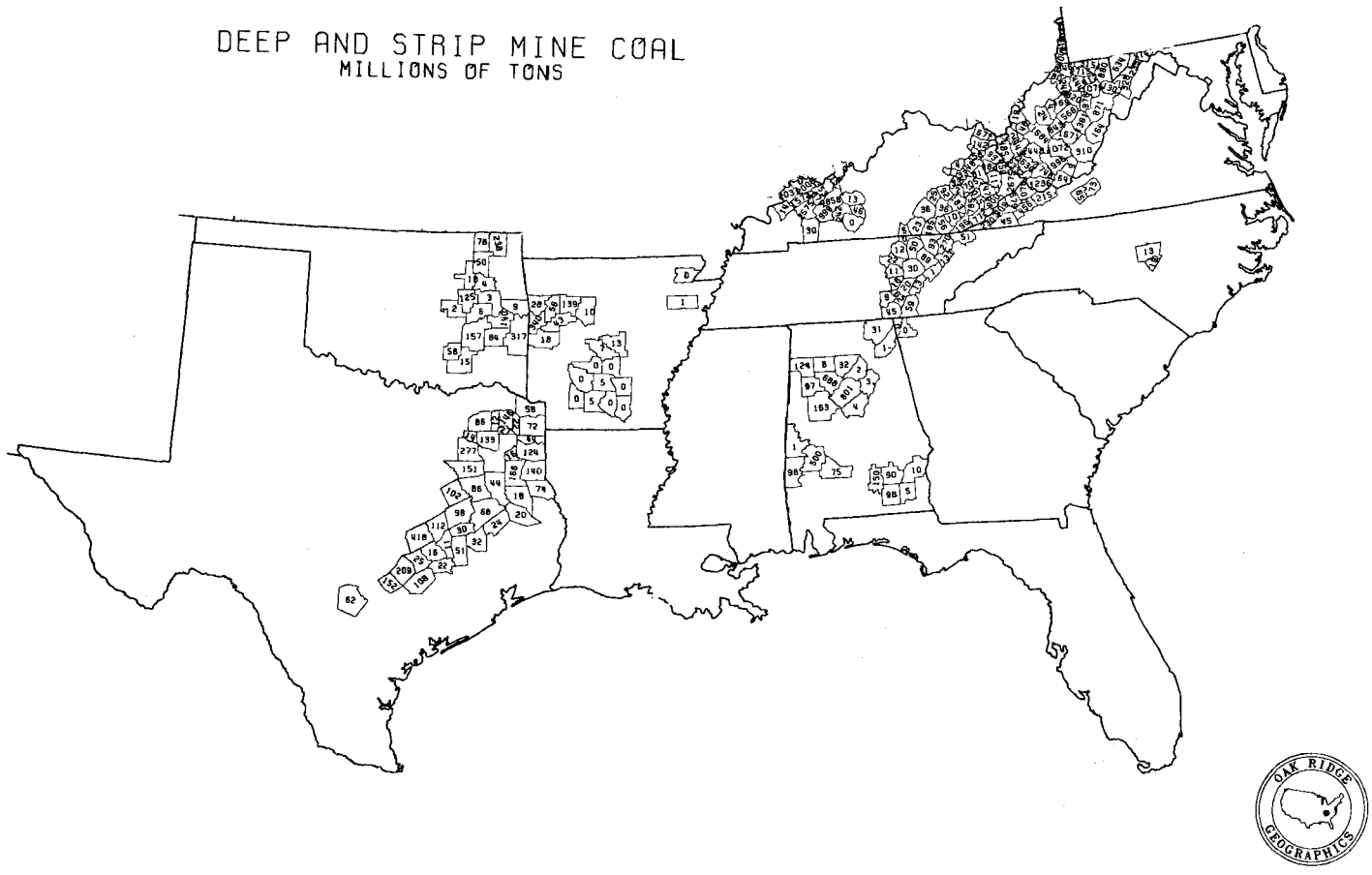


Fig. I-10. Deep and Strip Mine Coal. Source: ORNL, Regional and Urban Studies.

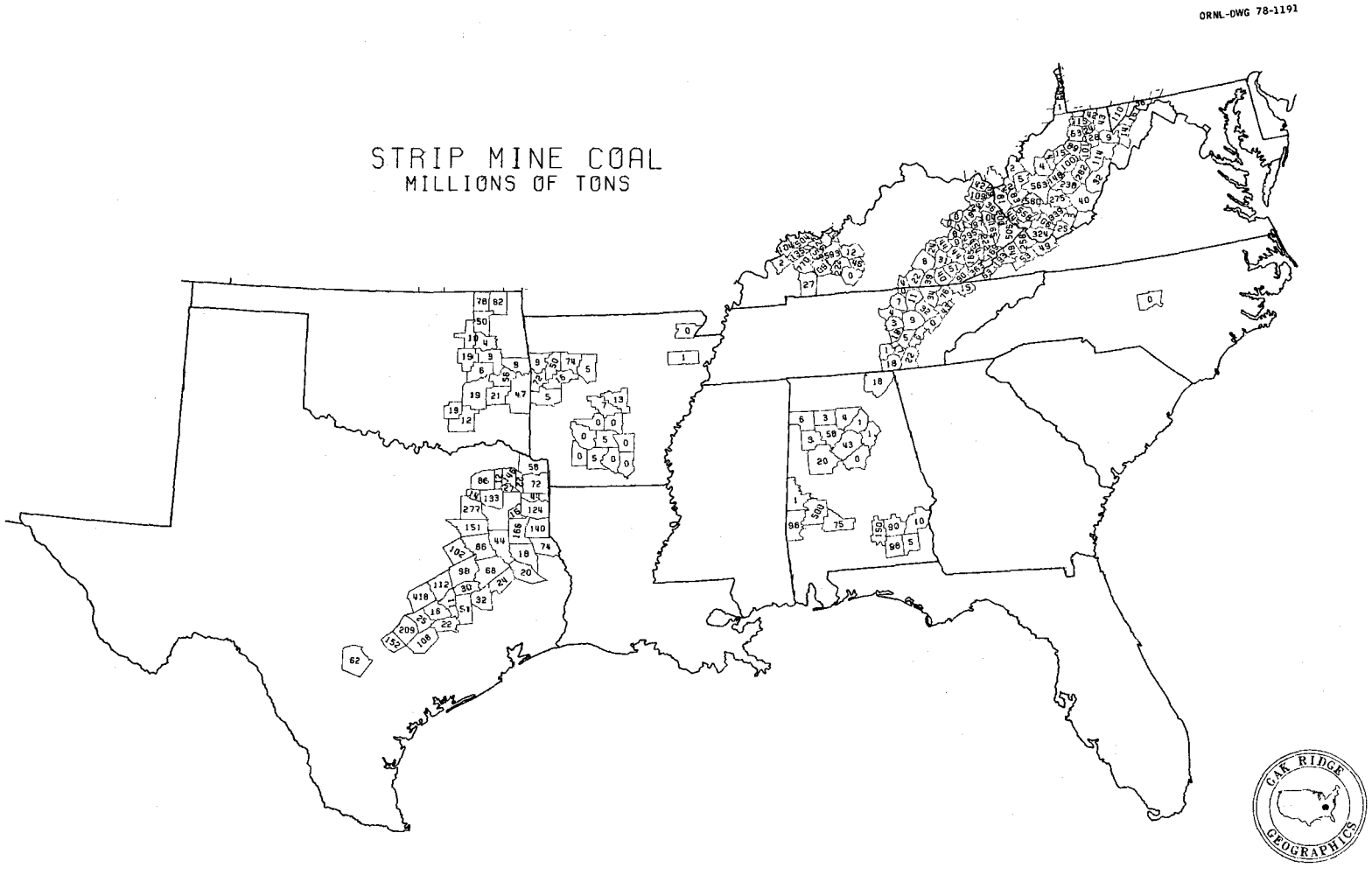


Fig. I-11. Strip Mine Coal. Source: ORNL, Regional and Urban Studies.

ORNL-DWG 78-920

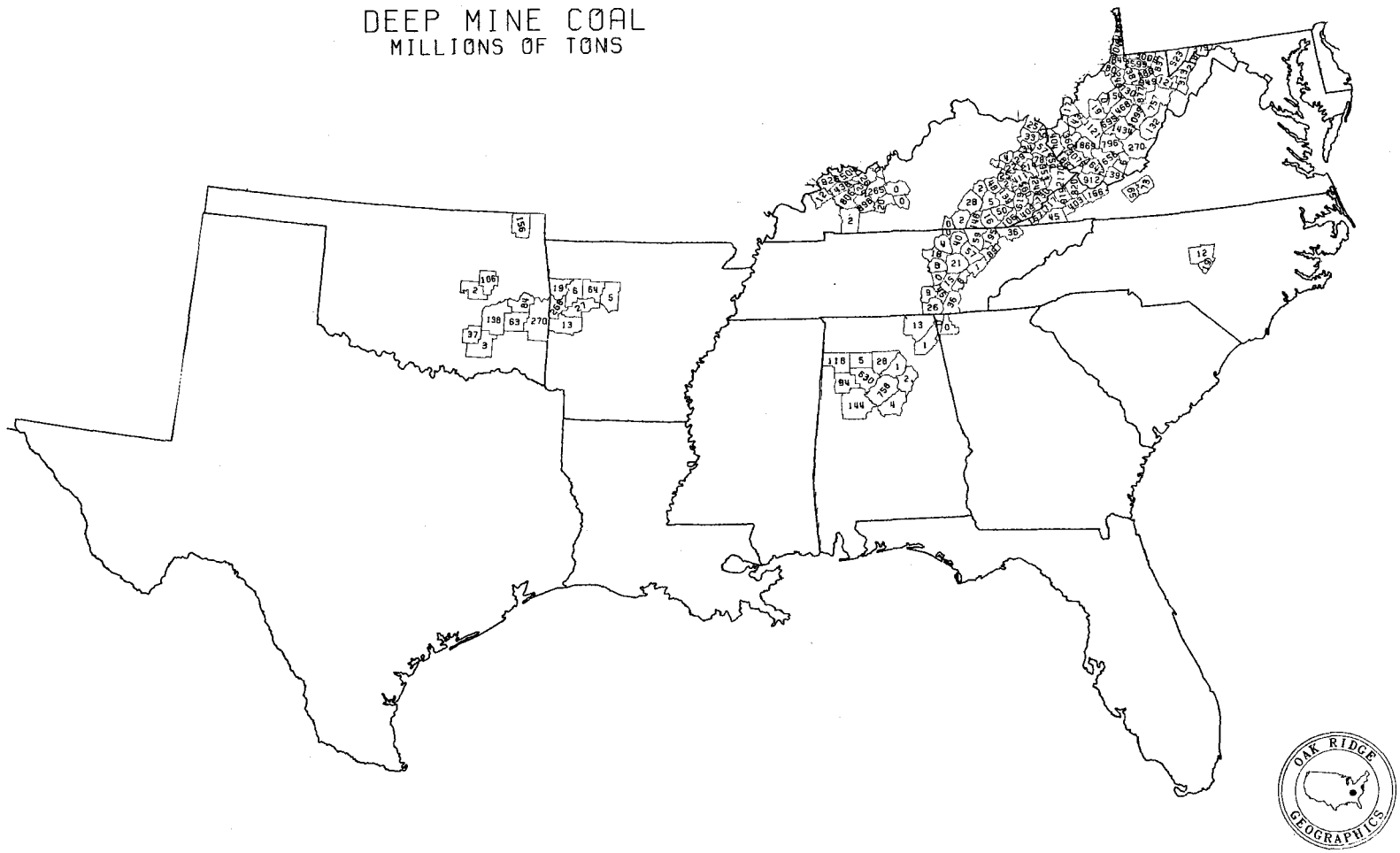


Fig. I-12. Deep Mine Coal. Source: ORNL, Regional and Urban Studies.

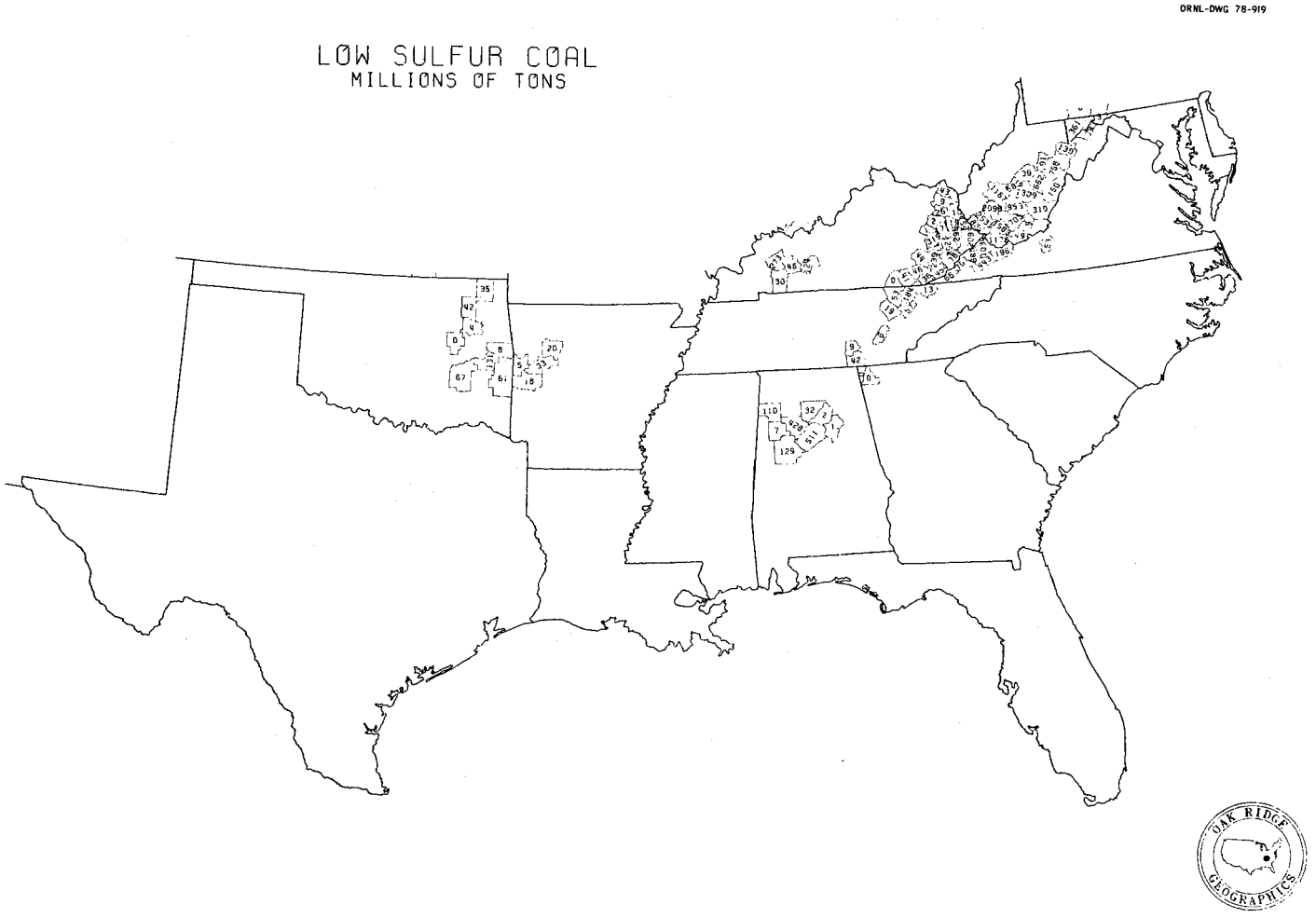


Fig. I-13. Low Sulfur Coal. Source: ORNL, Regional and Urban Studies.

ORNL-DWG 78-922

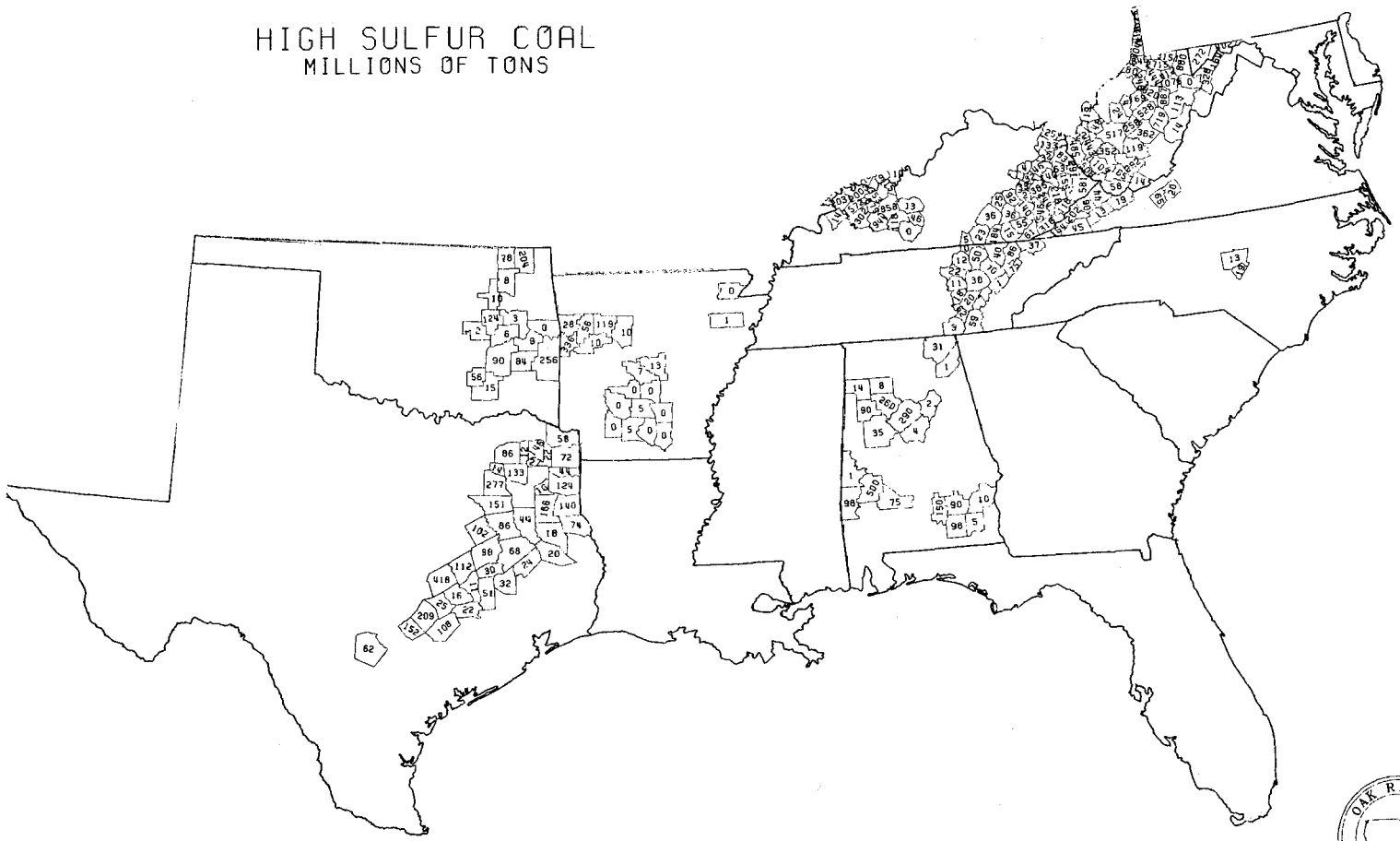


Fig. I-14. High Sulfue Coal. Source: ORNL, Regional and Urban Studies.

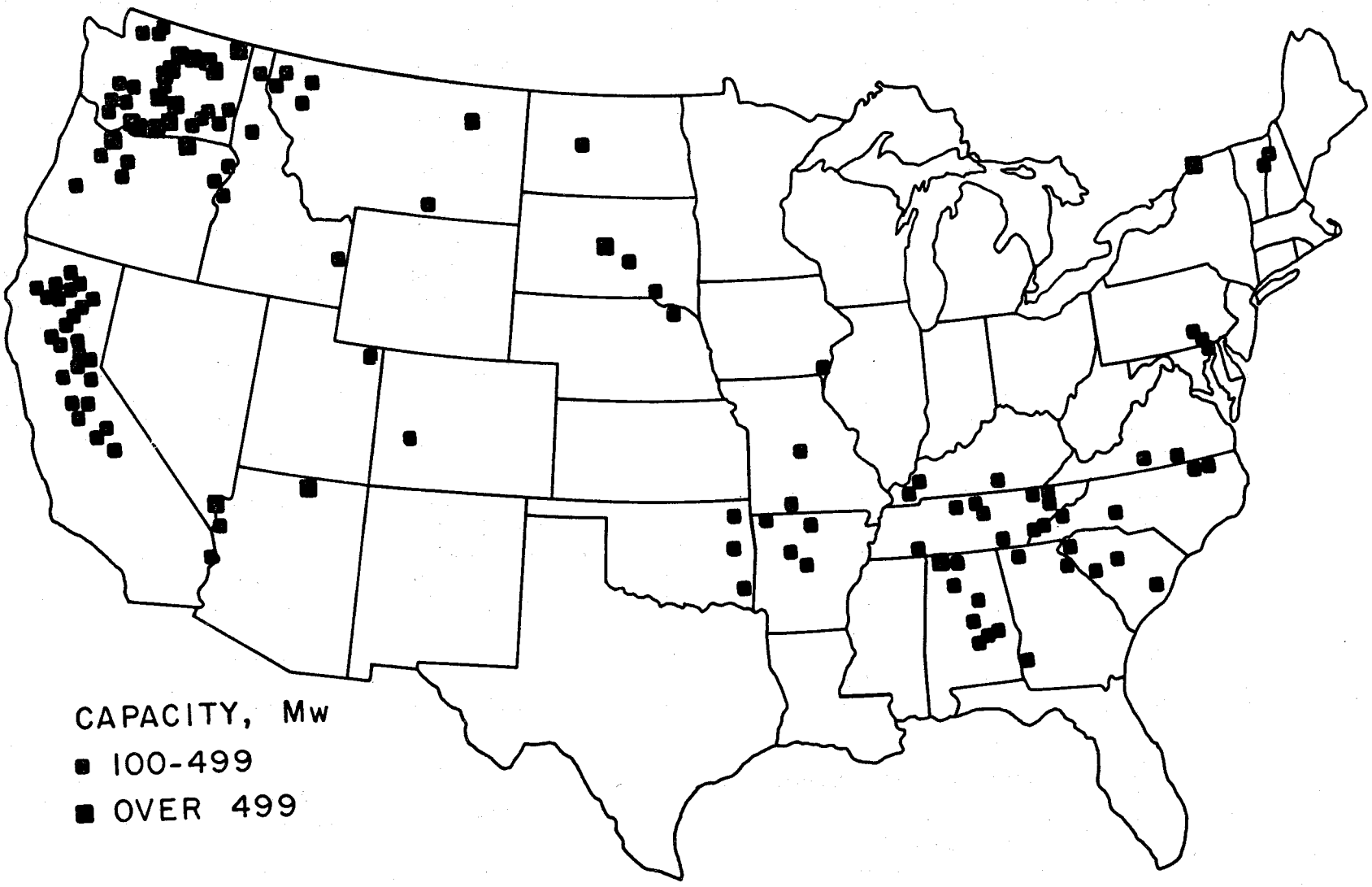


Fig. I-15. Hydro Capacity in the South. Source: Energy Alternatives: A Comparative Analysis.

TABLE I-7

PUMPED STORAGE PROJECTS WITH REVERSIBLE CAPACITY EXCEEDING 50 MW IN THE SOUTH AS OF SEPTEMBER 5, 1975, DEVELOPED, UNDER CONSTRUCTION, OR PROJECTED

State	Project name	River	Status[1]	Capacity (MW)			Date of operation
				Generating	Pumping	Output (cfs)	
Georgia	Carters	Coosawatte	—	250	276	8,860	1974
				250	—	—	1975
Georgia	Wallace	Oconee	—	216	248	24,000	1977
				108	—	—	1977
Georgia	Rocky Mt.	Heath Creek	LA	675	675	12,200	1978
North Carolina	Green River	Green	PO	500	500	—	—
North Carolina	Jackson Co.	Caney Fork and Frady Fork	PO	1,000	—	—	1981
North Carolina	Hawassee	Hiwassee		60	76	3,800	1956
				60	—	—	1940
Oklahoma	Salina	Grand	—	260	286	10,000	1968
South Carolina	Bad Creek	Bad Creek	LA	1,000	1,000	10,800	1985
South Carolina	Parr Shoals	Broad	—	480	480	—	1976
South Carolina and North Carolina	Jocassee	Keowee	—	610	610	19,100	1975
Tennessee	Raccoon Mt.	Tennessee	—	1,530	1,530	12,700	1975
Texas	Village Bend	Brazos	PA	730	730	—	1981
Virginia	Randolph	Roanoke	PA	3,575	3,575	—	—
Virginia and North Carolina	Blue Ridge	New River	LO	1,600	1,600	64,000	—
Virginia	Poor Mt.	Roanoke	PO	1,500	1,500	—	1979
Virginia	Bath Co.	Back Creek	LA	1,500	1,500	—	1979
Virginia	Smith Mt.	Roanoke	—	132	150	8,200	1965
				300	—	—	1965
West Virginia	Davis	Blackwater	LA	1,000	1,000	—	1978

[1]LO-FPC license outstanding; PO-FPC Preliminary permit outstanding; LA-FPC license or amendment applied for; PA-FPC Preliminary permit applied for.

Source: Los Alamos Scientific Laboratory.

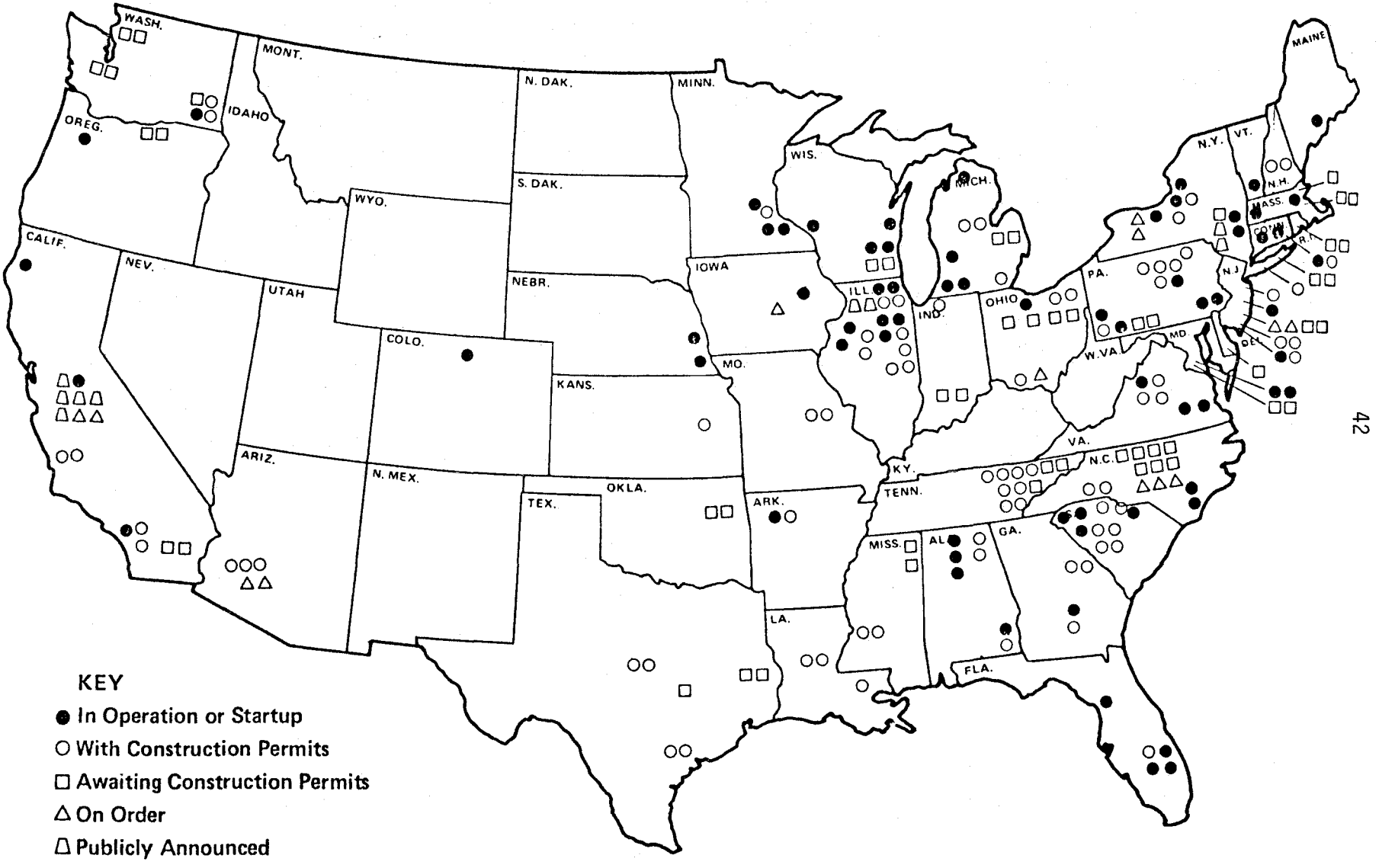
TABLE I-8

PUMPED STORAGE HYDROELECTRIC PLANTS OR ADDITIONS DEVELOPED, UNDER CONSTRUCTION, OR PROJECTED, JANUARY 1, 1976, FOR THE SOUTH

State	Plant	River	Status[1]	Reversible capacity (mkw)		Total potential conventional capacity (mkw)
				Developed	Total	
Arkansas	Degray	Caddo	FA	28.0	28.0	80.0
Georgia	Wallace Dam	Oconee	LO		216.0	108.0
Georgia	Carters	Coosawatte	LO		250.0	250.0
Georgia	Rocky Mountain	Heath Creek	LA		675.0	—
Georgia	Spewpell	Flint	FA		50.0	100.0
Kentucky	Breakabbey	Schoharic Cr.	LA		1,000.0	—
North Carolina	Hiwassee	Hiwassee	FA	59.5	59.5	57.6
North Carolina	Madison County	Sugarcamp Br.	PO		2,000.0	—
North Carolina	Green River Pr.	Green	PA		500.0	120.0
Oklahoma	Salina	Grand	LO	260.0	520.0	—
South Carolina	Jocassee	Keowee	LO	612.0	612.0	*
South Carolina	Bad Creek	Bad Creek	LA		1,000.0	—
South Carolina	Fairfield	Frees Cr. Bd.	LO	518.4	518.4	—
Tennessee	Raccoon Mt.	Tennessee	FA		1,530.0	—
Texas	Village Bend	Brazos	PO		730.0	—
Texas	Buchanan	Colorado	—	11.3	11.3	22.5
Virginia	Bath County	Back Creek	LA		2,100.0	—
Virginia	Turnip-Falling	Turnip Creek	PA		830.0	—
Virginia	Randolph-Hunting	Roanoke	PA		1,260.0	*
Virginia	Roanoke-Wallace	Roanoke	PA		780.0	—
Virginia	Cub Creek	Cub Creek	PA		800.0	—
Virginia	Mollys-Seneca Cr.	Seneca Creek	PA		420.0	—
Virginia	Upper Blue Ridge	New River	LO		1,600.0	*
Virginia	Upper Smite Mt.	Roanoke	LO	132.1	256.1	
West Virginia	Rowlesburg	Cheat	FA		350.0	

Source: Los Alamos Scientific Laboratory.

Status of Nuclear Powerplants, December 31, 1977



Due to Space Limitations, Symbols do not Represent Actual Locations.

Fig. I-16. Status of Nuclear Power Plants, December 31, 1977.
Source: ERDA Technical Information Center.

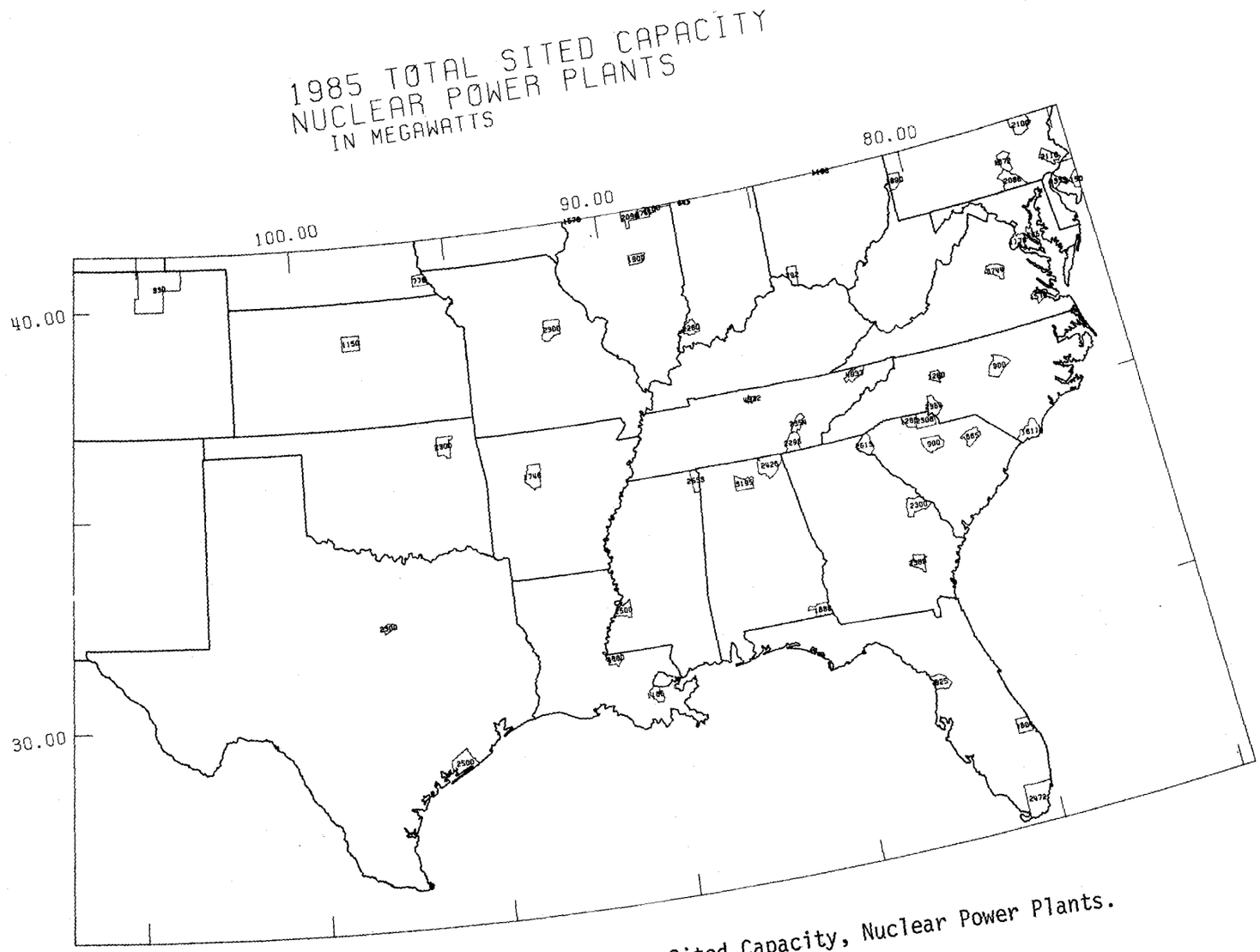


Fig. I-17. 1985 Total Sited Capacity, Nuclear Power Plants.
Source: Federal Power Commission.

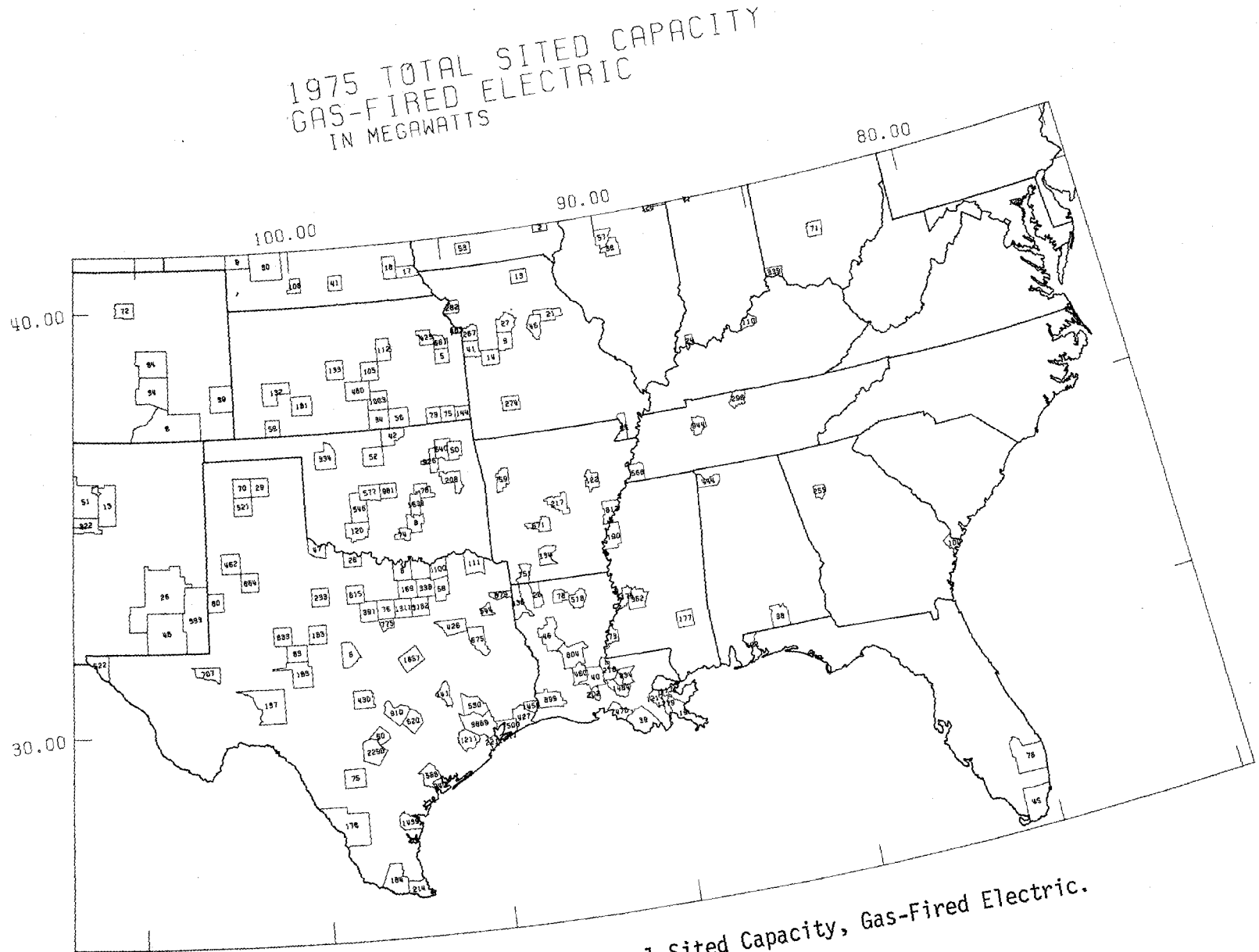


Fig. I-18. 1975 Total Sited Capacity, Gas-Fired Electric.
Source: Federal Power Commission.

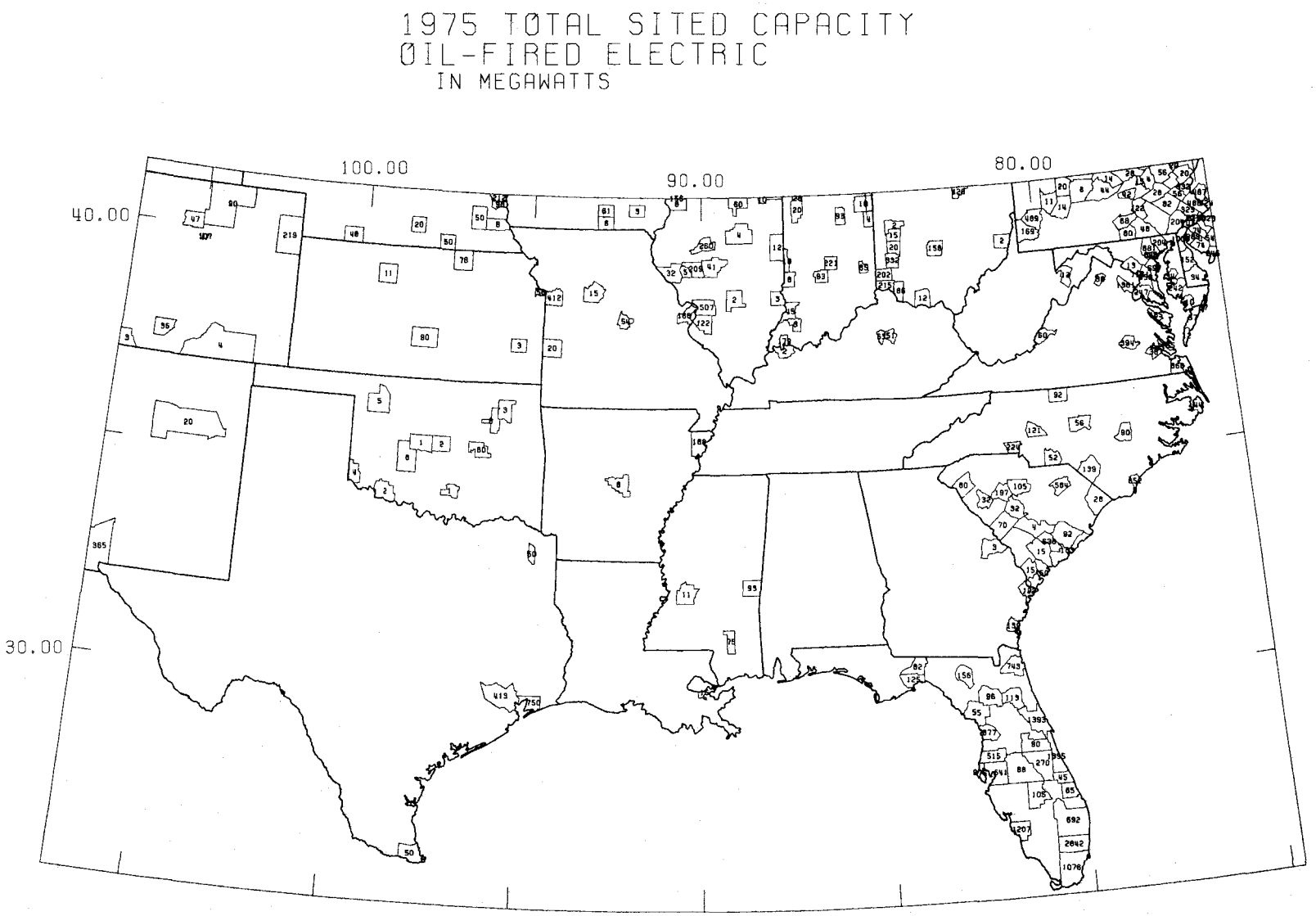


Fig. I-19. 1975 Total Sited Capacity, Oil-Fired Electric.
Source: Federal Power Commission.

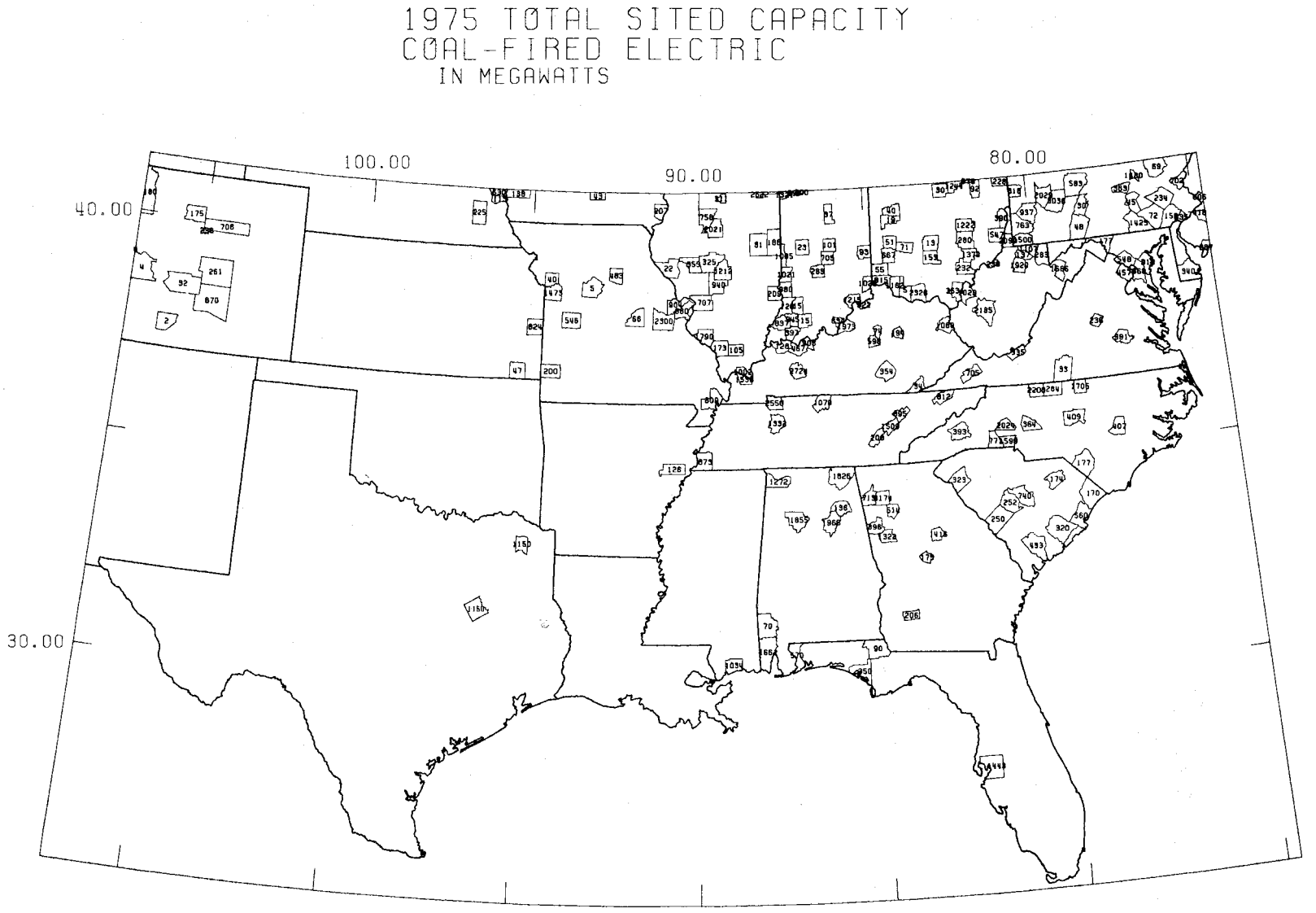


Fig. I-20. 1975 Total Sited Capacity, Coal-Fired Electric.
Source: Federal Power Commission.

TABLE I-9

1974-1975 SHIPMENTS OF URANIUM IN THE SOUTH

Mill Location	Converter Location	Total MBtu ($x\ 10^6$)
Grants, New Mexico	Sallisaw, Oklahoma	206.37
Falls City, Texas	Metropolis, Illinois	
Falls City, Texas	Sallisaw, Oklahoma	30.56
Ford, Washington	Sallisaw, Oklahoma	3.29
Douglas, Wyoming	Sallisaw, Oklahoma	48.96
Gas Hills, Wyoming	Sallisaw, Oklahoma	42.07
Shirley Basin, Wyoming	Sallisaw, Oklahoma	42.08

Uranium Milling Facilities in the South with Shipments in 1975

Facility	Location
Continental Oil Company	Falls City, Texas
Pioneer Nuclear, Inc.	Falls City, Texas

Source: Los Alamos Scientific Laboratory.

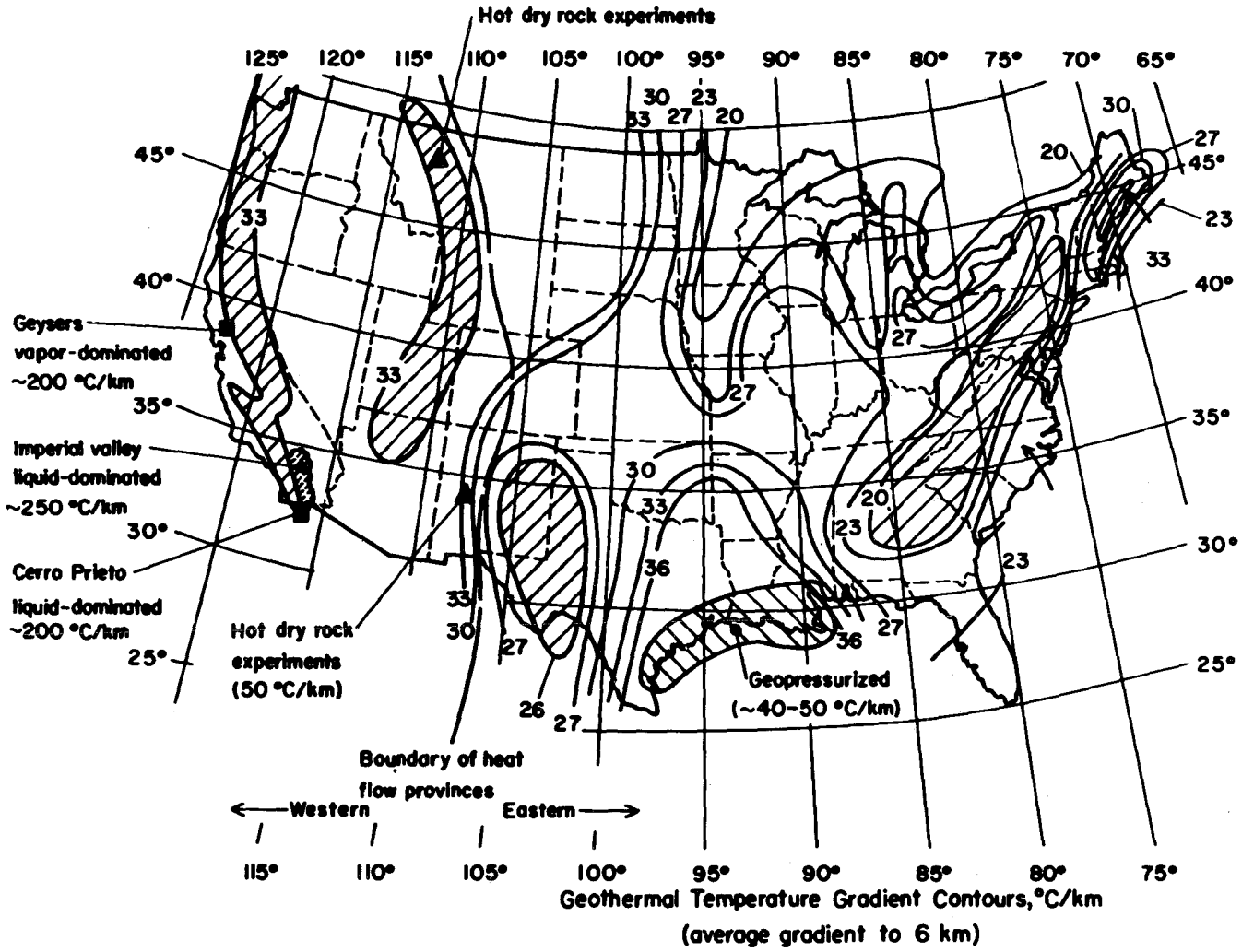


Fig. I-21. Geothermal Temperature Gradient Contours in the U.S. Source: Milora and Tester, Geothermal Energy as a Source of Electric Power (1976).

TABLE I-10

POTENTIAL SILVICULTURAL BIOMASS IF 10% OF PATURE, FOREST, AND RANGE WERE CONVERTED TO BIOMASS FARMS

Region	Biomass yields (DTE/acre)	Available land (10^6 acres)	Energy yield (quads)
Tennessee, Kentucky, Virginia, West Virginia, North Carolina	8	36.5	0.50
South Carolina, Georgia, Florida, Alabama	10	51.1	0.87
Mississippi, Louisiana, Arkansas	10	35.2	0.60
Texas, Oklahoma	9	42.3	0.65
South	—	165.1	2.61
U.S.	—	268.3	4.00
%	—	62	65.00

Source: R. E. Inman, 1977. Silvicultural Biomass Farms, Volumes I - VI. Mitre Technical Report Number 7347, The Mitre Corporation.

TABLE I-11

VOLUME OF HARVESTED SOFTWOODS AND HARDWOODS IN 1970 AND ESTIMATES OF TOTAL FOREST AND MILL RESIDUES IN DRY TON EQUIVALENTS AND QUADS

Region	Softwood		Hardwood		Total residues (10^3 DTE)	Quads
	Harvested (10^6 cu.ft.)	Residues (10^3 DTE)	Harvested (10^6 cu.ft.)	Residues (10^3 DTE)		
North Carolina, South Carolina, Virginia	789	3,216	516	8,597	11,813	0.20
Florida, Georgia	897	3,050	178	2,572	5,622	0.10
Alabama, Mississippi, Tennessee	978	4,132	579	6,453	10,585	0.18
Arkansas, Louisiana, Oklahoma, Texas	1,081	5,017	396	4,677	9,694	0.16
South	3,745	15,415	1,669	22,299	37,714	0.64
U.S.	8,984	44,907	3,174	38,291	83,198	1.41
%	42	34	53	58	45	45

Source: R. E. Inman, 1977. Silvicultural Biomass Farms, Volumes I - VI. Mitre Technical Report Number 7347, The Mitre Corporation.

TABLE I-12

MSW ENERGY RECOVERY SYSTEMS IN THE SOUTH

Location	Process	Capacity (ton/day)	Description
Existing Facilities—Electrical Generation			
So. Charleston, WV	Pyrolysis	200	Medium-Btu gas produced by Purox oxygen converter, shredding, 6 MW equivalent power
Existing Facilities—Steam Generation			
Nashville, TN	Incineration	720	Steam at 220,000 lb/hr, 620° F, 400 psig
New Orleans, LA	Incineration	650	Shredding, air-classification, magnetic separation
Norfolk, VA	Incineration	360	Steam at 100,000 lb/hr, 275 psig, saturated
Pompano Beach, FL	Anaerobic digestion	50-100	Sewage sludge to be mixed with MSW for methane production
Knoxville, TN	Undetermined	3000	Energy for use in utility, magnetic metals, aluminum
Miami, FL	Undetermined	3000	75 MW equivalent power

Source: Los Alamos Scientific Laboratory.

TABLE I-13

AGRICULTURAL RESIDUES GENERATED ANNUALLY
(THOUSANDS OF DRY TONS)

State	Total	Available
Alabama	10,901.6	10,231.8
Arkansas	12,197.7	11,104.4
Florida	6,520.3	5,820.3
Georgia	13,090.9	12,099.6
Kentucky	4,397.7	3,950.5
Louisiana	11,490.3	10,429.7
Mississippi	9,493.3	8,718.6
North Carolina	6,297.3	5,636.6
Oklahoma	9,026.3	7,675.0
South Carolina	4,274.1	3,962.6
Tennessee	4,142.3	3,687.5
Texas	19,215.4	16,270.1
Virginia	4,604.3	4,254.0
West Virginia	1,318.8	1,269.7
South	116,970.3	105,110.4
U.S.	474,213.5	418,010.4
	(24.7%)	(25.1%)

Source: An Evaluation of the Use of Agricultural Residues as an Energy Feedstock.

TABLE I-14

1975 SUPPLY PORTION OF FINAL ENERGY PRICE IN THE SOUTH

State	Oil ($/bbl)	Gas (¢/mcf)	Coal ($/ton)
Alabama	10.13	87.0	$26.53
Arkansas	8.88	34.7	32.76
Florida	11.71	97.3	NA
Georgia	NA	NA	NA
Kentucky	11.19	54.0	17.40
Louisiana	7.09	42.3	NA
Mississippi	6.66	49.6	NA
North Carolina	NA	NA	NA
Oklahoma	8.52	32.0	16.69
South Carolina	NA	NA	NA
Tennessee	11.33	43.0	17.10
Texas	7.64	51.0	NA
Virginia	11.29	51.5	30.46
West Virginia	11.99	36.9	29.35
South	9.68	52.7	24.33
U.S.	7.56	44.2	$19.23

Source: Bureau of Mines.

ORNL-DWG 78-9206A

1975 PER CAPITA ENERGY CONSUMPTION: THE SOUTH RELATIVE TO THE U.S.
(U.S. MEAN = 352 BILLION JOULES)

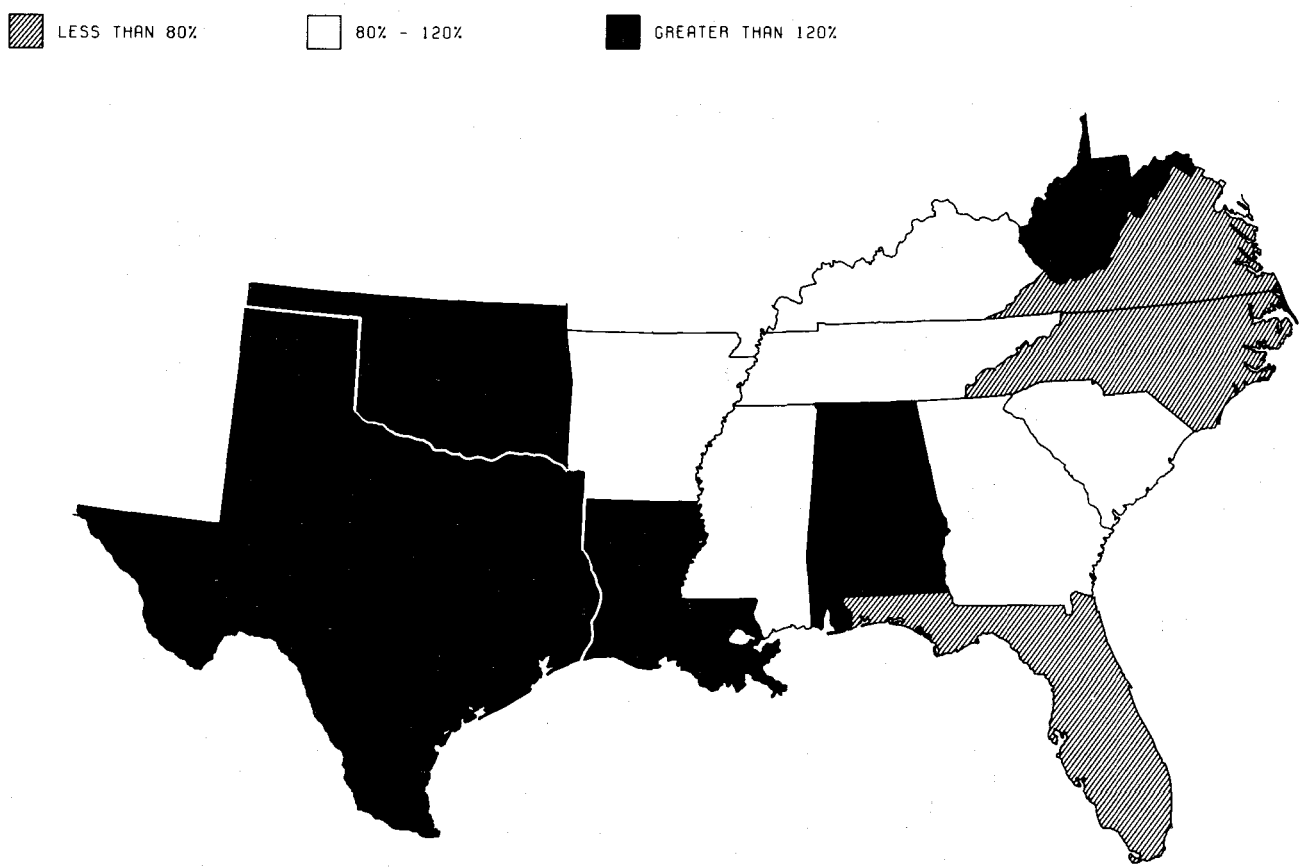


Fig. I-22. 1975 Per Capita Energy Consumption: the South Relative to the U.S. Source: FEDS.

TABLE I-15

ENERGY CONSUMPTION IN THE U.S. AND THE SOUTH* (1970-1975)
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		U.S., 1970				
Residential–Commercial	427	6453	7108	0	0	13988
Industrial	5002	5190	10162	0	0	20354
Transportation	8	15592	745	0	0	16345
Electric Utilities	7261	2087	4015	2650	229	16242
Miscellaneous	0	215	0	0	0	215
Total	12698	29537	22030	2650	229	67144
		U.S., 1971				
Residential–Commercial	406	6440	7366	0	0	14212
Industrial	4303	5221	10571	0	0	20095
Transportation	6	16160	766	0	0	16932
Electric Utilities	7330	2543	4117	2862	404	17256
Miscellaneous	0	207	0	0	0	207
Total	12045	30571	22820	2862	404	68702
		U.S., 1972				
Residential–Commercial	308	6667	7613	0	0	14588
Industrial	4275	5824	10550	0	0	20649
Transportation	4	17107	787	0	0	17898
Electric Utilities	7836	3134	4086	2946	576	18578
Miscellaneous	0	233	0	0	0	233
Total	12423	32965	23036	2946	576	71946
		U.S., 1973				
Residential–Commercial	296	6697	7633	0	0	14626
Industrial	4377	6076	10654	38	0	21145
Transportation	3	18192	744	0	0	18939
Electric Utilities	8618	3656	3681	2970	888	19813
Miscellaneous	0	231	0	0	0	231
Total	13294	24852	22712	3008	888	74754
		U.S., 1974				
Residential–Commercial	297.5	6098.8	7518.0	0	0	13914.3
Industrial	4129.2	5909.4	10018.2	33	0	20089.8
Transportation	2.1	17733.6	684.8	0	0	18420.5
Electric Utilities	8519.6	3480.2	3511.5	3276	1211	19998.3
Miscellaneous	0.0	245.3	0.0	0	0	245.3
Total	12948.4	33467.3	21732.5	3309	1211	72668.2
		U.S., 1975				
Residential–Commercial	176.2	5949.9	7610.8	0.0	0.0	13736.9
Industrial	3690.2	6806.1	8476.3	0.0	0.0	19072.6
Transportation	0.0	17319.6	597.0	0.0	0.0	17916.6
Electric Utilities	9286.9	3240.0	3222.4	3116.3	1805.2	20670.8
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	13153.3	33315.6	20006.5	3116.3	1805.2	71396.9
		South, 1970				
Residential–Commercial	118.7	1700.7	1440.9	0.0	0	3260.3
Industrial	935.0	1196.5	5710.0	0.0	0	7841.5
Transportation	0.0	4761.9	393.3	0.0	0	5155.2
Electric Utilities	2505.6	448.3	2277.2	352.1	0	5583.2
Miscellaneous	0.5	52.3	0.0	0.0	0	52.8
Total	3559.8	8159.7	9821.4	352.1	0	21893.0

TABLE I-15 (continued)

ENERGY CONSUMPTION IN THE U.S. AND THE SOUTH* (1970-1975)
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South, 1971				
Residential–Commercial	92.4	1729.3	1430.9	0.0	0.0	3252.6
Industrial	820.3	1250.4	5979.3	0.0	0.0	8050.0
Transportation	0.0	4950.8	404.7	0.0	0.0	5355.5
Electric Utilities	2684.8	552.4	2442.9	437.6	25.7	6143.4
Miscellaneous	0.2	47.9	0.0	0.0	0.0	48.1
Total	3597.7	8530.8	10257.8	437.6	25.7	22849.6
		South, 1972				
Residential–Commercial	82.8	1926.5	1459.6	0	0	3468.9
Industrial	839.3	1529.6	5858.1	0	0	8227.0
Transportation	0.0	5362.8	416.0	0	0	5778.8
Electric Utilities	3042.6	734.1	2465.6	464	57	6763.3
Miscellaneous	0.2	51.8	0.0	0	0	52.0
Total	3964.9	9604.8	10199.3	464	57	24290.0
		South, 1973				
Residential–Commercial	55.0	1239.8	1575.5	0.0	0	2870.3
Industrial	815.6	1662.8	6054.6	0.0	0	8533.0
Transportation	0.0	5820.1	418.1	0.0	0	6238.2
Electric Utilities	3000.0	955.2	2307.7	552.3	192	7007.2
Miscellaneous	1.8	67.5	0.0	0.0	0	69.3
Total	3872.4	9745.4	10355.9	552.3	192	24718.0
		South, 1974				
Residential–Commercial	49.1	1139.5	1480.7	0.0	0.0	2669.3
Industrial	820.3	1601.5	5822.5	0.0	0.0	8244.3
Transportation	0.0	5697.8	372.8	0.0	0.0	6070.6
Electric Utilities	2960.9	963.8	2355.1	495.2	336.7	7111.7
Miscellaneous	1.6	67.1	0.0	0.0	0.0	68.7
Total	3831.9	9469.7	10031.1	495.2	336.7	24164.6
		South, 1975				
Residential–Commercial	34.4	1149.0	1503.42	0.0	0.0	2686.8
Industrial	780.6	3327.5	4763.01	0.0	0.0	8871.1
Transportation	0.0	5964.7	314.18	0.0	0.0	6278.9
Electric Utilities	3433.1	871.3	2331.46	556.9	513.2	7706.0
Miscellaneous	0.0	0.0	0.00	0.0	0.0	0.0
Total	4248.1	11312.5	8912.07	556.9	513.2	25542.8

*See Table I-31 for state-specific data.

Source: Bureau of Mines, FEDS.

TABLE I-16

PER CAPITA ENERGY CONSUMPTION IN THE U.S. AND THE SOUTH* (1970-1975)
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		U.S., 1970				
Residential—Commercial	2.1	31.7	34.9	0.0	0.0	68.6
Industrial	24.5	25.5	49.9	0.0	0.0	99.9
Transportation	0.0	76.5	3.7	0.0	0.0	80.2
Electric Utilities	35.6	10.2	19.7	13.0	1.1	79.7
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	62.3	144.9	108.1	13.0	1.1	329.5
		U.S., 1971				
Residential—Commercial	2.0	31.2	35.7	0.0	0.0	68.9
Industrial	20.9	25.3	51.3	0.0	0.0	97.5
Transportation	0.0	78.4	3.7	0.0	0.0	82.1
Electric Utilities	35.6	12.3	20.0	13.9	2.0	83.7
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	58.4	148.3	110.7	13.9	2.0	333.2
		U.S., 1972				
Residential—Commercial	1.5	32.0	36.6	0.0	0.0	70.1
Industrial	20.5	28.0	50.7	0.0	0.0	99.2
Transportation	0.0	82.2	3.8	0.0	0.0	86.0
Electric Utilities	37.6	15.1	19.6	14.1	2.8	89.2
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	59.7	158.3	110.6	14.1	2.8	345.5
		U.S., 1973				
Residential—Commercial	1.4	31.9	36.4	0.0	0.0	69.7
Industrial	20.9	29.0	50.8	0.2	0.0	100.8
Transportation	0.0	86.7	3.5	0.0	0.0	90.3
Electric Utilities	41.1	17.4	17.5	14.2	4.2	94.4
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	63.4	166.1	108.2	14.4	4.2	356.2
		U.S., 1974				
Residential—Commercial	1.4	28.9	35.6	0.0	0.0	65.8
Industrial	19.5	28.0	47.4	0.2	0.0	95.0
Transportation	0.0	83.9	3.2	0.0	0.0	87.1
Electric Utilities	40.3	16.5	16.6	15.5	5.7	94.6
Miscellaneous	0.0	1.2	0.0	0.0	0.0	1.2
Total	61.3	158.3	102.8	15.7	5.7	343.8

TABLE I-16 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE U.S. AND THE SOUTH* (1970-1975)
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		U.S., 1975				
Residential—Commercial	0.8	27.9	35.7	0.0	0.0	64.5
Industrial	17.3	31.9	40.2	0.0	0.0	89.5
Transportation	0.0	81.3	2.8	0.0	0.0	84.1
Electric Utilities	43.6	15.2	15.1	14.6	8.5	97.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	61.7	156.3	93.9	14.6	8.5	335.0
		South, 1970				
Residential—Commercial	2.1	29.4	25.0	0.0	0.0	56.4
Industrial	16.2	20.7	98.8	0.0	0.0	135.7
Transportation	0.0	82.4	6.8	0.0	0.0	89.2
Electric Utilities	43.4	7.8	39.4	6.1	0.0	96.7
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	61.6	141.2	170.0	6.1	0.0	378.9
		South, 1971				
Residential—Commercial	1.6	29.5	24.4	0.0	0.0	55.4
Industrial	14.0	21.3	101.9	0.0	0.0	137.2
Transportation	0.0	84.4	6.9	0.0	0.0	91.3
Electric Utilities	45.8	9.4	41.6	7.5	0.4	104.7
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	61.3	145.4	174.8	7.5	0.4	389.4
		South, 1972				
Residential—Commercial	1.4	32.3	24.5	0.0	0.0	58.1
Industrial	14.1	35.6	98.1	0.0	0.0	137.8
Transportation	0.0	89.8	7.0	0.0	0.0	96.8
Electric Utilities	51.0	12.3	41.3	7.8	1.0	113.3
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	66.4	160.9	170.9	7.8	1.0	407.0
		South, 1973				
Residential—Commercial	0.9	20.4	25.9	0.0	0.0	47.2
Industrial	13.4	27.4	99.6	0.0	0.0	140.4
Transportation	0.0	95.7	6.9	0.0	0.0	102.6
Electric Utilities	49.4	15.7	38.0	9.1	3.2	115.3
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	63.7	160.3	170.4	9.1	3.2	406.6

TABLE I-16 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE U.S. AND THE SOUTH* (1970-1975)
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South, 1974				
Residential—Commercial	0.8	18.5	24.0	0.0	0.0	43.2
Industrial	13.3	25.9	94.3	0.0	0.0	133.5
Transportation	0.0	92.3	6.0	0.0	0.0	98.3
Electric Utilities	47.9	15.6	38.1	8.0	5.5	115.2
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	62.1	153.3	162.4	8.0	5.5	391.3
		South, 1975				
Residential—Commercial	0.5	18.3	24.0	0.0	0.0	42.8
Industrial	12.4	53.1	75.9	0.0	0.0	141.4
Transportation	0.0	95.1	5.0	0.0	0.0	100.1
Electric Utilities	54.7	13.9	37.2	8.9	8.2	122.9
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	67.7	180.4	142.1	8.9	8.2	407.2

*See Table I-32 for state-specific data.

Source: Bureau of Mines, FEDS.

TABLE I-17

FUEL MIX IN THE U.S. AND THE SOUTH* (1970-1975)
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		U.S., 1970				
Residential—Commercial	3.1	46.1	50.8	0.0	0.0	100
Industrial	24.5	25.5	49.9	0.0	0.0	100
Transportation	0.0	95.4	4.6	0.0	0.0	100
Electric Utilities	44.7	12.8	24.7	16.3	1.4	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	18.9	44.0	32.8	3.9	0.3	100
		U.S., 1971				
Residential—Commercial	2.9	45.3	51.8	0.0	0.0	100
Industrial	21.4	26.0	52.6	0.0	0.0	100
Transportation	0.0	95.4	4.5	0.0	0.0	100
Electric Utilities	42.5	14.7	23.9	16.6	2.3	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	17.5	44.5	33.2	4.2	0.6	100
		U.S., 1972				
Residential—Commercial	2.1	45.7	52.7	0.0	0.0	100
Industrial	20.7	28.2	51.1	0.0	0.0	100
Transportation	0.0	95.6	4.4	0.0	0.0	100
Electric Utilities	42.2	16.9	22.0	15.9	3.1	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	17.3	45.8	32.0	4.1	0.8	100
		U.S., 1973				
Residential—Commercial	2.0	45.8	52.2	0.0	0.0	100
Industrial	20.7	28.7	50.4	0.2	0.0	100
Transportation	0.0	96.1	4.0	0.0	0.0	100
Electric Utilities	43.5	18.5	18.6	15.0	4.5	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	17.8	46.6	30.4	4.0	1.2	100
		U.S., 1974				
Residential—Commercial	2.1	43.8	54.0	0.0	0.0	100
Industrial	20.6	29.4	49.9	0.2	0.0	100
Transportation	0.0	96.3	3.7	0.0	0.0	100
Electric Utilities	42.6	17.4	17.6	16.4	6.1	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	17.8	46.1	29.9	4.6	1.7	100

TABLE I-17 (continued)

FUEL MIX IN THE U.S. AND THE SOUTH* (1970-1975)
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		U.S., 1975				
Residential—Commercial	1.3	43.3	55.4	0.0	0.0	100
Industrial	19.3	35.7	45.0	0.0	0.0	100
Transportation	0.0	96.7	3.3	0.0	0.0	100
Electric Utilities	44.9	15.7	15.6	15.1	8.7	100
Miscellaneous	.	.	.	.	.	100
Total	18.4	46.7	28.0	4.4	2.5	100
		South, 1970				
Residential—Commercial	3.6	52.2	44.2	0.0	0.0	100
Industrial	11.9	15.3	72.8	0.0	0.0	100
Transportation	0.0	92.4	7.6	0.0	0.0	100
Electric Utilities	44.9	8.0	40.8	6.3	0.0	100
Miscellaneous	0.9	99.1	0.0	0.0	0.0	100
Total	16.3	37.3	44.9	1.6	0.0	100
		South, 1971				
Residential—Commercial	2.8	53.2	44.0	0.0	0.0	100
Industrial	10.2	15.5	74.3	0.0	0.0	100
Transportation	0.0	92.4	7.6	0.0	0.0	100
Electric Utilities	43.7	9.0	39.8	7.1	0.4	100
Miscellaneous	0.4	99.5	0.0	0.0	0.0	100
Total	15.7	37.3	44.9	1.9	0.1	100
		South, 1972				
Residential—Commercial	2.4	55.5	42.1	0.0	0.0	100
Industrial	10.2	18.6	71.2	0.0	0.0	100
Transportation	0.0	92.8	7.2	0.0	0.0	100
Electric Utilities	45.0	10.9	36.5	6.9	0.8	100
Miscellaneous	0.4	99.6	0.0	0.0	0.0	100
Total	16.3	39.5	42.0	1.9	0.2	100
		South, 1973				
Residential—Commercial	1.9	43.2	54.9	0.0	0.0	100
Industrial	9.6	19.5	71.0	0.0	0.0	100
Transportation	0.0	93.3	6.7	0.0	0.0	100
Electric Utilities	42.8	13.6	32.9	7.9	2.7	100
Miscellaneous	2.6	97.4	0.0	0.0	0.0	100
Total	15.7	39.4	41.9	2.2	0.8	100

TABLE I-17 (continued)

FUEL MIX IN THE U.S. AND THE SOUTH* (1970-1975)
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South, 1974				
Residential—Commercial	1.8	42.7	55.5	0.0	0.0	100
Industrial	9.9	19.4	70.6	0.0	0.0	100
Transportation	0.0	93.9	6.1	0.0	0.0	100
Electric Utilities	41.6	13.6	33.1	7.0	4.7	100
Miscellaneous	2.3	97.7	0.0	0.0	0.0	100
Total	15.6	39.2	41.5	2.0	1.4	100
		South, 1975				
Residential—Commercial	1.3	42.8	56.0	0.0	0.0	100
Industrial	8.8	37.5	53.7	0.0	0.0	100
Transportation	0.0	95.0	5.0	0.0	0.0	100
Electric Utilities	44.6	11.3	30.3	7.2	6.7	100
Miscellaneous	.	.	.	.	.	100
Total	16.6	44.3	34.9	2.1	2.0	100

*See Table I-33 for state-specific data.

Source: Bureau of Mines, FEDS.

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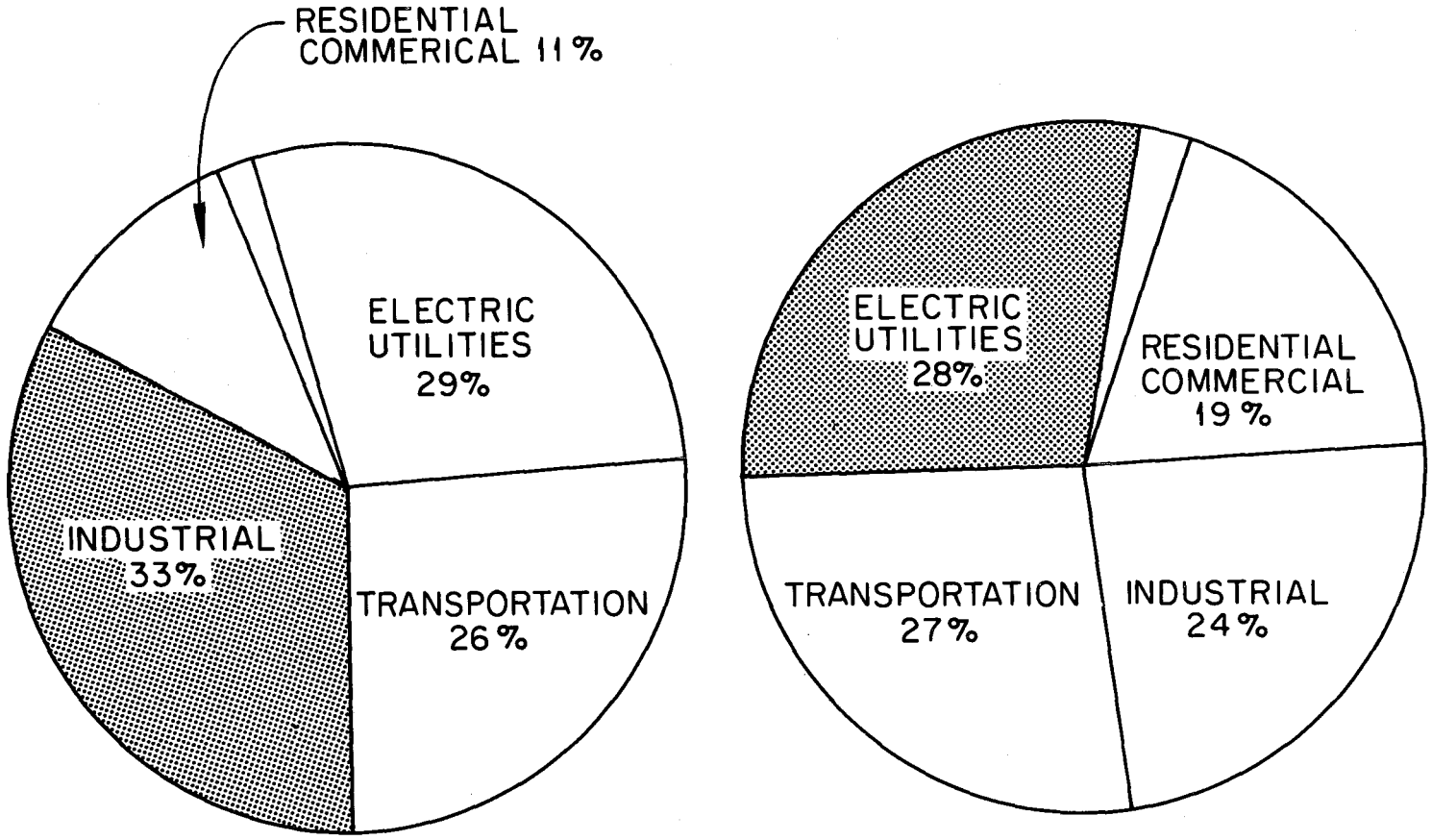
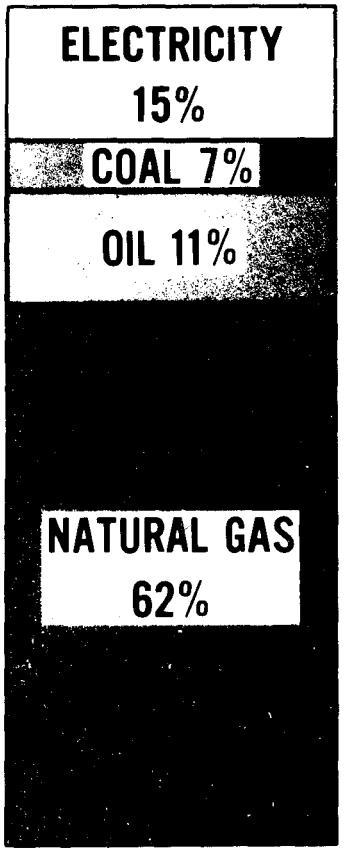
THE SECTORAL DISTRIBUTION OF ENERGY IN 1975: THE SOUTH AND THE U.S.



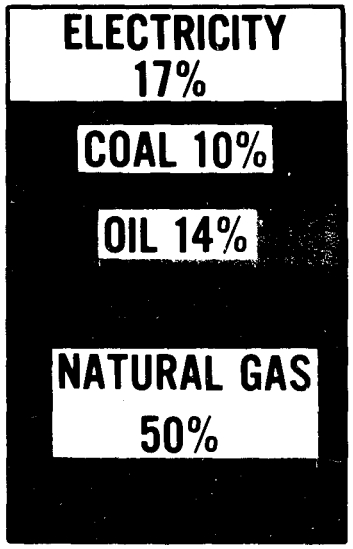
SOUTH: $26.9 * 10^{18}$ JOULES U.S.: $74.9 * 10^{18}$ JOULES

Fig. I-23. The Sectoral Distribution of Energy in 1975: the South and the U.S. Source: FEDS.

1975 Energy Usage per Employee in the Manufacturing Sector in the South and U.S.



SOUTH: 1120 x 10^9 JOULES



U.S.: 692 x 10^9 JOULES

Fig. I-24. 1975 Energy Usage Per Employee in the Manufacturing Sector in the South and U.S. Source: 1975 Annual Survey of Manufacturers.

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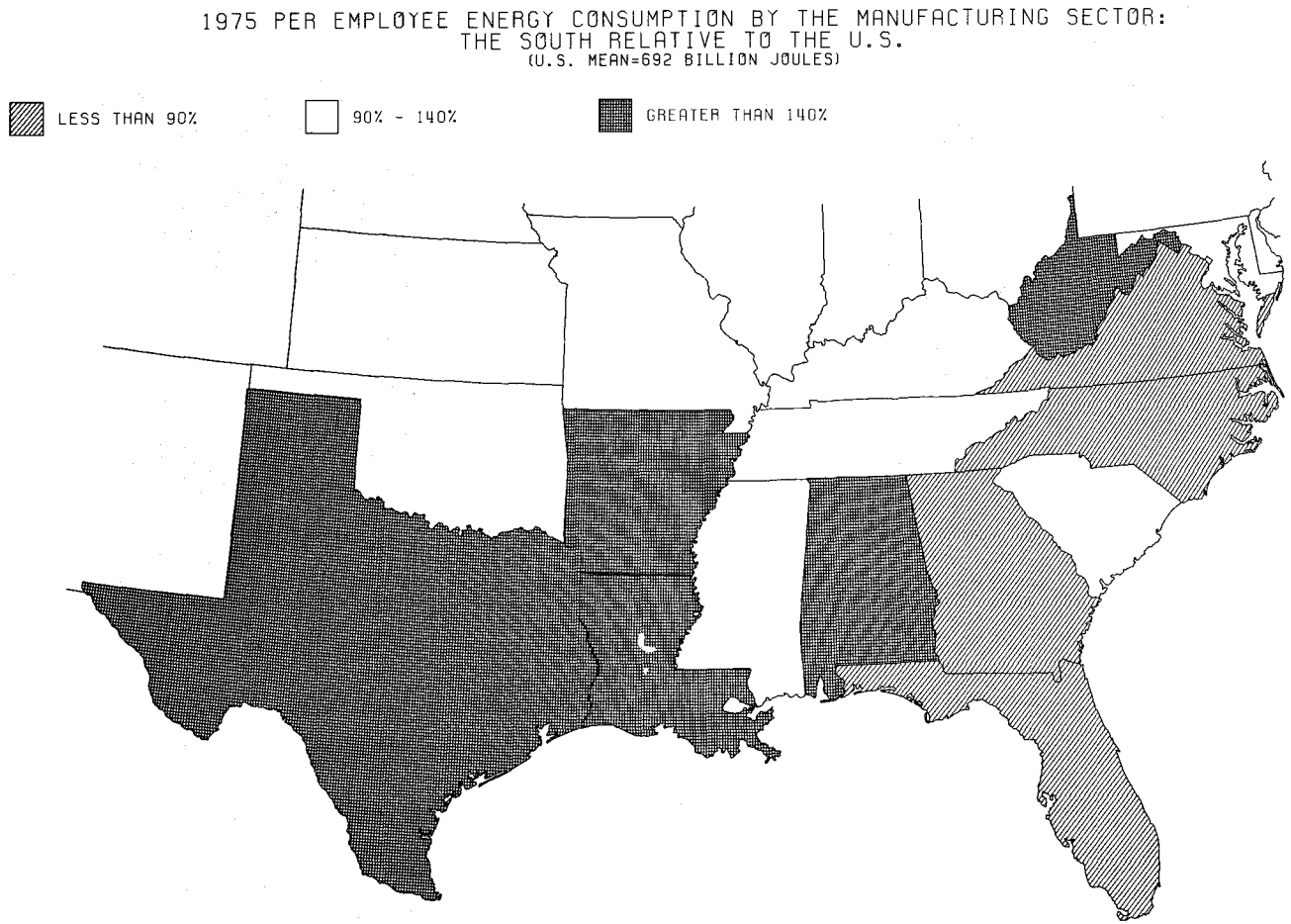

Fig. I-25. 1975 Per Employee Energy Consumption by the Manufacturing Sector: the South Relative to the U.S. Source: 1975 Annual Survey of Manufacturers.

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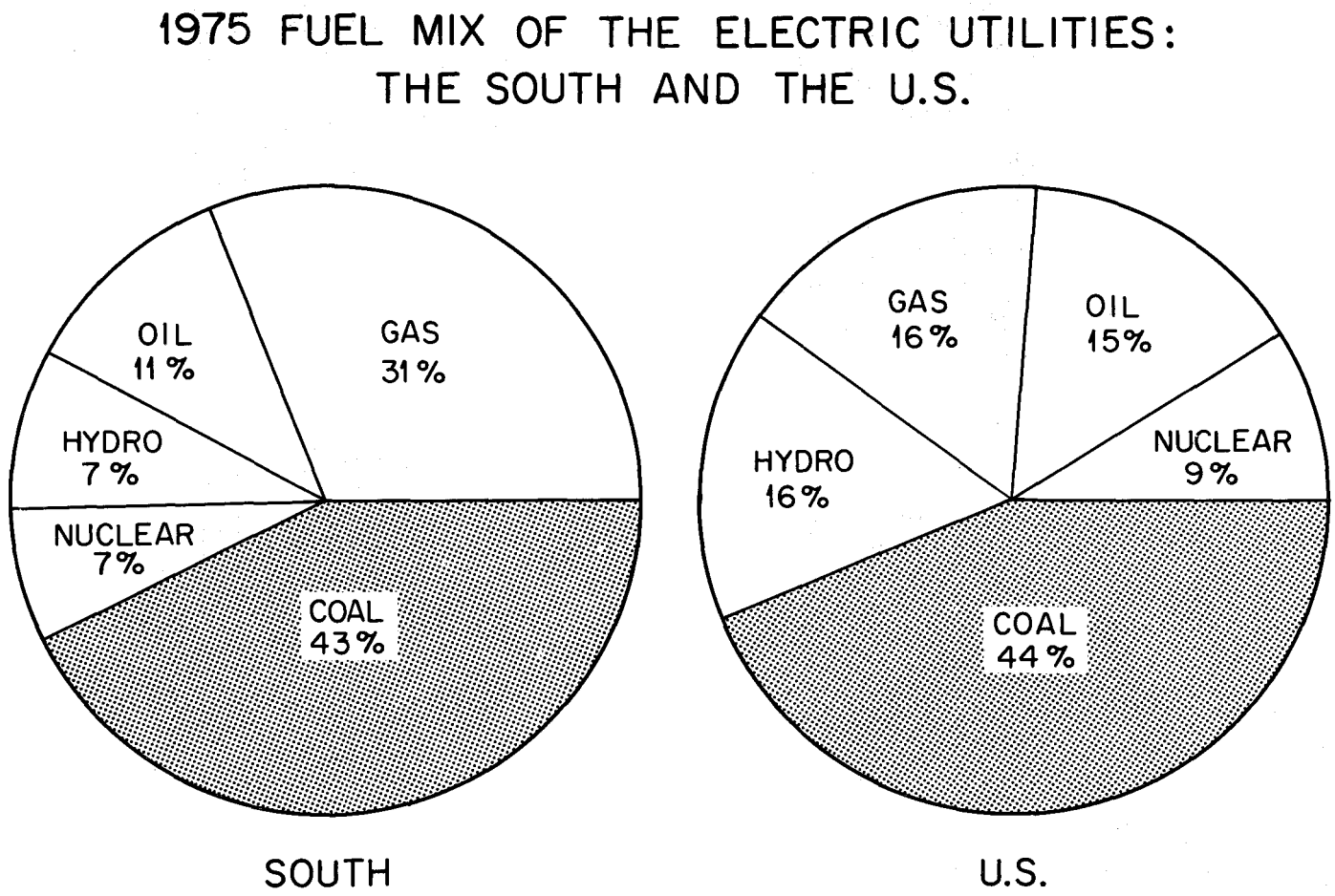

Fig. I-26. 1975 Fuel Mix of the Electric Utilities: the South and the U.S. Source: FEDS.

1975 per Capita Energy Usage in the Residential-Commercial Sector in the South and the U.S.

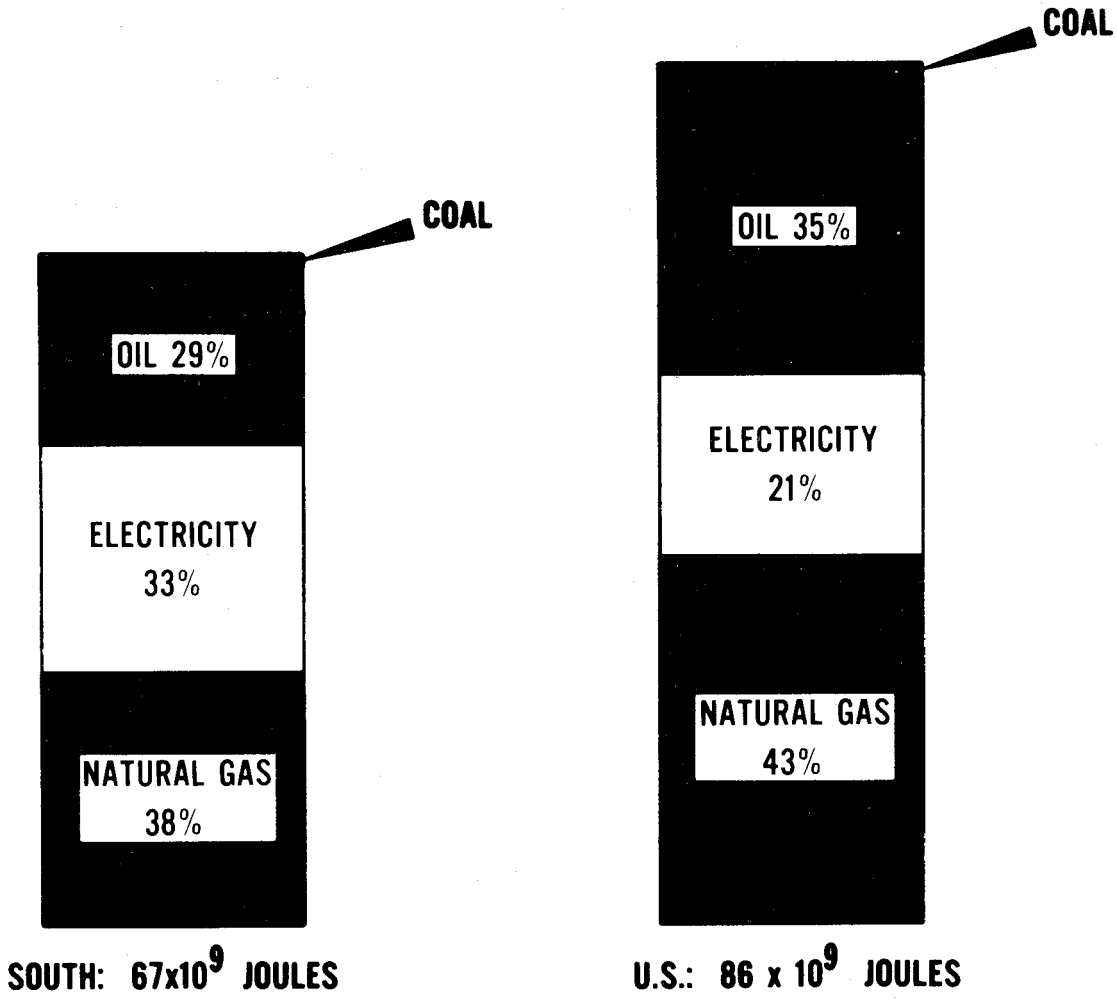

Fig. I-27. 1975 Per Capita Energy Usage in the Residential-Commercial Sector in the South and the U.S.

TABLE I-18

EMPLOYMENT IN THE TRANSPORTATION SECTOR IN THE SOUTH IN 1975

State	Truck drivers	Pipeline transport	Rail	Marine
Alabama	162,500	98	8,100	9,895
Arkansas	134,200	297	6,700	1,923
Florida	273,000	37	11,700	20,838
Georgia	216,000	449	13,100	3,384
Kentucky	153,700	169	14,300	2,575
Louisiana	167,300	900	8,100	46,525
Mississippi	105,600	167	3,700	20,639
North Carolina	311,600	92	7,300	3,107
Oklahoma	167,900	2,300	4,200	524
South Carolina	144,000	38	4,400	3,024
Tennessee	142,700	43	10,300	3,385
Texas	681,100	4,828	20,000	34,163
Virginia	180,800	100	13,800	23,418
West Virginia	87,900	100	7,800	598
South	2,928,300	9,618	141,500	173,999
U.S.	9,059,800	16,459	520,100	393,173
	(32.3%)	(58.4%)	(27.2%)	(44.3%)

Source: Motor Vehicle Facts and Figures, State, American Association of Railroads.

TABLE I-19

TRANSPORTATION DATA IN THE SOUTH IN 1975
(IN THOUSANDS)

State	Trailers	Trucks	Buses	Automobiles	Total motor vehicles
Alabama	40.8	584.1	8.4	1,900.3	2,492.8
Arkansas	30.9	411.1	7.4	864.8	1,283.3
Florida	63.8	878.4	17.8	4,499.2	5,395.4
Georgia	48.3	688.3	13.1	2,509.5	3,211.0
Kentucky	29.9	562.6	6.5	1,676.0	2,245.1
Louisiana	88.7	510.5	15.7	1,661.4	2,187.5
Mississippi	23.8	378.4	8.3	989.8	1,376.5
North Carolina	66.0	807.0	22.3	2,860.2	3,689.6
Oklahoma	46.7	672.0	8.3	1,432.5	2,112.7
South Carolina	21.0	362.6	9.3	1,400.5	1,772.4
Tennessee	34.5	624.3	8.3	2,093.0	2,725.6
Texas	163.5	2,149.7	29.4	6,217.5	8,396.5
Virginia	46.2	530.3	11.1	2,709.5	3,250.9
West Virginia	12.4	229.0	2.4	734.7	966.0
South	716.3	9,388.1	168.3	31,548.8	41,105.2
U.S.	2,557.6	25,775.7	462.1	106,712.6	132,950.4
	(28.0%)	(36.4%)	(36.4%)	(29.6%)	(30.9%)

Source: Motor Vehicle Facts and Figures, The Oil Producing Industry in Your County Business Patterns.

TABLE I-20

UNDERGROUND STORAGE, DECEMBER 31, 1975, IN THE SOUTH
(MILLION CUBIC FEET AT 14.73 PSIA AT 60° F)

State	Number of reservoirs	Type of reservoir					Number of wells	Total stored gas in underground reservoirs (million cubic feet)	Total reservoir capacity (million cubic feet)
		Dry gas	Oil and gas	Oil	Water	Other			
Arkansas	5	5	—	—	—	—	22	11,920	42,571
Kentucky	21	15	2	—	4	—	1,144	102,236	203,068
Louisiana	6	6	—	—	—	—	135	196,501	274,022
Mississippi	4	3	—	—	—	1 salt	69	65,465	108,077
Oklahoma	12	11	1	—	—	—	221	231,776	337,143
Texas	18	7	6	5	—	—	223	110,421	334,265
West Virginia	38	37	1	—	—	—	1,328	391,193	455,018
South	104	84	10	5	4	1 salt	3,142	1,109,512	1,754,164
U.S.	376	296	16	7	52	5	16,246	4,276,984	6,643,539

Source: Bureau of Mines.

TABLE I-21

ENERGY PRICES IN THE SOUTH IN 1975
(DOLLARS PER 10^6 * BTUs)

	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
Coal			1.18		1.00	1.09
Diesel	2.88					2.88
Distillates	2.75	2.55	2.53		1.98	2.45
Electricity	8.25	7.98	5.02			7.03
Gasoline	4.49			4.39		4.44
Kerosene	3.19	2.77	2.76			2.91
LPG	3.47		2.27			2.87
Natural gas	1.47	1.11	0.84	0.36	0.72	0.91
Residuals		1.88	1.86		1.70	1.81

Source: FEDS

TABLE I-22

RELATIVE ENERGY PRICES IN 1975
(SOUTH/U.S.)

	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
Coal			1.07		1.16	1.11
Diesel	1.02					1.02
Distillates	0.98	0.98	0.98		0.98	0.98
Electricity	0.88	0.86	0.89			0.89
Gasoline	0.98			0.99		0.99
Kerosene	1.03	1.01	1.01			1.02
LPG	1.09		0.97			1.04
Natural gas	0.88	0.84	0.90	0.92	0.96	0.78
Residuals		0.83	0.83		0.86	0.84

Source: FEDS.

TABLE I-23

ENERGY IMPORT TRENDS IN THE SOUTH

	1970	1971	1972	1973	1974	1975
			Natural gas (10^9 * cubic feet)			
Imports	30.7	9.6	0	0	0	0
Exports	8,028.9	8,221.0	8,255.8	8,071.6	7,588.3	7,056.3
Net imports	-7,998.2	-8,211.4	-8,255.8	-8,071.6	-7,588.3	-7,056.3
			Crude oil (10^3 * barrels)			
Imports	518,076	568,662	553,693	656,786	767,845	882,838
Exports	1,147,489	1,177,389	1,075,792	1,005,209	942,534	880,998
Net imports	-629,413	-608,727	-522,099	-348,423	-174,689	-1,840
			Coal (10^6 * tons)			
Imports	NA	NA	NA	4.5	4.1	3.9
Exports	NA	NA	NA	40.9	41.0	40.0
Net imports	NA	NA	NA	-36.4	-36.9	-36.1

Source: Bureau of Mines.

TABLE I-24

INTERSTATE PIPELINE SHIPMENTS OF NATURAL GAS IN THE SOUTH IN 1975

	Amount (10^9 x cubic feet)
Marketed production	16,676
Net shipments	7,056
26.0% to Kansas	
16.0% to Indiana	
14.5% to Ohio	
10.1% to Missouri	
9.5% to Pennsylvania	
9.5% to Maryland and D.C.	
7.5% to New Mexico	
5.3% to Illinois	
1.1% to Colorado	
0.1% to Mexico	
Retained for regional use	9,620
Regional consumption	9,414
Change in storage	112

Source: Bureau of Mines.

TABLE I-25

INTERSTATE SHIPMENTS OF CRUDE OIL IN THE SOUTH IN 1975

	1975 (bbl x 10^6)
Production	2,165
Receipts	517
94.2% from foreign sources	
2.6% from New Mexico	
1.6% from Illinois, Indiana, and Michigan	
0.7% from Utah	
0.3% from Colorado	
0.2% from Kansas	
0.4% from Wyoming, Ohio, and California	
Shipments	515
36.9% to Illinois	
22.1% to Ohio	
17.0% to Indiana	
9.3% to Kansas	
5.5% to Missouri and Nebraska	
3.4% to Pennsylvania	
2.3% to New Jersey	
1.4% to Michigan	
0.9% to Delaware and Maryland	
0.8% to New York	
0.3% to Minnesota and Wisconsin	
Retained for regional use	2,167
Change in stocks	4
Refinery loss	1
Regional consumption	2,157

Source: Bureau of Mines.

TABLE I-26

TRANSPORT MODES OF CRUDE OIL SHIPMENTS IN THE SOUTH AND THE UNITED STATES IN 1975

Shipment type	South	United States	Share (%)
Interstate	396	1,215	32.6
Percentage by:			
Pipeline	76.9	84.0	
Truck or rail	0.8	2.0	
Tanker or barge	22.3	14.0	
Intrastate	1,279	1,832	69.8
Percentage by:			
Pipeline	90.1	89.6	
Truck or rail	2.2	3.1	
Tanker or barge	7.7	7.4	
Foreign	487	1,498	32.5
Percentage by:			
Pipeline	6.8	26.5	
Tanker	93.2	73.5	
Total	2,162	4,545	47.6
Percentage by:			
Pipeline	68.9	67.3	
Truck or rail	1.5	1.8	
Tanker or barge	29.6	30.9	

Source: Bureau of Mines.

TABLE I-27

INTERSTATE SHIPMENTS OF BITUMINOUS COAL AND LIGNITE IN THE SOUTH IN 1975

		Millions of short tons
Total production		
Marketed production (shipments)		305
Kentucky, 44.1%	Rail, 77%	
West Virginia, 33.8%	Water, 13%	
Virginia, 11.6%	Truck, 10%	
Alabama, 6.6%		
Tennessee, 2.6%		
Oklahoma, 0.9%		
Arkansas, 0.2%		
Texas and Georgia, 0.1%		
Nonmarketed production		28
Texas, 35.2%	Mine-mouth plants, 92.7%	
Kentucky, 32.9%	Other, 7.3%	
West Virginia, 22.1%		
Alabama, 9.2%		
Tennessee, 0.5%		
Arkansas, Oklahoma, and Virginia, 0.1%		
Received		186
West Virginia, 19.5%		
Alabama and Mississippi, 18.1%		
Kentucky, 16.5%		
North Carolina, 12.9%		
Tennessee, 12.8%		
Florida and Georgia, 10.7%		
Virginia, 4.8%		
South Carolina, 4.2%		
Arkansas, Texas, Louisiana, and Oklahoma, 0.6%		
Consumption		186
West Virginia, 18.5%	Electric utilities, 83.5%	
Kentucky, 15.3%	Coke and gas plants, 7.4%	
Alabama, 14.3%	Retail dealers, 0.7%	
Tennessee, 14.3%	Other, 8.4%	
North Carolina, 11.5%		
Georgia, 8.1%		
Texas, 6.7%		
Virginia, 3.5%		
South Carolina, 3.0%		
Florida, 2.9%		
Mississippi, 0.9%		

Source: Bureau of Mines.

TABLE I-28

NET SHIPMENTS OF BITUMINOUS COAL AND LIGNITE TO STEAM-ELECTRIC PLANTS IN THE SOUTH IN 1975

South	39,986.6
Exports Ohio, 30.4% Michigan, 27.3% Pennsylvania, 12.9% Indiana, 6.9% Wisconsin, 5.2% New Jersey, 4.7% Missouri, 4.2% New York, 3.4% New Hampshire, 2.3% Kansas, Massachusetts, Nebraska, Minnesota, Maryland, South Dakota, Iowa, Vermont, and District of Columbia, 2.7%	
Imports Illinois, 95.6% Montana, 4.4%	3,853.5
Net exports	36,133.1
Intrastate shipments	70,893.1

Source: Bureau of Mines.

TABLE I-29

NET ELECTRICITY IMPORTS IN THE SOUTH
IN 1974

South	(mmkwh)
Exports	8,918
30.8% to Indiana	
30.7% to Kansas	
26.1% to Ohio	
10.5% to other states	
1.9% to Mexico	
Imports	10,855
54.1% from Illinois	
21.4% from New Mexico	
20.3% from Maryland	
1.6% from District of Columbia	
1.3% from Pennsylvania	
1.3% from Missouri	
Net imports	1,937

Source: National Energy Transportation, Vol. I.

TABLE I-30

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Alabama				
1970	1.0	.2	7.3	20.6	7.6	—	47.2
1971	.7	.1	7.8	17.9	9.9	—	46.9
1972	4.6	.1	9.9	20.8	10.2	—	49.8
1973	13.2	.1	11.7	19.2	11.8	.3	56.1
1974	29.4	.3	13.3	19.8	10.3	6.3	58.0
1975	38.9	.3	13.5	22.6	12.2	2.7	54.7
			Arkansas				
1970	183.7	1.8	18.0	.3	2.2	—	13.1
1971	174.9	1.6	18.3	.3	1.8	—	11.7
1972	169.2	.8	18.5	.4	1.6	—	11.2
1973	159.5	.7	18.0	.4	4.2	—	13.0
1974	125.7	.6	16.5	.5	4.3	.4	12.2
1975	121.5	.6	16.1	.5	3.4	4.9	13.7

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Florida				
1970	—	1.2	3.0	—	.3	—	55.7
1971	1.3	1.1	5.3	—	.3	—	60.7
1972	15.8	1.5	16.9	—	.2	.1	67.4
1973	33.9	2.2	32.7	—	.2	4.7	76.3
1974	38.1	2.0	36.4	—	.3	7.9	75.9
1975	44.4	6.8	41.9	—	.2	8.4	77.8
			Georgia				
1970	—	—	—	—	2.5	—	26.5
1971	—	—	—	—	3.2	—	29.6
1972	—	—	—	—	3.3	—	33.5
1973	—	—	—	—	4.2	—	35.9
1974	—	—	—	—	3.6	—	37.6
1975	—	—	—	.1	4.3	3.1	41.7

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Kentucky				
1970	77.9	7.0	11.6	125.3	3.2	—	45.0
1971	72.7	6.1	10.7	119.4	3.5	—	49.3
1972	63.6	4.9	9.7	121.2	3.8	—	53.7
1973	62.4	4.7	8.7	127.6	3.8	—	52.9
1974	71.9	4.8	7.8	137.2	3.4	—	53.5
1975	60.5	3.9	7.6	143.6	3.5	—	51.1
			Louisiana				
1970	8,076.2	136.9	906.9	—	—	—	33.6
1971	8,318.6	144.7	935.2	—	—	—	37.1
1972	8,159.8	151.1	891.8	—	—	—	39.3
1973	8,491.2	150.6	831.5	—	—	—	41.5
1974	7,919.8	144.3	737.3	—	—	—	39.5
1975	7,242.4	135.5	650.8	—	—	—	39.2

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Mississippi				
1970	157.0	1.0	65.1	—	—	—	10.5
1971	136.5	1.0	64.1	—	—	—	11.1
1972	119.7	.7	61.1	—	—	—	12.1
1973	117.8	.6	56.1	—	—	—	11.1
1974	99.0	.5	50.8	—	—	—	11.5
1975	92.5	.5	46.6	—	—	—	11.5
			North Carolina				
1970	—	—	—	—	4.4	—	51.6
1971	—	—	—	—	5.9	—	53.9
1972	—	—	—	—	6.4	—	57.6
1973	—	—	—	—	7.1	—	62.2
1974	—	—	—	—	6.9	—	58.5
1975	—	—	—	—	7.1	1.4	53.3

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Oklahoma				
1970	1,811.0	42.8	223.6	2.4	1.4	—	23.4
1971	1,809.1	41.7	213.3	2.2	1.4	—	24.7
1972	1,927.9	41.7	207.6	2.6	1.4	—	27.0
1973	1,889.8	43.7	191.2	2.2	3.8	—	30.5
1974	1,756.6	43.8	177.8	2.4	3.6	—	33.1
1975	1,720.7	40.5	163.1	2.9	2.9	—	33.3
			South Carolina				
1970	—	—	—	—	2.3	—	16.6
1971	—	—	—	—	3.4	2.4	21.5
1972	—	—	—	—	3.3	4.8	25.4
1973	—	—	—	—	3.9	6.2	28.0
1974	—	—	—	—	3.4	11.1	31.2
1975	—	—	—	—	4.4	19.5	38.5

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Tennessee				
1970	.1	—	.3	8.2	8.1	—	43.5
1971	.5	—	.4	9.3	9.4	—	43.9
1972	.2	—	.2	11.3	11.1	—	51.8
1973	.2	—	.2	8.2	11.5	—	59.5
1974	.4	—	.8	7.5	11.8	—	52.7
1975	.6	—	.7	8.2	11.8	—	54.6
			Texas				
1970	9,398.5	301.7	1,249.7	2.1	1.0	—	105.0
1971	9,518.6	306.7	1,222.9	2.0	.9	—	115.2
1972	9,550.0	319.1	1,301.7	4.0	.8	—	130.7
1973	9,289.9	314.4	1,294.7	6.9	1.7	—	135.0
1974	8,859.0	302.1	1,262.1	7.7	1.6	—	142.2
1975	7,988.8	291.5	1,221.9	11.0	1.9	—	147.8

TABLE I-30 (continued)

ENERGY PRODUCTION TRENDS BY STATE

Year	Natural Gas (billions of cubic feet)	NGL (millions of barrels)	Oil (millions of barrels)	Coal (millions of tons)	Hydro (billions of KWH)	Nuclear (billions of KWH)	Electricity (billions of KWH)
			Virginia				
1970	2.8	—	—	35.0	.1	—	28.5
1971	2.6	—	—	30.6	1.1	—	28.9
1972	2.8	—	—	34.0	1.4	.4	30.3
1973	5.1	—	—	33.7	1.3	6.9	35.7
1974	7.1	—	—	34.3	1.2	6.0	34.0
1975	6.7	—	—	35.5	1.3	9.0	35.3
			West Virginia				
1970	243.0	7.6	3.1	144.1	.4	—	35.6
1971	234.3	6.8	3.0	118.3	.5	—	38.9
1972	215.1	6.5	2.7	123.7	.5	—	49.0
1973	208.8	6.3	2.4	115.4	.5	—	56.5
1974	202.3	6.8	2.7	102.5	.5	—	61.5
1975	154.5	6.1	2.5	109.3	.5	—	61.4

Source: Bureau of Mines.

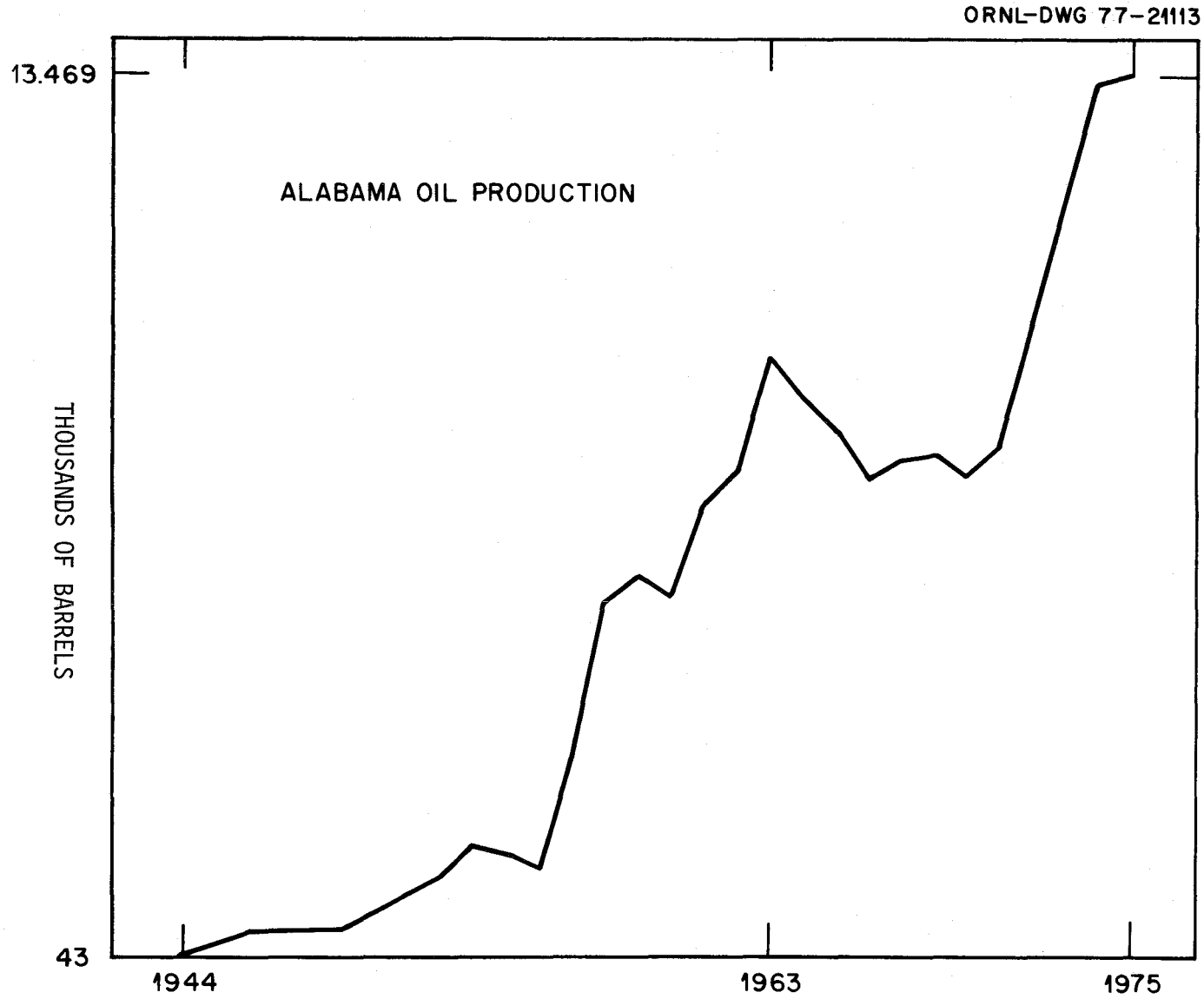

Fig. I-28. Alabama Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

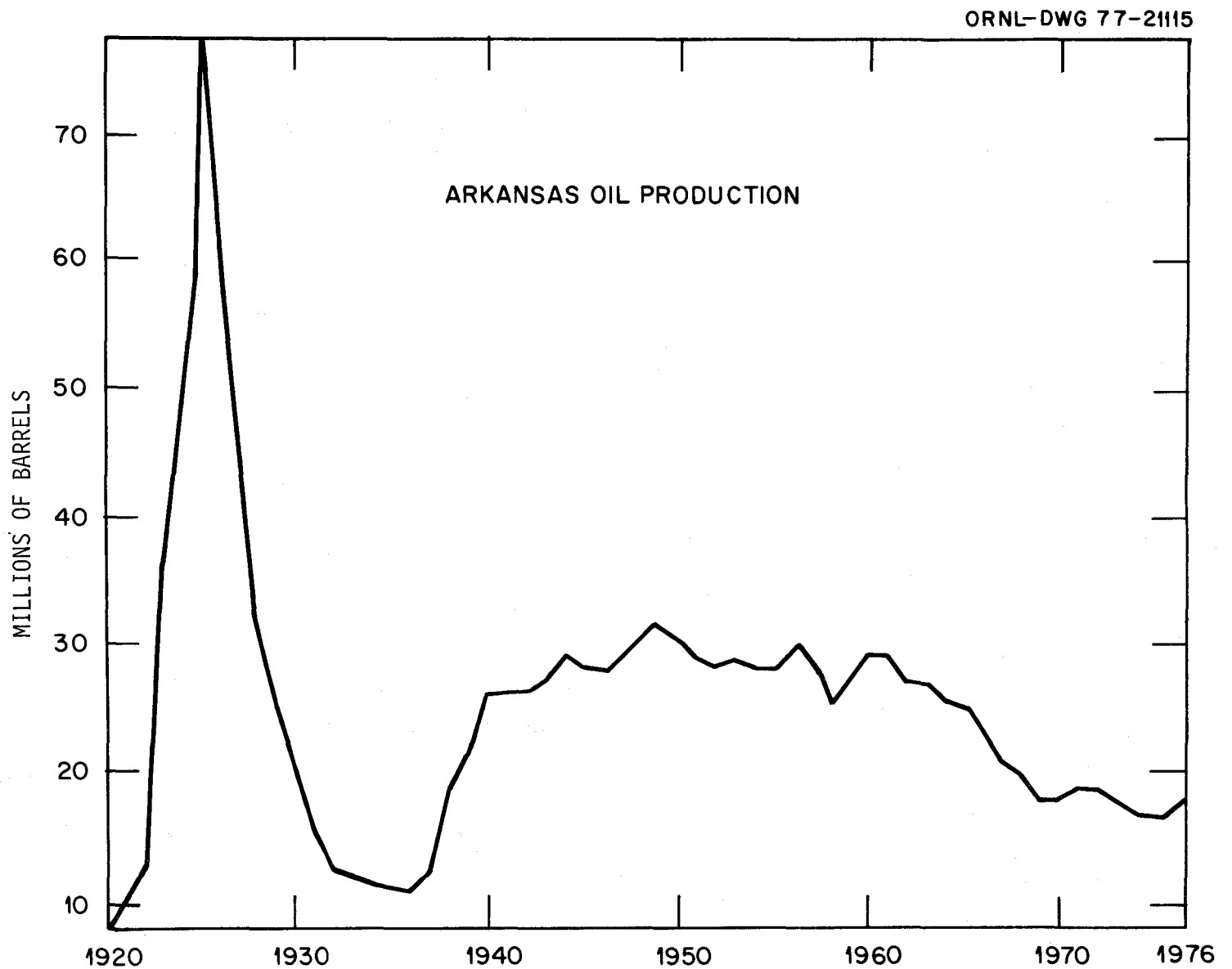

Fig. I-29. Arkansas Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

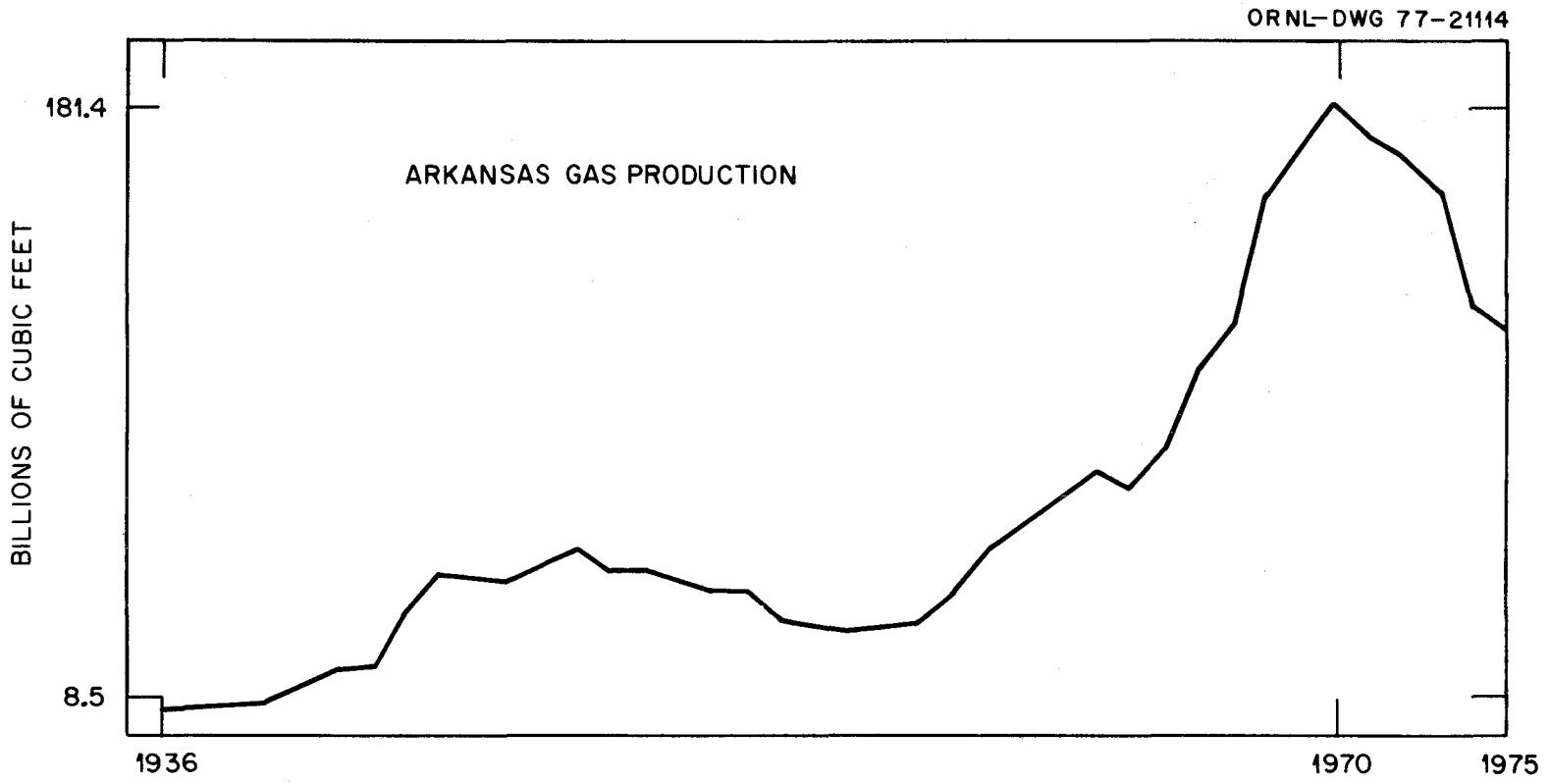

Fig. I-30. Arkansas Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

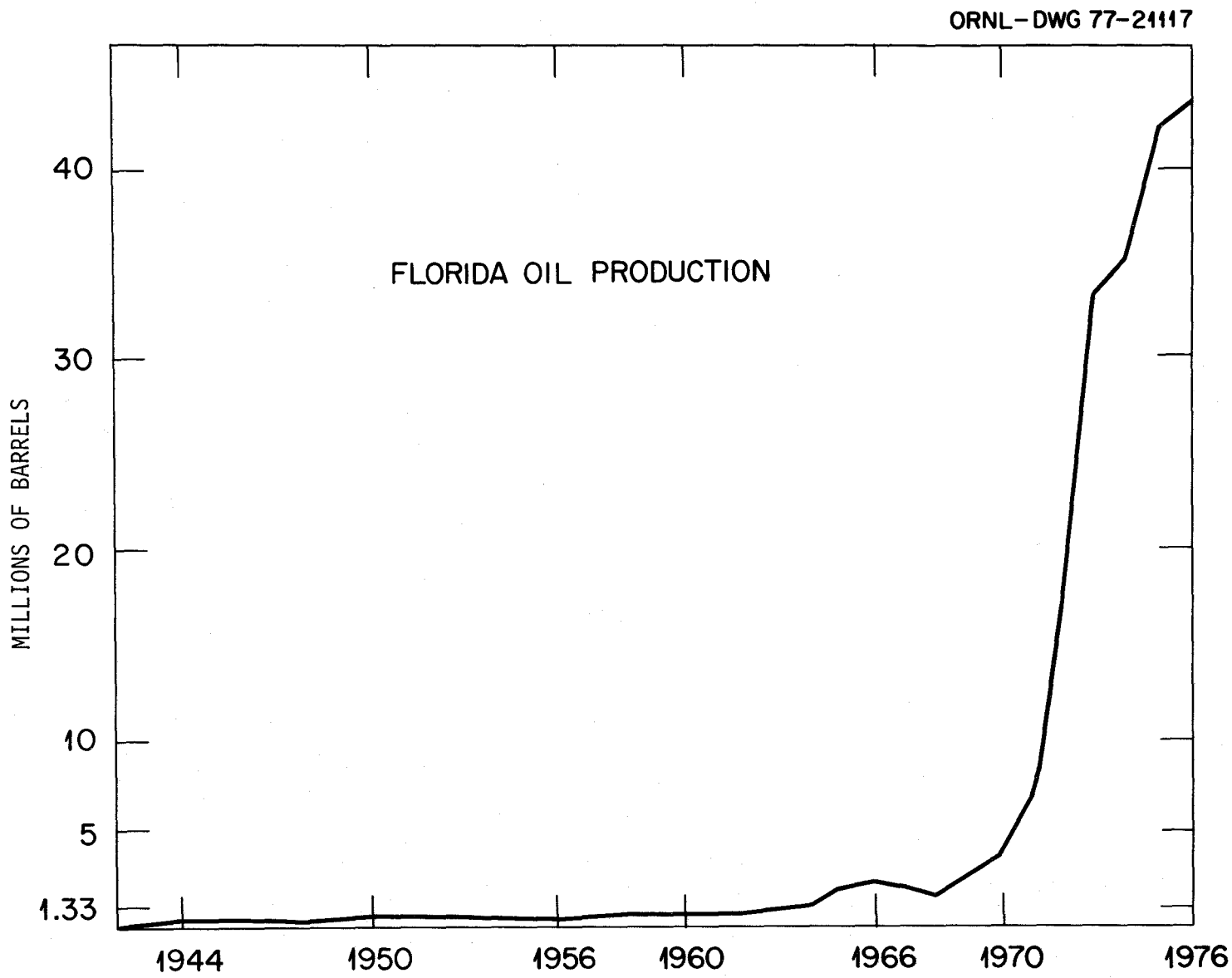

Fig. I-31. Florida Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

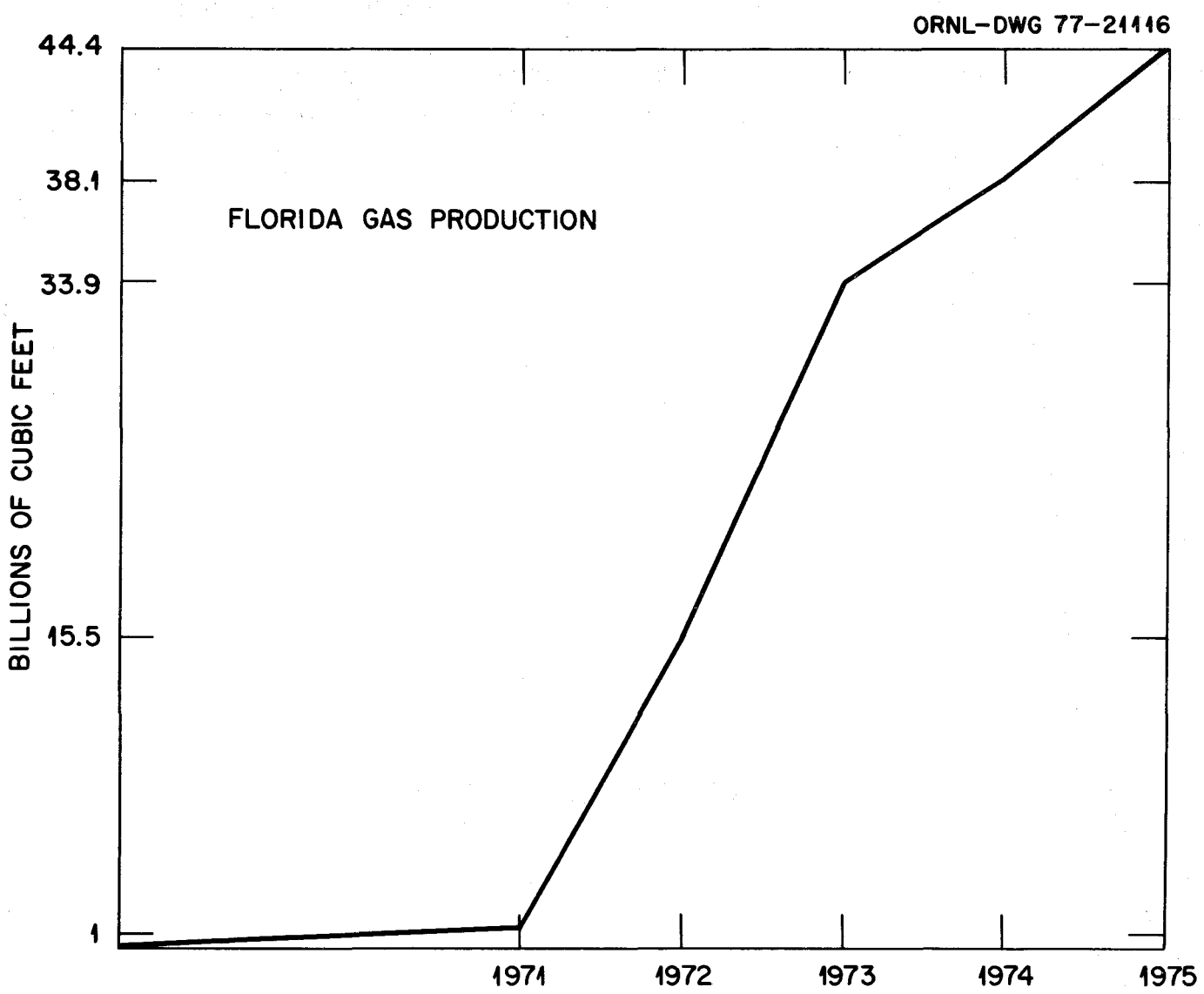

Fig. I-32. Florida Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

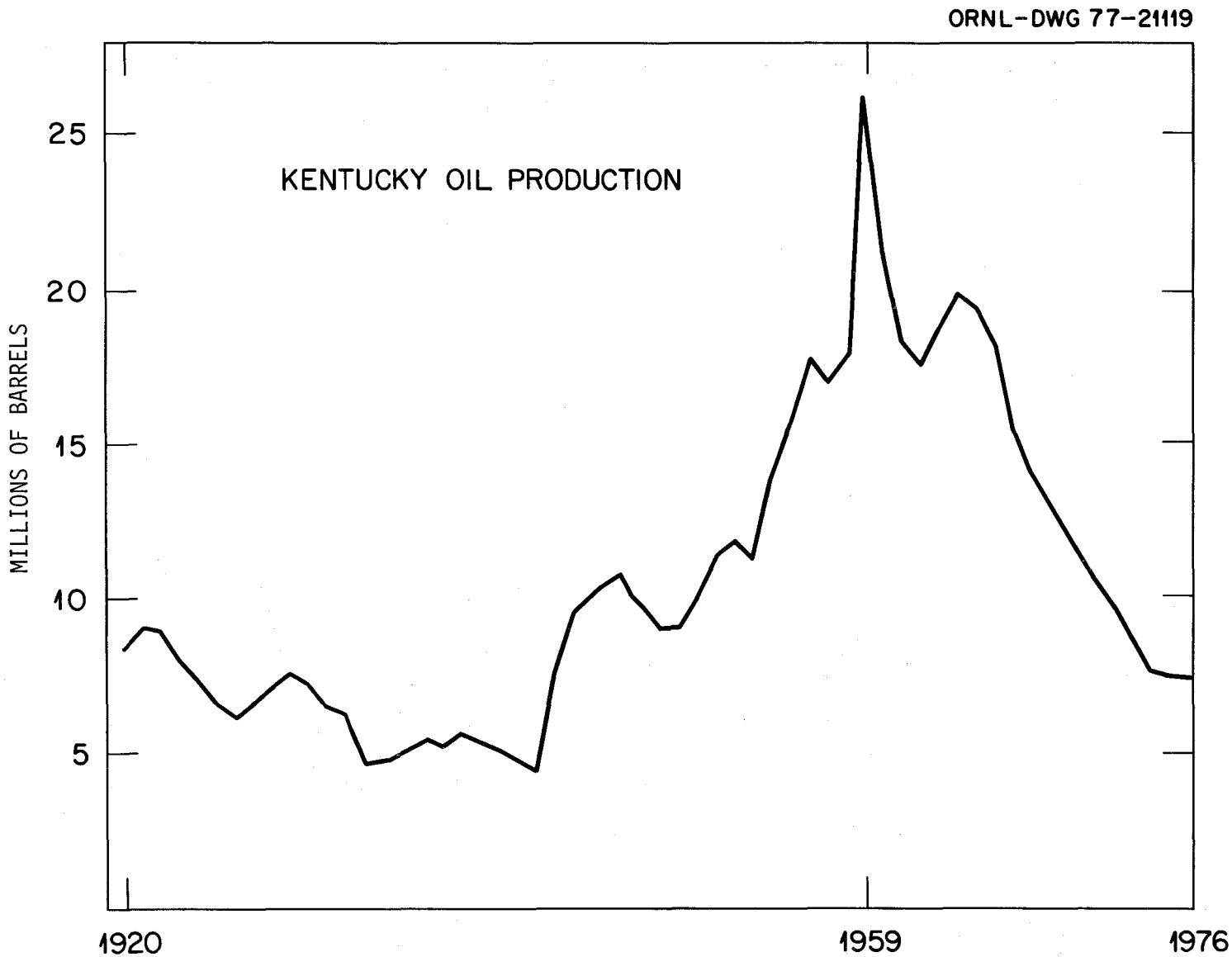

Fig. I-33. Kentucky Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

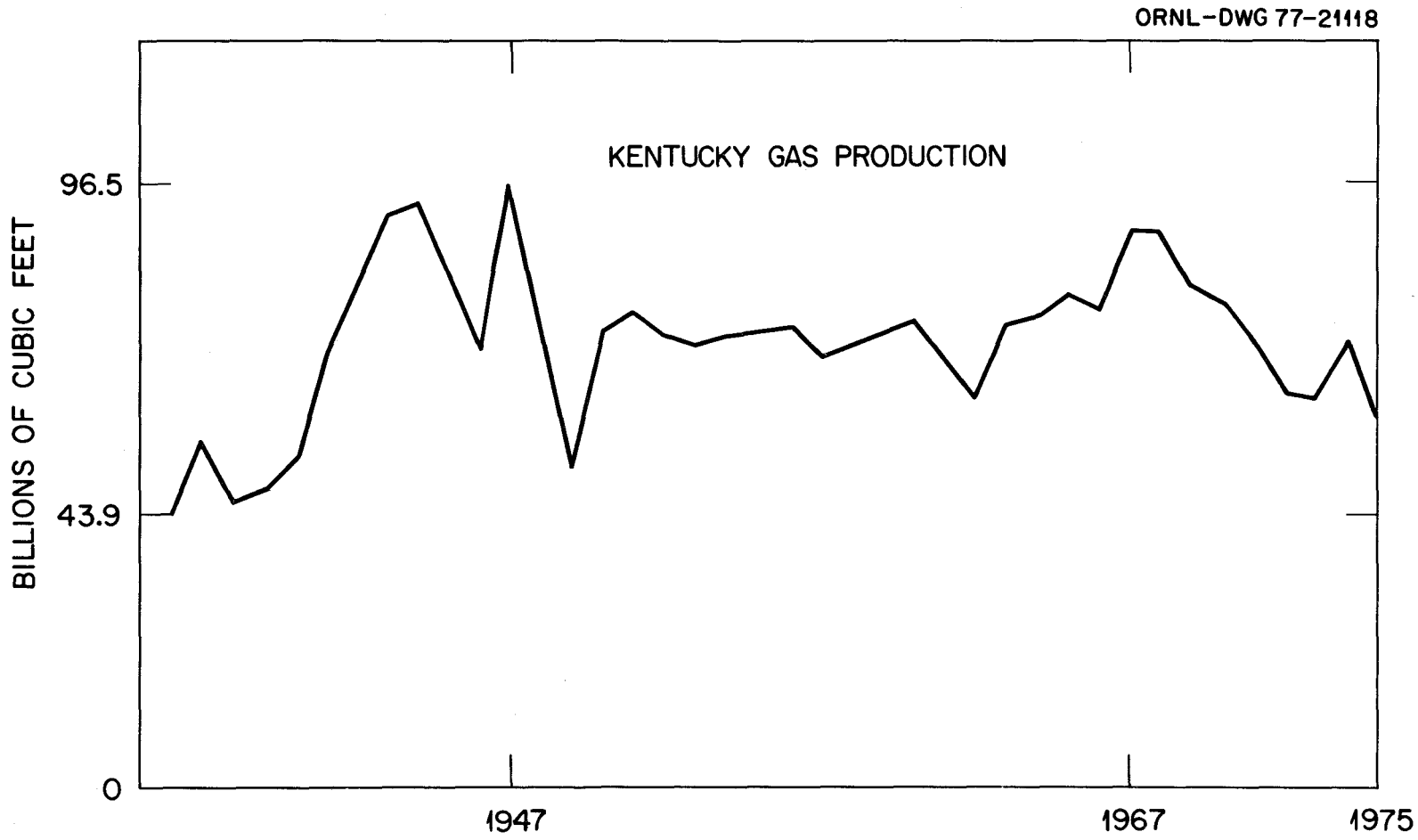

Fig. I-34. Kentucky Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

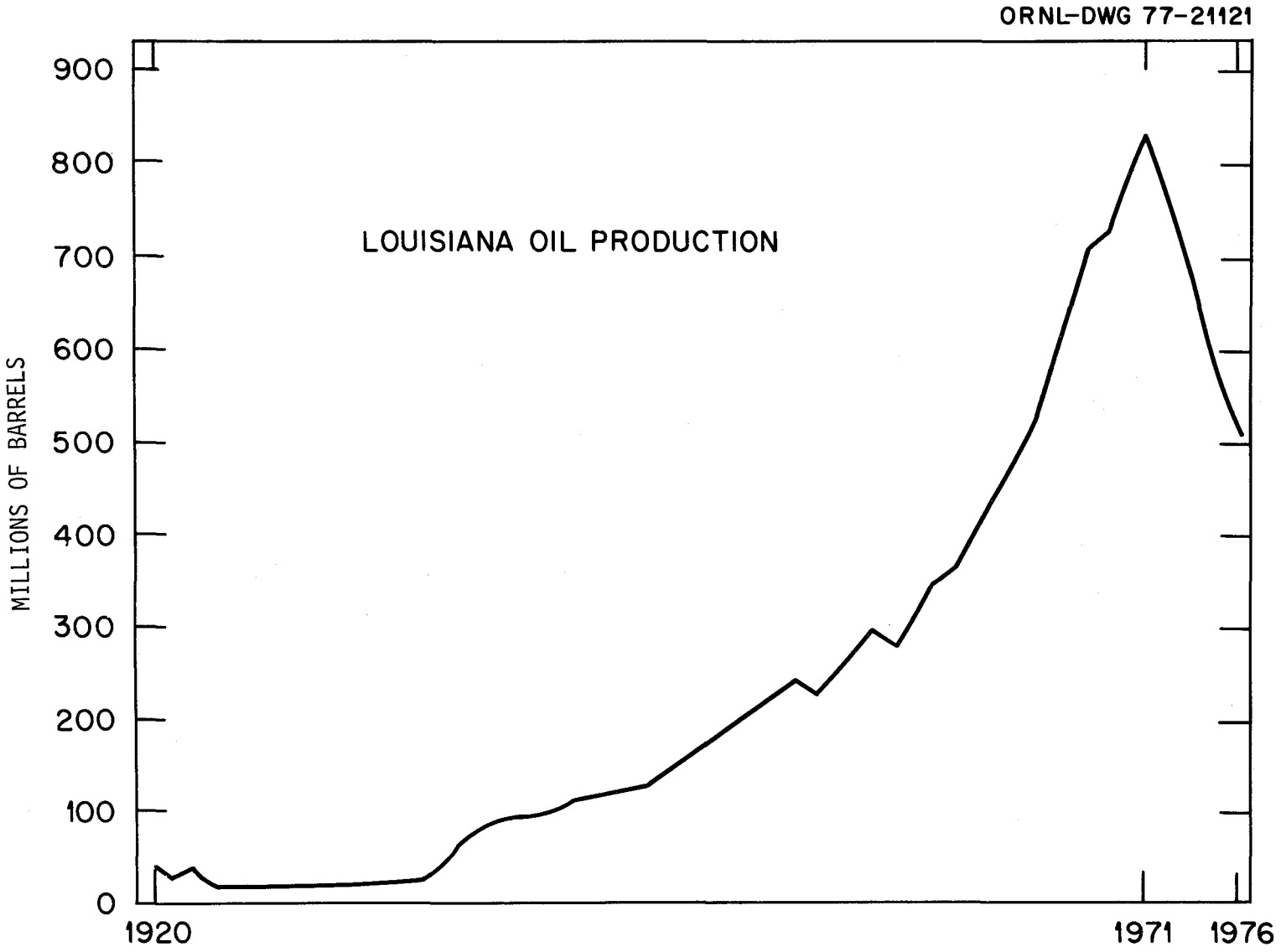

Fig. I-35. Louisiana Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

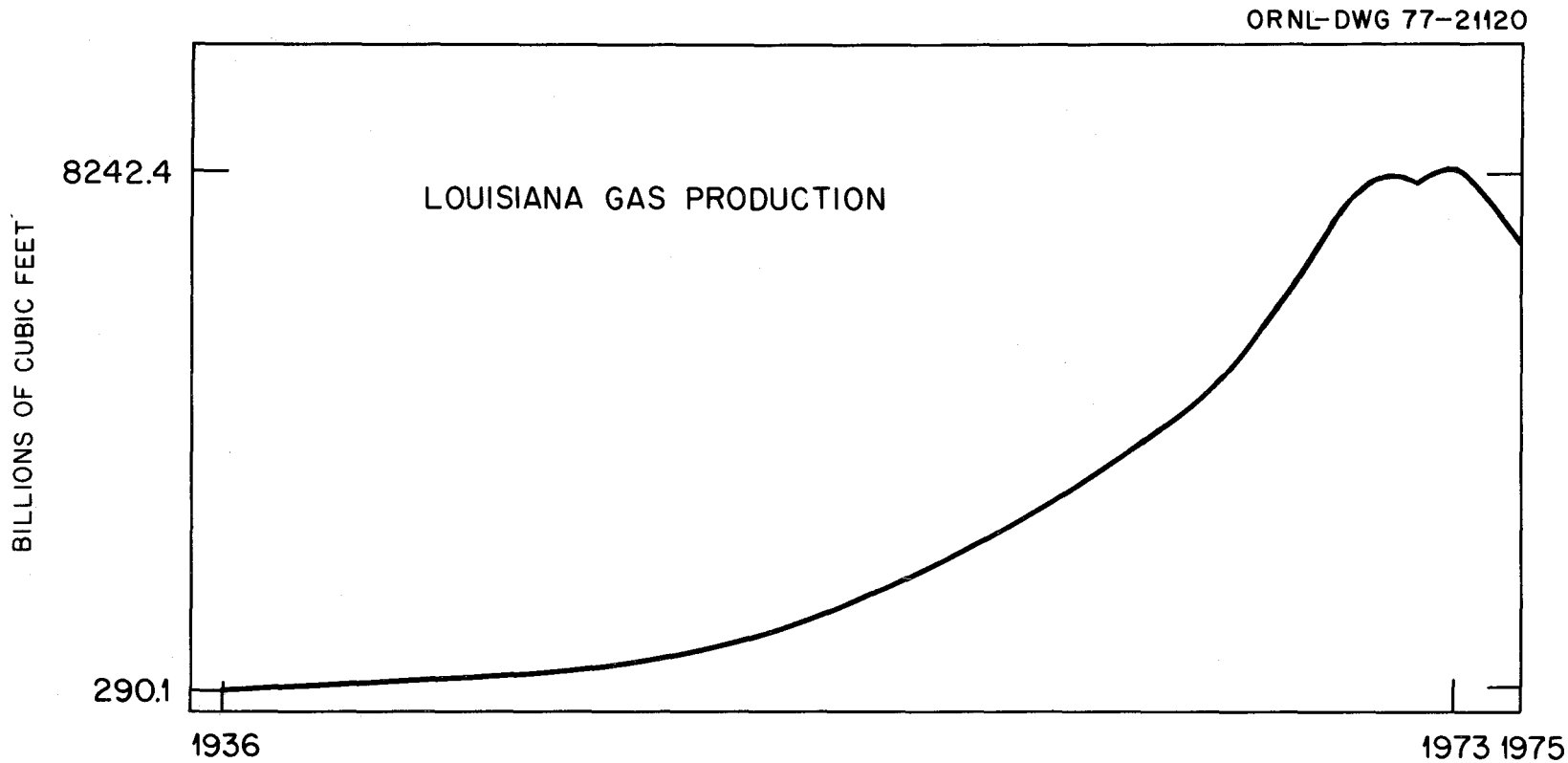

Fig. I-36. Louisiana Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

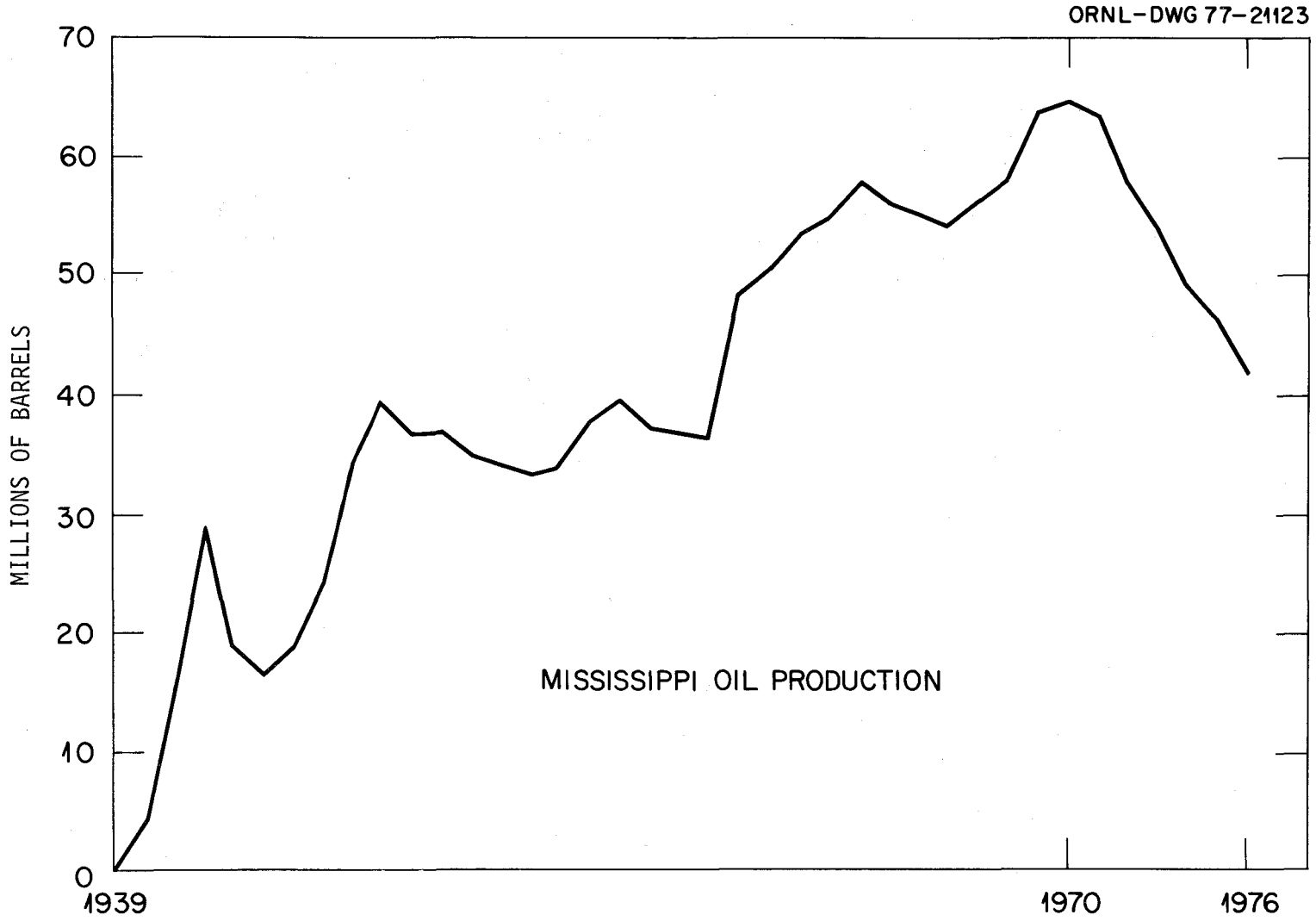

Fig. I-37. Mississippi Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

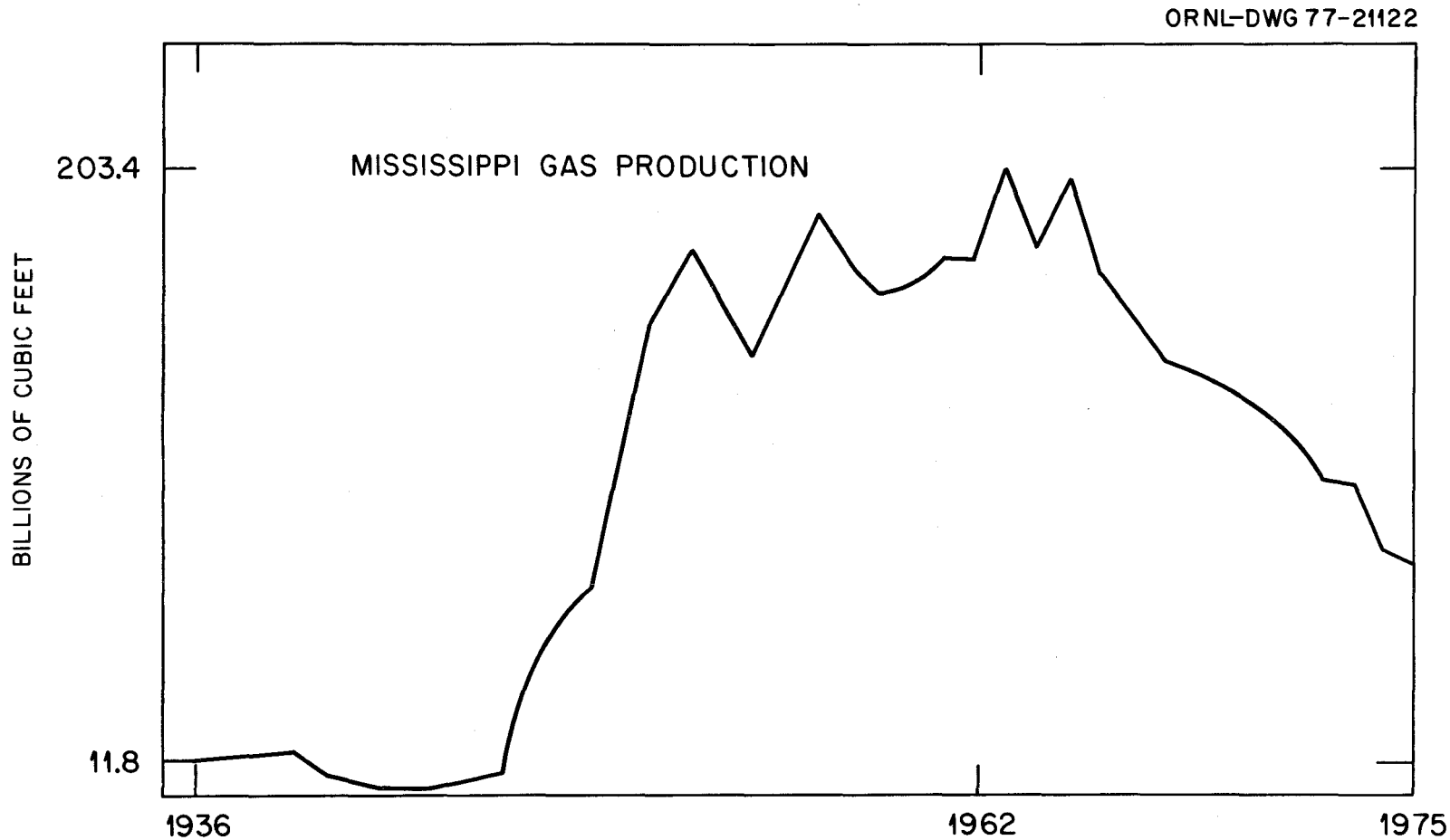

Fig. I-38. Mississippi Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

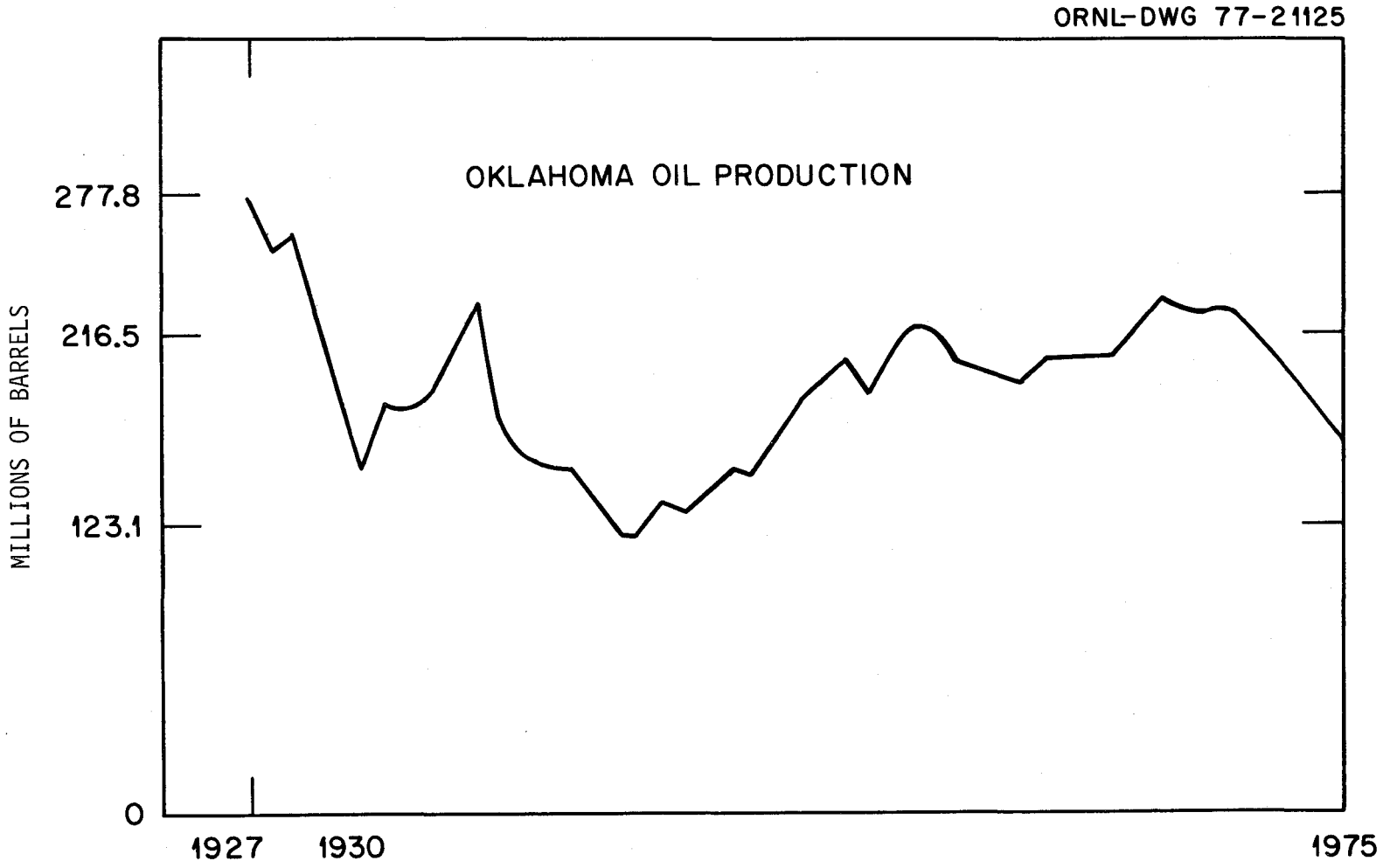

Fig. I-39. Oklahoma Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

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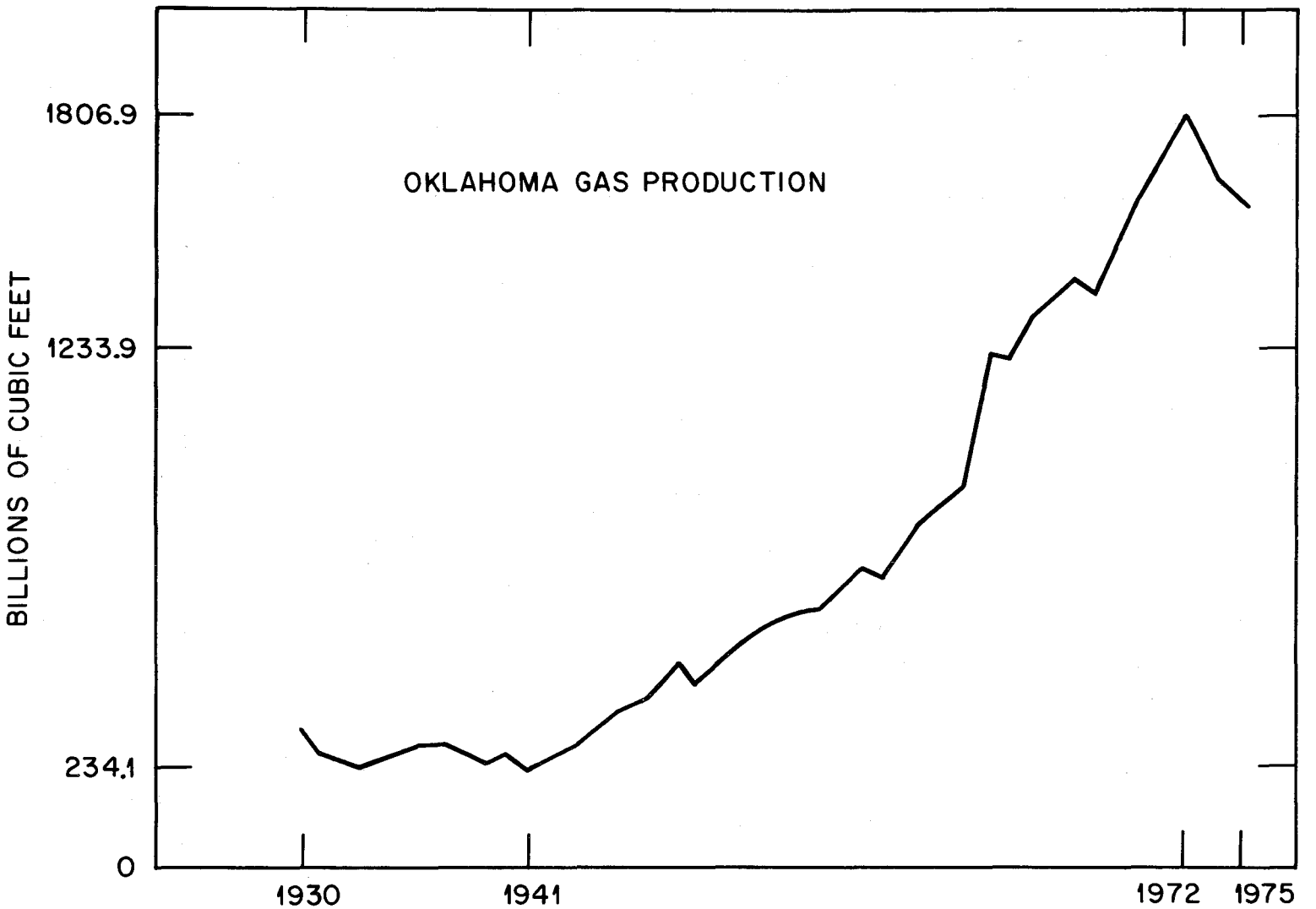

Fig. I-40. Oklahoma Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

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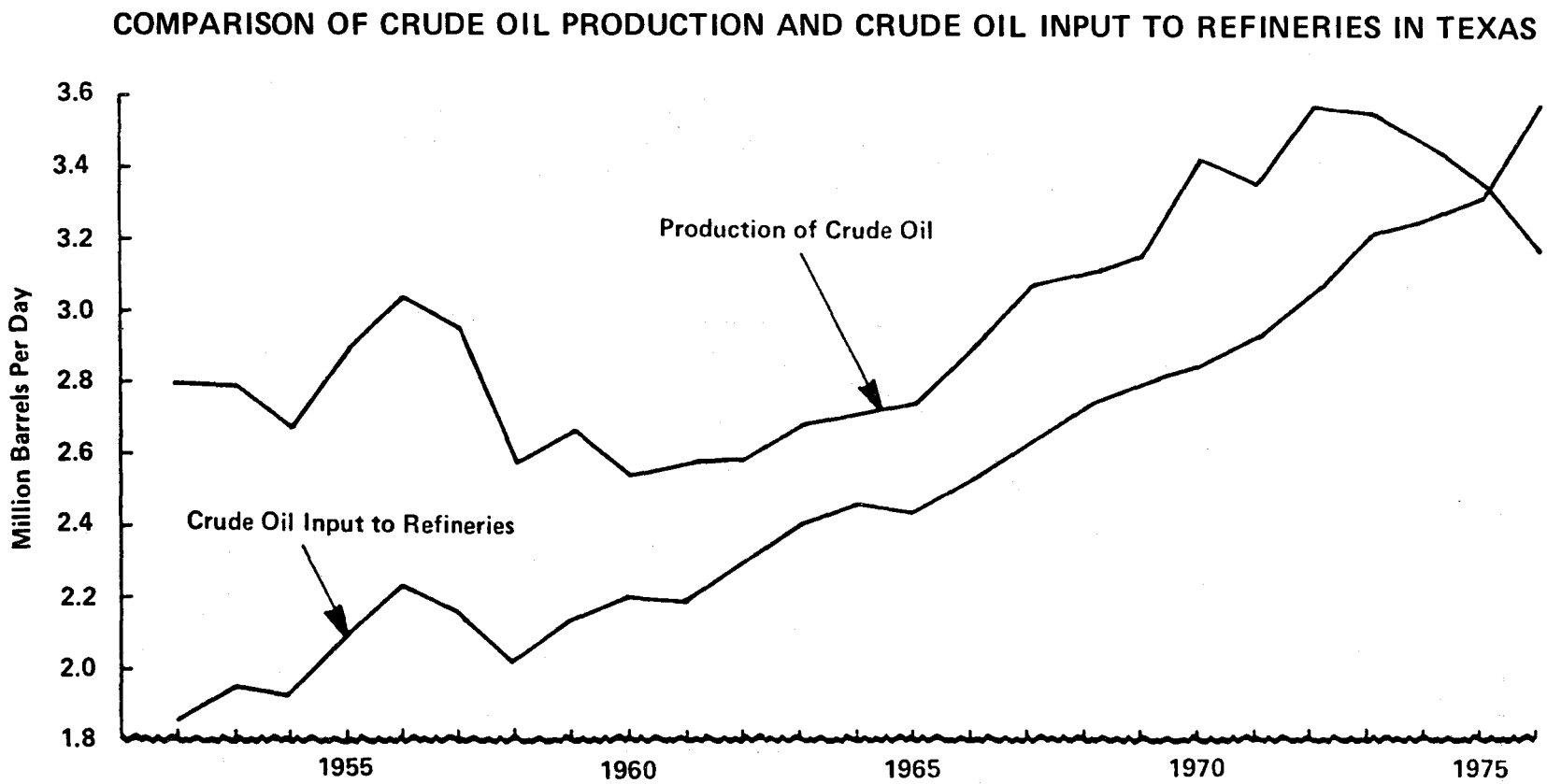

Fig. I-41. Comparison of Crude Oil Production and Crude Oil Input to Refineries in Texas. Source: Texas Energy: A Twenty-Five Year History.

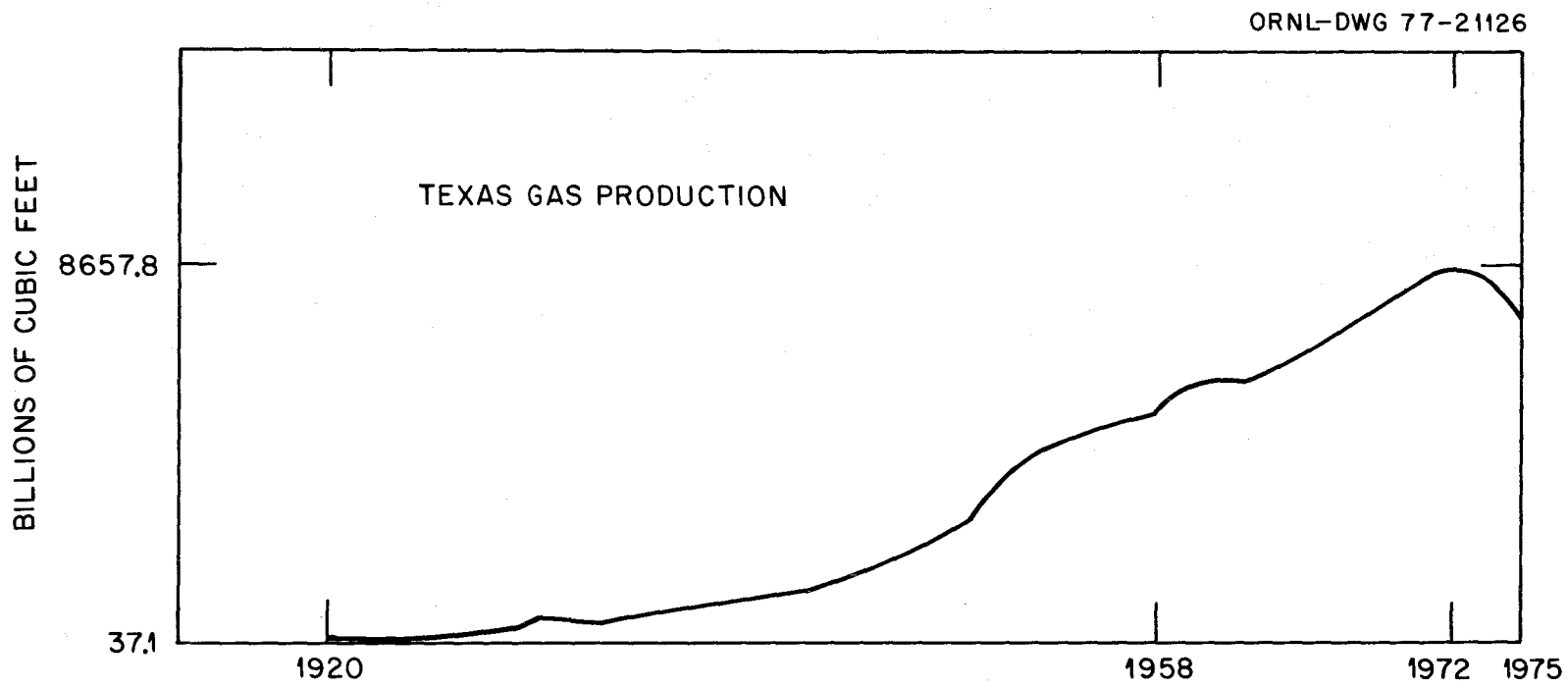

Fig. I-42. Texas Gas Production: Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

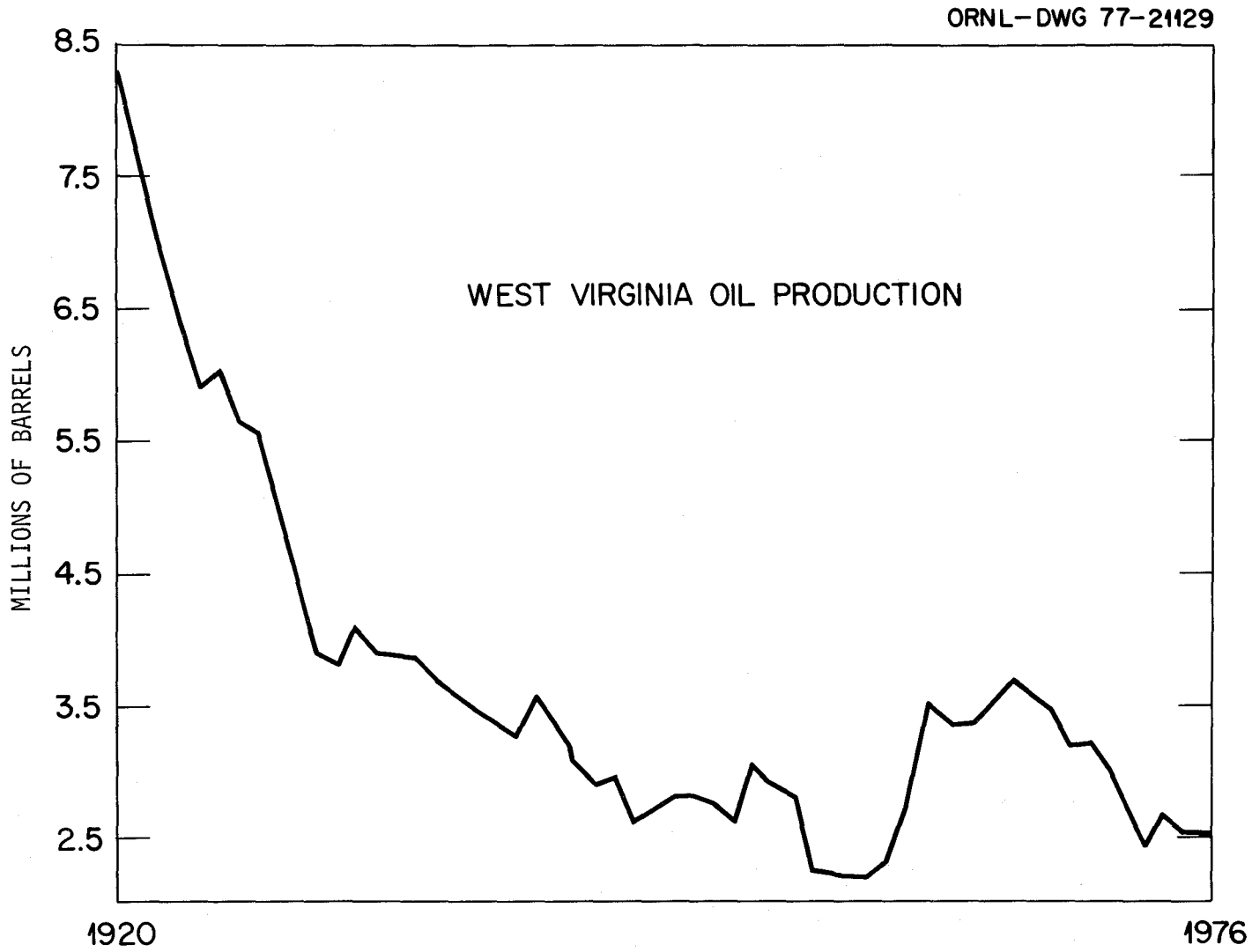

Fig. I-43. West Virginia Oil Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

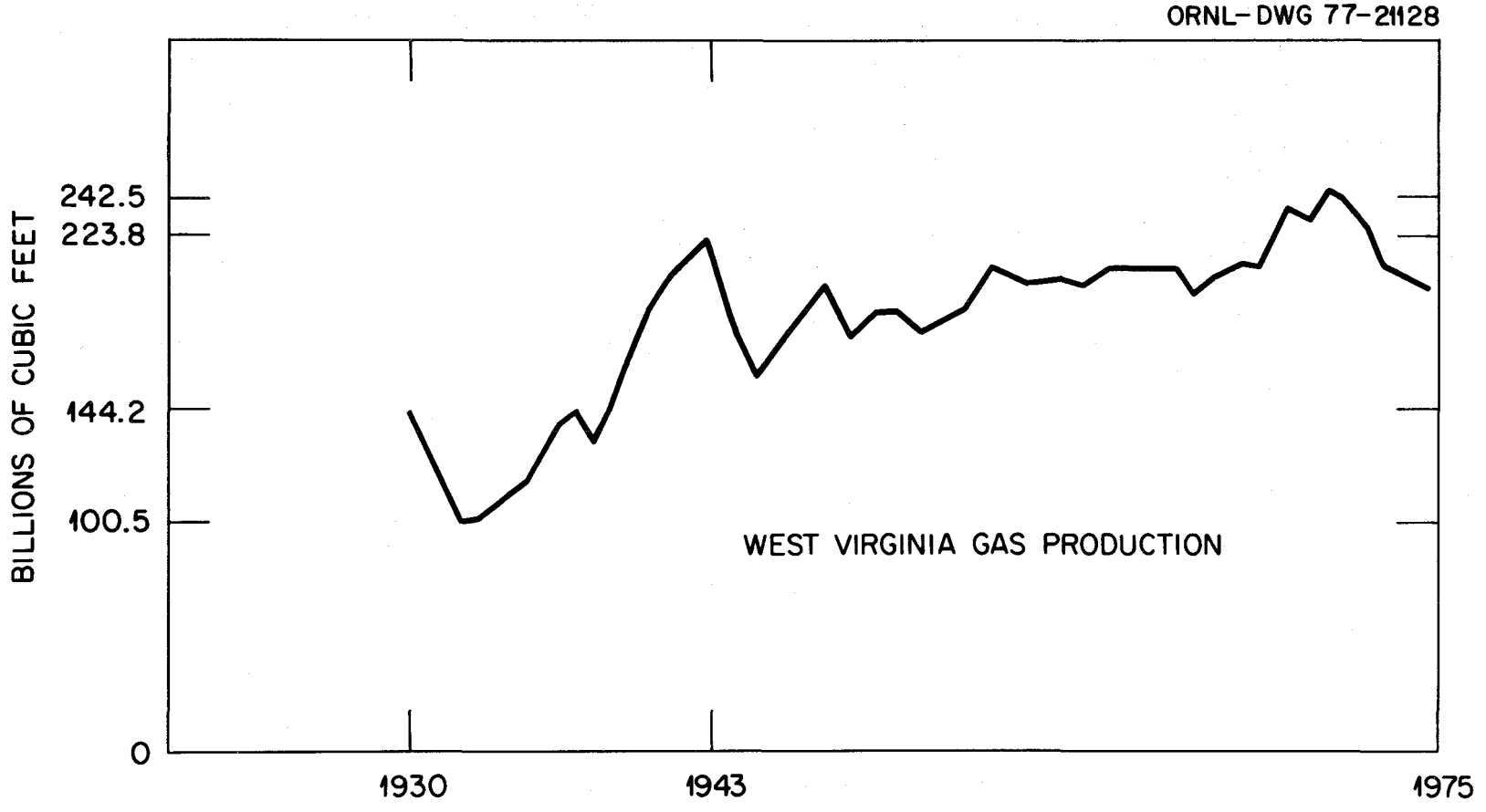

Fig. I-44. West Virginia Gas Production. Source: American Petroleum Institute, Reserves of Crude Oil, NGL, and Natural Gas in the U.S. and Canada.

ORNL-DWG 78-10988

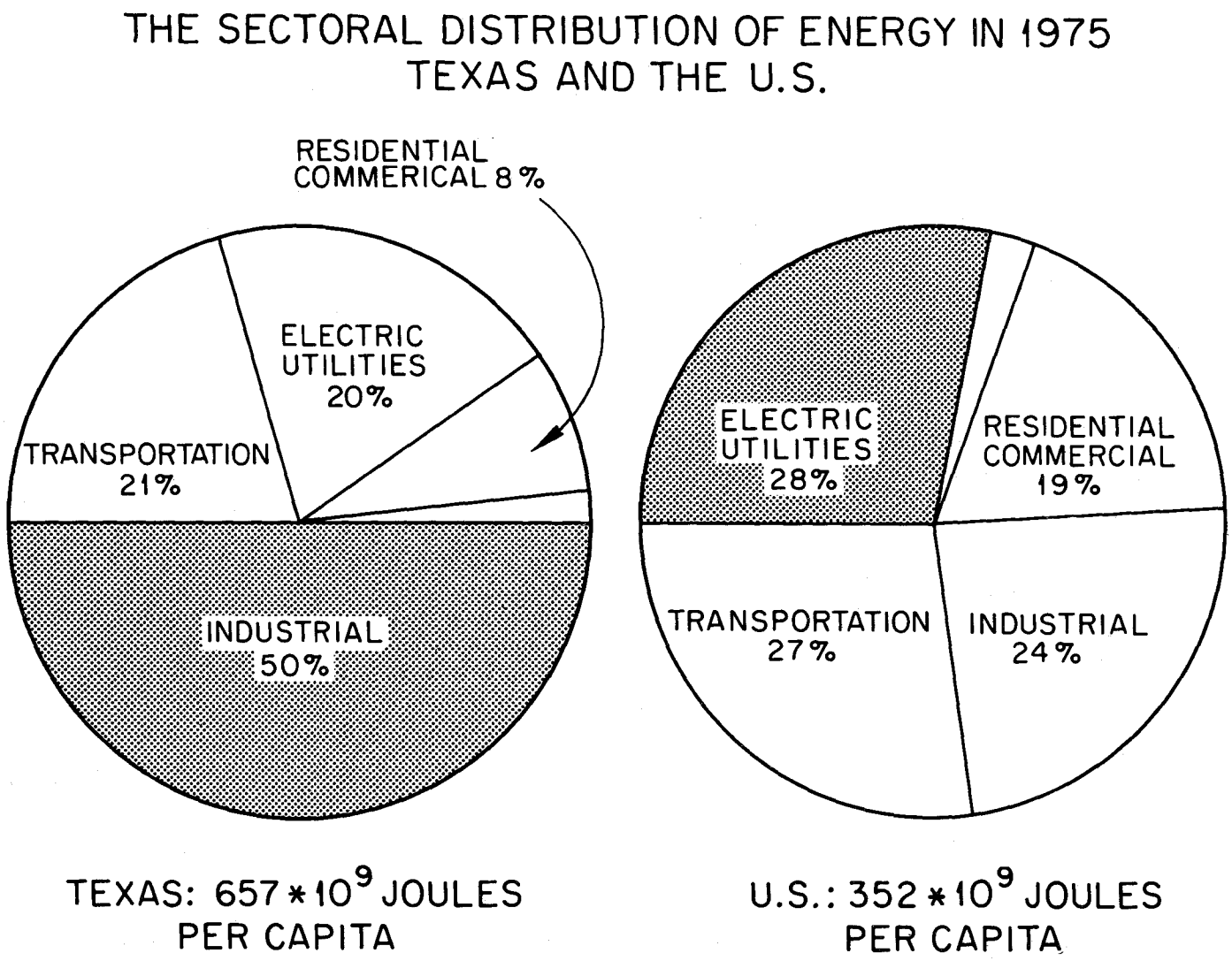

Fig. I-45. The Sectoral Distribution of Energy in 1975: Texas and the U.S. Source: Texas Energy: A Twenty-Five Year History.

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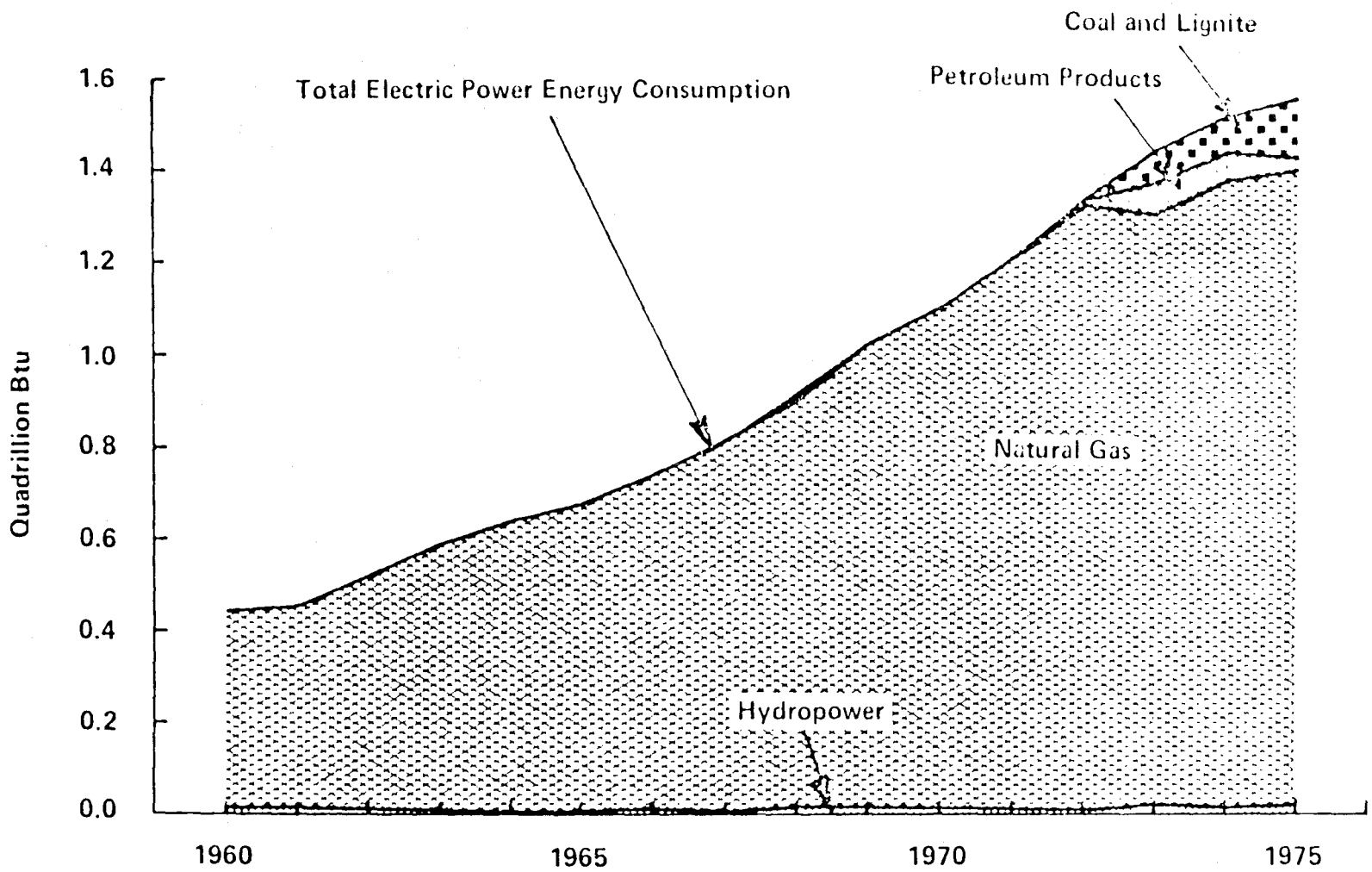

Fig. I-46. Electric Power Energy Consumption in Texas.
Source: Texas Energy: A Twenty-Five Year History.

RELATIVE ENERGY USAGE AND ENERGY PRICES IN 1975: TEXAS AND THE U. S.

SECTOR	RELATIVE PER CAPITA USAGE	RELATIVE ENERGY PRICES
RESIDENTIAL–COMMERCIAL	0.75	0.86
INDUSTRIAL	3.87	0.62
TRANSPORTATION	1.47	0.94
ELECTRIC UTILITIES	1.33	0.67
TOTAL	1.87	0.71

Fig. I-47. Relative Energy Usage and Energy Prices in 1975: Texas and the U.S. Source: Bureau of Mines, FEDS.

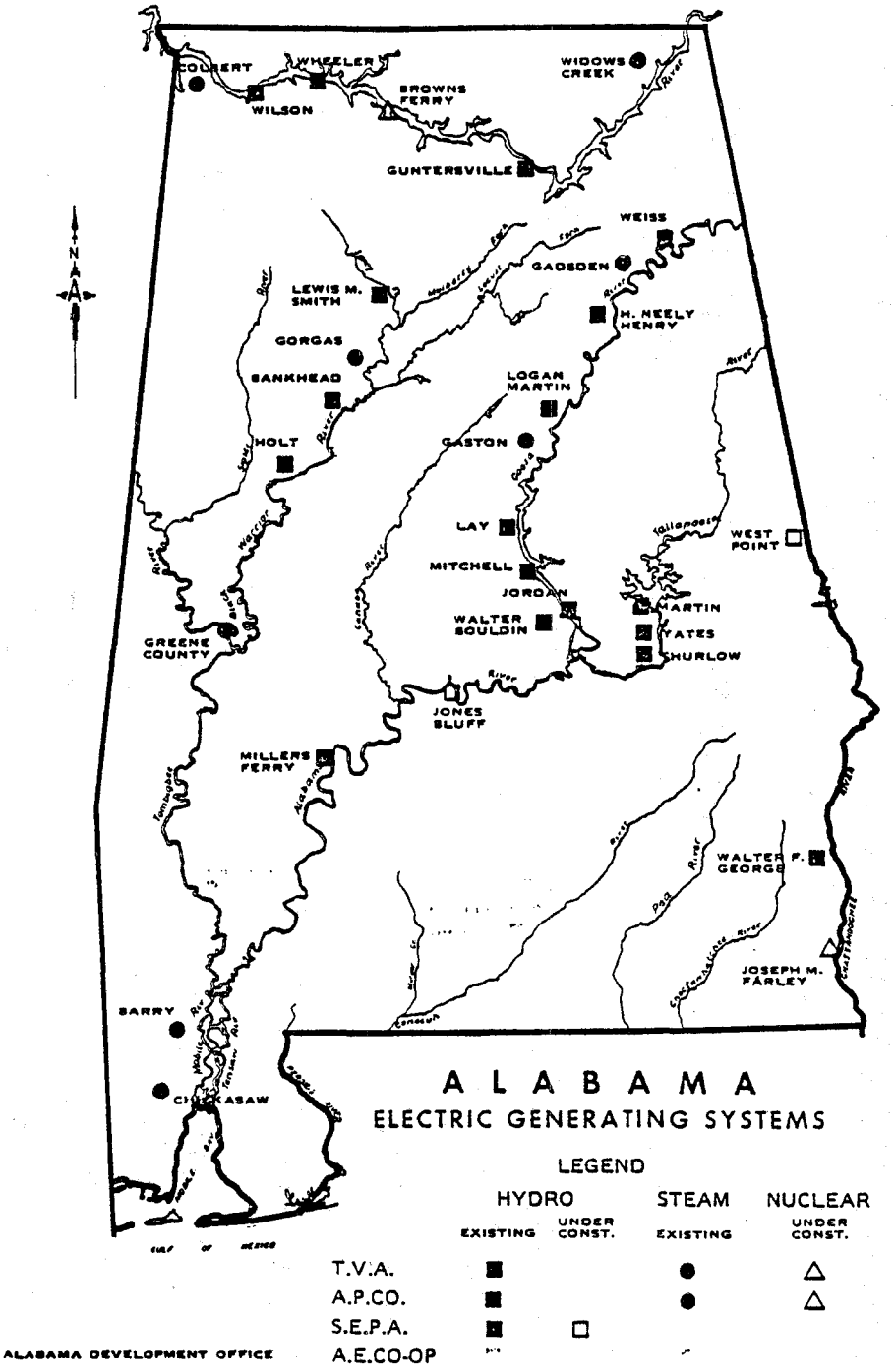

Fig. I-48. Alabama Electric Generating Systems.

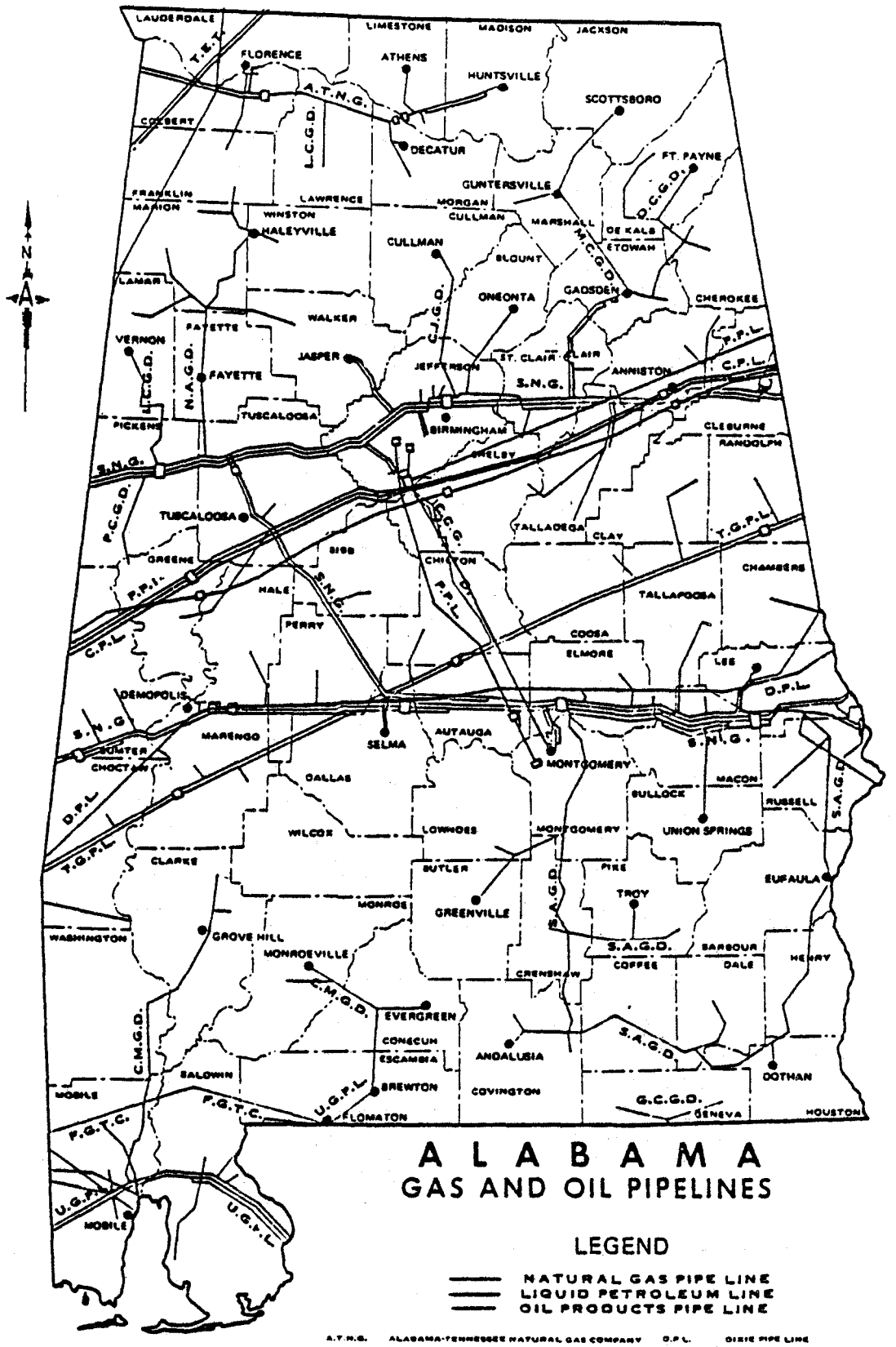

Fig. I-49. Alabama Gas and Oil Pipelines

ALABAMA DEVELOPMENT OFFICE

Fig. I-50. Alabama Railroads.

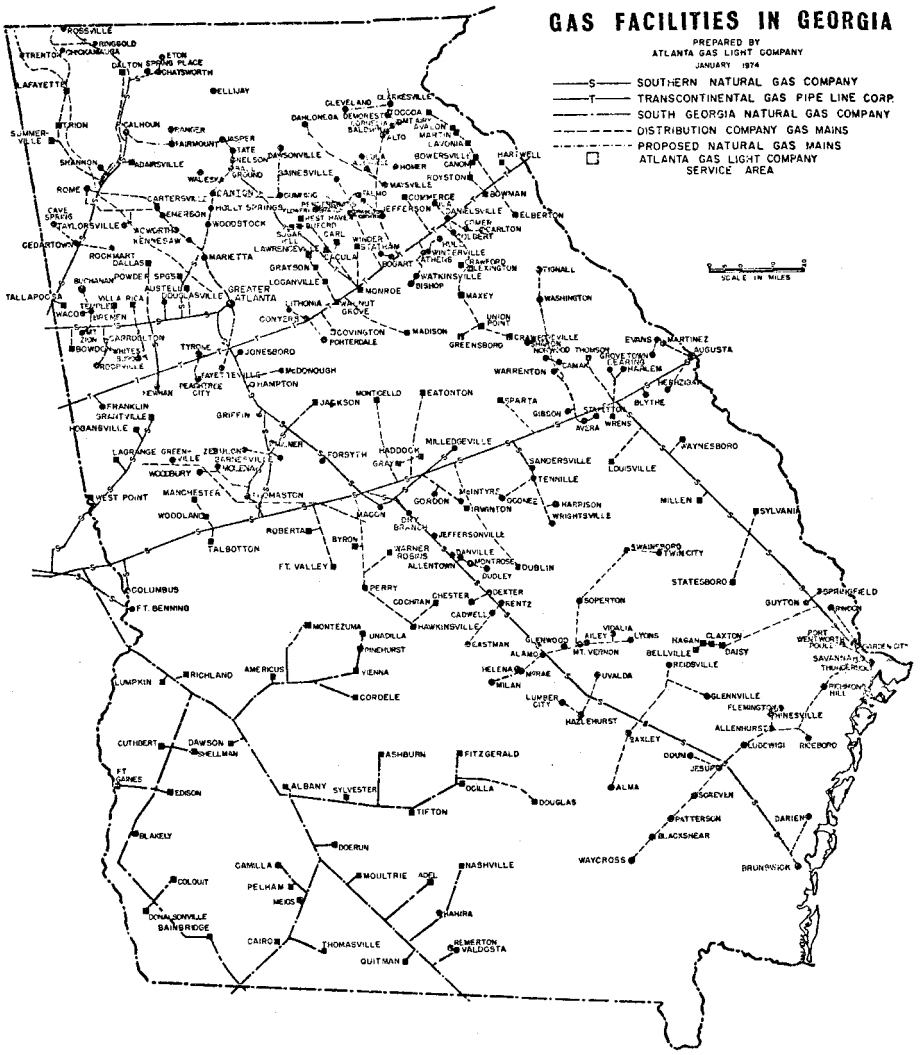

Fig. I-51. Gas Facilities in Georgia. Source: Georgia Statistical Abstract.

GAS DISTRIBUTION SYSTEMS

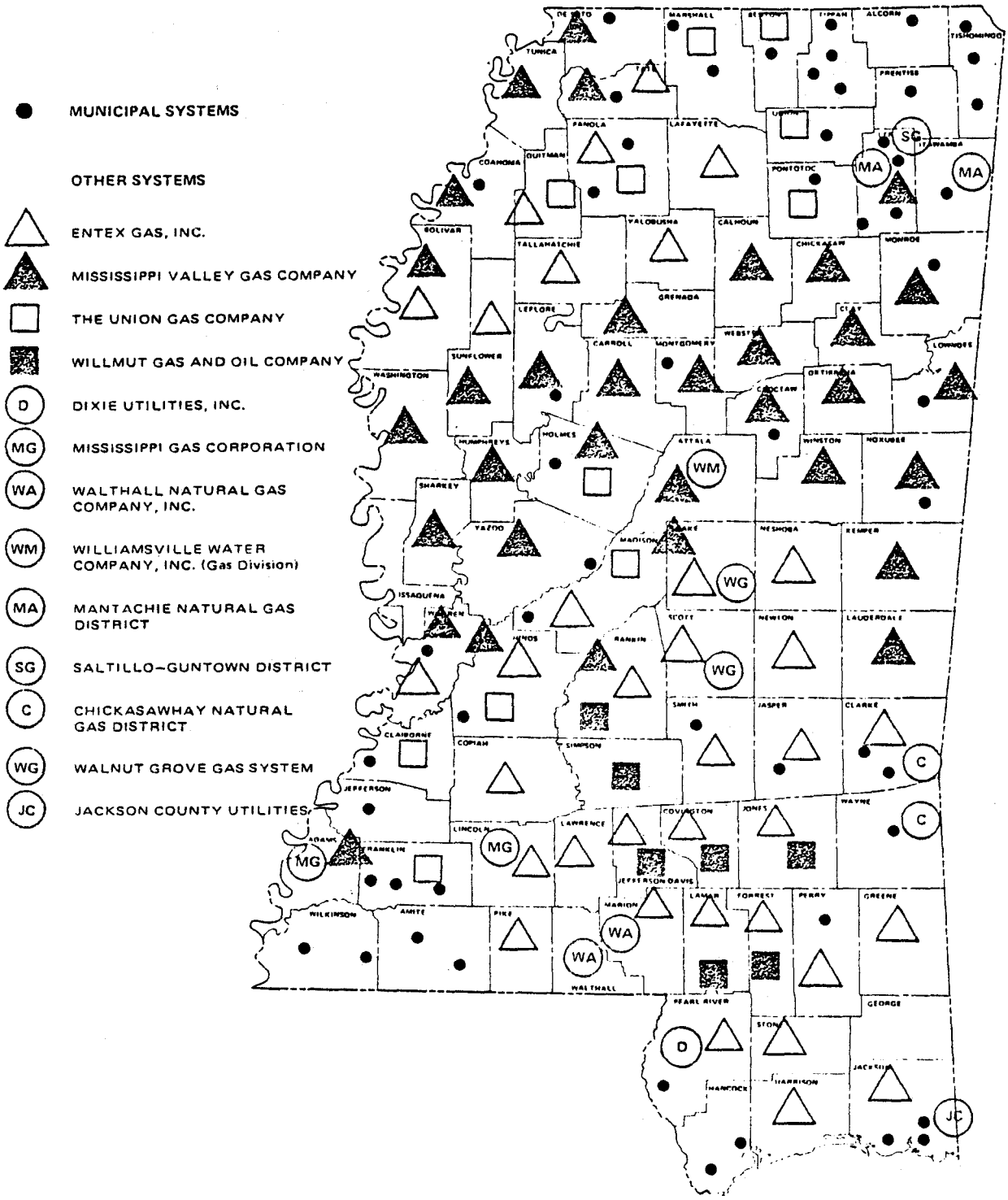

Fig. I-52. Mississippi Gas Distribution Systems.
Source: Mississippi Public Service Commission.

TABLE I-31

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1970				
Residential—Commercial	3.9	54.6	94.0	0.0	0.0	152.5
Industrial	278.0	24.1	173.3	0.0	0.0	475.4
Transportation	0.0	247.5	20.5	0.0	0.0	268.0
Electric Utilities	378.8	0.2	16.2	75.9	0.0	471.1
Miscellaneous	0.0	3.9	0.0	0.0	0.0	3.9
Total	660.7	330.3	304.0	75.9	0.0	1370.9
		Alabama, 1971				
Residential—Commercial	2.6	53.2	93.6	0.0	0.0	149.4
Industrial	253.1	31.1	162.8	0.0	0.0	437.0
Transportation	0.0	259.5	21.3	0.0	0.0	280.8
Electric Utilities	404.1	0.6	10.4	109.0	0.0	524.1
Miscellaneous	0.0	3.2	0.0	0.0	0.0	3.2
Total	659.8	337.6	288.1	109.0	0.0	1394.5
		Alabama, 1972				
Residential—Commercial	3.2	62.4	92.2	0.0	0.0	157.8
Industrial	271.6	24.6	177.7	0.0	0.0	473.9
Transportation	0.0	283.9	19.6	0.0	0.0	303.5
Electric Utilities	448.3	3.9	2.8	114.2	0.0	569.2
Miscellaneous	0.0	3.7	0.0	0.0	0.0	3.7
Total	723.1	378.5	292.3	114.2	0.0	1508.1
		Alabama, 1973				
Residential—Commercial	2.3	70.8	90.7	0.0	0.0	163.8
Industrial	242.4	32.4	161.9	0.0	0.0	436.7
Transportation	0.0	308.0	20.2	0.0	0.0	328.2
Electric Utilities	421.4	4.4	2.5	137.7	3.3	569.3
Miscellaneous	0.0	5.7	0.0	0.0	0.0	5.7
Total	666.1	421.3	275.3	137.7	3.3	1503.7
		Alabama, 1974				
Residential—Commercial	0.7	69.9	92.4	0.0	0.0	163.0
Industrial	231.7	31.2	170.6	0.0	0.0	433.5
Transportation	0.0	323.3	19.7	0.0	0.0	343.0
Electric Utilities	368.1	4.5	5.2	94.4	67.0	539.2
Miscellaneous	0.0	5.7	0.0	0.0	0.0	5.7
Total	600.5	434.6	287.9	94.4	67.0	1484.4

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1975				
Residential—Commercial	0.4	72.6	87.8	0.0	0.0	160.8
Industrial	242.9	85.7	159.2	0.0	0.0	487.8
Transportation	0.0	343.5	17.2	0.0	0.0	360.7
Electric Utilities	440.7	3.8	6.1	128.4	28.2	607.2
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	684.0	505.6	270.4	128.4	28.2	1616.6
		Arkansas, 1970				
Residential—Commercial	0.0	51.5	99.9	0.0	0.0	151.4
Industrial	0.0	11.6	183.1	0.0	0.0	194.7
Transportation	0.0	149.5	13.8	0.0	0.0	163.3
Electric Utilities	0.0	8.6	109.7	22.9	0.0	141.2
Miscellaneous	0.0	3.2	0.0	0.0	0.0	3.2
Total	0.0	224.4	406.5	22.9	0.0	653.8
		Arkansas, 1971				
Residential—Commercial	0.0	53.9	80.9	0.0	0.0	134.8
Industrial	0.0	10.9	181.6	0.0	0.0	192.5
Transportation	0.0	158.4	12.1	0.0	0.0	170.5
Electric Utilities	0.0	16.9	88.1	19.1	0.0	124.1
Miscellaneous	0.0	3.3	0.0	0.0	0.0	3.3
Total	0.0	243.4	362.7	19.1	0.0	625.2
		Arkansas, 1972				
Residential—Commercial	0.0	61.5	81.0	0.0	0.0	142.5
Industrial	0.0	17.8	181.0	0.0	0.0	198.8
Transportation	0.0	179.0	13.5	0.0	0.0	192.5
Electric Utilities	0.0	22.4	73.7	17.0	0.0	113.1
Miscellaneous	0.0	3.8	0.0	0.0	0.0	3.8
Total	0.0	284.5	349.2	17.0	0.0	650.7
		Arkansas, 1973				
Residential—Commercial	0.0	63.0	84.4	0.0	0.0	147.4
Industrial	0.0	26.2	195.3	0.0	0.0	221.5
Transportation	0.0	192.9	15.7	0.0	0.0	208.6
Electric Utilities	0.0	53.8	48.6	44.6	0.0	147.0
Miscellaneous	0.0	5.1	0.0	0.0	0.0	5.1
Total	0.0	341.0	344.0	44.6	0.0	729.6

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Arkansas, 1974				
Residential—Commercial	0.0	63.6	76.7	0.0	0.0	140.3
Industrial	2.9	27.7	169.8	0.0	0.0	200.4
Transportation	0.0	193.5	13.8	0.0	0.0	207.3
Electric Utilities	0.0	43.0	40.0	46.9	3.8	133.7
Miscellaneous	0.0	6.3	0.0	0.0	0.0	6.3
Total	2.9	334.1	300.3	46.9	3.8	688.0
		Arkansas, 1975				
Residential—Commercial	0.0	60.4	83.8	0.0	0.0	144.2
Industiral	0.0	74.0	135.5	0.0	0.0	209.5
Transportation	0.0	199.8	12.5	0.0	0.0	212.3
Electric Utilities	0.0	26.9	32.6	35.7	51.2	146.4
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	361.1	264.4	35.7	51.2	712.4
		Florida, 1970				
Residential—Commercial	0.0	106.0	37.1	0.0	0.0	143.1
Industrial	0.0	67.6	98.3	0.0	0.0	165.9
Transportation	0.0	564.2	4.5	0.0	0.0	568.7
Electric Utilities	0.0	276.3	200.1	3.1	0.0	479.5
Miscellaneous	0.0	9.5	0.0	0.0	0.0	9.5
Total	0.0	1023.6	340.0	3.1	0.0	1366.7
		Florida, 1971				
Residential—Commercial	0.0	109.2	34.8	0.0	0.0	144.0
Industrial	0.0	67.7	107.6	0.0	0.0	175.3
Trnasportation	0.0	597.0	4.4	0.0	0.0	601.4
Electric Utilities	0.0	332.6	199.2	2.9	0.0	534.7
Miscellaneous	0.0	7.5	0.0	0.0	0.0	7.5
Total	0.0	1114.0	346.0	2.9	0.0	1462.9
		Florida, 1972				
Residential—Commercial	0.0	113.0	32.7	0.0	0.0	145.7
Industrial	0.0	72.7	97.1	0.0	0.0	169.8
Transportation	0.0	659.7	4.1	0.0	0.0	663.8
Electric Utilities	0.0	524.9	172.3	2.6	0.7	601.5
Miscellaneous	0.0	4.0	0.0	0.0	0.0	4.0
Total	0.0	1275.3	306.2	2.6	0.7	1584.8

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Florida, 1973				
Residential—Commercial	0.0	120.4	41.5	0.0	0.0	161.9
Industrial	0.0	83.1	102.3	0.0	0.0	185.4
Transportation	0.0	734.3	4.0	0.0	0.0	738.3
Electric Utilities	0.0	451.8	171.0	2.5	49.9	675.2
Miscellaneous	0.0	3.7	0.0	0.0	0.0	3.7
Total	0.0	1393.3	318.8	2.5	49.9	1764.5
		Florida, 1974				
Residential—Commercial	0.0	105.0	38.1	0.0	0.0	143.1
Industrial	0.0	73.2	97.0	0.0	0.0	170.2
Transportation	0.0	868.7	3.1	0.0	0.0	689.8
Electric Utilities	143.3	422.5	157.3	2.7	84.0	809.8
Miscellaneous	0.0	3.1	0.0	0.0	0.0	3.1
Total	143.3	1290.5	295.5	2.7	84.0	1816.0
		Florida, 1975				
Residential—Commercial	0.0	92.0	48.1	0.0	0.0	140.1
Industrial	0.5	89.8	91.8	0.0	0.0	182.1
Transportation	0.0	726.0	2.4	0.0	0.0	728.4
Electric Utilities	124.9	455.0	144.5	2.4	87.9	814.8
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	125.4	1362.8	286.8	2.4	87.9	1865.3
		Georgia, 1970				
Residential—Commercial	3.8	72.8	126.8	0.0	0.0	203.4
Industrial	12.0	58.5	153.4	0.0	0.0	223.9
Transportation	0.0	381.8	7.1	0.0	0.0	388.9
Electric Utilities	299.3	10.1	60.9	26.3	0.0	396.6
Miscellaneous	0.0	4.9	0.0	0.0	0.0	4.9
Total	315.1	528.1	348.2	26.3	0.0	1217.7
		Georgia, 1971				
Residential—Commercial	2.0	81.7	129.7	0.0	0.0	213.4
Industrial	11.6	52.4	163.3	0.0	0.0	227.3
Transportation	0.0	410.3	6.9	0.0	0.0	417.2
Electric Utilities	367.0	16.3	65.4	36.7	0.0	485.4
Miscellaneous	0.0	4.1	0.0	0.0	0.0	4.1
Total	380.6	564.8	365.3	36.7	0.0	1347.4

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Georgia, 1972				
Residential—Commercial	1.6	86.8	128.9	0.0	0.0	217.3
Industrial	10.1	61.4	169.0	0.0	0.0	240.5
Transportation	0.0	439.1	8.2	0.0	0.0	447.3
Electric Utilities	408.7	29.6	39.7	36.9	0.0	514.9
Miscellaneous	0.0	3.7	0.0	0.0	0.0	3.7
Total	420.4	620.6	345.8	36.9	0.0	1423.7
		Georgia, 1973				
Residential—Commercial	1.8	86.7	136.2	0.0	0.0	224.7
Industrial	9.9	65.3	173.7	0.0	0.0	248.9
Transportation	0.0	485.3	6.2	0.0	0.0	491.5
Electric Utilities	387.8	40.2	35.4	44.0	0.0	507.4
Miscellaneous	0.0	5.3	0.0	0.0	0.0	5.3
Total	399.5	682.8	351.5	44.0	0.0	1477.8
		Georgia, 1974				
Residential—Commercial	1.1	74.0	123.1	0.0	0.0	198.2
Industrial	7.6	59.7	170.4	0.0	0.0	237.7
Transportation	0.0	454.1	5.0	0.0	0.0	459.1
Electric Utilities	246.3	49.8	44.3	36.1	0.5	377.0
Miscellaneous	0.0	5.6	0.0	0.0	0.0	5.6
Total	255.0	643.2	342.8	36.1	0.5	1277.6
		Georgia, 1975				
Residential—Commercial	1.0	74.3	139.9	0.0	0.0	215.2
Industrial	10.3	67.5	149.0	0.0	0.0	226.8
Transportation	0.0	468.4	4.3	0.0	0.0	472.3
Electric Utilities	340.9	31.3	41.3	44.4	32.4	490.3
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	352.2	641.5	334.4	44.4	32.4	1404.9
		Kentucky, 1970				
Residential—Commercial	15.3	66.7	124.2	0.0	0.0	206.2
Industrial	100.9	12.8	87.0	0.0	0.0	200.7
Transportation	0.0	224.6	36.8	0.0	0.0	261.4
Electric Utilities	417.5	0.8	8.8	32.3	0.0	459.4
Miscellaneous	0.0	1.2	0.0	0.0	0.0	1.2
Total	533.7	306.1	256.8	32.3	0.0	1128.9

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Kentucky, 1971				
Residential–Commercial	8.7	62.1	120.5	0.0	0.0	191.3
Industrial	92.6	13.8	98.5	0.0	0.0	204.9
Transportation	0.0	230.5	36.3	0.0	0.0	266.8
Electric Utilities	268.6	1.7	9.1	37.1	0.0	516.5
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	569.9	308.9	264.4	37.1	0.0	1180.3
		Kentucky, 1972				
Residential–Commercial	8.1	59.1	124.5	0.0	0.0	191.7
Industrial	91.9	18.3	100.1	0.0	0.0	210.3
Transportation	0.0	248.8	37.9	0.0	0.0	286.7
Electric Utilities	507.5	2.4	10.3	39.8	0.0	560.0
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	607.5	329.9	272.8	39.8	0.0	1250.0
		Kentucky, 1973				
Residential–Commercial	7.8	65.1	128.7	0.0	0.0	201.6
Industrial	75.2	21.2	87.1	0.0	0.0	183.5
Transportation	0.0	262.5	35.4	0.0	0.0	297.9
Electric Utilities	470.9	1.0	8.3	37.4	0.0	517.6
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	553.9	350.8	259.5	37.4	0.0	1201.6
		Kentucky, 1974				
Residential–Commercial	6.8	56.3	120.9	0.0	0.0	184.0
Industrial	88.3	27.0	83.1	0.0	0.0	198.4
Transportation	0.0	257.3	30.0	0.0	0.0	287.3
Electric Utilities	462.9	1.7	5.6	31.9	0.0	502.1
Miscellaneous	0.0	1.5	0.0	0.0	0.0	1.5
Total	558.0	343.8	239.6	31.9	0.0	1173.3
		Kentucky, 1975				
Residential–Commercial	4.8	61.9	120.5	0.0	0.0	187.2
Industrial	67.8	119.9	67.7	0.0	0.0	255.4
Transportation	0.0	260.7	24.1	0.0	0.0	284.8
Electric Utilities	551.1	0.6	0.3	36.0	0.0	588.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	623.7	443.1	212.5	36.0	0.0	1315.3

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1970				
Residential—Commercial	0.0	36.3	124.6	0.0	0.0	160.9
Industrial	0.0	46.4	1381.3	0.0	0.0	1427.7
Transportation	0.0	309.8	73.6	0.0	0.0	383.4
Electric Utilities	0.0	2.1	351.1	0.0	0.0	353.2
Miscellaneous	0.0	4.7	0.0	0.0	0.0	4.7
Total	0.0	399.3	1930.6	0.0	0.0	2329.9
		Louisiana, 1971				
Residential—Commercial	0.0	34.1	115.9	0.0	0.0	150.0
Industrial	0.0	47.2	1400.1	0.0	0.0	1447.3
Transportation	0.0	303.1	78.5	0.0	0.0	381.6
Electric Utilities	0.0	6.1	383.4	0.0	0.0	389.5
Miscellaneous	0.0	3.5	0.0	0.0	0.0	3.5
Total	0.0	394.0	1977.9	0.0	0.0	2371.9
		Louisiana, 1972				
Residential—Commercial	0.0	34.3	120.0	0.0	0.0	154.3
Industrial	0.0	64.2	1410.7	0.0	0.0	1474.9
Transportation	0.0	337.5	81.7	0.0	0.0	419.2
Electric Utilities	0.0	7.6	405.7	0.0	0.0	413.3
Miscellaneous	0.0	6.6	0.0	0.0	0.0	6.6
Total	0.0	450.2	2018.1	0.0	0.0	2468.3
		Louisiana, 1973				
Residential—Commercial	0.0	38.4	155.8	0.0	0.0	194.2
Industrial	0.0	82.6	1487.6	0.0	0.0	1570.2
Transportation	0.0	382.3	81.9	0.0	0.0	464.2
Electric Utilities	0.0	48.1	375.3	0.0	0.0	423.4
Miscellaneous	0.0	9.8	0.0	0.0	0.0	9.8
Total	0.0	561.2	2100.6	0.0	0.0	2661.8
		Louisiana, 1974				
Residential—Commercial	0.0	43.2	153.1	0.0	0.0	196.3
Industrial	0.0	86.7	1491.1	0.0	0.0	1577.8
Transportation	0.0	417.3	77.8	0.0	0.0	495.1
Electric Utilities	0.0	56.8	362.9	0.0	0.0	419.7
Miscellaneous	0.0	10.2	0.0	0.0	0.0	10.2
Total	0.0	614.2	2084.9	0.0	0.0	2699.1

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1975				
Residential—Commercial	0.0	50.8	150.4	0.0	0.0	201.2
Industrial	0.0	758.3	1253.9	0.0	0.0	2012.2
Transportation	0.0	445.0	62.6	0.0	0.0	507.6
Electric Utilities	0.0	38.9	364.7	0.0	0.0	403.6
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	1293.0	1831.5	0.0	0.0	3124.5
		Mississippi, 1970				
Residential—Commercial	0.0	43.1	57.7	0.0	0.0	100.8
Industrial	0.0	30.1	160.9	0.0	0.0	191.0
Transportation	0.0	153.5	61.2	0.0	0.0	214.7
Electric Utilities	0.0	3.8	101.9	0.0	0.0	105.7
Miscellaneous	0.0	1.9	0.0	0.0	0.0	1.9
Total	0.0	232.4	381.7	0.0	0.0	614.1
		Mississippi, 1971				
Residential—Commercial	0.0	47.6	63.2	0.0	0.0	110.8
Industrial	0.0	27.2	169.0	0.0	0.0	196.2
Transportation	0.0	166.2	61.3	0.0	0.0	227.5
Electric Utilities	0.0	6.0	107.2	0.0	0.0	113.2
Miscellaneous	0.0	2.1	0.0	0.0	0.0	2.1
Total	0.0	249.1	400.7	0.0	0.0	649.8
		Mississippi, 1972				
Residential—Commercial	0.0	55.9	61.0	0.0	0.0	116.9
Industrial	0.0	29.9	174.5	0.0	0.0	204.4
Transportation	0.0	182.0	59.4	0.0	0.0	241.4
Electric Utilities	0.0	19.2	104.0	0.0	0.0	123.2
Miscellaneous	0.0	2.3	0.0	0.0	0.0	2.3
Total	0.0	289.3	398.9	0.0	0.0	688.2
		Mississippi, 1973				
Residential—Commercial	0.0	62.7	56.3	0.0	0.0	119.0
Industrial	0.0	38.5	138.1	0.0	0.0	176.6
Transportation	0.0	194.1	58.6	0.0	0.0	252.7
Electric Utilities	0.0	37.2	61.4	0.0	0.0	98.6
Miscellaneous	0.0	3.2	0.0	0.0	0.0	3.2
Total	0.0	335.7	314.4	0.0	0.0	650.1

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Mississippi, 1974				
Residential—Commercial	0.0	61.3	55.5	0.0	0.0	116.8
Industrial	1.2	26.6	139.6	0.0	0.0	167.4
Transportation	0.0	191.0	51.4	0.0	0.0	242.4
Electric Utilities	35.4	61.6	43.9	0.0	0.0	140.9
Miscellaneous	0.0	3.2	0.0	0.0	0.0	3.2
Total	36.6	343.7	290.4	0.0	0.0	670.7
		Mississippi, 1975				
Residential—Commercial	0.0	62.8	54.7	0.0	0.0	117.5
Industrial	0.6	94.9	109.3	0.0	0.0	204.8
Transportation	0.0	193.6	39.3	0.0	0.0	232.9
Electric Utilities	36.7	59.3	32.3	0.0	0.0	128.3
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	37.3	410.6	235.6	0.0	0.0	683.5
		North Carolina, 1970				
Residential—Commercial	51.3	184.3	43.8	0.0	0.0	279.4
Industrial	51.3	44.2	88.0	0.0	0.0	183.5
Transportation	0.0	351.4	6.3	0.0	0.0	357.7
Electric Utilities	460.0	11.9	22.0	45.6	0.0	539.5
Miscellaneous	0.0	5.9	0.0	0.0	0.0	5.9
Total	562.6	597.7	160.1	45.6	0.0	1366.0
		North Carolina, 1971				
Residential—Commercial	42.3	178.7	50.7	0.0	0.0	271.7
Industrial	42.3	62.0	91.0	0.0	0.0	195.3
Transportation	0.0	364.6	6.4	0.0	0.0	371.0
Electric Utilities	421.0	14.0	21.8	56.3	0.0	513.1
Miscellaneous	0.0	6.7	0.0	0.0	0.0	6.7
Total	505.6	626.0	169.9	56.3	0.0	1357.8
		North Carolina, 1972				
Residential—Commercial	34.6	171.5	52.5	0.0	0.0	258.6
Industrial	34.6	88.3	96.8	0.0	0.0	219.7
Transportation	0.0	390.9	6.2	0.0	0.0	397.1
Electric Utilities	471.0	32.2	17.5	65.4	0.0	586.1
Miscellaneous	0.0	6.6	0.0	0.0	0.0	6.6
Total	540.2	689.5	173.0	65.4	0.0	1468.1

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		North Carolina, 1973				
Residential–Commercial	9.3	165.6	52.6	0.0	0.0	227.5
Industrial	35.0	70.2	97.4	0.0	0.0	202.6
Transportation	0.0	419.0	6.1	0.0	0.0	425.1
Electric Utilities	434.7	40.5	8.0	62.4	0.0	545.6
Miscellaneous	0.0	8.0	0.0	0.0	0.0	8.0
Total	479.0	703.3	164.1	62.4	0.0	1408.8
		North Carolina, 1974				
Residential–Commercial	7.2	136.8	48.8	0.0	0.0	192.8
Industrial	36.2	65.7	91.3	0.0	0.0	193.2
Transportation	0.0	413.2	4.6	0.0	0.0	417.8
Electric Utilities	459.1	34.9	1.1	66.0	0.0	561.1
Miscellaneous	0.0	6.9	0.0	0.0	0.0	6.9
Total	502.5	657.5	145.8	66.0	0.0	1371.8
		North Carolina, 1975				
Residential–Commercial	7.0	126.4	50.3	0.0	0.0	183.7
Industrial	35.4	91.2	63.6	0.0	0.0	190.2
Transportation	0.0	418.0	3.6	0.0	0.0	421.6
Electric Utilities	466.6	2.1	0.1	73.3	14.9	557.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	509.0	637.7	117.6	73.3	14.9	1352.5
		Oklahoma, 1970				
Residential–Commercial	0.0	66.7	119.7	0.0	0.0	186.4
Industrial	0.0	18.1	248.5	0.0	0.0	266.6
Transportation	0.0	232.0	23.5	0.0	0.0	255.5
Electric Utilities	0.0	0.3	242.5	14.9	0.0	257.7
Miscellaneous	0.0	1.2	0.0	0.0	0.0	1.2
Total	0.0	318.3	634.2	14.9	0.0	967.4
		Oklahoma, 1971				
Residential–Commercial	0.0	69.7	116.3	0.0	0.0	186.0
Industrial	0.0	18.0	254.0	0.0	0.0	272.0
Transportation	0.0	230.8	26.7	0.0	0.0	257.5
Electric Utilities	0.0	0.6	292.8	14.6	0.0	308.0
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	0.0	320.2	689.8	14.6	0.0	1024.6

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Oklahoma, 1972				
Residential–Commercial	0.0	72.0	120.4	0.0	0.0	192.4
Industrial	0.0	25.2	254.0	0.0	0.0	279.2
Transportation	0.0	253.1	25.3	0.0	0.0	268.4
Electric Utilities	0.0	0.5	273.7	15.0	0.0	289.2
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	0.0	341.8	673.4	15.0	0.0	1030.2
		Oklahoma, 1973				
Residential–Commercial	0.0	73.7	116.5	0.0	0.0	190.2
Industrial	0.0	29.3	234.1	0.0	0.0	263.4
Transportation	0.0	253.6	26.6	0.0	0.0	280.2
Electric Utilities	0.0	2.2	262.8	39.6	0.0	304.6
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	0.0	360.2	640.0	39.6	0.0	1039.8
		Oklahoma, 1974				
Residential–Commercial	0.1	73.2	116.4	0.0	0.0	189.7
Industrial	4.3	24.6	241.7	0.0	0.0	270.6
Transportation	0.0	245.3	24.6	0.0	0.0	269.9
Electric Utilities	0.0	2.1	305.9	37.4	0.0	345.4
Miscellaneous	0.0	2.4	0.0	0.0	0.0	2.4
Total	4.4	347.6	688.6	37.4	0.0	1078.0
		Oklahoma, 1975				
Residential–Commercial	0.1	79.0	124.7	0.0	0.0	203.6
Industrial	0.5	121.1	227.9	0.0	0.0	349.5
Transportation	0.0	255.7	24.3	0.0	0.0	280.0
Electric Utilities	0.0	3.9	308.1	30.6	0.0	342.6
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.6	459.7	684.9	30.6	0.0	1175.8
		South Carolina, 1970				
Residential–Commercial	7.4	63.8	32.5	0.0	0.0	103.7
Industrial	43.3	17.2	86.7	0.0	0.0	147.2
Transportation	0.0	182.5	3.4	0.0	0.0	185.9
Electric Utilities	100.8	17.5	47.0	25.9	0.0	191.2
Miscellaneous	0.0	3.3	0.0	0.0	0.0	3.3
Total	151.5	284.3	169.6	25.9	0.0	631.3

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South Carolina, 1971				
Residential–Commercial	5.6	62.8	34.4	0.0	0.0	102.8
Industrial	35.9	28.9	85.7	0.0	0.0	150.5
Transportation	0.0	194.5	3.3	0.0	0.0	197.8
Electric Utilities	111.5	10.3	41.1	31.1	25.7	219.7
Miscellaneous	0.0	2.6	0.0	0.0	0.0	2.6
Total	153.0	299.1	164.5	31.1	25.7	673.4
		South Carolina, 1972				
Residential–Commercial	5.4	59.8	34.6	0.0	0.0	99.8
Industrial	31.1	37.4	92.3	0.0	0.0	160.8
Transportation	0.0	211.7	3.1	0.0	0.0	214.8
Electric Utilities	133.6	13.9	25.3	25.8	51.5	250.1
Miscellaneous	0.0	2.2	0.0	0.0	0.0	2.2
Total	170.1	325.0	155.3	25.8	51.5	727.7
		South Carolina, 1973				
Residential–Commercial	5.9	56.1	39.6	0.0	0.0	101.6
Industrial	28.2	37.9	85.0	0.0	0.0	151.1
Transportation	0.0	220.8	3.6	0.0	0.0	224.4
Electric Utilities	137.0	32.8	25.9	42.0	65.7	303.4
Miscellaneous	0.0	2.2	0.0	0.0	0.0	2.2
Total	171.1	349.8	154.1	42.0	65.7	782.7
		South Carolina, 1974				
Residential–Commercial	4.7	51.2	35.9	0.0	0.0	91.8
Industrial	33.6	31.8	79.8	0.0	0.0	145.2
Transportation	0.0	212.4	2.2	0.0	0.0	214.6
Electric Utilities	155.7	38.1	22.1	44.2	117.9	378.0
Miscellaneous	0.0	1.6	0.0	0.0	0.0	1.6
Total	194.0	335.1	140.0	44.2	117.9	831.2
		South Carolina, 1975				
Residential–Commercial	4.6	48.1	36.3	0.0	0.0	89.0
Industrial	28.8	34.3	72.1	0.0	0.0	135.1
Transportation	0.0	231.2	2.7	0.0	0.0	233.9
Electric Utilities	107.9	27.4	14.9	45.4	204.3	399.9
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	141.3	341.0	125.9	45.4	204.3	857.9

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1970				
Residential–Commercial	16.2	65.9	88.6	0.0	0.0	170.7
Industrial	55.4	19.1	137.8	0.0	0.0	212.3
Transportation	0.0	285.2	27.3	0.0	0.0	312.5
Electric Utilities	350.2	0.0	18.1	83.8	0.0	452.1
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	421.8	371.6	271.8	83.8	0.0	1149.0
		Tennessee, 1971				
Residential–Commercial	14.0	63.8	89.9	0.0	0.0	167.7
Industrial	43.8	18.5	147.1	0.0	0.0	209.4
Transportation	0.0	303.6	27.5	0.0	0.0	331.1
Electric Utilities	365.7	0.4	19.1	105.2	0.0	490.4
Miscellaneous	0.0	1.6	0.0	0.0	0.0	1.6
Total	423.5	387.9	283.6	105.2	0.0	1200.2
		Tennessee, 1972				
Residential–Commercial	11.5	65.6	97.8	0.0	0.0	174.9
Industrial	52.1	22.1	150.6	0.0	0.0	224.8
Transportation	0.0	336.4	26.1	0.0	0.0	362.5
Electric Utilities	418.4	1.5	16.9	119.1	0.0	555.9
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	482.0	426.6	291.4	119.1	0.0	1319.1
		Tennessee, 1973				
Residential–Commercial	9.4	74.3	93.9	0.0	0.0	177.6
Industrial	60.1	24.3	170.5	0.0	0.0	254.9
Transportation	0.0	363.9	29.1	0.0	0.0	393.0
Electric Utilities	430.3	1.3	12.6	105.8	0.0	550.0
Miscellaneous	0.0	0.7	0.0	0.0	0.0	0.7
Total	499.8	464.5	306.1	105.8	0.0	1376.2
		Tennessee, 1974				
Residential–Commercial	6.4	62.7	90.1	0.0	0.0	159.2
Industrial	58.5	22.3	153.9	0.0	0.0	234.7
Transportation	0.0	353.0	24.5	0.0	0.0	377.5
Electric Utilities	354.6	2.3	0.0	102.6	0.0	459.5
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	419.5	441.6	268.5	102.6	0.0	1232.2

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1975				
Residential–Commercial	5.7	68.5	88.6	0.0	0.0	162.8
Industrial	46.5	65.5	114.4	0.0	0.0	226.4
Transportation	0.0	360.7	19.6	0.0	0.0	380.3
Electric Utilities	539.0	11.0	0.0	122.7	0.0	672.7
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	591.2	505.7	222.5	122.7	0.0	1442.1
		Texas, 1970				
Residential–Commercial	0.2	739.0	336.8	0.0	0.0	1076.0
Industrial	28.6	739.0	2747.5	0.0	0.0	3515.1
Transportation	0.0	1149.1	99.2	0.0	0.0	1248.3
Electric Utilities	0.0	3.0	1093.7	10.7	0.0	1107.4
Miscellaneous	0.0	4.3	0.0	0.0	0.0	4.3
Total	28.8	2634.4	4277.2	10.7	0.0	6951.1
		Texas, 1971				
Residential–Commercial	0.1	759.3	345.5	0.0	0.0	1104.9
Industrial	22.3	759.3	2980.3	0.0	0.0	3761.9
Transportation	0.0	1183.3	102.2	0.0	0.0	1285.5
Electric Utilities	0.0	4.1	1200.5	9.3	0.0	1213.9
Miscellaneous	0.0	4.2	0.0	0.0	0.0	4.2
Total	22.4	2710.2	4628.5	9.3	0.0	7370.4
		Texas, 1972				
Residential–Commercial	0.1	930.1	343.7	0.0	0.0	1273.9
Industrial	23.4	930.1	2753.9	0.0	0.0	3707.4
Transportation	0.0	1276.7	107.2	0.0	0.0	1383.9
Electric Utilities	0.0	10.5	1318.5	8.6	0.0	1337.6
Miscellaneous	0.0	8.5	0.0	0.0	0.0	8.5
Total	23.5	3155.9	4523.3	8.6	0.0	7711.3
		Texas, 1973				
Residential–Commercial	0.1	215.8	404.9	0.0	0.0	620.8
Industrial	42.3	1001.6	2954.5	0.0	0.0	3998.4
Transportation	0.0	1401.9	106.8	0.0	0.0	1508.7
Electric Utilities	67.8	66.1	1291.2	17.9	0.0	1443.0
Miscellaneous	0.0	16.3	0.0	0.0	0.0	16.3
Total	110.2	2701.7	4757.4	17.9	0.0	7587.2

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Texas, 1974				
Residential–Commercial	0.0	217.1	364.5	0.0	0.0	581.6
Industrial	42.0	979.2	2764.0	0.0	0.0	3785.2
Transportation	0.0	1379.0	95.8	0.0	0.0	1474.8
Electric Utilities	75.8	64.6	1361.5	17.4	0.0	1519.3
Miscellaneous	0.0	16.3	0.0	0.0	0.0	16.3
Total	117.8	2656.2	4585.8	17.4	0.0	7377.2
		Texas, 1975				
Residential–Commercial	0.0	226.9	357.5	0.0	0.0	584.4
Industrial	63.0	1582.1	2211.7	0.0	0.0	3856.8
Transportation	0.0	1483.5	84.1	0.0	0.0	1567.6
Electric Utilities	118.5	31.5	1385.8	20.0	0.0	1555.8
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	181.5	3324.0	4039.0	20.0	0.0	7564.5
		Virginia, 1970				
Residential–Commercial	14.5	135.5	76.5	0.0	0.0	226.5
Industrial	101.8	33.3	55.5	0.0	0.0	190.6
Transportation	0.0	428.5	8.0	0.0	0.0	436.5
Electric Utilities	164.9	111.0	4.4	6.5	0.0	286.8
Miscellaneous	0.5	6.1	0.0	0.0	0.0	6.6
Total	281.7	714.4	144.4	6.5	0.0	1147.0
		Virginia, 1971				
Residential–Commercial	10.7	135.1	77.7	0.0	0.0	223.5
Industrial	79.9	50.6	63.3	0.0	0.0	193.8
Transportation	0.0	448.5	7.4	0.0	0.0	455.9
Electric Utilities	144.4	139.9	4.4	11.2	0.0	299.9
Miscellaneous	0.2	6.1	0.0	0.0	0.0	6.3
Total	235.2	780.2	152.8	11.2	0.0	1179.4
		Virginia, 1972				
Residential–Commercial	11.0	132.8	84.7	0.0	0.0	228.5
Industrial	71.6	62.0	66.6	0.0	0.0	200.2
Transportation	0.0	463.1	8.5	0.0	0.0	471.6
Electric Utilities	121.2	160.4	4.7	13.7	4.8	304.8
Miscellaneous	0.2	6.7	0.0	0.0	0.0	6.9
Total	204.0	825.0	164.5	13.7	4.8	1212.0

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Virginia, 1973				
Residential—Commercial	11.9	129.9	91.1	0.0	0.0	232.9
Industrial	66.3	72.5	60.8	0.0	0.0	199.6
Transportation	0.0	480.8	6.0	0.0	0.0	486.8
Electric Utilities	120.8	172.0	4.3	13.7	73.1	383.9
Miscellaneous	0.2	4.4	0.0	0.0	0.0	4.6
Total	199.2	859.6	162.2	13.7	73.1	1307.8
		Virginia, 1974				
Residential—Commercial	13.3	111.5	85.2	0.0	0.0	210.0
Industrial	61.3	71.6	57.6	0.0	0.0	190.5
Transportation	0.0	451.0	4.3	0.0	0.0	455.3
Electric Utilities	107.8	174.0	4.9	11.2	63.5	361.4
Miscellaneous	0.2	2.5	0.0	0.0	0.0	2.7
Total	182.6	810.6	152.0	11.2	63.5	1219.9
		Virginia, 1975				
Residential—Commercial	6.2	105.0	83.1	0.0	0.0	194.3
Industrial	68.4	96.3	37.5	0.0	0.0	202.2
Transportation	0.0	456.8	3.1	0.0	0.0	459.9
Electric Utilities	95.7	175.5	0.5	13.2	94.2	379.1
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	170.3	833.6	124.2	13.2	94.2	1235.5
		West Virginia, 1970				
Residential—Commercial	6.1	14.5	78.7	0.0	0.0	99.3
Industrial	263.7	74.5	108.7	0.0	0.0	446.9
Transportation	0.0	102.3	8.1	0.0	0.0	110.4
Electric Utilities	334.1	2.7	0.8	4.2	0.0	341.8
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	603.9	194.8	196.3	4.2	0.0	999.2
		West Virginia, 1971				
Residential—Commercial	6.4	18.1	77.8	0.0	0.0	102.3
Industrial	238.8	72.8	75.0	0.0	0.0	386.6
Transportation	0.0	100.5	10.4	0.0	0.0	110.9
Electric Utilities	402.5	2.9	0.4	5.1	0.0	410.9
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	647.7	195.4	163.6	5.1	0.0	1011.8

TABLE I-31 (continued)

ENERGY CONSUMPTION IN THE SOUTH
(TRILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		West Virginia, 1972				
Residential–Commercial	7.3	21.7	85.6	0.0	0.0	114.6
Industrial	252.9	75.6	133.8	0.0	0.0	462.3
Transportation	0.0	110.9	15.2	0.0	0.0	126.1
Electric Utilities	533.9	4.1	0.5	5.9	0.0	544.4
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	794.1	212.7	235.1	5.9	0.0	1247.8
		West Virginia, 1973				
Residential–Commercial	6.5	17.3	83.3	0.0	0.0	107.1
Industrial	256.2	77.7	106.3	0.0	0.0	440.2
Transportation	0.0	120.7	17.9	0.0	0.0	138.6
Electric Utilities	529.3	3.8	0.4	4.7	0.0	538.2
Miscellaneous	1.6	0.7	0.0	0.0	0.0	2.3
Total	793.6	220.2	207.9	4.7	0.0	1226.4
		West Virginia, 1974				
Residential–Commercial	8.8	13.7	80.0	0.0	0.0	102.5
Industrial	252.7	74.2	112.6	0.0	0.0	439.5
Transportation	0.0	120.7	16.0	0.0	0.0	136.7
Electric Utilities	551.9	7.9	0.4	4.4	0.0	564.6
Miscellaneous	1.4	0.5	0.0	0.0	0.0	1.9
Total	814.8	217.0	209.0	4.4	0.0	1245.2
		West Virginia, 1975				
Residential–Commercial	4.8	20.4	77.9	0.0	0.0	103.1
Industrial	216.0	46.9	69.6	0.0	0.0	332.5
Transportation	0.0	121.9	14.4	0.0	0.0	136.3
Electric Utilities	611.2	4.1	0.4	4.9	0.0	620.6
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	832.0	193.3	162.2	4.9	0.0	1192.4

Source: Bureau of Mines, FEDS.

TABLE I-32

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1970				
Residential—Commercial	1.1	15.8	27.2	0.0	0.0	44.2
Industrial	80.6	7.0	50.2	0.0	0.0	137.8
Transportation	0.0	71.7	5.9	0.0	0.0	77.6
Electric Utilities	109.8	0.1	4.7	22.0	0.0	136.5
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	191.5	95.7	88.1	22.0	0.0	397.3
		Alabama, 1971				
Residential—Commercial	0.7	15.3	26.9	0.0	0.0	42.9
Industrial	76.7	6.1	46.8	0.0	0.0	125.5
Transportation	0.0	74.5	6.1	0.0	0.0	80.6
Electric Utilities	116.1	0.2	3.0	31.3	0.0	150.5
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	189.5	97.0	82.7	31.3	0.0	400.5
		Alabama, 1972				
Residential—Commercial	0.9	17.7	36.2	0.0	0.0	44.8
Industrial	77.1	7.0	50.5	0.0	0.0	134.6
Transportation	0.0	80.6	5.6	0.0	0.0	86.2
Electric Utilities	127.3	1.1	0.8	32.4	0.0	161.7
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	205.4	107.5	83.0	32.4	0.0	428.3
		Alabama, 1973				
Residential—Commercial	0.6	20.0	25.6	0.0	0.0	46.2
Industrial	68.4	9.1	45.7	0.0	0.0	123.2
Transportation	0.0	86.9	5.7	0.0	0.0	92.6
Electric Utilities	118.8	1.2	0.7	38.8	0.9	160.5
Miscellaneous	0.0	1.6	0.0	0.0	0.0	1.6
Total	187.8	118.8	77.6	38.8	0.9	424.1
		Alabama, 1974				
Residential—Commercial	0.2	19.6	25.8	0.0	0.0	45.6
Industrial	64.8	8.7	47.7	0.0	0.0	121.3
Transportation	0.0	90.4	5.5	0.0	0.0	95.9
Electric Utilities	103.0	1.3	1.5	26.4	18.7	150.8
Miscellaneous	0.0	1.6	0.0	0.0	0.0	1.6
Total	168.0	121.6	80.5	26.4	18.7	415.2

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1975				
Residential–Commercial	0.1	20.1	24.3	0.0	0.0	44.5
Industrial	67.2	23.7	44.1	0.0	0.0	135.0
Transportation	0.0	95.0	4.8	0.0	0.0	99.8
Electric Utilities	121.9	1.1	1.7	35.5	7.8	168.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	189.3	139.9	74.8	35.5	7.8	447.3
		Arkansas, 1970				
Residential–Commercial	0.0	26.7	51.7	0.0	0.0	78.4
Industrial	0.0	6.0	94.8	0.0	0.0	100.8
Transportation	0.0	77.4	7.1	0.0	0.0	84.5
Electric Utilities	0.0	4.5	56.8	11.9	0.0	73.1
Miscellaneous	0.0	1.7	0.0	0.0	0.0	1.7
Total	0.0	116.1	210.4	11.9	0.0	338.4
		Arkansas, 1971				
Residential–Commercial	0.0	27.4	41.2	0.0	0.0	68.6
Industrial	0.0	5.5	92.4	0.0	0.0	98.0
Transportation	0.0	80.6	6.2	0.0	0.0	86.8
Electric Utilities	0.0	8.6	44.8	9.7	0.0	63.2
Miscellaneous	0.0	1.7	0.0	0.0	0.0	1.7
Total	0.0	123.9	184.6	9.7	0.0	318.2
		Arkansas, 1972				
Residential–Commercial	0.0	30.6	40.3	0.0	0.0	71.0
Industrial	0.0	8.9	90.1	0.0	0.0	99.0
Transportation	0.0	89.1	6.7	0.0	0.0	95.9
Electric Utilities	0.0	11.2	36.7	8.5	0.0	56.3
Miscellaneous	0.0	1.9	0.0	0.0	0.0	1.9
Total	0.0	141.7	173.9	8.5	0.0	324.1
		Arkansas, 1973				
Residential–Commercial	0.0	31.0	41.5	0.0	0.0	72.4
Industrial	0.0	12.9	96.0	0.0	0.0	108.9
Transportation	0.0	94.8	7.7	0.0	0.0	102.5
Electric Utilities	0.0	26.4	23.9	21.9	0.0	72.2
Miscellaneous	0.0	2.5	0.0	0.0	0.0	2.5
Total	0.0	167.6	169.0	21.9	0.0	258.5

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Arkansas, 1974				
Residential—Commercial	0.0	30.8	37.1	0.0	0.0	67.8
Industrial	1.4	13.4	82.1	0.0	0.0	96.9
Transportation	0.0	93.6	6.7	0.0	0.0	100.2
Electric Utilities	0.0	20.8	19.3	22.7	1.8	64.7
Miscellaneous	0.0	3.0	0.0	0.0	0.0	3.0
Total	1.4	161.6	145.2	22.7	1.8	332.7
		Arkansas, 1975				
Residential—Commercial	0.0	28.5	39.6	0.0	0.0	68.1
Industrial	0.0	35.0	64.0	0.0	0.0	99.0
Transportation	0.0	94.4	5.9	0.0	0.0	100.3
Electric Utilities	0.0	12.7	15.4	16.9	24.2	69.2
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	170.7	124.9	16.9	24.2	336.7
		Florida, 1970				
Residential—Commercial	0.0	15.5	5.4	0.0	0.0	20.9
Industrial	0.0	9.9	14.4	0.0	0.0	24.2
Transportation	0.0	82.4	0.7	0.0	0.0	83.1
Electric Utilities	0.0	40.3	29.2	0.5	0.0	70.0
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	0.0	149.5	49.6	0.5	0.0	199.6
		Florida, 1971				
Residential—Commercial	0.0	15.5	4.9	0.0	0.0	20.4
Industrial	0.0	9.6	15.3	0.0	0.0	24.9
Transportation	0.0	84.7	0.6	0.0	0.0	85.3
Electric Utilities	0.0	47.2	28.3	0.4	0.0	75.8
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	0.0	158.0	49.1	0.4	0.0	207.5
		Florida, 1972				
Residential—Commercial	0.0	15.4	4.5	0.0	0.0	19.8
Industrial	0.0	9.9	13.2	0.0	0.0	23.1
Transportation	0.0	89.8	0.6	0.0	0.0	90.3
Electric Utilities	0.0	58.0	23.5	0.4	0.1	81.9
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	0.0	173.6	41.7	0.4	0.1	215.7

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Florida, 1973				
Residential—Commercial	0.0	15.5	5.4	0.0	0.0	20.9
Industrial	0.0	10.7	13.2	0.0	0.0	23.9
Transportation	0.0	94.8	0.5	0.0	0.0	95.3
Electric Utilities	0.0	58.3	22.1	0.3	6.4	87.2
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	0.0	179.9	41.2	0.3	6.4	227.8
		Florida, 1974				
Residential—Commercial	0.0	13.0	4.7	0.0	0.0	17.7
Industrial	0.0	9.0	12.0	0.0	0.0	21.0
Transportation	0.0	84.8	0.4	0.0	0.0	85.2
Electric Utilities	17.7	52.2	19.4	0.3	10.4	100.0
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	17.7	159.3	36.5	0.3	10.4	224.2
		Florida, 1975				
Residential—Commercial	0.0	11.0	5.8	0.0	0.0	16.8
Industrial	0.1	10.7	11.0	0.0	0.0	21.8
Transportation	0.0	86.9	0.3	0.0	0.0	87.2
Electric Utilities	14.9	54.4	17.3	0.3	10.5	97.5
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	15.0	163.1	34.3	0.3	10.5	223.2
		Georgia, 1970				
Residential—Commercial	0.8	15.8	27.5	0.0	0.0	44.2
Industrial	2.6	12.7	33.3	0.0	0.0	48.6
Transportation	0.0	82.9	1.5	0.0	0.0	84.4
Electric Utilities	65.0	2.2	13.2	5.7	0.0	86.1
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	68.4	114.6	75.6	5.7	0.0	264.3
		Georgia, 1971				
Residential—Commercial	0.4	17.5	27.8	0.0	0.0	45.7
Industrial	2.5	11.2	35.0	0.0	0.0	48.7
Transportation	0.0	87.9	1.5	0.0	0.0	89.4
Electric Utilities	78.6	3.5	14.0	7.9	0.0	104.0
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	81.6	121.0	78.3	7.9	0.0	288.7

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Georgia, 1972				
Residential—Commercial	0.3	18.3	27.2	0.0	0.0	45.9
Industrial	2.1	13.0	35.7	0.0	0.0	50.8
Transportation	0.0	92.8	1.7	0.0	0.0	94.5
Electric Utilities	86.4	6.3	8.4	7.8	0.0	108.8
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	88.8	131.1	73.1	7.8	0.0	300.8
		Georgia, 1973				
Residential—Commercial	0.4	18.0	28.3	0.0	0.0	46.6
Industrial	2.1	13.6	36.1	0.0	0.0	51.7
Transportation	0.0	100.7	1.3	0.0	0.0	102.0
Electric Utilities	80.5	8.3	7.3	9.1	0.0	105.3
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	82.9	141.7	72.9	9.1	0.0	306.7
		Georgia, 1974				
Residential—Commercial	0.2	15.2	25.2	0.0	0.0	40.6
Industrial	1.6	12.2	34.9	0.0	0.0	48.7
Transportation	0.0	93.1	1.0	0.0	0.0	94.1
Electric Utilities	50.5	10.2	9.1	7.4	0.1	77.3
Miscellaneous	0.0	1.1	0.0	0.0	0.0	1.1
Total	52.3	131.9	70.3	7.4	0.1	262.0
		Georgia, 1975				
Residential—Commercial	0.2	15.1	28.4	0.0	0.0	43.7
Industrial	2.1	13.7	30.2	0.0	0.0	46.0
Transportation	0.0	95.1	0.9	0.0	0.0	96.0
Electric Utilities	69.2	6.4	8.4	9.0	6.6	100.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	71.5	130.2	67.9	9.0	6.6	285.2
		Kentucky, 1970				
Residential—Commercial	4.7	20.6	38.4	0.0	0.0	63.8
Industrial	31.2	4.0	26.9	0.0	0.0	62.1
Transportation	0.0	69.5	11.4	0.0	0.0	80.9
Electric Utilities	129.2	0.2	2.7	10.0	0.0	142.2
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	165.2	94.7	79.5	10.0	0.0	349.4

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Kentucky, 1971				
Residential—Commercial	2.7	18.9	36.8	0.0	0.0	58.4
Industrial	28.2	4.2	30.0	0.0	0.0	62.5
Transportation	0.0	70.3	11.1	0.0	0.0	81.4
Electric Utilities	143.0	0.5	2.8	11.3	0.0	157.6
Miscellaneous	0.0	0.2	0.0	0.0	0.0	0.2
Total	173.9	94.2	80.7	11.3	0.0	360.1
		Kentucky, 1972				
Residential—Commercial	2.5	17.9	37.7	0.0	0.0	58.0
Industrial	27.8	5.5	30.3	0.0	0.0	63.6
Transportation	0.0	75.3	11.5	0.0	0.0	86.7
Electric Utilities	153.5	0.7	3.1	12.0	0.0	169.4
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	183.8	99.8	82.5	12.0	0.0	378.1
		Kentucky, 1973				
Residential—Commercial	2.3	19.6	38.7	0.0	0.0	60.6
Industrial	22.6	6.4	26.2	0.0	0.0	55.1
Transportation	0.0	78.9	10.6	0.0	0.0	89.5
Electric Utilities	141.5	0.3	2.5	11.2	0.0	155.5
Miscellaneous	0.0	0.3	0.0	0.0	0.0	0.3
Total	166.4	105.4	78.0	11.2	0.0	361.1
		Kentucky, 1974				
Residential—Commercial	2.0	16.8	36.0	0.0	0.0	54.9
Industrial	26.3	8.1	24.8	0.0	0.0	59.2
Transportation	0.0	76.7	8.9	0.0	0.0	85.7
Electric Utilities	138.0	0.5	1.7	9.5	0.0	149.7
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	166.4	102.5	71.4	9.5	0.0	349.8
		Kentucky, 1975				
Residential—Commercial	1.4	18.2	35.5	0.0	0.0	55.1
Industrial	20.0	35.3	19.9	0.0	0.0	75.2
Transportation	0.0	76.8	7.1	0.0	0.0	83.9
Electric Utilities	162.3	0.2	0.1	10.6	0.0	173.1
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	183.7	130.5	62.6	10.6	0.0	387.3

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1970				
Residential–Commercial	0.0	9.9	34.1	0.0	0.0	44.1
Industrial	0.0	12.7	378.2	0.0	0.0	390.9
Transportation	0.0	84.8	20.2	0.0	0.0	105.0
Electric Utilities	0.0	0.6	96.1	0.0	0.0	96.7
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	0.0	109.3	528.6	0.0	0.0	638.0
		Louisiana, 1971				
Residential–Commercial	0.0	9.2	31.4	0.0	0.0	40.6
Industrial	0.0	12.8	378.8	0.0	0.0	391.6
Transportation	0.0	82.0	21.2	0.0	0.0	103.2
Electric Utilities	0.0	1.7	103.7	0.0	0.0	105.4
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	0.0	106.6	535.1	0.0	0.0	641.7
		Louisiana, 1972				
Residential–Commercial	0.0	9.2	32.1	0.0	0.0	41.3
Industrial	0.0	17.2	377.4	0.0	0.0	394.6
Transportation	0.0	90.3	21.9	0.0	0.0	112.1
Electric Utilities	0.0	2.0	108.5	0.0	0.0	110.6
Miscellaneous	0.0	1.8	0.0	0.0	0.0	1.8
Total	0.0	120.4	539.9	0.0	0.0	660.3
		Louisiana, 1973				
Residential–Commercial	0.0	10.3	41.6	0.0	0.0	51.8
Industrial	0.0	22.1	397.1	0.0	0.0	419.2
Transportation	0.0	102.1	21.9	0.0	0.0	123.9
Electric Utilities	0.0	12.8	100.2	0.0	0.0	113.0
Miscellaneous	0.0	2.6	0.0	0.0	0.0	2.6
Total	0.0	149.8	560.8	0.0	0.0	710.6
		Louisiana, 1974				
Residential–Commercial	0.0	11.5	40.7	0.0	0.0	52.2
Industrial	0.0	23.0	396.4	0.0	0.0	419.4
Transportation	0.0	110.9	20.7	0.0	0.0	131.6
Electric Utilities	0.0	15.1	96.5	0.0	0.0	111.6
Miscellaneous	0.0	2.7	0.0	0.0	0.0	2.7
Total	0.0	163.3	554.2	0.0	0.0	717.5

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1975				
Residential—Commercial	0.0	13.4	39.7	0.0	0.0	53.1
Industrial	0.0	200.0	330.8	0.0	0.0	530.8
Transportation	0.0	117.4	16.5	0.0	0.0	133.9
Electric Utilities	0.0	10.3	96.2	0.0	0.0	106.5
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	341.1	483.1	0.0	0.0	824.2
		Mississippi, 1970				
Residential—Commercial	0.0	19.4	26.0	0.0	0.0	45.4
Industrial	0.0	13.6	72.5	0.0	0.0	86.0
Transportation	0.0	69.1	27.6	0.0	0.0	96.7
Electric Utilities	0.0	1.7	45.9	0.0	0.0	47.6
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	0.0	104.7	171.9	0.0	0.0	276.6
		Mississippi, 1971				
Residential—Commercial	0.0	21.2	28.2	0.0	0.0	49.4
Industrial	0.0	12.1	75.4	0.0	0.0	87.6
Transportation	0.0	74.2	27.4	0.0	0.0	101.5
Electric Utilities	0.0	2.7	47.8	0.0	0.0	50.5
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	0.0	111.2	178.8	0.0	0.0	290.0
		Mississippi, 1972				
Residential—Commercial	0.0	24.8	27.0	0.0	0.0	51.8
Industrial	0.0	13.3	77.3	0.0	0.0	90.6
Transportation	0.0	80.7	26.3	0.0	0.0	107.0
Electric Utilities	0.0	8.5	46.1	0.0	0.0	54.6
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	0.0	128.2	176.8	0.0	0.0	305.0
		Mississippi, 1973				
Residential—Commercial	0.0	27.1	24.3	0.0	0.0	51.4
Industrial	0.0	16.7	59.6	0.0	0.0	76.2
Transportation	0.0	83.8	25.3	0.0	0.0	109.1
Electric Utilities	0.0	16.1	26.5	0.0	0.0	42.6
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	0.0	144.9	135.7	0.0	0.0	280.6

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Mississippi, 1974				
Residential–Commercial	0.0	26.3	23.8	0.0	0.0	50.0
Industrial	0.5	11.4	59.8	0.0	0.0	71.7
Transportation	0.0	81.8	22.0	0.0	0.0	103.9
Electric Utilities	15.2	26.4	18.8	0.0	0.0	60.4
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	15.7	147.3	124.4	0.0	0.0	287.4
		Mississippi, 1975				
Residential–Commercial	0.0	26.8	23.3	0.0	0.0	50.1
Industrial	0.3	40.5	46.6	0.0	0.0	87.3
Transportation	0.0	82.5	16.7	0.0	0.0	99.3
Electric Utilities	15.6	25.3	13.8	0.0	0.0	54.7
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	15.9	175.0	100.4	0.0	0.0	291.3
		North Carolina, 1970				
Residential–Commercial	10.1	36.2	8.6	0.0	0.0	54.8
Industrial	10.1	8.7	17.3	0.0	0.0	36.1
Transportation	0.0	68.9	1.2	0.0	0.0	70.2
Electric Utilities	90.2	2.3	4.3	8.9	0.0	105.8
Miscellaneous	0.0	1.2	0.0	0.0	0.0	1.2
Total	110.4	117.2	31.4	8.9	0.0	267.9
		North Carolina, 1971				
Residential–Commercial	8.2	34.6	9.8	0.0	0.0	52.7
Industrial	8.2	12.0	17.6	0.0	0.0	37.9
Transportation	0.0	70.7	1.2	0.0	0.0	71.9
Electric Utilities	81.6	2.7	4.2	10.9	0.0	99.5
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	98.0	121.4	32.9	10.9	0.0	263.2
		North Carolina, 1972				
Residential–Commercial	6.6	32.8	10.1	0.0	0.0	49.5
Industrial	6.6	16.9	18.5	0.0	0.0	42.1
Transportation	0.0	74.9	1.2	0.0	0.0	76.1
Electric Utilities	90.2	6.2	3.4	12.5	0.0	112.3
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	103.5	132.1	33.1	12.5	0.0	281.2

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		North Carolina, 1973				
Residential—Commercial	1.8	31.2	9.9	0.0	0.0	42.9
Industrial	6.6	13.2	18.4	0.0	0.0	38.2
Transportation	0.0	79.0	1.2	0.0	0.0	80.2
Electric Utilities	82.0	7.6	1.5	11.8	0.0	102.9
Miscellaneous	0.0	1.5	0.0	0.0	0.0	1.5
Total	90.3	132.6	31.0	11.8	0.0	265.7
		North Carolina, 1974				
Residential—Commercial	1.3	25.5	9.1	0.0	0.0	35.9
Industrial	6.7	12.2	17.0	0.0	0.0	35.9
Transportation	0.0	76.9	0.9	0.0	0.0	77.7
Electric Utilities	85.4	6.5	0.2	12.3	0.0	104.4
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	93.5	122.3	27.1	12.3	0.0	255.2
		North Carolina, 1975				
Residential—Commercial	1.3	23.2	9.2	0.0	0.0	33.7
Industrial	6.5	16.7	11.7	0.0	0.0	34.9
Transportation	0.0	76.7	0.7	0.0	0.0	77.3
Electric Utilities	85.6	0.4	0.0	13.4	2.7	102.2
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	93.4	117.0	21.6	13.4	2.7	248.1
		Oklahoma, 1970				
Residential—Commercial	0.0	26.0	46.6	0.0	0.0	72.6
Industrial	0.0	7.1	96.8	0.0	0.0	103.9
Transportation	0.0	90.4	9.2	0.0	0.0	99.5
Electric Utilities	0.0	0.1	94.5	5.8	0.0	100.4
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	0.0	124.0	247.1	5.8	0.0	376.9
		Oklahoma, 1971				
Residential—Commercial	0.0	26.8	44.7	0.0	0.0	71.5
Industrial	0.0	6.9	97.7	0.0	0.0	104.6
Transportation	0.0	88.8	10.3	0.0	0.0	99.0
Electric Utilities	0.0	0.2	112.6	5.6	0.0	118.5
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	0.0	123.2	265.3	5.6	0.0	394.1

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Oklahoma, 1972				
Residential–Commercial	0.0	27.3	45.7	0.0	0.0	73.1
Industrial	0.0	9.6	96.5	0.0	0.0	106.0
Transportation	0.0	92.3	9.6	0.0	0.0	101.9
Electric Utilities	0.0	0.2	104.0	5.7	0.0	109.8
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	0.0	129.8	255.8	5.7	0.0	391.3
		Oklahoma, 1973				
Residential–Commercial	0.0	27.6	43.6	0.0	0.0	71.3
Industrial	0.0	11.0	87.7	0.0	0.0	98.7
Transportation	0.0	95.0	10.0	0.0	0.0	105.0
Electric Utilities	0.0	0.8	98.5	14.8	0.0	114.1
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	0.0	135.0	239.8	14.8	0.0	389.6
		Oklahoma, 1974				
Residential–Commercial	0.0	27.3	43.4	0.0	0.0	70.8
Industrial	1.6	9.2	90.2	0.0	0.0	100.9
Transportation	0.0	91.5	9.2	0.0	0.0	100.7
Electric Utilities	0.0	0.8	114.1	14.0	0.0	128.8
Total	1.6	129.7	256.8	14.0	0.0	402.1
		Oklahoma, 1975				
Residential–Commercial	0.0	29.1	46.0	0.0	0.0	75.1
Industrial	0.2	44.7	84.0	0.0	0.0	128.9
Transportation	0.0	94.3	9.0	0.0	0.0	103.2
Electric Utilities	0.0	1.4	113.6	11.3	0.0	126.3
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.2	169.5	252.5	11.3	0.0	433.5
		South Carolina, 1970				
Residential–Commercial	2.8	24.6	12.5	0.0	0.0	39.9
Industrial	16.7	6.6	33.4	0.0	0.0	56.7
Transportation	0.0	70.3	1.3	0.0	0.0	71.6
Electric Utilities	38.8	6.7	18.1	10.0	0.0	73.6
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	58.3	109.5	65.3	10.0	0.0	243.1

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South Carolina, 1971				
Residential—Commercial	2.1	23.8	13.0	0.0	0.0	38.9
Industrial	13.6	10.9	32.5	0.0	0.0	57.0
Transportation	0.0	73.7	1.3	0.0	0.0	75.0
Electric Utilities	42.3	3.9	15.6	11.8	9.7	83.3
Miscellaneous	0.0	1.0	0.0	0.0	0.0	1.0
Total	58.0	113.3	62.3	11.8	9.7	255.2
		South Carolina, 1972				
Residential—Commercial	2.0	22.2	12.9	0.0	0.0	37.1
Industrial	11.6	13.9	34.3	0.0	0.0	59.8
Transportation	0.0	78.8	1.2	0.0	0.0	79.9
Electric Utilities	49.7	5.2	9.4	10.0	19.2	93.0
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	63.3	120.9	57.8	10.0	19.2	270.7
		South Carolina, 1973				
Residential—Commercial	2.2	20.6	14.5	0.0	0.0	37.3
Industrial	10.3	13.9	31.2	0.0	0.0	55.5
Transportation	0.0	81.0	1.3	0.0	0.0	83.4
Electric Utilities	50.3	12.0	9.5	15.4	24.1	111.4
Miscellaneous	0.0	0.8	0.0	0.0	0.0	0.8
Total	62.8	128.4	56.6	15.4	24.1	287.3
		South Carolina, 1974				
Residential—Commercial	1.7	18.4	12.9	0.0	0.0	33.1
Industrial	12.1	11.4	28.7	0.0	0.0	52.3
Transportation	0.0	76.5	0.8	0.0	0.0	77.3
Electric Utilities	56.1	13.7	8.0	15.9	42.5	136.2
Miscellaneous	0.0	0.6	0.0	0.0	0.0	0.6
Total	69.9	120.7	50.4	15.9	42.5	299.5
		South Carolina, 1975				
Residential—Commercial	1.6	17.1	12.9	0.0	0.0	31.6
Industrial	10.2	12.2	25.6	0.0	0.0	47.9
Transportation	0.0	82.0	1.0	0.0	0.0	83.0
Electric Utilities	38.3	9.7	5.3	16.1	72.5	141.9
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	50.1	121.0	44.7	16.1	72.5	304.4

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1970				
Residential—Commercial	4.1	16.7	22.5	0.0	0.0	43.4
Industrial	14.1	4.8	35.0	0.0	0.0	53.9
Transportation	0.0	72.4	6.9	0.0	0.0	79.4
Electric Utilities	89.0	0.0	4.6	21.3	0.0	114.8
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	107.1	94.4	69.0	21.3	0.0	291.8
		Tennessee, 1971				
Residential—Commercial	3.5	16.0	22.5	0.0	0.0	42.0
Industrial	11.0	4.6	36.9	0.0	0.0	52.5
Transportation	0.0	76.1	6.9	0.0	0.0	83.0
Electric Utilities	91.7	0.1	4.8	26.4	0.0	123.0
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	106.2	97.3	71.1	26.4	0.0	300.9
		Tennessee, 1972				
Residential—Commercial	2.8	16.1	24.0	0.0	0.0	42.9
Industrial	12.8	5.4	37.0	0.0	0.0	55.2
Transportation	0.0	82.6	6.4	0.0	0.0	89.0
Electric Utilities	102.7	0.4	4.1	29.2	0.0	136.5
Miscellaneous	0.0	0.2	0.0	0.0	0.0	0.2
Total	118.4	104.8	71.6	29.2	0.0	323.9
		Tennessee, 1973				
Residential—Commercial	2.3	18.1	22.9	0.0	0.0	43.4
Industrial	14.7	5.9	41.6	0.0	0.0	62.2
Transportation	0.0	88.9	7.1	0.0	0.0	96.0
Electric Utilities	105.1	0.3	3.1	25.8	0.0	134.3
Miscellaneous	0.0	0.2	0.0	0.0	0.0	0.2
Total	122.1	113.4	74.7	25.8	0.0	336.1
		Tennessee, 1974				
Residential—Commercial	1.5	15.1	21.7	0.0	0.0	38.4
Industrial	14.1	5.4	37.1	0.0	0.0	56.6
Transportation	0.0	85.1	5.9	0.0	0.0	91.0
Electric Utilities	85.5	0.5	0.0	24.7	0.0	110.7
Miscellaneous	0.0	0.3	0.0	0.0	0.0	0.3
Total	101.1	106.4	64.7	24.7	0.0	297.0

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1975				
Residential–Commercial	1.4	16.4	21.1	0.0	0.0	38.9
Industrial	11.1	15.6	27.3	0.0	0.0	54.0
Transportation	0.0	86.1	4.7	0.0	0.0	90.8
Electric Utilities	128.7	2.6	0.0	29.3	0.0	160.6
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	141.2	120.7	53.1	29.3	0.0	244.3
		Texas, 1970				
Residential–Commercial	0.0	65.8	30.0	0.0	0.0	95.8
Industrial	2.5	65.8	244.5	0.0	0.0	312.8
Transportation	0.0	102.3	8.8	0.0	0.0	111.1
Electric Utilities	0.0	0.3	97.3	0.9	0.0	98.5
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	2.5	234.5	380.7	0.9	0.0	618.6
		Texas, 1971				
Residential–Commercial	0.0	66.5	30.3	0.0	0.0	96.8
Industrial	1.9	66.5	261.1	0.0	0.0	329.5
Transportation	0.0	103.6	8.9	0.0	0.0	112.6
Electric Utilities	0.0	0.4	105.2	0.8	0.0	106.3
Miscellaneous	0.0	0.4	0.0	0.0	0.0	0.4
Total	1.9	237.4	405.4	0.8	0.0	645.6
		Texas, 1972				
Residential–Commercial	0.0	80.2	29.6	0.0	0.0	109.8
Industrial	2.0	80.2	237.3	0.0	0.0	319.5
Transportation	0.0	110.0	9.2	0.0	0.0	119.3
Electric Utilities	0.0	0.9	113.6	0.7	0.0	115.3
Miscellaneous	0.0	0.7	0.0	0.0	0.0	0.7
Total	2.0	272.0	389.8	0.7	0.0	664.5
		Texas, 1973				
Residential–Commercial	0.0	18.2	34.2	0.0	0.0	52.5
Industrial	3.6	84.7	249.8	0.0	0.0	338.0
Transportation	0.0	118.5	9.0	0.0	0.0	127.5
Electric Utilities	5.7	5.6	109.2	1.5	0.0	122.0
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	9.3	228.4	402.2	1.5	0.0	641.5

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Texas, 1974				
Residential—Commercial	0.0	18.1	30.3	0.0	0.0	48.4
Industrial	3.5	81.5	230.0	0.0	0.0	315.0
Transportation	0.0	114.8	8.0	0.0	0.0	122.8
Electric Utilities	6.3	5.4	113.3	1.4	0.0	126.4
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	9.8	221.0	381.6	1.4	0.0	613.9
		Texas, 1974				
Residential—Commercial	0.0	18.5	29.2	0.0	0.0	47.7
Industrial	5.1	129.3	180.7	0.0	0.0	315.2
Transportation	0.0	121.2	6.9	0.0	0.0	128.1
Electric Utilities	9.7	2.6	113.2	1.6	0.0	127.1
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	14.8	271.6	330.1	1.6	0.0	618.2
		Virginia, 1970				
Residential—Commercial	3.1	29.1	16.4	0.0	0.0	48.6
Industrial	21.8	7.1	11.9	0.0	0.0	40.9
Transportation	0.0	92.0	1.7	0.0	0.0	93.7
Electric Utilities	35.4	23.8	0.9	1.4	0.0	61.6
Miscellaneous	0.1	1.3	0.0	0.0	0.0	1.4
Total	60.5	153.3	31.0	1.4	0.0	246.2
		Virginia, 1971				
Residential—Commercial	2.3	28.7	16.5	0.0	0.0	47.4
Industrial	16.9	10.7	13.4	0.0	0.0	41.1
Transportation	0.0	95.1	1.6	0.0	0.0	96.7
Electric Utilities	30.6	39.7	0.9	2.4	0.0	63.6
Miscellaneous	0.0	1.3	0.0	0.0	0.0	1.3
Total	49.8	165.5	32.4	2.4	0.0	250.1
		Virginia, 1972				
Residential—Commercial	2.3	27.9	17.8	0.0	0.0	48.0
Industrial	15.0	13.0	14.0	0.0	0.0	42.0
Transportation	0.0	97.2	1.8	0.0	0.0	99.0
Electric Utilities	25.4	33.7	1.0	2.9	1.0	64.0
Miscellaneous	0.0	1.4	0.0	0.0	0.0	1.4
Total	42.8	173.1	34.5	2.9	1.0	254.3

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Virginia, 1973				
Residential—Commercial	2.5	26.8	18.8	0.0	0.0	48.1
Industrial	13.7	15.0	12.6	0.0	0.0	41.2
Transportation	0.0	99.3	1.2	0.0	0.0	100.5
Electric Utilities	24.9	35.5	0.9	2.8	15.1	79.2
Miscellaneous	0.0	0.9	0.0	0.0	0.0	0.9
Total	41.1	177.5	33.5	2.8	15.1	270.0
		Virginia, 1974				
Residential—Commercial	2.7	22.7	17.3	0.0	0.0	42.8
Industrial	12.5	14.6	11.7	0.0	0.0	38.8
Transportation	0.0	91.9	0.9	0.0	0.0	92.7
Electric Utilities	22.0	35.4	1.0	2.3	12.9	73.6
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	37.2	165.1	31.0	2.3	12.9	248.5
		Virginia, 1975				
Residential—Commercial	1.2	21.1	16.7	0.0	0.0	39.1
Industrial	13.8	19.4	7.5	0.0	0.0	40.7
Transportation	0.0	92.0	0.6	0.0	0.0	92.6
Electric Utilities	19.3	35.3	0.1	2.7	19.0	76.3
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	34.3	167.8	25.0	2.7	19.0	248.7
		West Virginia, 1970				
Residential—Commercial	3.5	8.3	44.9	0.0	0.0	56.7
Industrial	150.6	42.5	62.1	0.0	0.0	255.2
Transportation	0.0	58.4	4.6	0.0	0.0	63.0
Electric Utilities	190.8	1.5	0.5	2.4	0.0	195.2
Miscellaneous	0.0	0.5	0.0	0.0	0.0	0.5
Total	244.9	111.2	112.1	2.4	0.0	570.6
		West Virginia, 1971				
Residential—Commercial	3.6	10.2	43.8	0.0	0.0	57.6
Industrial	134.5	41.0	42.2	0.0	0.0	217.7
Transportation	0.0	56.6	5.9	0.0	0.0	62.4
Electric Utilities	226.6	1.6	0.2	2.9	0.0	231.4
Miscellaneous	0.0	0.6	0.0	0.0	0.0	0.6
Total	364.7	110.0	92.1	2.8	0.0	569.7

TABLE I-32 (continued)

PER CAPITA ENERGY CONSUMPTION IN THE SOUTH
(MILLIONS OF BTUs)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		West Virginia, 1972				
Residential–Commercial	4.1	12.1	47.7	0.0	0.0	63.8
Industrial	140.9	42.1	74.5	0.0	0.0	257.5
Transportation	0.0	61.8	8.5	0.0	0.0	70.3
Electric Utilities	297.4	2.3	0.3	3.3	0.0	303.3
Miscellaneous	0.0	0.2	0.0	0.0	0.0	0.2
Total	442.4	118.5	131.0	3.3	0.0	695.2
		West Virginia, 1973				
Residential–Commercial	3.6	9.7	46.6	0.0	0.0	59.9
Industrial	143.3	43.5	59.5	0.0	0.0	246.2
Transportation	0.0	67.5	10.0	0.0	0.0	77.5
Electric Utilities	296.0	2.1	0.2	2.6	0.0	301.0
Miscellaneous	0.9	0.4	0.0	0.0	0.0	1.3
Total	443.8	123.2	116.3	2.6	0.0	685.9
		West Virginia, 1974				
Residential–Commercial	4.9	7.7	44.8	0.0	0.0	57.4
Industrial	141.6	41.6	63.1	0.0	0.0	246.3
Transportation	0.0	67.7	9.0	0.0	0.0	76.6
Electric Utilities	309.4	4.4	0.2	2.5	0.0	316.5
Miscellaneous	0.8	0.3	0.0	0.0	0.0	1.1
Total	456.7	121.6	117.1	2.5	0.0	698.0
		West Virginia, 1975				
Residential–Commercial	2.7	11.3	43.2	0.0	0.0	57.2
Industrial	119.8	26.0	38.6	0.0	0.0	184.4
Transportation	0.0	67.6	8.0	0.0	0.0	75.6
Electric Utilities	339.0	2.3	0.2	2.7	0.0	344.2
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
Total	461.5	107.2	90.0	2.7	0.0	661.4

Source: Bureau of Mines, FEDS.

TABLE I-33

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1970				
Residential—Commercial	2.6	35.8	61.7	0.0	0.0	100
Industrial	58.5	5.1	36.5	0.0	0.0	100
Transportation	0.0	92.4	7.6	0.0	0.0	100
Electric Utilities	80.4	0.1	3.4	16.1	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	48.2	24.1	22.2	5.5	0.0	100
		Alabama, 1971				
Residential—Commercial	1.7	35.6	62.7	0.0	0.0	100
Industrial	57.9	4.8	37.3	0.0	0.0	100
Transportation	0.0	92.4	7.6	0.0	0.0	100
Electric Utilities	77.1	0.1	2.0	20.8	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	47.3	24.2	20.7	7.8	0.0	100
		Alabama, 1972				
Residential—Commercial	2.0	39.5	58.4	0.0	0.0	100
Industrial	57.3	5.2	37.5	0.0	0.0	100
Transportation	0.0	93.5	6.5	0.0	0.0	100
Electric Utilities	78.8	0.7	0.5	20.1	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	47.9	25.1	19.4	7.6	0.0	100
		Alabama, 1973				
Residential—Commercial	1.4	43.2	55.4	0.0	0.0	100
Industrial	55.5	7.4	37.1	0.0	0.0	100
Transportation	0.0	93.8	6.2	0.0	0.0	100
Electric Utilities	74.0	0.8	0.4	24.2	0.6	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	44.3	28.0	18.3	9.2	0.2	100
		Alabama, 1974				
Residential—Commercial	0.4	42.9	56.7	0.0	0.0	100
Industrial	53.4	7.2	39.4	0.0	0.0	100
Transportation	0.0	94.3	5.7	0.0	0.0	100
Electric Utilities	68.3	0.8	1.0	17.5	12.4	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	40.5	29.3	19.4	6.4	4.5	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Alabama, 1975				
Residential—Commercial	0.2	45.1	54.6	0.0	0.0	100
Industrial	49.8	17.6	32.6	0.0	0.0	100
Transportation	0.0	95.2	4.8	0.0	0.0	100
Electric Utilities	72.6	0.6	1.0	21.1	4.6	100
Miscellaneous	.	.	.	.	.	100
Total	42.3	31.3	16.7	7.9	1.7	100
		Arkansas, 1970				
Residential—Commercial	0.0	34.0	66.0	0.0	0.0	100
Industrial	0.0	6.0	94.0	0.0	0.0	100
Transportation	0.0	91.5	8.5	0.0	0.0	100
Electric Utilities	0.0	6.1	77.7	16.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	34.3	62.2	3.5	0.0	100
		Arkansas, 1971				
Residential—Commercial	0.0	40.0	60.0	0.0	0.0	100
Industrial	0.0	5.7	94.3	0.0	0.0	100
Transportation	0.0	92.9	7.1	0.0	0.0	100
Electric Utilities	0.0	13.6	31.0	15.4	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	38.9	58.0	3.1	0.0	100
		Arkansas, 1972				
Residential—Commercial	0.0	43.2	56.8	0.0	0.0	100
Industrial	0.0	9.0	91.0	0.0	0.0	100
Transportation	0.0	93.0	7.0	0.0	0.0	100
Electric Utilities	0.0	19.8	65.2	15.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	43.7	53.7	2.6	0.0	100
		Arkansas, 1973				
Residential—Commercial	0.0	42.7	57.3	0.0	0.0	100
Industrial	0.0	11.8	88.2	0.0	0.0	100
Transportation	0.0	92.5	7.5	0.0	0.0	100
Electric Utilities	0.0	36.6	33.1	30.3	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	46.7	47.1	6.1	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Arkansas, 1974				
Residential–Commercial	0.0	45.3	54.7	0.0	0.0	100
Industrial	1.4	13.8	84.7	0.0	0.0	100
Transportation	0.0	93.3	6.7	0.0	0.0	100
Electric Utilities	0.0	32.2	29.9	35.1	2.8	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.4	48.6	43.6	6.8	0.6	100
		Arkansas, 1975				
Residential–Commercial	0.0	41.9	58.1	0.0	0.0	100
Industrial	0.0	35.3	64.7	0.0	0.0	100
Transportation	0.0	94.1	5.9	0.0	0.0	100
Electric Utilities	0.0	18.4	22.3	24.4	35.0	100
Miscellaneous	.	.	.	.	.	100
Total	0.0	50.7	37.1	5.0	7.2	100
		Florida, 1970				
Residential–Commercial	0.0	74.1	26.0	0.0	0.0	100
Industrial	0.0	40.7	59.3	0.0	0.0	100
Transportation	0.0	99.2	0.8	0.0	0.0	100
Electric Utilities	0.0	57.6	41.7	0.6	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	74.9	24.9	0.2	0.0	100
		Florida, 1971				
Residential–Commercial	0.0	75.8	24.2	0.0	0.0	100
Industrial	0.0	38.6	61.4	0.0	0.0	100
Transportation	0.0	99.3	0.7	0.0	0.0	100
Electric Utilities	0.0	62.2	37.3	0.5	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	76.2	23.7	0.2	0.0	100
		Florida, 1972				
Residential–Commercial	0.0	77.6	22.4	0.0	0.0	100
Industrial	0.0	42.8	57.2	0.0	0.0	100
Transportation	0.0	99.4	0.6	0.0	0.0	100
Electric Utilities	0.0	70.8	28.6	0.4	0.1	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	80.5	19.3	0.2	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Florida, 1973				
Residential–Commercial	0.0	74.4	25.6	0.0	0.0	100
Industrial	0.0	44.8	55.2	0.0	0.0	100
Transportation	0.0	99.5	0.5	0.0	0.0	100
Electric Utilities	0.0	66.9	25.3	0.4	7.4	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	79.0	18.1	0.1	2.8	100
		Florida, 1974				
Residential–Commercial	0.0	73.4	26.6	0.0	0.0	100
Industrial	0.0	43.0	57.0	0.0	0.0	100
Transportation	0.0	99.6	0.4	0.0	0.0	100
Electric Utilities	17.7	52.2	19.4	0.3	10.4	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	7.9	71.1	16.3	0.1	4.6	100
		Florida, 1975				
Residential–Commercial	0.0	65.7	34.3	0.0	0.0	100
Industrial	0.3	49.3	50.4	0.0	0.0	100
Transportation	0.0	99.7	0.3	0.0	0.0	100
Electric Utilities	15.3	55.8	17.7	0.3	10.8	100
Miscellaneous	.	.	.	.	.	100
Total	6.7	73.1	15.4	0.1	4.7	100
		Georgia, 1970				
Residential–Commercial	1.9	35.8	62.3	0.0	0.0	100
Industrial	5.4	26.1	68.5	0.0	0.0	100
Transportation	0.0	98.1	1.8	0.0	0.0	100
Electric Utilities	75.5	2.5	15.4	6.6	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	25.9	43.4	28.6	2.2	0.0	100
		Georgia, 1971				
Residential–Commercial	0.9	38.3	60.8	0.0	0.0	100
Industrial	5.1	23.1	71.8	0.0	0.0	100
Transportation	0.0	98.3	1.7	0.0	0.0	100
Electric Utilities	75.6	3.4	13.5	7.6	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	28.2	41.9	27.1	2.7	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Georgia, 1972				
Residential—Commercial	0.7	39.9	59.3	0.0	0.0	100
Industrial	4.2	25.5	70.3	0.0	0.0	100
Transportation	0.0	98.2	1.8	0.0	0.0	100
Electric Utilities	79.4	5.7	7.7	7.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	29.5	43.6	24.3	2.6	0.0	100
		Georgia, 1973				
Residential—Commercial	0.8	38.6	60.6	0.0	0.0	100
Industrial	4.0	26.2	69.8	0.0	0.0	100
Transportation	0.0	98.7	1.3	0.0	0.0	100
Electric Utilities	76.4	7.9	7.0	8.7	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	27.0	46.2	23.8	3.0	0.0	100
		Georgia, 1974				
Residential—Commercial	0.6	37.3	62.1	0.0	0.0	100
Industrial	3.2	25.1	71.7	0.0	0.0	100
Transportation	0.0	98.9	1.1	0.0	0.0	100
Electric Utilities	65.3	13.2	11.8	9.6	0.1	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	20.0	50.3	26.8	2.8	0.0	100
		Georgia, 1975				
Residential—Commercial	0.5	34.5	65.0	0.0	0.0	100
Industrial	4.5	29.8	65.7	0.0	0.0	100
Transportation	0.0	99.1	0.9	0.0	0.0	100
Electric Utilities	69.5	6.4	8.4	9.1	6.6	100
Miscellaneous	.	.	.	.	.	100
Total	25.1	45.7	23.8	3.2	2.3	100
		Kentucky, 1970				
Residential—Commercial	7.4	32.3	60.2	0.0	0.0	100
Industrial	50.3	6.4	43.3	0.0	0.0	100
Transportation	0.0	85.9	14.1	0.0	0.0	100
Electric Utilities	90.9	0.2	1.9	7.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	47.3	27.1	22.7	2.9	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Kentucky, 1971				
Residential–Commercial	4.5	32.5	63.0	0.0	0.0	100
Industrial	45.2	6.7	48.1	0.0	0.0	100
Transportation	0.0	86.4	13.6	0.0	0.0	100
Electric Utilities	90.7	0.3	1.8	7.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	48.3	26.2	22.4	3.1	0.0	100
		Kentucky, 1972				
Residential–Commercial	4.2	30.8	64.9	0.0	0.0	100
Industrial	43.7	8.7	47.6	0.0	0.0	100
Transportation	0.0	86.8	13.2	0.0	0.0	100
Electric Utilities	90.6	0.4	1.8	7.1	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	48.6	26.4	21.8	3.2	0.0	100
		Kentucky, 1973				
Residential–Commercial	3.9	32.3	63.8	0.0	0.0	100
Industrial	41.0	11.6	47.5	0.0	0.0	100
Transportation	0.0	88.1	11.9	0.0	0.0	100
Electric Utilities	91.0	0.2	1.6	7.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	46.1	29.2	21.6	3.1	0.0	100
		Kentucky, 1974				
Residential–Commercial	3.7	30.6	65.7	0.0	0.0	100
Industrial	44.5	13.6	41.9	0.0	0.0	100
Transportation	0.0	89.6	10.4	0.0	0.0	100
Electric Utilities	92.2	0.3	1.1	6.4	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	47.6	29.3	20.4	2.7	0.0	100
		Kentucky, 1975				
Residential–Commercial	2.6	33.1	64.4	0.0	0.0	100
Industrial	26.6	47.0	26.5	0.0	0.0	100
Transportation	0.0	91.5	8.5	0.0	0.0	100
Electric Utilities	93.7	0.1	0.0	6.1	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	47.4	33.7	16.2	2.7	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1970				
Residential–Commercial	0.0	22.6	77.4	0.0	0.0	100
Industrial	0.0	3.3	96.8	0.0	0.0	100
Transportation	0.0	80.8	19.2	0.0	0.0	100
Electric Utilities	0.0	0.6	99.4	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	17.1	82.9	0.0	0.0	100
		Louisiana, 1971				
Residential–Commercial	0.0	22.7	77.3	0.0	0.0	100
Industrial	0.0	3.3	96.7	0.0	0.0	100
Transportation	0.0	79.4	20.6	0.0	0.0	100
Electric Utilities	0.0	1.6	98.4	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	16.6	83.4	0.0	0.0	100
		Louisiana, 1972				
Residential–Commercial	0.0	22.2	77.8	0.0	0.0	100
Industrial	0.0	4.4	95.6	0.0	0.0	100
Transportation	0.0	80.5	19.5	0.0	0.0	100
Electric Utilities	0.0	1.8	98.2	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	18.2	81.8	0.0	0.0	100
		Louisiana, 1973				
Residential–Commercial	0.0	19.8	80.2	0.0	0.0	100
Industrial	0.0	5.3	94.7	0.0	0.0	100
Transportation	0.0	82.4	17.6	0.0	0.0	100
Electric Utilities	0.0	11.4	88.6	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	21.1	78.9	0.0	0.0	100
		Louisiana, 1974				
Residential–Commercial	0.0	22.0	78.0	0.0	0.0	100
Industrial	0.0	5.5	94.5	0.0	0.0	100
Transportation	0.0	84.3	15.7	0.0	0.0	100
Electric Utilities	0.0	13.5	86.5	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	22.8	77.2	0.0	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Louisiana, 1975				
Residential—Commercial	0.0	25.2	74.8	0.0	0.0	100
Industrial	0.0	37.7	62.3	0.0	0.0	100
Transportation	0.0	87.7	12.3	0.0	0.0	100
Electric Utilities	0.0	9.6	90.4	0.0	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	0.0	41.4	58.6	0.0	0.0	100
		Mississippi, 1970				
Residential—Commercial	0.0	42.8	57.2	0.0	0.0	100
Industrial	0.0	15.8	84.2	0.0	0.0	100
Transportation	0.0	71.5	28.5	0.0	0.0	100
Electric Utilities	0.0	3.6	96.4	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	37.8	62.2	0.0	0.0	100
		Mississippi, 1971				
Residential—Commercial	0.0	43.0	57.0	0.0	0.0	100
Industrial	0.0	13.9	86.1	0.0	0.0	100
Transportation	0.0	73.1	26.9	0.0	0.0	100
Electric Utilities	0.0	5.3	94.7	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	38.3	61.7	0.0	0.0	100
		Mississippi, 1972				
Residential—Commercial	0.0	47.8	52.2	0.0	0.0	100
Industrial	0.0	14.6	85.4	0.0	0.0	100
Transportation	0.0	75.4	24.6	0.0	0.0	100
Electric Utilities	0.0	15.6	84.4	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	42.0	58.0	0.0	0.0	100
		Mississippi, 1973				
Residential—Commercial	0.0	52.7	47.3	0.0	0.0	100
Industrial	0.0	21.8	78.2	0.0	0.0	100
Transportation	0.0	76.8	23.2	0.0	0.0	100
Electric Utilities	0.0	37.7	62.3	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	51.6	48.4	0.0	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Mississippi, 1974				
Residential–Commercial	0.0	52.5	47.5	0.0	0.0	100
Industrial	0.7	15.9	83.4	0.0	0.0	100
Transportation	0.0	78.8	21.2	0.0	0.0	100
Electric Utilities	25.1	43.7	31.2	0.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	5.5	51.2	43.3	0.0	0.0	100
		Mississippi, 1975				
Residential–Commercial	0.0	53.4	46.6	0.0	0.0	100
Industrial	0.3	46.3	53.4	0.0	0.0	100
Transportation	0.0	83.1	16.9	0.0	0.0	100
Electric Utilities	28.6	46.2	25.2	0.0	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	5.5	60.1	34.5	0.0	0.0	100
		North Carolina, 1970				
Residential–Commercial	18.4	65.9	15.7	0.0	0.0	100
Industrial	28.0	24.1	48.0	0.0	0.0	100
Transportation	0.0	98.2	1.8	0.0	0.0	100
Electric Utilities	85.3	2.2	4.1	8.5	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	41.1	43.8	11.7	3.3	0.0	100
		North Carolina, 1971				
Residential–Commercial	15.6	65.8	18.7	0.0	0.0	100
Industrial	21.7	31.7	46.6	0.0	0.0	100
Transportation	0.0	98.3	1.7	0.0	0.0	100
Electric Utilities	82.1	2.7	4.2	11.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	37.2	46.1	12.5	4.1	0.0	100
		North Carolina, 1972				
Residential–Commercial	13.4	66.3	20.3	0.0	0.0	100
Industrial	15.7	40.2	44.1	0.0	0.0	100
Transportation	0.0	98.4	1.6	0.0	0.0	100
Electric Utilities	80.4	5.5	3.0	11.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	36.8	47.0	11.8	4.5	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		North Carolina, 1973				
Residential–Commercial	4.1	72.8	23.1	0.0	0.0	100
Industrial	17.3	34.7	48.1	0.0	0.0	100
Transportation	0.0	98.6	1.4	0.0	0.0	100
Electric Utilities	79.7	7.4	1.5	11.4	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	34.0	49.9	11.6	4.4	0.0	100
		North Carolina, 1974				
Residential–Commercial	3.7	71.0	25.3	0.0	0.0	100
Industrial	18.7	34.0	47.3	0.0	0.0	100
Transportation	0.0	98.9	1.1	0.0	0.0	100
Electric Utilities	81.8	6.2	0.2	11.8	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	36.6	47.9	10.6	4.8	0.0	100
		North Carolina, 1975				
Residential–Commercial	3.8	68.8	27.4	0.0	0.0	100
Industrial	18.6	48.0	33.4	0.0	0.0	100
Transportation	0.0	99.1	0.9	0.0	0.0	100
Electric Utilities	83.8	0.4	0.0	13.2	2.7	100
Miscellaneous	.	.	.	.	.	100
Total	37.6	47.2	8.7	5.4	1.1	100
		Oklahoma, 1970				
Residential–Commercial	0.0	35.8	64.2	0.0	0.0	100
Industrial	0.0	6.8	93.2	0.0	0.0	100
Transportation	0.0	90.8	9.2	0.0	0.0	100
Electric Utilities	0.0	0.1	94.1	5.8	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	32.9	65.6	1.5	0.0	100
		Oklahoma, 1971				
Residential–Commercial	0.0	37.5	62.5	0.0	0.0	100
Industrial	0.0	6.6	93.4	0.0	0.0	100
Transportation	0.0	89.6	10.4	0.0	0.0	100
Electric Utilities	0.0	0.2	95.1	4.7	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	31.3	67.3	1.4	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Oklahoma, 1972				
Residential–Commercial	0.0	37.4	62.6	0.0	0.0	100
Industrial	0.0	9.0	91.0	0.0	0.0	100
Transportation	0.0	90.6	9.4	0.0	0.0	100
Electric Utilities	0.0	0.2	94.6	5.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	33.2	65.4	1.5	0.0	100
		Oklahoma, 1973				
Residential–Commercial	0.0	38.7	61.3	0.0	0.0	100
Industrial	0.0	11.1	88.9	0.0	0.0	100
Transportation	0.0	90.5	9.5	0.0	0.0	100
Electric Utilities	0.0	0.7	86.3	13.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.0	34.6	61.6	3.8	0.0	100
		Oklahoma, 1974				
Residential–Commercial	0.1	38.6	61.4	0.0	0.0	100
Industrial	1.6	9.1	89.3	0.0	0.0	100
Transportation	0.0	90.9	9.1	0.0	0.0	100
Electric Utilities	0.0	0.6	88.6	10.8	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.4	32.2	63.9	3.5	0.0	100
		Oklahoma, 1975				
Residential–Commercial	0.0	38.8	61.2	0.0	0.0	100
Industrial	0.1	34.7	65.2	0.0	0.0	100
Transportation	0.0	91.3	8.7	0.0	0.0	100
Electric Utilities	0.0	1.1	89.9	8.9	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	0.1	39.1	58.2	2.6	0.0	100
		South Carolina, 1970				
Residential–Commercial	7.1	61.5	31.3	0.0	0.0	100
Industrial	29.4	11.7	58.9	0.0	0.0	100
Transportation	0.0	98.2	1.8	0.0	0.0	100
Electric Utilities	52.7	9.2	24.6	13.5	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	24.0	45.0	26.9	4.1	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		South Carolina, 1971				
Residential—Commercial	5.4	61.1	33.5	0.0	0.0	100
Industrial	23.9	19.2	56.9	0.0	0.0	100
Transportation	0.0	98.3	1.7	0.0	0.0	100
Electric Utilities	50.8	4.7	18.7	14.2	11.7	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	22.7	44.4	24.4	4.6	3.8	100
		South Carolina, 1972				
Residential—Commercial	5.4	59.9	34.7	0.0	0.0	100
Industrial	19.3	23.3	57.4	0.0	0.0	100
Transportation	0.0	98.6	1.4	0.0	0.0	100
Electric Utilities	53.4	5.6	10.1	10.3	20.6	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	23.4	44.7	21.3	3.5	7.1	100
		South Carolina, 1973				
Residential—Commercial	5.8	55.2	39.0	0.0	0.0	100
Industrial	18.7	25.1	56.3	0.0	0.0	100
Transportation	0.0	98.4	1.6	0.0	0.0	100
Electric Utilities	45.2	10.8	8.5	13.8	21.7	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	21.9	44.7	19.7	5.4	8.4	100
		South Carolina, 1974				
Residential—Commercial	5.1	55.8	39.1	0.0	0.0	100
Industrial	23.1	21.9	55.0	0.0	0.0	100
Transportation	0.0	99.0	1.0	0.0	0.0	100
Electric Utilities	41.2	10.1	5.8	11.7	31.2	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	23.3	40.3	16.8	5.3	14.2	100
		South Carolina, 1975				
Residential—Commercial	5.2	54.1	40.8	0.0	0.0	100
Industrial	21.3	25.4	53.3	0.0	0.0	100
Transportation	0.0	98.8	1.2	0.0	0.0	100
Electric Utilities	27.0	6.9	3.7	11.4	51.1	100
Miscellaneous	.	.	.	.	.	100
Total	16.5	39.7	14.7	5.3	23.8	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1970				
Residential–Commercial	9.5	38.6	51.9	0.0	0.0	100
Industrial	26.1	9.0	64.9	0.0	0.0	100
Transportation	0.0	91.3	8.7	0.0	0.0	100
Electric Utilities	77.5	0.0	4.0	18.5	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	36.7	32.3	23.7	7.3	0.0	100
		Tennessee, 1971				
Residential–Commercial	8.3	38.0	53.6	0.0	0.0	100
Industrial	20.9	8.8	70.2	0.0	0.0	100
Transportation	0.0	91.7	8.3	0.0	0.0	100
Electric Utilities	74.6	0.1	3.9	21.5	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	35.3	32.3	23.6	8.8	0.0	100
		Tennessee, 1972				
Residential–Commercial	6.6	37.5	55.9	0.0	0.0	100
Industrial	23.2	9.8	67.0	0.0	0.0	100
Transportation	0.0	92.8	7.2	0.0	0.0	100
Electric Utilities	75.3	0.3	3.0	21.4	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	36.5	32.3	22.1	9.0	0.0	100
		Tennessee, 1973				
Residential–Commercial	5.3	41.8	52.9	0.0	0.0	100
Industrial	23.6	9.5	66.9	0.0	0.0	100
Transportation	0.0	92.6	7.4	0.0	0.0	100
Electric Utilities	78.2	0.2	2.3	19.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	36.3	33.8	22.2	7.7	0.0	100
		Tennessee, 1974				
Residential–Commercial	4.0	39.4	56.6	0.0	0.0	100
Industrial	24.9	9.5	65.6	0.0	0.0	100
Transportation	0.0	93.5	6.5	0.0	0.0	100
Electric Utilities	77.2	0.5	0.0	22.3	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	34.0	35.8	21.8	8.3	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Tennessee, 1975				
Residential—Commercial	3.5	42.1	54.4	0.0	0.0	100
Industrial	20.5	28.9	50.5	0.0	0.0	100
Transportation	0.0	94.8	5.2	0.0	0.0	100
Electric Utilities	80.1	1.6	0.0	18.2	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	41.0	35.1	15.4	8.5	0.0	100
		Texas, 1970				
Residential—Commercial	0.0	68.7	31.3	0.0	0.0	100
Industrial	0.8	21.0	78.2	0.0	0.0	100
Transportation	0.0	92.1	7.9	0.0	0.0	100
Electric Utilities	0.0	0.3	98.8	1.0	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.4	37.9	61.5	0.2	0.0	100
		Texas, 1971				
Residential—Commercial	0.0	68.7	31.3	0.0	0.0	100
Industrial	0.6	20.2	79.2	0.0	0.0	100
Transportation	0.0	92.1	8.0	0.0	0.0	100
Electric Utilities	0.0	0.3	98.9	0.8	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.3	36.8	62.8	0.1	0.0	100
		Texas, 1972				
Residential—Commercial	0.0	73.0	27.0	0.0	0.0	100
Industrial	0.6	25.1	74.3	0.0	0.0	100
Transportation	0.0	92.3	7.7	0.0	0.0	100
Electric Utilities	0.0	0.8	98.6	0.6	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	0.3	40.9	58.7	0.1	0.0	100
		Texas, 1973				
Residential—Commercial	0.0	34.8	65.2	0.0	0.0	100
Industrial	1.1	25.1	73.9	0.0	0.0	100
Transportation	0.0	92.9	7.1	0.0	0.0	100
Electric Utilities	4.7	4.6	89.5	1.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	1.5	35.6	62.7	0.2	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Texas, 1974				
Residential—Commercial	0.0	37.3	62.7	0.0	0.0	100
Industrial	1.1	25.9	73.0	0.0	0.0	100
Transportation	0.0	93.5	6.5	0.0	0.0	100
Electric Utilities	5.0	4.3	89.6	1.1	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	1.6	36.0	62.2	0.2	0.0	100
		Texas, 1975				
Residential—Commercial	0.0	38.8	61.2	0.0	0.0	100
Industrial	1.6	41.0	57.3	0.0	0.0	100
Transportation	0.0	94.6	5.4	0.0	0.0	100
Electric Utilities	7.6	2.0	89.1	1.3	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	2.3	43.9	53.4	0.3	0.0	100
		Virginia, 1970				
Residential—Commercial	6.4	59.8	33.8	0.0	0.0	100
Industrial	53.4	17.5	29.1	0.0	0.0	100
Transportation	0.0	98.2	1.8	0.0	0.0	100
Electric Utilities	57.5	38.7	1.5	2.3	0.0	100
Miscellaneous	7.6	92.4	0.0	0.0	0.0	100
Total	24.6	62.3	12.6	0.6	0.0	100
		Virginia, 1971				
Residential—Commercial	4.8	60.4	34.8	0.0	0.0	100
Industrial	41.2	26.1	32.7	0.0	0.0	100
Transportation	0.0	98.4	1.6	0.0	0.0	100
Electric Utilities	48.1	46.6	1.5	3.7	0.0	100
Miscellaneous	3.2	96.8	0.0	0.0	0.0	100
Total	19.9	66.2	13.0	0.9	0.0	100
		Virginia, 1972				
Residential—Commercial	4.8	58.1	37.1	0.0	0.0	100
Industrial	35.8	31.0	33.3	0.0	0.0	100
Transportation	0.0	98.2	1.8	0.0	0.0	100
Electric Utilities	39.8	52.6	1.5	4.5	1.6	100
Miscellaneous	2.9	97.1	0.0	0.0	0.0	100
Total	16.8	68.1	13.6	1.1	0.4	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		Virginia, 1973				
Residential–Commercial	5.1	55.8	39.1	0.0	0.0	100
Industrial	33.2	36.3	30.5	0.0	0.0	100
Transportation	0.0	98.8	1.2	0.0	0.0	100
Electric Utilities	31.5	44.8	1.1	3.6	19.0	100
Miscellaneous	4.3	95.7	0.0	0.0	0.0	100
Total	15.2	65.7	12.4	1.0	5.6	100
		Virginia, 1974				
Residential–Commercial	6.3	53.1	40.6	0.0	0.0	100
Industrial	32.2	37.6	30.2	0.0	0.0	100
Transportation	0.0	99.1	0.9	0.0	0.0	100
Electric Utilities	29.8	48.1	1.4	3.1	17.6	100
Miscellaneous	7.4	92.6	0.0	0.0	0.0	100
Total	15.0	66.4	12.5	0.9	5.2	100
		Virginia, 1975				
Residential–Commercial	3.2	54.0	42.8	0.0	0.0	100
Industrial	33.8	47.6	18.5	0.0	0.0	100
Transportation	0.0	99.3	0.7	0.0	0.0	100
Electric Utilities	25.2	46.3	0.1	3.5	24.8	100
Miscellaneous	.	.	.	.	.	100
Total	13.8	67.5	10.1	1.1	7.6	100
		West Virginia, 1970				
Residential–Commercial	6.1	14.6	79.3	0.0	0.0	100
Industrial	59.0	16.7	24.3	0.0	0.0	100
Transportation	0.0	92.7	7.3	0.0	0.0	100
Electric Utilities	97.7	0.8	0.2	1.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	60.4	19.5	19.6	0.4	0.0	100
		West Virginia, 1971				
Residential–Commercial	6.3	17.7	76.1	0.0	0.0	100
Industrial	61.7	18.8	19.4	0.0	0.0	100
Transportation	0.0	90.6	9.4	0.0	0.0	100
Electric Utilities	98.0	0.7	0.1	1.2	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	64.0	19.3	16.2	0.5	0.0	100

TABLE I-33 (continued)

FUEL MIX IN THE SOUTH
(PERCENTAGE)

Sector	Coal	Oil	Gas	Hydro	Nuclear	Total
		West Virginia, 1972				
Residential—Commercial	6.4	18.9	74.7	0.0	0.0	100
Industrial	54.7	16.4	28.9	0.0	0.0	100
Transportation	0.0	87.9	12.1	0.0	0.0	100
Electric Utilities	98.1	0.8	0.1	1.1	0.0	100
Miscellaneous	0.0	100.0	0.0	0.0	0.0	100
Total	63.6	17.0	18.8	0.5	0.0	100
		West Virginia, 1973				
Residential—Commercial	6.1	16.2	77.8	0.0	0.0	100
Industrial	58.2	17.7	24.2	0.0	0.0	100
Transportation	0.0	87.1	12.9	0.0	0.0	100
Electric Utilities	98.3	0.7	0.1	0.9	0.0	100
Miscellaneous	69.6	30.4	0.0	0.0	0.0	100
Total	64.7	18.0	17.0	0.4	0.0	100
		West Virginia, 1974				
Residential—Commercial	8.6	13.4	78.0	0.0	0.0	100
Industrial	57.5	16.9	25.6	0.0	0.0	100
Transportation	0.0	88.3	11.7	0.0	0.0	100
Electric Utilities	97.8	1.4	0.1	0.8	0.0	100
Miscellaneous	73.7	26.3	0.0	0.0	0.0	100
Total	65.4	17.4	16.8	0.4	0.0	100
		West Virginia, 1975				
Residential—Commercial	4.7	19.8	75.6	0.0	0.0	100
Industrial	65.0	14.1	20.9	0.0	0.0	100
Transportation	0.0	89.4	10.6	0.0	0.0	100
Electric Utilities	98.5	0.7	0.1	0.8	0.0	100
Miscellaneous	.	.	.	.	.	100
Total	69.8	16.2	13.6	0.4	0.0	100

Source: Bureau of Mines, FEDS.

TABLE I-34

ENERGY PRICES IN THE U.S. AND THE SOUTH IN 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
			United States			
Coal	.	.	1.10	.	0.86	0.98
Diesel	2.81	.	.	.	.	2.82
Distillate	2.81	2.60	2.59	.	2.03	2.51
Electricity	9.40	9.25	5.63	.	.	7.91
Gasoline	4.58	.	.	4.43	.	4.50
Kerosene	3.09	2.73	2.72	.	.	2.85
LPG	3.18	.	2.33	.	.	2.76
Natural gas	1.67	1.32	0.94	0.39	0.75	1.17
Residual	.	2.26	2.25	.	1.98	2.16
			South			
Coal	.	.	1.18	.	1.00	1.09
Diesel	2.88	.	.	.	.	2.88
Distillate	2.75	2.55	2.53	.	1.98	2.45
Electricity	8.25	7.98	5.02	.	.	7.03
Gasoline	4.49	.	.	4.39	.	4.44
Kerosene	3.19	2.77	2.76	.	.	2.91
LPG	3.47	.	2.27	.	.	2.87
Natural gas	1.47	1.11	0.84	0.36	0.72	0.91
Residual	.	1.88	1.86	.	1.70	1.81
			Alabama			
Coal	.	.	0.76	.	0.97	0.86
Diesel	2.92	.	.	.	.	2.92
Distillate	2.77	2.54	2.53	.	.	.
Electricity	7.37	8.31	5.01	.	.	6.45
Gasoline	4.25	.	.	4.37	.	4.31
Kerosene	3.31	2.81	2.79	.	.	2.97
LPG	3.61	.	2.22	.	.	2.92
Natural gas	1.54	1.05	0.73	0.31	1.06	0.95
Residual	.	1.77	1.75	.	.	.
			Arkansas			
Coal	.	.	1.33	.	.	.
Diesel	2.52	.	.	.	.	2.52
Distillate	2.69	2.46	2.45	.	2.13	2.43
Electricity	8.56	7.95	4.81	.	.	7.03
Gasoline	4.59	.	.	4.30	.	4.44
Kerosene	2.81	2.68	2.66	.	.	2.72
LPG	3.25	.	2.21	.	.	2.73
Natural gas	1.10	0.87	0.66	0.42	0.66	0.77
Residual	.	1.87	1.83	.	1.08	1.86
			Florida			
Coal	.	.	0.72	.	1.01	0.87
Diesel	2.89	.	.	.	.	2.89
Distillate	2.75	2.57	2.56	.	2.62	2.63
Electricity	10.00	10.58	7.03	.	.	9.67
Gasoline	4.40	.	.	4.40	.	4.40
Kerosene	3.28	2.79	2.78	.	.	2.95
LPG	3.77	.	2.37	.	.	3.07
Natural gas	2.68	1.67	1.01	0.35	0.55	0.94
Residual	.	1.91	1.90	.	1.84	1.88
			Georgia			
Coal	.	.	0.84	.	1.03	0.93
Diesel	3.02	.	.	.	.	3.02
Distillate	2.72	2.54	2.52	.	.	.
Electricity	8.25	9.97	6.81	.	.	8.21
Gasoline	4.66	.	.	4.51	.	4.58

TABLE I-34 (continued)

ENERGY PRICES IN THE U.S. AND THE SOUTH IN 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
Kerosene	3.44	2.75	2.74	.	.	2.98
LPG	3.46	.	2.34	.	.	2.90
Natural gas	1.47	1.08	0.82	0.31	0.65	1.02
Residual	.	1.89	1.88	.	1.72	1.83
			Kentucky			
Coal	.	.	0.74	.	0.69	0.71
Diesel	2.76	.	.	.	.	2.78
Distillate	2.80	2.57	2.55	.	.	.
Electricity	7.16	4.86	4.24	.	.	4.98
Gasoline	4.66	.	.	4.57	.	4.61
Kerosene	3.13	2.83	2.82	.	.	2.93
LPG	3.77	.	2.24	.	.	3.00
Natural gas	1.20	1.04	0.73	0.36	0.89	1.00
Residual	.	1.78	1.76	.	.	.
			Louisiana			
Coal	.	.	2.32	.	.	.
Diesel	2.54	.	.	.	.	2.54
Distillate	2.69	2.46	2.45	.	1.82	2.35
Electricity	7.29	6.46	3.71	.	.	5.57
Gasoline	4.49	.	.	4.37	.	4.43
Kerosene	3.41	3.68	2.66	.	.	2.92
LPG	3.46	.	2.38	.	.	2.92
Natural gas	1.34	0.78	0.74	0.38	0.53	0.73
Residual	.	2.19	2.15	.	1.76	2.03
			Mississippi			
Coal	.	.	2.70	.	0.84	1.77
Diesel	2.73	.	.	.	.	2.74
Distillate	2.80	2.57	2.55	.	1.43	2.34
Electricity	7.38	7.95	5.93	.	.	7.03
Gasoline	4.34	.	.	4.73	.	4.53
Kerosene	3.79	2.83	2.82	.	.	3.15
LPG	3.46	.	2.24	.	.	2.85
Natural gas	1.38	0.92	0.71	0.35	0.71	0.84
Residual	.	1.78	1.76	.	1.70	1.75
			North Carolina			
Coal	.	.	0.90	.	1.18	1.04
Diesel	3.12	.	.	.	.	3.12
Distillate	2.83	2.64	2.63	.	.	.
Electricity	8.52	7.82	5.91	.	.	7.33
Gasoline	4.54	.	.	4.31	.	4.42
Kerosene	2.96	2.83	2.82	.	.	2.87
LPG	3.51	.	2.35	.	.	2.93
Natural gas	1.98	1.70	1.33	0.30	0.90	1.57
Residual	.	1.91	1.90	.	1.75	1.85
			Oklahoma			
Coal	.	.	1.16	.	1.78	1.47
Diesel	2.60	.	.	.	.	2.60
Distillate	2.66	2.44	2.42	.	1.86	2.35
Electricity	7.52	6.23	3.98	.	.	6.15
Gasoline	4.52	.	.	4.25	.	4.38
Kerosene	2.88	2.66	2.64	.	.	2.73
LPG	2.77	.	2.02	.	.	2.40
Natural gas	1.19	0.92	0.71	0.26	0.51	0.69
Residual	.	1.85	1.81	.	.	.

TABLE I-34 (continued)

ENERGY PRICES IN THE U.S. AND THE SOUTH IN 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
			South Carolina			
Coal	.	.	0.73	.	1.24	0.98
Diesel	3.01	.	.	.	.	3.01
Distillate	2.81	2.63	2.62	.	.	.
Electricity	8.79	7.91	5.39	.	.	7.03
Gasoline	4.35	.	.	4.43	.	4.39
Kerosene	3.06	2.82	2.81	.	.	2.90
LPG	3.87	.	2.35	.	.	3.11
Natural gas	2.09	1.22	1.01	0.48	0.75	1.18
Residual	.	1.91	1.90	.	1.14	1.65
			Tennessee			
Coal	.	.	1.23	.	0.88	1.06
Diesel	3.01	.	.	.	.	3.01
Distillate	2.76	2.53	2.51	.	.	2.60
Electricity	6.06	7.65	4.52	.	.	5.28
Gasoline	4.58	.	.	4.31	.	4.44
Kerosene	3.38	2.79	2.78	.	.	2.98
LPG	3.40	.	2.21	.	.	2.81
Natural gas	1.26	1.11	0.73	0.35	.	0.93
Residual	.	1.76	1.74	.	.	1.75
			Texas			
Coal	.	.	1.70	.	0.24	0.97
Diesel	2.49	.	.	.	.	2.49
Distillate	2.72	2.49	2.47	.	1.98	2.41
Electricity	8.00	7.02	4.36	.	.	6.15
Gasoline	4.32	.	.	4.14	.	4.23
Kerosene	3.04	2.71	2.69	.	.	2.81
LPG	2.98	.	2.23	.	.	2.61
Natural gas	1.49	1.03	0.93	0.36	0.85	0.94
Residual	.	1.88	1.85	.	1.62	1.78
			Virginia			
Coal	.	.	0.76	.	1.21	0.99
Diesel	2.73	.	.	.	.	2.73
Distillate	2.79	2.60	2.59	.	.	.
Electricity	10.12	8.77	6.84	.	.	8.79
Gasoline	4.58	.	.	4.32	.	4.45
Kerosene	2.99	2.83	2.81	.	.	2.88
LPG	3.77	.	2.33	.	.	3.05
Natural gas	2.19	1.68	1.08	0.37	0.70	1.70
Residual	.	1.89	1.88	.	1.84	1.87
			West Virginia			
Coal	.	.	0.59	.	0.95	0.77
Diesel	3.97	.	.	.	.	3.97
Distillate	2.77	2.59	2.57	.	.	.
Electricity	9.58	9.25	6.09	.	.	7.62
Gasoline	4.61	.	.	4.55	.	4.58
Kerosene	3.21	2.79	2.78	.	.	2.93
LPG	3.46	.	2.33	.	.	2.89
Natural gas	1.42	1.19	0.99	0.58	0.62	1.19
Residual	.	1.89	1.88	.	.	.

TABLE I-35

RELATIVE ENERGY PRICES IN THE SOUTH, 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
			Alabama			
Coal	0	0	0.69	0	1.12	0.88
Diesel	1.04	0	0	0	0	1.04
Distillate	0.99	0.98	0.98	0	0	0
Electricity	0.78	0.90	0.89	0	0	0.81
Gasoline	0.93	0	0	0.99	0	0.96
Kerosene	1.07	1.03	1.03	0	0	1.04
LPG	1.14	0	0.95	0	0	1.06
Natural gas	0.92	0.79	0.78	0.80	1.40	0.81
Residual		0.78	0.78	0	0	0
			Arkansas			
Coal	0	0	1.21	0	0	0
Diesel	0.90	0	0	0	0	0.90
Distillate	0.96	0.95	0.95	0	1.05	0.97
Electricity	0.91	0.86	0.85	0	0	0.89
Gasoline	1.00	0	0	0.97	0	0.97
Kerosene	0.91	0.98	0.98	0	0	0.95
LPG	1.02	0	0.95	0	0	0.99
Natural gas	0.65	0.66	0.70	1.07	0.87	0.66
Residual	0	0.83	0.81	0	0.95	0.86
			Florida			
Coal	0	0	0.65	0	1.17	0.88
Diesel	1.03	0	0	0	0	1.03
Distillate	0.98	0.99	0.99	0	1.30	1.05
Electricity	1.06	1.14	1.25	0	0	1.22
Gasoline	0.96	0	0	0.99	0	0.98
Kerosene	1.06	1.02	1.02	0	0	1.04
LPG	1.18	0	1.02	0	0	1.11
Natural gas	1.60	1.26	1.07	0.90	0.73	0.81
Residual	0	0.85	0.84	0	0.93	0.87
			Georgia			
Coal	0	0	0.76	0	1.19	0.95
Diesel	1.07	0	0	0	0	1.07
Distillate	0.97	0.98	0.97	0	0	0
Electricity	0.88	1.08	1.21	0	0	1.04
Gasoline	1.02	0	0	1.02	0	1.02
Kerosene	1.11	1.01	1.01	0	0	1.05
LPG	1.09	0	1.00	0	0	1.05
Natural gas	0.88	0.81	0.88	0.80	0.86	0.87
Residual	0	0.84	0.84	0	0.87	0.85
			Kentucky			
Coal	0	0	0.67	0	0.80	0.73
Diesel	0.98	0	0	0	0	0.98
Distillate	1.00	0.99	0.98	0	0	0
Electricity	0.76	0.53	0.75	0	0	0.63
Gasoline	1.02	0	0	1.03	0	1.02
Kerosene	1.01	1.04	1.04	0	0	1.03
LPG	1.18	0	0.96	0	0	1.09
Natural gas	0.72	0.79	0.78	0.92	1.18	0.86
Residual	0	0.79	0.78	0	0	0
			Louisiana			
Coal	0	0	2.11	0	0	0
Diesel	0.90	0	0	0	0	0.90
Distillate	0.96	0.95	0.95	0	0.90	0.94
Electricity	0.77	0.70	0.66	0	0	0.70

TABLE I-35 (continued)

RELATIVE ENERGY PRICES IN THE SOUTH, 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
Gasoline	0.98	0	0	0.99	0	0.98
Kerosene	1.11	0.98	0.98	0	0	1.03
LPG	1.09	0	1.02	0	0	1.06
Natural gas	0.80	0.59	0.79	0.97	0.70	0.63
Residual	0	0.97	0.96	0	0.89	0.94
			Mississippi			
Coal	0	0	2.45	0	0.97	1.80
Diesel	0.97	0	0	0	0	0.97
Distillate	1.00	0.99	0.98	0	0.70	0.93
Electricity	0.78	0.86	1.05	0	0	0.89
Gasoline	0.95	0	0	1.07	0	1.01
Kerosene	1.23	1.04	1.04	0	0	1.11
LPG	1.09	0	0.96	0	0	1.03
Natural gas	0.82	0.70	0.70	0.90	0.94	0.72
Residual	0	0.79	0.78	0	0.86	0.81
			North Carolina			
Coal	0	0	0.82	0	1.37	1.06
Diesel	1.11	0	0	0	0	1.11
Distillate	1.01	1.02	1.02	0	0	0
Electricity	0.91	0.85	1.05	0	0	0.93
Gasoline	0.99	0	0	0.97	0	0.98
Kerosene	0.96	1.04	1.04	0	0	1.01
LPG	1.10	0	1.01	0	0	1.06
Natural gas	1.18	1.29	1.42	0.78	1.19	1.34
Residual	0	0.85	0.84	0	0.88	0.86
			Oklahoma			
Coal	0	0	1.05	0	2.06	1.50
Diesel	0.92	0	0	0	0	0.92
Distillate	0.95	0.94	0.93	0	0.92	0.94
Electricity	0.80	0.67	0.70	0	0	0.78
Gasoline	0.99	0	0	0.96	0	0.97
Kerosene	0.93	0.97	0.97	0	0	0.96
LPG	0.87	0	0.87	0	0	0.87
Natural gas	0.71	0.70	0.75	0.67	0.68	0.59
Residual	0	0.82	0.80	0	0	0
			South Carolina			
Coal	0	0	0.66	0	1.43	1.00
Diesel	1.07	0	0	0	0	1.07
Distillate	1.00	1.01	1.01	0	0	0
Electricity	0.93	0.86	0.96	0	0	0.89
Gasoline	0.95	0	0	1.00	0	0.98
Kerosene	0.99	1.03	1.03	0	0	1.02
LPG	1.22	0	1.01	0	0	1.13
Natural gas	1.25	0.93	1.07	1.22	1.00	1.01
Residual	0	0.85	0.84	0	0.57	0.76
			Tennessee			
Coal	0	0	1.12	0	1.02	1.07
Diesel	1.07	0	0	0	0	1.07
Distillate	0.98	0.97	0.97	0	0	0.97
Electricity	0.64	0.83	0.80	0	0	0.67
Gasoline	1.00	0	0	0.97	0	0.99
Kerosene	1.09	1.02	1.02	0	0	1.05
LPG	1.07	0	0.95	0	0	1.02
Natural gas	0.75	0.84	0.78	0.90	0	0.80
Residual	0	0.78	0.77	0	0	0.77

TABLE I-35 (continued)

RELATIVE ENERGY PRICES IN THE SOUTH, 1975

Fuel	Residential	Commercial	Industrial	Transportation	Electric utilities	Total
			Texas			
Coal	0	0	1.55	0	0.28	0.99
Diesel	0.88	0	0	0	0	0.88
Distillate	0.97	0.96	0.95	0	0.98	0.96
Electricity	0.85	0.76	0.77	0	0	0.78
Gasoline	0.94	0	0	0.93	0	0.94
Kerosene	0.98	0.99	0.99	0	0	0.99
LPG	0.94	0	0.96	0	0	0.95
Natural gas	0.89	0.78	0.99	0.92	1.13	0.81
Residual	0	0.83	0.82	0	0.82	0.82
			Virginia			
Coal	0	0	0.69	0	1.40	1.00
Diesel	0.97	0	0	0	0	0.97
Distillate	0.99	1.00	1.00	0	0	0
Electricity	1.08	0.95	1.22	0	0	1.11
Gasoline	1.00	0	0	0.98	0	0.99
Kerosene	0.97	1.04	1.03	0	0	1.01
LPG	1.18	0	1.00	0	0	1.11
Natural gas	1.30	1.27	1.15	0.95	0.92	1.46
Residual	0	0.84	0.84	0	0.93	0.86
			West Virginia			
Coal	0	0	0.54	0	1.10	0.78
Diesel	1.40	0	0	0	0	1.41
Distillate	0.99	1.00	0.99	0	0	0
Electricity	1.02	1.00	1.08	0	0	0.96
Gasoline	1.01	0	0	1.03	0	1.02
Kerosene	1.04	1.02	1.02	0	0	1.03
LPG	1.09	0	1.00	0	0	1.05
Natural gas	0.85	0.90	1.05	1.47	0.82	1.02
Residual	0	0.84	0.84	0	0	0

Source: FEDS.

TABLE I-36

ENERGY IMPORT TRENDS IN ALABAMA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	3,316.4	3,308.2	3,267.0	3,147.9	2,914.8	2,711.9
Exports	3,021.6	3,028.9	2,985.7	2,777.2	2,660.5	2,471.7
Net Imports	294.8	279.3	281.3	259.7	254.3	240.2
			Crude Oil (10^3 * Barrels)			
Imports	5,067	8,100	8,181	10,135	10,881	11,571
Exports	5,115	8,176	8,258	10,412	10,985	11,681
Net Imports	-48	-76	-77	-97	-104	-110
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	7.5	6.3	7.7
Exports	NA	NA	NA	1.4	1.0	1.7
Net Imports	NA	NA	NA	6.1	5.3	6.0

Source: Bureau of Mines

TABLE I-37

ENERGY IMPORT TRENDS IN ARKANSAS

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	2,868.9	2,879.5	2,857.0	2,694.0	2,413.8	2,362.7
Exports	2,651.3	2,695.9	2,681.5	2,512.2	2,241.7	2,215.4
Net Imports	217.6	183.6	175.5	181.8	172.1	147.3
			Crude Oil (10^3 * Barrels)			
Imports	16,514	13,627	4,343	4,424	7,154	5,908
Exports	9,484	5,801	1,849	1,883	3,045	2,515
Net Imports	7,030	7,826	2,494	2,541	4,109	3,393
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	0	0	0
Exports	NA	NA	NA	.037	.001	.010
Net Imports	NA	NA	NA	-.037	-.001	-.010

Source: Bureau of Mines

TABLE I-38

ENERGY IMPORT TRENDS IN FLORIDA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	335.8	337.0	287.3	282.0	255.5	246.6
Exports	0	0	0	0	0	0
Net Imports	335.8	337.0	287.3	282.0	255.5	246.6
			Crude Oil (10^3 * Barrels)			
Imports	986	1,287	1,537	3,204	1,661	1,709
Exports	6,678	8,468	18,774	32,979	36,852	41,595
Net Imports	-5,692	-7,190	-17,237	-29,775	-35,191	-39,886
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	6.0	6.1	5.4
Exports	NA	NA	NA	0	0	0
Net Imports	NA	NA	NA	6.0	6.1	5.4

Source: Bureau of Mines.

TABLE I-39

ENERGY IMPORT TRENDS IN GEORGIA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	1,451.5	1,451.2	1,400.7	1,388.7	1,227.6	1,137.4
Exports	1,114.2	1,097.6	1,064.3	1,044.6	892.1	809.1
Net Imports	337.3	353.6	336.4	344.1	335.5	328.3
			Crude Oil (10^3 * Barrels)			
Imports	3,099	4,019	4,833	5,012	5,223	5,373
Exports	0	0	0	0	0	0
Net Imports	3,099	4,019	4,833	5,012	5,223	5,373
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	10.2	9.9	14.5
Exports	NA	NA	NA	0	0	0
Net Imports	NA	NA	NA	10.2	9.9	14.5

Source: Bureau of Mines.

TABLE I-40

ENERGY IMPORT TRENDS IN KENTUCKY

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	3,833.8	4,007.3	3,967.3	4,193.0	3,854.5	3,684.5
Exports	3,645.7	3,810.8	3,750.9	3,979.7	3,684.1	3,512.8
Net Imports	188.1	196.5	216.4	213.3	170.4	171.7
			Crude Oil (10^3 * Barrels)			
Imports	45,178	48,926	48,153	46,856	44,596	52,379
Exports	1,624	1,954	2,411	3,004	3,015	3,359
Net Imports	43,554	46,972	45,742	43,852	41,581	49,020
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	1.3	4.3	1.0
Exports	NA	NA	NA	66.0	72.5	76.4
Net Imports	NA	NA	NA	-64.7	-68.2	-75.4

Source: Bureau of Mines

TABLE I-41

ENERGY IMPORT TRENDS IN LOUISIANA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	987.1	930.1	971.5	919.7	636.2	847.0
Exports	6,656.9	6,840.1	6,794.3	6,825.6	6,162.5	5,883.7
Net Imports	-5,669.8	-5,910.0	-5,822.8	-5,905.9	-5,526.3	-5,036.7
			Crude Oil (10^3 * Barrels)			
Imports	75,601	72,785	85,671	123,296	159,758	189,873
Exports	545,366	593,275	493,705	417,675	350,464	301,077
Net Imports	-469,765	-520,490	-408,034	-294,379	-190,706	-111,204

Source: Bureau of Mines.

TABLE I-42

ENERGY IMPORT TRENDS IN MISSISSIPPI

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	6,412.0	6,605.1	6,569.1	6,625.7	6,047.5	5,676.2
Exports	6,164.2	6,333.8	6,208.8	6,419.5	5,842.2	5,513.9
Net Imports	247.8	271.3	360.3	206.2	205.3	162.3
			Crude Oil (10^3 * Barrels)			
Imports	55,749	70,589	79,828	78,846	70,317	83,020
Exports	37,916	30,516	30,547	41,026	34,334	25,610
Net Imports	17,833	40,073	49,281	37,820	35,983	57,410
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	1.1	1.5	1.5
Exports	NA	NA	NA	0	0	0
Net Imports	NA	NA	NA	1.1	1.5	1.5

Source: Bueau of Mines.

TABLE I-43

ENERGY IMPORT TRENDS IN NORTH CAROLINA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	928.3	916.8	893.6	871.6	732.7	659.8
Exports	773.1	752.3	725.4	710.9	589.7	541.9
Net Imports	155.2	164.5	168.2	160.7	143.0	117.9
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	17.9	20.9	19.7
Exports	NA	NA	NA	0	0	0
Net Imports	NS	NA	NA	17.9	20.9	19.7

Source: Bureau of Mines.

TABLE I-44

ENERGY IMPORT TRENDS IN OKLAHOMA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	1,419.4	1,364.2	1,284.8	1,194.7	1,394.4	1,166.9
Exports	2,329.3	2,346.1	2,394.1	2,259.6	2,310.3	2,036.3
Net Imports	-909.9	-981.9	-1,109.3	-1,064.9	-915.9	-869.4
			Crude Oil (10^3 * Barrels)			
Imports	46,355	54,926	38,599	43,467	50,079	52,910
Exports	84,576	85,035	84,960	69,928	66,123	63,447
Net Imports	-38,221	-30,109	-46,361	-26,461	-16,044	-10,537
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	0	0	0
Exports	NA	NA	NA	1.5	1.7	1.8
Net Imports	NA	NA	NA	-1.5	-1.7	-1.8

Source: Bureau of Mines.

TABLE I-45

ENERGY IMPORT TRENDS IN SOUTH CAROLINA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	1,092.2	1,076.2	1,044.7	1,022.2	869.8	786.9
Exports	928.3	916.8	893.6	871.6	732.7	659.8
Net Imports	163.9	159.4	151.1	150.6	137.1	127.1
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	5.6	4.8	4.5
Exports	NA	NA	NA	0	0	0
Net Imports	NA	NA	NA	5.6	4.8	4.5

Source: Bureau of Mines.

TABLE I-46

ENERGY IMPORT TRENDS IN TENNESSEE

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	4,104.1	4,287.7	4,259.1	4,503.0	4,127.1	3,911.9
Exports	3,840.8	4,014.0	3,975.8	4,193.0	3,863.3	3,690.7
Net Imports	263.3	273.7	283.3	310.0	263.8	221.2
			Crude Oil (10^3 * Barrels)			
Imports	12,406	13,362	14,141	14,023	13,694	14,384
Exports	0	0	0	0	0	0
Net Imports	12,406	13,362	14,141	14,203	13,694	14,384
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	16.3	14.0	19.6
Exports	NA	NA	NA	2.6	3.8	2.6
Net Imports	NA	NA	NA	13.7	10.2	17.0

Source: Bureau of Mines.

TABLE I-47

ENERGY IMPORT TRENDS IN TEXAS

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	30.7	9.6	0	0	0	0
Exports	3,775.7	3,650.2	3,742.1	3,390.6	3,229.6	3,077.9
Net Imports	-3,745.0	-3,640.6	-3,742.1	-3,390.6	-3,229.6	-3,077.9
			Crude Oil (10^3 * Barrels)			
Imports	246,687	267,810	251,498	310,815	385,661	446,620
Exports	456,718	444,124	435,199	428,146	437,541	431,517
Net Imports	-210,031	-176,314	-183,701	-117,331	-51,880	15,103

Source: Bureau of Mines.

TABLE I-48

ENERGY IMPORT TRENDS IN VIRGINIA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	1,018.8	1,058.8	1,023.7	1,001.7	880.6	784.1
Exports	879.6	872.5	866.2	847.7	729.0	665.5
Net Imports	139.2	186.3	157.5	154.0	151.6	118.6
			Crude Oil (10^3 * Barrels)			
Imports	9,072	11,768	14,153	13,064	15,292	15,732
Exports	0	0	0	0	0	0
Net Imports	9,072	11,768	14,153	13,064	15,292	15,732
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	2.1	2.0	1.1
Exports	NA	NA	NA	8.5	10.1	10.9
Net Imports	NA	NA	NA	-6.4	-8.1	-9.8

Source: Bureau of Mines.

TABLE I-49

ENERGY IMPORT TRENDS IN WEST VIRGINIA

	1970	1971	1972	1973	1974	1975
			Natural Gas (10^9 * Cubic Feet)			
Imports	1,025.8	1,020.0	1,093.7	1,140.8	1,003.2	962.4
Exports	1,042.3	1,094.1	1,092.6	1,112.8	1,000.0	915.9
Net Imports	-16.5	-74.1	1.1	28.0	3.2	46.5
			Crude Oil (10^3 * Barrels)			
Imports	1,362	1,472	2,756	3,464	3,529	3,359
Exports	12	40	89	156	175	197
Net Imports	1,350	2,667	2,667	3,308	3,354	3,162
			Coal (10^6 * Tons)			
Imports	NA	NA	NA	.8	6.8	3.1
Exports	NA	NA	NA	25.2	24.4	20.8
Net Imports	NA	NA	NA	-24.4	-17.6	-17.7

Source: Bureau of Mines.

TABLE I-50

1975 NATURAL GAS FLOWS
(10^9 * CUBIC FEET)

Alabama	
Receipts	
Mississippi	2,711.9
Shipments	
Georgia	1,137.4
Tennessee	1,095.1
Florida	239.2
	2,471.7
Net	240.2
Arkansas	
Receipts	
Louisiana	1,709.7
Texas	527.3
Oklahoma	125.8
	2,362.7
Shipments	
Mississippi	1,502.1
Missouri	713.3
	2,215.4
Net	147.3
Florida	
Receipts	
Alabama	239.2
Georgia	7.4
	246.6
Net	246.6
Georgia	
Receipts	
Alabama	1,137.4
Shipments	
South Carolina	786.9
Tennessee	14.8
Florida	7.4
	809.1
Net	328.3
Kentucky	
Receipts	
Tennessee	3,684.5
Shipments	
Ohio	1,215.4
Indiana	1,152.9
West Virginia	771.0
Illinois	373.5
	3,512.8
Net	171.7
Louisiana	
Receipts	
Texas	847.0
Shipments	
Mississippi	4,174.1
Arkansas	1,709.6
	5,883.7
Net	-5,036.7
Mississippi	
Receipts	
Louisiana	4,174.1
Arkansas	1,502.1
	5,676.2
Shipments	
Tennessee	3,802.0
Alabama	2,711.9
	5,513.9
Net	162.3
North Carolina	
Receipts	
South Carolina	659.8
Shipments	
Virginia	541.9
Net	117.9

TABLE I-50 (continued)

1975 NATURAL GAS FLOWS
(10^9 * CUBIC FEET)

Oklahoma	
Receipts	
Texas	1,166.7
Missouri	.2
	1,166.9
Shipments	
Kansas	1,835.2
Arkansas	125.8
Colorado	75.3
	2,036.3
Net	-869.4
South Carolina	
Receipts	
Georgia	786.9
Shipments	
North Carolina	659.8
Net	127.1
Tennessee	
Receipts	
Alabama	1,095.1
Georgia	14.8
Mississippi	2,802.0
	3,911.9
Shipments	
Kentucky	3,684.5
Virginia	6.2
	3,690.7
Net	221.2
Texas	
Receipts	
Oklahoma	1,166.7
Louisiana	847.0
New Mexico	530.7
Arkansas	527.3
Mexico	6.2
	3,077.9
Net	-3,077.9
Virginia	
Receipts	
North Carolina	541.9
West Virginia	236.0
Tennessee	6.2
	784.1
Shipments	
Washington, D.C.	655.4
Maryland	10.1
	665.6
Net	118.6
West Virginia	
Receipts	
Kentucky	771.0
Ohio	191.4
	962.4
Shipments	
Pennsylvania	672.4
Virginia	236.0
	915.9
Net	46.5

Source: Bureau of Mines.

TABLE I-51

1975 CRUDE OIL FLOWS IN THE SOUTH

Alabama		
Receipts		
Florida	5,807	10,302 - Pipelines
Mississippi	5,040	139 - Tank Cars and trucks
Foreign	671	1,130 - Barges and tankers
		11,571
Shipments		
Georgia	813	
Kentucky, Tennessee	876	
Louisiana	9,939	
Net	-110	
Arkansas		
Receipts		
Louisiana	813	5,902 - Pipelines
Texas	5,095	6 - Tank cars and trucks
		5,908
Shipments		
Illinois	1,777	
Kansas	738	
Net	3,393	
Florida		
Receipts		
Foreign	1,691	1,709 - Barges and tankers
Shipments		
Alabama	5,807	
Delaware, Maryland	4,975	
Illinois	200	
Indiana	429	
Kentucky, Tennessee	3,044	
Louisiana	11,776	
Pennsylvania	2,560	
Texas	12,786	
Net	-39,886	
Georgia		
Receipts		
Alabama	813	800 - Tank cars and trucks
Foreign	4,560	4,573 - Barges and tankers
		5,373
Net	5,373	

TABLE I-51 (continued)

1975 CRUDE OIL FLOWS IN THE SOUTH

Kentucky, Tennessee			
Receipts			
Alabama	876	52,362	- Pipelines
Florida	3,044	95	- Tank cars and trucks
Illinois	8,055	14,306	- Barges and tankers
Louisiana	23,859	66,763	
Ohio	96		
Texas	4,896		
Wyoming	936		
Foreign	25,001		
Shipments			
West Virginia	3,359		
Net	63,404		
Louisiana			
Receipts			
Alabama	9,939	91,273	- Pipelines
Florida	11,776	1,329	- Tank cars and trucks
Oklahoma	165	97,271	- Barges and tankers
Foreign	89,159	189,873	
Shipments			
Arkansas	813		
Delaware, Maryland	178		
Illinois	55,501		
Indiana	16,351		
Kansas	79		
Kentucky, Tennessee	23,859		
Michigan	7,372		
Mississippi	38,666		
New Jersey	2,179		
New York	2,671		
Ohio	51,777		
Pennsylvania	1,498		
Texas	21,299		
Net	-111,204		
Mississippi			
Receipts			
Louisiana	38,666	44,420	- Pipelines
Foreign	38,600	38,600	- Barges and tankers
		83,020	

TABLE I-51 (continued)

1975 CRUDE OIL FLOWS IN THE SOUTH

Mississippi (cont.)		
Shipments		
Alabama	5,040	
Illinois	617	
Michigan	61	
New Jersey	603	
Ohio	2,729	
Pennsylvania	997	
Texas	9,809	
Net	57,410	
Oklahoma		
Receipts		
Colorado	94	52,910 - Pipelines
New Mexico	2,439	
Texas	40,368	
Utah	235	
Wyoming	631	
Foreign	3,207	
Shipments		
Illinois	17,151	
Indiana	10,971	
Kansas	24,902	
Louisiana	165	
Minnesota, Wisconsin	406	
Missouri	2,438	
Ohio	602	
Pennsylvania	876	
Net	-10,537	
Texas		
Receipts		
Alaska	221	79,102 - Pipelines
Colorado	1,626	142 - Tank cars and trucks
Florida	12,786	367,376 - Barges and tankers
Louisiana	21,299	446,620
Mississippi	9,809	
New Mexico	10,775	
Utah	3,257	
Foreign	308,619	

TABLE I-51 (continued)

1975 CRUDE OIL FLOWS IN THE SOUTH

Texas (cont.)		
Shipments		
Arkansas	5,095	
Illinois	114,910	
Indiana	59,808	
Kansas	20,679	
Kentucky, Tennessee	4,896	
Minnesota, Wisconsin	1,211	
Missouri	26,059	
New Jersey	8,502	
New York	1,331	
Ohio	58,832	
Oklahoma	40,368	
Pennsylvania	11,598	
Net	15,103	
Virginia		
Receipts		
Foreign	15,732	15,732 - Barges and tankers
Net	15,732	
West Virginia		
Receipts		
Kentucky, Tennessee	3,359	1,432 - Pipelines
		740 - Tank cars and trucks
Shipments		
Pennsylvania	197	1,187 - Barges and tankers
		3,359
Net	3,162	

Source: Bureau of Mines.

TABLE I-52

NET SHIPMENTS OF BITUMINOUS COAL AND LIGNITE TO STEAM-ELECTRIC PLANTS IN THE SOUTH IN 1975

State and shipments	Thousands of short tons
Alabama	
Exports	1,746.3
Georgia, 83.3%	
Florida, 16.2%	
South Carolina, 0.5%	
Imports	7,685.1
Kentucky, 89.3%	
Tennessee, 5.6%	
Illinois, 4.8%	
Indiana, 0.3%	
Net imports	5,938.8
Intrastate shipments	11,638.6
Arkansas	
Exports	10.4
Kansas, 100.0%	
Net exports	10.4
Intrastate shipments	0.0
Florida	
Imports	5,426.5
Kentucky, 78.0%	
Illinois, 16.8%	
Alabama, 5.2%	
Net imports	5,426.5
Intrastate shipments	0.0
Georgia	
Imports	14,502.0
Kentucky, 75.3%	
Tennessee, 10.2%	
Alabama, 10.0%	
Indiana, 3.3%	
Virginia, 1.1%	
Illinois, 0.1%	
Net imports	14,502.0
Intrastate shipments	0.0

TABLE I-52 (continued)

NET SHIPMENTS OF BITUMINOUS COAL AND LIGNITE TO STEAM-ELECTRIC PLANTS IN THE SOUTH IN 1975

State and shipments	Thousands of short tons
Kentucky	
Exports	76,415.2
Tennessee, 20.9%	
Georgia, 14.3%	
North Carolina, 11.8%	
Ohio, 9.4%	
Alabama, 9.0%	
Michigan, 7.6%	
Florida, 5.5%	
South Carolina, 5.4%	
Indiana, 4.5%	
West Virginia, 3.4%	
Wisconsin, 2.7%	
Pennsylvania, 1.4%	
Virginia, 1.4%	
Mississippi, 0.8%	
New York, 0.7%	
Missouri, 0.4%	
Minnesota, Massachusetts, New Hampshire, New Jersey, Maryland, Iowa, and District of Columbia, 0.8%	
Imports	956.8
Illinois, 82.2%	
Montana, 17.8%	
Net exports	75,458.4
Intrastate shipments	21,664.2
Mississippi	
Imports	1,531.0
Illinois, 58.4%	
Kentucky, 41.6%	
Net imports	1,531.0
Intrastate shipments	0.0
North Carolina	
Imports	19,740.8
Kentucky, 45.8%	
Virginia, 40.9%	
West Virginia, 10.9%	
Tennessee, 2.4%	
Net imports	19,740.8
Intrastate shipments	0.0

TABLE I-52 (continued)

NET SHIPMENTS OF BITUMINOUS COAL AND LIGNITE TO STEAM-ELECTRIC PLANTS IN THE SOUTH IN 1975

State and shipments	Thousands of short tons
Oklahoma	
Exports	1,813.8
Missouri, 75.2%	
Kansas, 16.1%	
Iowa, 3.7%	
Nebraska, 3.1%	
Minnesota, 1.5%	
South Dakota and Illinois, 0.4%	
Net exports	1,813.8
Intrastate shipments	0.0
South Carolina	
Imports	4,479.2
Kentucky, 92.6%	
Virginia, 5.6%	
Tennessee, 1.6%	
Alabama and West Virginia, 0.2%	
Net imports	4,479.2
Intrastate shipments	0.0
Tennessee	
Exports	2,634.8
Georgia, 60.3%	
North Carolina, 19.1%	
Alabama, 17.6%	
South Carolina and Wisconsin, 3.0%	
Imports	19,643.4
Kentucky, 82.1%	
Ohio, 8.5%	
Virginia, 4.2%	
Illinois, 3.7%	
Indiana and West Virginia, 1.5%	
Net imports	17,008.6
Intrastate shipments	4,850.0
Virginia	
Exports	10,912.3
North Carolina, 74.0%	
Tennessee, 7.6%	
West Virginia, 5.5%	
Ohio, 4.8%	
New Jersey, 3.6%	

TABLE I-52 (continued)

NET SHIPMENTS OF BITUMINOUS COAL AND LIGNITE TO STEAM-ELECTRIC PLANTS IN THE SOUTH IN 1975

State and shipments	Thousands of short tons
South Carolina, 2.3%	
Georgia, 1.4%	
Pennsylvania, 0.3%	
District of Columbia, 0.3%	
Indiana, 0.2%	
Maryland and Michigan, 0.1%	
Imports	1,065.5
Kentucky, 100.0%	
Net exports	9,846.8
Intrastate shipments	2,373.7
West Virginia	
Exports	20,793.6
Ohio, 29.6%	
Michigan, 24.6%	
Pennsylvania, 19.4%	
North Carolina, 10.4%	
New Jersey, 6.6%	
New Hampshire, 4.5%	
New York, 4.0%	
Maryland, 0.4%	
Indiana, 0.4%	
Vermont, Minnesota, District of Columbia, Tennessee, Illinois, South Carolina, and Wisconsin, 0.1%	
Imports	3,163.0
Kentucky, 81.1%	
Virginia, 18.9%	
Net exports	17,630.6
Intrastate shipments	21,220.6

Source: Bureau of Mines.

TABLE I-53

1974 ELECTRICITY EXPORTS IN THE SOUTH

State			Millions of KWH
Alabama		Net Exports	13,699
Exports 13,699			
53.0% to Georgia 24.8% to Tennessee 20.1% to Mississippi 2.1% to Florida			
Arkansas		Net Imports	3,933
Exports 2,697	Imports 6,630		
81.4% to Mississippi 18.6% to Others	11.6% from Missouri 56.3% from Oklahoma 8.8% from Texas 26.4% from Louisiana .0% from Tennessee		
Florida		Net Exports	1,416
Exports 1,711	Imports 295		
100.0% to Georgia	100.0% from Alabama		
Georgia		Net Imports	10,925
	Imports 10,925		
	66.5% from Alabama 15.7% from Florida 14.9% from South Carolina 2.3% from Tennessee .6% from North Carolina		
Kentucky		Net Exports	8,438
Exports 14,312	Imports 5,874		
51.9% to Tennessee 19.2% to Indiana 26.3% to Ohio 2.6% to Virginia	100.0% from Illinois		
Louisiana		Net Exports	2,182
Exports 5,103	Imports 2,921		
65.7% to Mississippi 34.3% to Arkansas	100.0% from Texas		

TABLE I-53 (continued)

1974 ELECTRICITY EXPORTS IN THE SOUTH

State				(mmkwh)
Mississippi			Net Imports	9,680
		Imports 9,680		
		34.7% from Louisiana		
		28.4% from Alabama		
		22.7% from Arkansas		
		14.2% from Tennessee		
North Carolina			Net Exports	3,281
Exports 4,288		Imports 1,007		
65.1% to Tennessee		100.0% from Virginia		
33.3% to South Carolina				
1.6% to Georgia				
Oklahoma			Net Exports	7,172
Exports 7,172				
52.0% to Arkansas				
38.2% to Kansas				
5.9% to Missouri				
3.8% to Texas				
South Carolina			Net Exports	202
Exports 1,632		Imports 1,430		
100% to Georgia		100% from North Carolina		
Tennessee			Net Imports	13,055
Exports 2,064		Imports 15,119		
66.8% to Mississippi		49.1% from Kentucky		
21.0% to other states		22.4% from Alabama		
12.2% to Georgia		18.5% from North Carolina		
.0% to Arkansas		10.0% from Virginia		
Texas			Net Exports	1,080
Exports 3,678		Imports 2,598		
79.4% to Louisiana		10.5% from Oklahoma		
16.0% to Arkansas		89.5% from New Mexico		
4.6% to Mexico				

TABLE I-53 (continued)

1974 ELECTRICITY EXPORTS IN THE SOUTH

State				(mmkwh)
Virginia			Net Exports	1,188
Exports	2,582	Imports	1,394	
39.0% to North Carolina		26.6% from Kentucky		
58.3% to Tennessee		60.8% from Maryland		
2.7% to West Virginia		12.6% from D.C.		
West Virginia			Net Imports	3,003
		Imports	3,003	
		47.9% from Ohio		
		45.2% from Maryland		
		4.6% from Pennsylvania		
		2.4% from Virginia		

Source: National Energy Transportation, Vol. I.

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II-A Regional Overview

The majority of the South has abundant water resources, relatively clean air, a mild climate, varied landscapes with generally high productivity and ecological diversity, and increasing population and economic activity. The 14 state southern region includes 29% of the conterminous U.S. land area and 29% of the 1975 population. The states east of Oklahoma and Texas are classified 59% forest while Oklahoma and Texas are predominantly range and pasture (53%). Overall, 24% of the region is classified as cropland, 25% as pasture and range, 42% as forest, and 6% as urban, transportation, parks and other special uses. The Federal Government owns less than 5% of the area. The region has 53% of the conterminous U.S. shoreline with extensive wetlands occurring in Florida and other coastal states. Most of the land is below 500 ft in elevation (48%) with only 16% of the area above 2000 ft elevation. Except for dry portions of western Oklahoma and Texas, the states average between 40 and 60 inches of annual rainfall. Average annual temperatures (°F) range from the mid-fifties in Virginia and West Virgina to the seventies in southern Florida and parts of Texas. Every state has shown a population increase between 1970 and 1975 primarily occurring in metropolitan areas, although the South continues to have income levels below the national averages. Manufacturing is the most important industry in the region with energy production and energy-intensive industries important sectors in the southern economy.

The variations in these generalities are described by a series of tables and figures in this chapter in sections on Water, Air, Solid

Wastes, Land, Biota, and Socioeconomics. Tables and figures were included based on the following criteria: (1) regional environmental attributes that are important in energy-related assessment and planning, (2) availability of up-to-date data at the state or "county" level for the entire region, and (3) comparable items included in regional volumes produced by the other national laboratories. The tables include state and regional statistics while maps present the spatial distribution of parameters. Overviews are included for each section to highlight tables and figures; however, within the scope of this databook, the overviews are not intended to be comprehensive regional characterizations. More detailed discussions were included on the water resource regions and ecoregions occurring in the South that were adapted from regional studies at ORNL (Davis 1978). Each section also includes a discussion of the data quality and availability along with a matrix which summarizes the spatial and temporal resolution of data used in the databook and additional data available at finer resolution.

II-B Water

Approximately 3% of the region is covered by lakes and rivers (Table II-1), the mouths of 9 of the 21 largest rivers in the U.S. are located in the region (Table II-2), 53% of the conterminous U.S. shoreline occurs in the South (Table II-3), based on a 1956 survey, 11% of the region was classified as wetlands (Table II-4), and over half the surface runoff in the U.S. occurs in water resource regions covering the South. These statistics highlight the relative abundance of water resources in the South. The South contains all or part of eight of the 21 major water resource regions. Rainfall and runoff decrease dramatically in the western portion such that local shortages can develop there or in eastern areas whenever heavy demand occurs in headwater areas. Water use in the South accounts for 27% of the groundwater and 29% of the surface water withdrawn in the U.S.; however the South only uses 25% of the total water consumed (Table II-7). Water withdrawal and consumption data by state show low values for irrigation (except Texas) and high values for thermoelectric power generation and industrial use (Tables II-7 to II-10).

The Water section is divided into Surface Water (water sources, quantity, withdrawals and consumption, critical surface supply, and quality) and Groundwater (sources, withdrawals, and quality). Information on Water Management was not included due to lack of data in a consistent format for the South covering such areas as dams, irrigation systems, conservation projects, or use of saline water. The South does contain a large number of reservoirs and dams as shown in Fig. II-3.

The Tennessee Valley Authority (TVA) represents one of the largest coordinated, multiple-use systems in the U.S. TVA has built 21 dams, including 9 on the Tennessee River, to provide 650 miles of navigable waterway. The following subsections describe the tables and figures and are followed by a discussion of each of the 8 water regions including specific hydrology, water use and water quality.

Surface Water

Surface water resources are described in terms of states, regions or aggregated subareas (ASA's) within regions which have been defined (Fig. II-1 and II-2) by the Water Resources Council to approximate river drainage basins. Data are available for subareas, which are the smallest units in this hierarchical system, that can be defined in terms of county units. The National Stream Quality Accounting Network (NASQAN) accounting units (Fig. II-13) are slightly different divisions of the regions. These units are used by USGS for water quality data (Table II-11 and Figs. II-14 to II-21). Table II-6 and Fig. II-8 present data on water availability as calculated by the Energy Division at ORNL. The methodology used is described below under Water Availability for Energy and Other Uses.

Groundwater

Groundwater resources are characterized by maps (Figs. II-22 to II-26) showing major aquifers and water quality. Statistics on groundwater use are presented in Table II-12 as well as being included in earlier tables on surface water use.

Water Resource Regions

The South contains all or part of eight major water resource regions. The hydrology, water quality, and water use of the individual water resource regions are summarized below (from Cushman *et al.*, 1978).

Mid-Atlantic Water Resource Region

Portions of the Mid-Atlantic Water Resource Region which fall in the South include the Potomac, James, and Rappahannock River basins. Coastal areas include the Chesapeake estuary system (Chesapeake Bay and the mouths of the Potomac, Rappahannock, York, and James rivers), Delaware Bay, and the extensive bays between the mainland and barrier beaches. Major reservoirs are not important surface-water features, although some tributaries are impounded.

Consolidated sedimentary rocks are locally significant aquifiers within the region. The thick sequences of unconsolidated sands and silts which underlie the coastal plain areas produce large amounts of high-quality groundwater. Locally, seawater intrusion may render an aquifer unusable. Alluvium along streamcourses is an excellent, though areally restricted, source of high-quality groundwater.

Regional water quality problems include severe thermal pollution loads, pesticides in the lower reaches of major river basins, and heavy metals. Other toxic pollutants of concern in the region include Kepone (James River), phenols, and PCBs. Increased nutrient loads and lake eutrophication have

been reported as a problem in Maryland and Delaware. Saltwater encroachment in coastal areas as a result of groundwater pumping may increase dissolved solids in groundwater.

The primary user of water in the region is the self-supplied industrial sector, including electricity-generating utilities. Almost twice as much saline water as freshwater is used for condenser and reactor cooling. In contrast to water withdrawals, the greatest freshwater consumption is accounted for by the public supplies sector. Projections to the year 2000 point to probable water-supply problems in heavily populated areas. Coastal siting, which is necessary for saline water use, may be limited by site availability.

South Atlantic-Gulf Water Resource Region

The South Atlantic-Gulf region includes 24 major river systems and the smaller coastal rivers draining the southern Appalachian Highlands southeastward and southward toward the Atlantic Ocean and the Gulf of Mexico. Large natural lakes are not typical; the smaller Carolina Bays of the southeastern Atlantic coast are of particular interest because of their obscure geologic origin. The region has an extensive shoreline, and bays are prominent features.

The South Atlantic-Gulf Region groundwater reservoirs are of various types. The crystalline and adjacent metamorphic rocks of the Blue Ridge and Piedmont areas are the least productive of the aquifers. Consolidated sedimentary rocks are locally important aquifers, being most extensive in Florida and southeastern Georgia. Sand and gravel deposits in the larger river valleys are excellent local sources of potable groundwater.

Surface water quality problems in the region include sediment runoff from silviculture and mining, nutrient loading, and municipal and industrial discharges. Contamination of aquatic habitats with pesticides is a problem: the region has had particularly high use of DDT, and dieldrin and lindane have been found in surface waters. The Black Warrior drainage in Alabama has experienced acidification problems from coal mining operations. Trace element contamination, including elevated arsenic levels in the Cape Fear and Catawba river drainages, elevated cadmium in interior and coastal Mississippi and Alabama, and industrial mercury pollution in the lower Tombigbee-Alabama river basin, the lower Savannah River, and waters of coastal Georgia have been identified. Saltwater intrusion into groundwater aquifers has resulted from pumping, especially in Florida.

The geographic distribution of water use is crucial in the region. Although the total runoff is the largest of all the eastern regions, many of the population centers are in inland headwater areas where low-flow problems result from periodic droughts. Important river mainstems pass through less populated areas. Southern Florida also has large population centers, high agricultural water use and variable rainfall but no major rivers.

The self-supplied industrial and electricity generation utility sector is the largest user of water in the region; irrigation is the largest consumer of freshwater. Use of saline water for condenser and reactor cooling is almost as great as the use of freshwater. Water supply projections for the region indicate that, while supplies are available along much of the coast, increased inland use may require water resource development, and

increased use in southern Florida will necessitate even greater reliance on saltwater withdrawals. Peninsular Florida has been rated as one of the nation's most critical energy-related water supply problem areas by the Water Resources Council.

Ohio Water Resource Region

The southern half of the Ohio Water Resource Region, which includes the Ohio River and tributary systems, lies in the Southern region. The region includes scattered small natural lakes and moderate-sized reservoirs; major reservoirs are limited to the Cumberland River. The groundwater reservoirs in the Ohio region are of four general types: alluvium, outwash, glaciofluvial deposits, and bedrock. Well yields from the unconsolidated aquifers can exceed 31 liters/sec (500 gpm); yields of bedrock aquifers are lower. Groundwater quality within the region varies primarily with depth.

Water quality in the Ohio basin has suffered from both point-source and nonpoint-source pollutants. Agriculture, construction, urban runoff, stream channelization, and industrial and municipal discharges have degraded water quality. The region has been categorized as having major thermal pollution problems, and has been particularly affected by coal mining drainage, with abandoned mines and the diffuse nature of the discharge exacerbating the situation.

The greatest user of water and consumer of freshwater in the region is the self-supplied industrial sector, including electricity-generating utilities. Projections indicate that development of energy resources (coal, oil, gas, oil shale, and tar sands) in the Ohio River basin could stress

available water supplies. Monthly flow varies considerably in the Ohio River basin, and some upper mainstem and tributary areas already experience low-flow problems.

Tennessee Water Resource Region

The Tennessee River basin consists of the heavily impounded Tennessee River and its tributaries from headwaters in southwestern Virginia and western North Carolina to its confluence with the Ohio River at Paducah, Kentucky. The unconsolidated to semiconsolidated sediments of west-central Tennessee are some of the most productive aquifers. Limestones and dolomites in central Tennessee have small to large well yields, though quality is poor at very shallow depths due to contamination in improperly cased wells and sinkholes. The Cumberland Plateau portion of eastern Tennessee contains groundwater in perched aquifers; yields to wells are small to moderate. Farther to the east, in upthrusted limestones, dolomites and a few sandstones, yields to wells are small; the quality is generally good. Fractured igneous and metamorphic rocks in extreme eastern Tennessee produce water of good quality in small amounts.

Eutrophication has been cited as a problem in some reservoirs with long retention times. Sources of water quality degradation include industrial and municipal discharge in populated and developed areas. Elevated levels of mercury in sediments and biota have been reported from the Tennessee River in northern Alabama and in the North Fork of the Holston River. Water quality problems have been related to surface mining of coal in the Clinch River basin.

The primary user of water (and consumer of freshwater) in the region is the self-supplied industrial sector, including electricity-generating utilities. In generation of hydroelectric power, the Tennessee River region trails only the Great Lakes and Pacific Northwest regions. Primarily because of the Tennessee Valley Authority's ability to regulate streamflow, the region experiences no major low-flow water supply problems.

Lower Mississippi Water Resource Region

The Lower Mississippi Water Resource Region includes the lower mainstem of the Mississippi River, lower reaches of major tributary systems, and smaller tributaries. Natural lakes are not important surface features of the region, though reservoirs are abundant, and the Louisiana coast has many bayous, bays, and coastal lakes. The Lower Mississippi Region contains some of the most extensive, prolific aquifers in the United States. The groundwater quality is generally good across the region. Saline water occurs at depth and with proximity to the mouth of the Mississippi.

Nonpoint-source water pollution is a serious problem in the Lower Mississippi region, and one which is not easily controlled. Agricultural operations in the region largely determine the nature of water quality problems, especially runoff of bacteria, pesticides, and sediments. Pesticide residues have been found in the Mississippi mainstem and in lower tributary reaches. Point sources, such as industrial and municipal waste discharges, may be controlled with waste treatment facilities. Previous and continuing releases, however, have contaminated major streams with toxic elements such as arsenic, cadmium, and mercury. Surface waters in Arkansas have been

adversely affected by acid drainage (from bauxite mines) and oil field brine point-source and diffuse releases.

The greatest user of water in the region is the self-supplied industrial sector, including electricity-generating utilities. However, the greatest freshwater consumption is accounted for by irrigation.

Arkansas-White-Red Water Resource Region

The Arkansas-White-Red Water Resource Region includes all but the lowest reaches of the Arkansas, White, and Red River systems, though the upper portions of the Arkansas, White and some tributary systems lie outside the South. Although the region has few natural lakes, most of the major streams have been impounded. Aquifers in the region can be classified into four general types: alluvial, carbonate and gypsum, sand and sandstone, and undifferentiated consolidated rocks. The extensive stream valley alluvium is the most productive.

Point sources are responsible for some surface-water quality problems in the region; however, the nonpoint sources are more important. These include urban-industrial runoff, agricultural runoff, and natural mineralization. Salt and gypsum formations in Oklahoma contribute to the mineralization of surface waters; in Kansas, stream water use is limited by natural mineralization. Pesticide residues and elevated trace element (such as lead, arsenic, and cadmium) concentrations have been reported in surface waters. Groundwater quality varies from fresh to saline within the region, both geographically and with depth. Saline groundwater occurs at shallow depths over much of the region, as well as in areas underlain by shale and gypsum and where pollution by oil-field brine has occurred.

Irrigation is the major user and consumer of all waters in the region. Surface-water withdrawals are dominant in the eastern part of the region, with groundwater withdrawals dominant in the western and central parts. About 60% of freshwater withdrawn is consumed. The westernmost part of the region may not have sufficient water supplies to meet increasing demands. Limitations on water use also exist because of natural and man-made pollutants. Local effects on groundwater levels and artesian pressures may result from increased pumping.

Texas Gulf Water Resource Region

The Texas Gulf Water Resource Region includes river systems draining most of Texas and portions of southeastern New Mexico and western Louisiana. Drainage is towards the Gulf of Mexico. Major reservoirs are present in central and eastern Texas. Significant groundwater reservoirs underlie more than 80% of the land area in the Texas-Gulf region. There are twelve regionally important aquifers containing water with total dissolved solids concentrations less than 3000 mg/liter.

In general, natural water quality decreases toward the southwest, with increasing aridity. Heavy metals (including mercury) and pesticides have been identified in Texas waters. Brine disposal has created severe local salinity problems, although control measures have limited adverse effects. Saltwater intrusion in the coastal groundwater of east Texas and west Louisiana has resulted from groundwater pumping. Groundwater quality varies with depths as well as geographical location. Generally, the lowest concentrations of dissolved solids occur in areas of greatest rainfall and least evaporation.

Saline surface-water is used in the region by the self-supplied industrial sector; cooling of thermoelectric facilities is responsible for about 55% of this use. Irrigation accounts for most of the freshwater consumption. About 85% of the irrigation demand is satisfied with groundwater, which has been heavily pumped in the northwestern part of the basin, resulting in the lowering of the water table. Groundwater is also used for domestic, public, industrial, and municipal supplies and for secondary oil recovery throughout the region.

Rio Grande Water Resource Region

The Rio Grande Water Resource Region includes the basin of the Rio Grande from headwaters in southern Colorado to its mouth on the Gulf at the U.S. - Mexican border. The headwaters of both the Rio Grande and the Pecos, its major tributary, lie outside the Southern region.

The groundwater reservoirs in the region can be classified according to four major types: valley fill, volcanic rocks, consolidated sedimentary deposits and crystalline rocks. The most important of the groundwater reservoirs, valley fill material, is found in intermontane valleys in all but the southeastern portion of the region. The volcanic rocks are significant as aquifers only where they occur in association with valley fill material. Consolidated sedimentary rocks are found in the east-central and southeastern portions of the region, and well yields can be good. Crystalline rocks in the north and north-central portions of the region are very dense and well yields are generally insignificant. Groundwater quality varies from site to site.

The surface waters in the region are very hard in southern New Mexico and Texas. Surface water quality problems include reservoir eutrophication from municipal discharges, pesticides and increased salinities from agricultural sources.

Approximately 90% of the regional groundwater withdrawal is used for irrigation. An additional 5% provides public supplies. Irrigation accounts for most of the total regional water use and freshwater consumption. Rio Grande waters are divided between the United States and Mexico by treaty and between Colorado, New Mexico, and Texas by compact. The region does not currently have sufficient water resources to support present levels of development, and the Water Resources Council has listed the Rio Grande region as one of the nation's most critical energy-related water-supply problem areas.

Water Availability for Energy and Other Uses

In most basins it is impossible to calculate precisely how much water is available for energy. Generally under the Riparian Doctrine, which prevails in all of the eastern states except Delaware, Florida, and Mississippi, an unlimited amount may be taken by any user owning property adjacent to the stream as long as the use does not adversely affect the flow required by downstream users. This means that any reasonable rates of withdrawal and consumption will be supported during periods of adequate flow. Water quantity constraints are applicable only in periods of unusually low flow, during which the amount available to any user depends on established priorities of use, litigation by

downstream users, and minimum flow standards. Only a few states have established precise requirements for minimum flows to support instream uses such as navigation, recreation or aquatic habitat.

The Appropriation Doctrine, which applies in all of the western states plus Delaware, Florida, and Mississippi, offers even less certainty as to how much water is available for energy. These three eastern states have permit systems that employ most of the principles of the Appropriation Doctrine without establishing priorities on use during critical periods. Generally the right to use water is independent of land ownership and can be transferred from one user to another under contractual agreements subject to the approval of a state water engineer. Approval usually depends upon verification that the water will be devoted to a beneficial use. In only two western states, Montana and Colorado, is instream flow recognized as a beneficial use. Theoretically, most of the flow of any stream could be purchased for use by energy facilities. In practice, however, the amount of water available for energy is limited by the value placed on other beneficial uses, and approval for massive transfers to energy would be determined in the political arena of each state.

Although appropriative water rights are based upon volumes of water withdrawn or consumed annually, periods of seasonal low flow can constrain availability to users requiring dependable flows throughout the year. Utilities generally purchase senior rights, which give them priority over other users during the low flow, or construct reservoirs dedicated to their needs. Because users with low priority and inadequate storage may suffer during such periods, we have considered low

flow in the definition of problem areas in the states practicing the Appropriation Doctrine as well as in those with the Riparian Doctrine.

Our analysis (Table II-6 and Fig. II-8) of the projected water resource impacts of energy production focuses on the seasonal period when the total water demand utilizes the greatest proportion of estimated supply. Surface water supply estimates are based on the 95% monthly discharge ("exceedence" value estimates) of 1975 Present Modified Flows. Flow data were obtained from the Water Resources Council and U.S. Geological Survey as compiled for the 1975 National Water Assessment. These figures, representing the ASA surface outflow that has a 95% chance of being exceeded for a given month, were adjusted by ORNL for the 1975 level of upstream surface water depletion by ASA for all uses. The resulting calculated values represent the approximate Critical Surface Supply (CSS) available to all users.

The estimated contribution by groundwater sources to total ASA water supply was considered in the analysis. If the groundwater portion of total water consumption exceeded 10% in any ASA, a determination was made regarding the feasibility of increased groundwater withdrawals. Interbasin water imports, exports, and surface evaporation from reservoirs were assumed to remain at 1975 levels.

The amount of existing surface storage capacity available to support consumptive uses is indirectly represented in the calculation of the Critical Surface Supply values. This explains why several western basins appear to have a larger volume of water available during the critical supply period than many eastern basins. In the more highly

regulated basins, particularly in the western United States, the seasonal peak use of water for irrigation purposes is supported mainly from reservoir storage, with only a nominal amount coming directly from streamflow.

Data on the actual operation of reservoirs and on the proportion of consumptive use provided from storage capacity are lacking. Hence, the additional quantity of water which could theoretically be provided by altering the management of existing storage, and the prospects of building new reservoirs to provide additional storage, are not addressed directly in this report. These alternatives, however, are generally much more attractive in areas of the western U.S. than in the East, especially the Northeast, due to restrictions regarding inundations of land by reservoir construction.

Data Quality, Gaps, Limitations

There are abundant data available from EPA and USGS on surface water quality and quantity as shown in the accompanying matrix. Because of the large volume of data, care should be taken in using these data due to changing conditions (e.g. dams being constructed), diversity of contributors to the data base, and potential data errors. Groundwater data are included in the STORET and WATSTOR files but are not as comprehensive as surface water data. Data on water management are not readily available.

	Resolution of data presented	Finer resolution of available data	Computerized?
B. Water			
1. Surface Water			
a. Characteristics	Maps	Larger Scale	No (World Data Bank II has major rivers and coastlines)
b. Quantity	State, WRC Regions and Aggregated Subareas; 1975	Guage Stations; Daily, 1800's to present	Yes (USGS WATSTOR, EPA STORET)
c. Nonavailable Flow	Not available	?	?
d. Consumption	State, WRC Regions and ASA's 1975	?	?
e. Quality	NASQAN Units, Annual, 1975	NASQAN Units; Monthly, 1974-1977 Monitoring Stations,	Yes (CEQ UPGRADE, USGS WATSTOR) Yes (EPA STORET)
2. Ground Water	Maps	?	Some (USGS, EPA, CEQ)
3. Water Management	Maps	?	?

Table

TABLE II-1

LAND AND WATER AREAS BY STATE (ACRES)

State	Total area	Land area	Number of counties	Average county	Large lakes (>40 acres)	Small lakes (<40 acres)
Alabama	33,029,760	32,452,544	67	484,366	576,768	154,330
Arkansas	33,986,560	33,245,056	75	443,267	741,504	221,668
Florida	37,478,400	34,617,728	67	516,683	2,860,800	239,654
Georgia	37,680,640	37,166,528	159	233,752	514,176	221,377
Kentucky	25,852,800	25,375,680	120	211,464	476,992	121,156
Louisiana	31,054,720	28,755,584	64	449,306	2,299,136	609,986
Mississippi	30,538,240	30,269,440	82	369,140	268,800	297,178
North Carolina	33,655,040	31,230,976	100	312,310	2,424,064	140,980
Oklahoma	44,748,160	44,020,608	77	571,696	727,552	266,874
South Carolina	19,875,200	19,343,936	46	420,520	531,584	110,161
Tennessee	27,036,160	26,450,112	95	278,422	586,112	143,580
Texas	171,096,320	167,765,312	254	660,493	3,330,240	456,949
Virginia	26,127,350	25,463,424	100	254,634	663,808	72,561
West Virginia	15,475,840	15,404,672	55	280,085	71,168	47,561
South	567,635,200	551,561,600	1,361	405,262	16,072,704	3,104,015

Source: ORNL Geoecology Database, from 1972 County and City Data Book (Land Area) 1967 Conservation Needs Inventory (Small lake acreage <40 acres); 1969 Census of Agriculture (Large lake acreage >40 acres).

TABLE II-2

LARGE RIVERS IN THE SOUTH

River	Drainage area (square miles)	Average discharge (1941-1970) (cubic feet per second)	Length (miles)	Most distant source	Mouth
Mississippi	1,247,266[1]	640,000[2,3]	3,710[4]	Source of Red Rock River, Mont.	Gulf of Mexico
Ohio	203,900	258,000	1,306	Source of Allegheny River, Potter Co., Pa.	Mississippi River
Tennessee	40,910	.....[5]	900	Southwest Virginia, No. Fork Holston River	Ohio River
Mobile	43,800[6]	61,400	780	Northwest Georgia	Mobile Bay
Arkansas	160,000	45,100	1,450	Lake Co., Colo.	Mississippi River
Alabama	22,600	32,400	735	Northwest Georgia	Mobile River
White	28,000	32,100	720	Madison Co., Ark.	Mississippi River
Wabash	33,150	30,400	529	Darke Co., Ohio	Ohio River
Tombigbee	20,100	27,300	525	Northeast Mississippi	Mobile River
Cumberland	18,080	.....[5]	720	Poor Fork, Letcher Co., Ky.	Ohio River
Apalachicola	19,600	24,700	524	Source of Chattahoochee River, Towns Co., Ga.	Gulf of Mexico
Illinois	27,900	22,800	420	Source of Kankakee River, St. Joseph Co., Inc.	Mississippi River

TABLE II-2 (continued)

LARGE RIVERS IN THE SOUTH

River	Drainage area (square miles)	Average discharge (1941-1970) (cubic feet per second)	Length (miles)	Most distant source	Mouth
Allegheny	11,700	19,290	325	Source of Allegheny River, Potter Co., Pa.	Ohio River

[1]At Baptiste Collette Bayou, La.

[2]About 25 percent of the flow of the Mississippi River system occurs in the Atchafalaya River.

[3]Combined flow of Mississippi and Atchafalaya Rivers is 640,000 cubic feet per second. Flow of Mississippi River channel at mouth is 453,000 cubic feet per second.

[4]Measured from the mouth of the Mississippi River and along its watercourse and that of the Missouri River to the source of Red Rock River in Montana. The length from mouth of the Mississippi River to its source in Minnesota is 2,340 miles.

[5]Interbasin diversion beginning June 1966 between Lake Barkley on Cumberland River and Lake Kentucky on Tennessee River through Barkeley-Kentucky Canal.

[6]At Bankhead Canal.

Source: U.S. Geological Survey, 1974. Large Rivers of the United States, USGS Circular #686, p. 9.

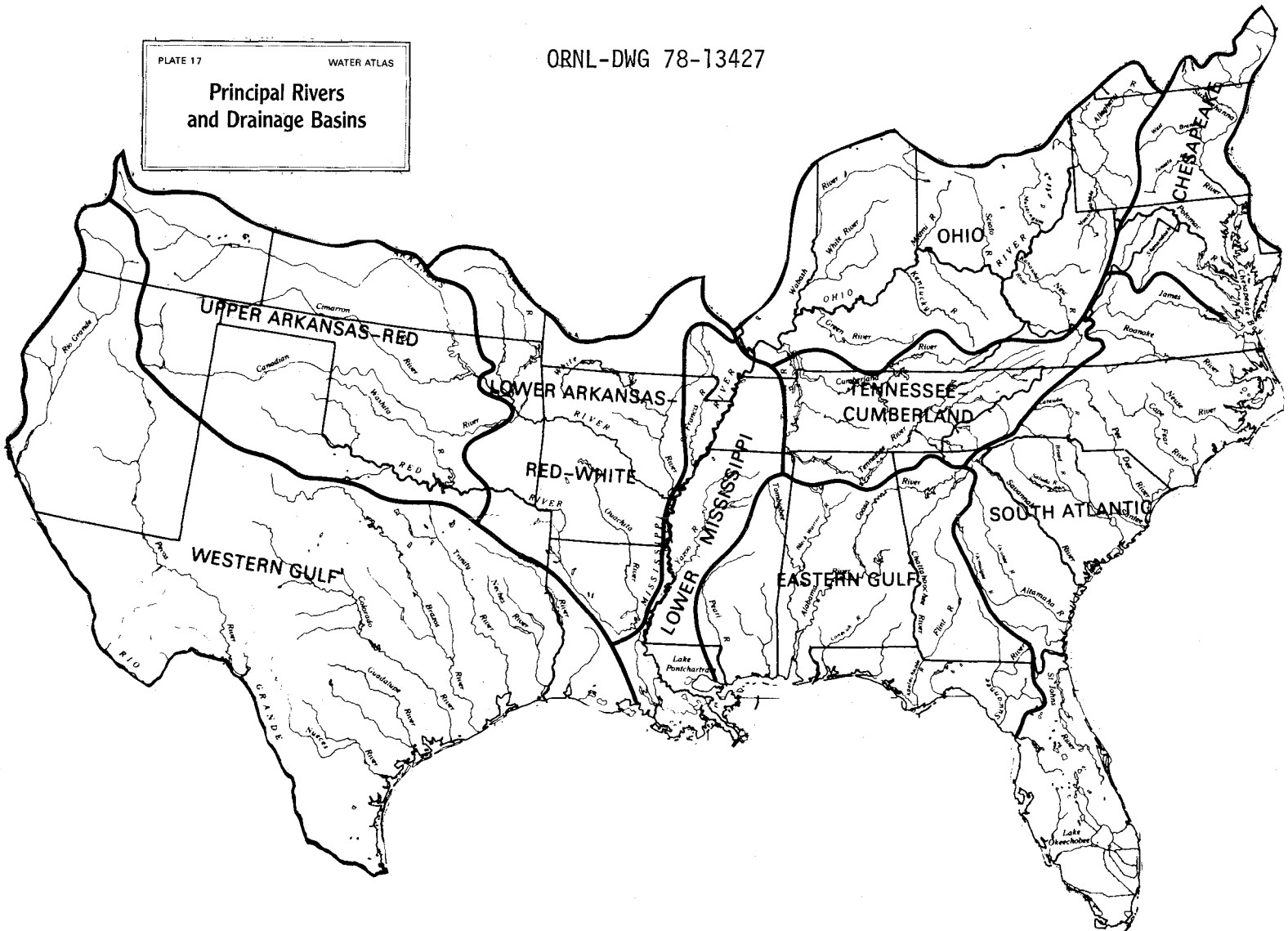

Fig. II-1. Principal rivers and drainage basins. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 17. Water Information Center, Port Washington, N. Y.

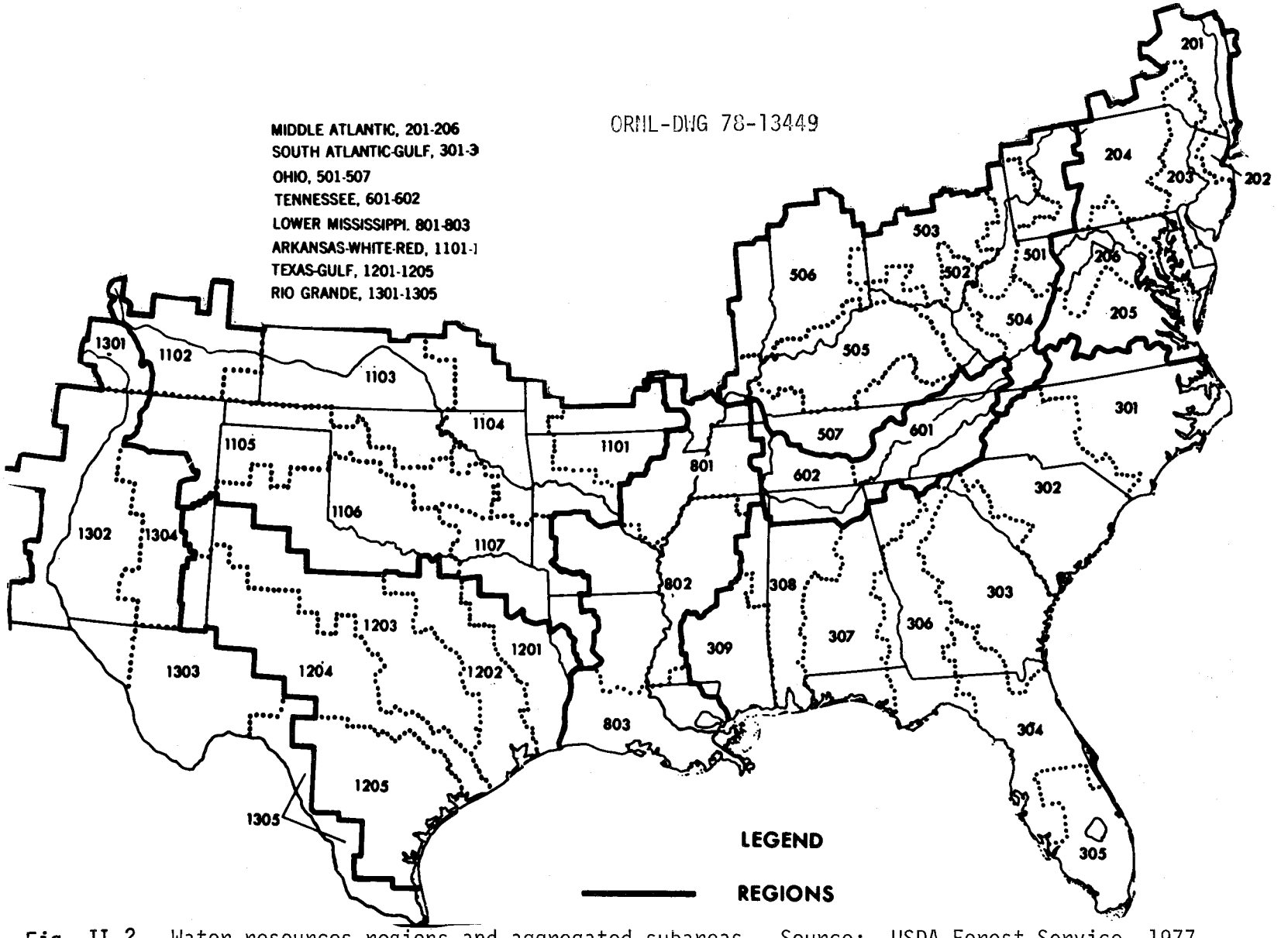

Fig. II-2. Water resources regions and aggregated subareas. Source: USDA Forest Service, 1977, The Nation's Renewable Resources - An Assessment, 1975, Forest Resource Report 21.

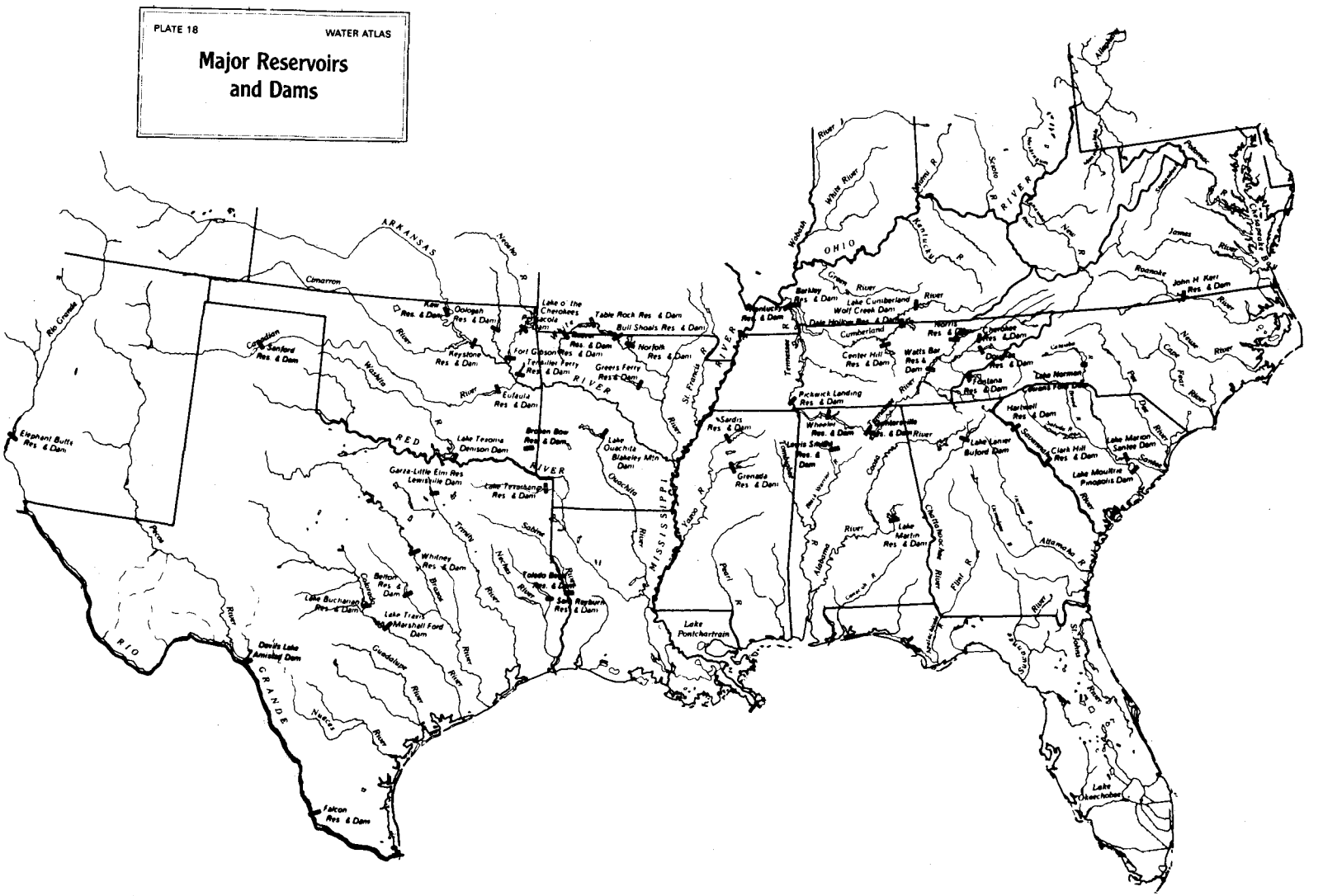

Fig. II-3. Major reservoirs and dams. Source: Geraghty el al. 1972. Water Atlas of the United States. Plate 18. Water Information Center, Port Washington, N.Y.

TABLE II-3

STATUS OF SHORELINE BY STATE, 1971

State	Total shoreline	Ownership[b] Federal government	State & local governments	Private	Uncertain[c]	Use Public recreation	Private recreation	Non recreational development	Undeveloped
Alabama	352	2	13	337		32	210	5	105
Florida	6,266	689	277	5,204	97	386	763	1,445	3,672
Georgia	204	29	23	153		16	6		183
Louisiana	1,943	246	331	1,366		18	28	46	1,851
Mississippi	247	33	43	171		31	106	10	101
North Carolina	3,661	573	59	1,038	1,991	98	321	239	3,003
South Carolina	3,063	435	1,452	832	344	84	50	580	2,349
Texas	2,498	388	55	2,055		386	160	107	1,845
Virginia	993	109	15	769		50	56	155	732
South	19,227	2,504	2,368	11,925	2,432	1,101	1,700	2,587	13,841
Continental U.S.	36,010	3,830	4,320	25,300	2,560	3,290	5,820	5,730	21,200
% of U.S.	53	65	55	47	95	33	29	45	65

[a]Includes bay and estuary as well as ocean and gulf shoreline.
[b]Ownership figured at mean low or highwater mark, according to state law.
[c]Information not available.

Source: Corps of Engineers, Department of the Army. The National Shoreline Study, 1971. As published in Land and Natural Resources in the South, a report to the Southern Growth Policies Board, 1975.

TABLE II-4

NATURAL WETLANDS BY STATE, 1956

State	Acres ($x10^3$)	% total area
Alabama	1,598	5
Arkansas	3,785	11
Florida	17,185	46
Georgia	5,919	16
Kentucky	273	1
Louisiana	9,647	31
Mississippi	2,589	8
North Carolina	4,054	12
Oklahoma	279	1
South Carolina	3,377	16
Tennessee	828	3
Texas	3,741	2
Virginia	541	2
West Virginia	4	<1
South	53,820	11.1
U.S.	74,439	2.5
% of U.S.	72	

Source: Show and Fredine, 1956. Wetlands of the United States. USGS Circular 39, as reproduced in Draft Environmental Impact Statement, Proposed Regulation: Criteria for Classification of Solid Waste Disposal Facilities (40 CFR Part 257). EPA, 1978.

TABLE II-5

WATER SUPPLY AND OFF-CHANNEL USES BY WATER RESOURCE REGIONS, 1975

Region	Area ($x10^3$ sq miles)	Population ($x10^6$)	Average runoff (Bgd)	90% flow (Bgd)	Withdrawals Ground (Bgd)	Withdrawals Surface (Bgd)	Consumed (Bgd)
Mid Atlantic	102	40.2	84	68	2.7	49.0	1.6
South Atlantic Gulf	270	26.4	197	129	5.5	38.0	3.7
Ohio	163	21.1	125	175	1.9	34.0	1.2
Tennessee	41	3.3	41	28	0.3	10.0	0.3
Lower Mississippi	96	6.5	79	38	4.5	11.0	5.5
Arkansas-Red-White	265	7.8	73	36	9.0	6.2	9.0
Texas-Gulf	175	10.4	32	11	7.2	15.0	8.0
Rio Grande	136	2.0	5	2	2.3	3.0	3.5
Southern Regions	1,248	117.7	636	387	33.8	166.2	32.8
U.S. (conterminous)	3,020	213.0	1,200	747	81.9	324.2	95.2
% of U.S.	41	55	53	52	41	51	34

Source: Murray, C. R., and E. B. Reeves, 1977. Geological Survey Circular 765, Tables 4 and 17.

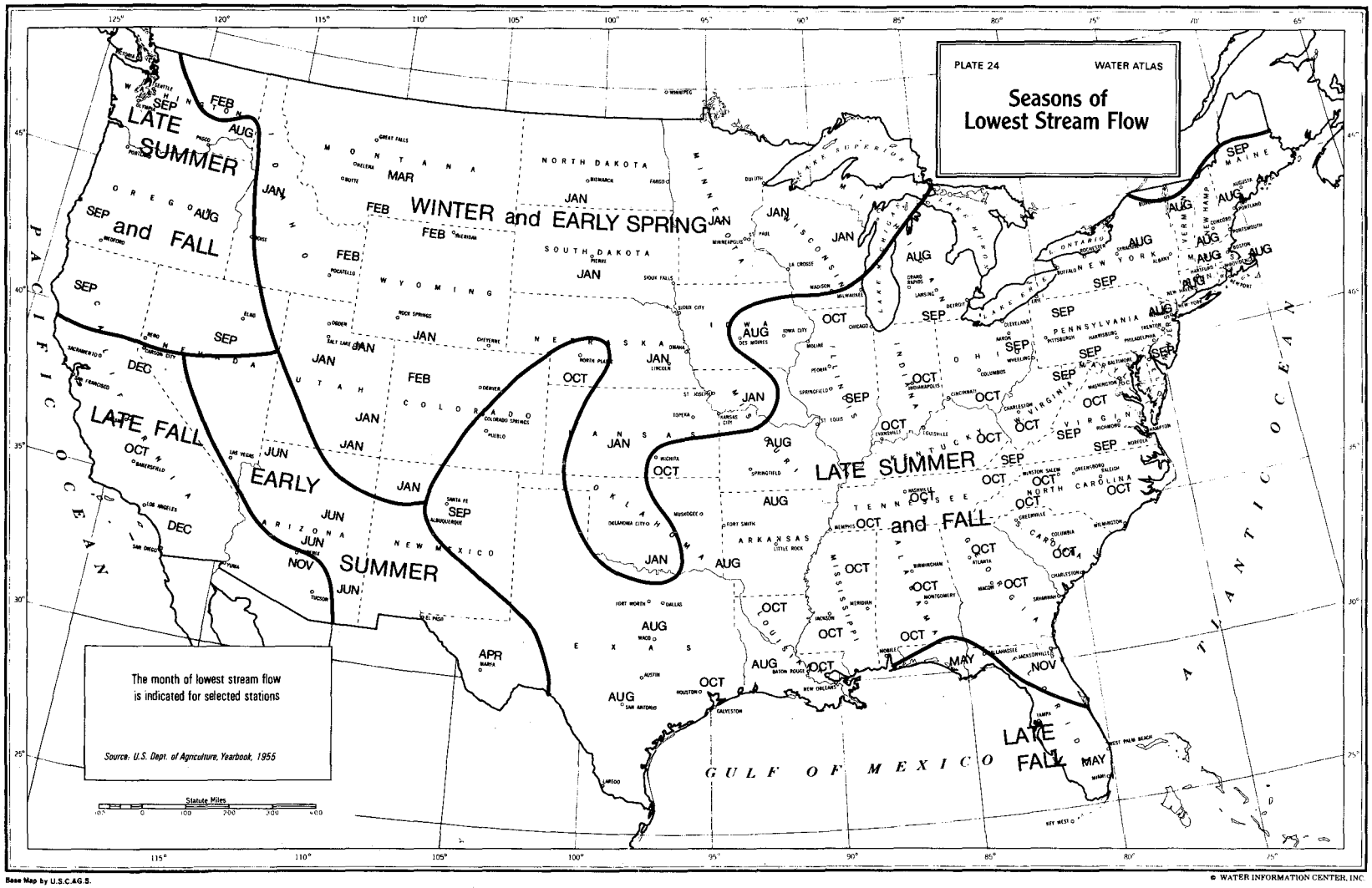

Fig. II-4. Seasons of lowest stream flow. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 24. Water Information Center, Port Washington, N.Y.

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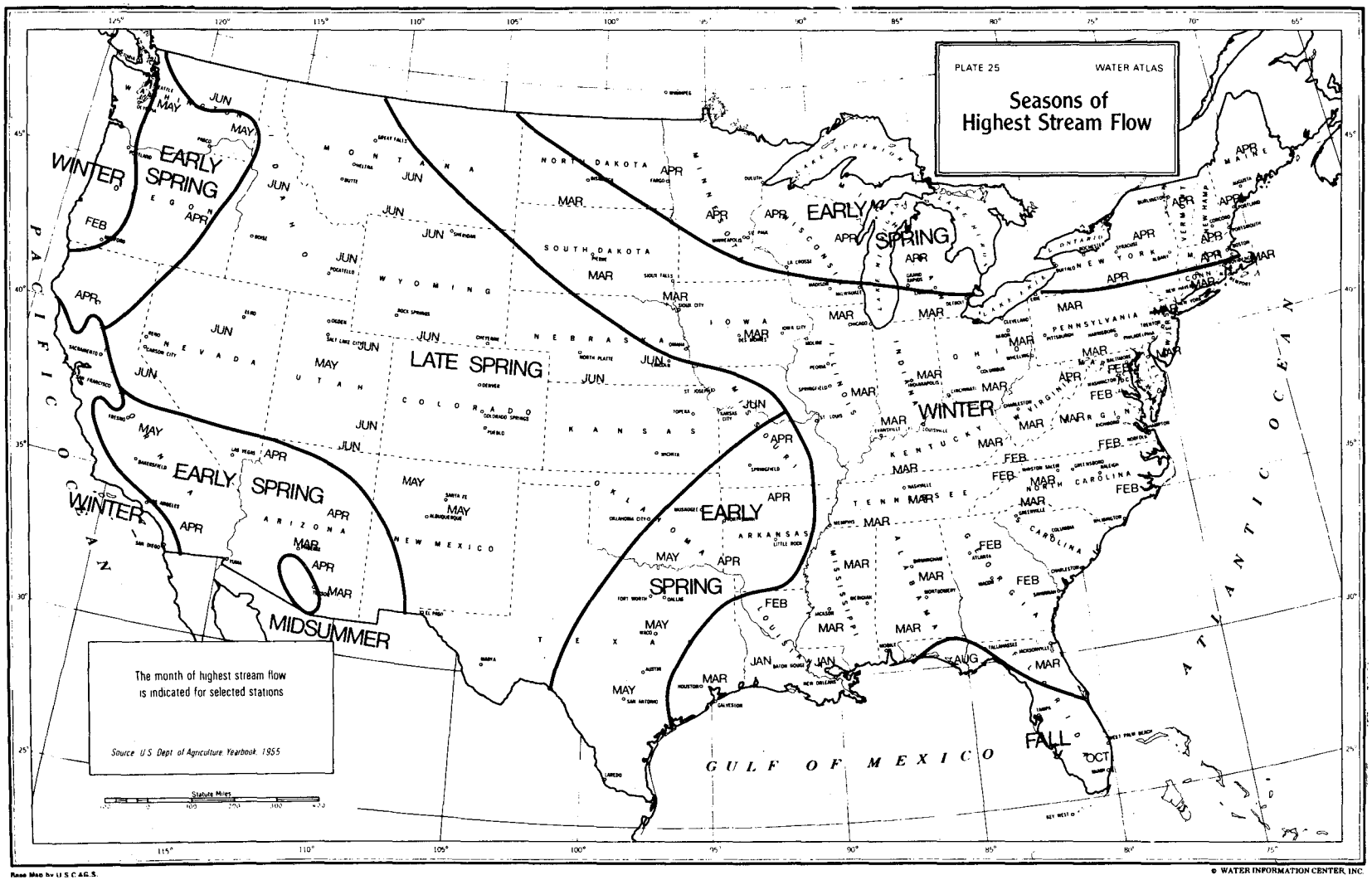

Fig. II-5. Seasons of highest stream flow. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 25. Water Information Center, Port Washington, N.Y.

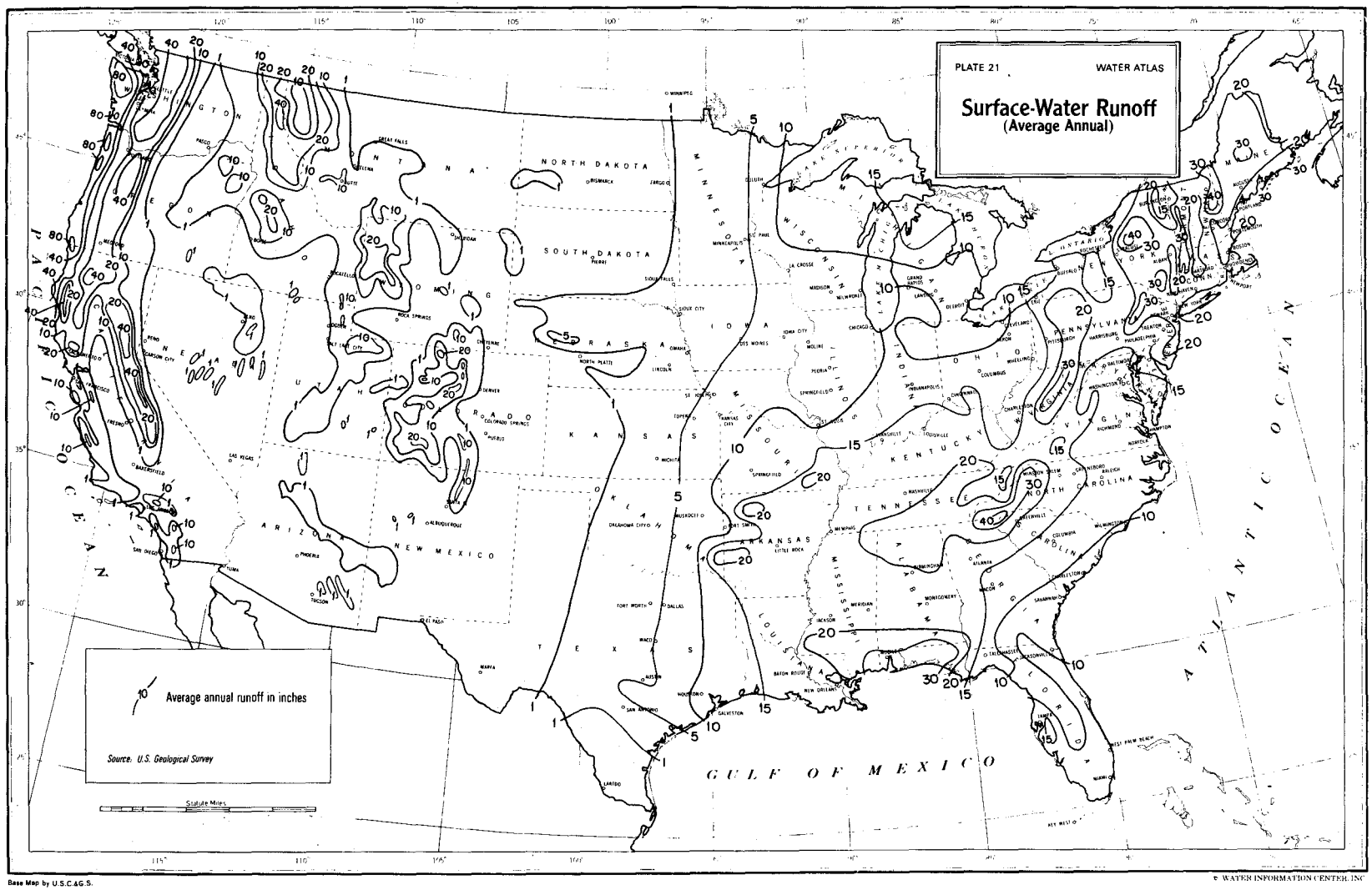

Fig. II-6. Surface-water runoff. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 21. Water Information Center, Port Washington, N.Y.

TABLE II-6

CRITICAL MONTH SURFACE WATER SUPPLY ESTIMATES BY WATER RESOURCE AGGREGATED SUBAREAS

ASA	Area (10^3 acres)[a]	1975 est. population (10^3)[a]	% forest range[b]	Critical month data: Month[c]	95% flow (Mgd)[d]	Surface supply (Mgd)[c]	consumption (Mgd)[d]
201	9,472	2,145	64	Aug	2,330	2,497	171
202	2,816	17,023	23	Aug	2,710	3,563	714
203	9,664	7,982	48	Sept	2,520	3,039	530
204	17,152	3,676	59	Sept	2,390	2,642	257
205	15,360	4,673	51	Sept	1,230	1,430	202
206	9,472	4,113	51	Aug	1,160	1,323	166
301	22,784	3,133	69	Oct	2,130	2,377	255
302	26,432	4,939	61	Sept	4,980	5,266	289
303	22,400	1,973	67	Oct	4,850	5,010	165
304	17,600	3,979	68	July	4,140	5,722	1,683
305	11,264	3,486	48	July	1,490	5,478	4,198
306	17,984	2,960	65	Oct	5,690	5,862	174
307	20,288	1,890	68	Oct	11,100	11,269	172
308	15,168	1,901	68	Oct	5,820	6,017	199
309	12,800	1,162	68	Oct	2,130	2,257	135
501	9,664	1,342	68	Sept	1,490	1,676	188
502	17,728	6,664	55	Sept	4,910	6,128	662
503	12,928	4,165	24	Sept	970	1,224	262
504	8,256	895	72	Sept	1,160	1,276	116
505	20,032	2,960	45	Sept	27,000	29,126	252
506	21,504	3,739	15	Sept	1,810	2,085	278
507	11,072	1,393	51	Sept	2,590	2,651	61
601	15,360	2,467	57	Sept	12,000	12,226	226
602	11,200	1,098	49	Sept	15,300	15,620	94
801	17,920	1,962	27	Oct	73,200	82,579	100
802	31,040	1,849	58	Oct	86,500	96,617	204
803	15,552	2,606	46	Oct	88,900	99,664	660
1101	12,544	352	71	Oct	2,590	2,615	29
1102	15,872	457	65	Aug	16	2,779	2,791
1103	29,504	970	33	Aug	345	4,786	8,388
1104	25,024	2,086	55	Aug	1,700	9,962	682
1105	46,247	1,088	68	Aug	1,380	4,533	7,883
1106	39,579	926	56	Aug	1,010	5,331	7,202
1107	16,064	967	59	Aug	1,360	6,010	339
1201	10,880	967	62	Oct	442	691	254
1202	16,704	5,050	41	Oct	162	949	811
1203	46,263	1,282	47	Oct	116	798	1,137
1204	46,394	1,017	70	Oct	187	921	798
1205	24,192	1,595	72	Aug	472	1,671	1,332

TABLE II-6 (continued)

CRITICAL MONTH SURFACE WATER SUPPLY ESTIMATES BY WATER RESOURCE AGGREGATED SUBAREAS

ASA	Area (10^3 acres)[a]	1975 est. population (10^3)[a]	% forest range[b]	Critical month data			
				Month[c]	95% flow (Mgd)[d]	Surface supply (Mgd)[c]	consumption (Mgd)[d]
1301	5,120	96	71	Oct	12	22	17
1302	37,440	1,004	67	Oct	19	670	855
1303	21,248	71	93	Oct	142	1,323	677
1304	13,056	110	74	Oct	9	200	290
1305	10,176	474	83	Oct	133	2,008	701

[a]Source: Water Resource Council, 1970. Water Resource Regions and Subregions for the National Assessment of Water and Related Land Resources; Water Resource Council, 1974. 1972 OBERS Projections as reproduced in Lukens and Pechan, 1977, Water Pollution Control.

[b]Source: USDA -FS, 1976. The Nation's Renewable Resources - An Assessment, 1975.

[c]Source: Calculated by Oak Ridge National Laboratory, Energy Division.

[d]Source: Water Resources Council, 1978. The Nation's Water Resources - Draft Data.

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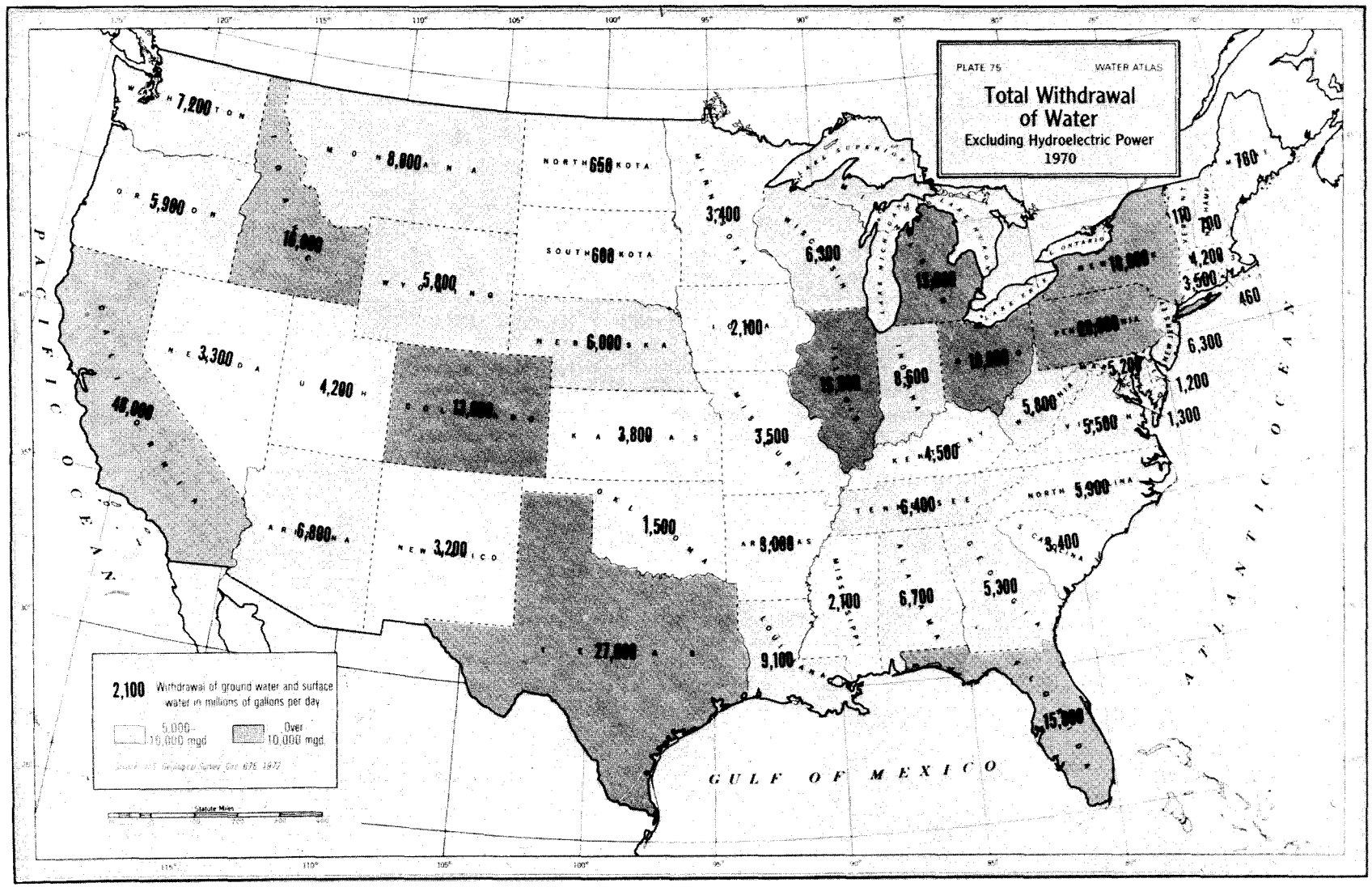

Fig. II-7. Total withdrawal of water, excluding hydroelectric power, 1970. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 75. Water Information Center, Port Washington, N.Y.

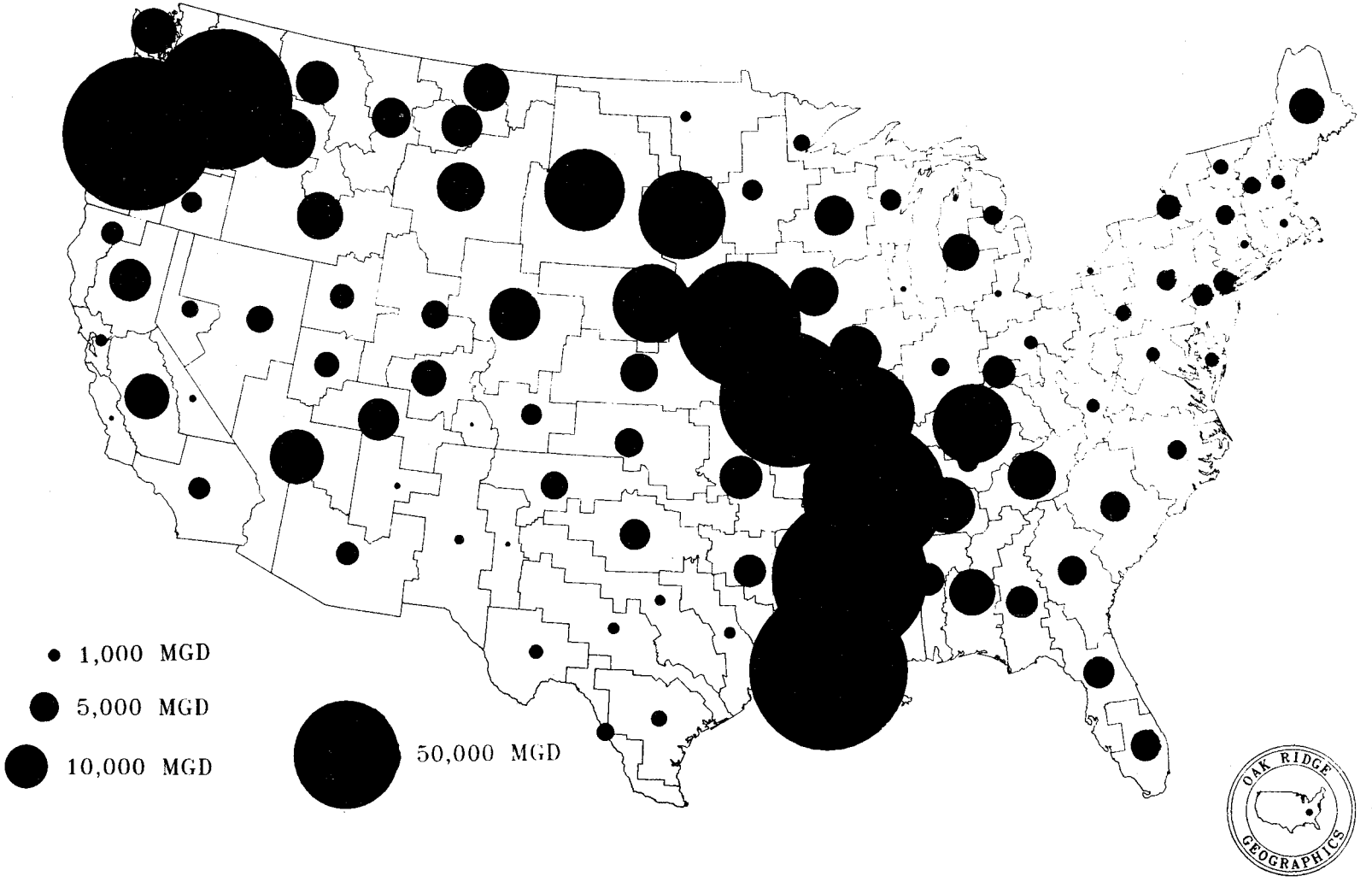

Fig. II-8. Critical surface water supply values for aggregated subareas derived by ORNL based on statistics from the U.S. Geological Survey for aggregated subarea discharges with a 95 percent chance of being exceeded in the month with the least surplus flow.

TABLE II-7

WATER-USE SUMMARY BY STATE FOR 1975, EXCLUDING HYDROELECTRIC POWER

State	Population[a] ($x10^3$)	Area[b] ($x10^3$ sq miles)	Water withdrawn[a] Ground (Mgd)	Water withdrawn[a] Surface (Mgd)	Consumed[a] (Mgd)	Per capita (gpd)
Alabama	3,577	51.6	370	8,800	260	370
Arkansas	2,116	53.1	2,600	2,500	2,200	2,400
Florida	8,485	58.6	3,300	15,000	2,300	810
Georgia	5,023	58.9	810	5,100	390	1,100
Kentucky	3,391	40.4	150	2,800	180	860
Louisiana	3,790	48.5	1,600	10,000	3,200	3,000
Mississippi	2,315	47.7	1,100	1,000	530	680
North Carolina	5,367	52.6	540	5,500	490	940
Oklahoma	3,260	69.9	1,400	880	1,200	650
South Carolina	2,818	31.1	200	5,600	280	2,100
Tennessee	4,170	42.2	370	7,300	270	1,800
Texas	12,236	267.3	11,000	18,000	13,000	1,900
Virginia	4,920	40.8	210	7,200	71	990
West Virginia	1,800	24.2	80	6,100	66	3,400
South	63,268	886.9	22,330	95,780	24,380	
U.S.	217,482	3,615.2	83,000	330,000	96,000	1,600
% of U.S.	29	25	27	29	25	

[a]Source: Murray, C. R., and E. B. Reeves, 1977, Geologic Survey Circular 765, Table 10.
[b]Source: Statistical Abstract of the United States, 1976, Table 303.

TABLE II-8

WATER WITHDRAWALS FOR PUBLIC SUPPLIES AND RURAL USE BY STATE, 1975 (MILLION GALLONS PER DAY)

State	Public utilities		Rural		Irrigation	
	Domestic	Industrial	Domestic	Livestock	Water	Acres ($x10^3$)
Alabama	240	270	59	34	22	32
Arkansas	140	70	46	48	1,800	1,400
Florida	930	210	200	63	1,300	2,000
Georgia	250	320	59	24	63	120
Kentucky	170	87	38	46	3	10
Louisiana	430	76	42	18	1,900	780
Mississippi	170	46	21	29	670	390
North Carolina	290	200	17	20	87	500
Oklahoma	230	110	31	69	1,200	1,000
South Carolina	190	130	46	60	29	42
Tennessee	300	140	41	38	9	19
Texas	1,100	550	120	180	12,000	8,600
Virginia	240	200	84	25	20	44
West Virginia	83	72	22	7	1	2
South	4,760	2,480	830	660	19,100	14,940
U.S.	20,000	9,100	2,800	2,000	140,000	54,000
% of U.S.	24	27	30	33	14	28

Source: Murray, C. R., and E. B. Reeves, 1977. Geological Survey Circular 765, Tables 5, 6, 7.

TABLE II-9

WATER WITHDRAWALS FOR ELECTRICAL GENERATION AND SELF SUPPLIED INDUSTRIAL USES BY STATE, 1975 (MILLION GALLONS PER DAY)

State	Thermoelectric		Other industrial		Hydroelectric
	Fresh	Saline	Fresh	Saline	
Alabama	6,900	110	1,400	100	160,000
Arkansas	1,700	0	610	0	52,000
Florida	1,600	11,000	940	63	10,000
Georgia	3,500	510	1,100	11	56,000
Kentucky	2,300	0	280	0	140,000
Louisiana	5,400	0	3,500	300	4,800
Mississippi	130	540	510	0	0
North Carolina	3,500	950	740	0	62,000
Oklahoma	180	0	330	140	60,000
South Carolina	5,000	9	350	32	0
Tennessee	5,800	0	1,300	0	190,000
Texas	8,900	2,800	880	2,400	14,000
Virginia	3,400	2,500	880	70	27,000
West Virginia	5,400	0	660	0	25,000
South	53,710	18,420	13,480	3,120	735,000
U.S.	131,000	64,000	38,000	6,400	3,300,000
% of U.S.	41	29	35	49	22

Source: Murray, C. R., and E. B. Reeves, 1977. Geological Survey Circular 765, Tables 8, 11.

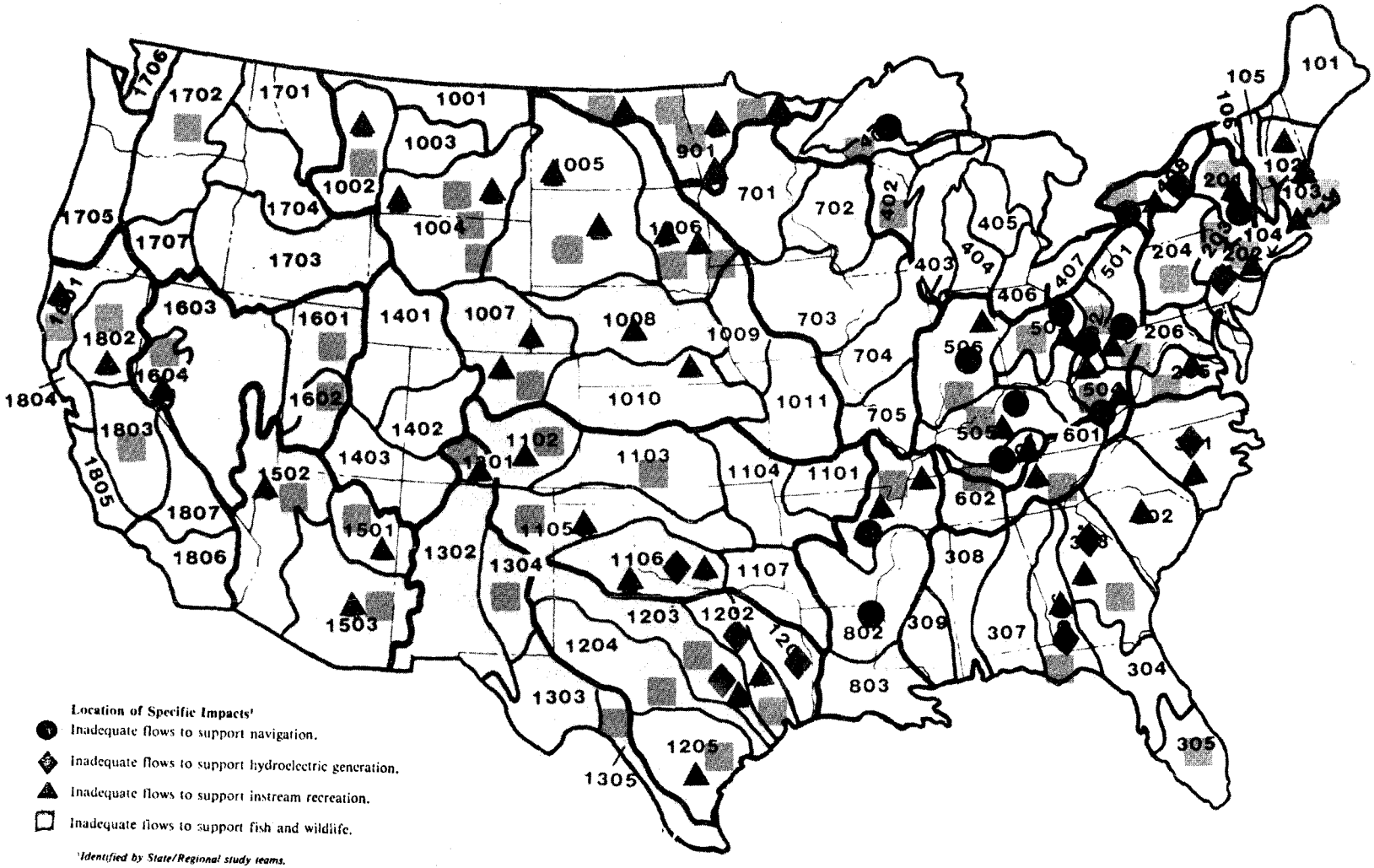

Fig. II-9. Inadequate water supply for instream uses, 1975.
Source: Water Resources Council, 1977. Preliminary Water Resources Problem Statement.

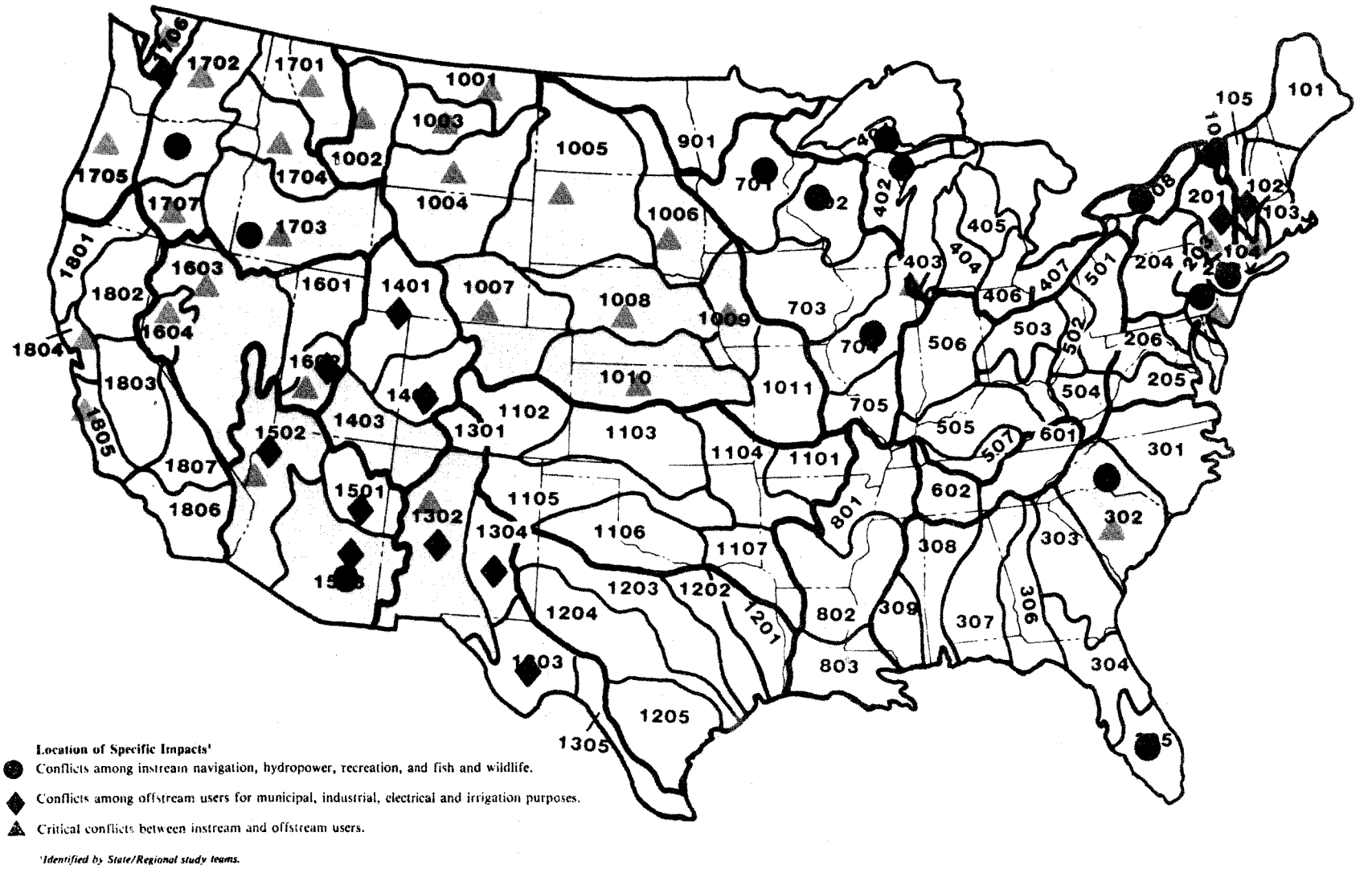

Fig. II-10. Offstream and instream competition for water, 1975.
Source: Water Resources Council, 1977. Preliminary Water Resources Problem Statement.

TABLE II-10

WATER CONSUMPTION AS A PERCENT OF WITHDRAWAL FOR MAJOR SUPPLY CATEGORIES BY STATE, 1975

State	Public utilities	Rural supplies	Self supplied	Irrigation	
				consumed	losses
Alabama	8	100	1.3	100	0
Arkansas	30	100	10.4	75	7
Florida	52	41	2.1	45	8
Georgia	21	100	2.3	100	0
Kentucky	10	92	2.8	96	0
Louisiana	55	100	9.7	100	32
Mississippi	29	96	6.8	51	10
North Carolina	20	100	2.3	100	0
Oklahoma	41	96	23.0	68	1
South Carolina	15	100	1.7	100	0
Tennessee	11	57	2.4	94	8
Texas	44	100	5.2	92	4
Virginia	7	17	0.1	60	15
West Virginia	0.3	22	1.0	100	0
South	24	80	5.1	84	6
U.S.	23	69	2.5	57	16

Source: Murray, C. R., and E. B. Reeves, 1977. Geological Survey Circular 765, calculated from Tables 5, 6, 7, 8.

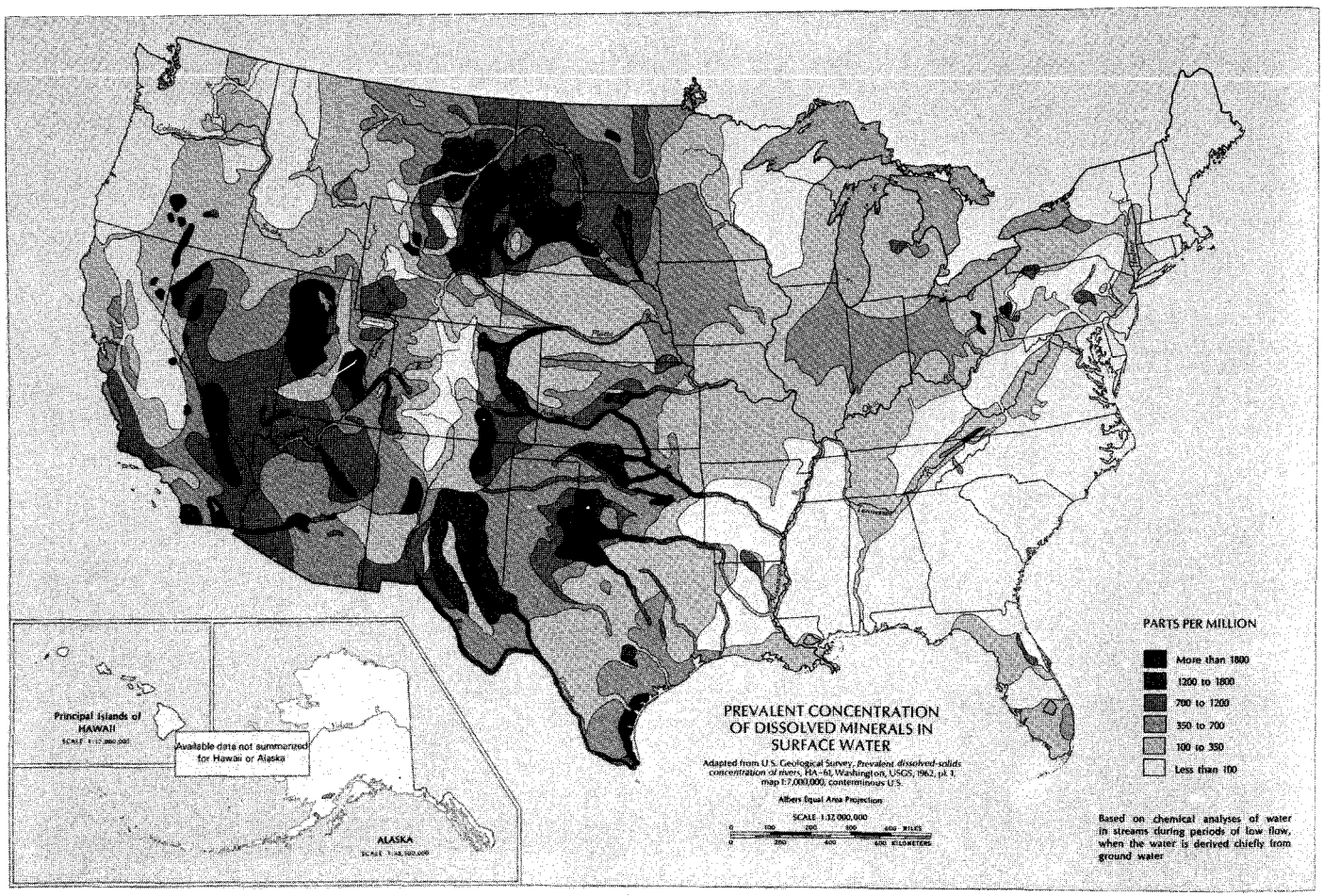

Fig. II-11. Prevalent concentration of dissolved minerals in surface water. Source: USGS, 1970, The National Atlas of the United States, p. 124.

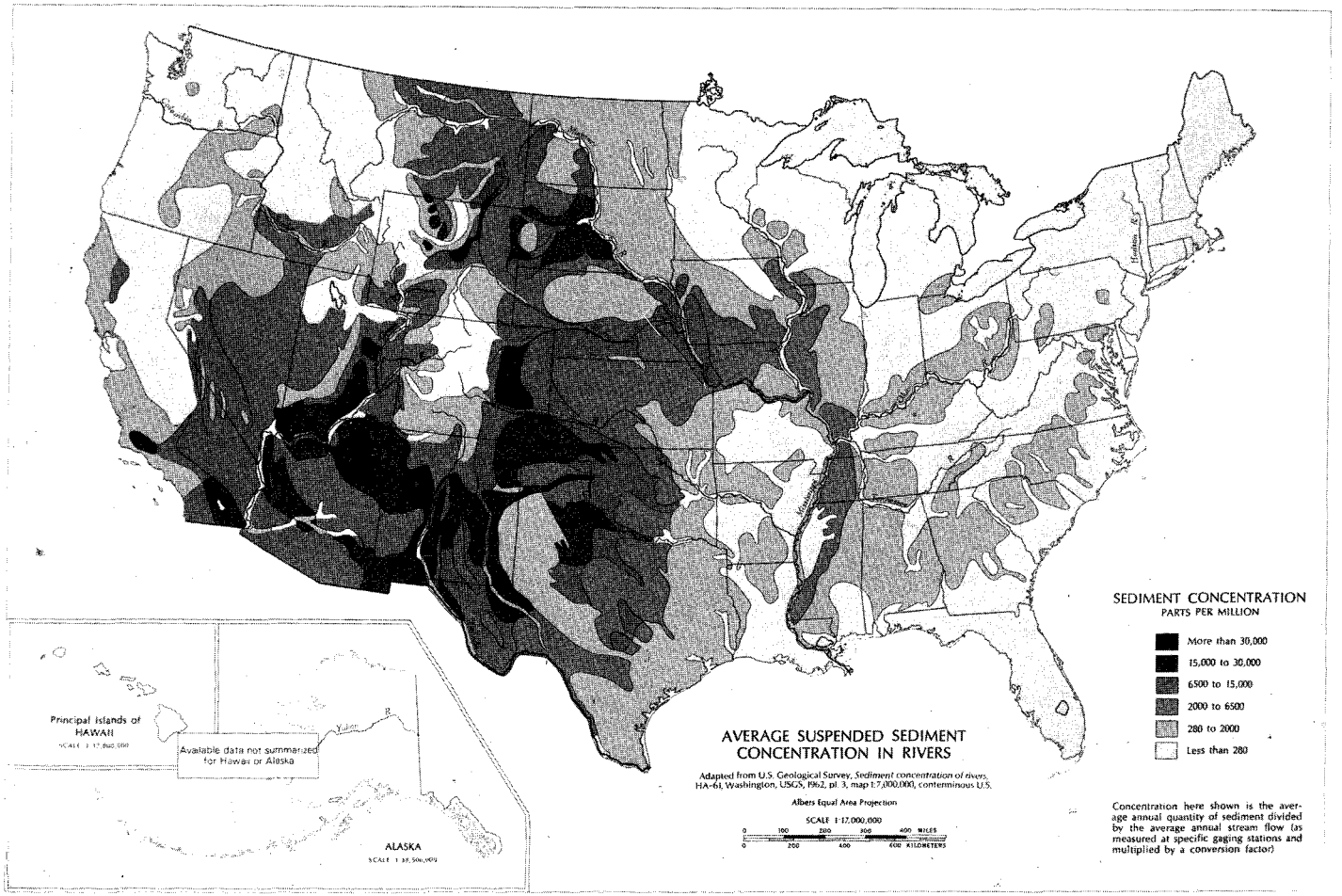

Fig. II-12. Average suspended sediment concentration in rivers. Source: USGS, 1970, The National Atlas of the United States, p. 125.

TABLE II-11

WATER QUALITY ANNUAL AVERAGE VALUES FOR THE NATIONAL STREAM QUALITY ACCOUNTING NETWORK (NASQAN) ACCOUNTING UNITS, 1975

NASQAN ACCOUNTING UNIT	TOTAL RESIDUE MG/L	TOTAL COBALT UG/L	TOTAL IRON UG/L	TOTAL LEAD UG/L	TOTAL CARBON UG/L
		MID ATLANTIC BASIN			
20100	84.63	0.0	87.50	20.75	6.62
20200	117.60	0.50	357.14	8.25	5.39
20301	173.42	0.75	482.50	10.50	5.60
20302	58.82	0.33	914.29	3.00	5.93
20401	101.08	0.75	258.00	11.25	3.52
20402	207.67	2.00	335.00	17.00	3.30
20403	44.50	0.75	1082.50	9.00	9.49
20501	158.67	3.50	2375.00	7.71	4.92
20502	94.75	5.00	405.00	5.00	3.53
20503	136.36	3.94	1137.50	5.94	4.77
20600	89.17	1.75	1670.00	2.75	6.07
20700	161.67	1.00	917.50	7.00	5.85
20801	53.25	0.0	2096.67	46.67	6.17
20802	83.38	1.00	3966.67	19.67	6.53
		SOUTH ATLANTIC-GULF BASIN			
30101	37.80	12.61	443.67	29.61	4.56
30102	74.33	0.0	1433.33	54.00	11.87
30201	63.73	20.40	1428.57	32.14	11.66
30202	62.69	34.67	1207.14	33.14	11.60
30300	55.08	36.67	1600.00	35.67	8.47
30401	57.25	33.83	1943.33	36.33	7.42
30402	53.54	0.25	852.28	9.42	9.16
30501	49.21	0.0	549.26	41.97	5.96
30502	49.91	0.0	723.31	27.42	12.27
30601	45.75	0.50	1137.50	8.75	6.12
30602	56.14	0.25	1050.00	32.75	9.10
30701	59.86	1.00	1365.00	25.50	9.80
30702	58.39	0.11	1137.22	19.12	19.31
30801	627.73	0.25	295.00	12.75	13.12
30802	716.74	0.0	819.33	5.01	14.33
30901	132.27	0.0	422.69	3.20	16.20
30902	384.45	0.50	360.00	14.75	20.50
31001	252.37	0.50	387.50	22.00	11.00
31002	198.76	1.35	224.99	13.11	9.04
31101	119.50	0.0	370.00	14.00	15.73
31102	119.50	0.0	370.00	14.00	15.73
31200	63.00	0.0	2133.33	12.00	9.20
31300	54.21	0.96	1256.64	17.74	5.35
31401	40.36	0.75	1512.50	15.75	5.67
31402	48.82	3.33	1850.00	21.33	4.25
31403	51.71	1.25	1750.00	13.00	6.17
31501	52.75	0.40	1342.00	19.20	16.25
31502	56.70	0.0	2122.50	9.75	10.30
31601	70.78	0.25	3287.50	14.38	14.73
31602	83.67	0.0	1482.00	15.20	15.30
31700	52.75	1.25	1850.00	2.75	6.17
31800	59.60	0.75	1760.00	5.00	6.02

TABLE II-11 (continued)

WATER QUALITY ANNUAL AVERAGE VALUES FOR THE NATIONAL STREAM QUALITY ACCOUNTING NETWORK (NASQAN) ACCOUNTING UNITS, 1975

NASQAN ACCOUNTING UNIT	TOTAL RESIDUE MG/L	TOTAL COBALT UG/L	TOTAL IRON UG/L	TOTAL LEAD UG/L	TOTAL CARBON UG/L
		OHIO BASIN			
50100	148.78	4.83	1414.29	6.33	2.57
50200	230.75	4.00	1528.00	9.00	3.63
50301	221.27	1.00	1180.00	11.00	4.82
50302	221.27	1.00	1180.00	11.00	4.82
50400	447.50	3.50	1247.50	5.50	6.27
50500	140.00	1.00	735.00	65.00	3.80
50600	428.00	0.75	710.00	3.50	3.18
50701	80.00	1.40	1122.86	11.40	5.43
50702	218.27	1.75	1046.67	17.25	6.97
50800	412.62	2.55	2309.05	13.33	5.55
50901	221.27	1.00	1180.00	11.00	4.82
50902	215.79	11.17	6036.23	28.32	6.30
51001	142.17	1.00	2275.00	10.75	3.82
51002	148.83	1.25	2200.00	13.00	4.85
51100	185.42	3.50	3725.00	21.25	5.95
51201	322.36	2.33	3833.33	15.67	11.30
51202	304.18	1.33	1196.67	7.67	5.70
51301	89.82	0.50	650.00	78.40	3.33
51302	106.25	0.0	987.50	26.25	4.12
51401	204.48	2.00	2005.94	14.30	5.21
51402	159.25	4.00	4399.99	43.75	4.65
		TENNESSEE BASIN			
60101	81.25	0.25	910.00	24.25	3.10
60102	87.95	1.00	460.00	27.62	2.24
60200	87.67	0.0	532.50	17.75	3.28
60300	88.00	5.50	349.23	20.40	2.47
60400	84.62	0.75	860.00	17.25	4.30
		LOWER MISSISSIPPI BASIN			
80101	235.42	50.00	3300.00	125.00	6.60
80102	59.89	3.67	5233.33	32.33	5.30
80201	229.83	50.00	3775.00	75.00	6.10
80203	129.82	50.00	2560.00	100.00	4.75
80204	301.33	37.50	1130.00	77.50	4.60
80301	205.17	2.75	4650.00	20.75	6.25
80302	49.25	3.00	5600.00	16.75	7.32
80401	52.82	50.00	2520.00	100.00	5.06
80402	127.69	0.50	1425.00	7.00	6.20
80403	263.60	0.0	1500.00	3.00	5.60
80500	190.40	1.00	6150.00	7.00	9.34
80601	212.69	9.83	4338.32	15.27	7.27
80602	73.97	2.79	6524.14	19.47	9.73
80700	64.67	0.25	2075.00	5.50	4.14
80801	96.09	1.00	2425.00	6.25	10.86
80802	325.42	0.0	1252.50	6.25	13.62
80900	234.36	13.25	4445.00	29.25	5.45

TABLE II-11 (continued)

WATER QUALITY ANNUAL AVERAGE VALUES FOR THE NATIONAL STREAM QUALITY ACCOUNTING NETWORK (NASQAN) ACCOUNTING UNITS, 1975

NASQAN ACCOUNTING UNIT	TOTAL RESIDUE MG/L	TOTAL COBALT UG/L	TOTAL IRON UG/L	TOTAL LEAD UG/L	TOTAL CARBON UG/L
		ARKANSAS-RED-WHITE BASIN			
110100	129.82	50.00	2560.00	100.00	4.75
110200	3967.14	66.67	823.33	100.00	6.37
110300	822.49	49.97	12487.00	86.04	14.05
110400	5839.38	207.50	10602.00	125.00	20.50
110500	2899.39	55.00	3300.00	100.00	12.97
110600	898.46	50.00	934.76	90.48	7.26
110701	281.33	50.00	845.00	100.00	8.75
110702	160.55	75.00	323.33	100.00	4.95
110800	3767.30	100.00	22905.00	100.00	21.92
110901	1286.58	37.50	458.00	75.50	6.83
110902	337.12	50.00	941.99	100.00	12.13
111001	2015.77	3.13	45.85	6.25	0.30
111002	1457.73	83.33	2152.50	100.00	9.85
111003	337.12	50.00	941.99	100.00	12.13
111101	337.55	50.00	1792.00	80.00	9.35
111102	301.33	37.50	1130.00	77.50	4.60
111201	6955.11	112.50	45260.00	150.75	39.90
111202	2518.33	37.50	2650.00	64.00	6.38
111203	3661.40	66.67	10052.50	100.00	13.60
111301	4681.66	50.00	12279.98	64.00	16.10
111302	763.33	37.50	246.67	64.00	4.13
111303	831.45	62.50	9920.00	100.00	12.30
111401	412.46	1.71	3617.20	6.08	7.96
111402	330.33	8.25	4147.50	15.50	14.22
111403	412.46	1.71	3617.20	6.08	7.96
		TEXAS GULF BASIN			
120100	88.75	30.00	1512.00	64.00	8.30
120200	102.55	37.50	2025.00	75.75	7.93
120301	305.90	33.33	2173.33	90.67	8.45
120302	186.50	37.50	1400.00	77.00	8.83
120401	171.58	37.50	1100.00	101.50	10.06
120402	171.58	37.50	1100.00	101.50	10.06
120500	28464.16	163.00	2672.50	100.50	4.15
120601	9726.66	37.50	9980.00	76.25	7.02
120602	733.82	50.00	3100.00	66.67	8.80
120701	452.83	41.20	16820.00	84.00	8.73
120702	452.83	41.20	16820.00	84.00	8.73
120800	5340.00	50.00	12002.50	75.00	16.25
120901	992.08	37.50	1180.00	77.50	7.85
120902	288.50	33.33	93.33	66.67	6.12
120903	317.09	50.00	4066.67	100.00	6.01
120904	452.83	41.20	16820.00	84.00	8.73
121001	417.18	50.00	500.00	100.00	7.04
121002	326.75	50.00	1732.50	100.00	3.60
121003	586.67	50.00	3925.00	100.00	10.37
121004	386.75	50.00	2119.05	100.00	5.23
121101	807.50	50.00	1075.00	100.00	7.35
121102	3098.30	50.00	673.33	133.33	14.47

TABLE II-11 (continued)

WATER QUALITY ANNUAL AVERAGE VALUES FOR THE NATIONAL STREAM QUALITY ACCOUNTING NETWORK (NASQAN) ACCOUNTING UNITS, 1975

NASQAN ACCOUNTING UNIT	TOTAL RESIDUE MG/L	TOTAL COBALT UG/L	TOTAL IRON UG/L	TOTAL LEAD UG/L	TOTAL CARBON UG/L
		RIO GRANDE BASIN			
130100	155.22	50.00	790.00	100.00	4.20
130201	212.00	50.00	2675.00	100.00	8.07
130202	449.83	50.00	20000.00	100.00	14.22
130301	4022.50	50.00	3885.00	101.00	10.40
130302	4022.50	50.00	3885.00	101.00	10.40
130401	4022.50	50.00	3885.00	101.00	10.40
130402	754.27	87.50	57259.89	176.00	9.62
130403	2219.17	37.50	167.50	76.25	1.98
130500	1174.55	62.50	8397.50	100.00	5.42
130600	8807.49	225.00	310.00	150.00	10.12
130700	2219.17	37.50	167.50	76.25	1.98
130800	595.83	50.00	1305.00	100.00	10.72
130900	813.36	50.00	2445.00	100.00	7.77

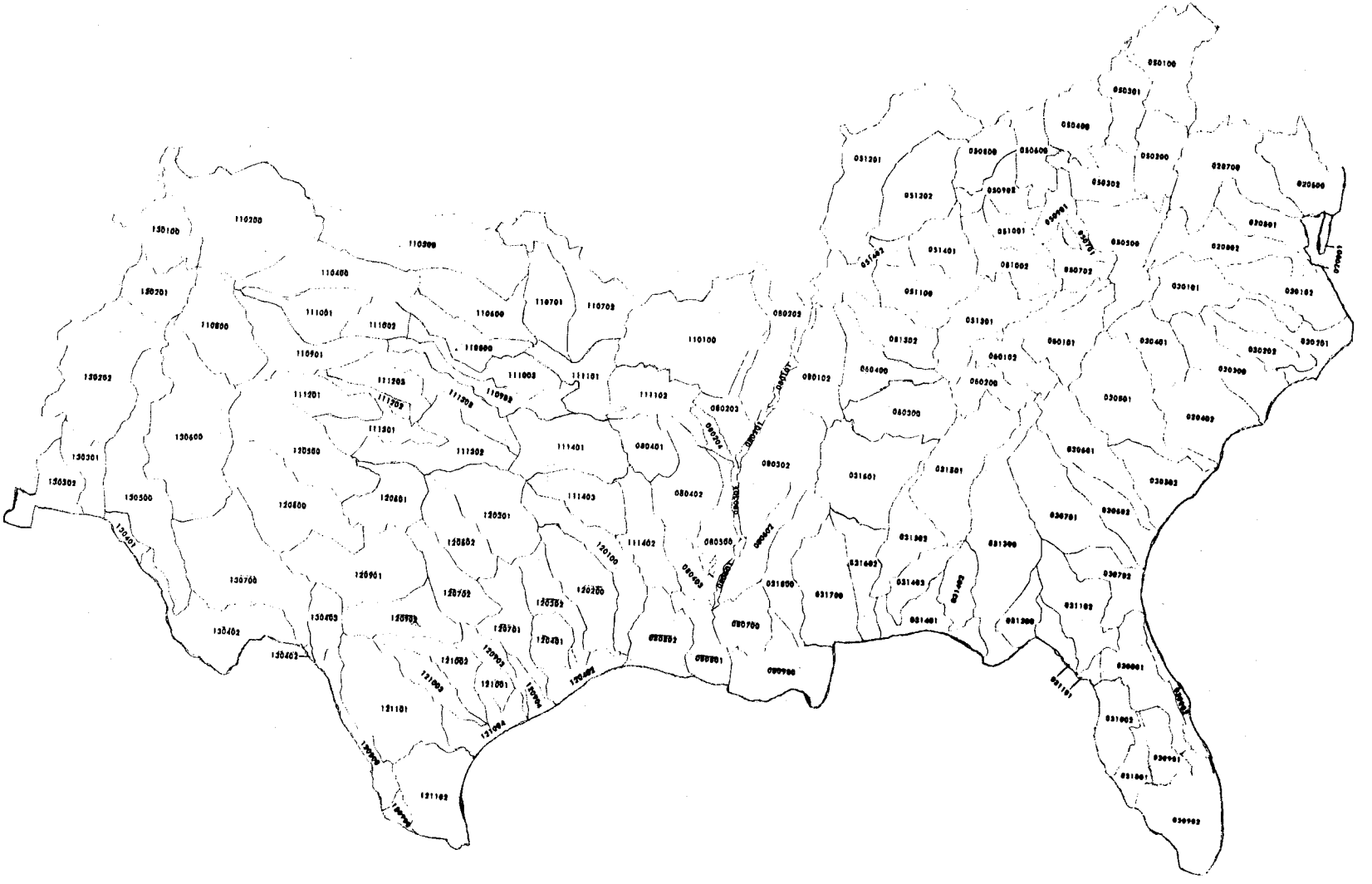

Fig. II-13. National Stream Quality Accounting Network (NASQAN). Source: CEQ UPGRADE system.

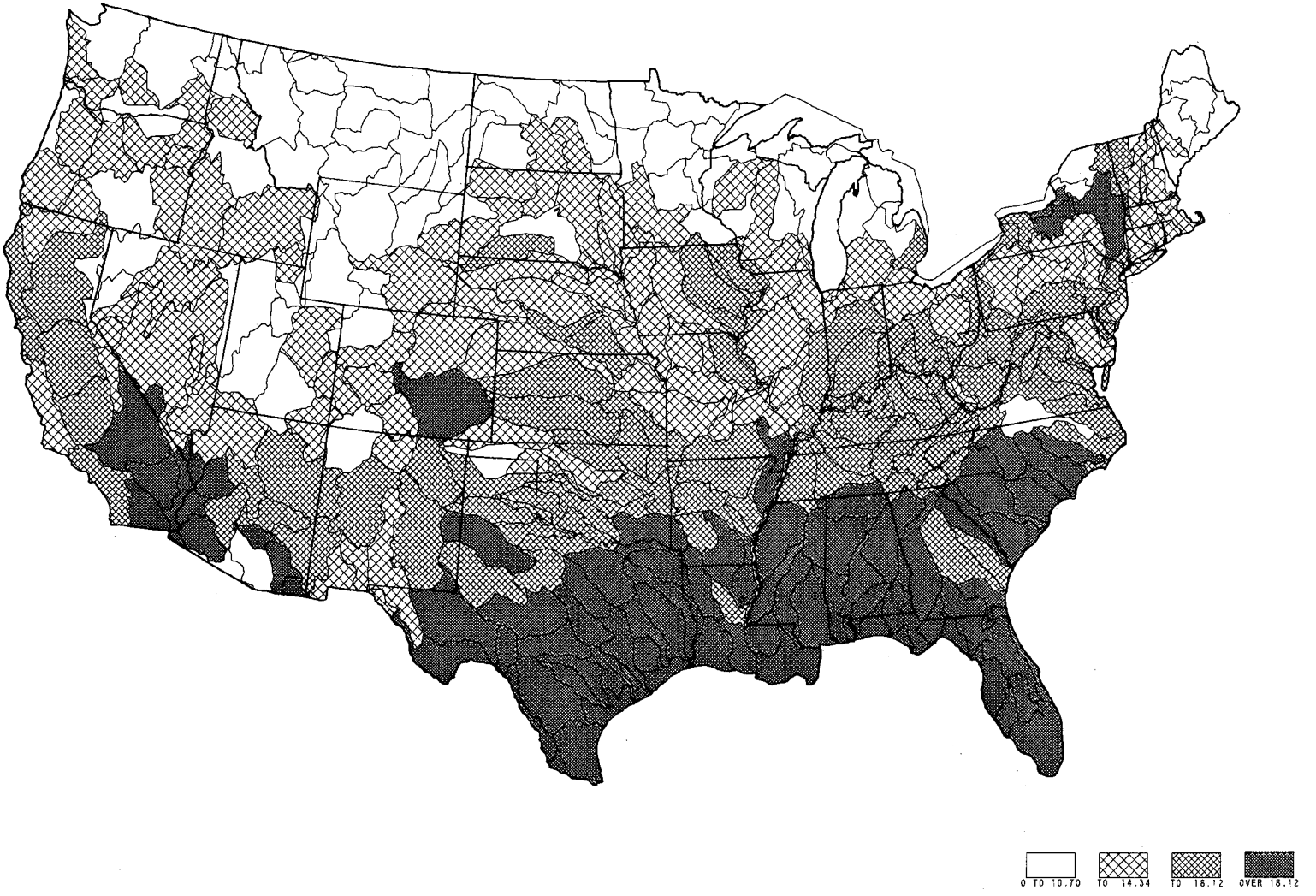

Fig. II-14. Annual mean water temperature (degrees Centigrade) by NASQAN accounting units, 1975. Source: CEQ UPGRADE system.

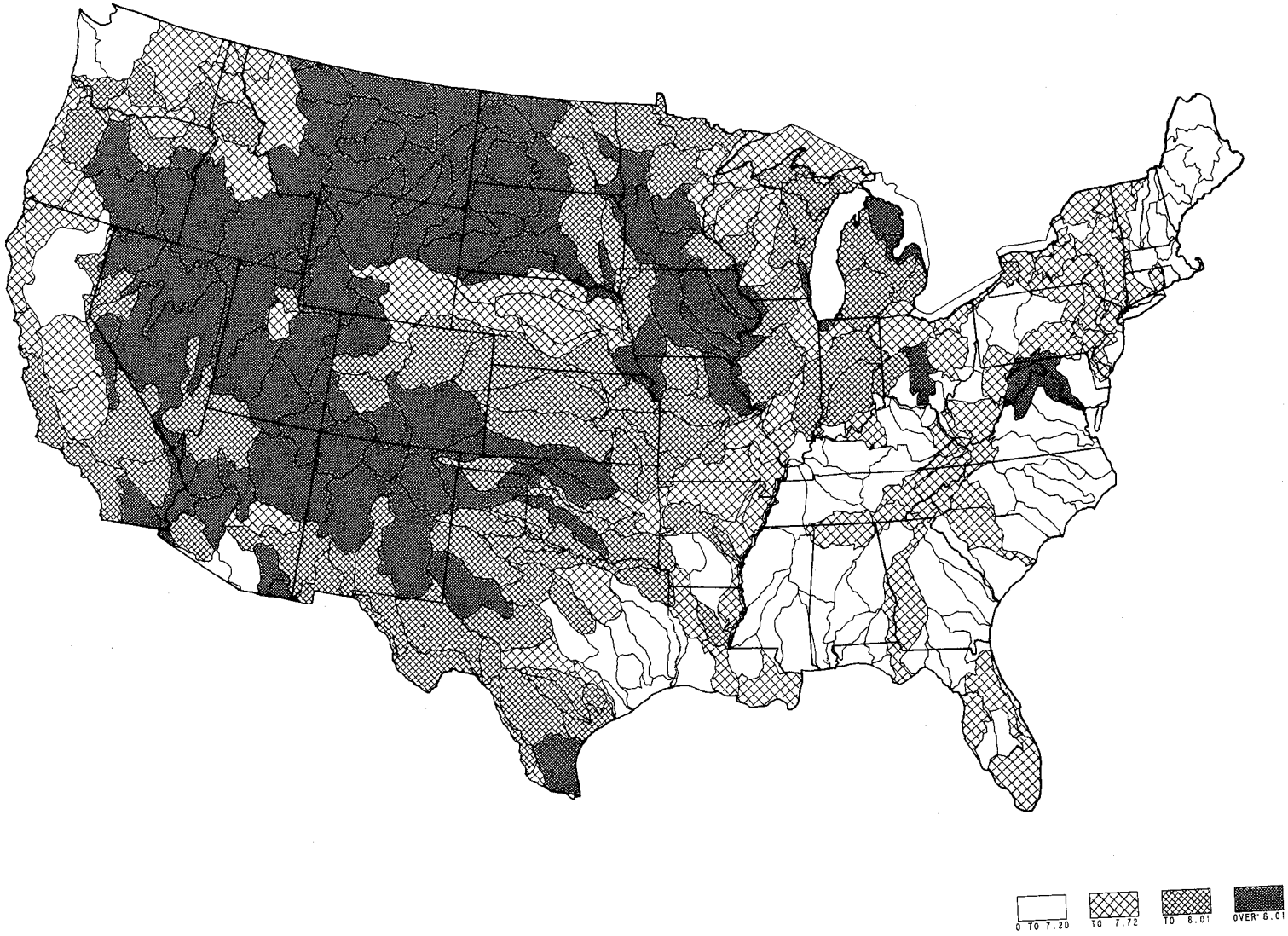

Fig. II-15. Annual mean PH (standard units) by NASQAN accounting units, 1975.
Source: CEQ UPGRADE system.

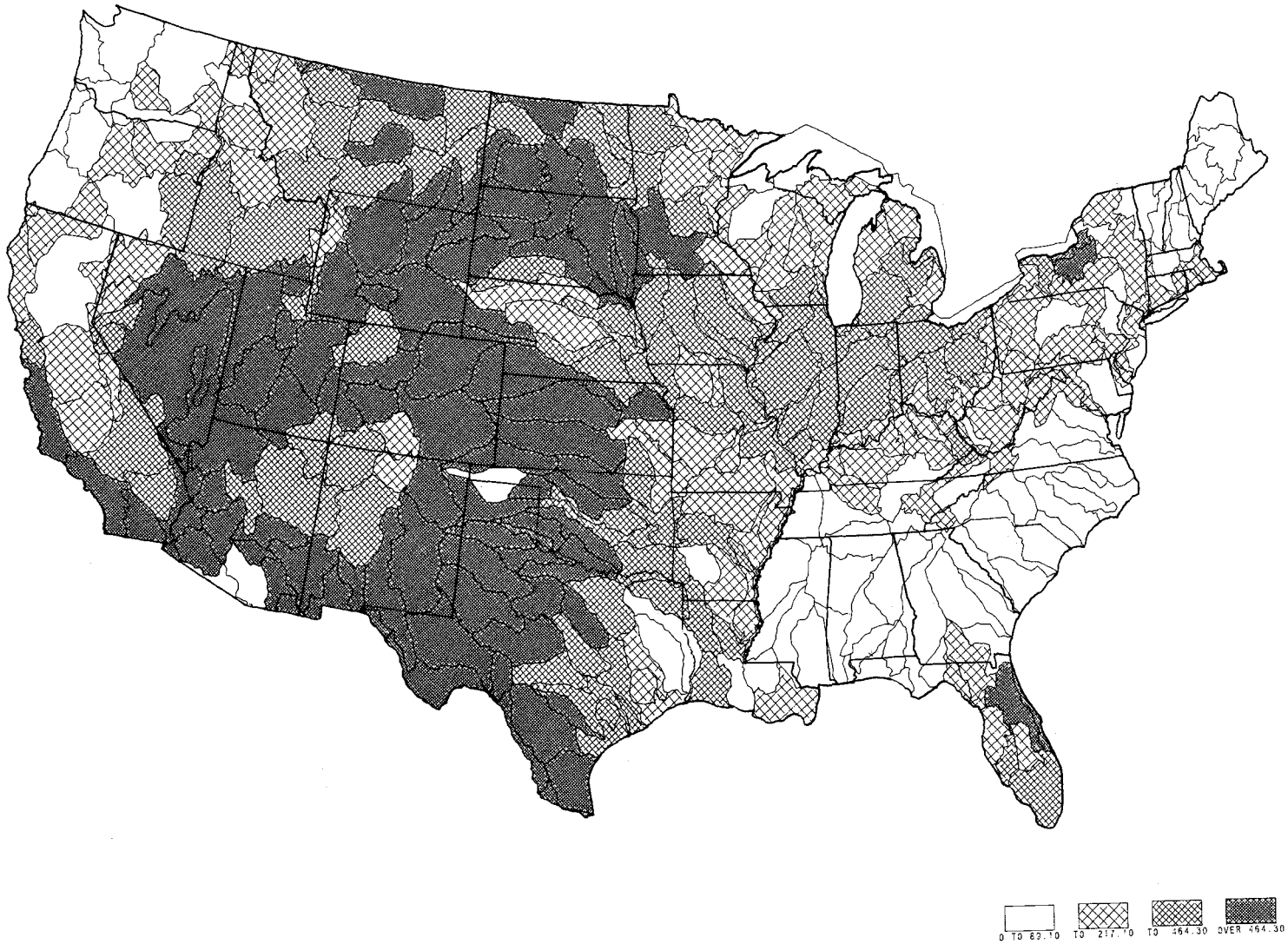

Fig. II-16. Annual mean total dissolved solids (mg/l) by NASQAN accounting units, 1975
Source: CEQ UPGRADE system.

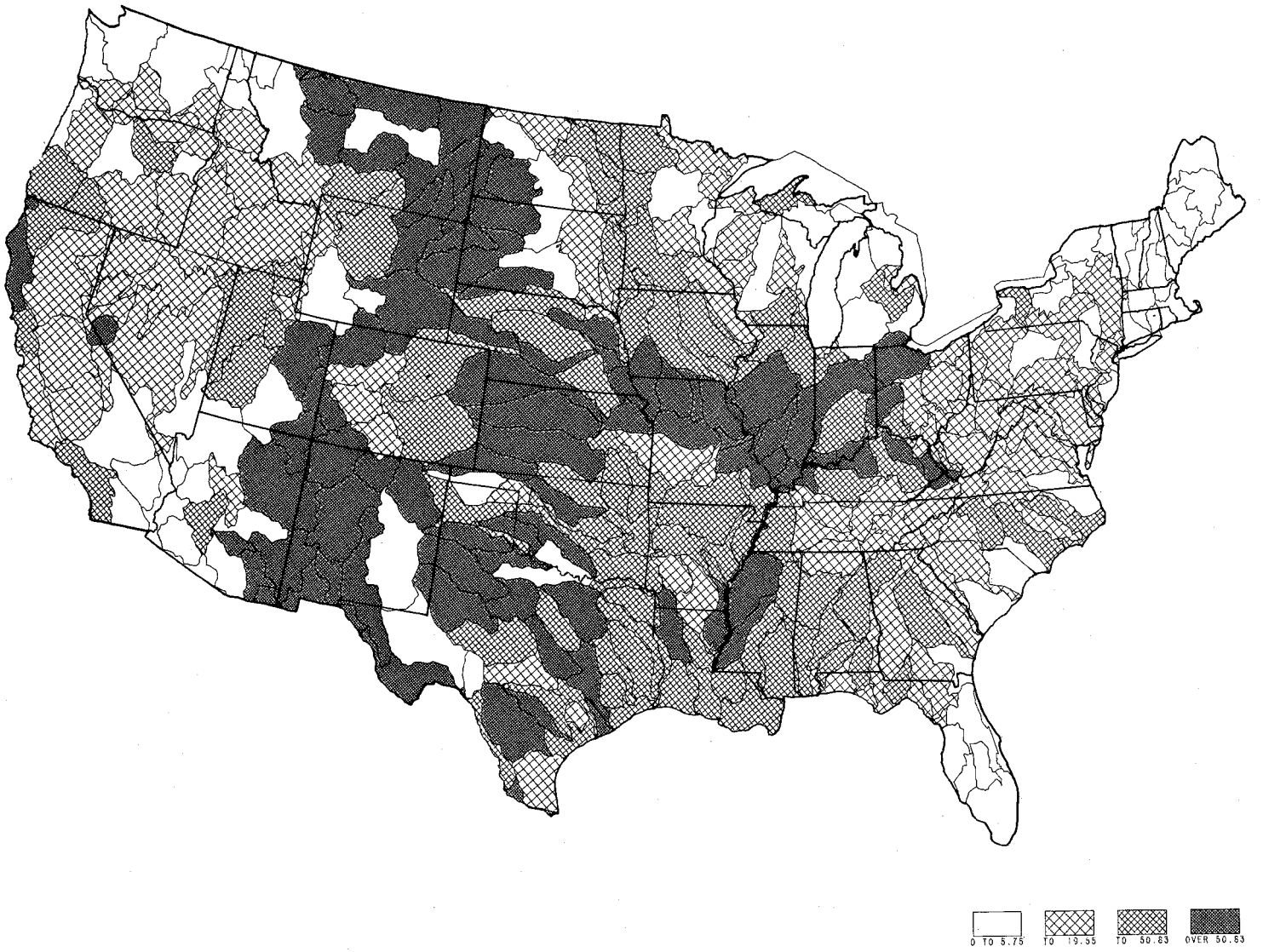

Fig. II-17. Annual mean turbidity (Jackson units) by NASQAN accounting units, 1975
Source: CEQ UPGRADE system.

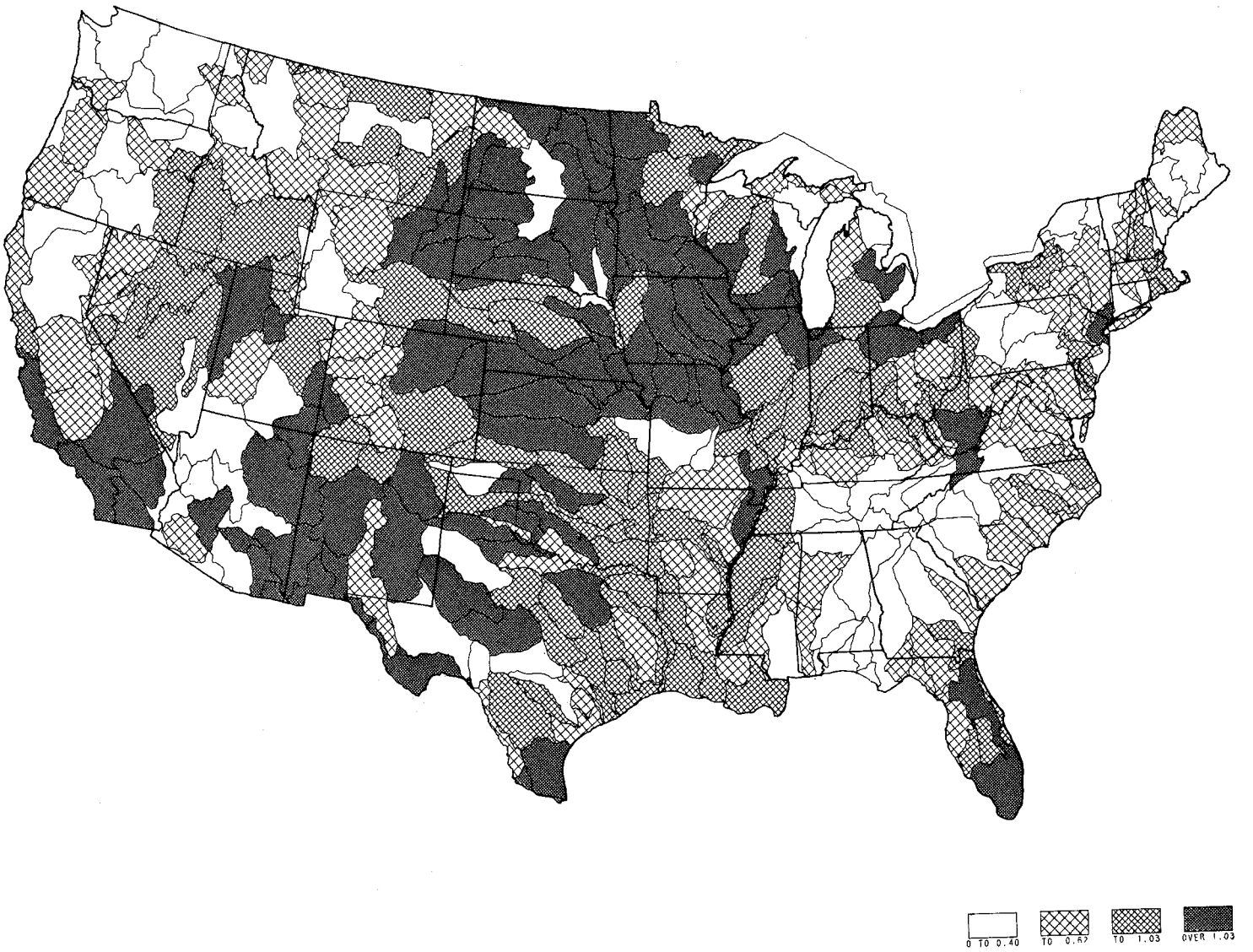

Fig. II-18. Annual mean total organic nitrogen (mg/l) by NASQAN accounting units, 1975
Source: CEQ UPGRADE system.

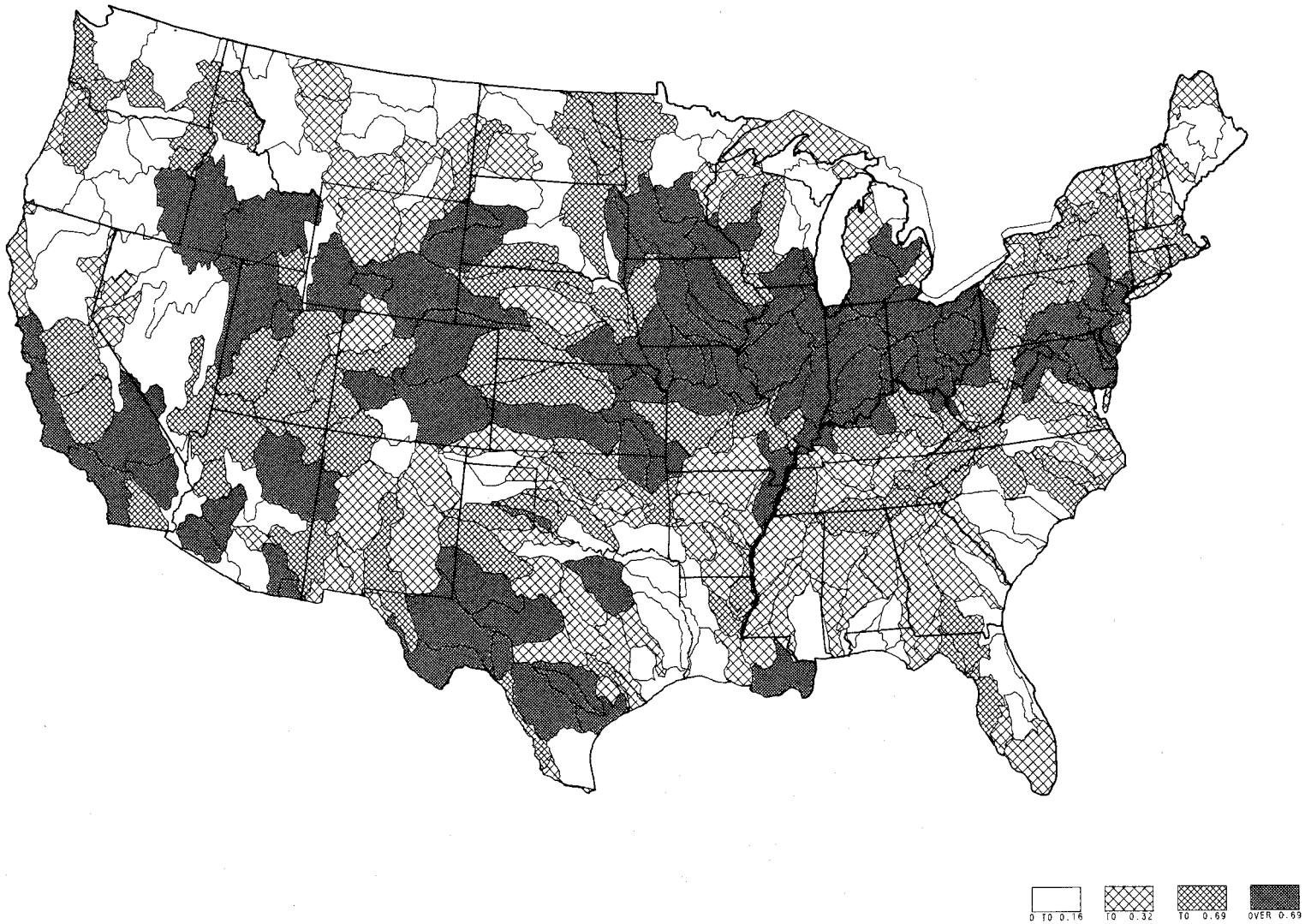

Fig. II-19. Annual mean total inorganic nitrogen (mg/l) by NASQAN accounting units, 1975.
Source: CEQ UPGRADE system.

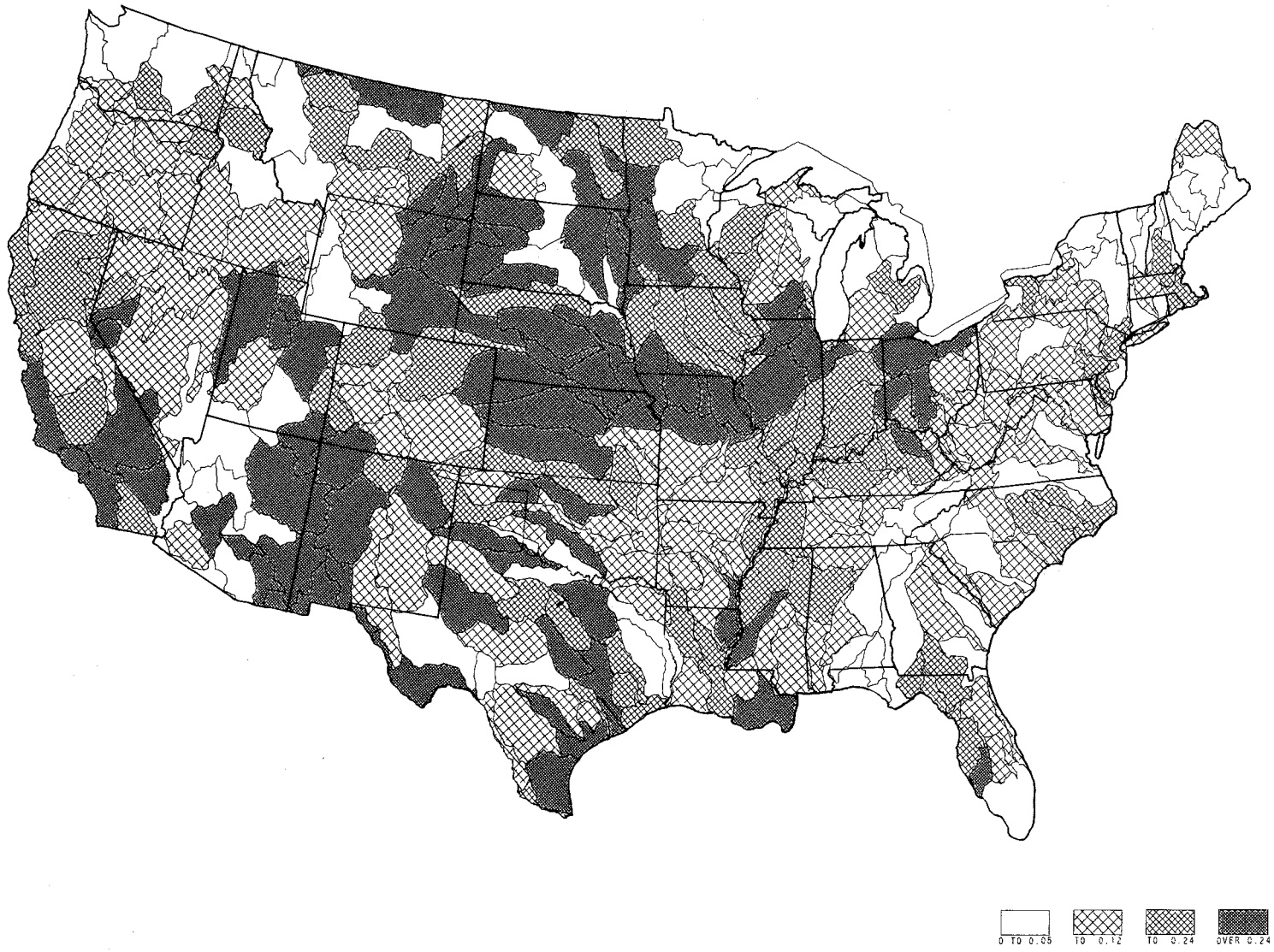

Fig. II-20. Annual mean total phosphorus (mg/l) by NASQAN accounting units, 1975.
Source: CEQ UPGRADE system.

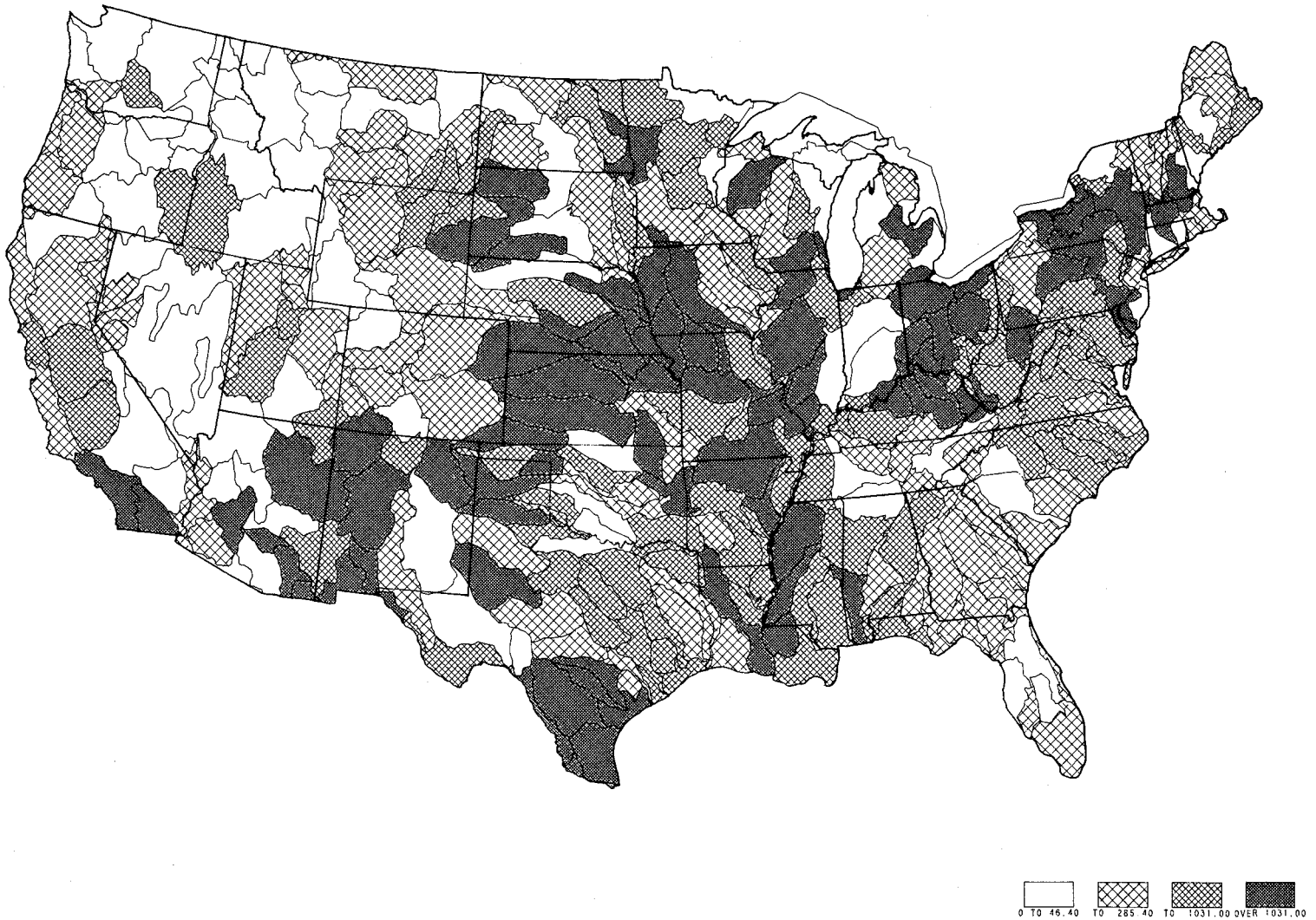

Fig. II-21. Annual mean fecal coliform bacteria (cells/100ml) by NASQAN accounting units, 1975. Source: CEQ UPGRADE system.

TABLE II-12

GROUNDWATER WITHDRAWALS BY STATE, 1975

State	Population[a] ($X\ 10^3$)	Area[b] ($X\ 10^3$ sq miles)	Groundwater[a] withdrawal (Mgd)
Alabama	3,577	51.6	370
Arkansas	2,116	53.1	2,600
Florida	8,485	58.6	3,300
Georgia	5,023	58.9	810
Kentucky	3,391	40.4	150
Louisiana	3,790	48.5	1,600
Mississippi	2,315	47.7	1,100
North Carolina	5,367	52.6	540
Oklahoma	3,260	69.9	1,400
South Carolina	2,818	31.1	200
Tennessee	4,170	42.2	370
Texas	12,236	267.3	11,000
Virginia	4,920	40.8	210
West Virginia	1,800	24.2	80
South	63,268	886.9	22,330
U.S.	217,482	3,615.2	83,000
% of U.S.	29	25	27

[a]Source: Murray, C. R. and E. B. Reeves, 1977. Geologic Survey Circular 765, Table 10.

[b]Source: Statistical Abstract of the United States, 1976. Table 303.

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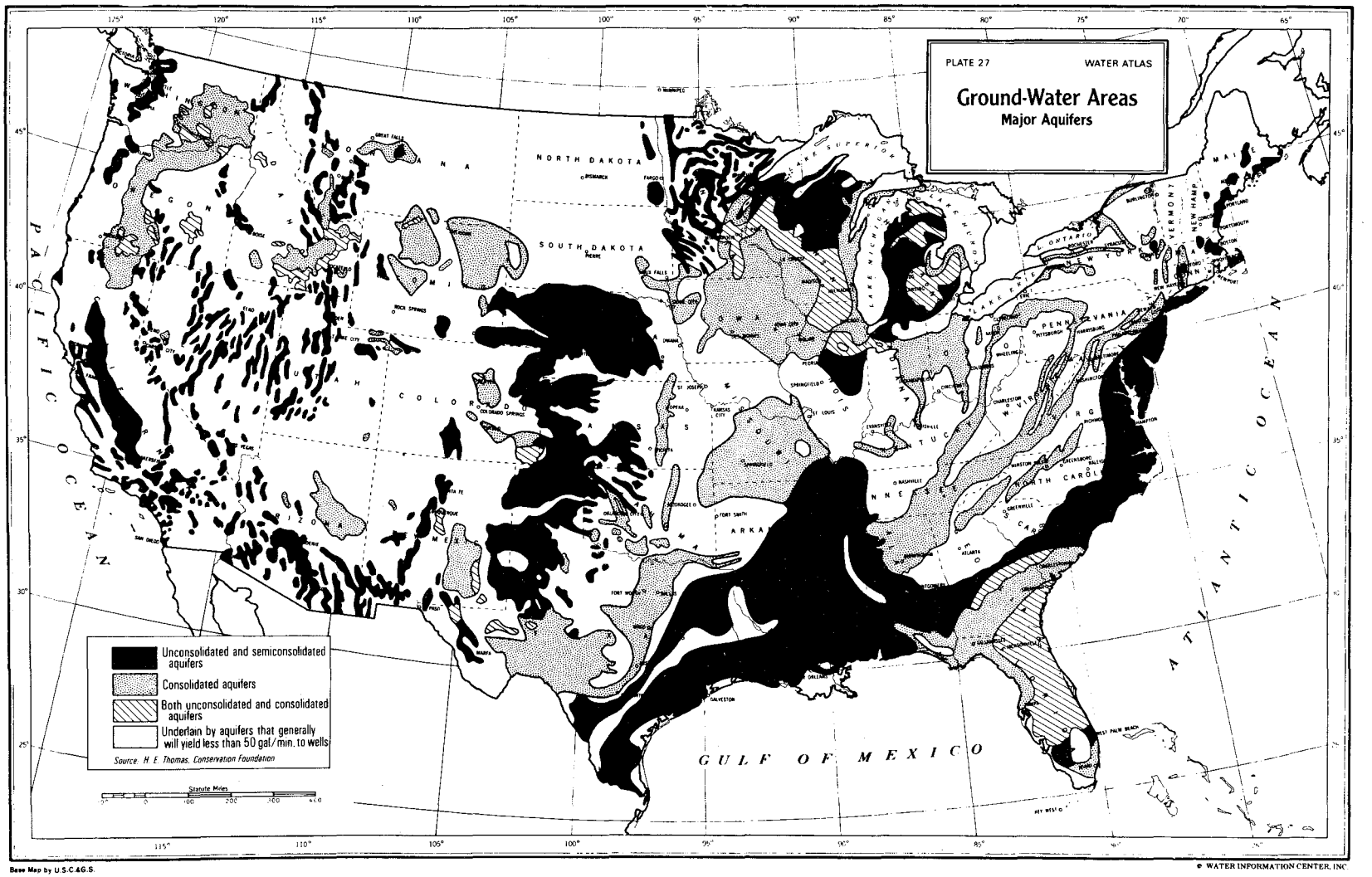

Fig. II-22. Ground-water areas, major aquifers. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 27. Water Information Center, Port Washington, N.Y.

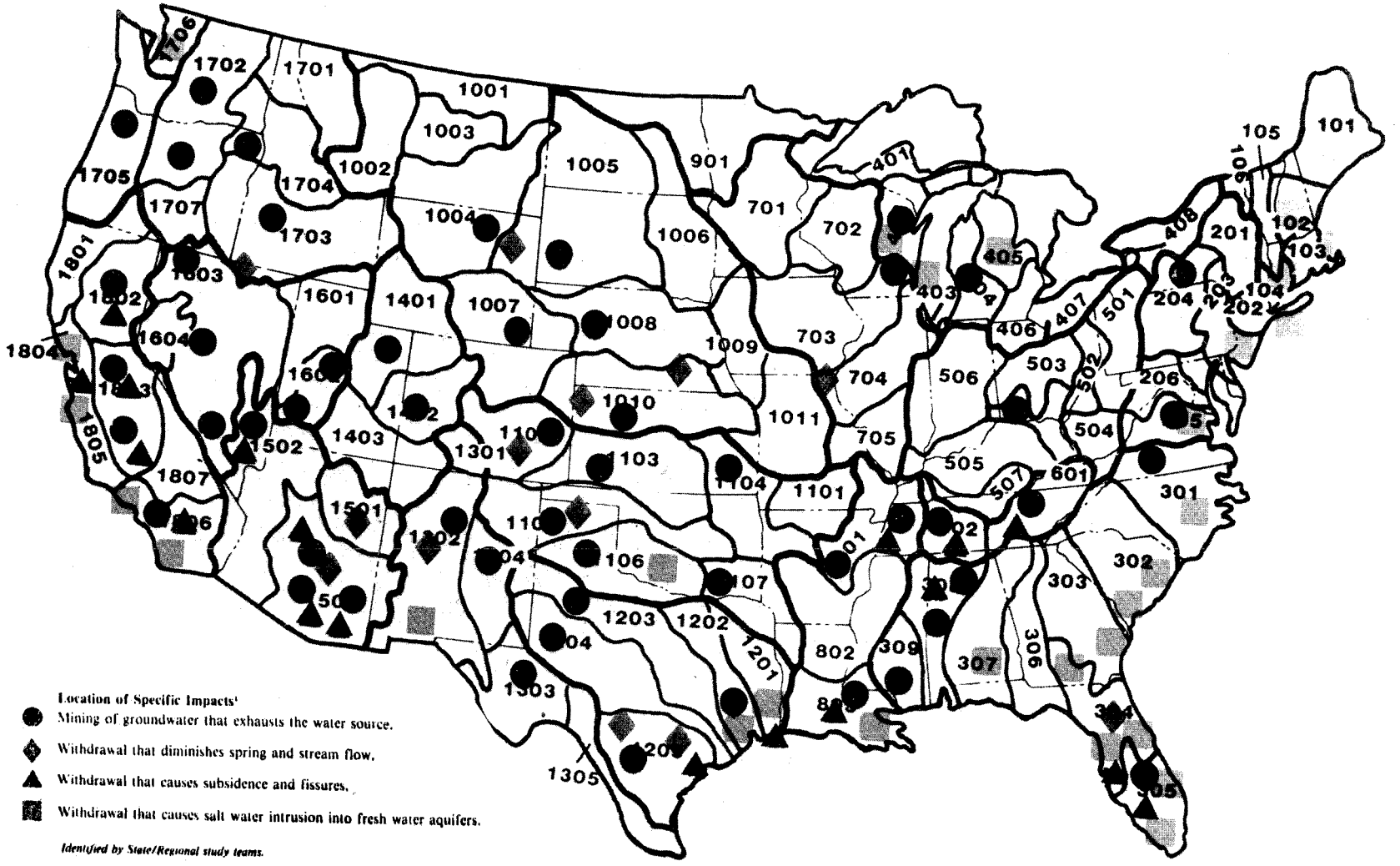

Fig. II-23. Location of groundwater depletion areas by source of impact, 1975.
Source: Water Resources Council, 1977. Preliminary Water Resources Problem Statement.

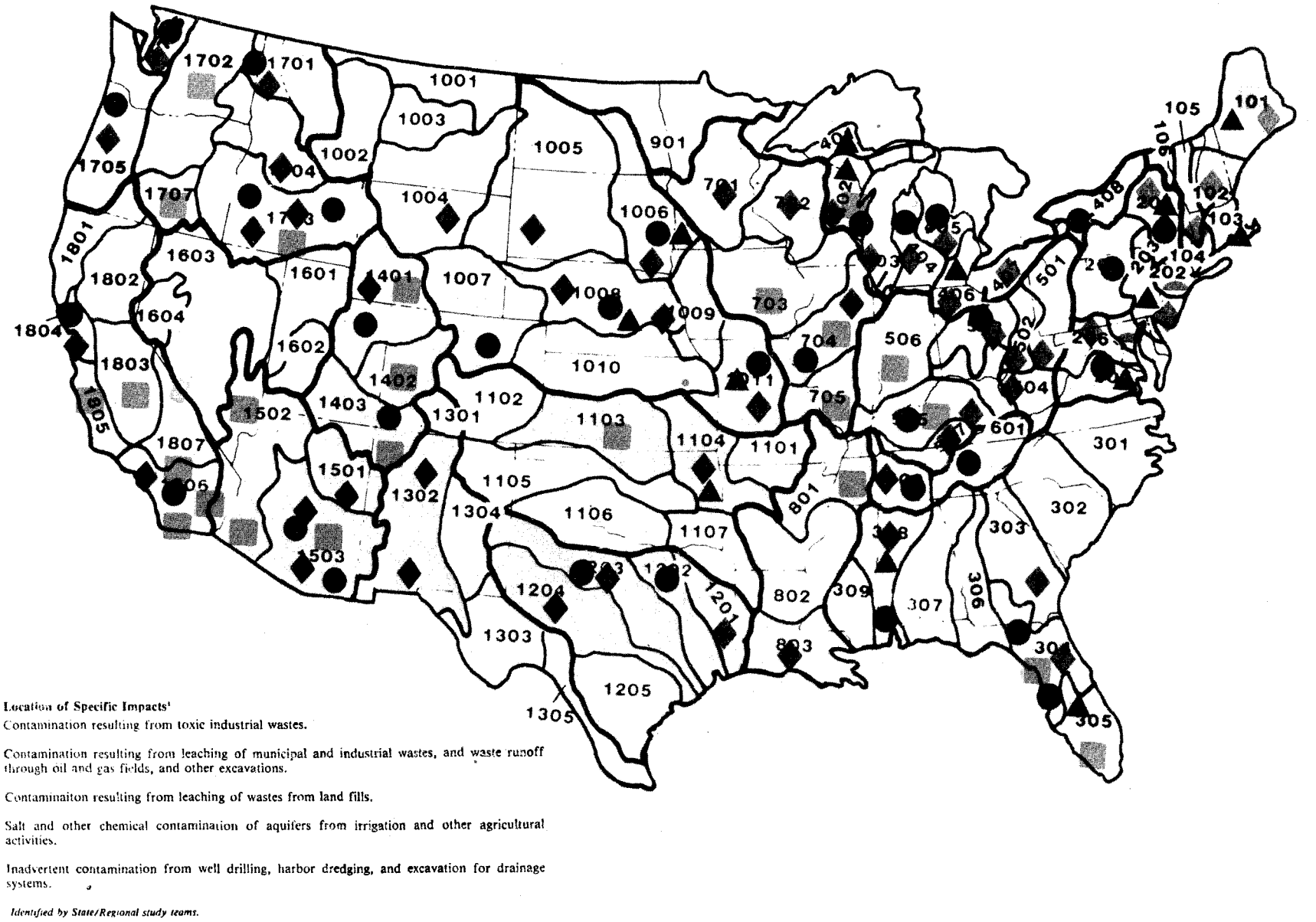

Fig. II-24. Location of groundwater contamination areas by source of impact, 1975.
Source: Water Resources Council, 1977. Preliminary Water Resources Problem Statement.

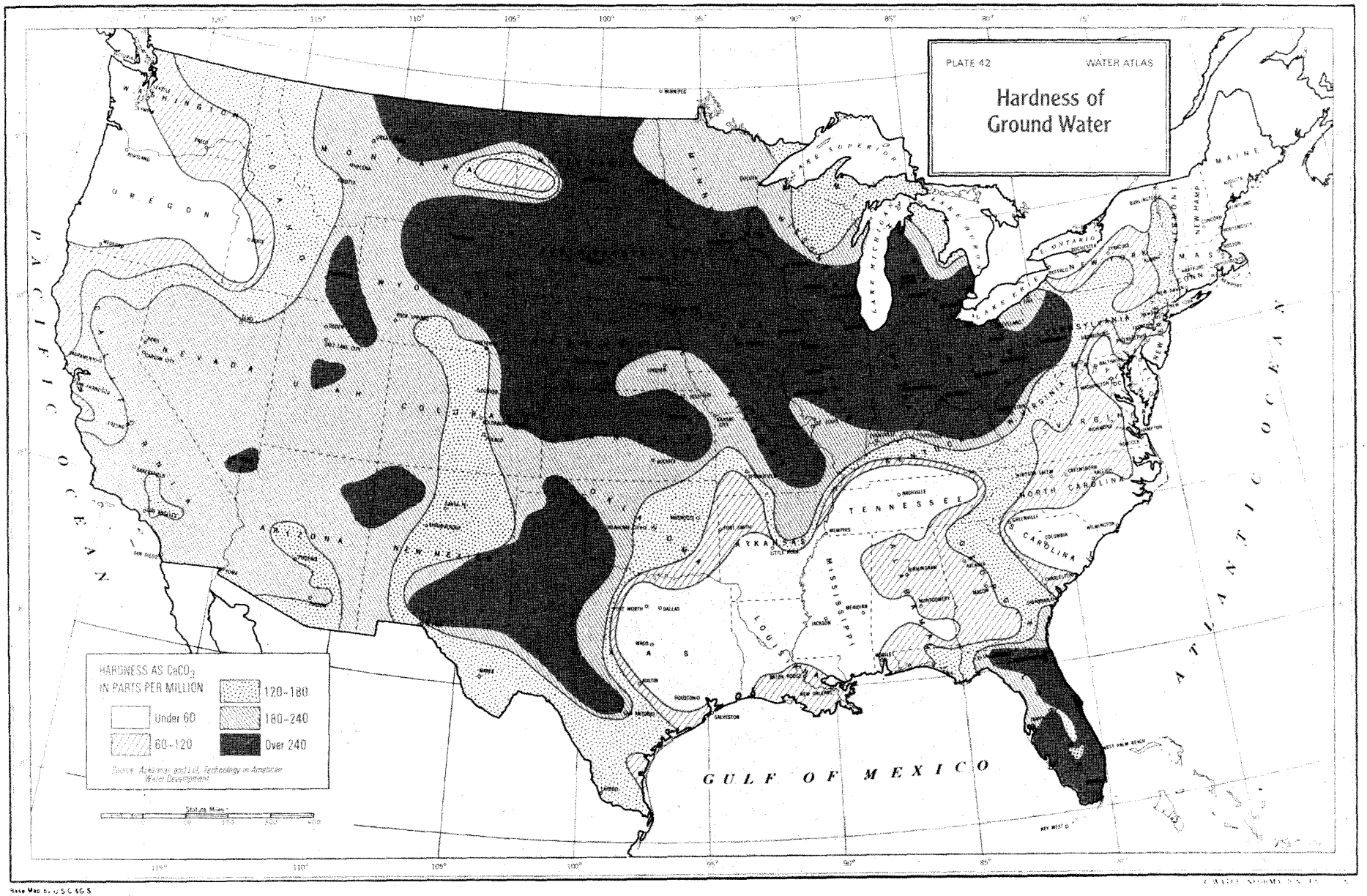

Fig. II-25. Hardness of ground water. Source: Geraghty et al. 1972. Water Atlas of the United States. Plate 42. Water Information Center, Port Washington, N.Y.

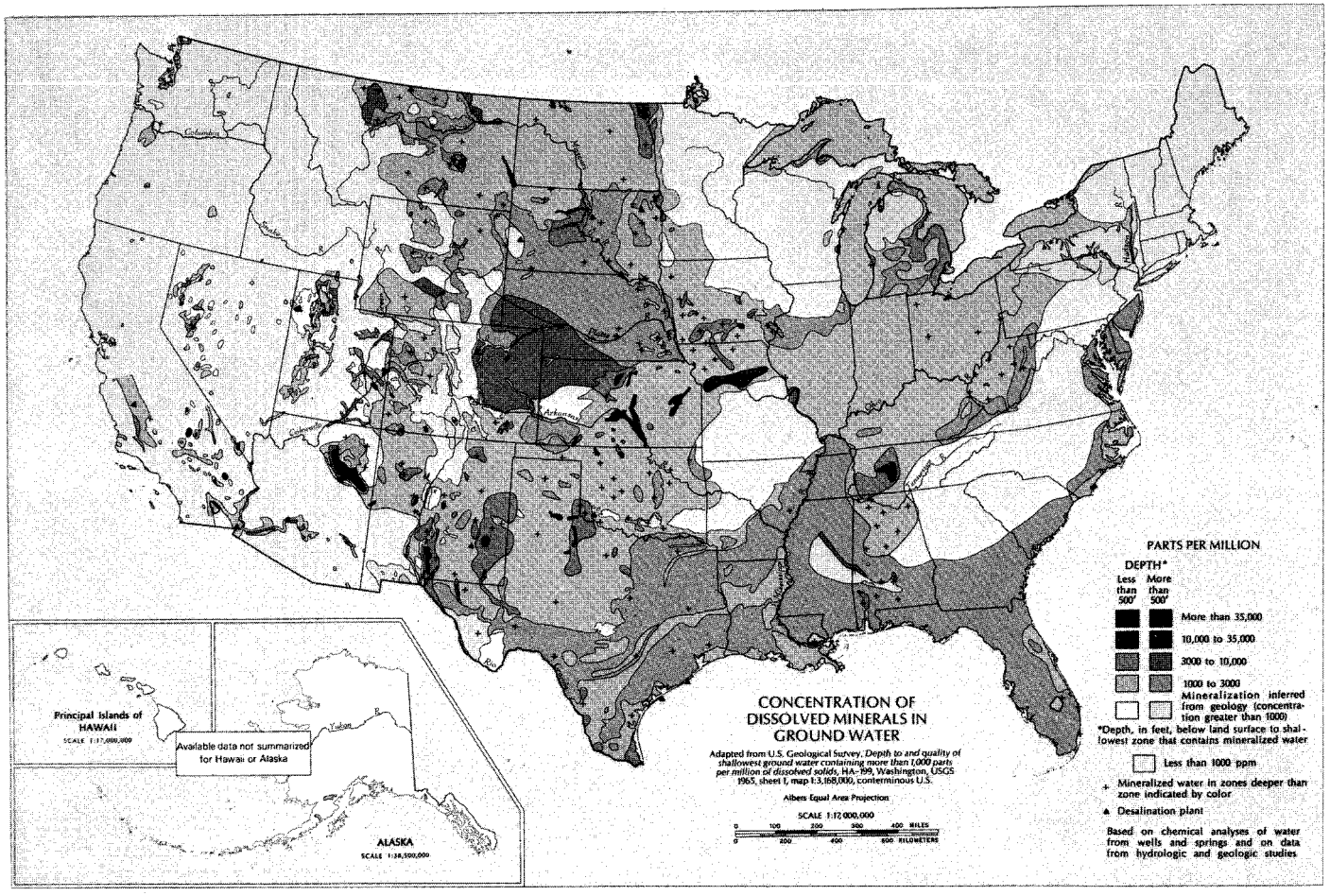

Fig. II-26. Concentration of dissolved minerals in ground water. Source: The National Atlas of the United States, USGS, 1970, p. 124.

II-C Air

Current air quality, climate, and man-induced atmospheric insults are described in this section to help assess energy-related impacts on the environment. Since the establishment of the National Ambient Air Quality Standards (NAAQS) in 1971 and more recent clean air legislation, there have been significant decreases in the levels of the major atmospheric pollutants. Total suspended particulates (TSP), sulfur dioxide (SO_2) and carbon monoxide (CO) have declined while it is unclear if nitrogen dioxide (NO_2) and photochemical oxidants (O_3) are increasing or have stabilized. Ambient pollutant levels for 1975 and 1976 along with the 1978 NAAQS attainment status of these criteria pollutants are given for Air Quality Control Regions (AQCR's). The 1975 point source emission levels are also given. It is realized that selecting one year's data does not adequately reflect the trends occurring in air quality conditions.

Thirty-year normals (1941-70) were used to define current climatic conditions in the South which includes subtropical climates in southern Florida, semi-arid climates in parts of Texas, and humid continental climate in Kentucky. The incidence of severe storms in the South is shown by maps of tornado, thunderstorm, hail, and heavy fog occurrences. In addition, a series of maps on atmospheric mixing is included which indicates the probability of favorable conditions for air pollution episodes. Man-induced atmospheric insults include directly observable events such as smog, acid rain, or noise. Maps of the dramatic increase in acidity of rainfall in the eastern U.S. are presented to illustrate the effects of increased fossil fuel combustion over the past several decades.

Air Quality

Air quality conditions are summarized in terms of attainment of National Ambient Air Quality Standards (NAAQS) (Table II-13) and in terms of average ambient levels of five major pollutants. Ambient levels for states (Table II-14) and the 87 Air Quality Control Regions (AQCR's) (Table II-15) for 1976 were calculated at ORNL from SAROAD data files received from EPA. AQCR's (Fig. II-27) are county clusters defined to have relatively uniform air quality characteristics based on atmospheric conditions and major pollution sources. The AQCR's can cross state boundaries. The actual ambient levels are valuable in assessing potential impacts on crops, forest systems and human health but need to be used with caution as the means are based on a predominance of monitoring stations located in urban areas. Figs. II-31 through II-35 present maps of 1975 maximum values for the five criteria pollutants.

Table II-16 summarizes the NAAQS attainment status of AQCR's or portions of AQCR's in each state based on 1978 congressional records. The table also lists which AQCR's need State Implementation Plan revisions and which contain Class I areas (Table II-17). The attainment status is shown in Figs. II-28 and II-29 for total suspended particulates and sulfur dioxide. Fig. II-30 visually summarizes that the South has fewer pollutants per state which require additional State Air Quality Implementation Plan revisions. Emission data for 1975 are presented as a series of maps based on EPA data for AQCR's (Figs. II-36 through II-40).

Climate

The South has a continental climate throughout most of the interior states with cool winters and warm to hot summers. The western parts of Texas and Oklahoma have limited rainfall due to the influence of the Rockies while there is generally increasing rainfall progressing eastward. Areas along the Atlantic Coast and Gulf of Mexico have mild winters and very warm summers with high humidity levels. Southern Florida has subtropical climate and rarely experiences freezing temperatures. Climate in and to the west of the Appalachian Mountains is cooler and more variable than east of the mountains where coastal effects ameliorate the climate and reduce climatic variability.

State climatic divisions are mapped in Fig. II-41 while Table II-19 provides an index between the names on the map and division numbers used in tables. Monthly precipitation and temperature normals are given in Tables II-20 through II-25 for state climatic divisions. Potential evapotranspiration (Fig. II-46) is an indication of water needs for plants. It represents the amount of water that would evaporate from the soil and vegetation assuming saturated soil. Potential evapotranspiration is a calculated value and is greatest during the growing season in arid regions. Water supplies can be compared against the potential evapotranspiration to determine if deficits will occur which would result in drought damage.

The most dramatic aspect of the region's climate is the frequent occurrence of locally severe storms. Figs. II-52 through II-55 show the incidence of tornadoes, thunderstorms, hail, and heavy fog. In addition, tropical storms occur along the Atlantic Coast and Gulf of Mexico.

Man-Induced Atmospheric Insults

The increased acidity of rainfall in the eastern U.S. is a phenomenon that has been shown to be related to increased SO_2 and NO_x pollution levels from fossil fuel combustion. Fig. II-65 shows the dramatic change in the pattern of acid rain over the past 20 years while Fig. II-66 shows a pattern with localized areas of low pH rainfall.

Data Quality, Gaps, Limitations

Air quality monitoring stations have increased in recent years but tend to be located in urban areas. Currently a network is being established to monitor ambient conditions away from industrial and urban areas. As seen in the following matrix, the existing air quality and emissions data are available in digital form from EPA. Climatic data are readily available from NOAA. Data on man-induced insults are not readily available.

	Resolution of data presented	Finer resolution of available data	Computerized?
C. Air			
1. Air Quality			
a. Ambient Levels	State, AQCR; 1976	Sites; 1973-1977	Yes (EPA SAROAD)[1]
b. Attainment Status	AQCR, 1977	?	No
c. Emissions	State; 1972	Point Sources; 1973-1977	Yes (EPA NEDS)[2]
2. Climate			
a,b,c. Precip, Temp, Heating/Cooling Degree Days	Climatic Division; 30 year norms; Annual Averages	Climatic Divisions; 1931-1975; Monthly by year	Yes (NOAA)[3]
		Stations; 1800's to present, Hourly, Daily, Monthly	Yes (NOAA)
d. Evapotranspiration	Map	County; Monthly 30 year norms	Yes (ORNL GDB)[4]
e,f. Wind, Storms, etc.	Maps	?	?
g. Mixing Heights	Maps	?	?
3. Man Induced Change			
a. Smog	Not available	?	?
b. Acid Rain	Map	?	?

[1] EPA SAROAD - EPA Storage and Retrieval of Aerometric Data.

[2] EPA NEDS - EPA National Emissions Data System.

[3] NOAA - National Oceanic and Atmospheric Administration, Environmental Data Service.

[4] ORNL GDB - ORNL Geoecology Data Base.

TABLE II-13

SUMMARY OF NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging time	Primary standards	Secondary standards	Comments
Particulate matter	Annual (geometric mean)	75 $\mu g/m^3$	60 $\mu g/m^3$	The secondary annual standard (60 $\mu g/m^3$) is a guide for assessing State Implementation Plans to achieve the 24-hour secondary standard.
	24-hour[b]	260 $\mu g/m^3$	150 $\mu g/m^3$	
Sulfur oxides	Annual (arithmetic mean)	80 $\mu g/m^3$ (0.03 ppm)	-	
	24-hour[b]	365 $\mu g/m^3$ (0.14 ppm)	-	
	3-hour[b]	-	1300 $\mu g/m^3$ (0.5 ppm)	
Carbon monoxide	8-hour[b]	10 mg/m^3 (9 ppm)	(Same as primary)	
	1-hour[b]	40 mg/m^3 (35 ppm)		
Nitrogen dioxide	Annual (arithmetic mean)	100 $\mu g/m^3$ (0.05 ppm)	(Same as primary)	Chemiluminescence has been established as the Federal Reference Method (FRM),[a] and the sodium arsenite and triethanolamine guiacol sulfite (TGS) methods have been identified as equivalent methods.
Photochemical oxidants	1-hour[b]	160 $\mu g/m^3$ (0.08 ppm)	(Same as primary)	The FRM measures O_3 (ozone).
Hydrocarbons (nonmethane)	3-hour (6 to 9 a.m.)	160 $\mu g/m^3$ (0.24 ppm)	(Same as primary)	The HC standard is a guide to devising State Implementation Plans to achieve the oxidant standard. The HC standard does not have to be met if the oxidant standard is met.

[a]The air quality standards and a description of the Federal Reference Methods (FRM) were published on April 30, 1971, in 42 CFR 410, recodified to 40 CFR 50 on November 25, 1972. The new FRM for nitrogen dioxide was published on December 1, 1976, as 40 CFR 50, Appendix F.

[b]Not to be exceeded more than once per year.

Source: U. S. Environmental Protection Agency, EPA-450/2-78-011, Feb. 1978.

TABLE II-14

ANNUAL AMBIENT LEVELS FOR TOTAL SUSPENDED PARTICULATES, SULFUR DIOXIDE AND NITROGEN DIOXIDE BY STATE, 1976 (MICROGRAMS PER CUBIC METER)

	TSP			SO_2			NO_2		
	N	Geom.Mean	Max	N	Mean	Max	N	Mean	Max
Alabama	6826	71	1665	2367	0.3	52	1902	2.4	126
Arkansas	2689	55	411	843	2.9	80	598	33.1	104
Florida	8152	40	295	5244	5.9	444	2538	22.0	138
Georgia	3980	48	322	1627	7.1	177	1630	38.5	821
Kentucky	6812	58	434	6071	20.3	571	6081	33.4	302
Louisiana	1974	52	349	855	3.8	194	802	30.9	111
Mississippi	1641	47	230	923	3.9	293	172	23.5	90
North Carolina	6993	50	303	5678	9.5	220	5690	30.1	163
Oklahoma	2783	55	818	1062	4.3	221	747	33.5	763
South Carolina	5003	51	448	2672	3.6	200	2664	29.2	191
Tennessee	6630	59	491	3028	11.1	190	3083	39.2	184
Texas	9697	62	1175	6003	2.2	157	5893	33.5	453
Virginia	5017	51	709	2236	4.7	175	435	1.0	35
West Virginia	2379	65	477	1548	48.6	581	-	-	-

Source: U. S. Environmental Protection Agency, SAROAD data file.

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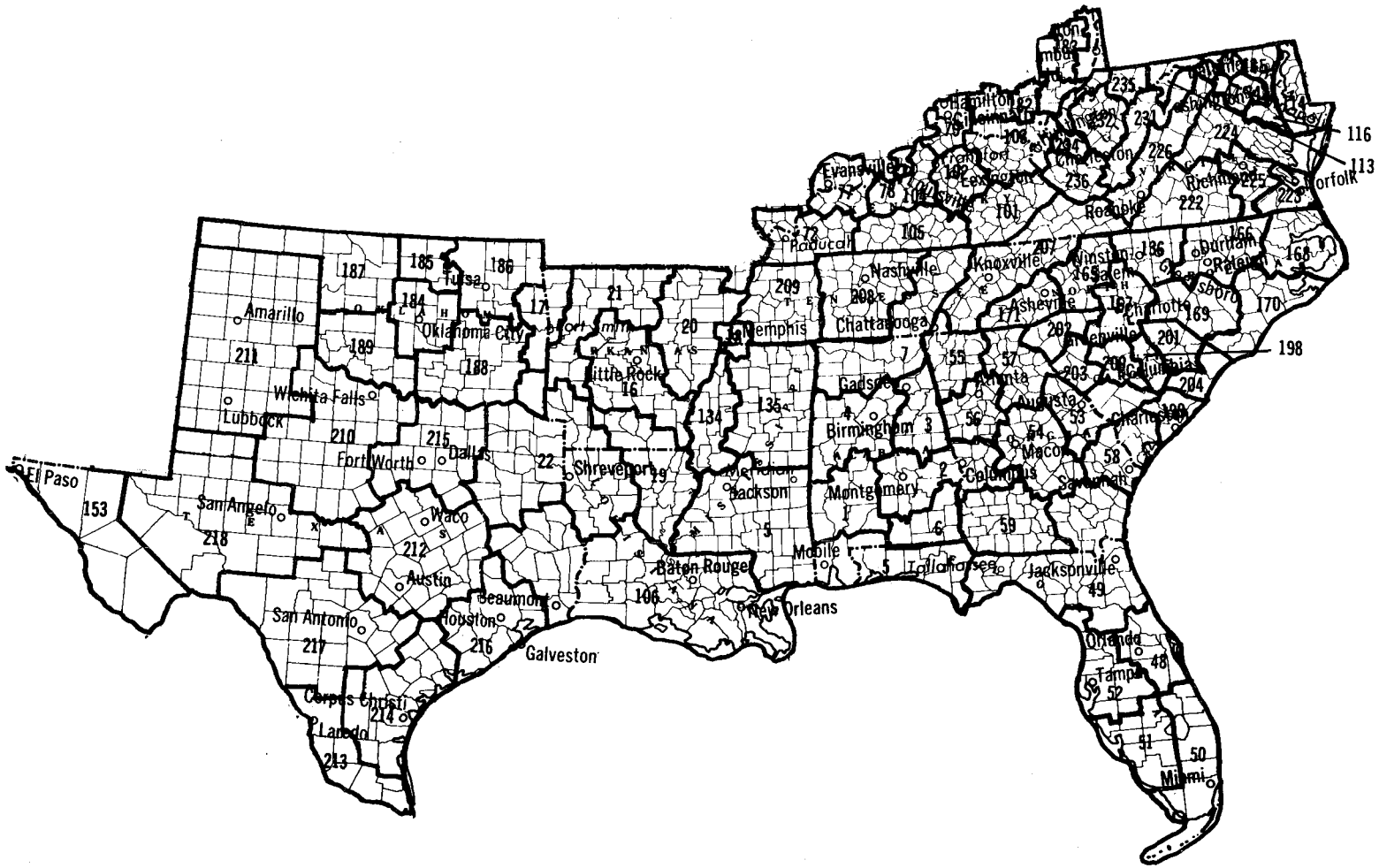

Fig. II-27. Air quality control regions. Source: U.S. Environmental Protection Agency, 1975, National Summary of State Implementation Plan Reviews Volume II, (Section 4 ESECA), Technical Support Document, EPA-450/3-75-053-b.

TABLE II-15

ANNUAL AMBIENT LEVELS FOR TOTAL SUSPENDED PARTICULATES, SULFUR DIOXIDE AND NITROGEN DIOXIDE BY AIR QUALITY CONTROL REGION, 1976 (MICROGRAMS PER CUBIC METER)

AQCR	N_TSP	G_M_TSP	MAX_TSP	N_SO2	MEAN_SO2	MAX_SO2	N_NO2	MEAN_NO2	MAX_NO2
1	52	40	120	42	0	0	.	.	.
2	384	43	182	137	2	17	105	43	145
3	356	50	192	39	0	0	.	.	.
4	3376	92	621	1144	0	33	1417	1	126
5	2150	51	567	1677	2	293	175	23	90
6	154	39	156	46	0	0	.	.	.
7	2253	54	1665	641	0	30	567	1	72
16	962	50	282	381	2	80	137	25	104
17	370	42	161	100	1	14	57	34	74
18	849	60	245	484	21	190	694	58	184
19	329	53	283	103	1	19	93	27	79
20	619	70	411	58	2	31	57	33	73
21	173	40	117	58	0	9	57	25	52
22	764	51	388	279	9	32	273	22	89
47	2819	46	790	1444	15	175	723	37	118
48	355	34	267	175	5	51	171	20	91
49	2070	40	322	1207	10	421	830	29	821
50	2860	38	224	745	4	68	771	14	80
51	550	32	247	413	1	71	58	13	38
52	2290	45	223	2423	5	444	780	24	97
53	402	44	165	322	3	127	337	33	124
54	615	43	241	246	2	24	247	34	108
55	1062	53	213	855	14	122	857	42	160
56	1647	48	157	534	14	64	531	50	133
57	98	37	116	37	4	38	38	24	49
58	656	50	309	371	5	177	358	28	191
59	272	47	210	139	1	11	137	28	67
72	1203	54	321	1008	20	266	1012	28	116
77	994	67	249	837	27	571	828	34	99
78	1003	66	246	990	31	355	995	46	302
79	906	54	278	845	17	148	848	31	106
101	385	61	268	400	15	255	398	32	78
102	675	47	243	630	10	90	629	29	83
103	700	66	434	689	15	164	674	33	225
104	654	47	159	335	14	140	338	28	84
105	356	53	197	353	14	207	359	24	219
106	1818	51	349	982	3	194	949	29	111
113	447	56	261	441	23	193	439	31	219
134	114	71	199	51	2	23	.	.	.
135	438	44	190	111	3	25	.	.	.
136	1268	56	171	1095	12	108	1101	38	114
153	1023	80	797	393	9	157	436	21	84
165	1054	48	249	723	8	179	713	24	120
166	688	50	226	682	9	124	670	30	163
167	2241	47	303	1480	8	121	1491	34	161
168	421	50	277	405	5	23	416	15	61
169	477	50	283	398	9	121	400	31	81
170	558	52	254	491	5	64	485	15	69
171	763	47	255	697	9	220	710	29	110
179	119	59	157	52	25	162	.	.	.
181	620	93	477	487	80	581	.	.	.
184	1001	56	319	343	5	87	358	34	109
185	71	61	140	44	2	22	.	.	.

Column Legend:

- AQCR - Air Quality Control Region (See Fig. II-27)
- Total Suspended Particulates
  - N_TSP - Number of observations
  - G_M_TSP - Geometric Mean of 24 hour values
  - MAX_TSP - Maximum 24 hour value
- Sulfur Dioxide
  - N_SO2 - Number of observations
  - MEAN_SO2 - Mean of 24 hour values
  - MAX_SO2 - Maximum 24 hour value
- Nitrogen Dioxide
  - N_NO2 - Number of observations
  - MEAN_NO2 - Mean of 24 hour values
  - MAX_NO2 - Maximum 24 hour value

TABLE II-15 (continued)

ANNUAL AMBIENT LEVELS FOR TOTAL SUSPENDED PARTICULATES, SULFUR DIOXIDE AND NITROGEN DIOXIDE BY AIR QUALITY CONTROL REGION, 1976 (MICROGRAMS PER CUBIC METER)

AQCR	N_TSP	G_M_TSP	MAX_TSP	N_SO2	MEAN_SO2	MAX_SO2	N_NO2	MEAN_NO2	MAX_NO2
186	859	58	818	395	3	56	312	38	763
187	209	61	228	40	8	221	.	.	.
188	193	44	233	70	5	55	42	9	49
189	201	58	577	117	3	36	35	10	74
198	288	60	407	181	3	91	177	29	76
199	846	53	448	406	3	112	408	31	118
200	737	45	255	348	3	200	344	24	113
201	218	53	175	58	2	20	57	36	82
202	1303	46	159	729	3	112	727	30	121
203	121	44	103	120	2	32	120	31	113
204	544	63	299	176	3	89	177	26	74
207	2357	61	333	947	4	79	754	26	119
208	2277	60	491	1080	8	78	994	37	145
209	598	49	263	48	0	0	48	0	0
210	228	68	201	171	0	0	175	21	68
211	147	62	280	212	0	1	236	14	63
212	528	55	415	419	0	72	408	21	117
213	652	69	1175	152	1	20	151	19	82
214	826	61	547	471	1	66	296	20	453
215	2881	55	793	959	1	31	1261	41	153
216	2337	65	873	2194	3	142	2187	43	239
217	529	59	357	403	1	35	101	25	82
218	197	60	777	244	1	139	246	18	69
222	1145	48	310	311	0	0	.	.	.
223	280	55	238	174	0	0	.	.	.
224	293	45	185	57	0	0	.	.	.
225	722	53	212	557	0	0	305	0	0
226	836	48	709	228	0	14	117	1	27
231	231	56	229	170	41	323	.	.	.
232	61	67	401	63	18	108	.	.	.
233	65	74	190	58	26	121	.	.	.
234	736	55	456	396	40	229	1	39	39
235	366	52	242	245	29	160	.	.	.
236	116	55	168	61	15	47	.	.	.

Source: U. S. Environmental Protection Agency SAROAD data file.

Column Legend:
- AQCR - Air Quality Control Region (See Fig. II-27)
- Total Suspended Particulates
  - N_TSP - Number of observations
  - G_M_TSP - Geometric Mean of 24 hour values
  - MAX_TSP - Maximum 24 hour value
- Sulfur Dioxide
  - N_SO2 - Number of observations
  - MEAN_SO2 - Mean of 24 hour values
  - MAX_SO2 - Maximum 24 hour value
- Nitrogen Dioxide
  - N_NO2 - Number of observations
  - MEAN_NO2 - Mean of 24 hour values
  - MAX_NO2 - Maximum 24 hour value

TABLE II-16

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Alabama							
001	Alabama and Tombigbee Rivers						
002	Columbus-Phenix City (GA)				NAP		
003	East Alabama	NAP					
004	Metropolitan Birmingham	NAP (R)			NAP		
005	Mobile-Pensacola-Panama City Mississippi	NAP			NAP		
006	Southeast Alabama						
007	Tennessee River Valley-Cumberland Mtns (TN)	NAP /NAS	NAP /NAS		NAP		1
Arkansas							
016	Central Arkansas	NAS (R)			NAP		
017	Metropolitan Ft. Smith (OK)	NAS (R)					
018	Metropolitan Memphis (MS, TN)	(R)					
019	Monroe-El Dorado (LA)	NAS (R)					
020	Northeast Arkansas	NAS (R)					
021	Northwest Arkansas						2
022	Shreveport-Texarkana-Tyler (LA, OK, TX)						

TABLE II-16 (continued)

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Florida							
005	Mobile-Pensacola-Panama City Mississippi (AL, MS)		?		NAP		
048	Central Florida	NAS			NAP		
049	Jacksonville-Brunswick (GA)		?		NAP		4
050	Southeast Florida			NAP	NAP		1
051	Southwest Florida						1
052	West Central Florida	NAS	NAP /NAS		NAP		1
Georgia							
002	Columbus-Phenix City (AL)				NAP		
049	Jacksonville-Brunswick (FL)						
053	Augusta-Aiken (SC)						
054	Central Georgia	NAP					
055	Chattanooga (TN)	NAP					1
056	Metropolitan Atlanta	NAP		NAP (R)	NAP (R)		
057	Northeast Georgia						
058	Savannah-Beaufort (SC)	NAP					
059	Southwest Georgia						

TABLE II-16 (continued)

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS
BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Kentucky							
072	Paducah-Cairo (IL)	NAP	NAP /NAS		NAP		
077	Evansville-Owensboro-Henderson (IN)	NAP	NAP /NAS		NAP		
078	Louisville (IN)	NAP	NAP /NAS	NAP (R)	NAP (R)		
079	Metropolitan Cincinnati (IN, OH)	NAP			NAP (R)		
101	Appalachian	NAP					
102	Bluegrass	NAP			NAP		
103	Huntington-Ashland-Portsmouth Ironton (OH, WV)	NAP	NAP /NAS		NAP		
104	North Central Kentucky	NAP					
105	South Central Kentucky						1
Louisiana							
019	Monroe-El Dorado (AR)						
022	Shreveport-Texarkana-Tyler (AR, OK, TX)	(R)			NAP		
106	Southern Louisiana-Southeast Texas (TX)				NAP (R)		1

TABLE II-16 (continued)

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS
BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Mississippi							
005	Mobile-Pensacola-Panama City (AL, FL)	NAP					
018	Metropolitan Memphis (AR, TN)						
134	Mississippi Delta						
135	Northeast Mississippi						
North Carolina							
136	Northern Piedmont	?					
165	Eastern Mountain	NAP					1
166	Eastern Piedmont			NAP	NAP		
167	Metropolitan Charlotte (SC)			NAP (R)	NAP (R)		
168	Northern Coastal Plain						1
169	Sandhills						
170	Southern Coastal Plain	?					
171	Western Mountain				NAP		3

TABLE II-16 (continued)

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS
BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Oklahoma							
017	Metropolitan Ft. Smith (AR)						
022	Shreveport-Texarkana-Tyler (AR, LA, TX)						
184	Central Oklahoma				NAP		
185	North Central Oklahoma						
186	Northeastern Oklahoma	NAP	NAP	NAP	NAP		
187	Northwestern Oklahoma						
188	Southeastern Oklahoma						
189	Southwestern Oklahoma	?					1
South Carolina							
053	Augusta-Aiken (GA)						
058	Savannah-Beaufort (GA)						
167	Metropolitan Charlotte (NC)			NAP	NAP		
198	Camden-Sumter						
199	Charleston	NAP (R) /NAS			NAP		1
200	Columbia				NAP		
201	Florence						
202	Greenville-Spartanburg						
203	Greenwood						
204	Georgetown	NAP (R)					

TABLE II-16 (continued)

ATTAINMENT STATUS OF NATIONAL AMBIENT AIR QUALITY STANDARDS
BY AIR QUALITY CONTROL REGIONS WITHIN STATES, 1978

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Tennessee							
007	Tennessee River Valley-Cumberland Mtns (AL)	?					
018	Metropolitan Memphis (AR, MS)	NAP		NAP	NAP		
055	Chattanooga (GA)	NAP (R)			NAP		
207	Eastern Tennessee-Southwestern Virginia (VA)	NAP /NAS	?	NAP	NAP		2
208	Middle Tennessee	NAP /NAS	?	NAP	NAP (R)		
209	Western Tennessee	?	NAP /NAS				
Texas							
022	Shreveport-Texarkana-Tyler (AR, LA, OK)				NAP		
106	Southern Louisiana-Southeast Texas (LA)						
153	El Paso-Las Cruces-Alamogordo (NM)	NAP	?	NAP	NAP		2
210	Abilene-Wichita Falls						
211	Amarillo-Lubbock	(R)					
212	Austin-Waco				NAP		
213	Brownsville-Laredo	NAP (R)					
214	Corpus Christi-Victoria	NAP (R)			NAP		
215	Metropolitan Dallas-Fort Worth	NAP (R) /NAS			NAP		
216	Metropolitan Houston-Galveston	NAP (R)			NAP		

AQCR		TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
Texas (continued)							
217	Metropolitan San Antonio	NAP (R)			NAP		
218	Midland-Odessa-San Angelo						
Virginia							
047	National Capital (DC, MD)	?		NAP (R)	NAP (R)		
207	Eastern Tennessee-	?			NAP (R)		
	Southwestern Virginia (TN)						
222	Central Virginia	?			(R)		1
223	Hampton Roads	?			NAP (R)		
224	Northeastern Virginia				(R)		1
225	State Capital	?			NAP (R)		
226	Valley of Virginia	?			NAP (R)		2
West Virginia							
103	Huntington-Ashland-Portsmouth Ironton (KY, OH)				(R)		
113	Cumberland-Keyser Interstate (MD)		?		(R)		2
179	Parkersburg-Marietta (OH)	NAS			(R)		
181	Steubenville-Weirton-Wheeling (OH)	NAP (R)	NAP		(R)		
231	Allegheny		?		(R)		2
232	Central West Virginia				(R)		
233	Eastern Panhandle	?			(R)		

AQCR	TSP	SO_2	CO	O_x	NO_2	No. of Class 1 areas
West Virginia (continued)						
234 Kanawha Valley	NAP (R)			NAP (R)		
235 North Central West Virginia	NAP			(R)		
236 Southern West Virginia				(R)		

NAP - Non attainment of primary NAAQS.

NAS - Non attainment of secondary NAAQS.

? - Cannot be classified for TSP or SO_2.

(R) - SIP revision indicated in EPA-450/2-76-026, State Air Pollution Implementation Plan Progress Report, January 1 to June 30, 1976.

Blank - Better than NAAQS for TSP or SO_2; cannot be classified or better than NAAQS for CO, O_x, or NO_2.

Source: Federal Register, Vol. 43, No. 43 - Friday, March 3, 1978; and Federal Register, Vol. 43, No. 38, Friday, February 24, 1978.

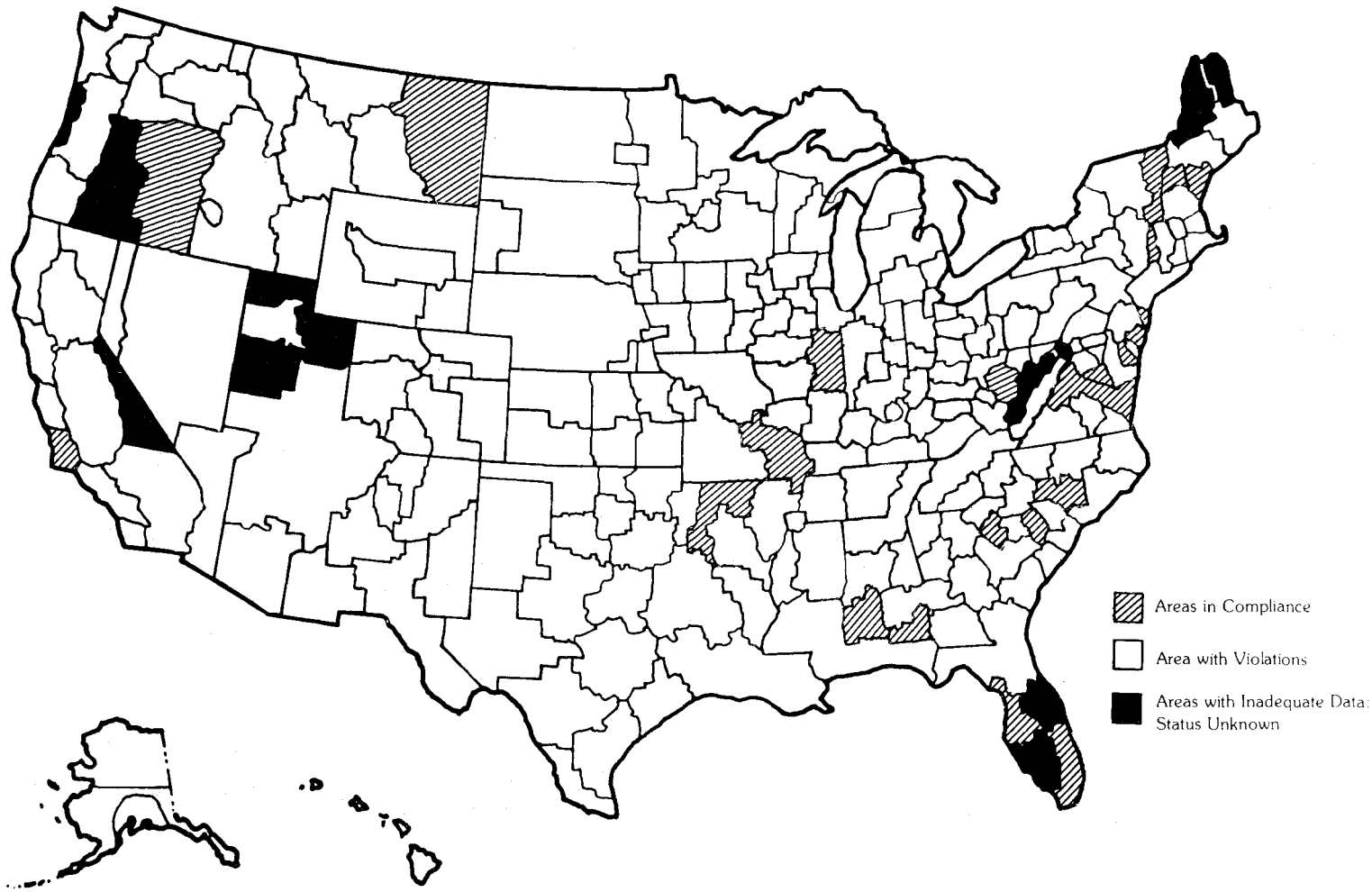

Fig. II-28. Status of compliance with ambient air quality standards for suspended particulates by Air Quality Control Regions, 1975. Source: US DOE/US EPA, 1978, Energy Environment Fact Book, p. 15.

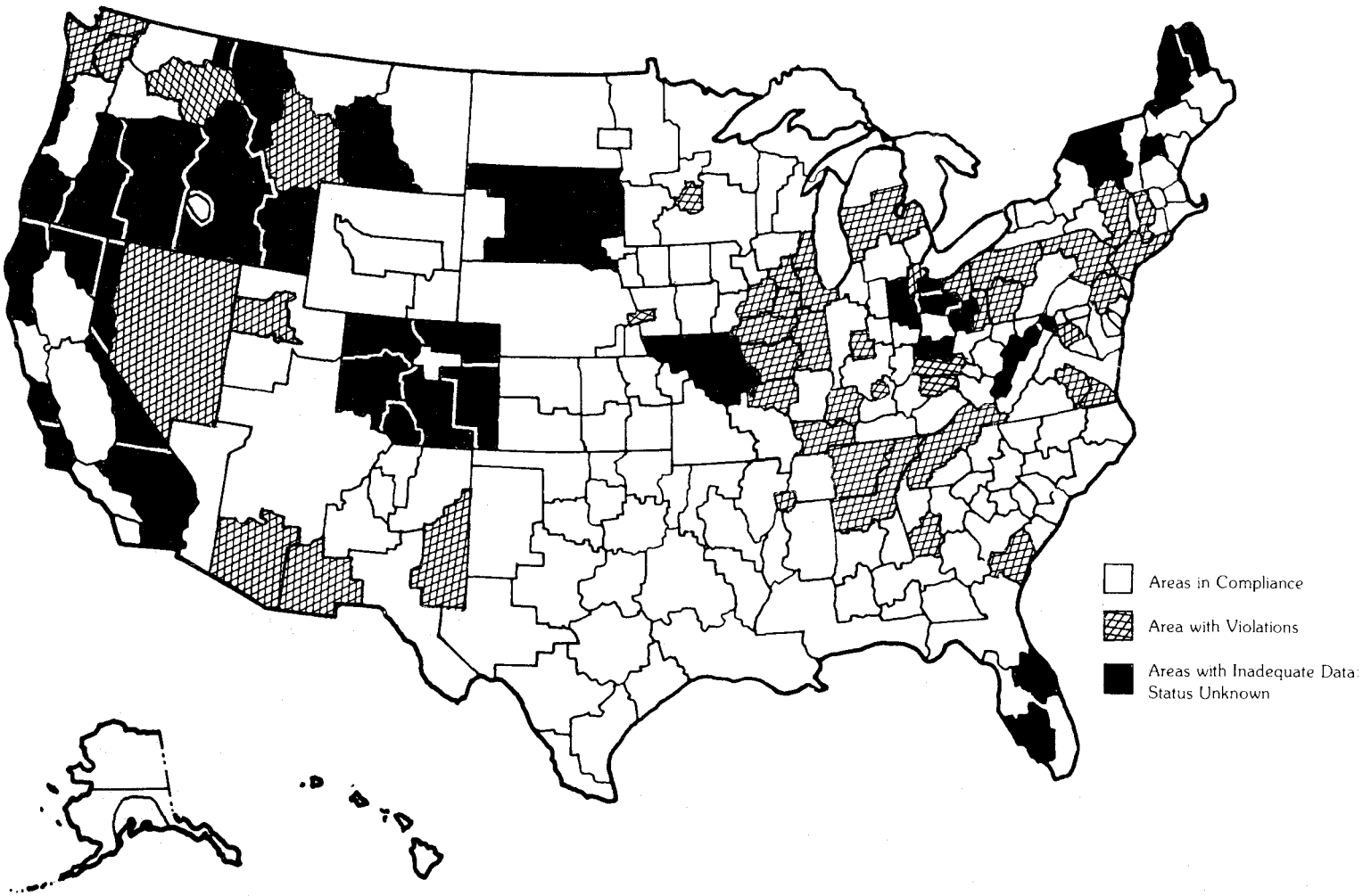

Fig. II-29. Status of compliance with ambient air quality standards for sulfur dioxide by Air Quality Control Regions, 1975. Source: US DOE/US EPA, 1978, Energy Environment Fact Book, p. 11.

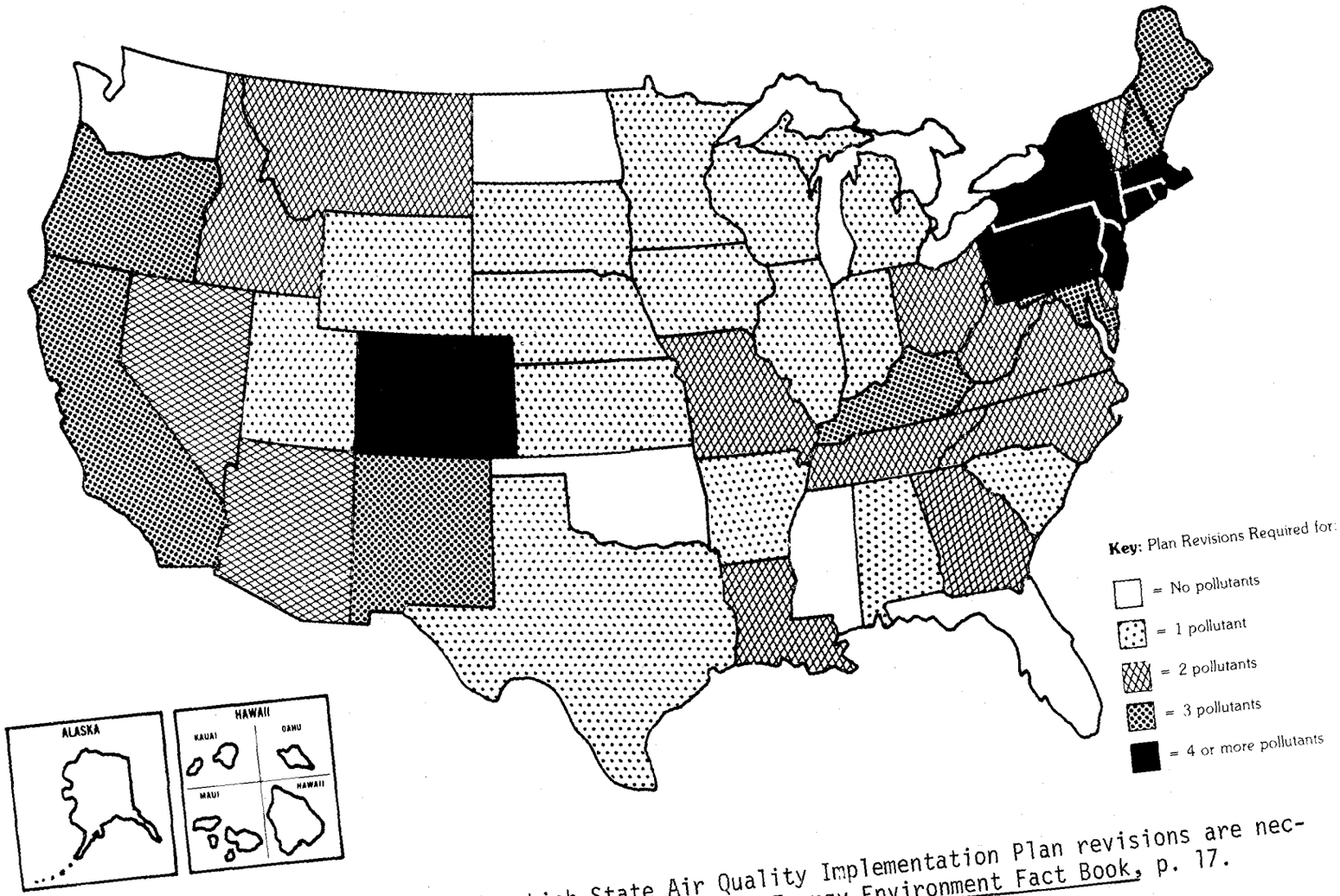

Fig. II-30. Number of pollutants for which State Air Quality Implementation Plan revisions are necessary, 1975. Source: US DOE/US EPA, 1978, Energy Environment Fact Book, p. 17.

TABLE II-17

FEDERAL CLASS I AREAS DESIGNATED UNDER PROVISION OF THE CLEAN AIR ACT SECTION 162(a), FEBRUARY 1978

State	Area	Agency	Average	Establishing Legislation	AQCR(s)
Alabama	Sipsey Wilderness	FS	12,646	93-622	007
Arizona	Caney Creek Wilderness	FS	14,344	93-622	021
	Upper Buffalo Wilderness	FS	9,912	93-622	021
Florida	Bradwell Bay Wilderness	FS	23,432	93-622	049
	Chassahowitzka Wilderness	FWS	23,360	94-557	052
	Everglades National Park	NPS	1,697,429	73-267	050, 051
	St. Marks Wilderness	FWS	17,745	93-632	049
Georgia	Cohotta Wilderness	FS	33,776	93-622	055
	Okefenokee Wilderness	FWS	343,850	93-429	049
	Wolf Island Wilderness	FWS	5,126	93-632	049
Kentucky	Mammoth Cave National Park	NPS	51,303	69-283	105
Louisiana	Breton Wilderness	FWS	5,000+	93-632	106
North Carolina	Great Smoky Mtns. National Park	NPS	273,551	69-268	171
	Joyce Kilmer-Slickrock Wilderness	FS	10,201	93-622	171
	Linville Gorge Wilderness	FS	7,575	88,577	165
	Shining Rock Wilderness	FS	13,350	88,577	171
	Swanquarter Wilderness	FWS	9,000	94-557	168
Oklahoma	Wichita Mtns. Wilderness	FWS	6,900	91-504	189
South Carolina	Cape Romain Wilderness	FWS	28,000	93-632	199
Tennessee	Great Smoky Mtns. National Park	NPS	241,207	69-268	207
	Joyce Kilmer-Slickrock Wilderness	FS	3,832	93-622	207
Texas	Big Bend National Park	NPS	708,118	74-157	153
	Guadalupe Mtns. National Park	NPS	76-292	86-667	153
Virginia	James River Face Wilderness	FS	8,703	93-622	222, 226
	Shenandoah National Park	NPS	190,535	69-268	224, 226
West Virginia	Dolly Sods Wilderness	FS	10,215	93-622	113, 231
	Otter Creek Wilderness	FS	20,000	93-622	113, 231

Source: Federal Register, Vol. 43, No. 38 - Friday, February 24, 1978.

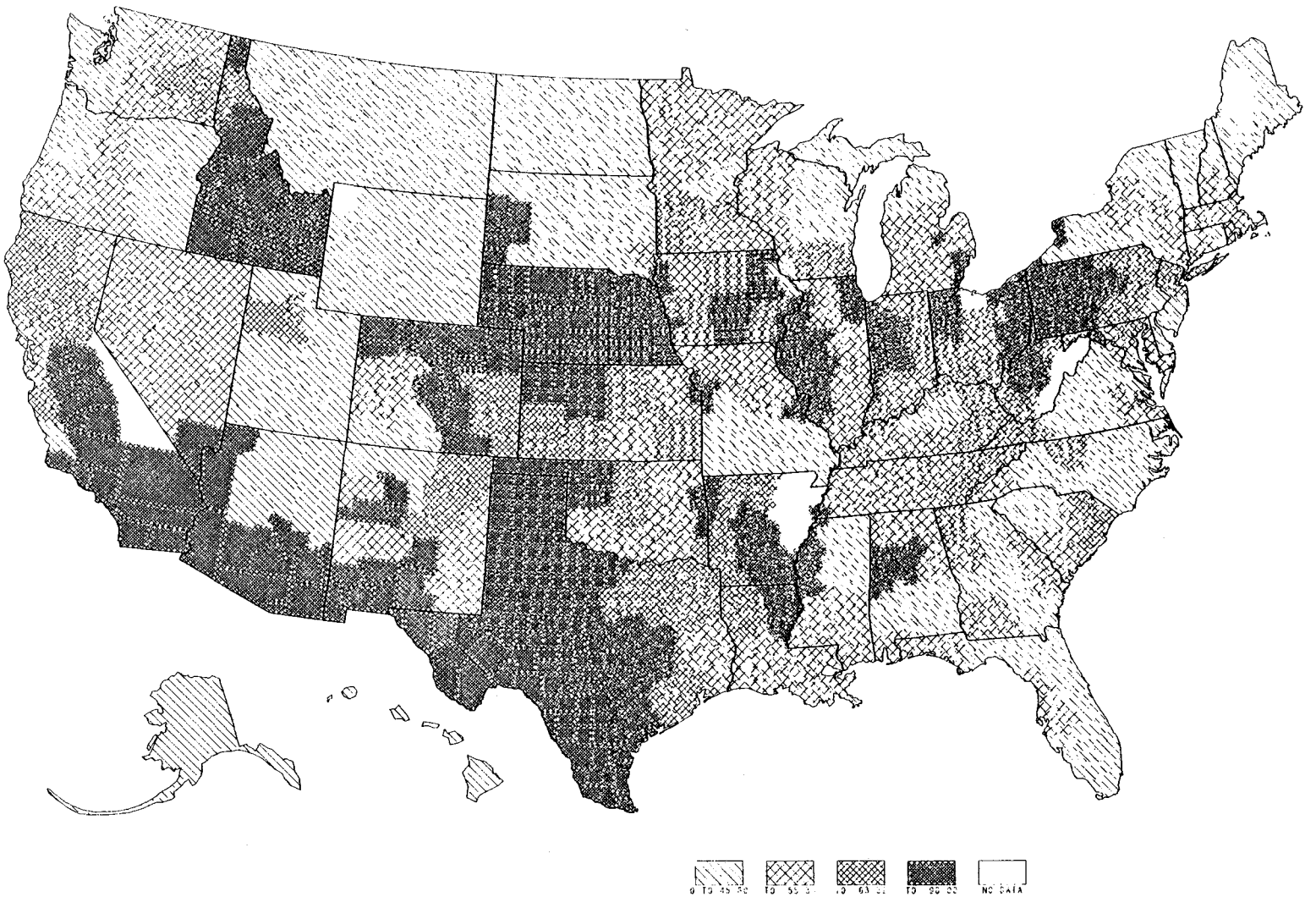

Fig. II-31. Annual average total suspended particulates (micro gram/cubic meter, 24 hour values by AQCR, 1975. Source: CEQ UPGRADE system.

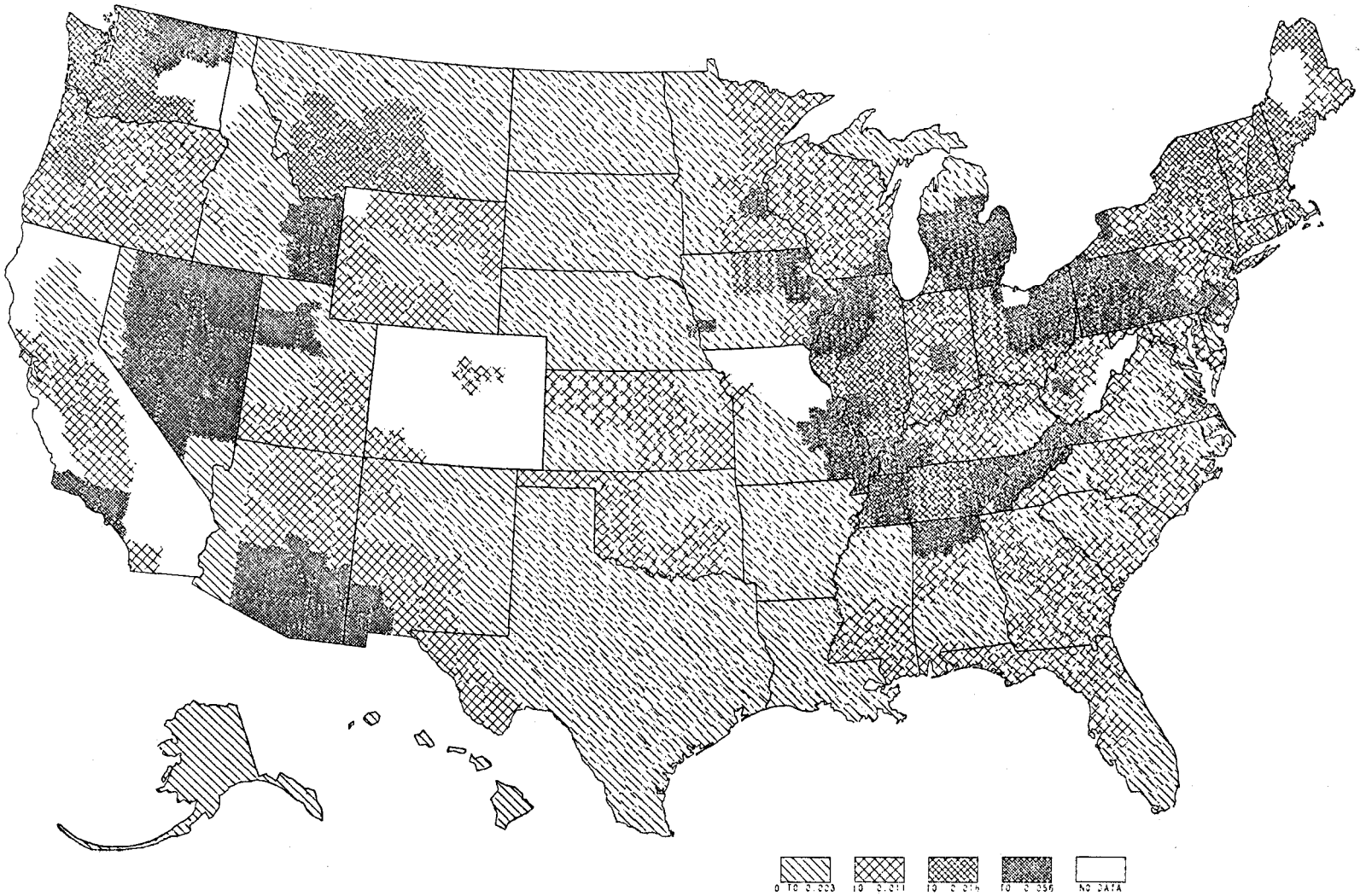

Fig. II-32. Annual average sulfur dioxide (ppm, daily maximum 1 hour values) by AQCR, 1975.
Source: CEQ UPGRADE system.

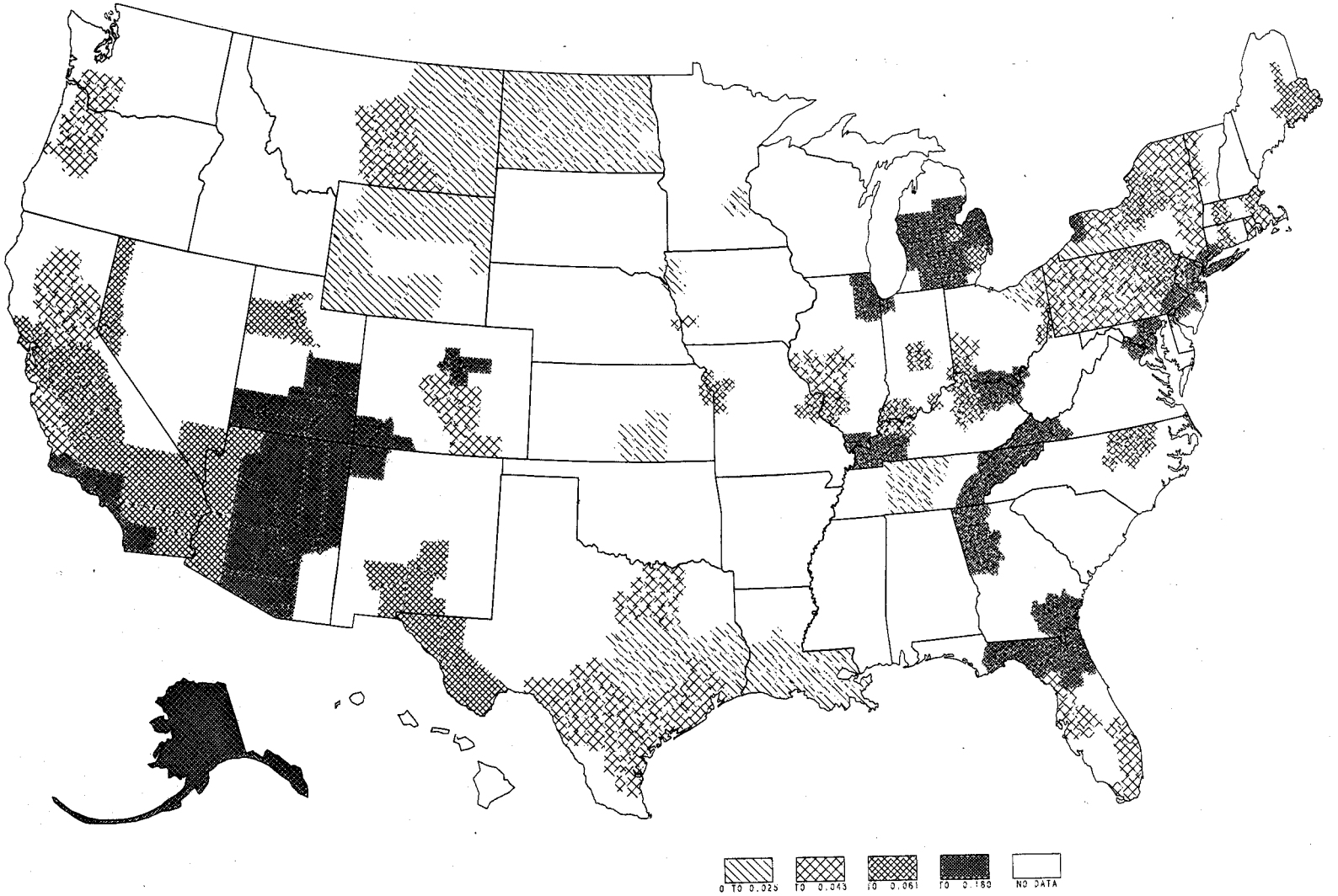

Fig. II-33. Annual average nitrogen dioxide (ppm, daily maximum 1 hour values) by AQCR, 1975. Source: CEQ UPGRADE system.

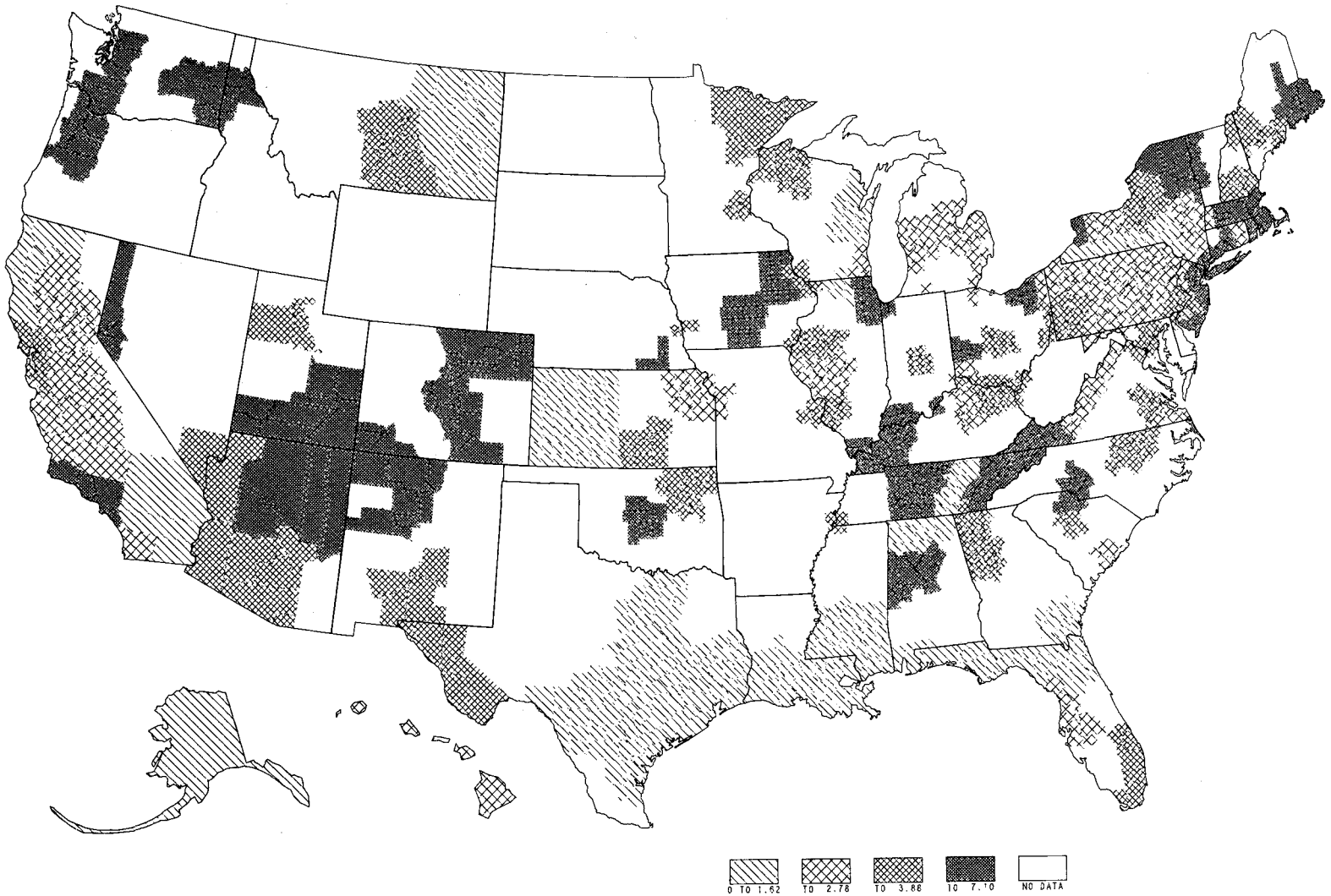

Fig. II-34. Annual average cabon monoxide (ppm, daily maximum 8 hour values) by AQCR, 1975. Source: CEQ UPGRADE system.

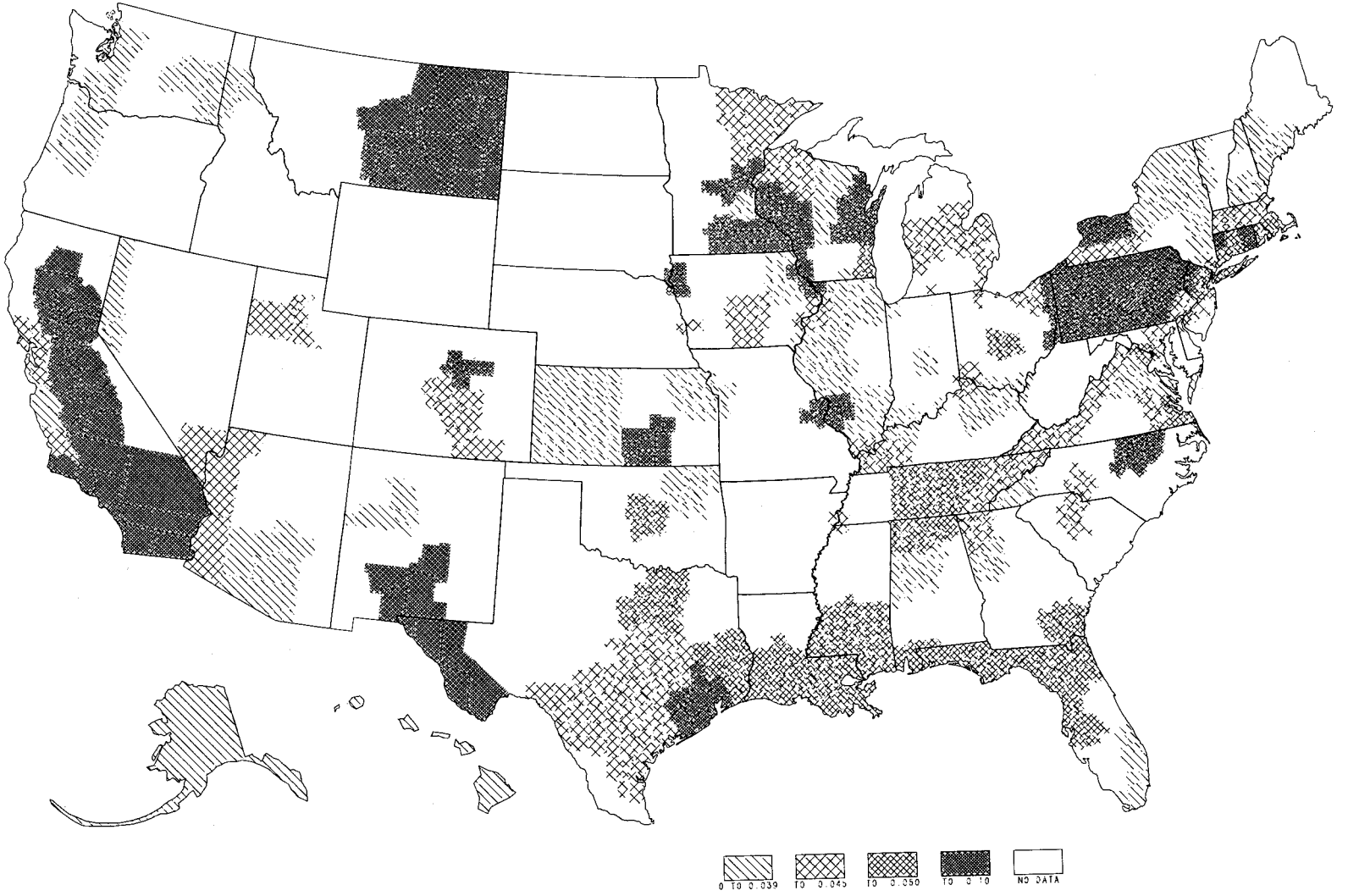

Fig. II-35. Annual average ozone (ppm, daily maximum 1 hour values) by AQCR, 1975.
Source: CEQ UPGRADE system.

TABLE II-18

ESTIMATED EMISSIONS OF CARBON MONOXIDE (CO), NITROGEN DIOXIDE (NO_2), SULFUR DIOXIDE (SO_2), TOTAL SUSPENDED PARTICULATES (TSP), AND HYDROCARBONS (HC) FROM FOSSIL FUEL COMBUSTION BY STATE, 1972 (TONS PER YEAR)

STATE	CO	NO2	SO2	TSP	HC
ALABAMA	1339	432	404	240	153
ARKANSAS	831	245	49	1	82
FLORIDA	2488	505	495	76	240
GEORGIA	4580	1048	598	224	444
KENTUCKY	2824	1323	2097	1061	336
LOUISIANA	2140	2364	130	18	341
MISSISSIPPI	1068	353	78	3	126
NORTH CAROLINA	2952	980	513	638	285
OKLAHOMA	1112	476	39	14	135
SOUTH CAROLINA	1077	275	164	108	104
TENNESSEE	2418	882	1122	661	236
TEXAS	3922	2490	176	25	573
VIRGINIA	6006	1684	1485	595	598
WEST VIRGINIA	1156	959	1902	1061	299
SOUTH	33914	14016	9254	4727	3952

Source: ORNL Geoecology Database, from Drysdale and Calef, 1976, Energetics of the United States of America: On Atlas, BNL 50501, Brookhaven National Laboratory.

Column Legend:
- CO - Carbon monoxide
- NO2 - Nitrogen dioxide
- SO2 - Sulfur Dioxide
- TSP - Total suspended particulates
- HC - Hydrocarbons

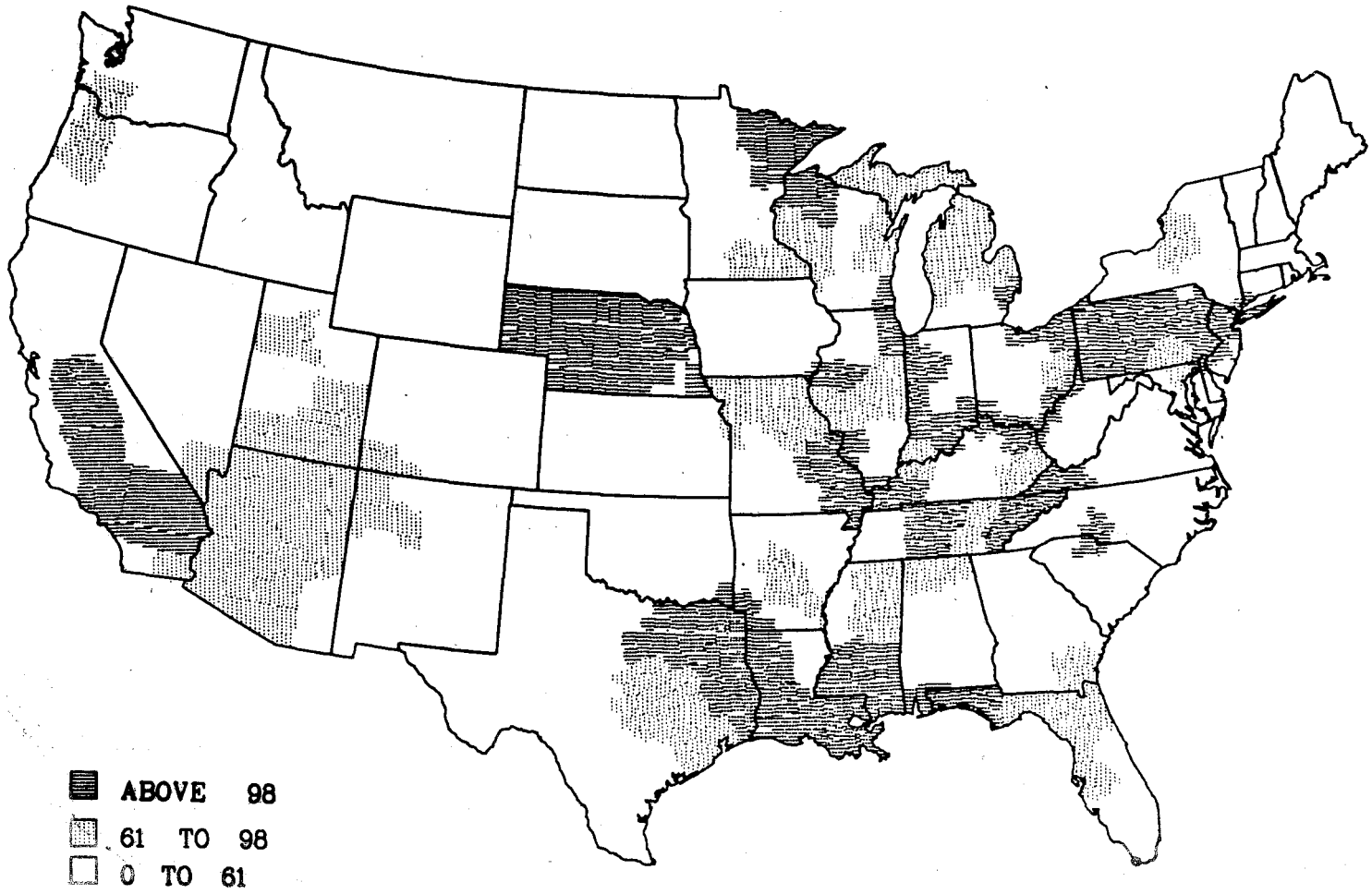

Fig. II-36. Total suspended particulate emissions (10^3 tons) by AQCR, 1975. Source: Pechan, E. H., 1977, 1985 Air Pollution Emissions, US DOE/PE-0001.

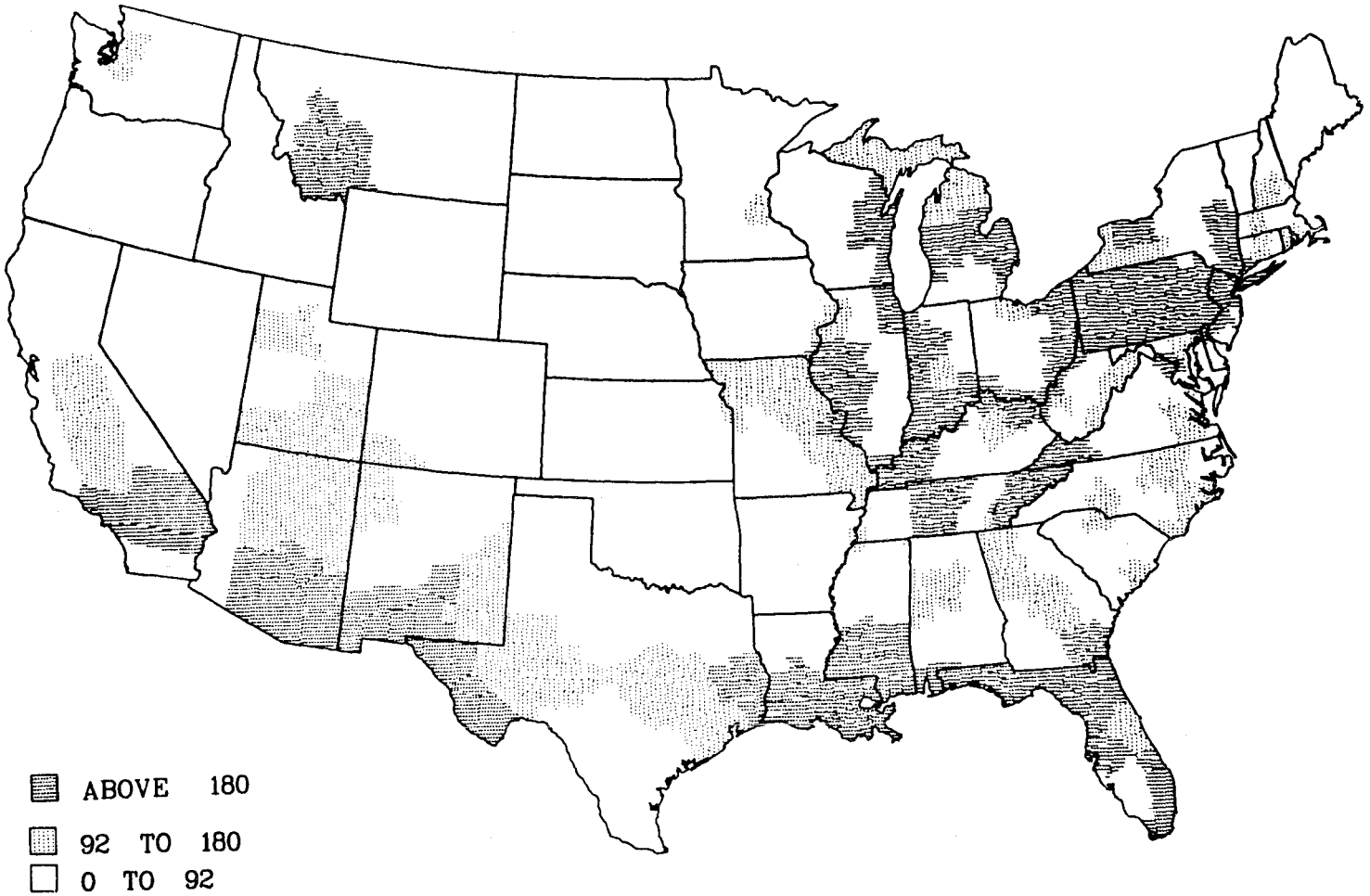

Fig. II-37. Sulfur oxides emissions (10^3 tons) AQCR, 1975. Source: Pechan, E. H. 1977, 1985 Air Pollution Emissions, US DOE/PE-0001.

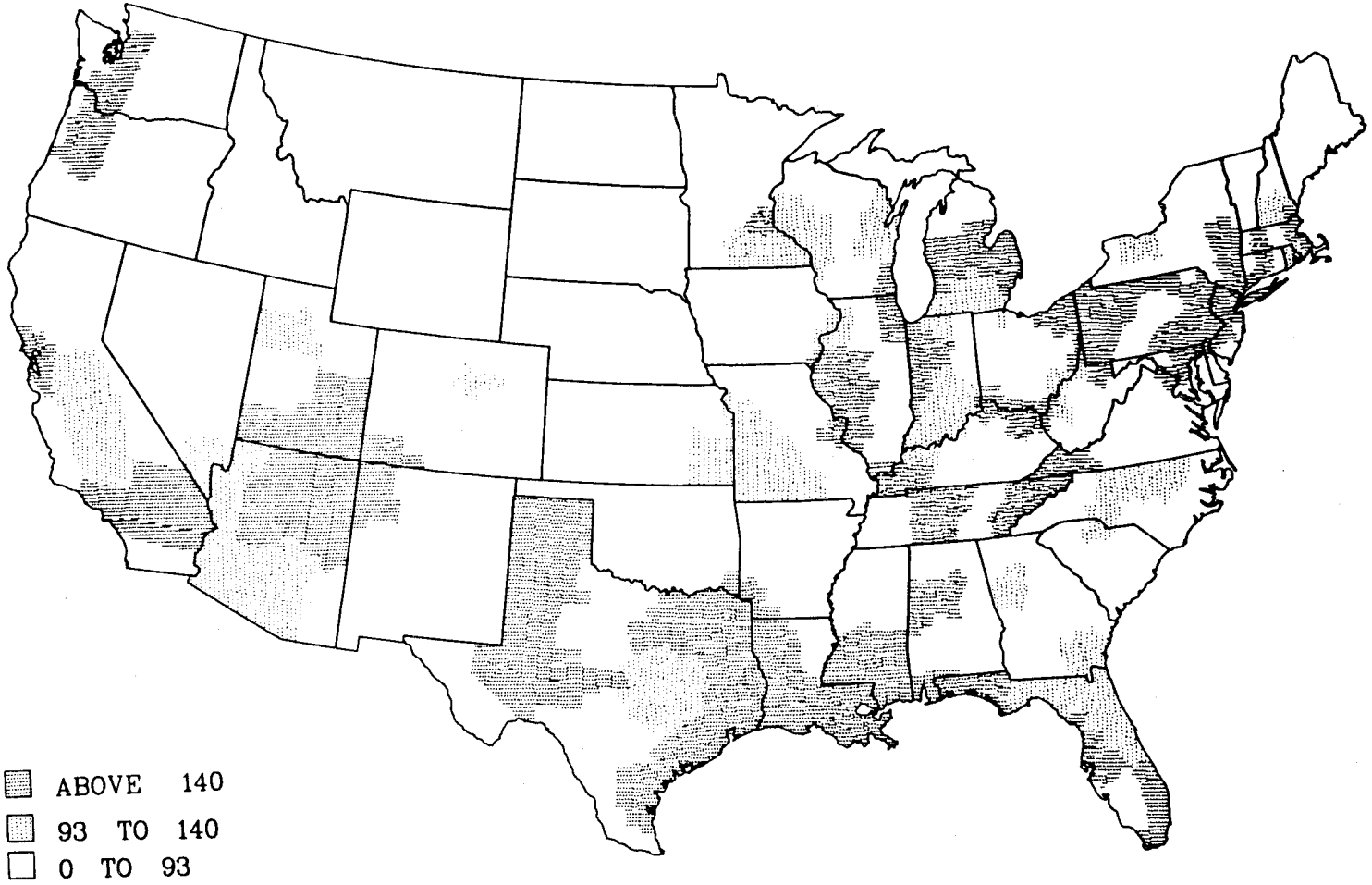

Fig. II-38. Nitrogen oxides emissions (10^3 tons) AQCR, 1975. Source: Pechan, E. H. 1977, 1985 Air Pollution Emissions, US DOE/PE-0001.

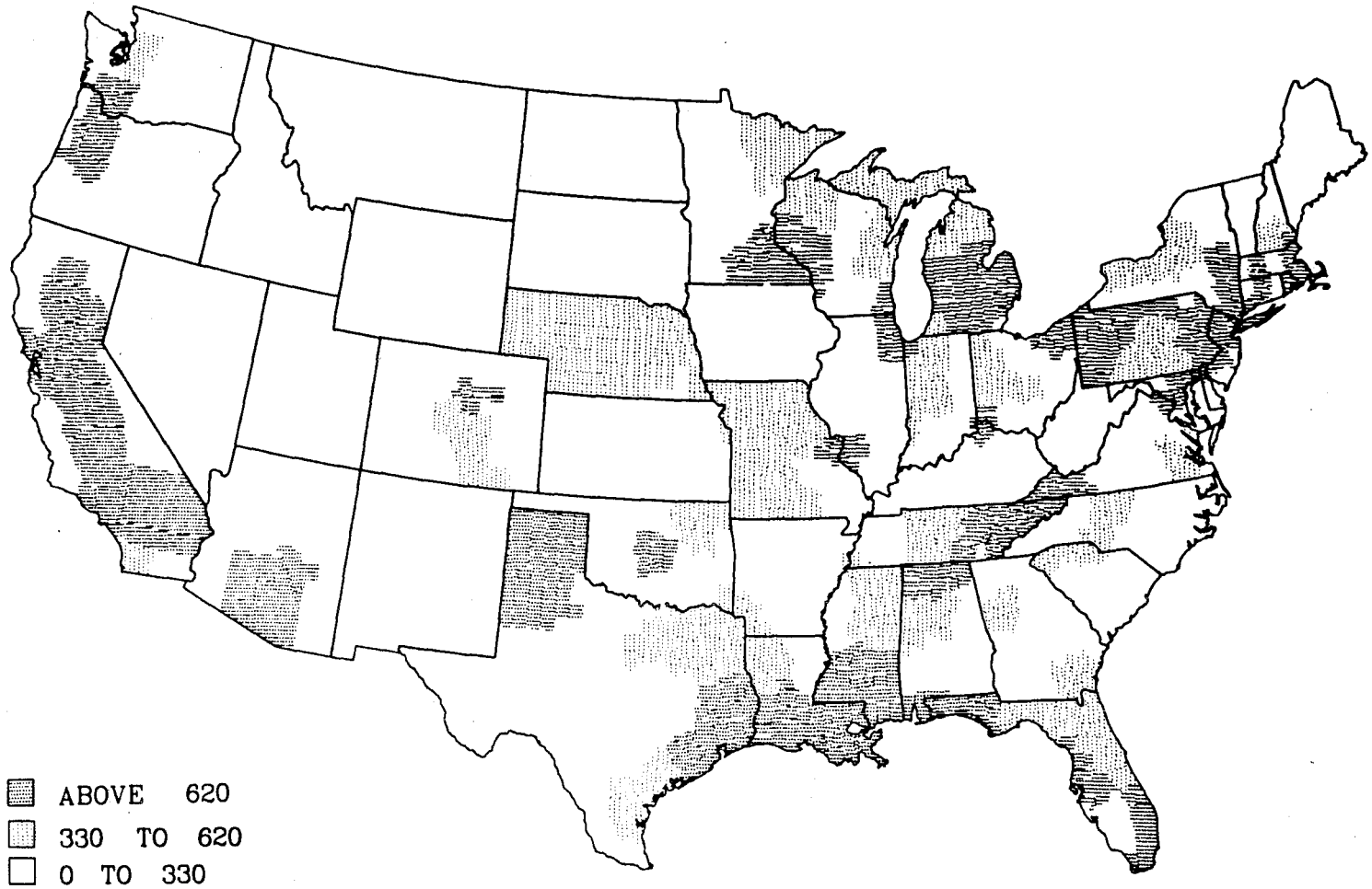

Fig. II-39. Carbon monoxide emissions (10^3 tons) by AQCR, 1975. Source: Pechan, E. H. 1977, 1985 Air Pollution Emissions, US DOE/PE-0001.

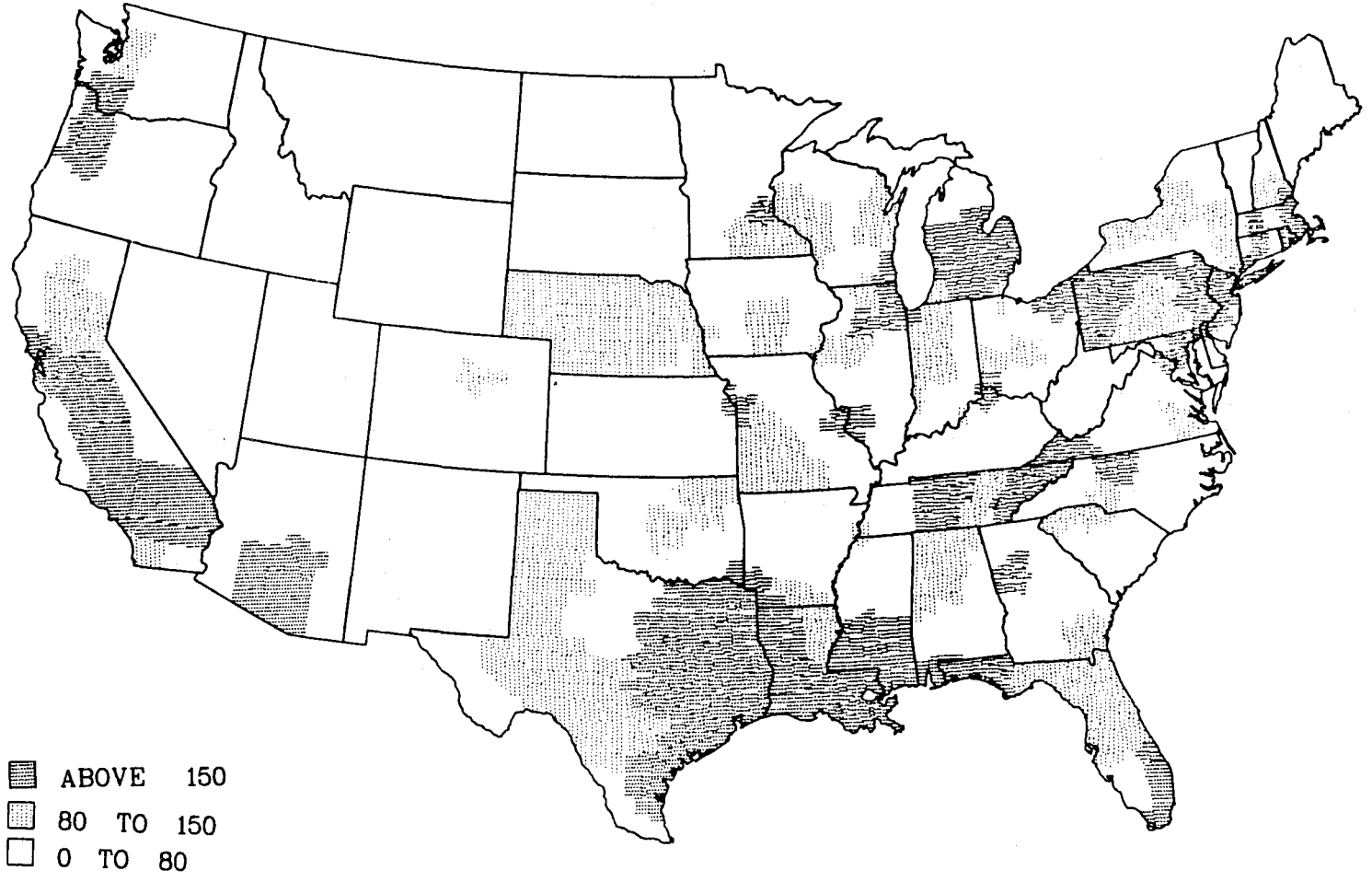

Fig. II-40. Hydrocarbon emissions (10^3 tons) by AQCR, 1975. Source: Pechan, E. H. 1977, 1985 Air Pollution Emissions, US DOE/PE-0001.

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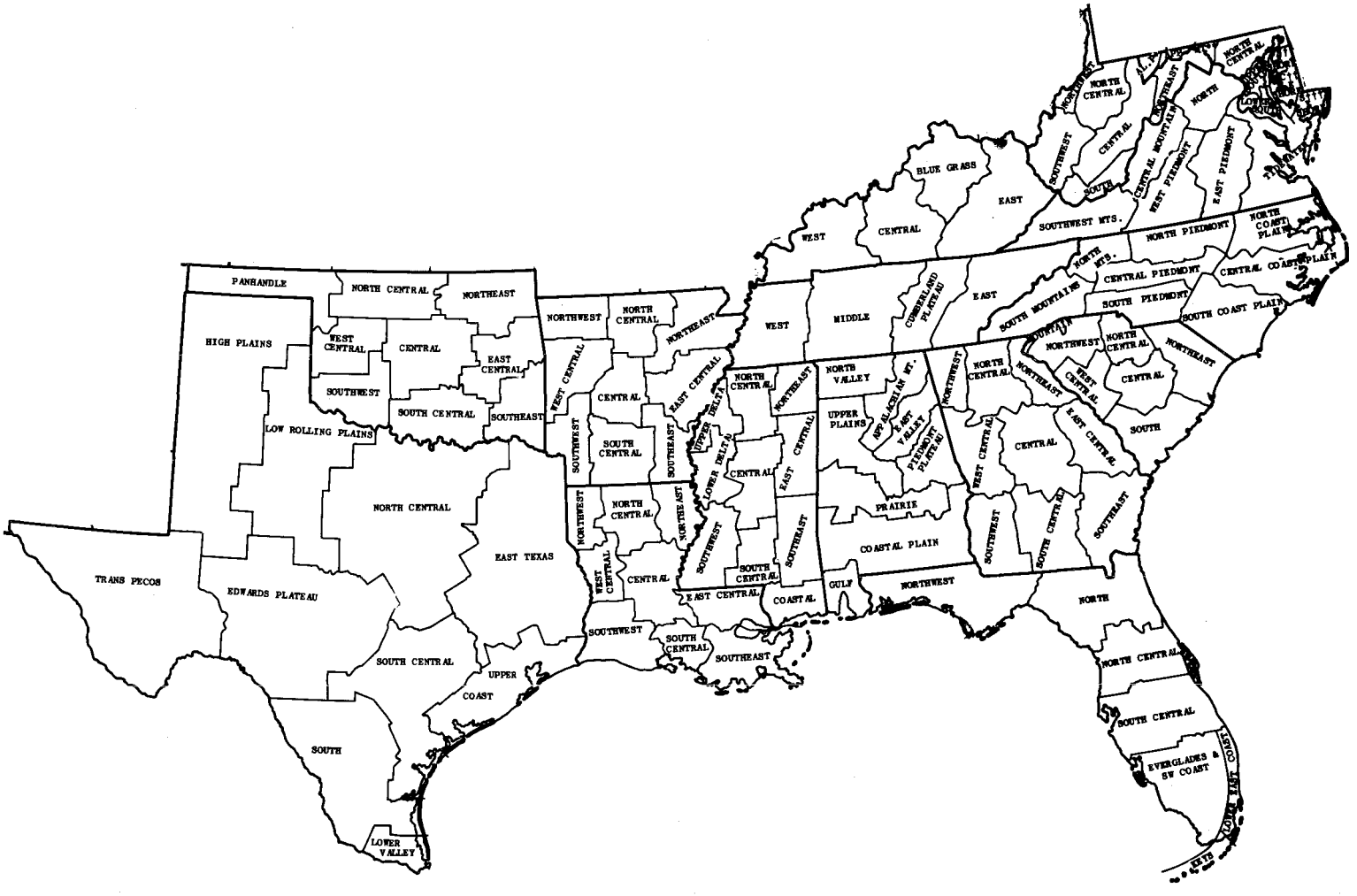


Fig. II-41. State climatic divisions. Source: U.S. Department of Commerce, Environmental Data Service, 1968, Climatic Atlas of the United States.

TABLE II-19

CLIMATIC DIVISIONS BY STATE

State	Division number	Division name
Alabama	1	Northern Valley
	2	Appalachian Mountains
	3	Upper Plains
	4	Eastern Valley
	5	Piedmont Plateau
	6	Prairie
	7	Coastal Plain
	8	Gulf
Arkansas	1	Northwest
	2	North Central
	3	Northeast
	4	West Central
	5	Central
	6	East Central
	7	Southwest
	8	South Central
	9	Southeast
Florida	1	Northwest
	2	North
	3	North Central
	4	South Central
	5	Everglades and SW Coast
	6	Lower East Coast
	7	Keys
Georgia	1	Northwest
	2	North Central
	3	Northeast
	4	West Central
	5	Central
	6	East Central
	7	Southwest
	8	South Central
	9	Southeast
Kentucky	1	Western
	2	Central
	3	Blue Grass
	4	Eastern
Louisiana	1	Northwest
	2	North Central
	3	Northeast
	4	West Central
	5	Central
	6	East Central
	7	Southwest
	8	South Central
	9	Southeast

TABLE II-19 (continued)

CLIMATIC DIVISIONS BY STATE

State	Division number	Division name
Mississippi	1	Upper Delta
	2	North Central
	3	Northeast
	4	Lower Delta
	5	Central
	6	East Central
	7	Southwest
	8	South Central
	9	Southeast
	10	Coastal
North Carolina	1	Southern Mountains
	2	Northern Mountains
	3	Northern Piedmont
	4	Central Piedmont
	5	Southern Piedmont
	6	Southern Coastal Plain
	7	Central Coastal Plain
	8	Northern Coastal Plain
Oklahoma	1	Panhandle
	2	North Central
	3	Northeast
	4	West Central
	5	Central
	6	East Central
	7	Southwest
	8	South Central
	9	Southeast
South Carolina	1	Mountain
	2	Northwest
	3	North Central
	4	Northeast
	5	West Central
	6	Central
	7	Southern
Tennessee	1	Eastern
	2	Cumberland Plateau
	3	Middle
	4	Western
Texas	1	High Plains
	2	Low Rolling Plains
	3	North Central
	4	East Texas
	5	Trans Pecos
	6	Edwards Plateau
	7	South Central
	8	Upper Coast
	9	Southern
	10	Lower Valley

TABLE II-19 (continued)

CLIMATIC DIVISIONS BY STATE

State	Division number	Division name
Virginia	1	Tidewater
	2	Eastern Piedmont
	3	Western Piedmont
	4	Northern
	5	Central Mountain
	6	Southwestern Mountain
West Virginia	1	Northwestern
	2	North Central
	3	Southwestern
	4	Central
	5	Southern
	6	Northeastern

Source: U.S. Department of Commerce, NOAA, Environmental Data Service, 1973. Climatography of the United States No. 85 (by State).

TABLE II-20

NORMAL MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-1970 (INCHES)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	5.3	5.4	5.8	4.8	3.7	3.5	4.3	3.5	3.5	2.5	3.9	5.4	51.5
2	5.3	5.5	6.2	5.0	3.8	3.8	4.8	3.8	3.7	2.6	4.2	5.3	54.1
3	5.1	5.3	6.2	5.2	3.7	4.0	4.8	4.1	3.4	2.4	3.9	5.3	53.6
4	5.0	5.4	6.3	5.1	3.5	4.2	4.7	4.0	3.6	2.5	3.7	5.2	53.1
5	4.8	5.3	6.6	5.4	3.7	4.2	5.3	4.0	4.1	2.5	3.9	5.2	54.9
6	4.4	4.8	6.3	4.9	3.6	3.9	5.2	3.7	3.6	2.4	3.5	5.2	51.5
7	4.5	4.7	6.4	5.0	3.9	4.5	6.4	4.8	4.5	2.3	3.6	5.3	56.0
8	4.5	4.5	6.8	5.2	4.3	6.1	7.9	6.6	6.9	2.8	3.7	5.3	64.6

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	2.2	2.9	3.4	4.7	6.1	5.0	3.7	3.5	3.9	3.7	3.0	2.6	44.8
2	3.1	3.4	3.9	4.5	5.4	4.2	3.4	3.3	3.6	3.2	3.5	3.2	44.7
3	4.2	4.0	4.8	4.8	5.0	3.7	3.6	3.4	3.5	3.0	4.1	4.1	48.1
4	3.2	3.8	4.4	5.1	5.9	4.2	4.1	3.5	3.8	3.7	3.6	3.5	48.8
5	4.2	4.2	5.2	5.5	5.8	3.9	3.8	3.4	3.8	3.2	3.9	4.2	51.1
6	4.5	4.6	5.3	5.4	4.9	3.3	3.6	3.2	3.4	3.0	4.0	4.6	49.7
7	3.9	4.1	5.0	5.9	6.2	3.9	3.8	3.5	3.9	3.6	3.8	4.1	51.7
8	4.4	4.5	5.3	5.8	5.2	3.3	3.8	3.2	3.7	3.3	4.2	4.5	51.1
9	4.7	4.9	5.6	5.3	4.9	3.1	4.1	3.1	3.4	2.8	4.1	4.7	50.8

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.0	4.4	5.8	4.5	3.8	5.8	7.8	6.8	6.6	2.9	3.1	4.3	59.9
2	3.0	3.7	4.2	3.1	3.5	6.2	7.8	7.4	6.9	4.0	2.2	2.9	54.8
3	2.4	3.1	3.9	2.8	3.2	7.0	8.2	7.7	7.2	4.2	1.8	2.2	53.7
4	2.3	2.8	3.6	2.7	3.4	7.3	8.0	7.7	7.5	4.0	1.9	2.0	53.2
5	1.8	2.0	2.7	2.4	4.5	8.8	8.0	7.3	8.2	4.8	1.4	1.4	53.3
6	2.3	2.2	2.6	3.3	5.5	8.5	6.6	6.6	9.0	8.4	2.6	2.0	59.5
7	1.8	1.9	1.8	2.1	3.1	5.3	4.1	4.4	7.0	6.8	2.3	1.8	42.6

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.8	5.1	6.0	4.8	3.9	3.8	4.8	3.9	3.9	2.9	3.7	4.8	52.3
2	5.0	5.1	6.1	4.9	4.0	4.1	5.3	3.9	3.7	3.1	3.8	4.7	53.6
3	5.1	5.2	6.3	4.8	3.9	4.6	5.4	4.3	4.0	3.3	3.8	4.9	55.5
4	4.4	4.8	6.1	4.6	3.9	4.1	5.6	4.0	3.7	2.4	3.3	4.8	51.6
5	4.1	4.3	5.5	3.8	3.9	3.9	5.2	4.0	3.5	2.4	2.6	4.3	47.4
6	3.4	3.8	4.9	3.5	3.9	3.9	5.0	4.4	3.9	2.6	2.3	3.7	45.3
7	4.0	4.3	5.7	4.4	3.7	4.7	6.2	4.7	4.3	2.2	2.6	4.5	51.2
8	3.5	3.9	5.1	3.9	3.9	4.6	6.1	5.3	4.0	2.4	2.1	3.8	48.7
9	3.0	3.2	4.5	3.2	3.8	5.2	7.2	6.4	6.0	3.2	2.0	3.1	50.6

TABLE II-20 (continued)

NORMAL MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-1970 (INCHES)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.2	3.8	5.1	4.2	4.4	3.9	3.8	3.3	3.2	2.6	3.9	3.9	46.4
2	4.2	3.9	5.1	4.2	4.3	4.4	4.4	3.4	3.0	2.5	3.7	3.9	47.1
3	3.8	3.4	4.7	4.0	4.1	4.2	4.7	3.4	3.0	2.2	3.4	3.4	44.2
4	4.0	3.9	4.7	3.9	3.9	4.2	5.0	3.7	3.1	2.4	3.5	3.8	46.0

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.4	4.2	4.5	5.1	5.4	3.4	3.5	3.1	3.5	2.9	3.9	4.5	48.4
2	4.8	4.8	4.9	5.2	5.4	3.9	4.5	3.1	3.5	2.7	4.2	4.9	51.9
3	5.0	5.2	5.5	5.0	4.7	3.6	4.3	3.3	2.9	2.5	4.4	5.3	51.6
4	4.7	4.7	4.4	5.2	5.9	4.1	4.2	3.4	3.7	2.9	4.3	5.0	52.4
5	5.0	5.0	5.3	5.2	5.7	4.4	5.2	4.0	4.0	3.1	4.4	5.7	57.1
6	4.8	5.2	5.9	4.9	4.9	4.8	6.4	5.1	4.7	2.8	4.1	5.9	59.7
7	4.7	4.7	4.2	4.6	5.3	4.8	6.4	4.9	4.8	3.5	4.1	5.5	57.4
8	4.3	4.7	4.6	4.3	4.9	5.4	7.6	6.0	5.7	3.3	3.7	5.1	59.7
9	4.5	4.8	5.2	4.2	4.5	5.4	7.5	6.3	7.0	2.9	3.8	5.1	61.1

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	5.0	5.2	5.8	5.5	4.6	3.3	3.9	2.6	3.3	2.7	4.2	4.8	50.9
2	5.2	5.3	5.8	5.7	4.3	3.4	4.0	3.2	3.4	2.7	4.7	5.2	52.9
3	5.4	5.5	6.1	5.4	4.1	3.5	4.4	3.2	3.3	2.5	4.6	5.3	53.1
4	4.9	5.3	5.7	5.4	4.1	3.5	4.1	3.0	3.1	2.5	4.5	5.2	51.4
5	5.2	5.2	5.9	5.1	4.2	3.5	4.9	3.5	3.0	2.5	4.1	5.2	52.3
6	5.2	5.4	5.9	5.2	3.7	3.3	5.4	3.4	3.1	2.5	4.0	5.2	52.4
7	5.1	5.0	6.0	5.0	4.7	4.1	4.8	3.7	3.2	2.6	4.2	5.6	53.9
8	4.9	5.3	6.4	5.2	4.7	4.4	5.4	4.4	4.1	2.7	3.9	5.8	57.4
9	4.7	5.2	6.6	5.1	4.1	4.1	5.9	4.4	3.8	2.5	3.9	5.8	56.1
10	4.7	4.8	6.4	4.9	4.2	5.2	7.3	6.0	6.4	2.7	3.8	5.5	62.1

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.4	4.7	5.6	4.4	3.9	4.7	5.7	5.1	4.1	3.6	3.6	4.5	54.3
2	3.6	4.1	4.8	4.1	4.0	4.6	5.4	5.3	4.4	3.7	3.5	3.8	51.3
3	3.2	3.5	3.8	3.3	3.5	3.9	4.9	4.4	3.8	2.9	2.9	3.3	43.3
4	3.5	3.8	4.1	3.6	3.6	4.1	5.3	4.8	4.0	3.1	2.9	3.4	46.3
5	3.5	3.9	4.4	3.6	3.4	4.1	5.6	5.0	3.9	3.0	2.8	3.4	46.4
6	3.2	3.5	4.1	3.1	3.7	5.2	7.3	5.9	4.9	3.0	3.0	3.2	50.0
7	3.6	3.8	3.7	3.1	3.8	4.9	6.9	6.1	5.2	3.2	3.3	3.3	50.9
8	3.6	3.8	3.8	3.0	3.6	4.3	6.0	5.7	4.6	3.2	3.3	3.4	48.2

TABLE II-20 (continued)

NORMAL MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-1970 (INCHES)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.5	0.7	1.0	1.5	3.1	3.0	3.1	2.8	1.8	1.6	0.7	0.6	20.3
2	0.7	1.1	1.6	2.8	4.1	3.9	3.2	3.0	3.0	2.3	1.2	1.0	28.0
3	1.5	1.8	2.7	4.3	5.4	5.1	3.4	3.3	4.4	3.5	2.0	1.7	39.2
4	0.7	1.0	1.4	2.6	4.3	3.7	2.5	2.5	2.7	2.4	1.1	0.9	25.7
5	1.2	1.4	2.1	3.6	5.5	4.3	3.3	2.7	3.9	2.9	1.6	1.4	33.9
6	1.9	2.5	3.3	4.9	6.2	4.8	3.7	3.0	4.0	3.5	2.5	2.5	42.8
7	1.0	1.2	1.5	2.5	4.9	3.6	2.4	2.2	2.9	2.7	1.2	1.2	27.2
8	1.6	2.1	2.6	4.2	5.6	4.1	2.8	2.5	4.0	3.3	2.2	2.0	37.0
9	2.8	3.6	4.0	5.3	6.2	4.0	3.9	3.6	4.4	3.5	3.4	3.2	48.0

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	5.7	6.0	7.1	5.7	4.9	5.7	7.5	5.9	5.1	4.8	4.9	5.9	69.1
2	4.3	4.5	5.6	4.3	3.4	4.2	4.9	4.5	3.8	3.1	3.4	4.3	50.3
3	3.8	3.7	4.7	3.6	3.2	3.8	5.4	4.7	4.0	2.7	2.7	3.5	45.8
4	3.1	3.5	4.4	3.2	3.3	4.9	6.3	5.5	4.7	2.9	2.6	3.1	47.6
5	4.0	4.0	5.1	4.0	3.5	3.9	4.9	4.1	3.8	2.6	2.7	3.8	46.4
6	3.2	3.6	4.5	3.4	3.5	4.5	5.8	5.3	4.1	2.7	2.4	3.3	46.4
7	3.0	3.4	4.6	3.0	3.9	5.3	6.9	5.9	5.0	2.9	2.2	3.1	49.3

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	4.5	4.7	5.0	4.0	3.6	3.9	5.2	3.9	3.3	2.7	3.6	4.4	48.6
2	5.6	5.5	5.8	4.8	4.1	4.4	5.0	3.9	3.8	2.7	4.3	5.5	55.3
3	5.2	5.1	5.4	4.6	4.2	3.8	4.2	3.6	3.3	2.6	4.1	4.9	50.8
4	4.9	4.7	5.3	4.9	4.4	3.8	3.9	3.2	3.4	2.8	4.3	4.5	50.0

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.6	0.6	0.8	1.2	2.8	2.8	2.7	2.2	2.0	1.8	0.6	0.6	18.6
2	0.9	1.0	1.1	2.2	3.8	2.9	2.2	1.9	2.6	2.4	1.1	1.0	23.2
3	1.9	2.3	2.2	4.0	4.6	3.2	2.0	2.1	3.4	3.0	2.2	2.0	32.9
4	3.6	3.7	3.5	4.9	5.3	3.6	3.0	2.8	3.7	3.4	3.7	4.0	45.4
5	0.6	0.4	0.5	0.5	1.1	1.4	1.8	1.6	1.7	1.1	0.4	0.5	11.6
6	1.3	1.6	1.4	2.5	3.1	2.4	1.5	2.0	3.2	2.5	1.3	1.2	23.9
7	2.1	2.6	1.8	3.0	3.7	3.2	2.1	2.7	4.3	3.2	2.2	2.1	33.0
8	3.3	3.5	2.6	3.4	4.5	4.4	4.1	4.5	5.2	3.9	3.5	3.7	46.4
9	1.1	1.3	0.8	1.9	3.1	2.3	1.3	2.1	3.6	2.3	1.1	1.0	21.9
10	1.5	1.3	0.8	1.5	2.8	2.6	1.1	2.3	4.4	2.8	1.3	1.0	23.4

TABLE II-20 (continued)

NORMAL MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-1970 (INCHES)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	3.1	3.1	3.5	2.8	3.4	3.7	5.0	5.0	3.7	3.0	2.9	3.1	42.4
2	3.0	3.0	3.6	3.0	3.4	3.5	4.7	4.4	3.5	2.9	3.0	3.3	41.3
3	3.0	3.1	3.8	3.3	3.8	3.8	4.6	4.3	4.1	3.1	2.9	3.3	43.1
4	2.6	2.4	3.4	3.0	3.8	3.7	4.2	4.3	3.5	3.1	3.0	2.9	39.8
5	2.5	2.6	3.4	2.9	3.6	3.6	4.0	4.0	3.6	3.0	2.6	2.9	38.7
6	3.2	3.4	4.0	3.3	3.7	3.7	4.7	4.0	3.2	2.6	2.8	3.3	42.0

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	3.1	2.7	3.8	3.6	4.0	4.0	4.4	3.6	3.0	2.5	2.8	2.8	40.2
2	3.4	3.1	4.0	3.7	4.0	4.4	4.8	4.2	3.4	2.7	3.1	3.4	44.2
3	3.3	3.1	4.1	3.5	3.9	3.8	4.8	3.6	3.1	2.3	3.0	3.1	41.6
4	3.8	3.6	4.6	4.0	4.4	4.5	5.1	4.6	3.5	3.0	3.3	3.8	48.4
5	2.9	2.9	3.8	3.1	3.5	3.5	4.0	3.6	3.0	2.3	2.5	3.0	38.1
6	2.2	2.1	3.1	2.8	3.3	3.5	3.5	3.5	2.8	2.7	2.4	2.4	34.3

Source: ORNL Geoecology Database, from Climatography of the United States, No. 85 (By State), NOAA, Environmental Data Service, 1973.

TABLE II-21

MAXIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	11.6	11.3	10.8	10.0	8.2	8.0	9.5	7.3	6.5	6.0	12.4	11.6	64.1
2	11.3	13.4	11.5	10.8	7.6	6.7	8.5	8.5	8.8	6.2	15.3	13.3	71.6
3	10.3	14.0	10.7	13.5	6.8	7.0	8.8	8.6	7.6	6.8	14.6	14.1	69.4
4	11.1	14.4	11.3	9.6	7.3	7.4	9.8	8.3	8.5	6.2	16.7	13.9	71.1
5	10.9	16.9	10.9	13.3	7.1	7.1	9.4	7.1	8.7	9.5	17.6	14.8	74.3
6	9.5	14.2	12.0	14.2	7.8	6.8	9.1	6.4	8.4	8.1	16.4	13.4	71.8
7	8.6	11.3	13.5	11.8	9.0	7.6	9.6	9.1	9.5	8.8	14.7	14.2	71.4
8	8.8	9.8	14.3	14.3	10.7	11.5	16.1	12.2	14.9	11.3	13.8	14.6	86.4

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	6.1	8.3	10.5	10.9	15.5	10.6	10.1	8.4	10.3	13.3	11.5	5.3	65.8
2	11.6	8.5	12.3	11.0	11.4	11.1	5.9	8.9	8.8	11.3	8.5	6.8	67.2
3	12.1	9.6	10.2	10.8	10.0	10.5	7.0	7.4	9.7	10.6	12.6	7.4	74.4
4	12.0	9.5	14.1	12.8	10.9	11.2	11.2	8.0	9.6	10.4	11.4	7.4	71.4
5	12.2	10.3	11.3	13.3	13.6	9.4	7.5	9.8	8.6	9.2	9.0	9.1	76.0
6	11.2	9.6	9.6	12.8	11.9	8.0	6.1	8.1	9.0	10.8	9.6	11.0	74.7
7	11.3	8.6	14.3	12.6	15.4	9.0	8.5	8.8	10.0	10.0	11.3	10.4	76.6
8	9.6	9.4	10.1	12.5	10.8	7.6	7.9	8.0	8.1	10.6	10.5	11.7	73.8
9	11.3	9.9	10.7	11.0	12.3	6.4	7.9	8.8	12.3	10.9	11.0	11.4	73.2

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	9.2	8.9	14.5	9.0	11.0	12.8	14.4	11.0	18.6	11.1	12.1	12.4	83.0
2	8.5	7.0	10.7	8.3	8.3	10.7	11.8	12.3	12.9	9.9	6.0	7.6	75.8
3	6.3	6.6	11.9	7.0	7.7	13.5	12.4	13.8	13.2	9.6	5.5	5.7	73.2
4	6.6	7.0	9.5	7.7	7.4	14.3	13.9	15.4	15.0	9.4	5.4	4.3	73.6
5	7.0	4.4	12.7	6.5	9.3	14.3	11.4	10.4	16.2	10.2	3.7	4.4	77.5
6	6.9	6.0	7.3	11.5	14.7	18.3	11.8	11.0	21.2	16.8	9.2	7.9	90.2
7	8.6	6.1	4.8	9.4	11.6	13.8	9.8	9.7	13.8	18.7	8.8	5.5	64.8

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	10.9	10.8	11.8	9.7	8.8	7.3	9.1	8.8	9.6	6.6	15.6	12.9	67.7
2	9.9	11.0	11.5	10.2	8.3	10.5	9.1	9.8	6.6	7.8	14.3	10.9	73.4
3	9.6	10.0	14.4	10.5	6.7	8.6	10.6	9.0	7.5	8.8	15.3	10.8	77.3
4	8.9	12.4	11.4	10.6	7.9	7.3	9.4	6.9	7.4	7.2	14.0	10.1	68.9
5	9.6	7.8	11.4	7.9	8.9	6.8	8.6	9.0	8.4	7.8	9.8	9.7	64.4
6	7.1	6.7	10.3	8.8	7.5	8.8	10.1	9.0	8.1	7.6	7.6	7.8	67.8
7	9.9	8.4	12.3	8.6	8.4	9.5	10.7	7.8	11.3	8.4	9.4	11.4	77.2
8	8.7	8.3	11.5	8.3	7.3	8.5	11.2	10.7	8.8	6.9	9.3	9.1	72.8
9	8.0	7.3	10.5	7.0	9.3	10.7	13.3	11.8	13.5	8.7	6.0	6.3	70.4

TABLE II-21 (continued)

MAXIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	13.3	7.6	14.5	8.1	9.2	7.9	8.0	7.4	7.1	6.6	13.0	7.6	68.2
2	14.0	9.0	11.4	8.8	7.9	8.0	9.1	6.6	5.6	4.7	9.3	8.4	67.5
3	13.0	8.5	11.8	8.1	7.5	7.9	7.9	7.4	6.9	4.5	6.7	6.8	60.7
4	10.4	9.8	9.3	6.9	6.5	6.7	7.8	6.1	6.5	5.0	6.9	6.9	57.1

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	11.1	7.1	8.9	10.8	11.1	9.5	6.3	7.1	12.0	12.1	10.3	10.8	72.8
2	10.8	9.4	9.6	9.6	11.8	8.3	10.6	7.4	10.1	10.1	12.4	11.2	73.6
3	13.2	10.7	11.8	10.1	12.5	7.6	8.4	9.3	10.4	8.3	19.8	10.9	72.3
4	9.7	11.0	8.4	12.3	21.9	9.5	9.8	7.8	12.3	9.2	13.6	10.1	79.1
5	10.9	10.0	11.0	9.4	21.6	10.3	9.7	7.8	9.5	9.7	14.6	11.6	77.2
6	10.1	15.0	12.9	8.7	11.9	8.9	10.7	10.0	11.4	7.6	14.0	14.8	85.4
7	9.4	10.1	8.8	11.3	15.7	12.0	12.1	9.1	13.0	13.9	9.3	10.7	73.6
8	10.1	13.2	10.4	9.7	13.5	12.7	17.5	10.4	18.6	11.3	10.8	10.0	90.8
9	11.8	11.1	14.0	8.9	10.8	11.5	11.7	9.6	14.8	9.1	12.5	11.1	77.3

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	12.3	11.1	11.1	11.3	10.2	7.7	9.8	5.8	12.0	9.8	12.3	10.4	73.2
2	12.0	11.0	9.7	11.2	10.2	8.2	8.5	6.1	11.2	7.4	13.6	11.3	69.7
3	11.6	12.1	11.0	11.1	7.4	7.5	8.6	8.1	9.2	7.9	13.7	11.2	68.3
4	11.7	10.8	10.4	10.1	9.3	8.4	7.8	6.4	14.6	8.6	14.3	11.8	68.9
5	11.5	10.4	10.9	11.4	8.8	7.9	9.0	7.6	7.7	10.5	13.5	13.0	69.2
6	13.2	10.3	10.9	12.0	6.7	8.0	10.2	8.3	7.4	7.2	13.3	13.9	72.8
7	11.7	10.1	13.1	9.5	13.3	8.7	9.6	10.6	8.1	8.4	15.0	10.9	73.9
8	11.4	14.4	15.3	10.4	9.7	8.7	10.6	8.7	11.7	7.2	11.3	12.0	87.8
9	12.0	14.8	12.5	11.5	8.8	8.6	10.4	8.1	13.1	7.8	15.1	13.5	83.6
10	9.8	11.8	14.1	11.5	10.4	9.7	17.4	9.7	16.4	9.1	12.9	11.1	86.1

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	9.3	8.4	10.4	8.2	7.8	9.5	11.2	10.2	8.0	9.5	11.9	9.3	69.8
2	7.0	7.3	8.5	8.0	7.9	9.9	9.4	12.3	10.6	9.2	9.9	6.7	67.2
3	6.6	5.9	7.0	6.5	5.8	7.1	10.4	8.1	11.1	7.2	8.0	6.2	53.7
4	7.8	6.1	8.5	6.7	6.7	7.7	8.9	10.2	12.2	7.9	8.8	6.8	56.2
5	6.4	6.9	7.8	7.2	6.2	7.5	9.4	11.6	12.5	8.4	8.7	6.8	59.2
6	6.3	6.4	6.6	6.3	6.2	9.6	13.5	12.3	12.7	8.1	7.8	7.0	58.4
7	6.8	6.2	6.2	5.6	7.8	12.0	11.6	16.6	16.6	9.7	8.0	6.2	60.8
8	6.5	6.0	6.6	5.3	8.5	8.4	10.8	11.6	11.2	8.8	8.5	6.6	56.9

TABLE II-21 (continued)

MAXIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.6	2.5	4.3	5.3	6.4	7.7	9.8	4.7	4.1	6.1	3.1	2.2	33.3
2	4.4	3.1	3.8	7.2	11.7	9.8	9.1	6.1	7.1	8.7	6.5	3.0	45.5
3	6.0	4.7	6.0	9.7	19.1	11.3	9.3	8.0	11.9	17.3	7.0	3.2	60.5
4	4.1	3.1	3.8	7.6	9.6	8.8	7.2	5.7	7.3	7.7	6.6	3.3	40.3
5	6.2	2.5	4.6	9.5	12.2	9.6	10.2	6.2	10.7	13.5	6.0	3.3	49.6
6	5.3	6.6	10.6	11.8	14.7	11.2	10.1	5.8	10.4	14.8	9.2	6.9	63.9
7	4.9	2.9	3.3	7.2	10.2	8.8	6.0	6.5	6.5	8.4	5.1	3.4	44.1
8	5.2	5.9	8.5	11.4	11.9	9.3	8.4	7.5	9.6	14.3	6.5	5.5	57.5
9	9.6	10.1	12.4	12.8	11.8	11.0	13.0	7.6	10.4	9.0	13.2	7.4	69.9

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	15.2	12.1	15.5	11.8	12.0	10.4	16.9	12.5	11.2	12.1	15.2	13.0	87.9
2	7.6	8.8	11.9	9.9	6.4	8.2	9.0	9.2	7.9	8.7	12.0	9.0	71.4
3	7.4	7.3	8.8	6.6	8.4	7.6	13.1	12.6	12.2	9.4	9.5	7.4	65.8
4	6.9	7.1	7.5	6.8	7.3	8.9	10.7	10.0	14.5	9.0	8.5	7.3	66.4
5	8.7	8.0	9.6	7.8	7.0	8.8	9.6	10.4	10.4	8.6	9.0	8.1	72.6
6	7.3	6.2	7.6	8.0	6.8	11.7	12.5	12.7	13.1	10.6	7.6	7.4	69.0
7	7.3	7.1	10.1	7.1	8.1	13.5	17.0	12.1	14.8	10.2	6.7	8.1	73.1

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	10.0	8.9	10.3	7.0	6.6	5.7	9.6	7.3	7.7	6.5	10.5	9.7	60.2
2	15.4	10.9	10.2	9.1	7.2	7.4	9.9	9.3	9.7	6.6	11.2	11.9	67.4
3	15.2	10.3	9.7	8.8	9.1	8.3	7.8	6.3	7.0	6.0	10.1	10.4	64.9
4	14.5	10.2	8.8	8.8	9.0	8.5	7.5	7.1	6.7	7.8	11.9	8.4	73.9

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	2.7	1.7	2.4	3.8	8.5	6.3	6.8	5.1	4.5	7.0	1.8	2.6	37.6
2	3.7	2.7	3.0	6.5	8.5	6.3	5.1	6.0	6.4	7.9	3.4	3.0	44.3
3	5.8	4.9	6.1	11.9	10.4	6.9	5.8	5.3	7.5	8.0	6.1	5.2	47.9
4	7.6	6.1	7.9	11.8	11.7	8.0	6.4	6.6	9.2	11.5	11.1	8.7	61.7
5	2.7	1.5	4.4	2.3	4.4	3.6	4.0	4.1	5.1	4.0	2.2	1.4	27.1
6	4.2	3.6	4.1	7.4	7.8	6.6	4.1	5.8	7.3	6.7	3.3	3.3	38.3
7	6.0	5.5	6.0	7.7	7.3	7.8	9.4	6.3	13.8	11.8	5.3	5.3	46.9
8	9.1	9.5	8.3	7.8	10.5	13.2	11.8	13.5	12.7	18.0	11.1	8.0	70.7
9	5.3	3.7	2.3	6.2	6.9	4.8	5.7	6.0	14.4	7.8	3.1	3.4	34.1
10	6.3	5.1	4.2	4.6	7.0	6.7	3.1	7.9	18.8	12.0	3.3	3.9	41.2

TABLE II-21 (continued)

MAXIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	5.4	5.2	6.0	4.8	7.0	7.6	13.1	10.8	7.2	6.5	6.4	6.1	53.9
2	5.4	5.4	6.4	5.1	6.9	6.7	11.9	11.8	8.6	6.1	6.4	5.8	55.1
3	5.3	5.9	6.4	5.0	7.2	7.5	8.1	10.7	12.7	7.0	6.6	6.3	56.3
4	4.6	4.7	5.4	7.4	7.1	7.1	8.9	13.8	9.7	12.4	7.1	5.5	53.4
5	4.9	5.3	5.6	5.1	8.0	6.3	7.0	8.3	8.4	7.6	6.0	5.7	53.6
6	7.3	7.4	8.0	5.3	7.3	6.8	7.9	7.7	8.3	5.2	5.5	5.8	53.1

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	7.8	5.9	7.5	6.8	8.2	6.9	9.0	6.8	8.5	6.6	6.5	5.3	50.8
2	7.8	6.1	8.0	6.6	8.2	7.9	9.1	8.8	8.9	7.0	7.2	6.1	56.2
3	8.1	7.3	7.4	7.0	7.0	6.8	8.2	6.1	7.4	5.1	5.6	6.4	54.4
4	6.7	6.4	8.4	5.8	7.8	7.6	9.3	8.9	6.8	7.8	5.8	6.8	60.9
5	6.8	5.8	8.3	5.4	5.6	6.8	7.4	6.7	7.0	4.9	4.6	5.6	45.9
6	3.9	4.0	5.6	5.8	6.8	6.8	6.4	9.0	7.9	8.3	5.3	4.8	45.9

Source: ORNL Geoecology Database, from Climatography of the United States, No. 85 (By State), NOAA, Environmental Data Service, 1973.

TABLE II-22

MINIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.6	0.9	2.0	1.5	0.5	0.9	1.6	0.7	0.8	0.1	0.9	0.9	34.7
2	2.1	1.2	1.6	1.0	0.8	1.5	1.8	1.2	0.4	0.1	1.0	1.5	40.0
3	2.1	1.9	1.8	1.2	0.3	1.2	1.8	1.3	0.4	0.0	1.0	1.5	34.7
4	1.9	1.5	1.9	1.0	0.9	1.4	2.0	1.2	0.5	0.1	0.8	1.9	36.1
5	1.9	1.3	2.3	1.5	0.7	1.8	1.3	2.0	0.6	0.0	0.9	1.3	31.7
6	1.7	1.7	2.1	1.6	0.4	1.2	1.7	1.2	0.4	0.1	0.7	2.0	28.5
7	1.3	1.6	0.8	1.1	0.7	1.8	3.1	1.7	1.1	0.0	0.6	1.3	30.6
8	1.1	1.4	0.6	1.2	1.1	2.3	2.2	1.4	1.8	0.0	0.4	2.1	35.1

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.1	0.4	0.8	1.6	1.4	0.3	0.6	0.9	0.3	0.1	0.5	0.4	22.6
2	0.1	0.5	0.8	1.4	1.1	0.2	1.1	1.1	0.4	0.2	0.3	0.3	28.5
3	0.7	0.7	1.2	1.8	1.3	0.5	1.0	0.8	0.5	0.1	0.3	1.0	30.6
4	0.2	0.4	1.3	2.1	1.5	0.3	1.1	1.0	0.6	0.1	0.5	0.4	26.7
5	0.8	0.5	1.0	1.5	1.5	0.4	0.6	0.6	0.6	0.1	0.3	1.0	33.7
6	1.0	0.7	0.6	1.7	1.4	0.4	0.5	0.6	1.0	0.0	0.3	1.6	32.3
7	0.9	1.0	0.8	1.2	2.1	0.4	1.1	0.2	0.7	0.0	0.3	0.5	35.2
8	0.9	0.9	0.9	1.4	1.5	0.4	0.6	0.5	0.7	0.1	0.4	1.0	36.5
9	1.4	2.0	0.9	1.2	1.2	0.1	1.0	0.7	0.8	0.1	0.3	1.4	34.4

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.5	1.3	1.2	1.0	0.5	2.3	3.3	2.7	3.2	0.3	0.6	0.7	34.0
2	0.1	0.6	0.1	0.4	0.8	2.8	4.8	3.5	2.1	0.8	0.5	0.2	35.8
3	0.2	0.5	0.4	0.1	0.7	3.5	4.4	4.7	2.5	0.4	0.2	0.2	41.1
4	0.1	0.3	0.5	0.1	0.7	2.8	5.2	5.2	3.0	0.5	0.4	0.4	38.3
5	0.1	0.1	0.4	0.1	1.5	3.8	2.9	5.3	3.3	0.3	0.2	0.2	36.9
6	0.2	0.1	0.4	0.2	0.7	1.8	1.8	3.6	2.9	2.2	0.3	0.1	37.9
7	0.3	0.0	0.0	0.1	0.3	0.6	0.9	1.8	1.5	1.5	0.2	0.2	26.6

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	2.3	1.4	1.9	1.3	1.2	1.4	1.4	1.1	0.6	0.0	0.8	1.3	40.8
2	2.2	1.5	2.9	1.1	0.8	1.9	1.5	0.9	0.7	0.0	0.8	1.1	38.1
3	2.1	1.4	3.1	1.1	0.8	1.8	1.9	1.5	0.6	0.2	0.7	0.8	39.8
4	1.9	1.4	1.5	1.5	0.8	2.4	1.6	1.8	0.8	0.0	0.8	1.0	31.0
5	1.5	1.3	1.5	1.3	0.9	1.8	2.3	1.4	0.8	0.1	0.7	0.7	26.3
6	0.8	1.1	1.4	1.3	0.3	1.9	2.5	1.6	0.8	0.0	0.8	0.5	26.7
7	0.8	1.2	0.8	0.6	0.5	2.4	4.2	2.4	1.0	0.0	0.4	0.4	29.6
8	0.8	1.1	0.7	1.0	0.5	1.5	2.9	2.8	0.9	0.0	0.5	0.3	26.6
9	0.5	0.8	0.6	0.6	0.7	2.1	3.1	3.3	1.9	0.1	0.2	0.3	30.9

TABLE II-22 (continued)

MINIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.8	0.3	1.0	1.9	1.2	0.7	1.7	0.9	0.6	0.1	0.9	1.0	30.0
2	1.2	0.3	1.4	1.6	1.2	1.2	2.0	1.1	0.7	0.1	1.3	0.8	34.1
3	1.0	0.6	1.4	1.3	1.3	1.5	2.1	1.4	1.0	0.3	0.8	0.6	33.0
4	1.5	0.6	1.8	1.4	0.7	1.8	1.1	1.6	1.4	0.1	1.4	0.3	35.6

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.3	1.3	1.1	1.1	1.7	0.7	1.0	0.7	1.0	0.0	0.5	0.6	31.8
2	1.1	1.1	0.8	1.0	1.1	0.4	1.0	1.0	0.4	0.0	0.4	0.9	34.3
3	1.2	1.8	1.3	0.6	1.0	0.6	1.3	0.9	0.6	0.0	0.1	1.0	34.5
4	1.2	1.0	1.1	0.4	1.6	0.6	0.9	0.8	0.9	0.0	0.5	1.0	32.9
5	1.7	1.3	0.8	0.6	1.8	1.3	1.3	0.9	0.6	0.0	0.1	1.8	38.9
6	1.6	1.3	0.3	0.5	0.9	1.0	1.5	1.6	0.2	0.0	0.2	1.8	44.4
7	1.4	0.9	0.2	0.7	0.8	1.2	2.0	1.7	1.0	0.0	0.1	2.2	36.9
8	0.8	0.6	0.1	0.5	1.2	1.8	3.0	2.4	1.1	0.0	0.2	1.7	42.7
9	1.3	1.1	0.3	0.8	0.7	1.5	2.9	2.9	2.1	0.0	0.3	1.6	39.6

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.4	1.4	0.8	1.5	0.6	0.6	0.9	0.4	0.9	0.0	0.4	1.3	32.7
2	1.6	1.7	1.4	1.8	1.4	0.3	1.3	1.0	0.7	0.0	0.6	1.3	36.6
3	1.7	1.6	1.5	1.8	1.1	1.0	1.6	0.4	0.8	0.0	0.8	1.1	35.9
4	1.3	1.3	1.1	2.0	0.6	0.6	1.4	0.7	0.6	0.0	0.4	1.0	34.6
5	1.6	1.6	1.7	1.4	0.9	1.0	1.8	1.3	0.6	0.0	0.2	1.5	35.3
6	1.1	1.9	2.0	1.0	0.6	0.8	1.4	0.8	0.5	0.1	0.6	1.6	35.3
7	1.4	1.3	1.4	0.7	0.5	0.8	1.6	1.1	0.6	0.1	0.1	2.2	37.6
8	1.1	1.6	1.1	0.9	0.4	1.3	0.3	1.2	0.3	0.1	0.3	2.1	37.8
9	2.3	1.9	1.6	1.4	0.4	1.5	2.8	1.4	1.0	0.0	0.8	2.0	37.1
10	1.5	1.5	0.3	0.8	0.9	0.6	1.2	1.2	0.7	0.0	0.3	1.6	41.1

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.7	0.8	2.8	1.7	1.2	2.3	1.9	2.2	0.8	0.1	1.4	0.4	43.6
2	1.6	0.4	1.8	1.3	1.3	2.0	2.9	1.5	1.2	0.2	1.2	0.3	37.9
3	1.1	0.7	1.3	0.8	1.2	1.8	1.4	1.6	0.5	0.3	0.5	0.3	30.7
4	1.2	0.7	1.8	1.2	1.1	1.7	2.1	2.2	0.5	0.3	0.9	0.3	35.0
5	1.4	0.7	1.6	1.3	1.0	2.3	1.8	1.6	0.5	0.3	0.8	0.5	38.2
6	0.9	0.6	1.0	1.0	0.8	1.9	2.9	2.5	1.2	0.2	0.8	0.6	37.3
7	1.1	1.0	0.8	1.0	1.0	1.5	2.2	2.3	0.8	0.4	0.9	0.6	39.2
8	1.4	1.0	1.1	0.8	1.1	1.4	2.2	1.8	1.8	0.8	0.9	0.8	37.5

TABLE II-22 (continued)

MINIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.0	0.0	0.0	0.2	0.5	0.5	0.6	1.4	0.1	0.0	0.0	0.0	11.6
2	0.1	0.1	0.1	0.6	0.6	1.5	0.3	0.8	0.2	0.0	0.0	0.0	14.5
3	0.1	0.1	0.9	1.5	1.4	1.4	0.1	1.2	0.1	0.1	0.1	0.2	21.8
4	0.0	0.0	0.0	0.7	0.5	1.0	0.3	0.4	0.1	0.0	0.0	0.0	15.0
5	0.0	0.1	0.4	0.9	1.6	1.4	0.5	0.4	0.2	0.0	0.0	0.1	20.2
6	0.1	0.1	0.5	1.3	1.3	1.5	0.4	0.4	0.2	0.2	0.2	0.3	23.1
7	0.1	0.1	0.1	0.4	0.5	0.9	0.3	0.4	0.1	0.0	0.0	0.0	17.0
8	0.1	0.1	0.2	0.7	1.1	0.6	0.3	0.0	0.1	0.1	0.0	0.1	19.6
9	0.2	0.4	1.0	1.6	1.2	0.9	0.8	0.2	0.3	0.4	0.4	0.3	27.5

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.6	1.2	2.2	1.1	1.3	1.4	2.1	1.8	0.6	0.1	1.3	1.0	50.9
2	1.8	0.9	2.4	0.9	0.6	1.9	1.7	1.6	0.2	0.2	0.8	0.6	36.6
3	1.6	0.9	1.7	1.6	0.2	1.1	1.9	1.1	0.4	0.1	0.6	0.5	32.5
4	1.0	0.4	1.8	1.0	0.5	1.2	3.4	2.4	1.0	0.0	0.7	0.7	34.1
5	1.8	1.1	1.8	1.0	0.3	1.6	2.0	1.8	1.1	0.1	0.7	0.6	28.9
6	0.9	0.4	1.4	1.0	0.4	2.2	1.9	1.8	1.1	0.2	0.4	0.6	27.8
7	0.6	0.4	0.8	1.0	0.4	1.8	4.0	2.4	1.7	0.1	0.4	0.5	30.2

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	2.2	0.8	2.2	1.0	0.9	1.9	2.0	1.2	1.3	0.1	1.4	0.5	35.6
2	2.2	0.9	2.6	1.3	0.9	1.2	1.6	1.5	0.9	0.0	1.4	0.8	41.6
3	1.5	1.1	1.8	2.1	0.9	1.7	1.8	0.8	0.5	0.0	1.0	1.2	35.6
4	1.0	0.8	1.1	2.7	0.8	1.0	1.4	0.5	0.3	0.0	0.9	1.4	31.5

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.0	0.1	0.0	0.1	0.5	0.5	0.7	0.9	0.1	0.0	0.0	0.0	9.5
2	0.0	0.1	0.1	0.2	0.8	0.5	0.1	0.2	0.2	0.0	0.0	0.0	13.0
3	0.3	0.5	0.2	0.8	1.6	0.6	0.5	0.1	0.3	0.1	0.1	0.1	20.0
4	1.0	0.8	1.1	1.3	1.9	0.7	0.9	0.6	0.7	0.1	0.4	1.0	31.3
5	0.0	0.0	0.0	0.0	0.2	0.2	0.6	0.3	0.2	0.0	0.0	0.0	5.3
6	0.1	0.1	0.1	0.4	1.0	0.5	0.2	0.1	0.6	0.0	0.0	0.0	11.2
7	0.5	0.2	0.3	0.6	0.8	0.1	0.3	0.3	0.6	0.0	0.1	0.3	16.8
8	1.1	0.3	0.3	0.9	1.0	0.7	1.1	1.1	0.9	0.0	0.5	0.8	26.2
9	0.1	0.1	0.0	0.1	0.3	0.3	0.0	0.0	0.1	0.0	0.0	0.0	11.8
10	0.0	0.1	0.0	0.1	0.5	0.1	0.0	0.1	0.5	0.0	0.1	0.0	12.9

TABLE II-22 (continued)

MINIMUM MONTHLY AND ANNUAL PRECIPITATION BY STATE CLIMATIC DIVISION, 1941-70 (INCHES)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	1.6	1.0	1.1	0.6	1.1	1.2	1.7	1.8	0.9	0.5	0.4	0.6	29.1
2	1.2	0.8	1.3	0.7	1.0	1.6	1.7	1.2	0.9	0.3	0.6	0.3	31.0
3	0.9	0.4	1.6	0.7	0.9	1.6	2.3	1.6	1.3	0.5	1.0	0.3	30.7
4	0.3	0.4	1.3	0.9	1.1	1.6	1.5	1.3	0.9	0.0	0.7	0.3	30.0
5	0.9	0.4	1.0	0.6	1.0	1.4	1.8	1.3	1.3	0.3	0.9	0.3	27.2
6	1.7	0.4	1.6	0.5	0.7	1.7	2.8	2.1	1.3	0.1	1.0	0.3	33.6

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	0.9	0.6	1.3	1.2	1.7	1.1	2.2	0.9	0.9	0.3	1.2	0.6	31.0
2	0.9	0.7	1.8	1.7	1.5	1.2	2.4	1.3	0.7	0.3	1.0	0.9	34.4
3	1.2	0.6	1.5	1.4	1.4	0.8	2.0	1.3	1.2	0.1	1.1	0.4	33.6
4	1.4	1.0	2.2	2.1	1.6	1.8	2.5	2.0	1.2	0.4	1.5	1.1	39.5
5	1.4	0.5	1.6	0.6	1.1	1.6	2.1	1.8	1.0	0.1	1.0	0.3	31.0
6	0.3	0.3	1.1	1.0	0.9	1.1	1.2	0.7	0.7	0.2	0.8	0.3	26.6

Source: ORNL Geoecology Database, from Climatography of the United States, No. 85 (By State), NOAA, Environmental Data Service, 1973.

TABLE II-23

NORMAL MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	41.2	44.1	50.9	61.7	69.4	76.7	79.3	78.6	72.6	61.9	50.4	42.8	60.8
2	42.0	44.7	51.2	61.5	69.0	75.9	78.5	77.8	72.4	61.8	50.4	43.1	60.7
3	44.3	47.1	53.4	63.3	70.8	77.6	80.0	79.5	74.0	63.5	52.2	45.3	62.6
4	43.9	46.7	53.0	62.5	69.9	76.7	79.3	78.6	73.3	62.6	51.6	44.7	61.9
5	45.3	47.9	53.9	63.1	70.5	76.8	79.0	78.6	73.7	63.6	53.3	46.1	62.7
6	47.5	50.4	56.3	65.5	72.7	79.0	81.0	80.7	75.9	65.9	55.0	48.4	64.9
7	49.2	52.0	57.7	66.4	73.3	79.0	80.6	80.4	76.0	66.5	56.2	50.1	65.6
8	51.9	54.5	59.7	67.9	74.7	80.1	81.4	81.4	77.6	69.1	59.1	53.4	67.6

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	36.8	40.6	47.1	59.3	66.5	74.3	78.6	77.7	70.4	60.4	47.9	39.5	58.3
2	37.1	40.5	47.5	59.6	67.1	75.0	78.9	77.8	70.6	60.4	48.2	39.5	58.5
3	38.8	42.2	49.7	61.4	69.5	77.4	80.5	79.2	72.2	62.0	49.7	40.9	60.3
4	39.5	43.3	49.9	61.5	68.9	76.3	80.3	79.5	72.7	62.6	50.3	41.8	60.6
5	41.2	44.6	51.5	62.7	69.9	77.4	81.0	80.3	73.5	63.3	51.4	43.2	61.7
6	41.2	44.6	51.7	62.9	70.7	78.2	81.1	80.0	73.3	63.3	51.6	43.3	61.8
7	42.7	46.0	52.5	63.2	70.4	77.7	81.2	80.7	74.2	64.1	52.4	44.6	62.5
8	44.1	47.6	54.2	64.5	71.6	78.8	81.9	81.3	75.0	64.8	53.4	45.8	63.6
9	43.8	47.2	53.9	64.3	71.7	78.9	81.7	80.9	74.6	64.6	53.4	45.8	63.4

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	52.5	54.9	60.2	67.9	74.5	79.7	81.0	81.1	77.8	69.3	59.3	53.6	67.6
2	55.6	57.4	62.5	69.2	75.2	79.8	81.2	81.3	78.8	71.1	62.2	56.4	69.2
3	59.6	61.0	65.5	71.3	76.4	80.3	81.5	81.7	79.9	73.7	65.8	60.6	71.5
4	61.6	62.9	66.9	72.1	76.7	80.3	81.6	81.9	80.5	75.0	67.7	62.8	72.5
5	64.2	65.4	68.9	73.2	77.0	80.4	81.8	82.3	81.2	76.7	70.2	65.5	73.9
6	66.3	66.9	70.2	74.1	77.1	80.2	81.7	82.1	81.1	77.2	71.7	67.5	74.7
7	69.8	70.5	73.5	77.0	79.8	82.4	83.9	84.2	82.7	79.2	74.7	71.0	77.4

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	41.9	44.5	51.0	61.2	68.8	75.7	78.4	77.8	72.1	61.4	50.3	42.7	60.5
2	42.1	44.0	50.5	60.4	68.0	74.6	77.1	76.5	71.0	61.0	50.3	42.8	59.9
3	42.8	44.9	51.0	60.7	68.3	74.9	77.4	76.7	71.2	61.2	50.8	43.2	60.3
4	45.8	48.3	54.3	63.6	70.9	77.1	79.1	78.6	73.6	63.9	53.4	46.5	62.9
5	46.9	49.2	55.3	64.6	72.1	78.3	80.3	79.8	74.8	65.0	54.6	47.4	64.0
6	48.1	50.5	56.4	65.4	72.8	78.7	80.8	80.3	75.2	65.6	55.7	48.5	64.8
7	50.9	53.3	59.0	67.2	74.2	79.6	81.0	80.9	77.0	67.9	57.6	51.4	66.7
8	50.8	53.1	58.7	66.9	73.8	79.3	80.9	80.7	76.6	67.5	57.7	51.2	66.4
9	51.5	53.5	59.0	66.8	73.7	79.2	81.1	80.9	76.9	68.3	58.7	52.1	66.8

TABLE II-23 (continued)

NORMAL MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	35.7	38.6	46.6	58.5	66.9	75.0	78.0	76.9	70.1	59.5	47.1	38.0	57.6
2	34.9	37.5	45.6	57.3	65.8	73.7	76.7	75.6	69.3	58.5	46.1	37.2	56.5
3	33.5	35.8	44.0	55.5	64.4	72.5	75.7	74.6	68.4	57.7	45.1	35.8	55.3
4	35.7	37.8	45.4	56.5	64.9	72.3	75.4	74.2	68.2	57.4	45.7	37.3	55.9

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	46.2	49.6	55.7	65.5	72.4	79.2	82.3	82.1	76.1	66.1	55.2	48.2	64.9
2	46.7	49.9	56.1	65.8	72.7	79.4	82.0	81.6	75.9	66.1	55.5	48.4	65.0
3	46.8	49.9	56.4	66.2	73.4	80.0	82.4	81.8	76.3	66.3	55.9	48.7	65.3
4	49.0	52.1	57.9	66.8	73.3	79.5	82.0	81.8	76.6	67.1	57.0	50.7	66.1
5	50.1	53.1	58.8	67.7	74.1	80.0	81.9	81.7	77.0	67.7	57.9	51.9	66.8
6	51.1	53.9	59.3	67.7	74.0	79.7	81.5	81.2	77.1	68.0	58.3	52.6	67.0
7	51.4	54.4	59.7	68.4	74.8	80.5	82.1	82.1	77.9	69.3	59.6	53.6	67.8
8	52.8	55.4	60.5	69.0	75.1	80.4	81.8	81.8	78.1	69.5	60.1	54.7	68.3
9	54.3	56.7	61.5	69.3	75.5	80.7	82.2	82.2	78.9	71.0	61.6	56.2	69.2

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	42.7	46.1	52.9	64.0	72.0	79.0	81.6	80.7	74.4	64.2	52.7	44.7	62.9
2	42.0	45.1	52.0	62.9	70.3	77.6	80.5	79.7	73.5	63.1	51.8	44.0	61.9
3	42.0	45.0	51.9	62.8	70.5	77.7	80.4	79.7	73.5	63.1	51.6	43.8	61.8
4	44.7	47.9	54.6	65.1	72.6	79.5	81.8	80.9	75.0	64.9	53.9	46.6	64.0
5	45.5	48.4	54.7	64.4	71.3	78.1	80.5	79.8	74.6	64.4	53.8	47.0	63.5
6	44.5	47.5	54.1	64.1	71.3	78.2	80.6	80.0	74.3	64.0	53.2	45.9	63.1
7	48.3	51.2	57.2	66.2	72.9	79.1	81.2	80.8	76.0	66.5	56.3	50.0	65.5
8	49.2	52.0	57.7	66.5	73.1	79.2	81.1	80.7	76.0	66.3	56.4	50.5	65.7
9	48.0	51.0	56.8	65.8	72.6	78.9	80.8	80.4	75.5	65.6	55.4	49.2	65.0
10	51.5	54.3	59.4	67.9	74.5	80.1	81.5	81.4	77.5	68.8	58.9	53.2	67.4

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	38.0	39.6	45.8	55.7	63.3	69.9	72.6	71.9	66.2	56.5	45.9	38.6	55.3
2	35.5	36.9	43.3	53.4	61.3	67.8	70.7	69.8	64.0	54.6	44.2	36.3	53.2
3	39.9	41.5	48.8	59.3	67.6	74.6	77.6	76.3	70.4	60.0	49.6	40.6	58.9
4	40.8	42.6	49.6	60.1	68.1	75.0	77.9	76.9	70.8	60.6	50.1	41.4	59.5
5	42.2	44.1	51.1	61.3	69.4	76.2	78.6	77.7	72.0	61.8	51.4	42.8	60.7
6	44.9	46.6	53.2	62.4	70.1	76.4	79.2	78.3	73.3	63.6	53.9	45.6	62.3
7	43.9	45.5	52.1	61.7	69.6	76.3	79.3	78.4	73.4	63.7	53.7	44.9	61.9
8	42.5	43.9	50.6	60.2	68.5	75.4	78.9	77.6	72.5	62.7	52.7	43.7	60.8

TABLE II-23 (continued)

NORMAL MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	34.7	38.9	44.4	56.5	65.7	75.1	79.9	78.8	70.7	59.5	45.5	37.1	57.2
2	35.8	40.6	47.3	59.8	68.4	77.9	82.6	81.8	73.2	62.4	48.2	38.6	59.7
3	36.4	41.2	48.1	60.6	68.3	76.7	81.3	80.7	72.6	62.2	49.0	39.6	59.7
4	37.2	41.7	48.3	60.4	68.6	77.7	82.2	81.5	73.1	62.3	48.8	39.9	60.1
5	37.8	42.9	49.4	61.5	69.1	77.5	82.1	81.7	73.8	63.3	50.0	40.9	60.8
6	38.8	43.3	50.1	62.0	69.3	77.3	81.7	81.3	73.8	63.5	50.7	41.8	61.1
7	39.4	44.1	50.9	62.7	70.6	79.4	83.7	83.2	75.1	64.1	50.9	42.2	62.2
8	41.2	45.8	52.4	63.6	70.8	78.7	83.1	82.9	75.4	65.1	52.8	44.0	63.0
9	41.6	45.6	52.2	63.2	70.2	77.9	82.0	81.4	74.3	64.2	52.3	44.1	62.4

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	39.9	41.4	47.6	57.7	64.9	70.8	73.0	72.5	67.0	58.2	48.5	40.6	56.8
2	42.8	44.8	51.2	61.2	69.1	76.0	78.4	77.6	71.9	61.8	51.2	43.2	60.8
3	43.5	45.5	52.2	61.4	70.1	76.8	79.3	78.3	72.7	62.8	52.3	43.9	61.6
4	45.5	47.4	54.0	63.3	71.1	77.5	80.0	79.0	74.0	64.1	54.2	46.1	63.0
5	44.9	47.0	53.4	63.1	71.0	77.5	79.8	79.1	73.4	63.6	53.3	45.4	62.6
6	45.9	48.2	54.7	64.2	72.1	78.3	80.5	79.6	74.3	64.4	54.4	46.5	63.6
7	48.6	50.7	56.5	65.0	72.6	78.4	80.6	80.0	75.4	66.3	56.6	49.1	65.0

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	38.2	40.5	47.6	58.0	66.1	73.3	76.1	75.2	69.5	58.8	47.1	39.2	57.5
2	37.3	39.6	46.8	57.7	65.4	72.3	75.1	74.3	68.6	58.3	46.8	38.9	56.8
3	38.6	41.3	48.6	59.7	67.5	75.2	78.1	77.2	70.9	60.1	48.5	40.5	58.9
4	38.6	41.8	49.3	60.8	69.0	76.8	79.6	78.5	71.7	61.1	49.3	40.9	59.8

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	37.8	41.7	47.6	58.5	67.1	75.8	79.2	78.2	70.7	60.3	47.7	40.2	58.7
2	42.1	46.2	52.6	64.0	71.6	80.0	83.6	83.2	75.3	64.9	52.6	44.6	63.4
3	44.5	48.5	55.0	65.5	72.6	80.3	84.3	84.4	77.1	67.2	55.2	47.4	65.2
4	47.4	50.9	57.0	66.4	73.1	79.6	82.7	82.8	77.0	67.6	56.7	49.8	65.9
5	45.2	49.6	55.5	64.8	72.5	79.7	80.8	79.7	73.8	64.6	53.0	46.5	63.8
6	47.3	51.3	57.5	67.1	73.7	80.3	83.1	82.9	76.7	67.4	56.2	49.4	66.1
7	52.5	56.2	61.7	70.3	76.3	81.9	84.4	84.6	79.8	71.7	61.6	55.2	69.7
8	53.1	56.1	61.3	69.7	75.9	81.3	83.4	83.4	79.4	71.6	62.0	55.8	69.4
9	54.2	58.5	64.8	73.7	79.2	84.4	86.6	86.4	81.5	73.3	63.1	56.4	71.8
10	59.4	62.8	67.9	75.5	79.8	83.3	85.0	85.1	82.0	75.6	67.5	61.9	73.8

TABLE II-23 (continued)

NORMAL MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	39.1	40.4	47.4	57.5	66.5	74.1	77.9	76.6	71.0	60.9	50.6	40.7	58.6
2	37.2	39.0	46.5	57.1	65.8	73.3	76.9	75.4	69.0	58.4	48.0	38.3	57.1
3	37.2	38.7	46.0	57.0	65.5	72.6	76.0	74.7	68.3	58.3	47.6	38.3	56.7
4	33.6	35.2	43.1	54.3	63.5	71.3	75.1	73.6	67.2	56.7	45.7	35.2	54.5
5	34.3	35.8	43.3	54.2	62.9	70.0	73.4	72.1	65.7	55.7	44.8	35.4	54.0
6	34.2	35.8	43.0	53.6	62.0	68.8	71.8	70.8	64.9	54.9	43.8	35.3	53.3

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	31.4	33.1	41.4	53.0	62.4	70.8	74.1	72.7	66.4	55.7	43.8	33.6	53.2
2	32.0	33.7	41.6	53.0	62.1	70.1	73.2	71.8	65.6	55.1	43.5	33.9	53.0
3	34.1	36.1	43.9	55.4	64.2	72.0	75.2	74.0	67.9	57.2	45.3	36.0	55.1
4	29.8	31.0	38.3	49.6	58.3	65.5	68.6	67.3	61.4	51.6	40.5	31.1	49.4
5	33.2	34.9	42.2	53.3	61.9	69.1	72.2	71.2	65.0	54.8	43.4	34.3	53.0
6	31.8	33.5	41.4	52.6	61.9	69.6	73.3	71.9	65.1	54.8	43.7	33.4	52.7

Source: ORNL Geoecology Database, from Climatography of the United States, No. 85 (By State), NOAA, Environmental Data Service, 1973.

TABLE II-24

MAXIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	55.0	51.6	61.3	65.7	74.7	83.2	83.6	83.5	77.5	69.7	57.1	51.5	62.6
2	56.1	52.8	61.5	65.3	74.1	81.4	82.2	81.8	76.6	69.1	57.6	52.1	62.5
3	59.6	55.3	63.7	67.2	74.8	82.7	83.2	83.7	77.9	71.1	59.5	52.7	64.8
4	57.6	55.1	63.0	66.2	74.7	82.1	82.3	82.3	77.8	71.0	58.3	53.6	63.5
5	59.1	56.2	64.7	67.6	74.2	81.8	82.0	81.9	78.5	71.9	64.9	53.9	64.9
6	62.5	59.2	65.7	69.6	76.6	83.1	84.1	85.7	80.5	73.6	61.6	56.6	66.8
7	64.4	60.5	67.2	70.7	76.8	83.1	83.0	84.7	80.3	73.3	62.7	57.4	67.5
8	65.2	62.2	68.4	73.1	78.1	83.1	83.7	84.8	81.2	75.1	64.1	60.5	69.0

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	43.2	47.4	56.3	64.9	72.7	82.4	85.7	83.5	75.2	68.3	54.0	45.4	60.7
2	43.6	47.5	56.5	65.2	73.0	81.6	84.3	83.8	74.9	68.0	54.1	46.0	60.8
3	45.7	49.6	58.2	66.2	75.9	83.5	85.2	84.9	76.2	68.5	55.5	46.9	62.4
4	46.5	49.9	58.1	65.7	74.6	83.5	86.4	85.4	78.1	70.3	55.7	48.2	62.9
5	48.8	52.1	59.3	67.3	74.1	84.2	86.6	86.7	78.6	69.8	57.3	55.2	64.6
6	50.6	51.3	60.6	67.1	76.1	84.3	85.5	85.3	77.7	69.8	57.3	49.4	63.9
7	51.8	52.8	60.1	67.4	73.9	83.3	85.9	86.2	78.1	70.1	58.5	49.9	64.7
8	53.2	54.2	62.5	68.6	75.0	83.6	86.6	87.4	79.0	71.9	59.1	51.5	65.9
9	53.8	53.7	62.4	68.7	75.0	84.2	85.4	86.2	78.3	71.5	60.0	52.2	65.2

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	62.4	63.1	68.3	71.9	77.9	83.3	82.9	84.1	80.7	74.7	66.1	60.0	69.5
2	66.1	65.7	69.6	72.7	78.5	83.1	83.3	83.6	80.9	76.8	69.3	63.0	71.1
3	68.2	69.0	72.1	75.3	79.4	82.5	83.3	83.4	81.6	78.1	72.7	66.8	73.3
4	69.4	70.8	72.6	76.1	79.2	82.1	83.4	83.9	82.0	79.0	74.3	68.7	74.4
5	71.6	72.6	74.8	77.6	79.3	82.1	83.9	83.5	82.7	80.0	76.6	71.5	76.0
6	72.3	74.1	75.6	77.3	79.3	81.8	83.4	83.5	82.3	79.8	77.3	72.9	76.5
7	75.1	76.5	78.1	80.0	81.4	83.8	85.5	85.4	84.2	81.9	79.6	75.8	79.0

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	55.0	52.7	61.6	65.6	73.7	81.4	82.5	81.2	76.6	69.6	56.8	52.3	62.1
2	54.0	51.2	60.1	64.7	72.8	80.0	80.6	79.7	75.2	67.8	57.0	51.9	61.8
3	53.8	51.8	60.5	64.8	74.0	81.0	80.6	80.4	75.3	68.2	56.7	52.7	61.8
4	58.1	56.8	63.6	67.6	75.4	81.9	82.5	82.2	77.4	70.9	59.9	54.7	64.2
5	58.8	57.8	65.0	68.7	76.7	83.6	83.3	83.2	79.0	71.8	60.8	55.9	65.6
6	59.6	58.8	66.2	68.7	76.8	84.2	83.7	84.1	79.0	73.0	62.1	57.2	66.4
7	64.1	61.9	67.8	71.1	78.4	84.1	83.8	84.5	81.1	74.4	64.2	58.9	68.1
8	63.1	60.7	67.4	70.5	77.7	83.9	83.3	83.8	79.9	74.1	64.6	57.2	68.2
9	62.9	61.1	67.6	69.8	78.2	83.7	83.7	83.7	79.8	74.5	65.2	58.8	68.7

TABLE II-24 (continued)

MAXIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	44.6	46.4	57.1	63.0	73.8	82.1	81.8	81.2	75.3	65.2	51.6	45.5	59.5
2	44.9	45.1	56.2	62.1	72.0	79.9	80.1	79.8	74.2	64.7	50.6	45.7	58.3
3	44.3	43.4	56.1	61.0	70.2	77.7	79.3	79.1	72.7	63.6	50.2	44.3	57.3
4	47.9	45.3	57.7	61.5	70.4	77.2	78.8	77.6	72.2	63.7	51.9	47.1	58.2

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	55.5	56.9	63.0	69.7	75.8	83.0	85.8	85.6	79.6	73.0	61.8	54.0	66.9
2	57.2	56.9	64.7	70.1	75.9	83.9	85.3	85.8	79.3	73.4	61.8	54.5	66.8
3	58.0	57.9	64.1	70.2	76.9	84.6	85.3	85.9	79.6	73.2	61.9	56.0	67.4
4	63.4	59.3	66.1	71.1	77.1	83.5	84.3	86.4	79.8	73.2	63.3	56.6	68.0
5	62.7	61.3	67.8	71.9	77.4	83.4	84.2	84.8	79.6	75.0	64.1	58.1	68.4
6	64.9	62.5	66.4	71.9	76.5	82.3	84.2	84.3	79.9	75.3	64.3	59.5	68.5
7	63.5	62.0	67.9	73.2	77.7	83.5	84.5	85.1	80.2	75.7	66.1	59.2	69.1
8	66.3	63.0	67.8	73.5	77.9	83.3	83.9	84.2	80.1	76.3	66.0	60.0	69.6
9	67.5	64.1	68.8	73.2	77.8	82.9	84.5	85.2	81.1	77.9	66.4	62.2	70.6

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	53.5	53.9	62.2	68.2	76.0	85.2	85.4	85.5	78.5	70.6	57.5	52.4	65.3
2	52.9	52.9	61.9	67.1	74.7	83.7	84.7	85.1	78.5	70.5	56.9	52.4	64.3
3	52.9	52.2	61.6	66.9	75.5	83.2	84.5	85.4	79.0	70.7	57.5	51.6	64.0
4	56.6	54.9	63.7	69.0	75.9	84.8	85.6	85.9	78.9	72.4	59.5	53.9	66.0
5	59.0	56.6	63.2	68.5	74.9	82.9	83.5	84.0	78.0	71.2	60.0	55.4	65.2
6	59.2	55.5	63.8	68.0	74.8	83.2	83.8	85.3	78.3	71.6	59.4	54.1	64.8
7	61.3	59.7	65.1	70.6	76.1	83.1	83.8	84.7	78.9	72.8	62.5	57.2	67.1
8	64.5	60.4	66.6	70.5	77.0	82.8	83.4	84.5	79.0	74.0	62.1	57.0	67.5
9	62.5	59.5	66.1	70.2	76.4	82.3	83.2	84.2	79.0	73.6	61.6	56.5	66.5
10	65.6	63.0	67.0	72.6	78.0	82.9	83.8	84.6	80.3	76.1	64.7	59.7	69.0

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	50.4	46.2	56.2	59.7	68.4	75.0	74.9	74.5	70.3	62.5	51.9	47.3	57.1
2	47.0	43.0	53.2	57.2	66.6	72.8	73.1	73.1	68.6	59.8	48.5	45.5	54.5
3	51.2	48.8	60.1	63.5	72.8	79.5	80.0	78.6	74.4	67.5	55.4	49.9	60.9
4	52.0	49.3	60.0	63.8	73.3	80.2	80.3	78.8	74.7	67.9	55.0	51.0	61.4
5	54.0	51.3	62.0	64.5	74.1	80.9	80.8	80.5	76.4	67.7	56.5	53.1	62.7
6	57.0	53.9	63.2	66.6	75.1	81.2	81.7	81.0	78.0	68.9	59.5	55.2	64.3
7	55.2	51.8	61.3	65.4	75.0	81.2	82.4	80.6	77.1	69.4	59.2	54.2	63.8
8	54.4	50.7	60.7	64.1	73.3	80.7	82.3	80.3	76.9	67.6	58.4	53.0	62.9

TABLE II-24 (continued)

MAXIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	43.6	48.6	52.1	62.8	71.6	82.5	84.9	82.9	76.1	67.2	51.6	42.6	60.3
2	42.3	50.7	55.9	65.6	75.6	86.3	90.1	87.4	80.0	70.5	54.0	44.9	63.1
3	43.6	50.0	57.2	66.8	74.7	84.2	89.6	86.9	78.9	70.7	55.0	45.9	63.2
4	44.6	52.4	56.0	66.1	74.6	86.3	88.8	87.2	79.7	70.0	54.3	45.8	63.6
5	45.8	56.3	57.4	67.4	74.8	84.9	89.0	87.4	79.8	71.1	56.2	47.5	64.0
6	46.3	51.0	58.5	67.6	74.8	84.8	89.0	87.1	79.6	71.7	56.7	47.8	63.9
7	46.8	53.8	59.2	67.8	75.7	87.2	89.0	88.6	80.9	71.5	56.5	48.2	65.1
8	50.2	54.6	60.7	68.6	75.4	85.7	88.6	88.2	80.6	72.4	59.0	49.5	65.5
9	50.5	53.3	60.0	67.8	74.3	84.4	87.9	87.9	79.1	71.3	57.4	49.7	64.9

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	50.3	48.0	56.7	61.4	71.4	76.4	78.0	77.1	73.5	62.8	53.7	50.9	59.0
2	53.0	51.0	60.6	64.9	74.4	81.7	81.4	81.3	76.6	68.8	56.1	53.1	62.2
3	54.9	52.5	63.1	65.6	75.0	81.3	81.7	81.1	77.8	70.2	57.7	53.6	63.2
4	56.9	54.6	63.6	67.0	76.5	82.0	82.3	82.2	77.4	70.4	59.9	55.6	64.9
5	56.8	54.4	63.9	67.0	75.7	82.8	82.3	82.7	78.0	72.1	58.8	54.4	64.4
6	56.9	55.7	65.1	68.2	76.9	82.9	84.1	83.1	78.1	71.5	59.8	56.8	65.2
7	59.9	57.5	66.1	69.4	77.2	82.8	83.2	83.1	79.2	72.5	62.3	57.3	66.5

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	51.0	48.3	57.8	62.6	71.4	79.0	79.1	78.0	73.4	66.0	53.4	49.3	59.4
2	49.3	46.9	58.5	62.4	71.4	77.5	78.3	78.2	73.6	66.1	52.7	48.8	58.5
3	50.2	48.4	59.6	64.4	73.4	82.0	82.4	81.6	75.4	67.6	54.2	49.9	60.7
4	48.5	48.9	59.2	65.6	75.7	83.7	84.4	83.6	76.3	67.6	54.5	48.0	62.2

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	46.2	49.6	54.8	63.4	72.7	82.9	82.6	82.0	74.9	66.0	54.0	44.5	61.1
2	49.8	54.6	60.7	69.3	77.0	88.1	87.7	89.1	80.3	71.2	58.5	49.3	66.0
3	53.7	56.0	63.2	71.2	76.9	86.3	89.1	89.1	81.6	73.4	61.5	53.6	67.6
4	57.7	57.7	64.0	71.2	76.0	83.8	86.4	87.2	80.6	73.1	63.5	55.5	67.7
5	51.6	57.5	62.6	69.6	76.4	82.6	83.4	83.5	77.1	68.8	57.8	50.7	65.4
6	55.8	59.0	64.7	73.0	77.0	85.6	85.5	86.9	80.0	73.9	61.7	54.3	68.3
7	61.4	64.4	69.0	76.3	78.8	85.2	86.5	87.4	82.8	77.1	67.6	61.9	71.7
8	63.1	63.5	68.7	75.3	78.3	83.8	85.3	86.1	81.8	76.1	68.5	61.7	70.9
9	63.9	67.8	72.7	79.7	82.2	89.0	89.4	88.7	84.2	79.1	68.5	64.1	73.8
10	69.5	71.1	75.7	79.8	82.8	86.6	87.1	86.7	84.4	80.0	73.4	68.4	76.1

TABLE II-24 (continued)

MAXIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	51.0	47.7	57.2	61.8	71.3	78.8	81.1	79.5	74.6	66.6	55.4	50.2	60.7
2	49.1	45.9	58.4	61.3	71.2	78.3	79.9	78.0	73.3	65.3	52.0	48.8	59.2
3	47.7	45.0	57.3	61.6	70.7	78.2	78.5	77.6	72.8	65.4	51.9	48.2	58.5
4	46.2	42.6	53.9	58.3	69.2	75.9	79.5	77.0	72.0	62.2	49.9	44.1	56.7
5	45.6	42.5	53.6	58.6	67.7	75.1	77.4	75.7	70.3	60.7	48.8	46.1	56.1
6	46.8	42.7	52.9	58.0	67.0	74.5	75.1	74.3	68.5	60.2	48.9	45.2	55.3

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	43.3	39.9	52.0	58.1	69.1	76.0	78.0	77.9	70.7	61.8	48.3	42.4	55.1
2	45.5	41.2	52.3	58.4	68.2	75.4	77.6	76.2	69.7	61.3	48.8	42.9	55.5
3	46.2	43.2	54.4	60.3	70.0	77.0	79.3	78.8	72.1	63.3	50.7	45.8	57.4
4	43.5	38.7	49.5	54.8	63.4	71.6	72.4	71.7	65.4	57.1	45.8	41.1	51.8
5	46.2	42.4	53.6	58.0	67.0	75.2	75.6	75.2	69.2	60.3	50.1	44.3	55.4
6	44.6	41.0	52.4	57.2	67.4	76.1	77.0	75.5	69.8	59.8	47.8	42.4	55.2

Source: ORNL Geoecology Database, from Climatography of the United States, No. 85 (By State), NOAA, Environmental Data Service, 1973.

TABLE II-25

MINIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=ALABAMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	33.7	33.1	39.4	56.2	64.2	71.3	74.7	73.1	67.4	55.0	45.7	33.2	58.6
2	34.7	33.7	40.0	56.1	63.3	70.8	73.7	72.9	67.0	55.4	45.8	33.6	58.5
3	37.2	36.3	43.3	58.0	65.4	72.8	75.6	74.5	68.6	56.7	48.1	36.0	60.2
4	37.4	37.2	43.7	57.7	64.4	71.3	75.3	74.7	67.8	56.7	46.3	35.9	60.0
5	37.4	38.2	45.1	58.0	65.8	72.4	75.0	74.7	67.3	58.0	48.8	36.9	60.1
6	39.9	40.7	47.6	60.5	67.7	74.6	77.2	76.7	70.0	59.6	50.4	39.9	62.8
7	40.9	42.5	49.9	61.3	68.9	75.5	77.6	77.3	70.6	61.4	51.3	41.9	63.5
8	45.3	45.6	53.8	63.1	70.8	77.2	79.1	79.0	73.8	63.5	55.1	45.4	66.1

STATE=ARKANSAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	29.7	33.6	37.4	54.4	61.9	69.9	73.5	72.3	66.1	55.3	41.7	30.9	56.6
2	30.6	33.3	37.0	54.3	62.2	70.8	74.1	72.9	66.3	54.2	42.2	31.1	56.8
3	31.8	33.8	38.6	56.7	65.1	72.6	76.9	74.7	67.5	55.5	43.4	31.8	58.5
4	32.9	36.9	40.5	56.6	64.1	72.2	76.0	75.0	68.6	57.9	44.6	34.3	58.9
5	34.1	37.9	41.8	59.3	66.0	73.4	76.9	75.5	69.4	57.5	45.6	32.8	59.9
6	34.1	37.0	40.7	58.6	66.1	73.9	77.4	75.5	69.5	55.8	45.9	33.1	60.1
7	35.5	39.3	44.3	59.0	65.5	74.1	77.3	77.0	70.6	57.9	47.1	36.8	60.8
8	35.9	40.9	45.0	60.4	66.0	75.0	77.8	77.3	70.5	57.6	48.3	36.5	61.0
9	36.2	40.2	43.8	60.0	66.5	74.9	78.3	77.4	70.9	56.5	48.1	36.1	61.6

STATE=FLORIDA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	45.6	46.1	53.5	63.3	70.9	76.3	79.1	79.1	73.6	65.1	54.5	46.2	66.1
2	48.7	48.3	55.7	64.3	72.7	76.6	79.2	79.6	75.2	67.6	57.8	49.5	67.5
3	52.4	51.8	59.4	66.4	73.6	77.6	79.7	80.3	77.8	70.2	61.7	54.7	69.8
4	55.2	54.2	60.6	67.9	74.4	78.4	79.8	80.5	79.1	71.5	63.4	57.0	70.9
5	58.7	57.0	63.8	68.4	75.0	78.8	80.5	81.0	79.5	74.5	66.2	59.7	72.1
6	61.3	58.7	65.7	69.5	75.1	78.8	80.3	80.8	79.9	75.1	67.7	62.7	73.1
7	64.8	62.8	69.1	73.8	77.8	79.6	82.0	83.1	81.0	76.7	71.2	66.6	76.3

STATE=GEORGIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	34.3	35.6	39.9	55.9	64.1	71.0	73.4	73.3	66.0	56.1	46.2	34.3	58.1
2	34.2	35.2	39.2	53.8	63.0	70.6	72.8	72.6	65.5	56.6	46.3	34.9	57.5
3	35.2	37.5	39.8	53.6	63.5	70.7	73.5	73.3	65.5	56.3	46.8	36.2	58.1
4	38.0	39.8	45.1	58.7	65.9	73.0	75.6	75.8	68.1	59.3	49.3	39.0	61.1
5	39.4	41.3	45.3	59.0	67.5	74.1	76.7	76.5	69.2	60.1	50.6	39.9	62.2
6	40.2	42.7	46.5	60.1	67.9	74.3	77.7	77.0	69.9	61.1	51.9	41.2	62.7
7	42.4	44.2	51.2	62.3	69.8	75.4	77.8	78.2	71.8	63.6	53.3	44.1	64.7
8	43.0	44.4	50.4	61.9	69.8	74.9	78.3	78.7	72.2	63.3	53.5	43.5	64.6
9	44.1	45.4	50.4	62.3	70.0	75.1	79.3	79.1	72.4	64.2	54.9	45.4	65.2

TABLE II-25 (continued)

MINIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=KENTUCKY

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	27.4	29.0	33.5	52.9	62.1	69.7	72.9	71.5	65.1	53.5	40.8	27.6	55.7
2	26.3	27.9	32.3	51.1	60.5	68.4	71.2	70.4	65.0	51.8	40.4	26.9	54.4
3	25.7	26.6	30.0	48.7	58.8	67.3	70.9	69.6	63.5	51.7	39.3	25.0	52.7
4	27.1	27.8	32.3	50.1	59.7	67.4	70.7	69.9	62.6	51.2	41.0	27.0	53.4

STATE=LOUISIANA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	38.3	42.3	47.7	61.3	67.7	75.0	78.9	78.2	71.8	59.2	50.8	39.5	62.4
2	39.1	42.8	47.5	60.8	67.5	75.2	78.8	78.5	71.9	59.4	51.1	38.6	62.7
3	39.3	42.5	47.7	61.9	68.1	75.7	78.9	78.2	71.5	60.1	52.4	38.4	63.0
4	42.2	43.7	50.7	62.3	68.9	75.2	79.0	77.8	72.4	61.6	52.5	41.2	63.6
5	42.8	44.4	51.9	63.6	69.5	76.3	79.1	79.1	73.0	60.8	53.8	42.6	64.5
6	44.1	45.9	53.0	62.8	69.7	76.9	79.1	79.0	73.6	60.7	54.0	44.2	65.4
7	44.2	47.0	53.5	64.5	70.8	77.5	80.0	79.7	74.9	62.0	55.1	45.0	65.9
8	45.5	47.7	54.6	64.9	71.5	77.8	79.7	79.5	75.1	62.2	56.3	46.1	66.7
9	47.6	48.4	55.1	65.3	72.0	78.4	80.5	79.9	75.8	64.3	57.1	47.7	67.5

STATE=MISSISSIPPI

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	34.9	38.7	41.8	59.6	67.3	75.0	78.3	76.3	70.4	56.5	48.1	33.9	60.7
2	34.0	36.6	41.6	58.0	65.3	73.4	76.2	74.5	68.8	56.2	47.0	33.4	59.7
3	33.9	35.1	41.0	57.9	65.4	72.9	75.9	74.4	68.3	55.7	46.1	34.6	59.4
4	36.7	39.9	44.5	60.6	67.0	75.5	78.3	76.9	70.7	57.2	48.8	36.3	61.9
5	38.2	40.0	45.3	59.7	66.3	74.1	76.4	76.0	69.3	57.3	50.0	37.5	61.5
6	36.8	38.4	44.3	59.1	66.0	73.7	76.4	75.2	68.9	56.2	48.8	36.1	60.9
7	41.3	43.1	49.5	61.7	68.4	75.1	78.2	77.5	71.4	60.4	52.7	40.7	63.4
8	42.3	43.0	50.8	61.6	69.0	75.5	77.9	77.8	71.3	59.6	51.8	40.7	63.4
9	41.4	41.8	49.2	61.1	67.6	75.2	77.5	76.6	69.8	59.1	51.1	39.9	62.6
10	45.2	46.0	53.5	63.9	70.1	77.1	79.3	78.9	73.8	62.2	55.0	44.7	65.7

STATE=NORTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	30.5	30.1	34.2	50.2	57.6	64.7	69.1	68.9	61.2	52.2	41.5	30.6	53.7
2	29.2	27.4	31.0	47.6	55.8	62.1	65.6	66.0	60.1	49.1	38.6	28.9	51.2
3	33.2	34.1	36.4	53.3	62.3	70.3	73.2	74.2	65.0	54.7	45.4	33.3	56.9
4	34.1	35.7	37.7	54.0	63.1	70.9	75.3	74.2	65.5	55.4	46.1	34.2	57.6
5	35.5	36.9	39.4	54.8	64.5	72.4	75.7	75.0	66.6	56.4	47.6	35.5	58.9
6	37.7	38.9	42.0	57.0	65.9	72.7	76.2	76.1	68.1	58.8	49.7	38.6	60.3
7	37.3	38.3	41.3	56.7	65.3	72.2	76.0	76.6	68.3	59.1	49.0	38.3	60.0
8	36.5	37.7	40.2	55.8	63.4	71.1	76.4	75.5	67.4	58.0	48.4	37.3	58.6

TABLE II-25 (continued)

MINIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=OKLAHOMA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	25.3	31.1	35.8	51.6	61.2	70.1	74.2	73.5	66.8	53.5	40.1	30.3	55.8
2	27.3	33.5	39.1	55.5	63.4	73.8	76.3	75.7	68.6	57.3	42.5	31.1	58.2
3	29.5	34.3	38.4	55.3	64.5	73.5	75.5	74.9	67.3	57.8	43.2	30.7	58.1
4	27.5	34.9	40.5	55.6	62.8	74.0	76.7	76.2	69.4	57.1	43.2	33.1	58.6
5	30.2	36.3	40.5	57.2	64.5	74.3	76.5	76.6	69.1	58.4	44.2	33.5	59.4
6	32.3	37.3	40.7	57.2	64.8	73.8	76.4	76.0	69.4	58.9	45.0	33.9	59.4
7	30.8	38.3	42.9	58.2	65.2	75.4	78.6	78.4	71.3	59.1	45.6	35.8	60.5
8	34.8	40.1	44.0	59.5	66.2	75.1	78.1	78.1	71.5	60.0	46.8	36.5	61.3
9	34.7	39.2	43.5	58.9	65.5	74.1	77.7	76.5	69.7	59.2	46.2	36.8	60.3

STATE=SOUTH CAROLINA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	31.8	33.2	33.1	51.8	59.6	67.1	69.0	68.2	62.2	54.3	44.0	33.1	54.5
2	35.9	37.4	40.6	55.4	64.3	71.6	75.3	74.5	66.5	57.4	46.8	36.7	59.0
3	36.4	38.1	41.2	42.6	65.5	72.7	75.9	75.6	66.5	57.6	48.0	37.4	59.8
4	37.9	40.0	43.5	58.1	66.9	73.2	77.1	76.2	68.2	59.5	50.5	39.8	61.1
5	36.7	39.6	43.0	56.8	66.3	73.6	77.0	75.6	67.7	58.3	49.0	38.4	60.4
6	39.0	40.8	43.9	58.3	68.1	73.9	77.4	76.7	68.0	59.4	50.6	39.6	61.6
7	41.1	42.7	46.3	60.1	68.6	73.8	78.0	77.3	70.2	62.0	52.9	42.6	63.1

STATE=TENNESSEE

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	29.5	30.8	35.1	52.2	60.5	68.1	71.2	71.5	63.9	53.9	42.4	29.8	55.3
2	29.2	28.6	34.0	51.8	59.4	66.6	70.6	70.3	64.0	52.2	40.6	28.5	54.6
3	30.4	31.2	36.3	54.5	62.2	69.9	73.5	72.0	66.0	53.0	43.4	30.1	56.8
4	30.7	31.7	37.8	56.1	64.3	72.3	75.1	73.1	67.5	53.9	44.1	30.3	57.9

STATE=TEXAS

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	29.1	35.1	39.8	53.9	62.9	71.8	75.5	74.5	67.6	55.1	42.2	35.0	57.5
2	33.6	40.9	44.8	59.6	67.1	75.6	79.7	78.9	71.3	59.9	46.7	38.9	61.4
3	38.0	43.0	47.8	61.9	68.6	77.3	80.6	81.0	73.2	62.2	49.0	40.0	63.4
4	40.3	44.6	50.4	62.7	69.2	76.4	79.9	79.6	73.4	62.2	51.4	41.4	63.9
5	38.0	43.3	49.8	60.0	69.8	74.9	77.7	76.3	71.0	58.9	49.0	40.8	62.5
6	41.8	45.4	51.5	61.8	70.3	77.8	79.5	79.6	72.5	63.1	50.1	41.6	64.0
7	46.7	50.1	55.5	66.2	72.6	79.5	81.6	81.8	76.4	66.3	56.2	47.2	67.8
8	47.2	49.9	55.7	65.9	72.9	79.1	81.4	80.8	76.9	65.8	57.1	47.9	68.0
9	48.8	52.4	58.4	67.7	74.6	80.9	83.3	83.2	76.6	69.6	57.7	49.2	69.8
10	53.0	56.1	62.4	71.3	75.0	80.6	83.1	82.0	78.0	71.2	61.5	52.9	71.9

TABLE II-25 (continued)

MINIMUM MONTHLY AND ANNUAL TEMPERATURE BY STATE CLIMATIC DIVISION, 1941-70 (°F)

STATE=VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	32.5	34.3	37.2	53.6	60.9	70.9	75.1	73.2	66.5	56.3	46.0	34.7	56.9
2	30.5	32.3	34.7	52.2	60.1	68.8	73.6	72.2	64.2	53.2	43.6	31.1	55.3
3	30.6	31.3	34.4	51.2	59.6	67.8	72.7	71.2	63.8	53.3	42.6	30.9	55.1
4	26.6	28.6	31.9	49.4	57.2	67.6	71.8	69.6	63.6	52.2	41.4	28.4	52.9
5	27.4	28.5	31.1	48.8	57.3	65.7	69.4	68.0	60.5	51.2	39.7	27.9	52.3
6	26.6	26.3	29.9	47.6	56.8	63.7	68.0	66.3	60.3	50.1	38.8	26.6	51.5

STATE=WEST VIRGINIA

DIVSN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1	23.0	25.0	29.8	46.7	56.8	66.5	70.9	68.9	61.8	50.1	38.4	24.6	50.8
2	23.7	24.7	29.1	46.8	56.6	65.0	69.9	68.2	60.8	49.7	38.4	24.3	50.3
3	24.7	27.1	32.0	49.0	58.9	66.6	71.4	69.7	62.6	51.4	40.3	26.6	52.7
4	22.1	21.4	24.6	43.2	53.2	59.5	65.2	63.4	57.0	46.6	34.8	22.4	47.0
5	25.8	26.1	28.5	45.9	56.6	63.6	68.8	67.9	59.4	49.8	38.0	25.2	50.5
6	24.9	26.2	29.9	47.6	55.7	65.2	70.2	67.1	61.0	50.5	37.9	26.2	50.9

Source: ORNL Geoecology Database, from Climatography of the United States No. 85 (By State), NOAA, Environmental Data Service, 1973.

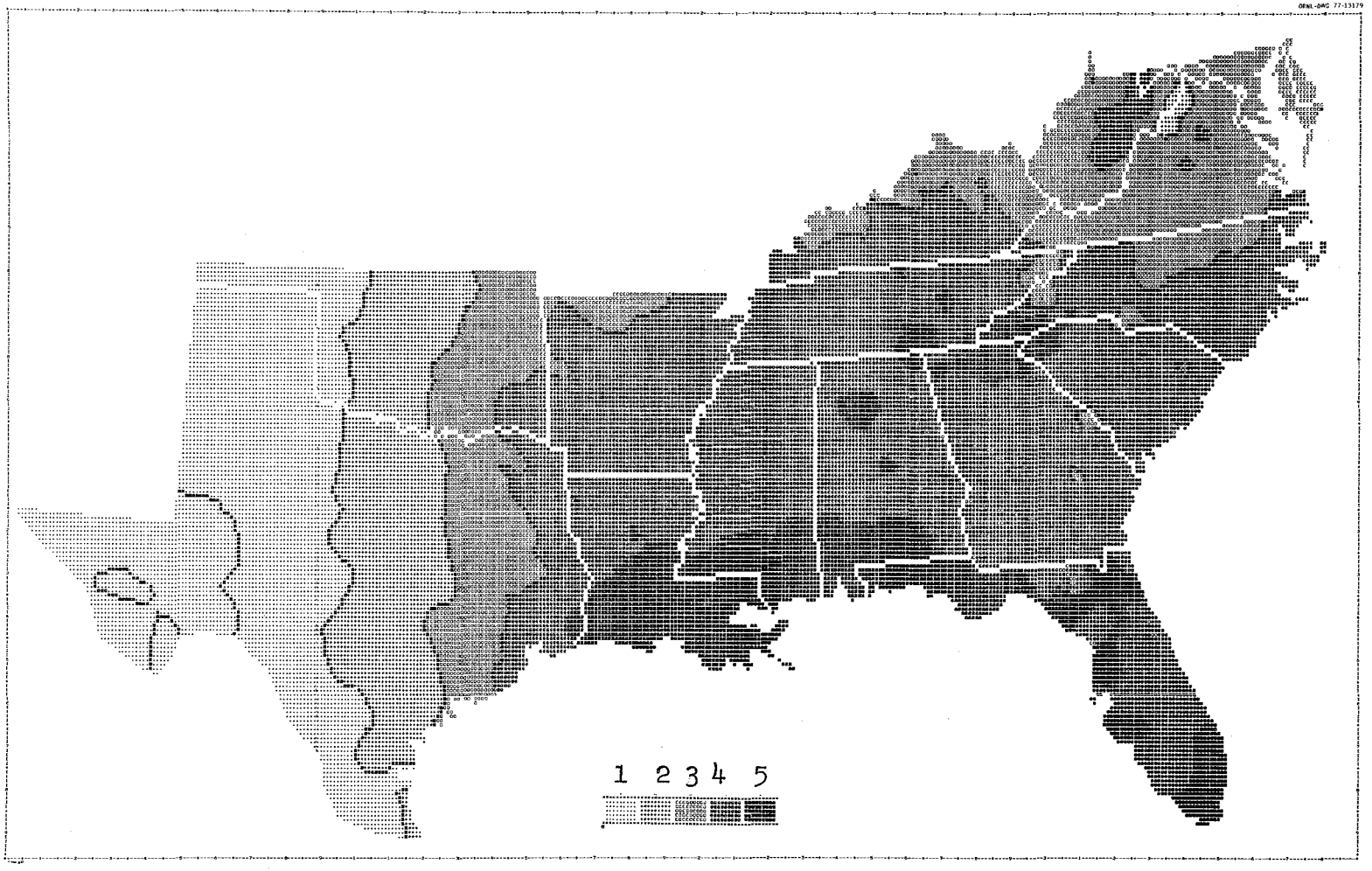


Fig. II-42. Total annual rainfall based on 30-year monthly norms for the period 1941-1970. Interval limits are expressed in inches as: (1) <25.0; (2) 25.0-35.0; (3) 35.0-45.0; (4) 45.0-55.0; (5) >55.0. Source: ORNL Geoecology from Decennial census of the United States Climate, NOAA.

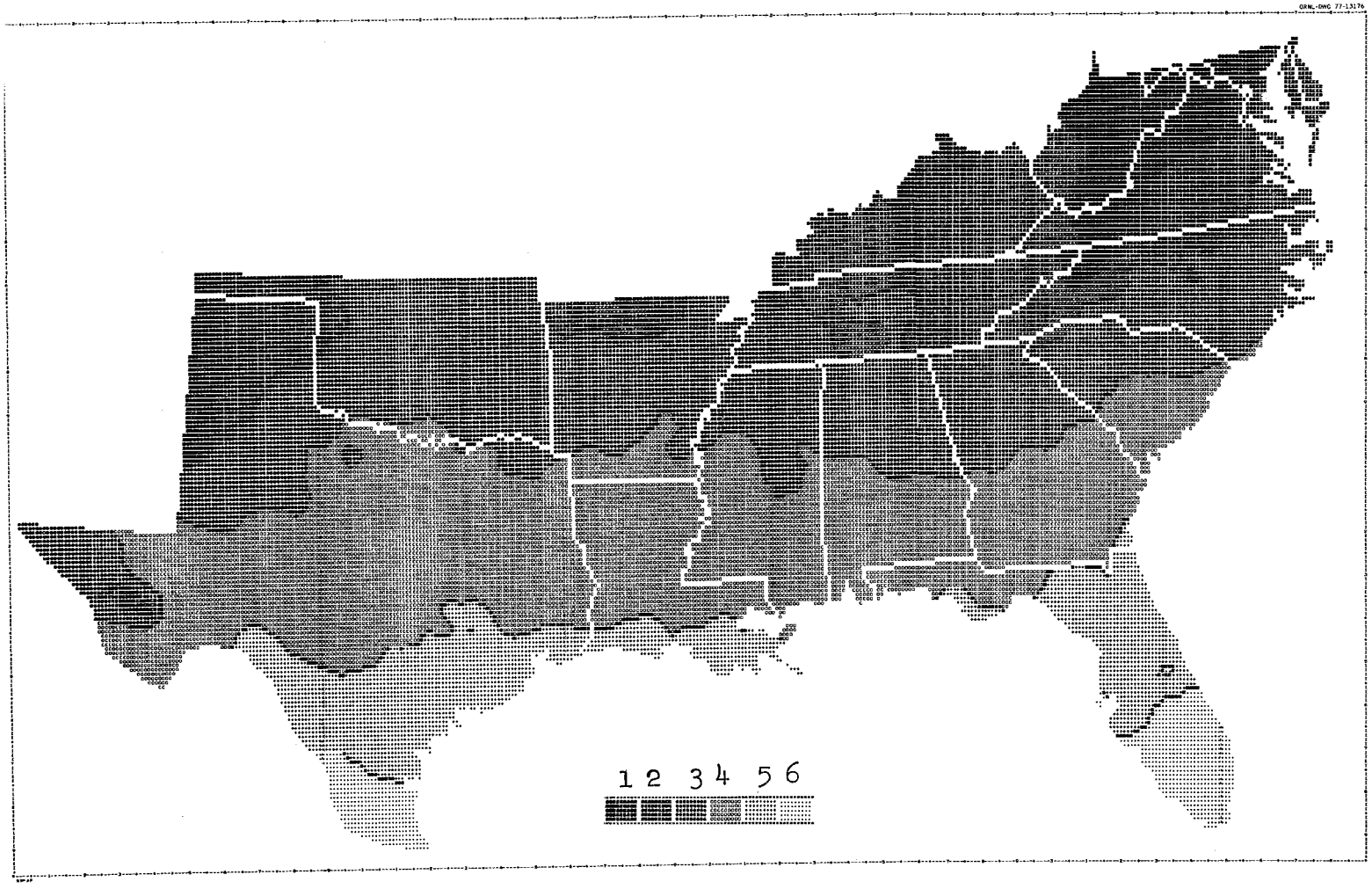


Fig. II-43. Average annual temperatures based on 30-year monthly norms for the period 1941-1970. Interval limits are expressed in degrees Fahrenheit as: (1) <54.5; (2) 54.9-59.0; (3) 59.0-63.5; (4) 63.5-68.0; (5) 68.0-72.5; (6) >72.5. Source: ORNL Geoecology from Decennial census of the United States Climate, NOAA.

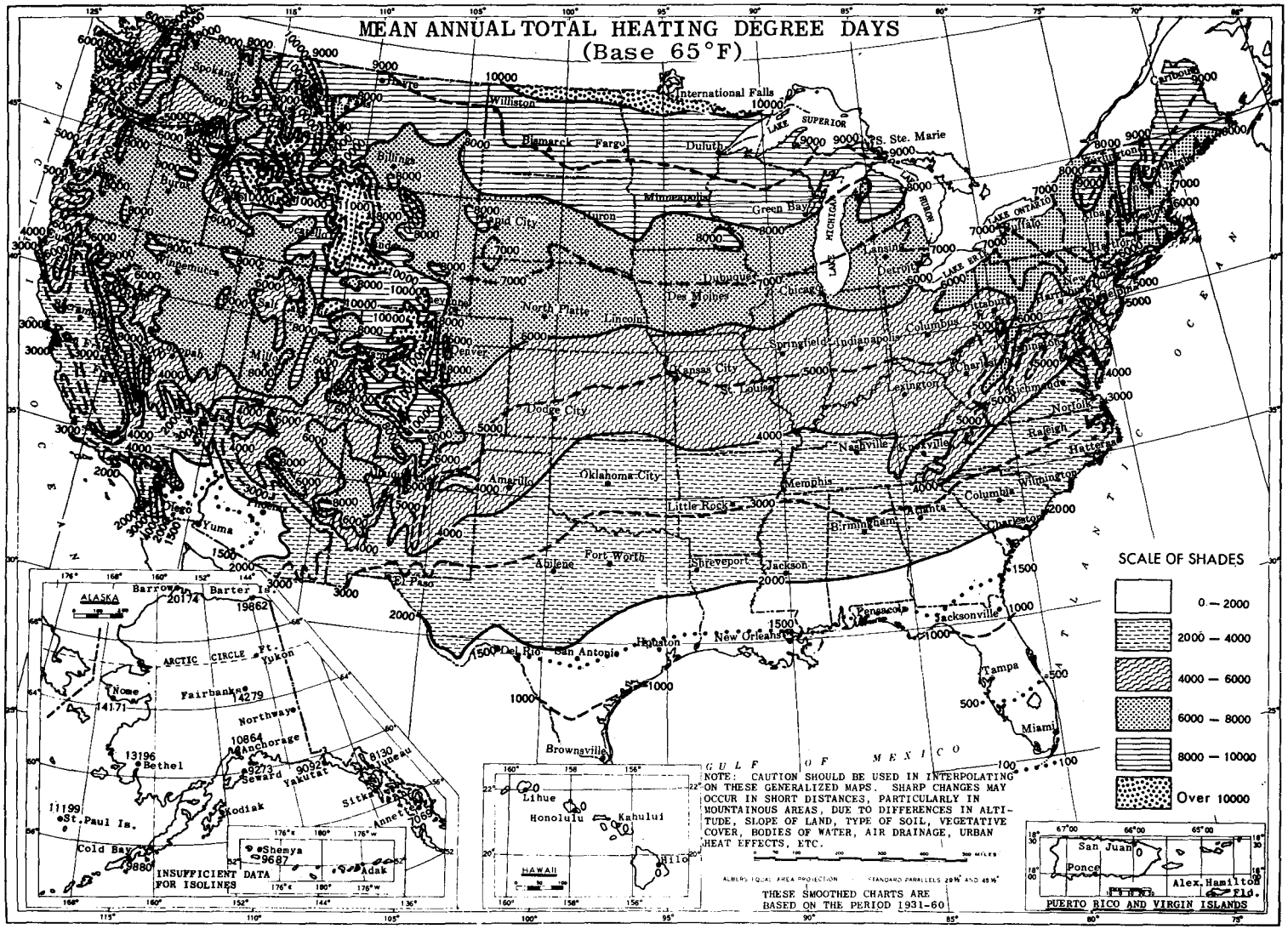


Fig. II-44. Mean annual total heating degree days (Base 65 F). Source: Baldwin, 1973. Climates of the United States.

ORNL-DWG. 78-13437

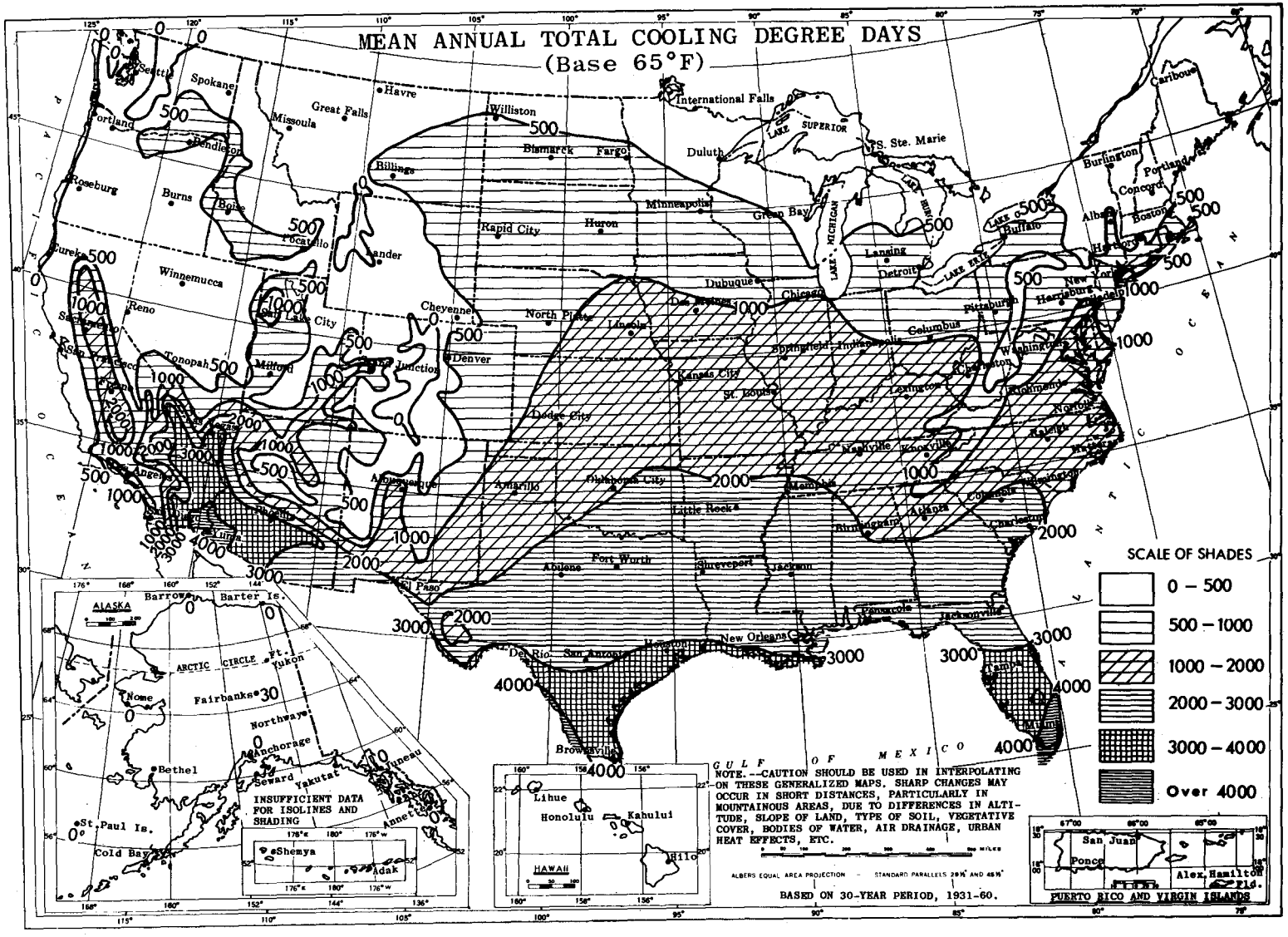


Fig. II-45. Mean annual total cooling degree days (Base 65 F). Source: Baldwin, 1973. Climates of the United States.

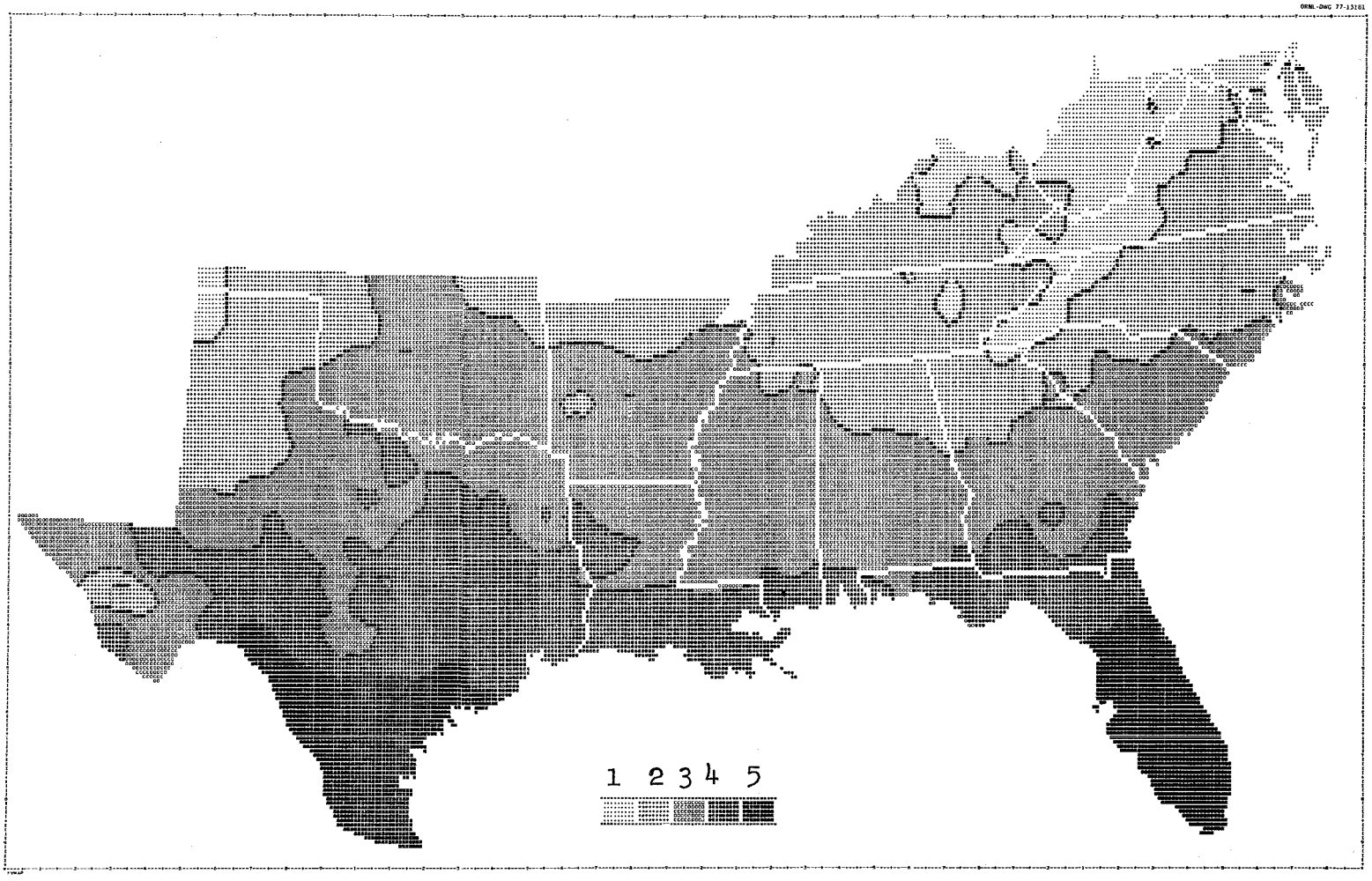


Fig. II-46. Annual potential evapotranspiration index calculated from 30-year monthly temperature and precipitation norms for the period 1941-1970 using the Thornthwaite formulas. Interval limits are: (1) <30.0; (2) 30.0-35.0; (3) 35.0-40.0; (4) 40.0-45.0; (5) >45.0. Source: ORNL Geoecology from Decennial census of the United States Climate, NOAA.

ORNL-DWG. 78-13438

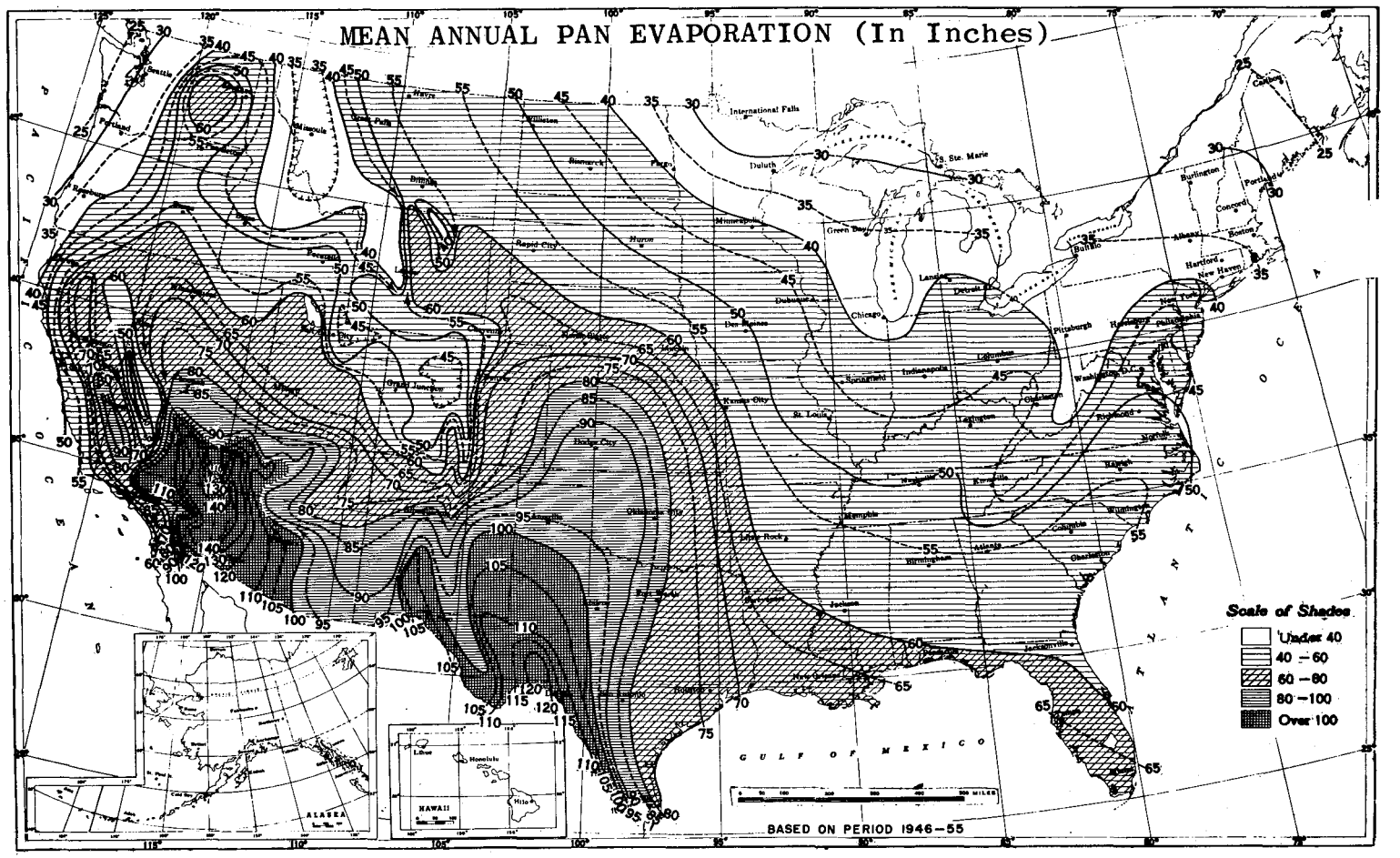


Fig. II-47. Mean annual pan evaporation (In Inches). Source: Baldwin, 1973. Climates of the United States.

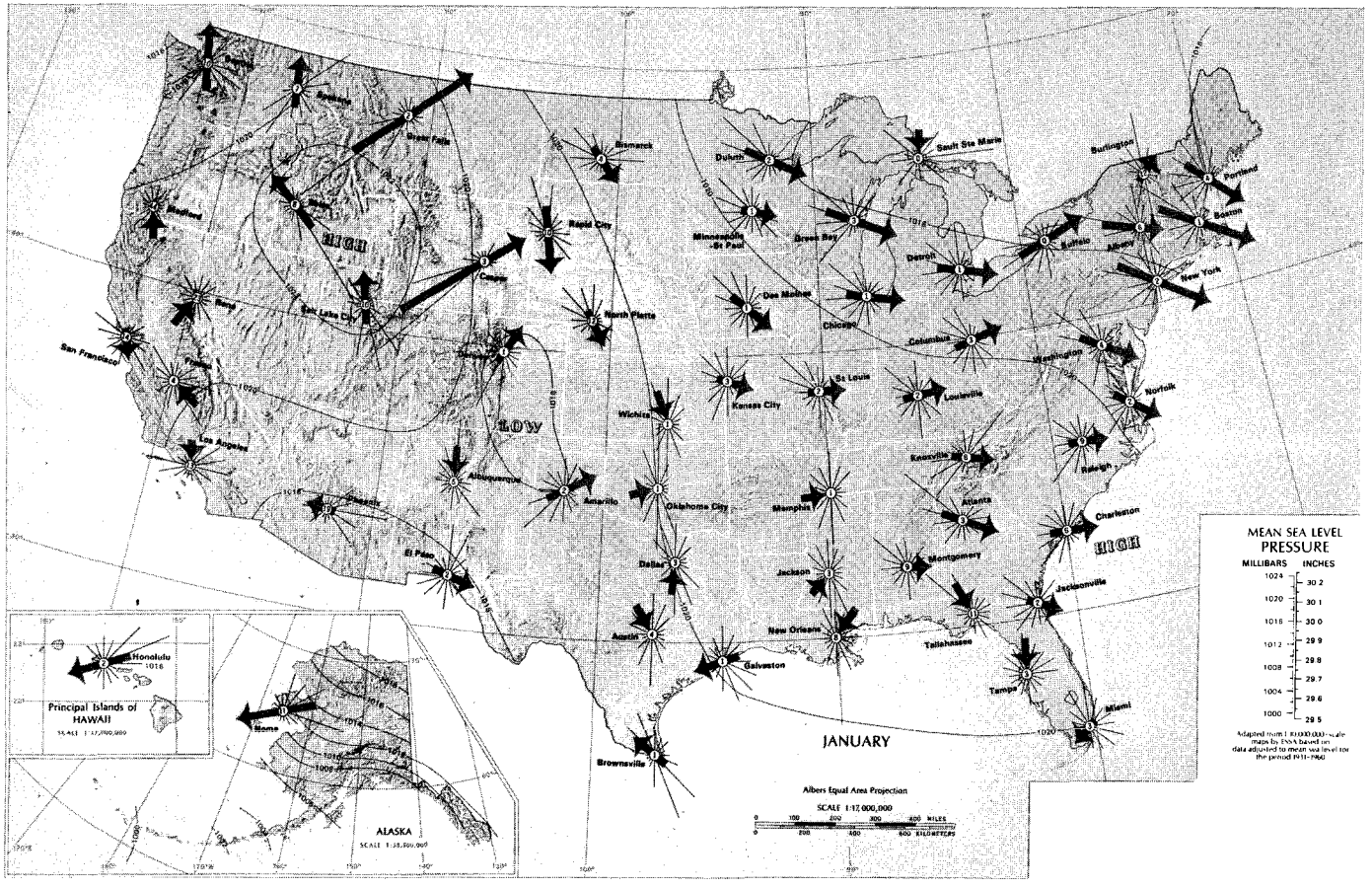


Fig. II-48. Wind and pressure patterns for January. Isolines indicate mean sea level pressure in millibars; wind rose pattern at major cities indicate percent of the month that winds blew from each direction with the percentage of calm time given in the circle. Large arrows reflect average monthly wind direction and net movement. Source: The National Atlas of the United States, USGS, 1970. p. 112.

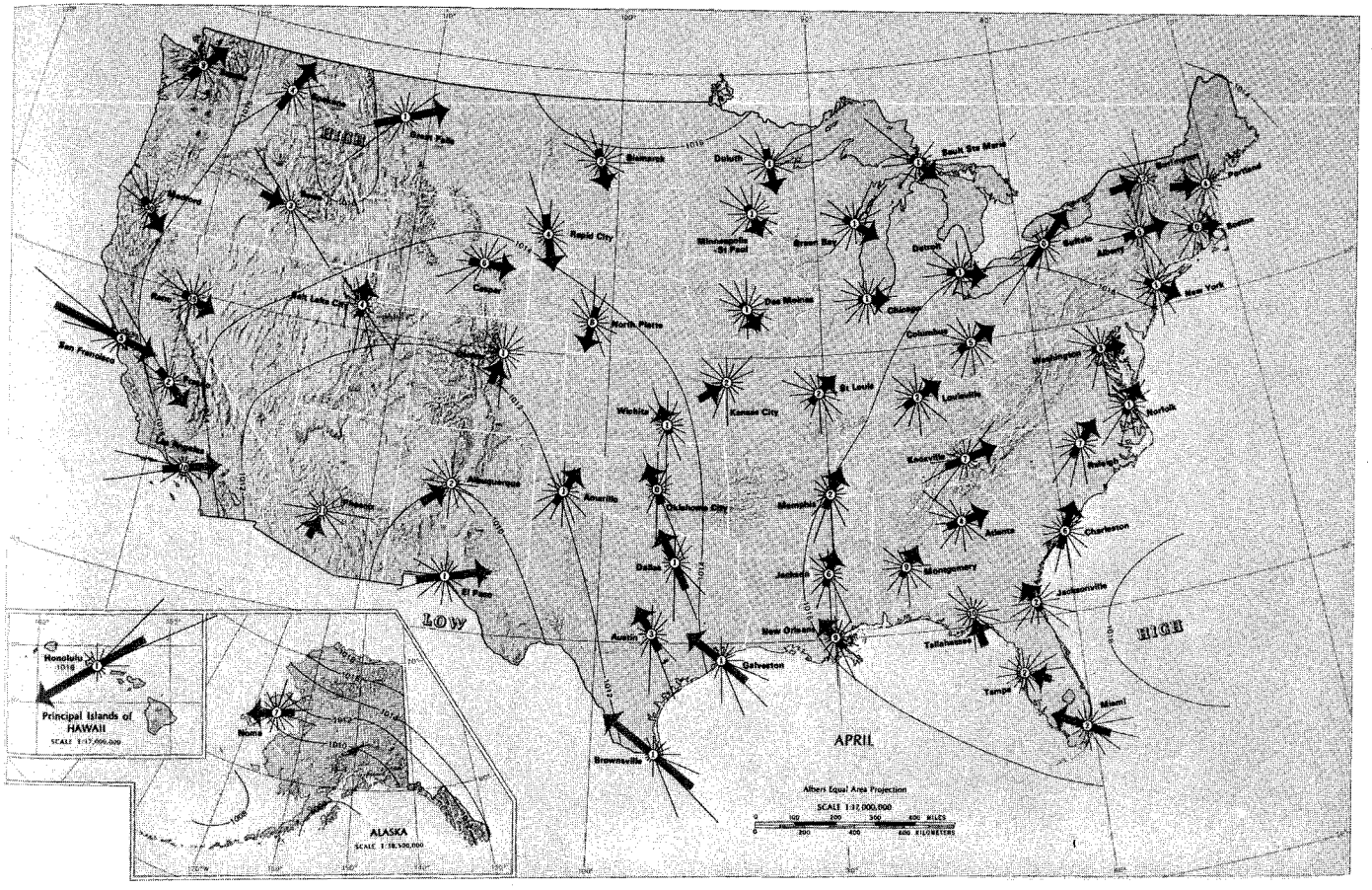


Fig. II-49. Wind and pressure patterns for April. Isolines indicate mean sea level pressure in millibars; wind rose pattern at major cities indicate percent of the month that winds blew from each direction with the percentage of calm time given in the circle. Large arrows reflect average monthly wind direction and net movement. Source: The National Atlas of the United States, USGS, 1970. p. 113.

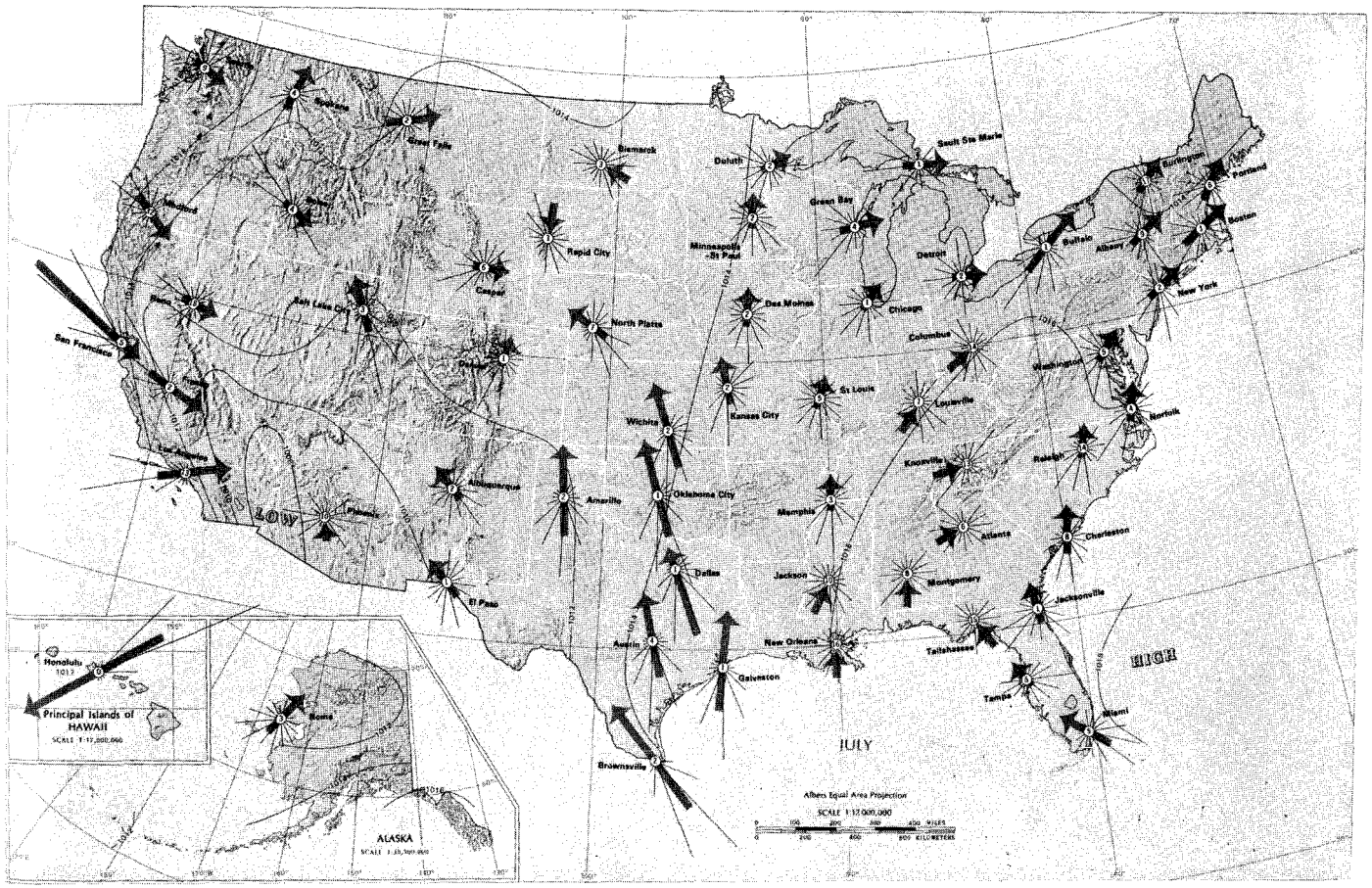


Fig. II-50. Wind and pressure patterns for July. Isolines indicate mean sea level pressure in millibars; wind rose pattern at major cities indicate percent of the month that winds blew from each direction with the percentage of calm time given in the circle. Large arrows reflect average monthly wind direction and net movement. Source: The National Atlas of the United States, USGS, 1970. p. 113.

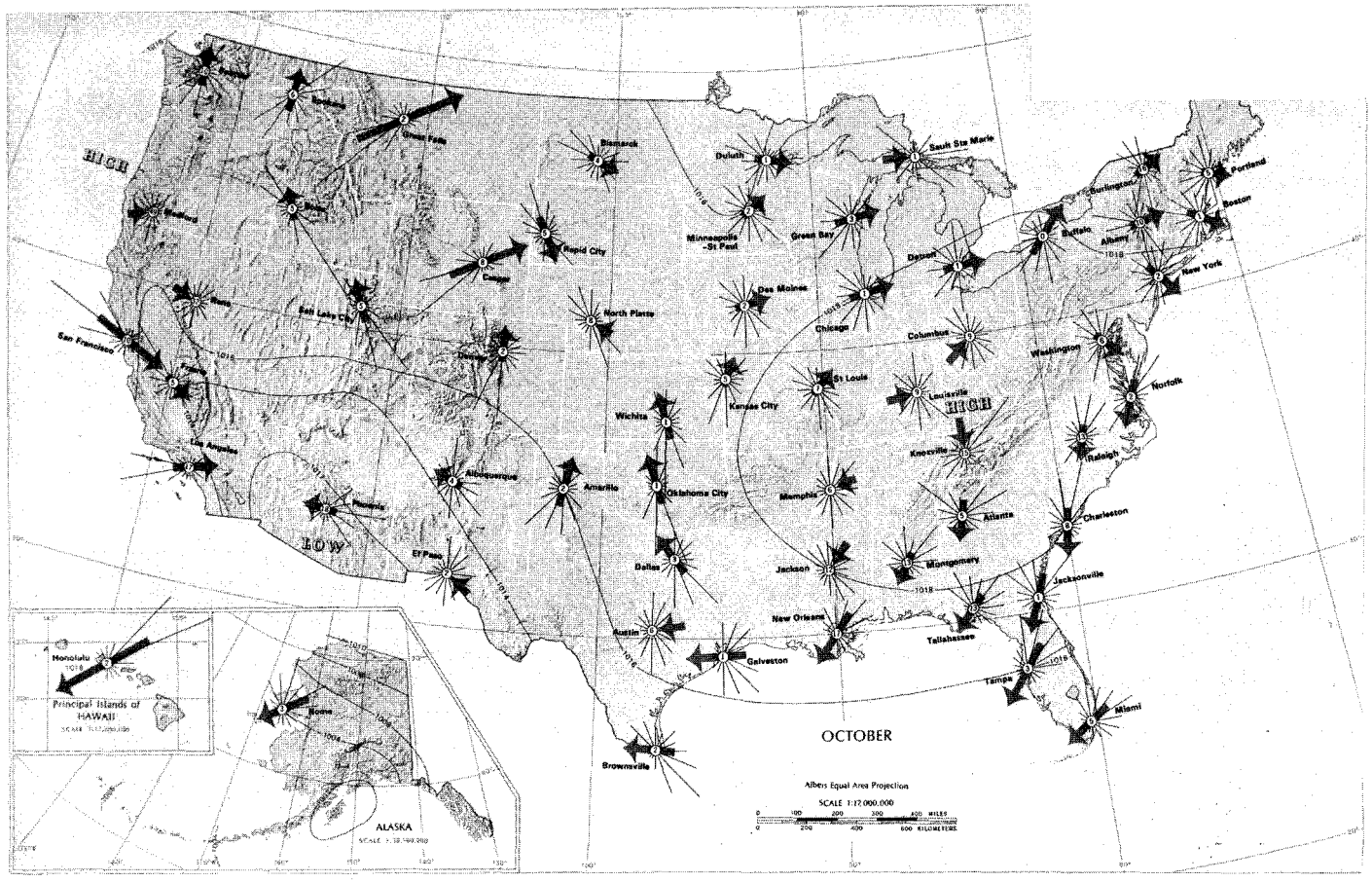


Fig. II-51. Wind and pressure patterns for October. Isolines indicate mean sea level pressure in millibars; wind rose pattern at major cities indicate percent of the month that winds blew from each direction with the percentage of calm time given in the circle. Large arrows reflect average monthly wind direction and net movement. Source: The National Atlas of the United States, USGS, 1970. p. 112.

ORNL-DWG. 78-13444

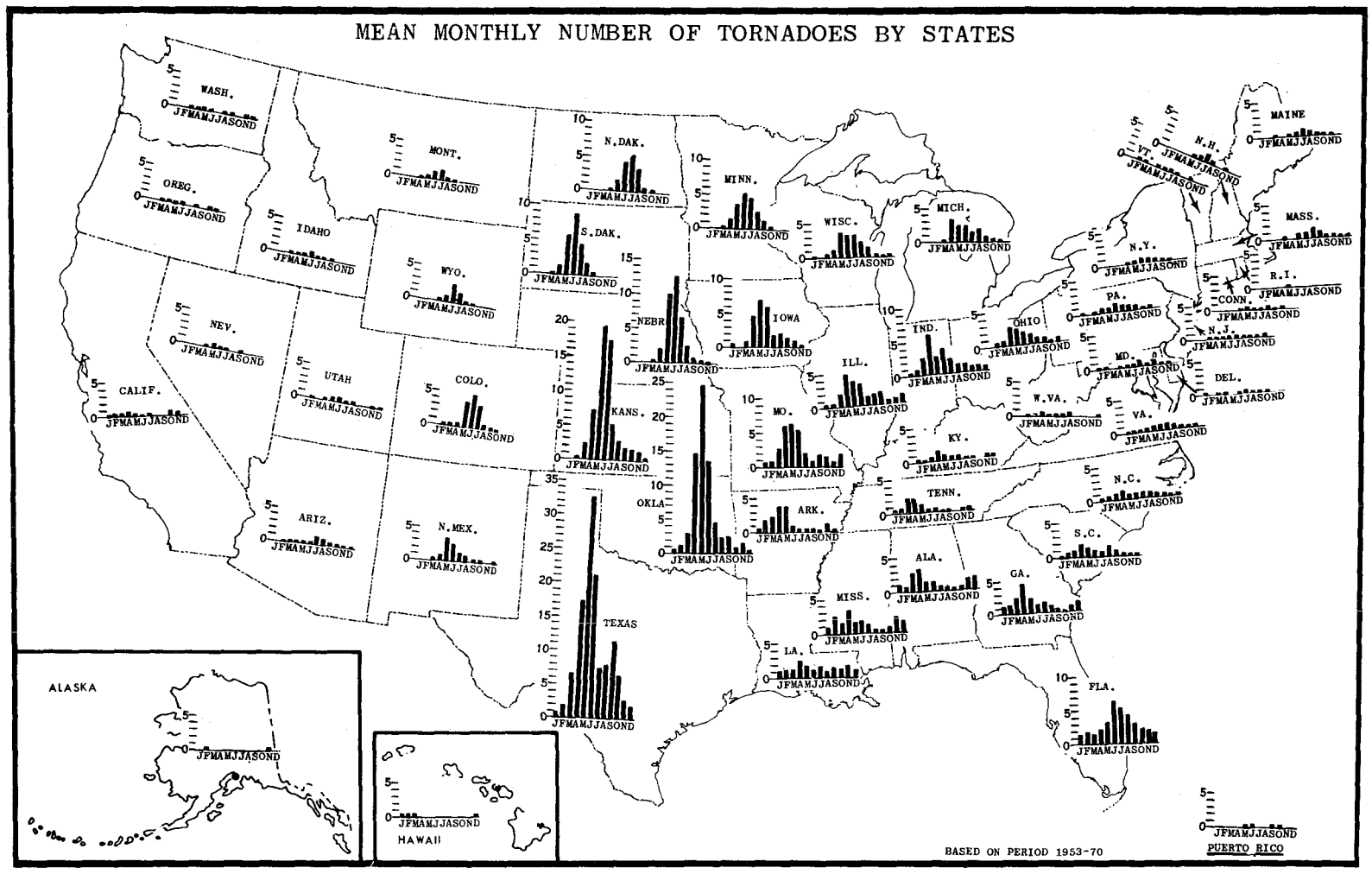


Fig. II-52. Mean monthly number of tornadoes by states. Source: Baldwin, 1973, Climates of the United States.

ORNL-DWG. 78-13439

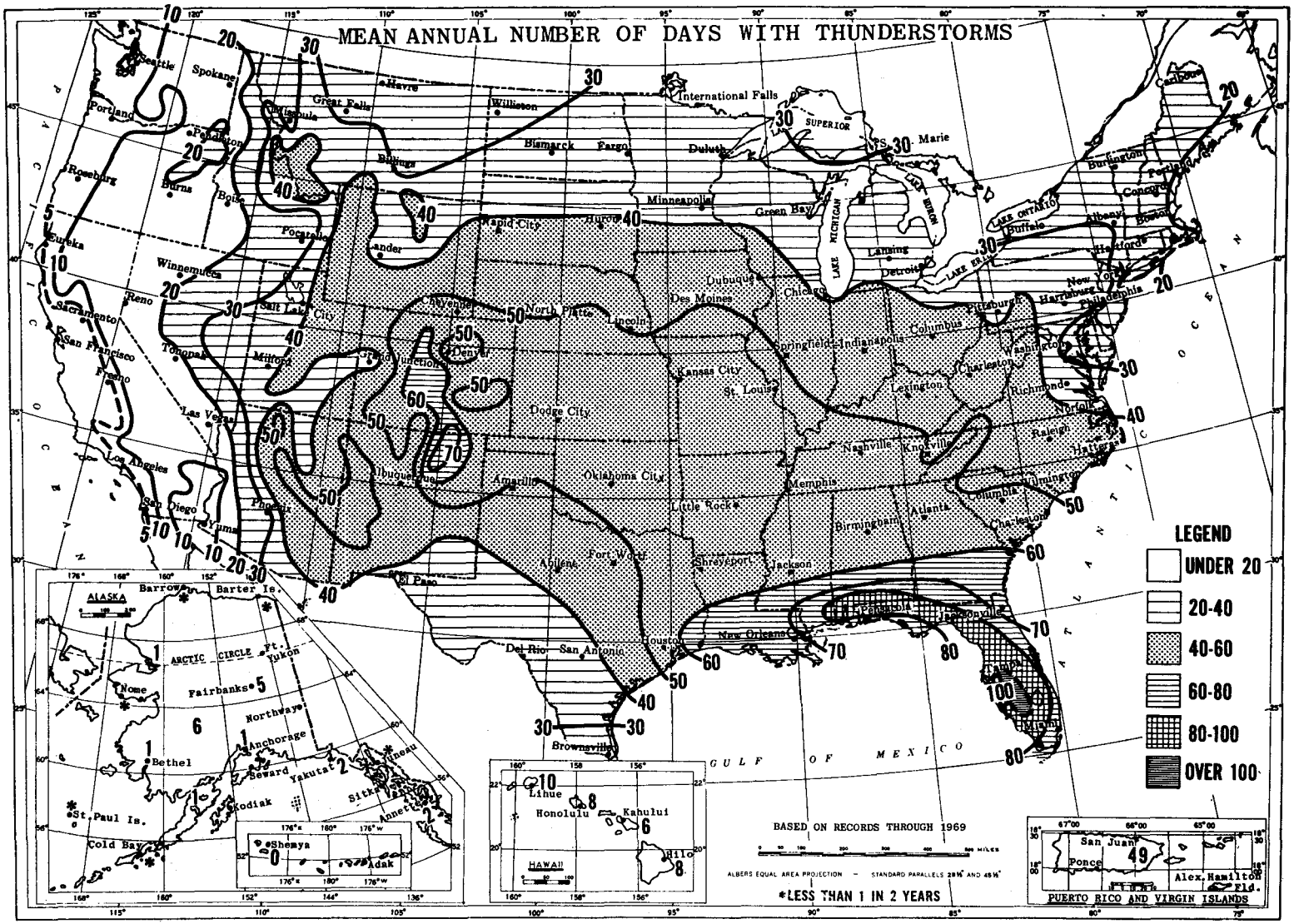


Fig. II-53. Mean annual number of days with thunderstorms. Source: Baldwin, 1973. Climates of the United States.

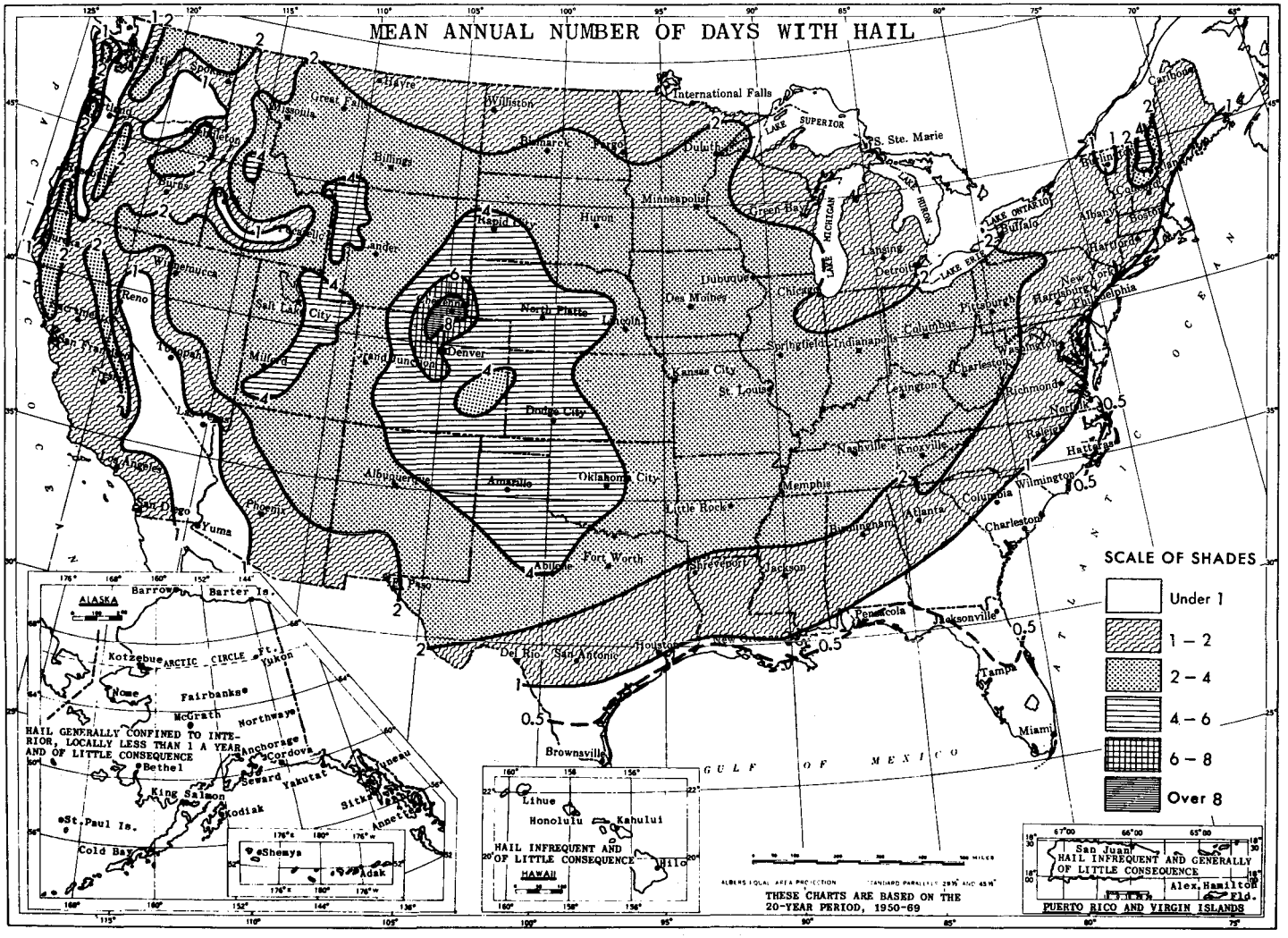


Fig. II-54. Mean annual number of days with hail. Source: Baldwin, 1973. Climates of the United States.

ORNL-DWG. 78-13441

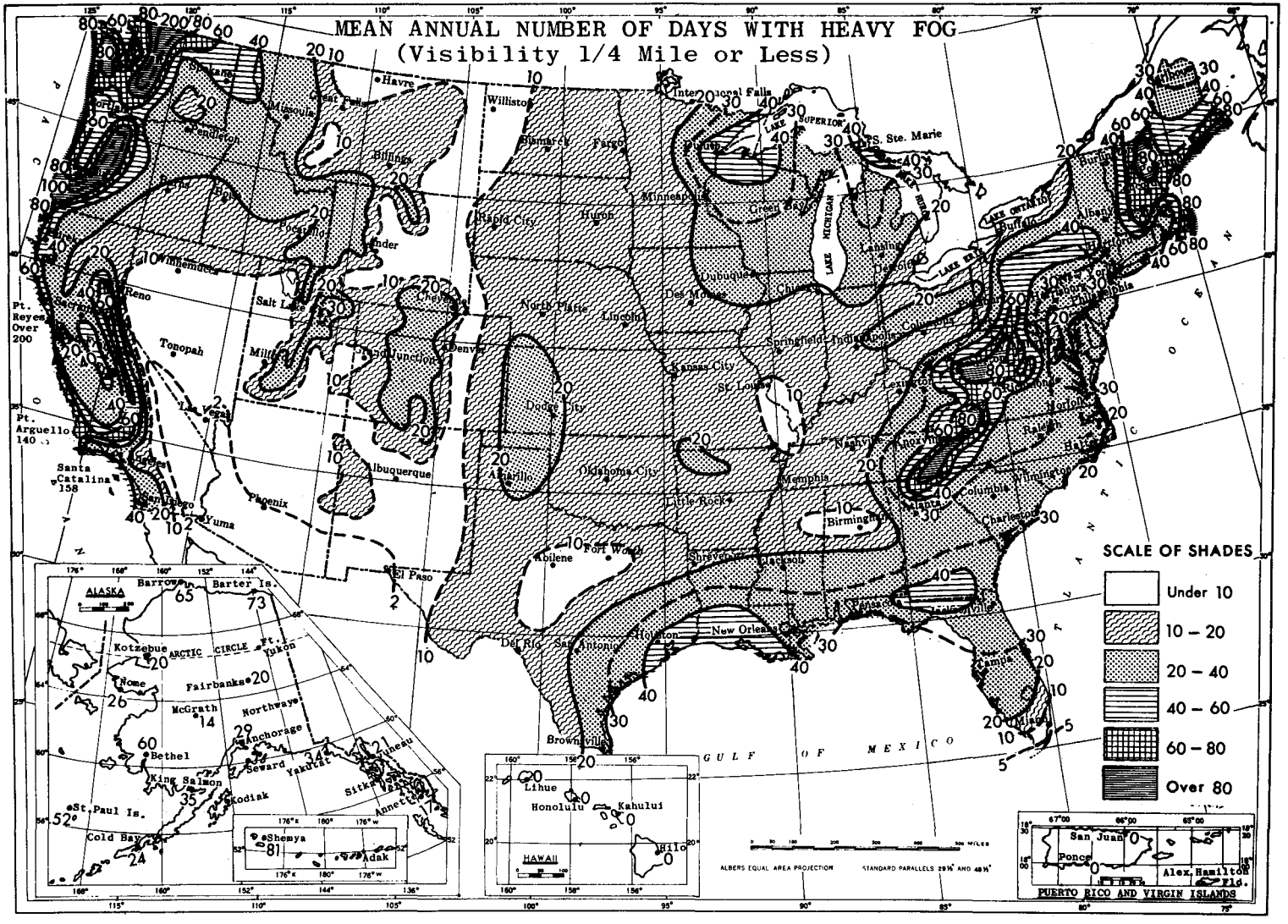


Fig. II-55. Mean annual number of days with heavy fog (Visibility 1/4 mile or less). Source: Baldwin, 1973. Climates of the United States.

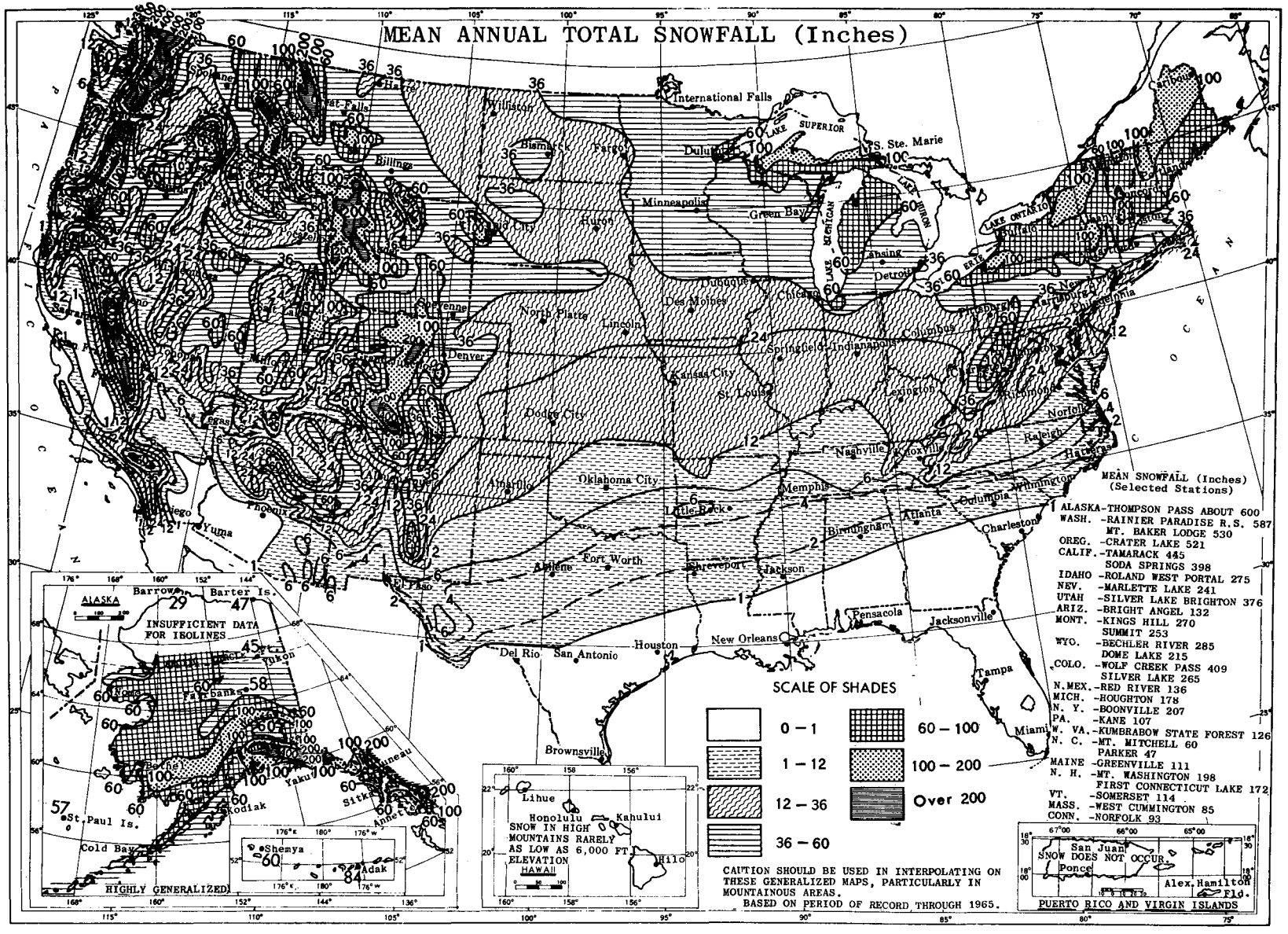


Fig. II-56. Mean annual total snowfall (Inches). Source: Baldwin, 1973. Climates of the United States.

ORNL-DWG. 78-13443

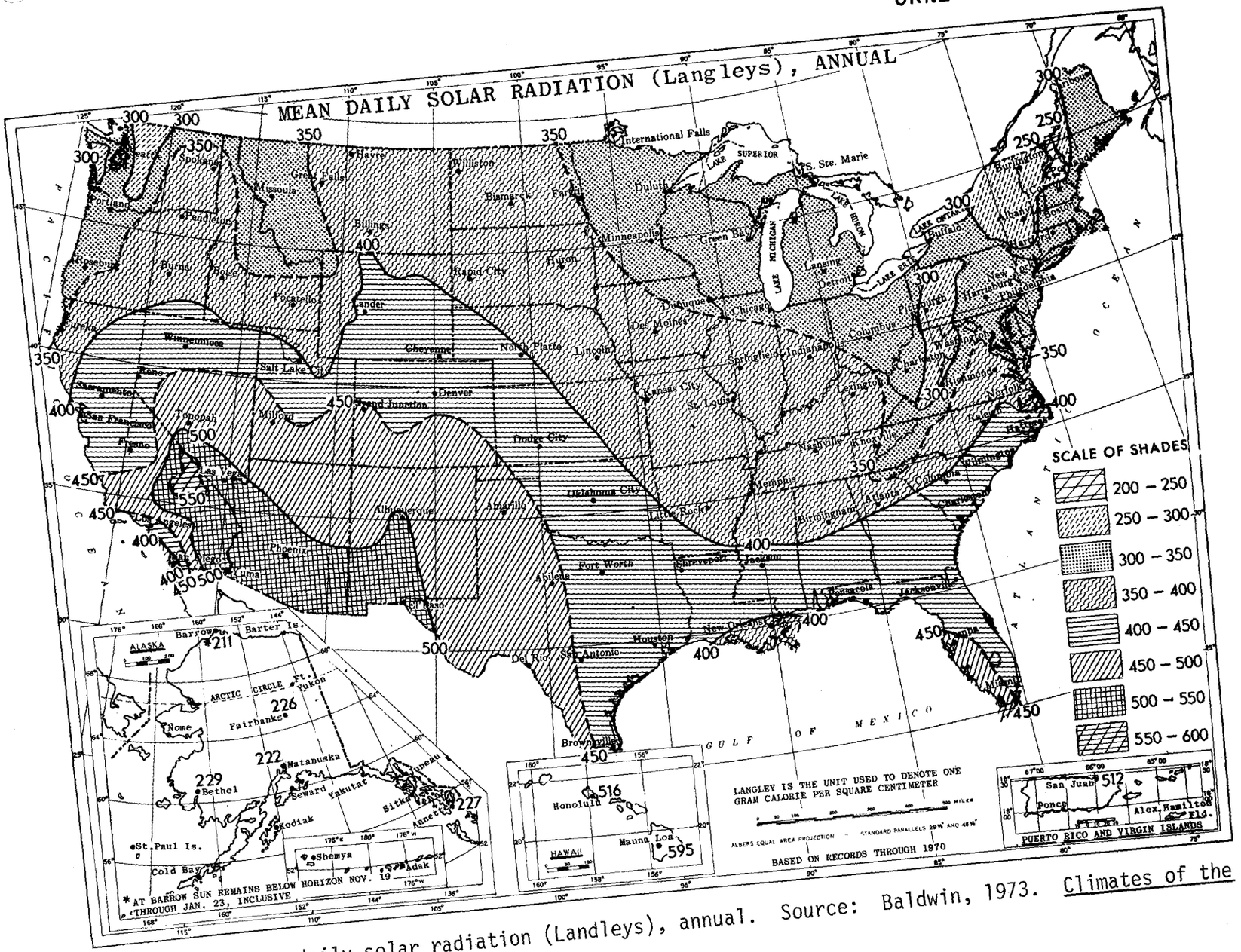


Fig. II-57. Mean daily solar radiation (Landleys), annual. Source: Baldwin, 1973. Climates of the United States.

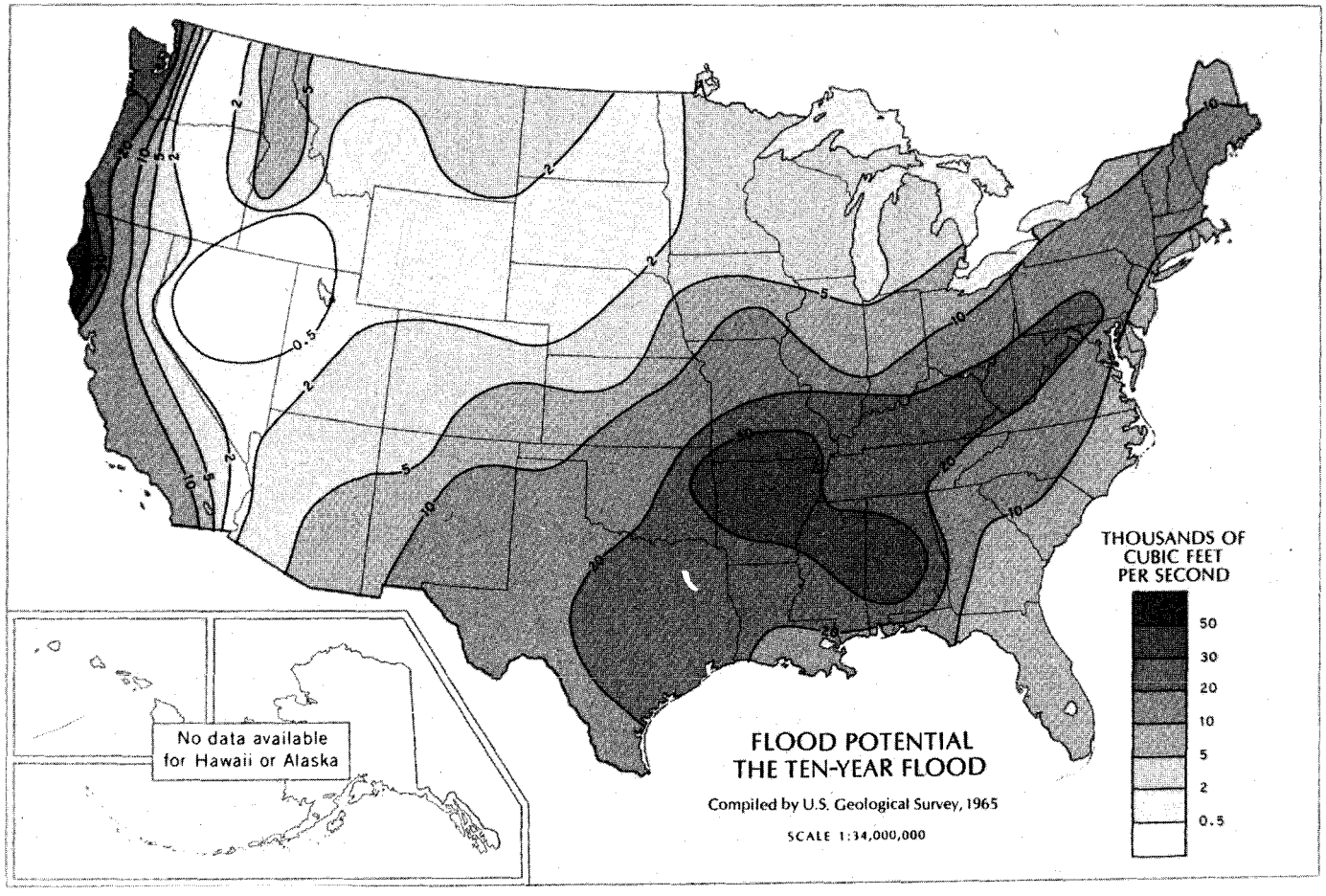


Fig. II-58. Flood potential for the ten-year flood. Source: The National Atlas of the United States, USGS, 1970, p. 121.

ORNL-DWG 78-13564

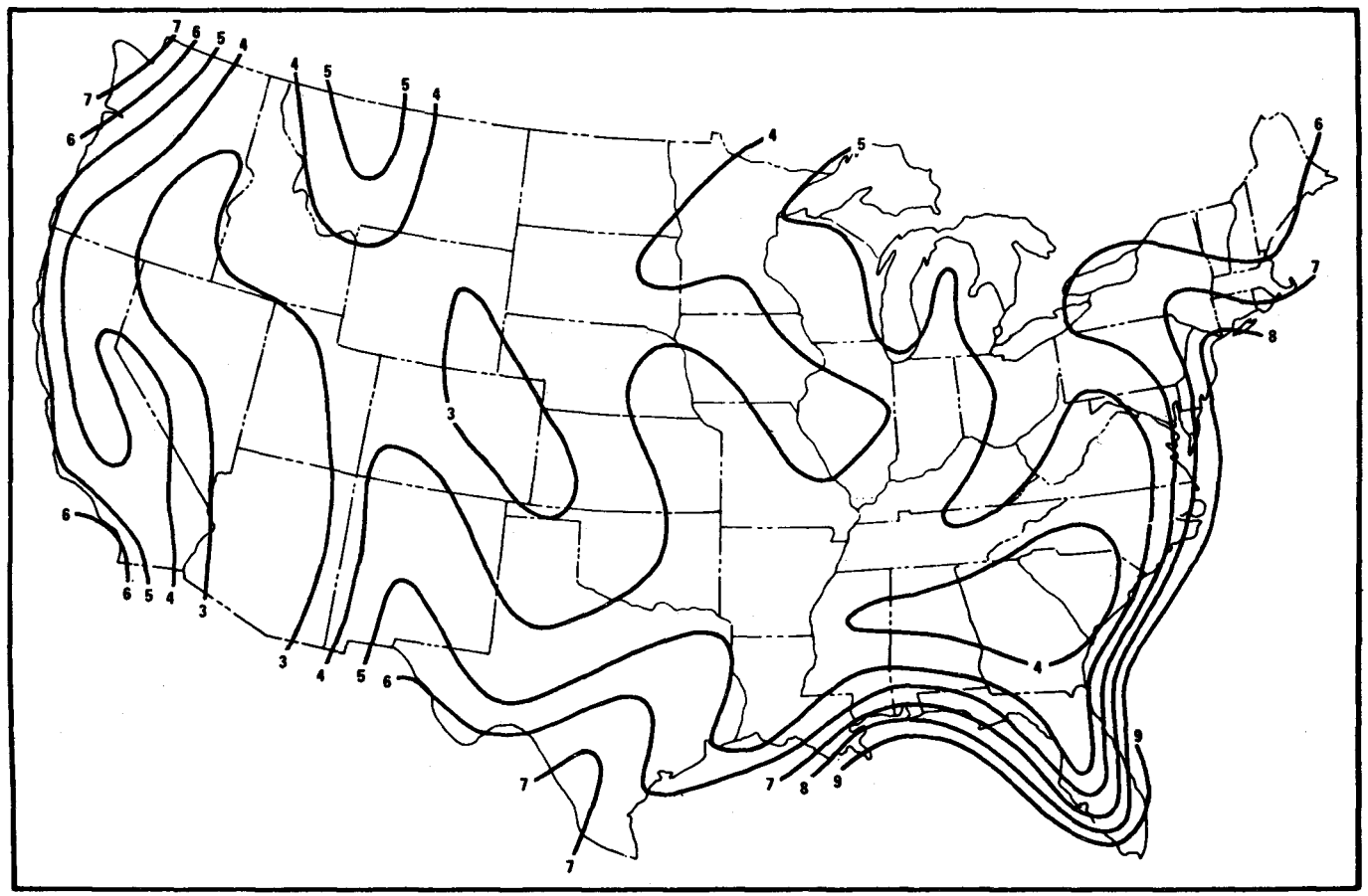


Fig. II-59. Isopleths (m x 10^2) mean annual morning mixing heights. Source: Holzworth, 1972, Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

ORNL-DWG 78-13571

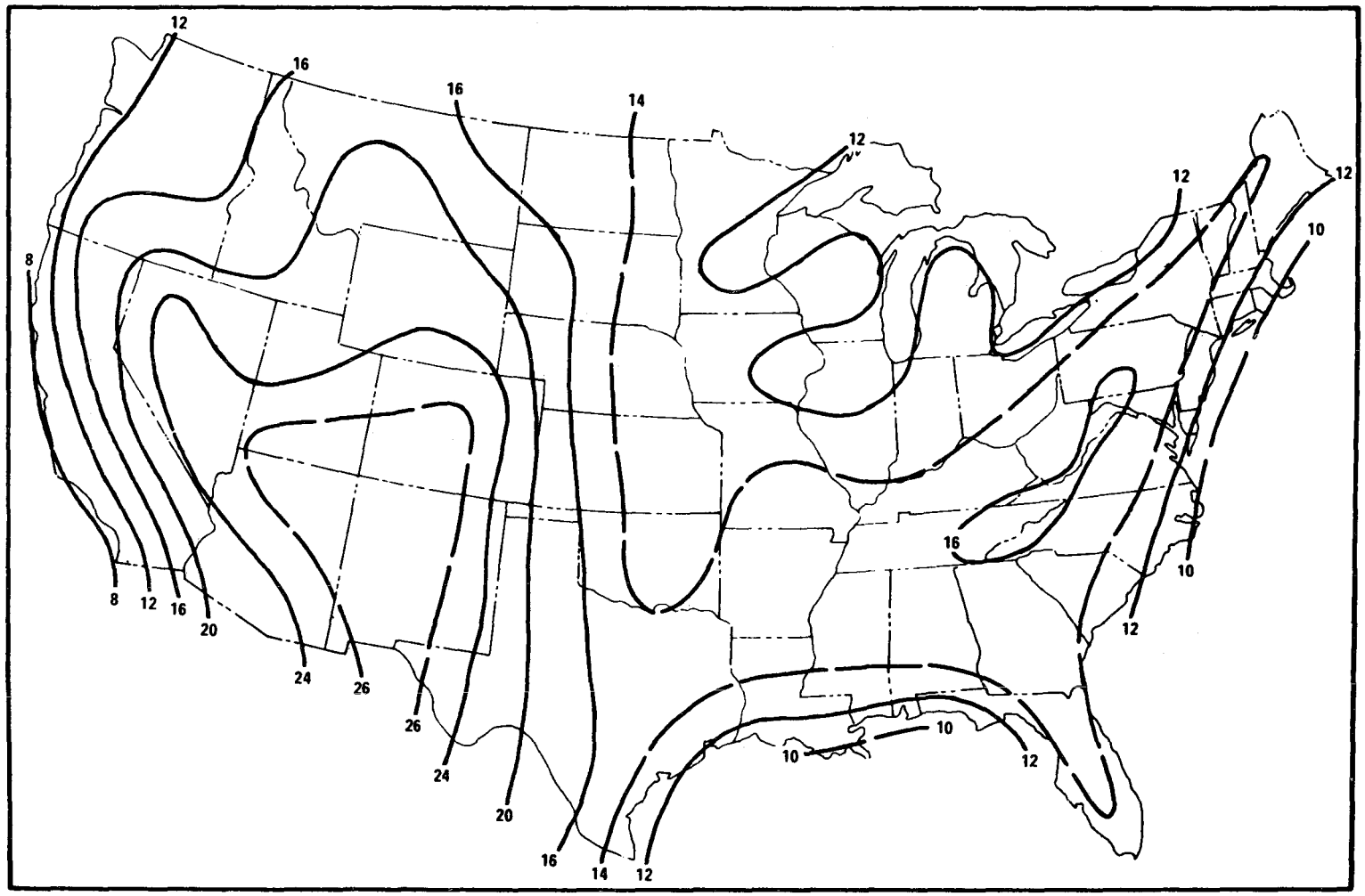


Fig. II-60. Isopleths (m x 10^2) mean annual afternoon mixing heights. Source: Holzworth, 1972. Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

ORNL-DWG 78-13565

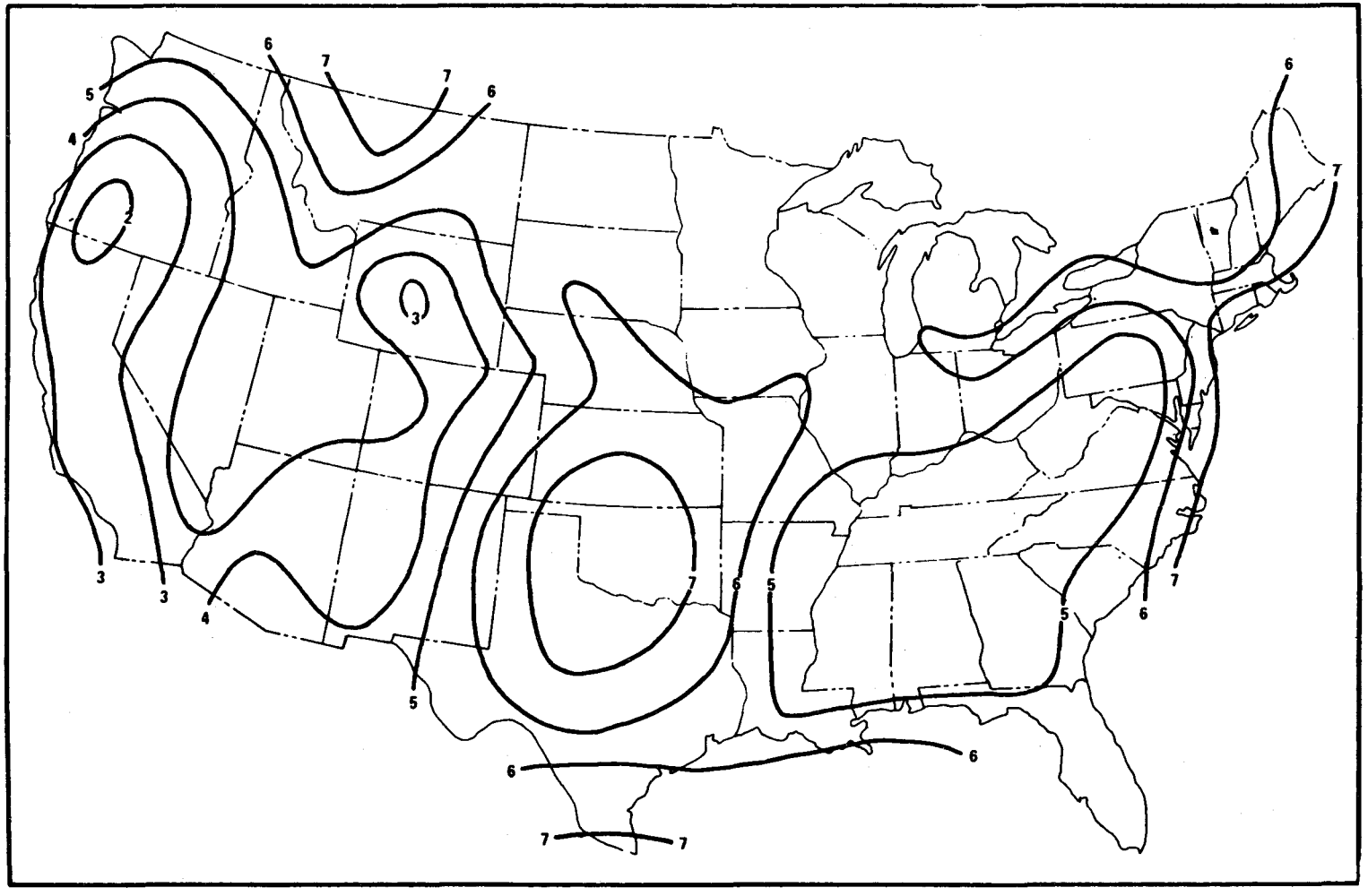


Fig. II-61. Isopleths (m sec^{-1}) of mean annual wind speed averaged through the morning mixing layer. Source: Holzworth, 1972. Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

ORNL-DWG 78-13566

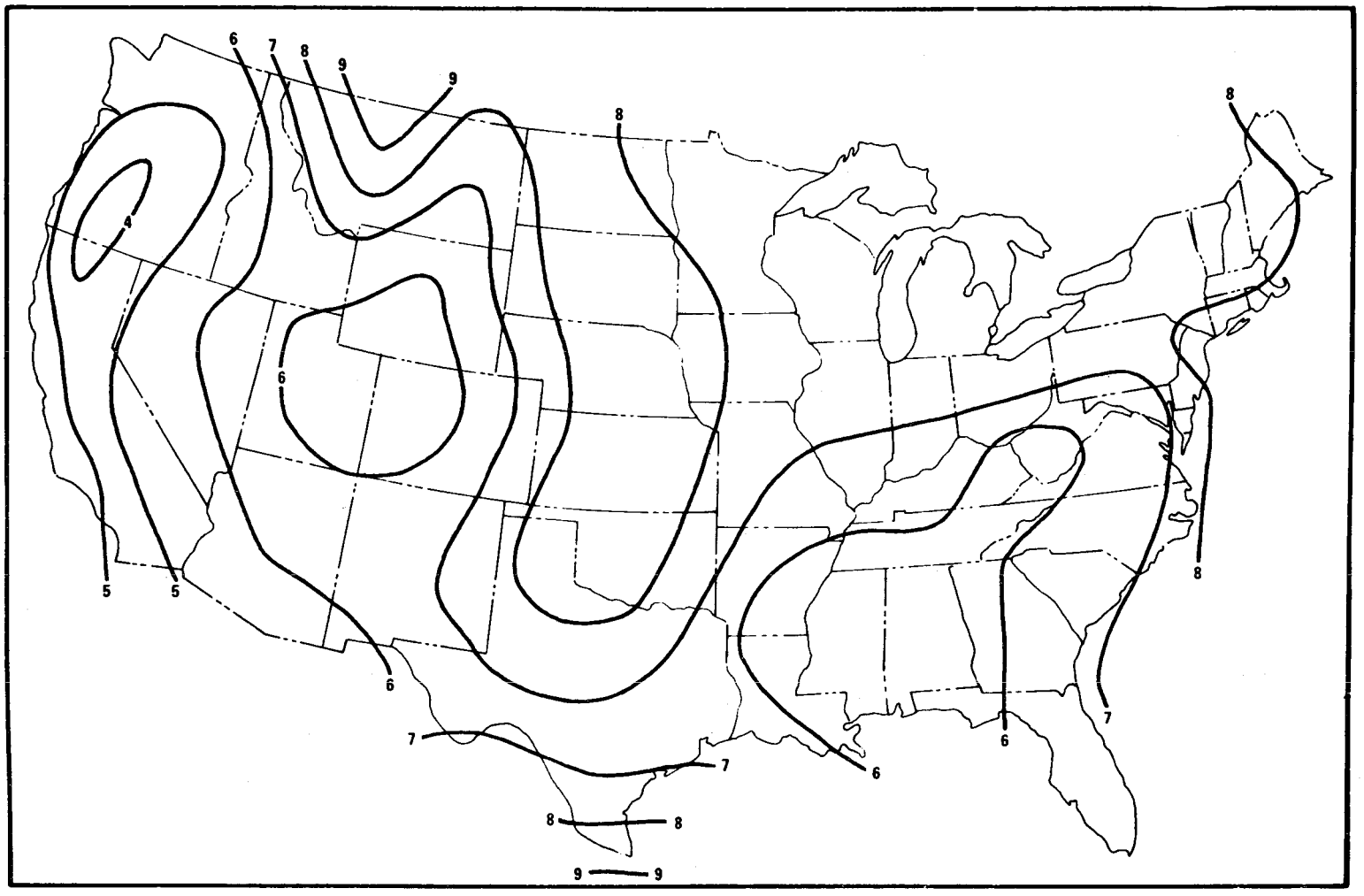


Fig. II-62. Isopleths (m sec^{-1}) of mean annual wind speed averaged through the afternoon mixing layer. Source: Holzworth, 1972, Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

ORNL-DWG 78-13568

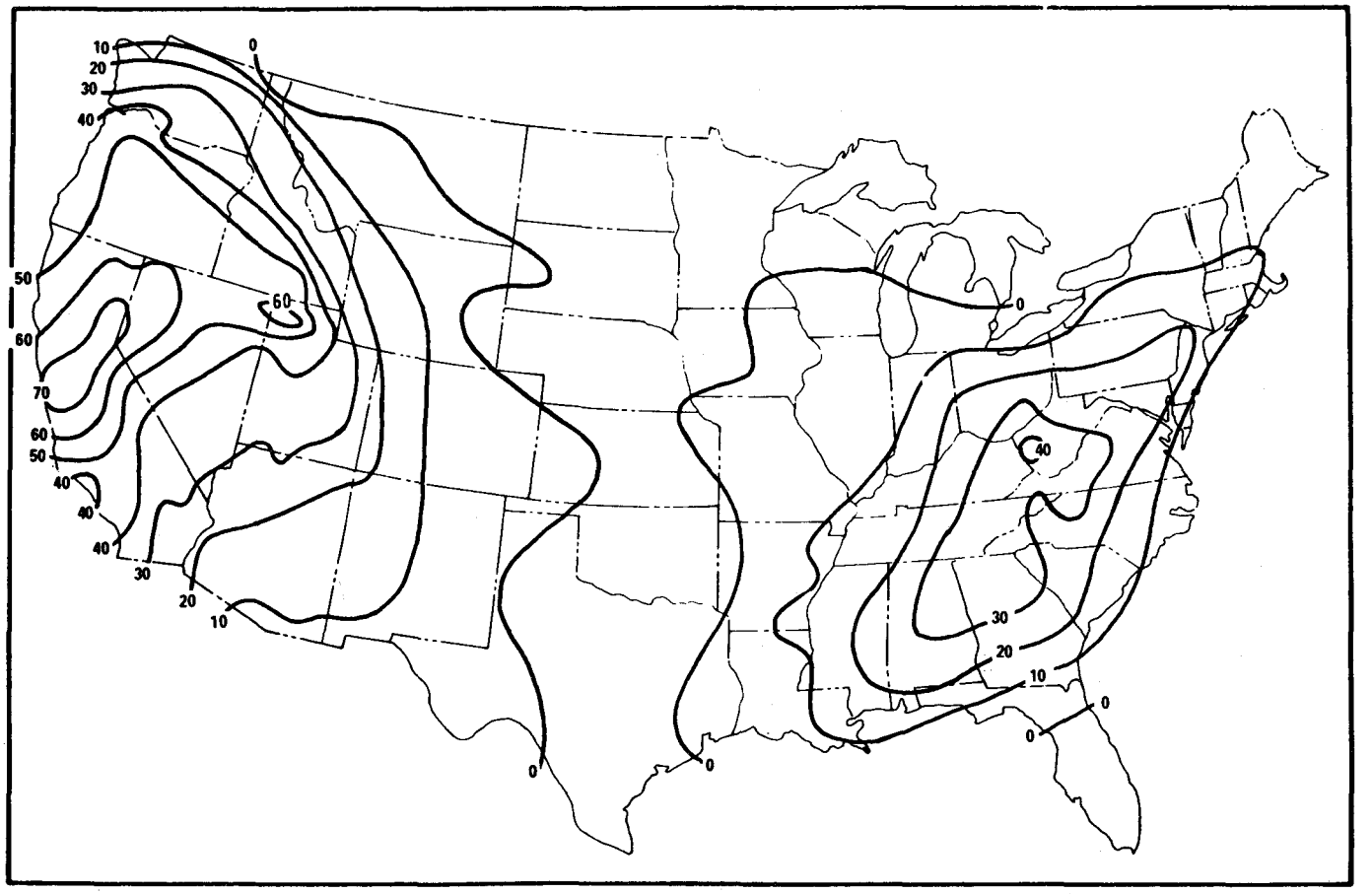


Fig. II-63. Isopleths of total number of forecast-days of high meteorological potential for air pollution in a 5-year period. Data are based on forecasts issued since the program began, 1 August 1960 and 1 October 1963 for eastern and western parts of the United States, respectively, through 3 April 1970. Source: Holzworth, 1972, Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

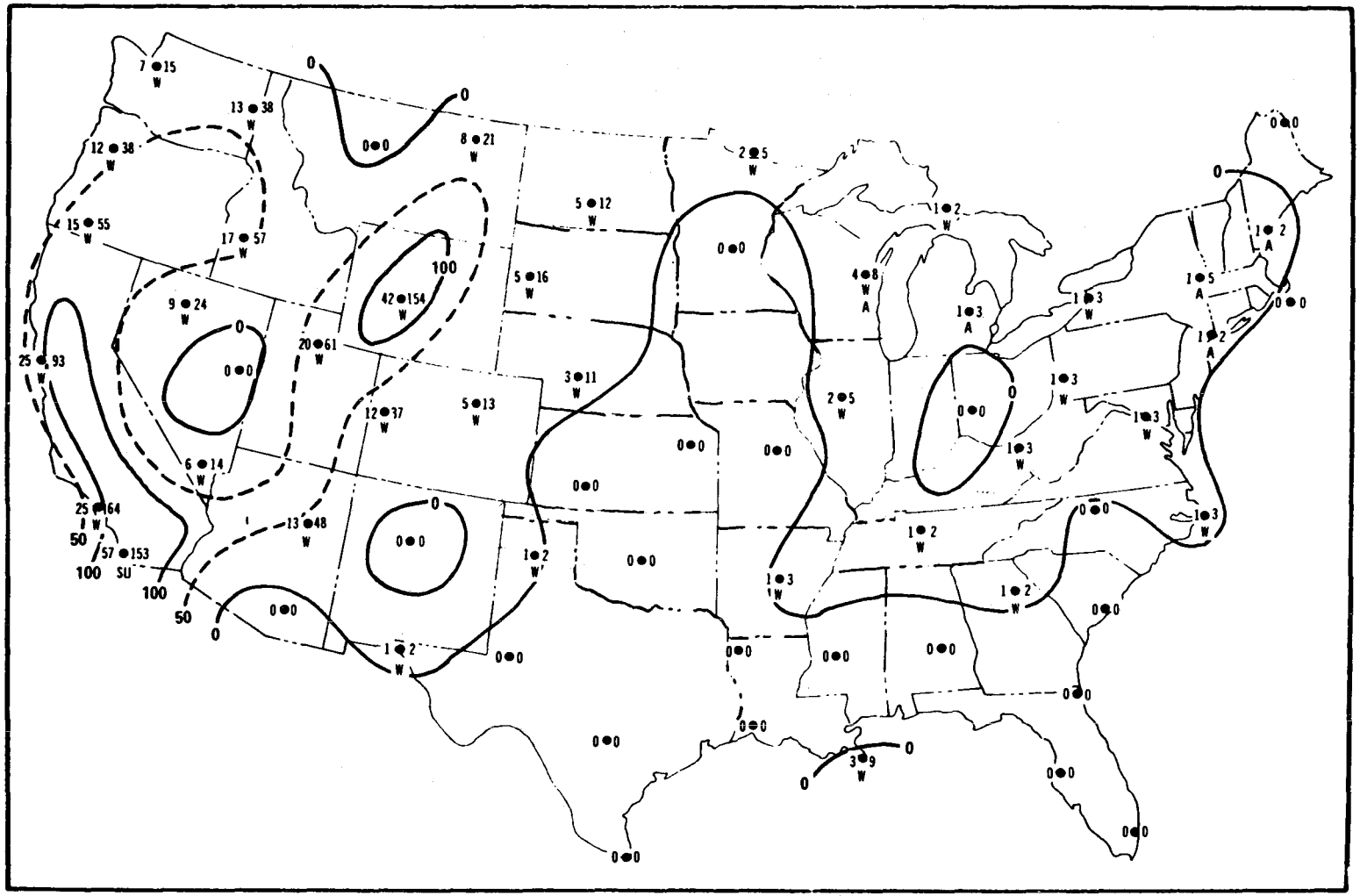
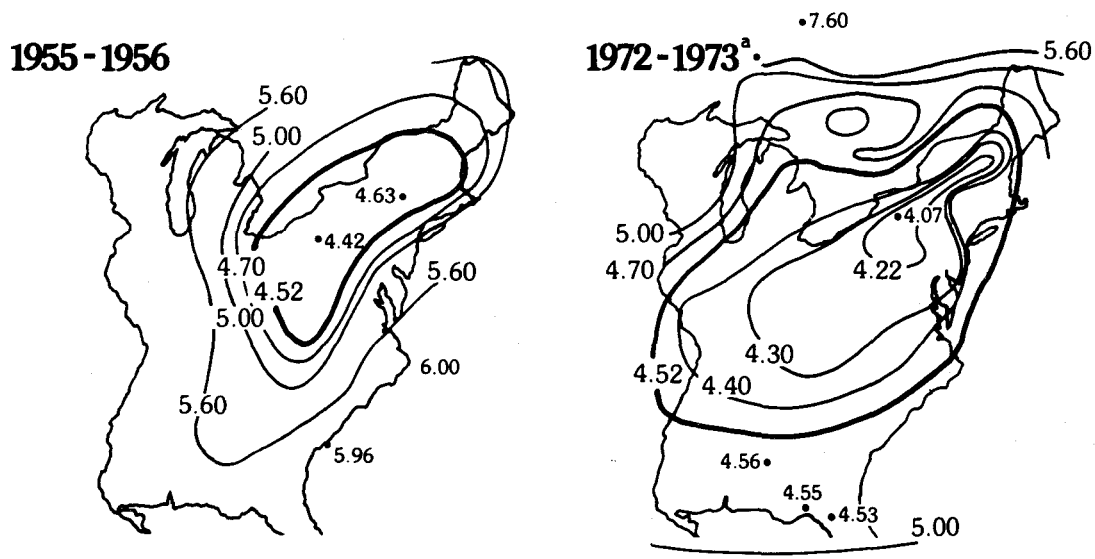


Fig. II-64. Isopleths of total number of episode-days in 5 years with mixing heights 500 m, wind speeds 4.0 m sec^{-1}, and no significant precipitation -- for episodes lasting at least 2 days. Numerals on left and right give total number of episodes and episode-days, respectively. Season with greatest number of episode-days indicated as W (winter), SP (spring), SU (summer), or A (autumn). Source: Holzworth, 1972, Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States, EPA, Office of Air Programs, Pub No. AP-101.

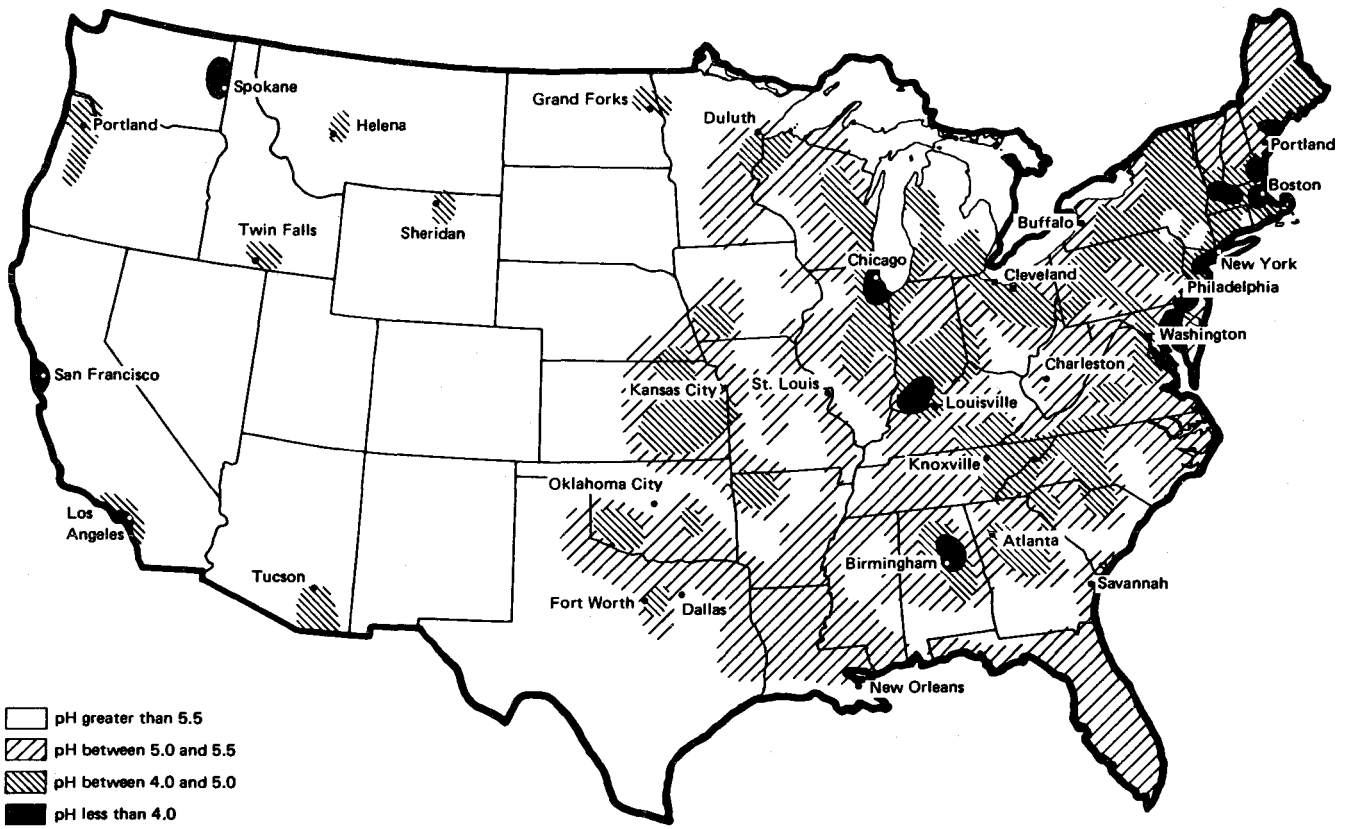
ORNL-DWG 78-13569



Source: Adapted from Likens, 1976.

Fig. II-65. Increase in acidity of rainfall in eastern U.S. Source: Likens, 1976 adapted and printed in US DOE/US EPA, 1978, Energy Environment Fact Book, p. 71.

ORNL-DWG 78-13570



SOURCE: *Scientific American:* The amateur scientist: *230*:122-127 (June 1974).

Fig. II-66. Acidity of rainfall in the U.S. Source: Scientific American: The amateur scientist: 230: 122-127 (June 1974), printed in National Academy of Sciences, 1975, Minerals Resources and the Environment.

II-D Solid Wastes

Solid wastes have only become an acknowledged environmental problem in the past few years. Open dumps have been the normally acceptable method of solid waste disposal. Recently, this type of disposal operation, with its attendant pollution of surface and groundwater, air pollution produced by open burning, and disease potential has alerted the Congress and the general public that more environmentally acceptable methods for solid waste disposal were required. The Resource Conservation and Recovery Act (RCRA) was passed in 1976, and addresses land disposal of solid wastes and sludges, and resource conservation. One of the key features of RCRA is the designation of solid wastes as "hazardous" or "non-hazardous," with special disposal procedures developed for each category of waste. To date, regulations have not been published in final form which define the methods for determining in which category a given solid waste will be placed.

Estimates of solid waste production for individual states, and the U.S. as a whole, are highly variable. Part of this is due to lack of measurements by municipalities and industrial waste generators. Also, in part, the varying estimates reflect different definitions of what constitutes a solid waste. Sewage sludges and industrial process sludges are now defined by RCRA as solid wastes and must be disposed of using RCRA criteria. The following sections are an attempt to present representative data on solid waste generation and disposal in the southern states.

Fly Ash, Scrubber Wastes, and Desulfurization Solids

Solid wastes from fossil fueled steam-electric plants include atmospheric fly ash and combustion emissions along with ash, scrubber

wastes and desulfurization solids collected at the plant. The South burned 36% of the coal in the U.S. in 1974; however, the coal was below the national average in sulfur and ash content (Table II-26). Even though the South generated 42% of the electricity from fossil fuels in the nation in 1974, the emissions for particulates, sulfur dioxide, nitrogen oxides and ash were proportionally lower (Table II-27). The lower levels of emissions can be attributed to lower sulfur and ash content of coal and the relatively high level of use of natural gas. Although estimates of scrubber sludge were not found for individual states, Table II-28 gives regional values. The three EPA regions that approximate the South account for over half the sludge in 1975 and would continue to do so based on the 1985 projection.

Radioactive Wastes

Solids are generated during all phases of the nuclear fuel cycle. At the present, highly radioactive wastes are not subject to RCRA but are managed by the Government. Some low level solid waste have been located in private landfills; however, the majority of this material is buried on DOE-controlled facilities. The South has two commercial and two DOE sites that have radioactive wastes storage facilities (Tables II-29 and II-30).

Coal Preparation and Oil Shale Wastes

Much of the coal in the South is or will be surfaced mined. Table II-31 presents statistics on the acreage by state that has been surfaced mined for coal and other minerals. Of the two million acres that have been disturbed (37% of the disturbed land in the nation), half the land

needs reclamation but is currently not covered by reclamation laws. A third of the remaining disturbed land (330,000 acres) is covered by reclamation laws while the remaining land (750,000 acres) does not require reclamation. Currently there are no significant oil shale recovery operations in the South.

Hazardous Wastes

Little data exist on what fraction of the total solid waste produced will be designated as "hazardous." In the absence of Federal guidelines, each state has developed its own guides. Thus a waste that is designated as "hazardous" in one state may not be considered as such in another. Recently the Mitre Corporation, in a report prepared for EPA, made an attempt to estimate the amount of "hazardous" solid wastes produced by various industries. Their approach was to use the Bureau of the Census' Annual Survey of Manufacturers to obtain state-by-state employment figures for various industries. They then developed generation factors based on the amount of waste produced and the number of employees that were employed. Multiplying these figures together gives the information presented in Tables II-32 and II-33 for various industrial categories. It is probable that some wastes would not be considered hazardous, but are included in the Table until EPA has defined "hazardous waste" and more definitive surveys can be performed. Based on these statistics, the South generates 35% of these types of solid wastes.

Detailed information on industrial solid wastes is difficult to locate. Table II-34 illustrates the amounts of various solid wastes generated by the chemical manufacturing industry. It would be a major

effort to adequately characterize the industrial production of solid waste on a national basis, let alone a state-by-state survey. Table II-35 presents an inventory of the types of hazardous waste disposal operations that were operating in the South in 1975.

RCRA also regulates surface impoundments. These impoundments are mainly located at facilities related to oil or gas extraction, coal and other types of mining, and at animal feedlots. Although municipal wastewater lagoons and oxidation ponds are commonly used by small communities, no inventory of the numbers for this type of impoundment has been located. Table II-36 lists the number of impoundments per state in the South. The U.S. total for impoundments was 110,150, meaning that the South has 36% of the total. Table II-36 also presents data on impoundments broken down into two categories. A Group I impoundment is at least 50 acres per site, and is representative of what might be found in coal and other mining operations, the paper and paper products industry, and the utility industry. There are reported to be 9,082 sites in the entire U.S. that fall into this group. A Group II impoundment has an area of 7.5 acres (may be three 2.5 acre ponds), and would be representative of the oil and gas industry, food product and chemical industry, textiles, etc. There are 64,153 sites meeting this criterion. The balance of the impoundments are smaller than Group II. It can be seen in Table II-36 that the South has about 20% of the larger type of impoundment, but contains nearly half (40%) of the smaller impoundments.

General Wastes

Estimates of solid waste generation from municipal sources are highly variable due to possible presence of industrial and commercial

wastes in addition to that generated by residents. Estimates of from 4 to 8 lbs/capita/day can be found in the literature. Unfortunately, not all of this waste is collected but rather is self-disposed or littered. A crude estimate of the solid waste from municipal sources can be obtained by taking the urban population of the state and multiplying it by an assumed generation rate. Table II-37 lists the estimated amounts of solid waste landfilled in the states making up the southern region. Also included are the number of landfills that have permits, are authorized, or are illegal, along with some estimates of landfill size.

Land disposal is by far the preferred method of solid waste disposal in the South (mainly because it is the cheapest form of disposal and land is available). Table II-38 shows the number of incinerators currently in operation in the South. Also included are estimates of the amount of solid waste which is burned. Although at the present time there is considerable interest in energy recovery from solid waste, there is only one modern plant (Nashville, TN) in the South.

Sewage sludges are produced as a by-product of municipal sewage treatment plants. At the present time these sludges are anaerobically digested or incinerated with the residue disposed of by land spreading or in landfills. The US EPA's Needs Survey has estimated the number of people in the U.S. that are served by some form of sewage treatment. These data are given in Table II-39. While many of these people are only provided with primary treatment (solids removal only) at this time, the Federal Water Pollution Control Act has as its main goal the provision of secondary treatment for all sewage treatment facilities. Table II-39 presents the results of calculations of the weight of sludge produced

based on the assumption that: (1) all individuals listed as served by treatment facilities in Table II-39 have primary treatment only, and (2) that all of the people served have secondary treatment of their wastes. Sludge estimates are based on 0.12 lbs/capita/day for primary treatment, and 0.20 lbs/capita/day for secondary treatment. In general, the actual amounts of sludge produced will be somewhere between the two extremes in Table II-39.

Data Quality, Gaps, Limitations

Data on solid wastes in the South are generally based on limited inventories or calculated based on general assumptions (e.g. pounds of waste per person). As shown in the following data matrix, very little additional or computerized data are available. Point source emissions data as required by air pollution legislation are available for individual sites from EPA.

		Resolution of data presented	Finer resolution of available data	Computerized?
D.	Solid Wastes			
1.	Volume and Disposed Method			
a.	Fly Ash, etc.	State, Annual	Point Source, Monthly	Yes (EPA-NEDS)[1]
b.	Radioactive Wastes	Site	?	?
c.	Coal Mining Wastes	State	County	Yes (ORNL GDB)[2]
d.	Hazardous Wastes	State	?	?
e.	General Wastes	State	?	?

[1]EPA-NEDS - National Emissions Data System.

[2]ORNL-GDB - Geoecology Data Base.

TABLE II-26

FUEL CONSUMPTION AND QUALITY FOR STEAM-ELECTRIC PLANTS BY STATE, 1974

State	Coal			Oil		Gas
	Consumption (1000 tons)	Sulfur %	Ash %	Consumption (1000 BBLS)	Sulfur %	Consumption (1000 MCF)
Alabama	17,889	2.3	14.8	404	0.6	4,949
Arkansas	0			6,806	1.0	39,478
Florida	6,400	3.1	11.2	62,671	1.5	144,168
Georgia	11,654	2.3	11.5	4,366	1.8	40,272
Kentucky	23,369	3.1	16.0	218	0.3	6,739
Louisiana	0			8,065	0.5	368,709
Mississippi	1,461	3.0	10.1	8,548	1.1	34,106
North Carolina	19,849	1.1	19.6	4,780	1.7	256
Oklahoma	1	2.0	10.9	178	1.9	282,545
South Carolina	4,868	1.3	13.0	5,194	1.8	13,363
Tennessee	18,511	3.0	16.6	203	0.2	0
Texas	5,200	0.6	10.5	5,384	0.5	1,329,091
Virginia	4,459	0.8	15.9	26,156	2.1	745
West Virginia	25,583	2.2	16.1	573	0.1	379
South	139,244	2.1	13.4	133,546	1.1	2,264,800
U.S.	390,262	2.3	14.0	498,326	1.0	3,237,471
% of U.S.	36	-9	-4	27	+10	70

Source: Steam-Electric Plant Air and Water Quality Control Data. 1978. DOE/FERC-0018.

TABLE II-27

ESTIMATED ANNUAL EMISSIONS AND FLY ASH COLLECTION FROM ALL FUELS FOR STEAM-ELECTRIC PLANTS BY STATE, 1974

State	Plant capacity (MW)	Annual generation (1000 MW)	Estimated annual emissions (1000 tons)			Fly ash collected (1000 tons)
			Particulates	Sulfur dioxide	Nitrogen oxides	
Alabama	11,967	47,021	418	813	156	2,224
Arkansas	3,358	7,681	1	22	23	0
Florida	17,032	65,441	16	716	258	1,043
Georgia	8,513	32,314	34	542	124	1,315
Kentucky	11,016	50,066	67	1,433	326	3,625
Louisiana	10,145	38,292	1	14	89	0
Mississippi	3,552	10,835	4	116	39	147
North Carolina	10,436	50,986	71	459	186	2,820
Oklahoma	5,709	28,819	0	1	54	0
South Carolina	7,035	21,637	33	160	74	619
Tennessee	10,067	40,816	165	1,095	195	2,875
Texas	37,087	139,166	12	69	318	546
Virginia	7,570	32,049	15	256	98	632
West Virginia	12,209	61,140	221	1,106	271	4,053
South	155,696	626,263	1,058	6,806	2,211	19,899
U.S.	372,047	1,504,511	2,813	19,169	6,203	53,793
% of U.S.	42	42	38	35	36	37

Source: Steam-Electric Plant Air and Water Quality Control Data. 1978. DOE/FERC-0018.

TABLE II-28

SCRUBBER SLUDGE BY EPA REGION, 1975 AND 1985 PROJECTIONS

EPA region	1975	1985	
	Million tons	Status quo projection Million tons	Thousand acre-feet
I. New England	<0.1	4.94	3.95
II. Mid Atlantic	0.2	14.82	11.85
III. East North Central	1.2	18.20	14.56
IV. West North Central	1.7	38.74	34.87
V. South Atlantic*	3.1	51.62	46.45
VI. East South Central*	<0.1	12.00	9.60
VII. West South Central*	0.5	14.75	8.86
VIII. Mountain	<0.1	1.29	0.77
IX. Pacific	<0.1	0.10	0.05
X. Non-contiguous U.S.	0	0.02	0.01
U.S.	6.8	156.48	130.97

*EPA regions covering the 14 state southern region.

Source: Environmental Protection Agency from F. O'Donnell, 1978, Scrubber Sludge, Nightmare for Utilities, Sludge, Vol. 1, No. 2, p. 26-30.

TABLE II-29

COMMERCIAL LOW LEVEL RADIOACTIVE WASTE INVENTORIES AS OF JANUARY, 1974

Site	Waste byproduct material (Ci, non-decayed)	Special nuclear material[a] (g)[b]	Source material (kg)[b]	Total waste volume (m^3)
West Valley, NY	380,000	49,000	386,000	55,500
Morehead, KY	1,500,000	327,000	58,900	95,000
Barnwell, SC	121,000	198,000	67,000	23,000
Sheffield, IL	29,500	34,000	27,000	29,000
Beatty, NV	85,500	635,000	24,300	40,900
Richland, WA	190,000	1,700	5,000	15,500
Total at all sites	2,305,000	1,244,700	568,200	258,900

[a]Includes approximately 80 kg ^{239}Pu

[b]Weight of radionuclides in waste

Source: Alternatives for Managing Wastes from Reactors and Post-Fission Operations in the LWR Fuel Cycle, ERDA 76-43, Vol. 4 of 5.

TABLE II-30

SUMMARY OF RADIOACTIVE WASTE AT SELECTED DOE SITES AS OF JULY, 1975

Site	Ci	TRU (g)	U(Kg)	Volume (m^3)
Savannah River, SC	4,410,000	7,000	79,000	279,000
Oak Ridge, TN	a	13,000	100	179,000
Los Alamos, NM	160,000	13,000	251,000	225,000
Idaho Falls, ID	3,579,000	361,000	288,000	140,000
Hanford, WA	810,000	365,000	600,000	199,000

[a]Records incomplete because some were destroyed in a fire; estimated as less than 60,000 Ci.

Source: Alternatives for Managing Wastes from Reactors and Post-Fission Operations in the LWR Fuel Cycle, ERDA 76-43, Vol. 4 of 5.

TABLE II-31

STATUS OF LAND DISTURBED BY SURFACE MINING (ACRES) BY STATE, 1977

State	Land needing reclamation						Land not requiring reclamation	Total land disturbed
	Reclamation not required by any law			Reclamation required by law				
	Coal mines	Sand & gravel	Other mined areas	Coal mines	Sand & gravel	Other mined areas		
Alabama	72,292	16,611	19,929	34,807	5,498	6,252	85,673	241,062
Arkansas	5,623	21,483	11,479	2,859	20	1,592	9,449	52,505
Florida		11,162	235,700		3,365	20,922	61,266	332,415
Georgia	1,680	3,353	24,008	764	4,577	13,818	23,247	71,447
Kentucky	101,637	980	4,712	154,218	2,015	2,785	154,495	421,121
Louisiana		37,324	2,549				10,467	50,340
Mississippi		45,966	7,821				14,445	68,202
North Carolina		11,908	4,792		7,096	3,909	7,000	34,705
Oklahoma	36,118	6,659	14,105	6,298	2,766	4,008	16,258	86,311
South Carolina		9,065	2,128		4,395	3,194	9,815	28,597
Tennessee	29,583	4,950	2,155	3,127	810	1,135	104,596	146,356
Texas	3,310	152,457	37,104	3,725	6,289	4,989	48,456	256,330
Virginia	23,724	3,788	1,251	8,222	3,911	2,003	70,060	112,977
West Virginia	84,868	4,554	995	7,658			137,105	235,180
South	358,835	330,260	368,728	221,678	40,742	64,607	752,332	2,137,548
U.S.	1,093,520	799,042	830,407	570,080	257,851	267,097	1,893,203	5,715,440
% of U.S.	33	41	44	39	16	24	40	37

Source: USDA Soil Conservation Service, Basic Statistics, Status of Land Disturbed by Surface Mining in the U.S. as of July 1, 1977 by States, Draft, Holmberg, G. V. 1977

TABLE II-32

HAZARDOUS WASTES GENERATED BY INDUSTRIES GROUPED BY STANDARD INDUSTRIAL CLASSIFICATIONS 20-30 BY STATE (10^3 METRIC TONS/YEAR)

State	20	22	23	24	25	26	27	28	29	30
Alabama	3.5	19.8	5.5	22.8	0.3	22.6	0.7	401.2	4.4	2.1
Arkansas	3.5	1.8	1.6	20.7	0.7	11.4	0.6	189.2	14.7	1.0
Florida	6.6	2.2	3.4	15.0	0.6	18.8	2.7	859.1	4.4	1.6
Georgia	6.6	47.4	7.6	28.2	0.5	30.5	1.4	526.1	7.4	2.0
Kentucky	3.1	3.0	2.9	12.4	0.3	8.9	1.2	533.6*	7.9	0.9
Louisiana	4.2	8.8	1.0	16.8	0.1	17.6	0.6	1,021.8	48.6	0.0
Mississippi	2.5	3.4	4.1	22.5	0.9	7.2	0.4	211.9	6.4	0.8
North Carolina	5.6	116.2	7.8	32.5	4.8	6.2	1.6	1,177.0	3.9	2.6
Oklahoma	2.2	0.8	1.3	3.6	0.1	2.2	1.0	83.3*	23.1	1.2
South Carolina	1.7	62.7	4.8	14.6	0.3	15.4	0.5	1,033.2	1.5*	1.5*
Tennessee	5.1	12.5	7.2	15.1	1.6	19.2	2.3	1,097.4	3.9	2.4
Texas	11.3	2.5	7.7	29.8	1.1	21.6	4.3	2,320.0	169.5	3.0
Virginia	4.9	18.5	3.9	22.3	1.7	15.1	1.6	1,195.9	2.0*	1.6
West Virginia	0.2	0.4	0.5	5.5	0.1	2.1	0.4	715.3	4.9	0.3
South	61.5	300.0	59.3	261.8	13.1	198.8	19.3	1,217.5	302.6	21.0
U.S.	224.2	403.2	138.3	691.3	29.6	751.3	106.5	32,157.8	742.1	94.2
% of U.S.	27	74	43	38	38	26	18	38	40.8	22

Standard Industrial Classification

20 Food and kindred products
22 Textile mill products
23 Apparel and other textile products
24 Lumber and wood products
25 Furniture and fixtures
26 Paper and allied products
27 Printing and publishing
28 Chemicals and allied products
29 Petroleum and coal products
30 Rubber and misc. plastics products

*Derived using the upper range of employees for firms for 1972, U.S. Dept. Commerce, 1976.

Source: Preliminary Working Draft Environmental Impact Statement for Subtitle C Resource Conservation and Recovery Act of 1976 (RCRA). Volume II, Appendices A-T, (Supporting Documentation). U.S. Environmental Protection Agency, Office of Solid Waste and METREK Division, MITRE Corporation. 1978.

TABLE II-33

HAZARDOUS WASTES GENERATED BY INDUSTRIES GROUPED BY STANDARD INDUSTRIAL CLASSIFICATIONS 31-39 BY STATE (10^3 METRIC TONS/YEAR)

State	31	32	33	34	35	36	37	38	39	Total+
Alabama	2.7	37.1	61.6	37.5	2.9	1.8	6.4	0.1	0.9	633.9
Arkansas	3.3	19.8	8.1	22.6	2.1	2.6	1.7	0.2*	2.4*	308.0
Florida	1.4	60.6	4.6	38.7	4.5	5.4	10.3	0.3	2.1	1,042.3
Georgia	1.2	67.2	16.2	27.9	3.4	2.1	8.9	0.2*	6.2	791.0
Kentucky	1.9	33.0	25.2	30.6	9.2	4.3	4.4	0.2	1.2	684.2
Louisiana	0.1*	29.7	10.1	21.2	2.4	1.2	7.7	<0.1	0.3	1,192.4
Mississippi	0.8	31.7	3.4	12.0	2.3	2.4	10.0	0.1	1.1	323.4
North Carolina	1.4	63.9	9.6	32.3	7.7	5.2	3.1	2.4	1.9	1,485.7
Oklahoma	0.4	29.3	7.2	25.7	6.2	1.7	3.4	0.5*	1.0*	194.2
South Carolina	0.1	40.4	6.9	13.4	5.1	2.4	1.5	1.3	1.5	1,208.8
Tennessee	7.0	68.0	24.9	46.3	6.2	4.7	6.6	1.0	3.8	2,145.2
Texas	1.2	124.9	56.4	110.7	23.7	7.8	21.5	3.5	2.8	2,923.3
Virginia	1.2	38.7	12.7	23.9	3.8	4.5	5.1	1.0*	1.0	1,359.4
West Virginia	0.5	75.0	35.4	11.6	1.6	0.8	1.0	0.3	0.4	856.8
South	23.2	719.3	282.3	454.4	81.1	46.9	91.6	11.2	26.6	15,149.1
U.S.	103.3	2,445.0	1,674.0	2,391.0	461.4	241.3	551.8	96.7	139.2	43,443.1
% of U.S.	22	29	17	19	18	19	17	12	19	35

Standard Industrial Classification

31 Leather and leather products
32 Stone, clay and glass products
33 Primary metal industries
34 Fabricated metal products
35 Machinery, except electrical
36 Electric and electronic equipment
37 Transportation equipment
38 Instruments and related products
39 Misc. manufacturing industries

+Total of Standard Industrial Classes 20-39.
*Derived using the upper range of employees for firms for 1972, U.S. Dept. Commerce, 1976.

Source: Preliminary Working Draft Environmental Impact Statement for Subtitle C Resource Conservation and Recovery Act of 1976 (RCRA). Volume II, Appendices A-T, (Supporting Documentation). U.S. Environmental Protection Agency, Office of Solid Waste and METREK Division, MITRE Corporation. 1978.

TABLE II-34

ANNUAL TONNAGE OF SOLID WASTES FROM CHEMICAL MANUFACTURING BY STATE, 1966

	Process solids, noncombustible	Process solids, combustible	Containers, noncombustible	Containers, combustible	Fly ash from combustion of fuel	Other or unspecified	Total
Alabama	86,000	18,000	2,000	1,000	86,000	1,000	194,000
Arkansas	7,000	9,000	a	3,000	a	a	19,000
Florida	10,000	3,000	a	2,000	a	1,000	17,000
Georgia	117,000	a	a	2,000	a	a	120,000
Kentucky	45,000	24,000	2,000	5,000	60,000	17,000	154,000
Louisiana	46,000	17,000	1,000	3,000	a	12,000	79,000
Mississippi	2,000	a	a	1,000	a	a	3,000
North Carolina	a	46,000	a	a	a	a	47,000
Tennessee	184,000	49,000	a	2,000	136,000	116,000	486,000
Texas	2,371,000	54,000	4,000	17,000	110,000	22,000	2,578,000
Virginia	672,000	12,000	a	2,000	65,000	39,000	790,000
West Virginia	336,000	23,000	1,000	3,000	388,000	22,000	773,000
South	3,876,000	255,000	10,000	41,000	770,000	230,000	5,260,000
U.S.	8,404,000	573,000	64,000	168,000	1,587,000	466,000	11,262,000
% of U.S.	46	45	16	24	49	49	47

[a]Less than 500 ton/yr.

Source: Handbook of Environmental Control, Volume II. Solid Wastes. CRC Press, 1973.

TABLE II-35

NUMBER OF HAZARDOUS WASTE DISPOSAL OPERATIONS
BY TYPE OF DISPOSAL METHOD BY STATE, 1975

	Incineration			Land disposal			
	Rotary kiln	Liquid wastes	Other	Secure landfill	Sanitary landfill	Soil incorporation	Deep well
Kentucky	1		1		2		
Louisiana	1				1		
North Carolina		2					
Oklahoma				1	1	1	
Tennessee			1		1		
Texas		1	1	2	2		3
Virginia			1				

Source: Hayes, A. J., 1975, Hazardous Waste management in the United States, EPA/530/SW-146, March, 1975, 40pp.

TABLE II-36

ESTIMATED NUMBER OF SURFACE IMPOUNDMENTS INCLUDING NUMBER OF GROUP I (50 ACRE) AND GROUP II (7.5 ACRE) SITES BY STATE

State	Group I	Group II	All types
Alabama	228	309	1,590
Arkansas	11	475	834
Florida	22	170	1,948
Georgia	38	191	1,440
Kentucky	452	592	1,279
Louisiana	55	9,338	9,751
Mississippi	30	630	1,715
North Carolina	48	223	1,026
Oklahoma	126	1,213	2,015
South Carolina	7	72	912
Tennessee	86	228	775
Texas	158	6,762	8,439
Virginia	3	26	1,818
West Virginia	704	5,755	6,612
South	1,970	25,984	40,154
U.S.	9,082	64,153	110,150
% of U.S.	22	40	36

Source: U. S. Environmental Protection Agency, Draft Environmental Impact Statement. Criteria for Classification of Solid Waste Disposal Facilities (40CFR Part 257). April, 1978

TABLE II-37

NUMBER AND CAPACITY OF LANDFILLS BY STATE, 1977 (TONS PER DAY-TPD)

State	Number of landfills				Number by size of landfill				Capacity of landfills	
	Permitted	Authorized	Illegal	Total	<10TPD	<100TPD	<300TPD	<700TPD	Tons/day	1000 tons/year
Alabama	127	8	5	140	80	51	4	5	10,600	2,756
Arkansas	74	87	239	400	385	14	1	-	5,550	1,443
Florida	238	67	50	355	247	71	22	15	26,670	6,934
Georgia	123	123	379	625	511	75	25	14	29,910	7,777
Kentucky	144	167	33	344	322	15	5	2	16,620	4,321
Louisiana	60	60	145	265	255	-	10	-	5,550	1,443
Mississippi	78	78	118	274	206	32	25	11	20,460	5,320
North Carolina	170	-	-	170	69	95	6	-	11,990	3,117
Oklahoma	165	165	177	507	227	178	52	50	70,670	18,374
South Carolina	217	-	5	222	113	40	47	22	34,630	9,004
Tennessee	109	12	5	126	31	83	4	8	27,410	7,127
Texas	293	752	52	1097	1008	48	15	26	37,580	9,771
Virginia	209	-	26	235	139	72	24	-	15,790	4,105
West Virginia	51	61	95	207	192	12	3	-	4,020	1,045
South	2,058	1,580	1,329	4,967	3,785	786	243	153	317,450	82,537
U.S.	6,160	6,150	3,511	15,821	12,342	2,389	591	499	856,280	227,313
% of U.S.	33	26	38	31	31	33	41	31	37	36

Source: U.S. Environmental Protection Agency, Draft Environmental Impact Statement, Criteria for Classification of Solid Waste Disposal Facilities (40CFR Part 257). April 1978.

TABLE II-38

NUMBER AND PROCESSED VOLUMES FOR OPERATING MUNICIPAL INCINERATORS BY STATE, 1972

State	Number of incinerators	Average tonnage processed	
		Daily (tons)	Yearly (10^6 tons)
Alabama	0	0	0
Arkansas	0	0	0
Florida	14	3,519	1.28
Georgia	2	990	0.32
Kentucky	7	1,525	0.38
Louisiana	8	1,505	0.41
Mississippi	0	0	0
North Carolina	0	0	0
Oklahoma	0	0	0
South Carolina	0	0	0
Tennessee[1]	0	0	0
Texas	2	850	0.24
Virginia	6	1,550	0.44
West Virginia	0	0	0
South	39	9,939	3.07
U.S.	193	49,932	16.66
% of U.S.	20	20	18

[1]Nashville installed a 720 ton/day heat recovery incinerator in 1974.

Source: Achinger, W. C., and R. L. Baker. Environmental assessment of municipal-scale incinerators. U.S. Environmental Protection Agency Report SW-111 (1973).

TABLE II-39

POPULATION SERVED BY SEWERS WITH ESTIMATES OF SLUDGE PRODUCTION FROM SEWAGE TREATMENT FACILITIES BY STATE, 1975 AND 1976

	Percent of population served by sewers[1]	Percent of population receiving some sort of sewage treatment[1]	Population having some form of sewage treatment[2]	Sludge production in dry tons/year if treatment is[2]	
	1976	1976	1975	Primary[3]	Primary and secondary
Alabama	54.3	53.6	2,051,000	44,900	74,800
Arkansas	49.6	47.9	1,015,000	22,300	37,200
Florida	54.6	51.3	5,000,000	109,500	182,500
Georgia	62.7	60.6	3,176,000	69,600	116,000
Kentucky	47.8	35.4	1,258,000	27,600	46,000
Louisiana	68.4	64.6	2,473,000	54,200	90,300
Mississippi	49.5	49.5	1,164,000	25,500	42,500
North Carolina	44.9	44.0	2,603,000	57,000	95,000
Oklahoma	73.6	73.5	1,993,000	43,600	72,700
South Carolina	47.7	45.3	1,572,000	34,400	57,300
Tennessee	50.0	50.1	2,341,000	51,300	85,500
Texas	78.9	78.7	9,718,000	212,800	354,700
Virginia	47.5	53.3	3,083,000	67,500	112,500
West Virginia	40.6	40.0	742,000	16,200	27,000
South	55.0	53.4	38,189,000	836,400	1,506,500
US	72.7	66.7			

[1]Source: Cost estimates for construction of publicly-owned wastewater treatment facilities - Summaries of technical data, Table 3 and 4, EPA-430/9-76-011 (Feb. 10, 1977).

[2]Source: J. B. Farrell, Overview of sludge handling and disposal, NERC, USEPA, Cincinnati, Ohio (1972) Needs Survey, Table 3.

[3]Primary sludge is 0.12 lbs/capita/day (dry weight), secondary (including primary) is 0.20 lbs/capita/day.

II-E Land

The land resources of the South are described according to natural landscape features, land use, and land ownership. Terrain characteristics are important in determining potential land uses whereas current land use/land ownership patterns often are important aspects of an area that may preclude the development of energy resources or facilities. There is some overlap in the tables and figures describing land use and land ownership as most Federal agencies have narrow land use policies for their lands.

Natural Landscape

The South contains 550 million acres or 29% of the conterminous U.S. (Table II-47). The highest points east of the Mississippi River occur as part of the Appalachian Mountains in North Carolina (Mt. Mitchell - 6,684 feet) and Tennessee (Clingman's Dome - 6,643 feet) although mountains in western Texas exceed 8,000 feet. Nine of the states share parts of the continental shelf and coastal plains with elevations generally below 500 feet (Table II-40 and Figs. II-67 and II-68). The geology primarily consists of sedimentary deposits except for mountain areas (Fig. II-69 and Table II-42). Landform (Table II-41), bedrock geology (Table II-42, Fig. II-69), soils (Table II-43) and Karst terrain (Table II-44) statistics are based on county level data digitized from maps in the National Atlas. Ratings of seismic risk show that suitable sites for building nuclear facilities or other structures requiring stable conditions can be found throughout the South (Fig. II-70).

Land Use

The South has 42% of the land classified as forest, 25% pasture/range and 24% cropland (Tables II-47 to II-50 and Figs. II-71 to II-75). Texas and Oklahoma contain most of the pasture/range with the eastern deciduous forest covering most of the area to the east. The South has experienced significant decreases in cropland except for the Mississippi Delta area and southern Florida, with much of the abandoned cropland converted to managed pine plantations.

Land use data are presented from several sources, including: 1969 Census of Agriculture data (Tables II-47 and II-48) which includes major land and special use statistics, 1967 Conservation Needs Inventory (CNI) (Table II-49, Figs. II-71 through II-75) which gives county statistics for nonfederal land; and the 1975 survey (Table II-50) which presents major uses for regions state aggregations. Land Capability Class maps (Figs. II-76 and II-77) based on the 1967 CNI show the distribution of "prime" agricultural land which was estimated as the sum of Class I (no land use limitations) plus proportions of Class II and Class III acreages (Dideriksen et al. 1977). The Soil Conservation Service has defined Land Resource Regions (Table II-52 and Fig. II-78) which characterize regions by current and potential agricultural land uses. Production statistics for major crops and growing stock volumes for forests are presented (Tables II-53 through II-56; Figs. II-81 through II-84) to indicate land productivity. Other major crops include cotton and hay and the citrus fruits in Florida. Maps of soybean and softwood (pine)

production are included due to their sensitivity to SO_2 pollution. The maps are based on total production in a county divided by the area of a county to emphasize major crop areas.

Land Ownership

Less than 5% of the region is owned by the Federal Government (Tables II-59 and II-60) although the South contains a variety of national and state parks, forests, grasslands, refuges, wilderness areas, wild rivers, scenic trails, seashores, historic sites, ecological reserves, and other natural areas (Tables II-57 to II-58, II-62 to II-66, Figs. II-85 to II-92). These special land use categories are often important in land use planning as they may preclude other types of land use on adjacent lands. It is difficult to compile a complete list of these areas for a specific site or county due to the number of groups and agencies involved. Wilderness preservation is a land use for which tracts of roadless lands administered by the Forest Service, Park Service, Bureau of Land Management, and Fish and Wildlife Service are currently being evaluated for incorporation into the National Wilderness System (Table II-58 and Fig. II-85). The National Scenic Rivers and Trails systems (Figs. II-86 and II-87) are also being expanded. There is a need to be able to readily determine the location of these areas along with parks, refuges, and endangered species habitats.

Data Quality, Gaps, Limitations

Data on the natural landscape were obtained primarily from national maps and have limitations associated with the digitizing procedure and

accuracy of the map. Land use and ownership data are generally out-of-date as shown in the matrix on the next page. Other limitations on land ownership data are that the level of resolution (states) is not adequate for regional assessments and the data are scattered between many agencies.

	Resolution of data presented	Finer resolution of available data	Computerized?[1]
E. Land			
1. Natural Landscape			
a. Land Form	Region	County	Yes (ORNL GDB)
Elevation	State	County, 2 Acre Grid	Yes (ORNL GDB) Yes (TOPOCOM)
b. Geology,	State	County	Yes (ORNL GDB)
Soils	Region	County	Yes (ORNL GDB)
c. Seismic Risk	State	County	Yes (ORNL GDB)
2. Land Use			
a. Land Use, Land Capability	State; 1967	County; 1967	Yes (Cons. Needs Inv.)
b. Agriculture	State; 1975	County; 1949, 54,59,64,69,74	Yes (Census of Ag)
		County; 1972-1976	Yes (USDA SRS)
c. Forestry	State; 1965-76 (Varies by State)	County, Survey Plot	Yes (USDA FS)
d. Recreation and Natural Areas	Sites	Sites	Yes, in several data data bases, not readily available

	Resolution of data presented	Finer resolution of available data	Computerized?[1]
3. Land Ownership			
a. Federal	State	County	Yes
b. State	State	?	?
c. Indian	State	?	?
d. Private	Not Available		

[1]ORNL GDB - ORNL Geoecology Data Base.
TOPOCOM - Defense Mapping Agency Elevation Data Base.
Cons. Needs Inv. - USDA 1967 Conservation Needs Inventory.
Census of Ag - USDA 1969 Census of Agriculture
USDA SRS - USDA Statistical Reporting Service.
USDA FS - USDA Forest Service Continuous Forest Inventory.

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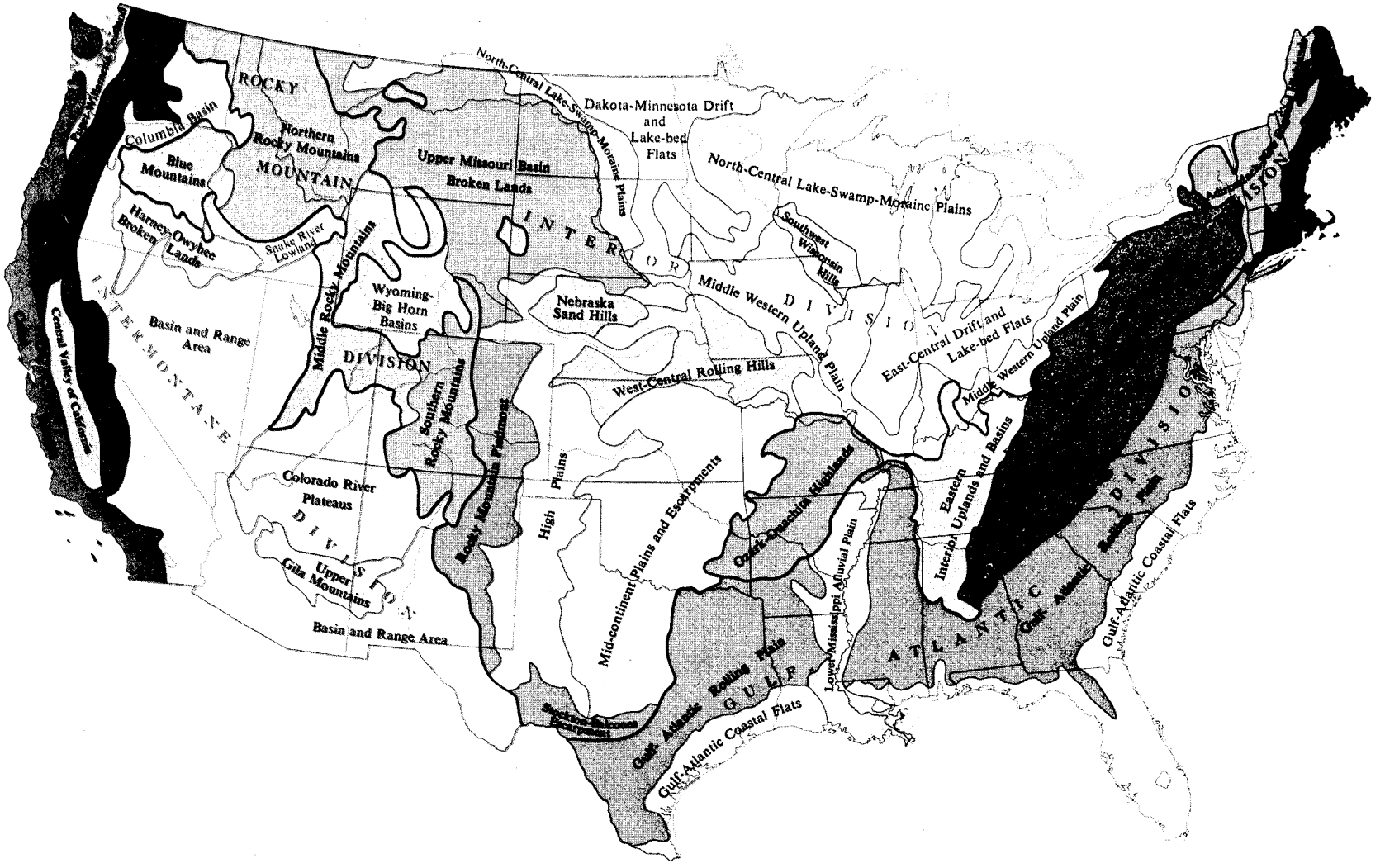

Fig. II-67. Physical subdivision. Sources: The National Atlas of the United States, USGS, 1970. p. 65.

TABLE II-40

ELEVATION CLASS ACREAGES BY STATE

STATE	E0_500	E5_1000	E10_2000	E20_5000	E50_9000
ALABAMA	23637647	8816323	.	.	.
ARKANSAS	20599063	6542545	5392509	654800	.
FLORIDA	34620040	.	.	.	.
GEORGIA	22536409	9290814	4361739	984658	.
KENTUCKY	5091511	13153496	6728880	404733	.
LOUISIANA	28757240	.	.	.	.
MISSISSIPPI	26718155	3554065	.	.	.
NORTH CAROLINA	17510470	6555270	2703619	4102658	362973
OKLAHOMA	1371011	16446962	20069753	6133644	.
SOUTH CAROLINA	13440635	5055028	633326	216561	.
TENNESSEE	6285868	9871475	8597608	1696119	.
TEXAS	50705551	23803921	29452759	61497259	2308870
VIRGINIA	11073967	4256099	4036244	6096820	.
WEST VIRGINIA	157899	3973208	6381805	4891548	.
SOUTH	262505466	111319206	88358242	86678800	2671843

Source: ORNL Geoecology Database, from map Topographic Relief, National Atlas Sheet Number 59, USGS, 1970.

Column Legend: E0-500 - Elevation Class 0-500 feet; E5-1000 - Elevation Class 500-1000 feet; E10-2000 - Elevation Class 1000-2000 feet; E20-5000 - Elevation Class 2000-5000 feet; E50-9000 - Elevation Class 5000-9000 feet.

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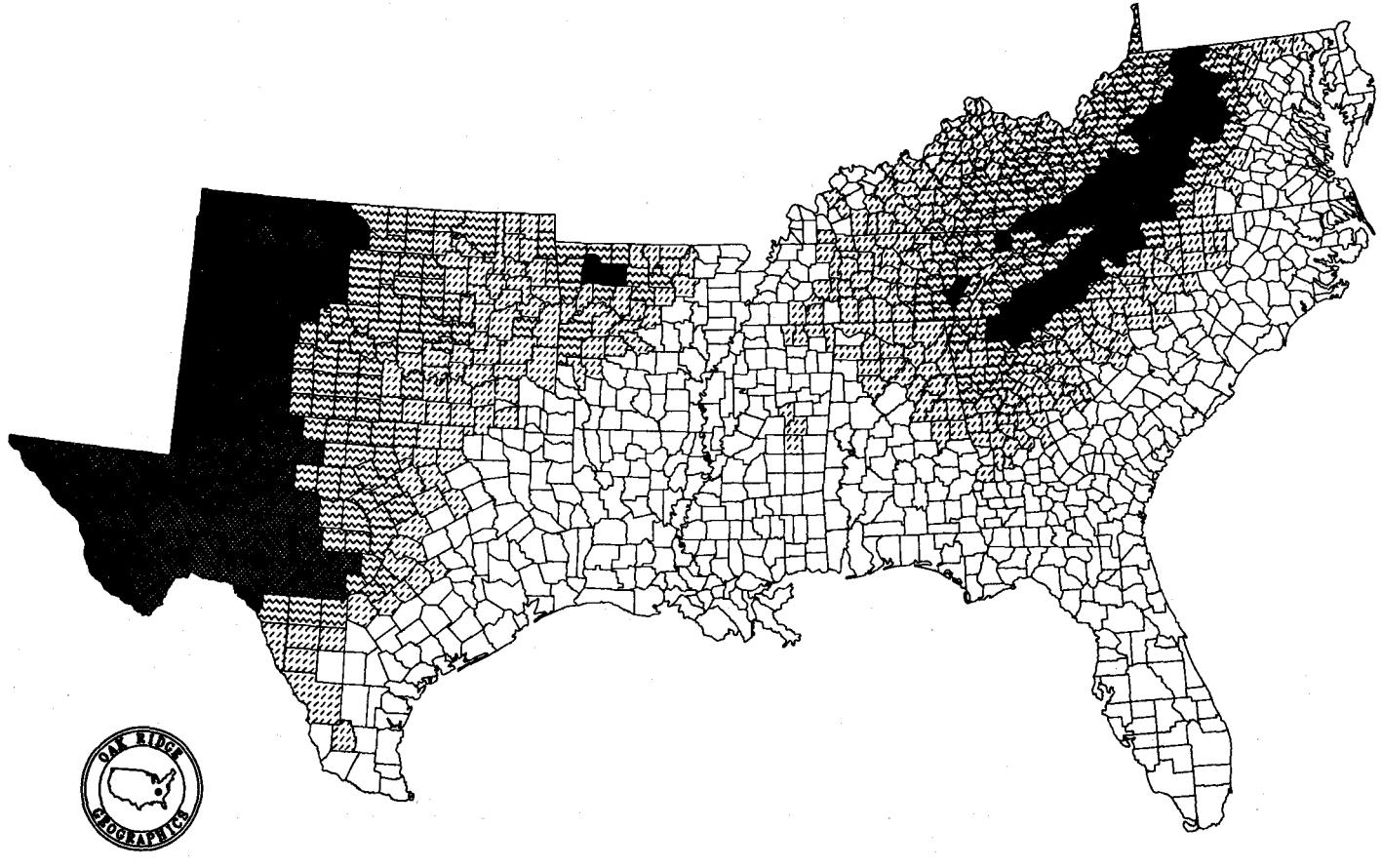

Fig. II-68. County elevation classification. Source: ORNL Geoecology Database, from USGS, 1970, The National Atlas of the United States, p. 59.

TABLE II-41

LAND SURFACE FORM ACREAGES IN THE SOUTH (NUMBER OF COUNTIES AND ACREAGE)

LAND_S_C	LAND_S_D	N_COUNT	LAND_S_A
11	> 80% GENTLY SLOPING, 0- 100FT LOCAL RELIEF	354	115444686
122	> 80% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN LOWLAND	54	12222423
123	> 80% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN UPLAND	123	38742556
213	50-80% GENTLY SLOPING, 0- 100FT LOCAL RELIEF, 50-75% IN LOWLAND	5	689864
222	50-80% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN LOWLAND	339	95408730
223	50-80% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN UPLAND	469	100505954
231	50-80% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, > 75% IN LOWLAND	41	8027137
232	50-80% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, 50-75% IN LOWLAND	59	11487315
233	50-80% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, 50-75% IN UPLAND	125	33160697
234	50-80% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, > 75% IN UPLAND	12	2092173
241	50-80% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, > 75% IN LOWLAND	39	5262934
242	50-80% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, 50-75% IN LOWLAND	16	4911352
243	50-80% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, 50-75% IN UPLAND	9	1446335
244	50-80% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, > 75% IN UPLAND	11	1058125
251	50-80% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF, > 75% IN LOWLAND	12	2115961
252	50-80% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF, 50-75% IN LOWLAND	8	9525292
261	50-80% GENTLY SLOPING, 3000-5000FT LOCAL RELIEF, > 75% IN LOWLAND	5	3678722
322	20-50% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN LOWLAND	21	2786221
323	20-50% GENTLY SLOPING, 100- 300FT LOCAL RELIEF, 50-75% IN UPLAND	23	2422182
331	20-50% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, > 75% IN LOWLAND	34	4490791
332	20-50% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, 50-75% IN LOWLAND	90	14888564
333	20-50% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, 50-75% IN UPLAND	67	10878245
334	20-50% GENTLY SLOPING, 300- 500FT LOCAL RELIEF, > 75% IN UPLAND	8	713538
341	20-50% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, > 75% IN LOWLAND	25	5602630
342	20-50% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, 50-75% IN LOWLAND	35	4390931
343	20-50% GENTLY SLOPING, 500-1000FT LOCAL RELIEF, 50-75% IN UPLAND	22	4929342
351	20-50% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF, > 75% IN LOWLAND	74	11247867
353	20-50% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF, 50-75% IN UPLAND	22	3285023
354	20-50% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF, > 75% IN UPLAND	6	738200
43	< 20% GENTLY SLOPING, 300- 500FT LOCAL RELIEF	13	1585612
44	< 20% GENTLY SLOPING, 500-1000FT LOCAL RELIEF	94	17605062
45	< 20% GENTLY SLOPING, 1000-3000FT LOCAL RELIEF	113	19809985

Source: ORNL Geoecology Database, from map by Hammond, E. H., 1964, Classes of Land-Surface Form in the Forty-eight States, U.S.A.

Column Legend: LAND_S_C - Land Surface Code; LAND_S_D - Land Surface Description; N_COUNT - Number of County Occurrences; LAND_S_A - Land Surface Acreages.

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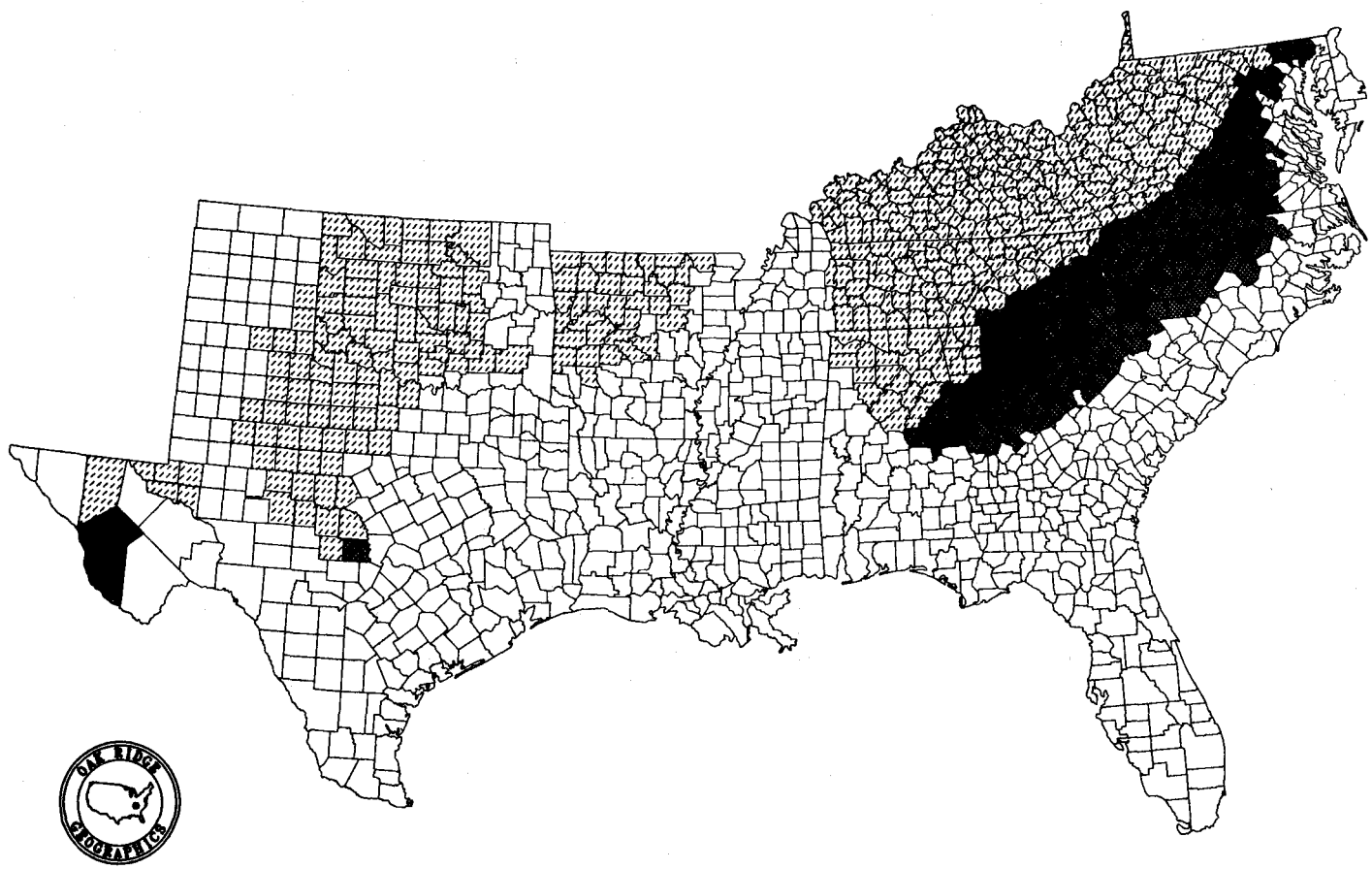

Fig. II-69. County bedrock geology classification. Source: ORNL Geoecology Database, from USGS, 1970, The National Atlas of the United States, p. 74.

TABLE II-42

BEDROCK LITHOLOGY ACREAGES BY STATES

STATE	IN_IGNUS	METAMOR	CON_SED	UNC_SED	EX_IGNUS
ALABAMA	810907	2122341	9416966	20103755	.
ARKANSAS	.	.	15438790	17931899	.
FLORIDA	.	.	.	34620040	.
GEORGIA	2479229	10086966	2003831	22532673	.
KENTUCKY	.	.	23750578	1628041	.
LOUISIANA	.	.	.	28757240	.
MISSISSIPPI	.	.	.	30272220	.
NORTH CAROLINA	3304582	13563230	1251682	13115495	.
OKLAHOMA	.	372128	28486136	15099748	.
SOUTH CAROLINA	2141308	5280587	.	11923654	.
TENNESSEE	.	805152	18977025	6668892	.
TEXAS	301763	813688	35040139	128018644	3550658
VIRGINIA	1730894	9408796	9213196	5110244	.
WEST VIRGINIA	.	67460	15337000	.	.
SOUTH	10768683	42520349	158915345	335782549	3550658

Source: ORNL Geoecology Database, from map Geology, National Atlas Sheet Number 74, USGS, 1970.

Column Legend: IN_IGNUS - Intrusive Igneous; METAMOR - Metamorphic; CON_SED - Consolidated Sedimentary; UNC_SED - Unconsolidated or Weakly Consolidated Sedimentary; EX_IGNUS - Extrusive Igneous.

TABLE II-43

PRINCIPAL SOIL ORDERS AND SUBORDERS ACREAGES IN THE SOUTH
(NUMBER OF COUNTIES AND ACREAGE)

SOILS_C	SOILS_D	N_COUNT	SOILS_A
A01	ALFISOLS, ALBAQUALFS	16	3384073
A02	ALFISOLS, OCHRAQUALFS	27	3732731
A06	ALFISOLS, FRAGIUDALFS	77	12225813
A07	ALFISOLS, HAPLUDALFS	89	11076054
A08	ALFISOLS, PALEUDALFS	29	3874089
A09	ALFISOLS, HAPLUSTALFS	96	29505709
A10	ALFISOLS, PALEUSTALFS	76	21740833
D05	ARIDISOLS, CALCIORTHIDS	15	9231823
E01	ENTISOLS, PSAMMAQUENTS	12	3517065
E03	ENTISOLS, TORRIORTHENTS	1	471772
E04	ENTISOLS, TORRIORTHENTS(SHALLOW)	18	18640482
E05	ENTISOLS, USTORTHENTS	1	332304
E10	ENTISOLS, QUARTZIPSAMMENTS	80	11624053
E13	ENTISOLS, USTIPSAMMENTS	6	2367931
H02	HISTOSOLS, HISTOSOLS(DECOMPOSED)	38	6051026
M02	MOLLISOLS, HAPAQUOLLS	20	3047566
M06	MOLLISOLS, ARGIUDOLLS	33	7433339
M07	MOLLISOLS, HAPLUDOLLS	15	2879853
M08	MOLLISOLS, HAPLUDOLLS(SHALLOW)	11	1936291
M09	MOLLISOLS, ARGIUSTOLLS	111	43450073
M10	MOLLISOLS, CALCIUSTOLLS	16	6010744
M11	MOLLISOLS, CALCIUSTOLLS(SHALLOW)	6	2514462
M12	MOLLISOLS, HAPLUSTOLLS	26	7011473
M13	MOLLISOLS, HAPLUSTOLLS(SHALLOW)	32	13667843
N05	INCEPTOSOLS, HAPLAQUEPTS	126	27467741
N06	INCEPTOSOLS, HUMAQUEPTS	9	1248819
N08	INCEPTOSOLS, DYSTROCHREPTS	170	30922058
N09	INCEPTOSOLS, EUTROCHREPTS	20	2316334
N11	INCEPTOSOLS, USTOCHREPTS	22	5288480
S01	SPODOSOLS, HAPLAQUODS	62	14850272
U01	ULTISOLS, OCHRAQUULTS	127	23242111
U04	ULTISOLS, FRAGIUDULTS	39	5040635
U05	ULTISOLS, HAPLUDULTS	418	88836870
U06	ULTISOLS, PALEUDULTS	467	106682437
V01	VERTISOLS, CHROMUDERTS	13	1510132
V02	VERTISOLS, PELLUDERTS	18	6898534
V03	VERTISOLS, CHROMUSTERTS	12	2717661
V04	VERTISOLS, PELLUSTERTS	39	11484504

Source: ORNL Geoecology Database, from map Soils, National Atlas Sheet Number 86, USGS, 1970.

Column Legend: SOILS_C - Principal Soils Code; SOILS_D - Soils Description; N_COUNT - Number of County OCCURRENCES; SOILS_A - Soils Acreage.

TABLE II-44

KARST TERRAIN ACREAGES IN THE SOUTH (NUMBER OF COUNTIES AND ACREAGE)

KARST_C	KARST_D	N_COUNT	KARST_A
11	LIMESTONE/DOLOMITE-PONORS + DOLINES ON PLAINS/FLOORS, UNDISSECTED UPLAND	139	17619115
12	LIMESTONE/DOLOMITE-PONORS + DOLINES WITH EXTENSIVE KARRENFELDER ON PLAIN	46	4477290
13	LIMESTONE/DOLOMITE-DOLINE PONDS AND LAKES ON PLAINS	24	5472219
14	LIMESTONE/DOLOMITE-DOLINES AND UVALA ON RIDGES AND DISSECTED PLAINS	91	13773853
15	LIMESTONE/DOLOMITE-COLLAPSED DOLINES/UVALA ON PLAINS, SMALL POLJES	28	2762924
21	GYPSUM AND SALT-DOLINES AND PONORS ON PLAINS	7	703555
32	PSEUDOKARST-BASINS ON PLAINS OF WEATHERED LAVA	1	73192
33	PSEUDOKARST-SINKHOLES AND BASINS ON GRAVEL/SAND PLAINS AND PLATEAUS	57	18517363
34	PSEUDOKARST-SHALLOW SINKHOLES ON GRANITE AND DIORITE UPLANDS	4	1538029
41	PSEUDOKARST-KARRENFELDER OUTSIDE OF AREAS OF OTHER KARST TYPES	9	1137597

Source: ORNL Geoecology Database, from map Karstlands and Caverns, National Atlas Sheet Number 77, USGS, 1970.

Column Legend: KARST_C - Karst Terrain Code; KARST_D - Karst Description; N_COUNT - Number of County Occurrences; KARST_A - Karst Acreage.

TABLE II-45

LAND COVERED WITH SAND OR WATER IN THE SOUTH, 1964 (NUMBER OF COUNTIES AND ACREAGE)

LAND_S_C	LAND_S_D	N_COUNT	LAND_S_A
5	> 50% OF AREA COVERED BY SAND	223	41074156
6	10-50% OF AREA COVERED WITH STANDING WATER	284	57338510
7	> 50% OF AREA COVERED WITH STANDING WATER	113	26893174

Source: ORNL Geoecology Database, from map Hammond, 1964, Classes of Land-Surface Form in the Forty-eight States, U.S.A.

Column Legend: LAND_S_C - Land Surface Code; LAND_S_D - Land Surface Description; N_COUNT - Number of County Occurrences; LAND_S_A - Land Surface Acreage.

TABLE II-46

RELATIVE SEISMIC SUITABILITY ACREAGES FOR NUCLEAR ENERGY SITES BY STATE, 1975 (ACRES)

STATE	SEISM_1A	SEISM_2A	SEISM_3A
ALABAMA	13286688	19167282	0
ARKANSAS	6286708	24039586	2922077
FLORIDA	34620030	0	0
GEORGIA	16603308	20570313	0
KENTUCKY	16940374	5209275	3228972
LOUISIANA	28757240	.	.
MISSISSIPPI	17871834	12400387	0
NORTH CAROLINA	18010880	13224111	0
OKLAHOMA	11027116	32994255	0
SOUTH CAROLINA	0	17648121	1697429
TENNESSEE	9132622	14491367	2827081
TEXAS	126467552	41300808	0
VIRGINIA	9108631	16354500	0
WEST VIRGINIA	2736405	12668056	0
SOUTH	310849385	230068057	10675558

Source: U. S. Nuclear Regulatory Commission, 1976, Nuclear Energy Center Site Survey - 1975 NUREG-0001. Part V of V.

Column Legend: SEISM_1A - Acreage of Low Seismic Risk; SEISM_2A - Acreage in which specific sites can be found with low seismic risk; SEISM_3A - Acreage of high seismic risk.

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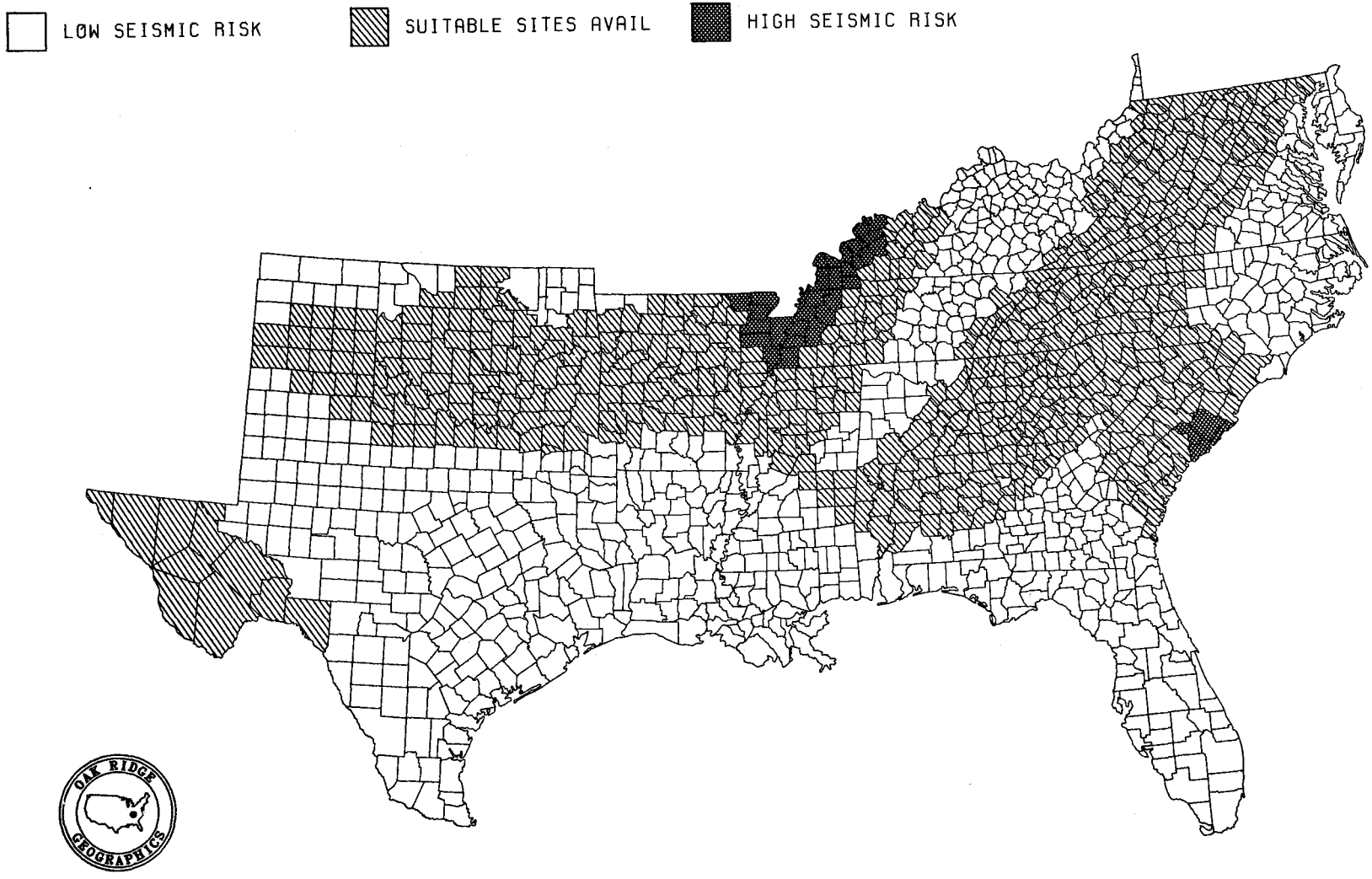

Fig. II-70. County seismic suitability classification. Source: US Nuclear Regulatory Commission, 1976. Nuclear Energy Center Site Survey-1975.

TABLE II-47

MAJOR LAND USES BY STATE, 1969 (10^3 ACRES)

	Cropland	Pasture/ range	Forest[a]	Special uses[b]	Other uses[c]	Total area
Alabama	5,885	2,410	21,748	1,909	500	32,452
Arkansas	10,202	2,895	18,237	1,501	410	33,245
Florida	3,773	5,834	17,753	4,794	2,464	34,618
Georgia	7,103	1,275	25,157	2,747	885	37,167
Kentucky	9,810	1,871	11,887	1,524	284	25,376
Louisiana	5,962	2,674	15,342	1,803	2,974	28,755
Mississippi	8,394	2,864	16,892	1,290	829	30,269
North Carolina	6,480	1,216	20,224	2,693	618	31,231
Oklahoma	16,036	16,599	8,926	2,142	317	44,020
South Carolina	3,663	979	12,403	1,614	685	19,344
Tennessee	8,652	2,195	12,820	2,236	547	26,450
Texas	40,007	94,750	24,064	7,026	1,919	167,766
Virginia	4,925	2,282	16,075	1,961	216	25,459
West Virginia	1,763	863	12,126	597	56	15,405
South	132,655	138,707	233,654	33,837	12,704	551,557
U.S.(48)	471,707	601,004	602,768	146,659	74,821	1,896,959
% of U.S.	28	23	39	23	17	29

[a]Excluding parks and special use areas.

[b]Urban transportation, recreation, and others.

[c]Marshes, swamps, bare rocks, deserts, and tundra.

Source: USDA, Economic Research Service, Agriculture Economic Report No. 247, Appendix Table 1.

TABLE II-48

LAND IN SPECIAL USE CATEGORIES BY STATE, 1969 (10^3 ACRES)

State	Urban	Rural transportation	Rural parks	Wildlife refuges	National defense, industrial	State institutional, misc.	Farmsteads, farm roads	Total
Alabama	792	612	50	39	179	87	150	1,909
Arkansas	401	414	27	341	95	21	202	1,501
Florida	1,587	714	1,056	255	703	364	115	4,794
Georgia	963	545	56	428	549	51	155	2,747
Kentucky	444	487	110	54	168	34	227	1,524
Louisiana	592	364	13	495	149	20	170	1,803
Mississippi	439	404	50	78	21	75	223	1,290
North Carolina	823	626	436	288	289	26	205	2,693
Oklahoma	557	628	73	342	183	60	299	2,142
South Carolina	490	447	64	163	298	50	102	1,614
Tennessee	784	439	398	162	190	39	224	2,236
Texas	2,731	1,677	1,095	351	480	224	468	7,026
Virginia	774	366	309	150	193	33	136	1,961
West Virginia	197	191	62	70	2	25	50	597
South	11,574	7,914	3,799	3,216	3,499	1,109	2,726	33,837
U.S.(48)	34,390	25,705	41,272	12,117	22,888	1,892	8,395	146,659
% of U.S.	34	31	9	27	15	59	32	23

Source: USDA, Economic Research Service, AER No. 247, Appendix Table 10.

TABLE II-49

LAND USE ACREAGES BY STATE, 1967

STATE	URBAN	FEDERAL	CROPS	PASTURE	FOREST	OTHER	TOTAL
ALABAMA	1364312	935430	5113878	3487309	20837633	858312	32596892
ARKANSAS	1095095	2877431	8575560	3893428	16308115	718523	33468152
FLORIDA	1601070	2806751	3830443	4784488	18989714	2708096	34720560
GEORGIA	1108679	1840391	6522297	2859211	23711492	1220155	37262802
KENTUCKY	834858	1047416	6586739	5164880	10988166	888862	25510880
LOUISIANA	1063808	970247	5123409	2837642	14925595	3785567	28596268
MISSISSIPPI	1165646	1491877	7274406	3988091	15502632	827588	30250140
NORTH CAROLINA	1461711	1877967	6543769	1653978	18355495	1438426	31331346
OKLAHOMA	1545584	1041357	12992641	18953655	8580907	704967	43819111
SOUTH CAROLINA	1031000	1042667	3865413	1037684	11427073	934431	19338269
TENNESSEE	1392259	1352180	7008724	3464491	12206586	1019286	26443526
TEXAS	4843215	2439814	35630331	99686185	22681747	2719796	168001086
VIRGINIA	951549	2124510	4023083	3408595	14001390	903924	25455381
WEST VIRGINIA	468420	947192	1105930	1836993	10429867	613379	15401780
SOUTH	19927206	22795230	114196623	157056630	218946412	19341312	552196193

Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory, USDA.

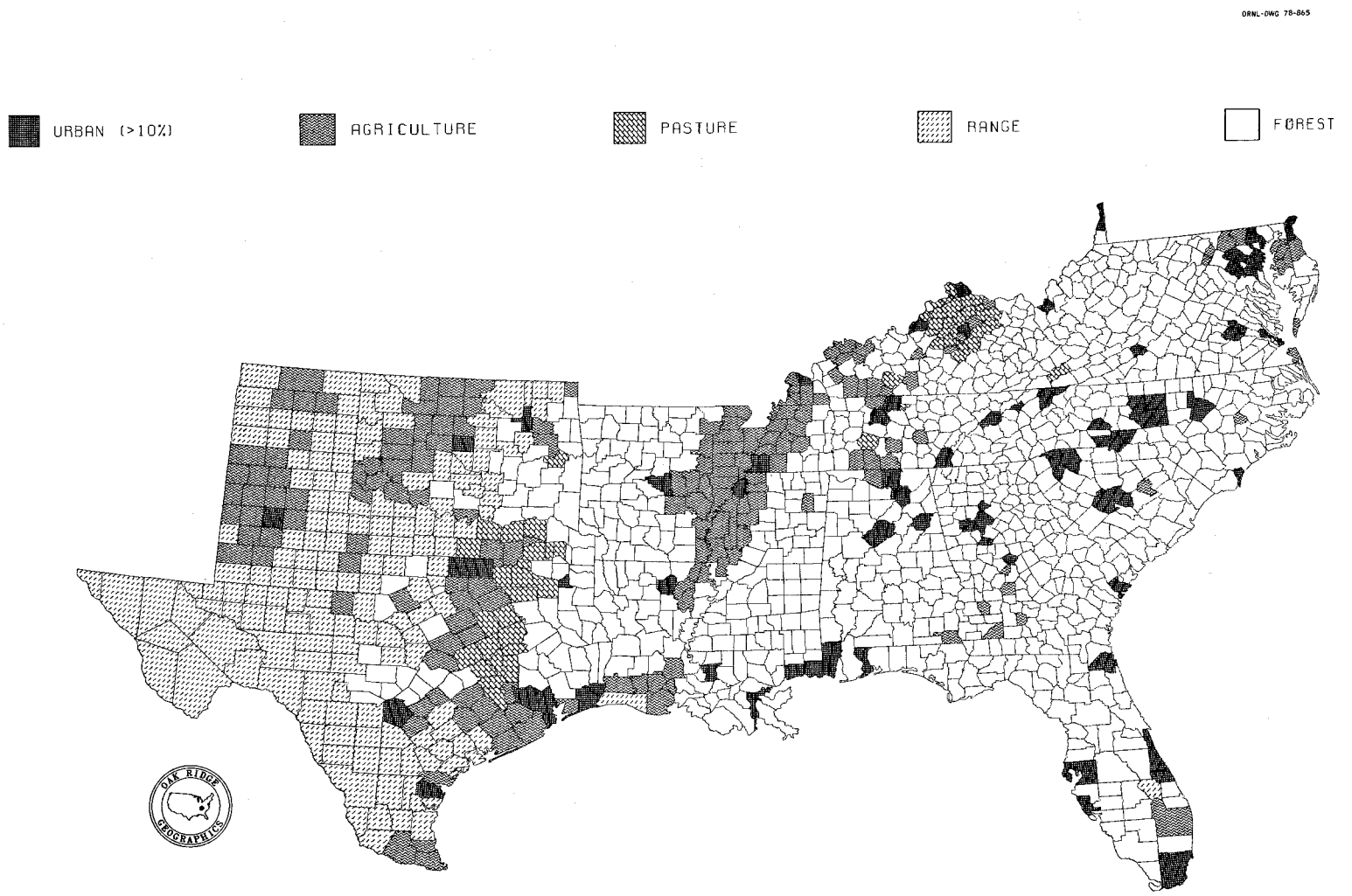

Fig. II-71. County land use classification, 1967. Source: ORNL Geoecology Database from 1967 Conservation Needs Inventory.

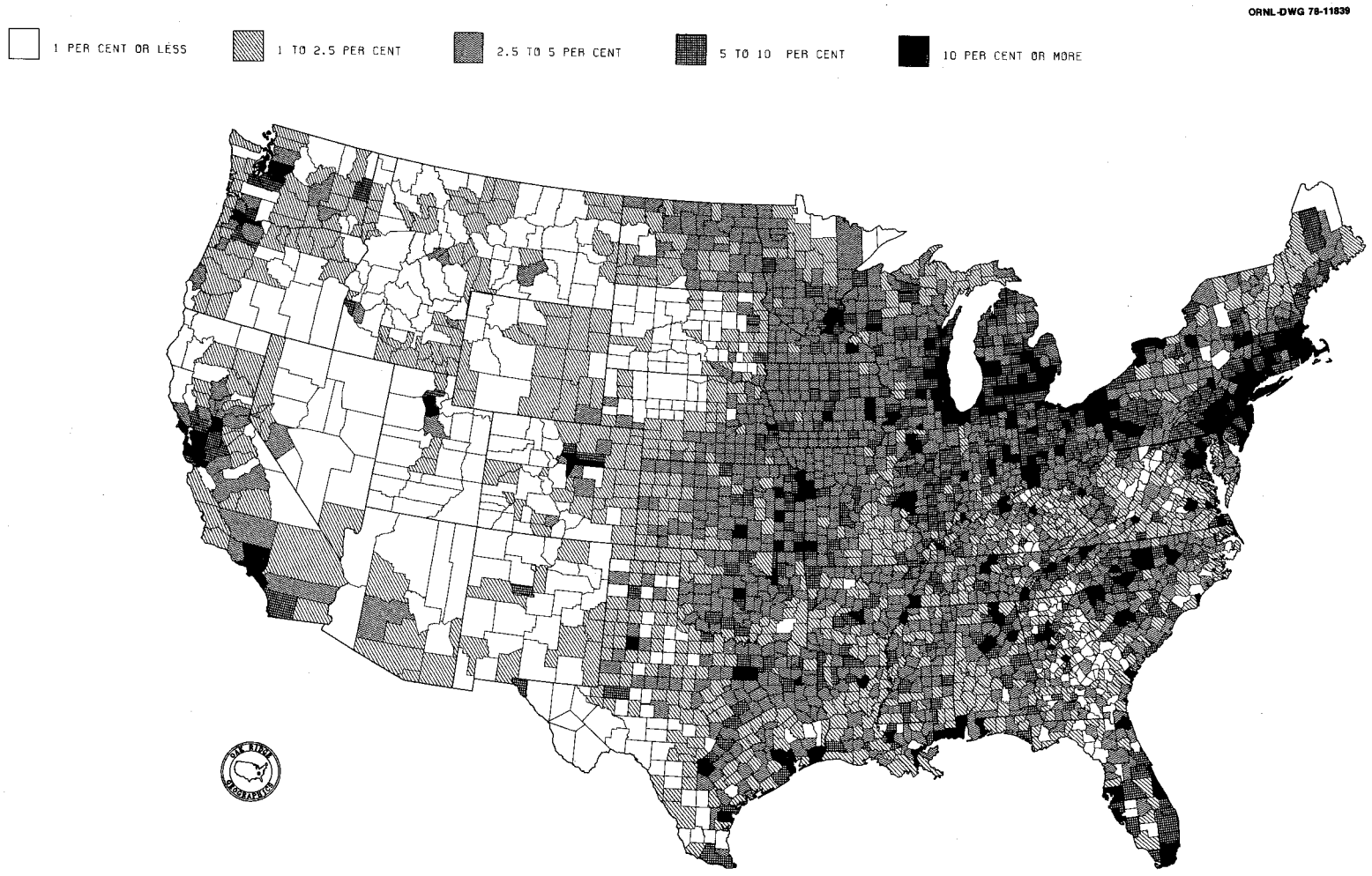

Fig. II-72. Urban land use, 1967. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

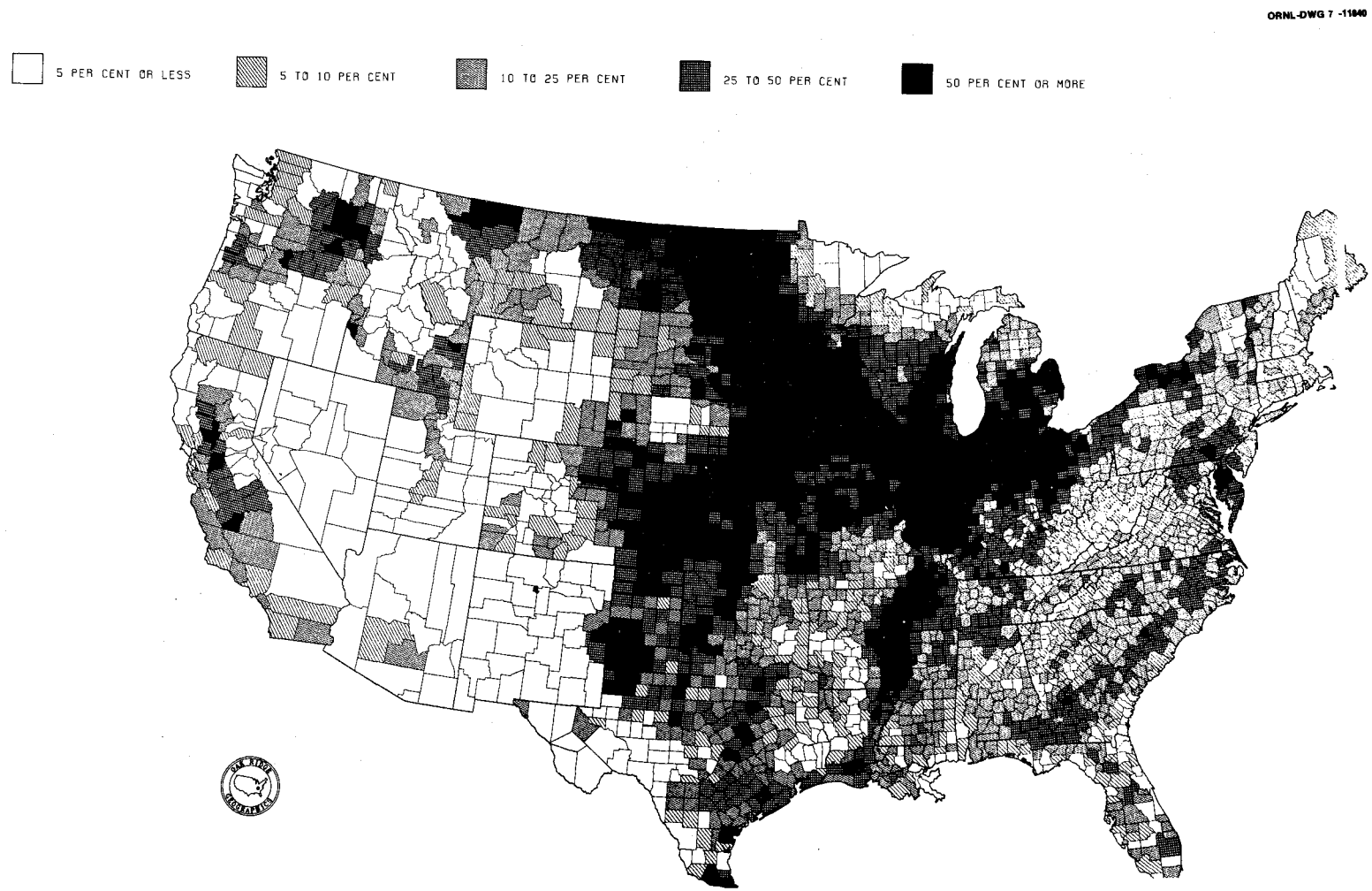

Fig. II-73. Cropland, 1967. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

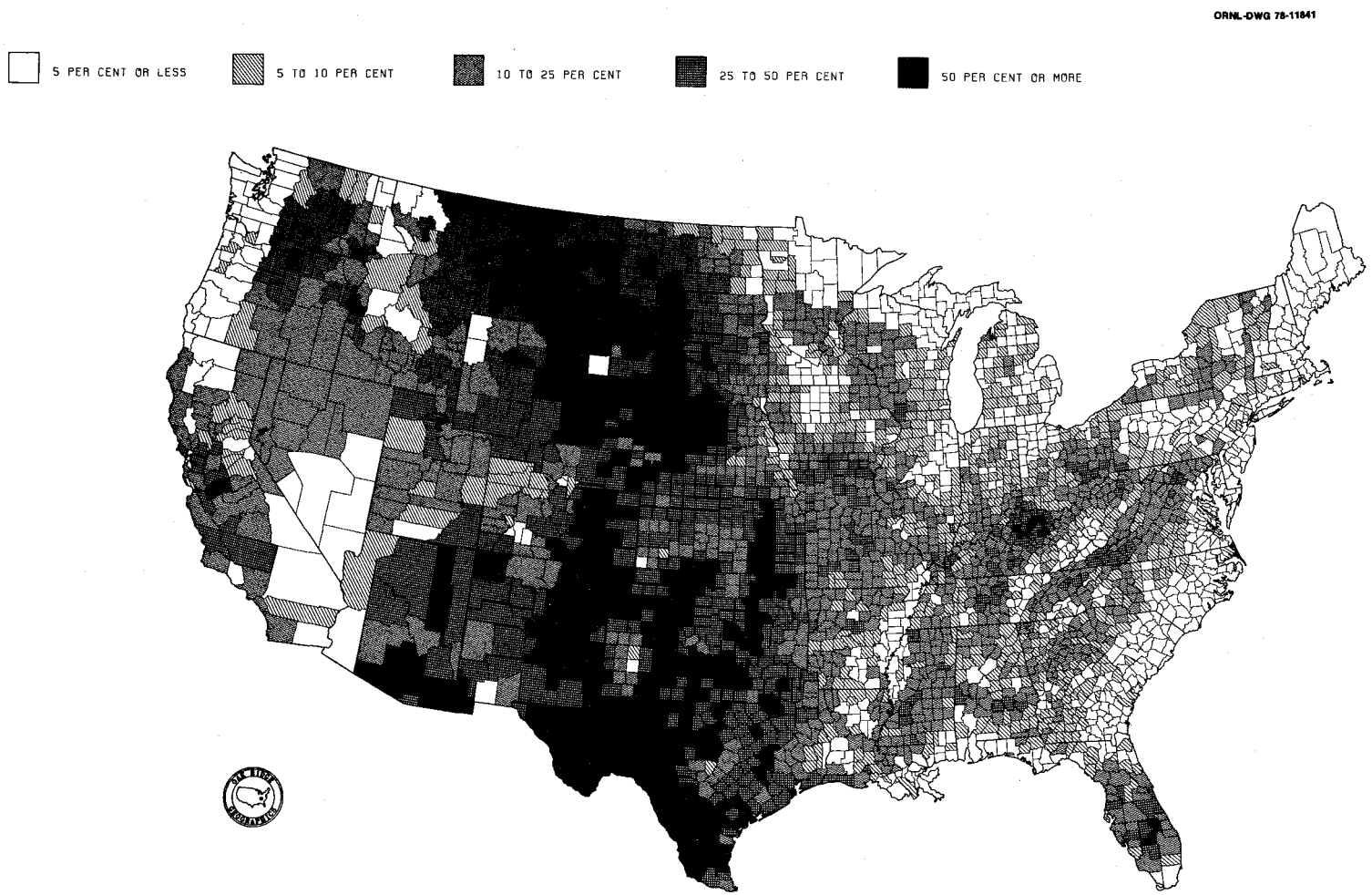

Fig. II-74. Pasture and Range land. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

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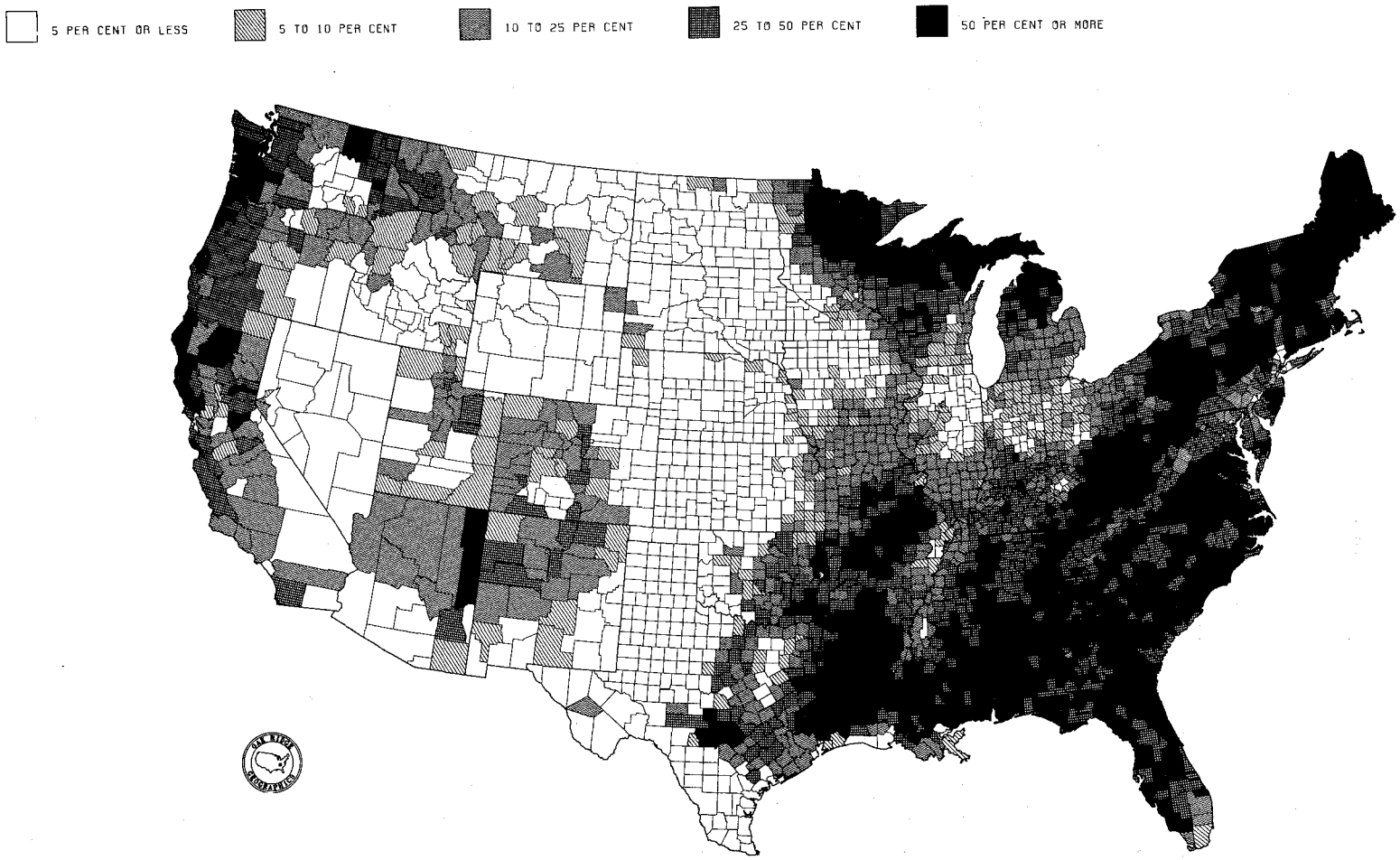

Fig. II-75. Nonfederal Forest land. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

TABLE II-50

MAJOR LAND USE BY FARM PRODUCTION REGION, 1958, 1967, 1975 (10^3 ACRES)

	Cropland			Pasture and range		
	1958	1967	1975	1958	1967	1975
Appalachian	27,362	23,406	20,308	15,657	18,412	21,874
Southeast	20,385	19,286	16,519	13,930	13,558	18,810
Delta States	20,719	19,145	20,239	9,331	12,166	12,475
Southern Plains	56,251	48,023	41,062	109,447	119,497	139,227
South	124,717	109,860	98,128	148,365	163,633	192,386
U.S.	447,392	430,178	399,718	484,717	504,871	568,681
% of U.S.	28%	26%	25%	31%	32%	34%

	Forest			Other land		
	1958	1967	1975	1958	1967	1975
Appalachian	64,014	65,230	63,066	6,148	4,060	3,410
Southeast	70,392	73,293	65,236	8,313	5,325	5,006
Delta States	48,559	47,199	44,401	4,724	4,115	4,565
Southern Plains	33,737	31,056	16,665	2,945	2,651	1,782
South	216,702	216,778	189,368	22,130	16,151	14,763
U.S.	449,651	450,252	372,856	66,271	55,603	67,598
% of U.S.	48%	48%	51%	33%	29%	22%

Source: Dideriksen et al., 1977, Potential Cropland Study, USDA, Soil Conservation Service, Statistical Bulletin No. 578, Table 1.

TABLE II-51

LAND CAPABILITY BY STATE, 1967 (ACRES)

STATE	LCC_1	LCC_2_4	LCC_5_7	LCC_8	PRIM_LND
ALABAMA	830653	16909244	12395118	7787	6831960
ARKANSAS	1254762	19649855	8369341	0	10148139
FLORIDA	161186	19120254	10035844	755803	3407644
GEORGIA	750578	21231403	12062302	47495	8710037
KENTUCKY	1109620	10858175	11517273	22423	6305264
LOUISIANA	998652	15952500	7170409	1940666	8258607
MISSISSIPPI	754476	17796188	8744701	174	8752181
NORTH CAROLINA	486973	19265294	7799972	298449	8045153
OKLAHOMA	1618250	22975304	16326046	45696	9522651
SOUTH CAROLINA	553745	12640631	3745529	214535	5690541
TENNESSEE	1857899	11544766	10152842	0	6411327
TEXAS	4089811	84237739	71349181	584379	24523182
VIRGINIA	474383	13226631	8298970	265418	6263339
WEST VIRGINIA	61930	3155096	10649817	71765	1129552
SOUTH	15002918	288563080	198617345	4254590	113999577

Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory, USDA.

Column Legend: LCC_1 - Land Capability Class 1 (No land use restrictions); LCC_2_4 - Sum of Land Capability Classes 2,3, and 4; LCC_5_7 - Sum of Land Capability Classes, 5,6 and 7 (Major land use restrictions); LCC_8 - Land Capability Class 8 (Severe land use restrictions); PRIM_LND - An Approximation of Prime Agricultural Land Estimated by the Sum of LCC_1 + .87*LCC_2 (erosion hazards) + .46*LCC_3 (wetness limitations).

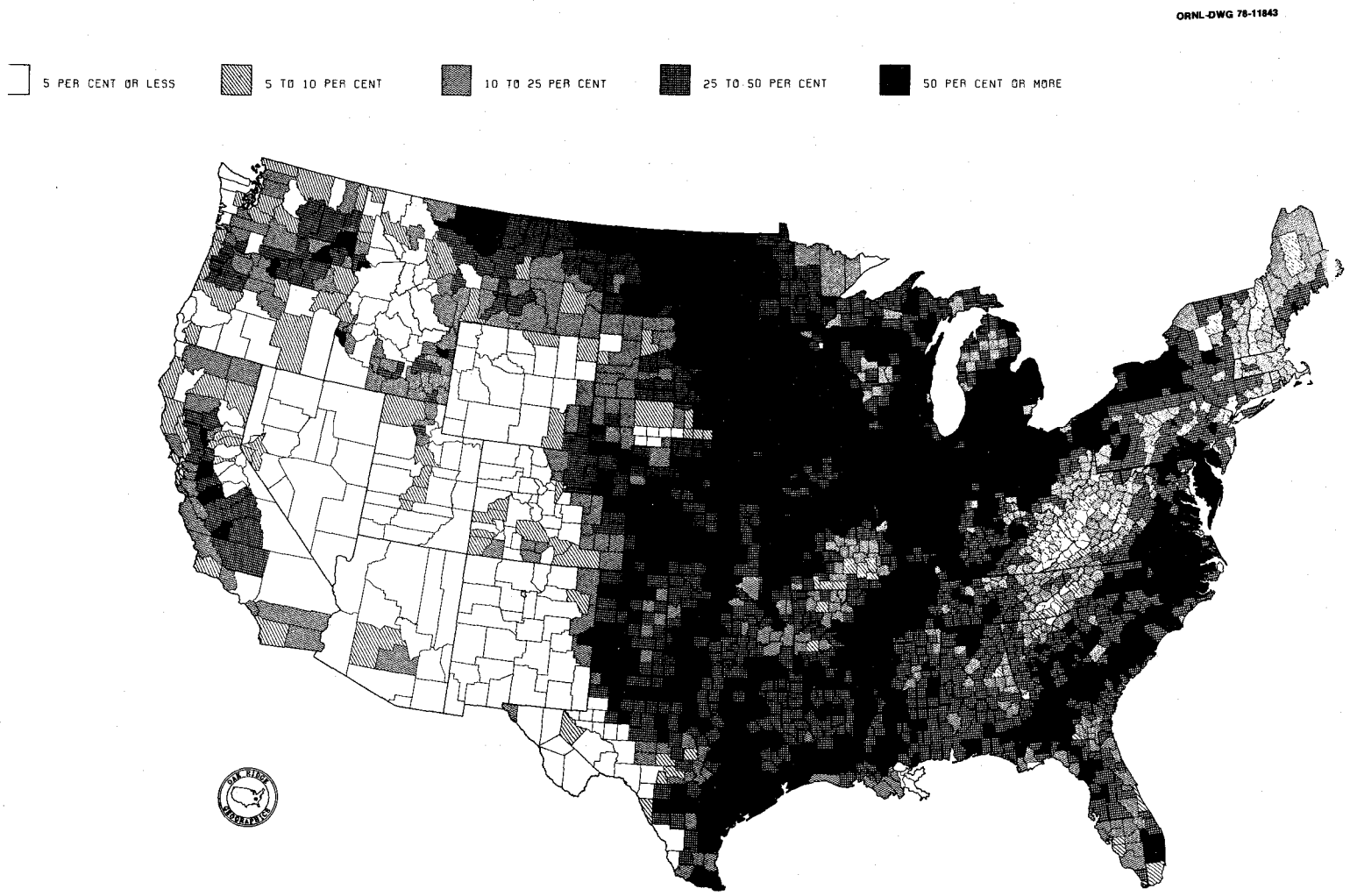

Fig. II-76. County land capability classification based on sum of capability classes I, II, and III. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

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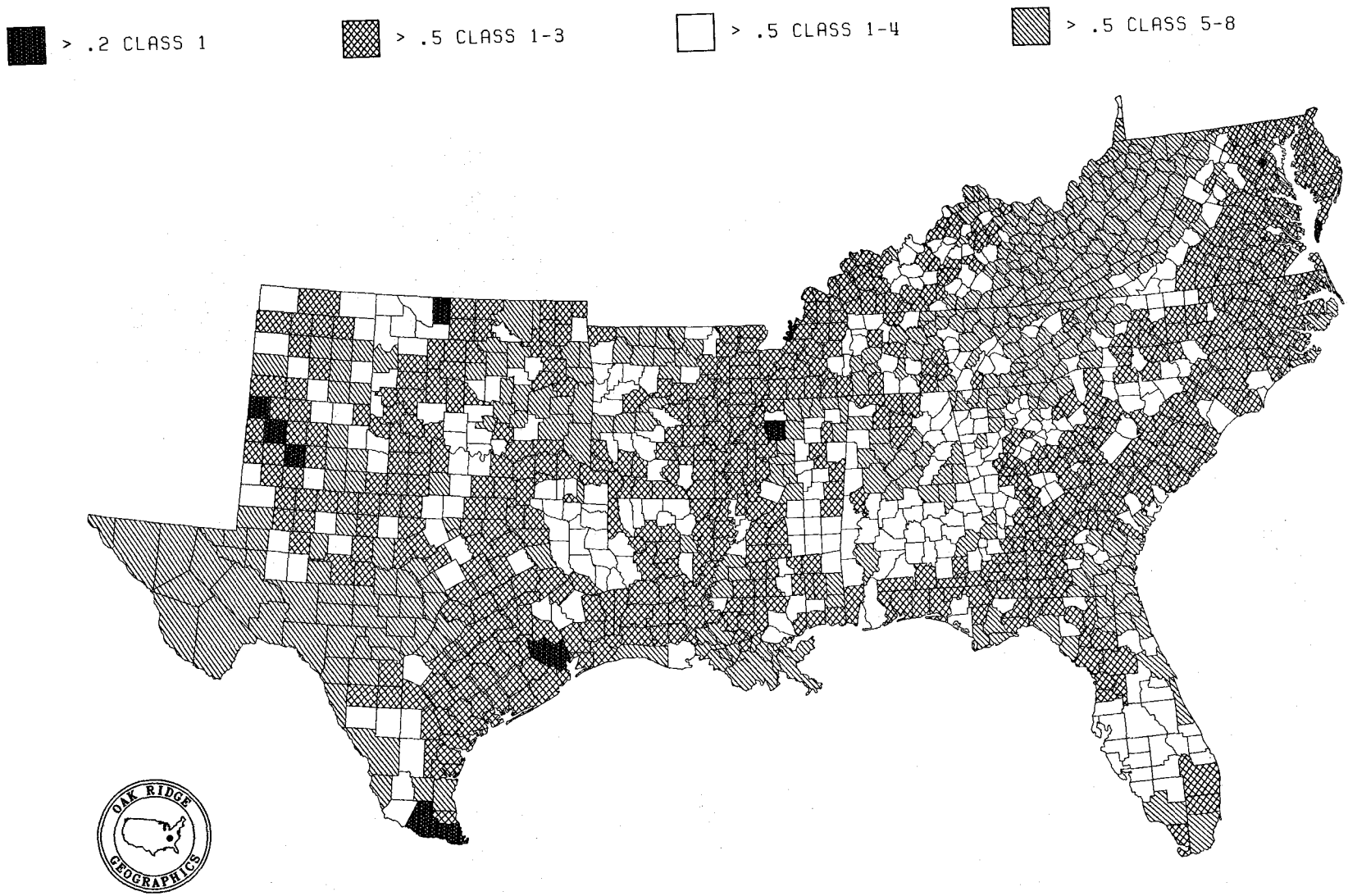

Fig. II-77. County land capability classification. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

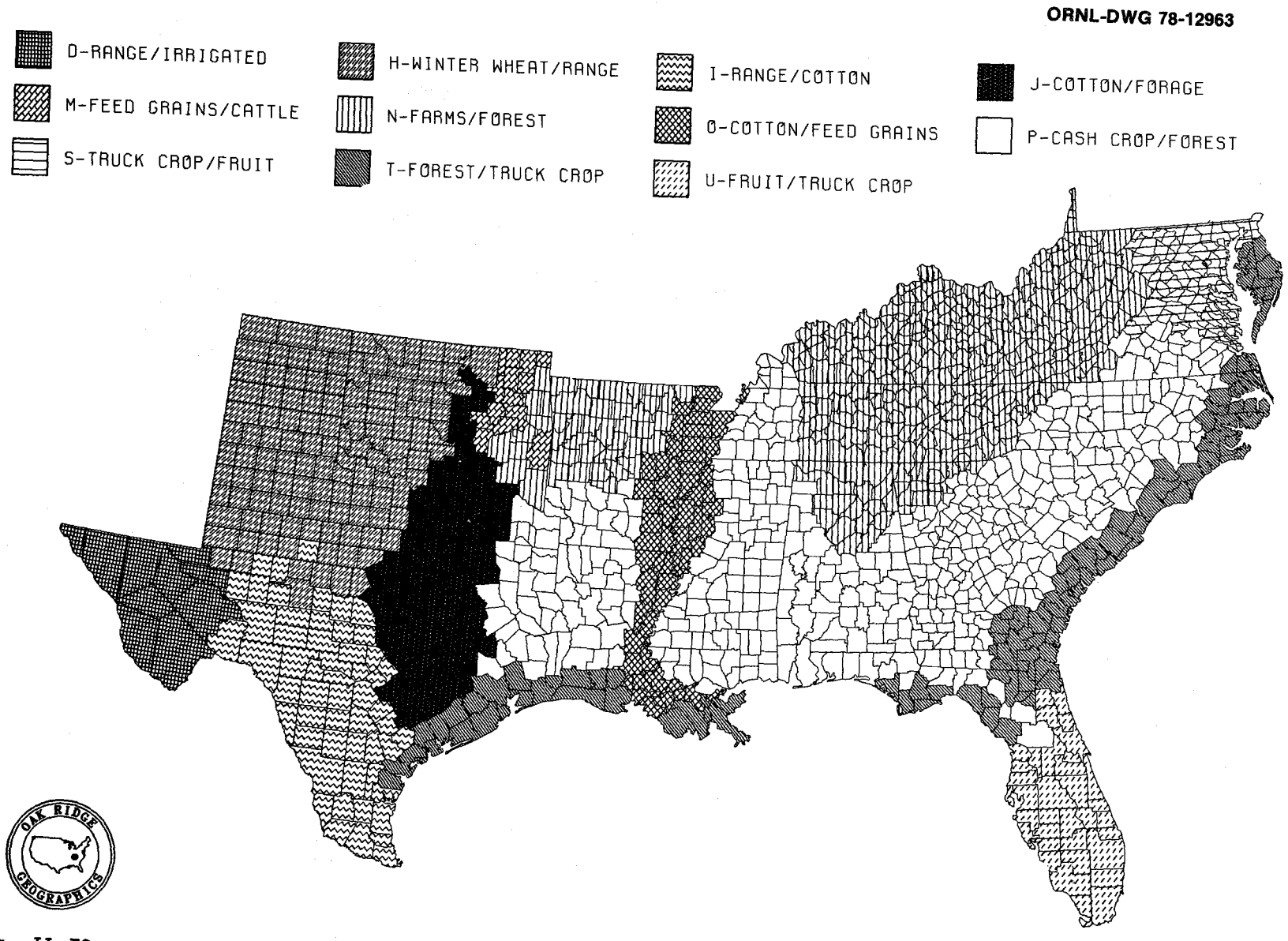

Fig. II-78. County land resource region classification. Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory.

TABLE II-52

LAND RESOURCE REGION ACREAGES IN THE SOUTH (NUMBER OF COUNTIES AND ACREAGE)

RGN_CODE	RGN_NAME	N_COUNT	RGN_AREA
		1	15360
042	SOUTHERN DESERTIC BASINS, PLAINS AND MOUNTAINS	12	20685888
076	BLUESTEM HILLS	1	1453090
077	SOUTHERN HIGH PLAINS	36	24978380
078	CENTRAL ROLLING RED PLAINS	55	32794099
080	CENTRAL ROLLING RED PRAIRIES	26	14454984
081	EDWARDS PLATEAU	25	19836931
082	TEXAS CENTRAL BASIN	2	1200448
083	RIO GRANDE PLAIN	28	21958545
084	CROSS TIMBERS	20	9665335
085	GRAND PRAIRIE	14	7079853
086	TEXAS BLACKLAND PRAIRIE	25	13397826
087	TEXAS CLAIPAN AREA	18	8932447
112	CHEROKEE PRAIRIES	12	5375545
116	OZARK HIGHLAND	13	5377874
117	BOSTON MOUNTAINS	8	3743168
118	ARKANSAS VALLEY AND RIDGES	12	5443654
119	OUACHITA MOUNTAINS	11	6581429
120	KENTUCKY-INDIANA SANDSTONE AND SHALE HILLS AND VALLEYS	15	3963520
121	KENTUCKY BLUEGRASS	38	6115840
122	HIGHLAND RIM AND PENNYROYAL	49	12612462
123	NASHVILLE BASIN	14	4076923
125	CUMBERLAND PLATEAU AND MOUNTAINS	56	14768782
126	CENTRAL ALLEGHENY PLATEAU	26	5243520
127	EASTERN ALLEGHENY PLATEAU AND MOUNTAINS	7	2918490
128	SOUTHERN APPALACHIAN RIDGES AND VALLEYS	70	21379019
129	SAND MOUNTAIN	7	3378028
130	BLUE RIDGE	36	8933917
131	SOUTHERN MISSISSIPPI VALLEY ALLUVIUM	47	17877926
132	EASTERN ARKANSAS PRAIRIES	2	1093760
133	SOUTHERN COASTAL PLAIN	258	101429584
134	SOUTHERN MISSISSIPPI VALLEY SILTY UPLANDS	58	20308276
135	ALABAMA AND MISSISSIPPI BLACKLAND PRAIRES	11	5098880
136	SOUTHERN PIEDMONT	137	38019098
137	CAROLINA AND GEORGIA SAND HILLS	19	6081046
138	NORTH-CENTRAL FLORIDA RIDGE	5	2705280
147	NORTHERN APPALACHIAN RIDGES AND VALLEYS	11	2538280
148	NORTHERN PIEDMONT	21	5395655
149	NORTHERN COSTAL PLAIN	17	1941820
150	GULF COAST PRAIRIES	21	11660228
151	GULF COAST MARSH	6	3667656
152	GULF COAST FLATWOODS	9	4270080
153	ATLANTIC COAST FLATWOODS	67	23598137
154	SOUTH-CENTRAL FLORIDA RIDGE	8	4597760
155	SOUTHERN FLORIDA FLATWOODS	21	9773290
156	FLORIDA EVERGLADES AND ASSOCIATED AREAS	6	5774080

Source: ORNL Geoecology Database, from 1967 Conservation Needs Inventory, USDA.

TABLE II-53

SELECTED CROP HARVESTED ACREAGE BY STATE, 1975

STATE	WHEAT	RICE	CORN	BARLEY	SORGHUM	TOBACCO	PEANUTS	SOYBEANS
ALABAMA	135000	.	660000	.	39500	.	204000	1310000
ARKANSAS	520000	881800	38000	.	200000	.	.	4700000
FLORIDA	17200	.	377100	.	.	13500	55000	209400
GEORGIA	134570	.	1880000	6630	42790	74925	524000	1259890
KENTUCKY	351700	.	1140000	30700	19400	200700	.	1197900
LOUISIANA	24600	654200	60000	.	27300	.	.	1920000
MISSISSIPPI	185000	165300	145000	.	38000	.	.	3120000
NORTH CAROLINA	275000	.	1590000	57620	85000	479495	165000	1420000
OKLAHOMA	6700000	.	82310	89800	660000	.	115000	232320
SOUTH CAROLINA	155000	.	550000	23000	17000	90000	14980	1380000
TENNESSEE	310000	.	615000	12520	24750	66030	.	1843100
TEXAS	5700000	548000	1100000	70000	7200000	.	304000	370950
VIRGINIA	292000	.	.	104000	14000	84517	.	.
WEST VIRGINIA	16650	.	64850	9770	.	1790	.	.
SOUTH	14816720	2249300	8302260	404040	8367740	1010957	1381980	18963560

Source: ORNL Geoecology Database, from 1975 state agriculture reports.

Column Legend: WHEAT, CORN, BARLEY, SOYBEANS - Production, bushels; RICE - Production, 100 lbs.

TABLE II-54

SELECTED CROP PRODUCTION BY STATE, 1975

STATE	WHEAT	RICE	CORN	BARLEY	SORGHUM	TOBACCO	PEANUTS	SOYBEANS
ALABAMA	3240000	.	34980000	.	1344300	.	532665000	32095000
ARKANSAS	15600000	40045500	1900000	.	9800000	.	.	115150000
FLORIDA	452000	.	16875000	.	.	28080000	177650000	5233600
GEORGIA	3633550	.	103400000	261620	1544820	150622300	1726580000	31497100
KENTUCKY	11959000	.	87780000	1143200	1274700	456654000	.	32351900
LOUISIANA	393200	24912500	3120000	.	901400	.	.	47040000
MISSISSIPPI	4440000	6467000	5945000	.	1330000	.	.	70200000
NORTH CAROLINA	8525000	.	106530000	2591300	4335000	956981900	373725000	33370000
OKLAHOMA	160800000	.	6706220	2700800	25080000	.	232300000	5347170
SOUTH CAROLINA	4185000	.	34650000	874000	595000	189000000	28657500	30360000
TENNESSEE	9610000	.	36900000	389120	1194470	134569000	.	45166000
TEXAS	131100000	24996000	113300000	2380000	374400000	.	463600000	9079000
VIRGINIA	9052000	.	.	4888000	490000	142029700	.	.
WEST VIRGINIA	533820	.	5514050	450100	.	2955400	.	.
SOUTH	363523570	96421000	557600270	15678140	422289690	2060892300	3535177500	456889770

Source: ORNL Geoecology Database, from 1975 state agricultural reports.

Column Legend: WHEAT, CORN, BARLEY, SOYBEANS - Production, bushels; RICE - Production, 100 lbs.

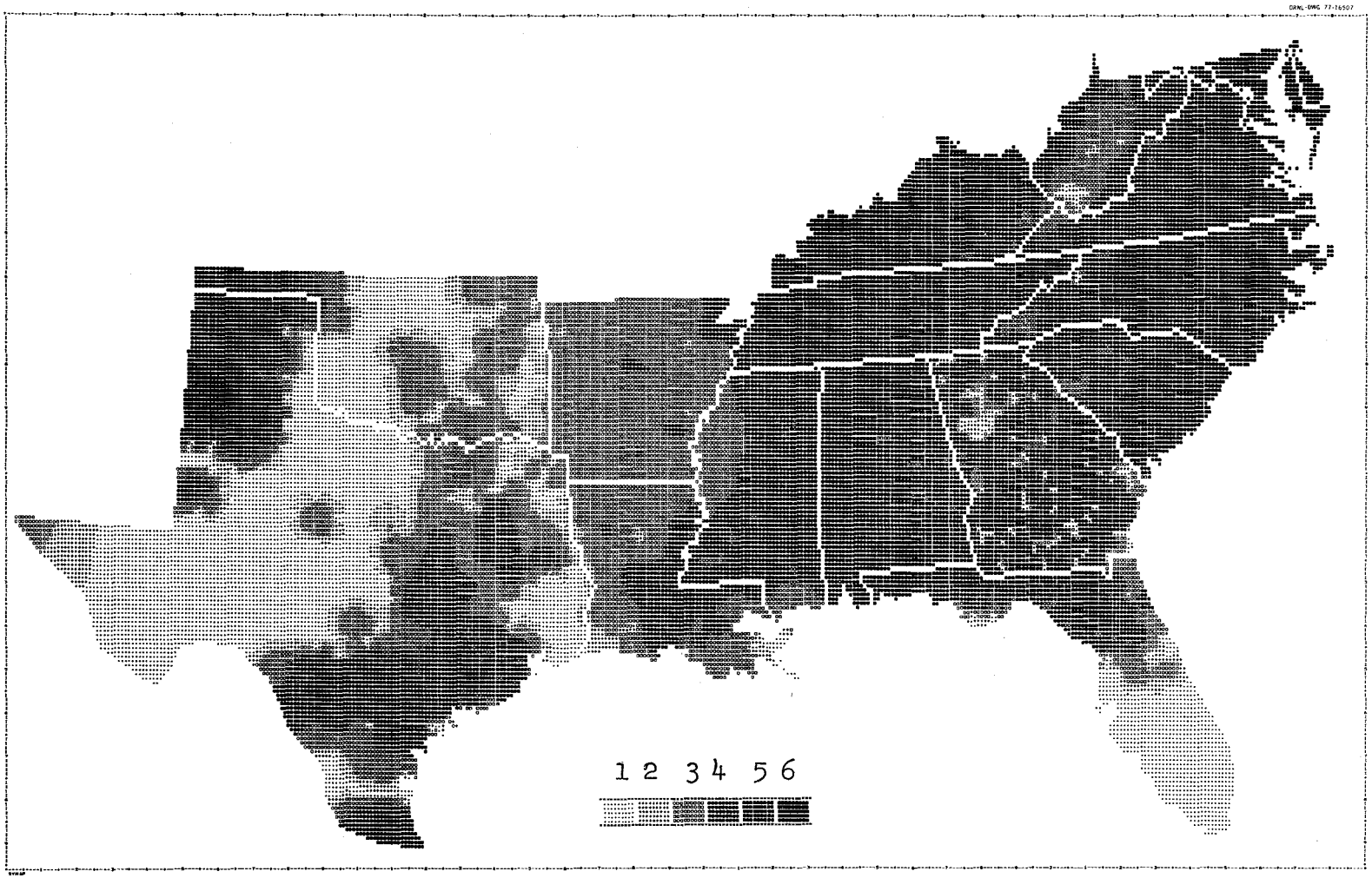

Fig. II-79. Corn yield, 1975, expressed as total production per total county area. Interval limits are expressed in bushels per acre as: (1) <0.001; (2) 0.001-0.01; (3) 0.01-1.0 (4) 0.1-1.0; (5) 1.0-10.0; (6) >10.0. Source: ORNL Geoecology Database, from 1975 State Agricultural Reports.

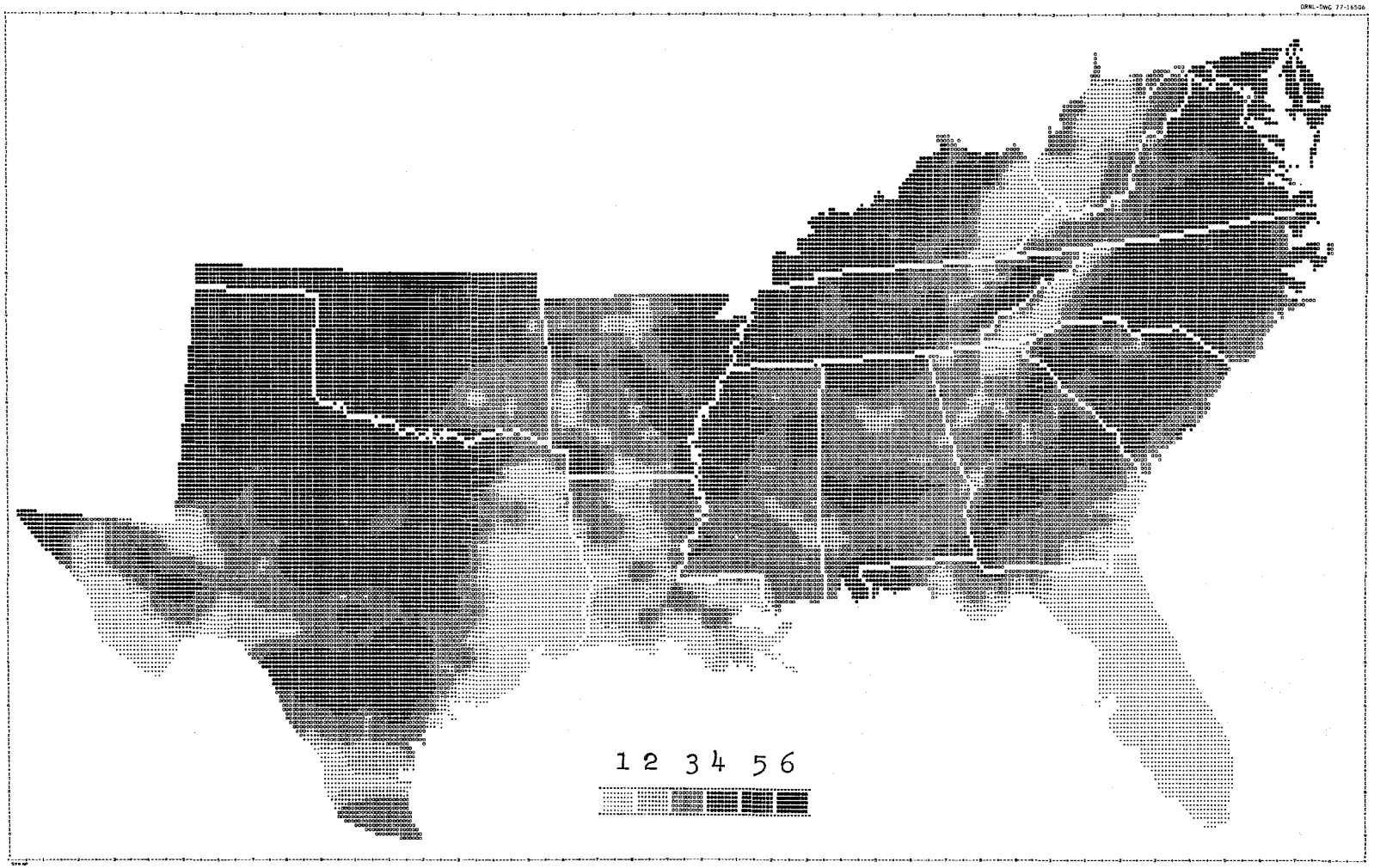

Fig. II-80. Wheat yield, expressed as total production per total county area. Interval limits are expressed in bushels per acre as : (1) <0.001; (2) 0.001-0.01; (3) 0.01-0.10; (4) 0.10-1.00; (5) 1.00-10.0; (6) >10.0. Source: ORNL Geoecology Database, from 1975 State Agricultural Reports.

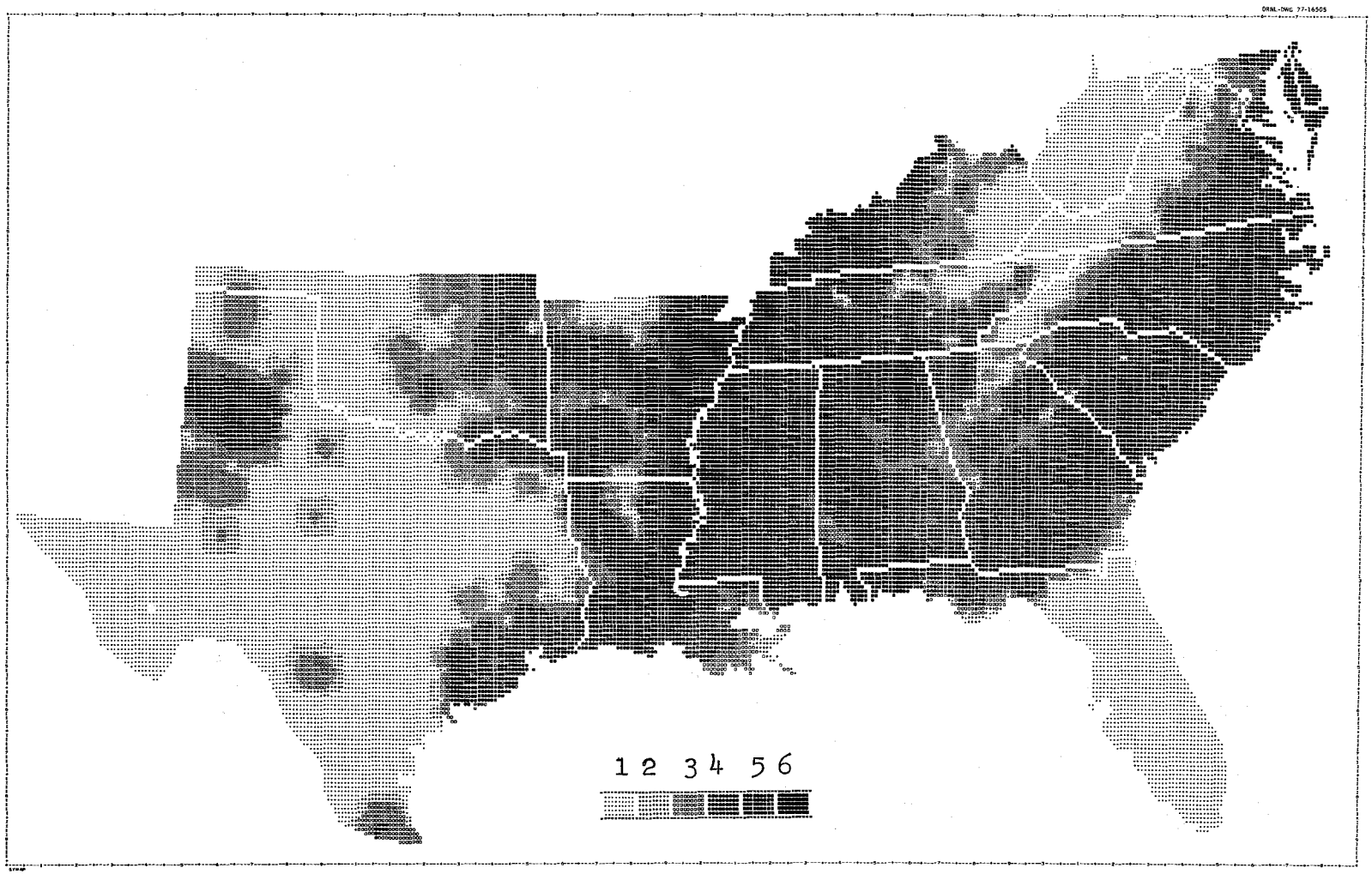

Fig. II-81. Soybean yield, expressed as total production per total county area. Interval limits are expressed in bushels per acre as: (1) <0.001; (2) 0.001-0.01;(3) 0.01-0.1; (4) 0.1-1.0; (5) 1.0-10.0; (6) >10.0. Source: ORNL Geoecology Database from 1975 State Agricultural Reports.

TABLE II-55

FOREST TYPE ACREAGES BY STATE, 1967-1976

STATE	N_COUNT	FOREST_A	SOFTWD_A	HARDWD_A
ALABAMA	67	21333061	7863663	13469350
ARKANSAS	75	18206665	3667980	14538643
FLORIDA	67	16231561	8206153	8025345
GEORGIA	159	24838916	12325090	12512958
KENTUCKY	120	11901900	981000	10920900
LOUISIANA	58	14526172	5099982	9430558
MISSISSIPPI	82	16891856	5577965	11313845
NORTH CAROLINA	100	19539732	6898352	12626498
OKLAHOMA	17	4817390	0	0
SOUTH CAROLINA	46	12410668	5524267	6886359
TENNESSEE	95	12819755	1731481	11088235
TEXAS	37	10901478	4567682	6333775
VIRGINIA	98	15809233	2981900	12827400
WEST VIRGINIA	55	11037064	614090	10422957
SOUTH	1076	211618694	62076705	116648523

Source: ORNL Geoecology Database, from U. S. Forest Service State Forest Survey Publications, 1963-1975.

Column Legend: N_COUNT - Number of County Occurrences; FOREST_A - Acreage of Forest; SOFTWD_A - Acreage of Softwood Forest; HARDWD_A - Acreage of Hardwood Forest.

TABLE II-56

FOREST GROWING STOCK VOLUMES BY STATE, 1967-1976

STATE	N_COUNT	ALL_SP_G	SOFTWD_G	HARDWD_G
ALABAMA	67	20212	11283	8929
ARKANSAS	75	15229	6422	8806
FLORIDA	66	10888	6904	3934
GEORGIA	159	25332	14769	10562
KENTUCKY	120	7390	555	6835
LOUISIANA	57	16697	9040	7657
MISSISSIPPI	82	13035	6555	6480
NORTH CAROLINA	100	24803	10374	14413
OKLAHOMA	17	1578	754	824
SOUTH CAROLINA	46	12251	6106	6145
TENNESSEE	95	10396	1800	8596
TEXAS	37	11808	7925	3883
VIRGINIA	99	14762	4276	10486
WEST VIRGINIA	55	11857	770	11087
SOUTH	1075	196238	87532	108638

Source: ORNL Geoecology Database, from U. S. Forest Service State Forest Survey Publications, 1963,1975.

Column Legend: N_COUNT - Number of County Occurrences; ALL_SP_G - Growing Stock Volume of All Species; SOFTWD_G - Growing Stock Volume of Softwoods; HARDWD_G - Growing Stock Volume of Hardwoods.

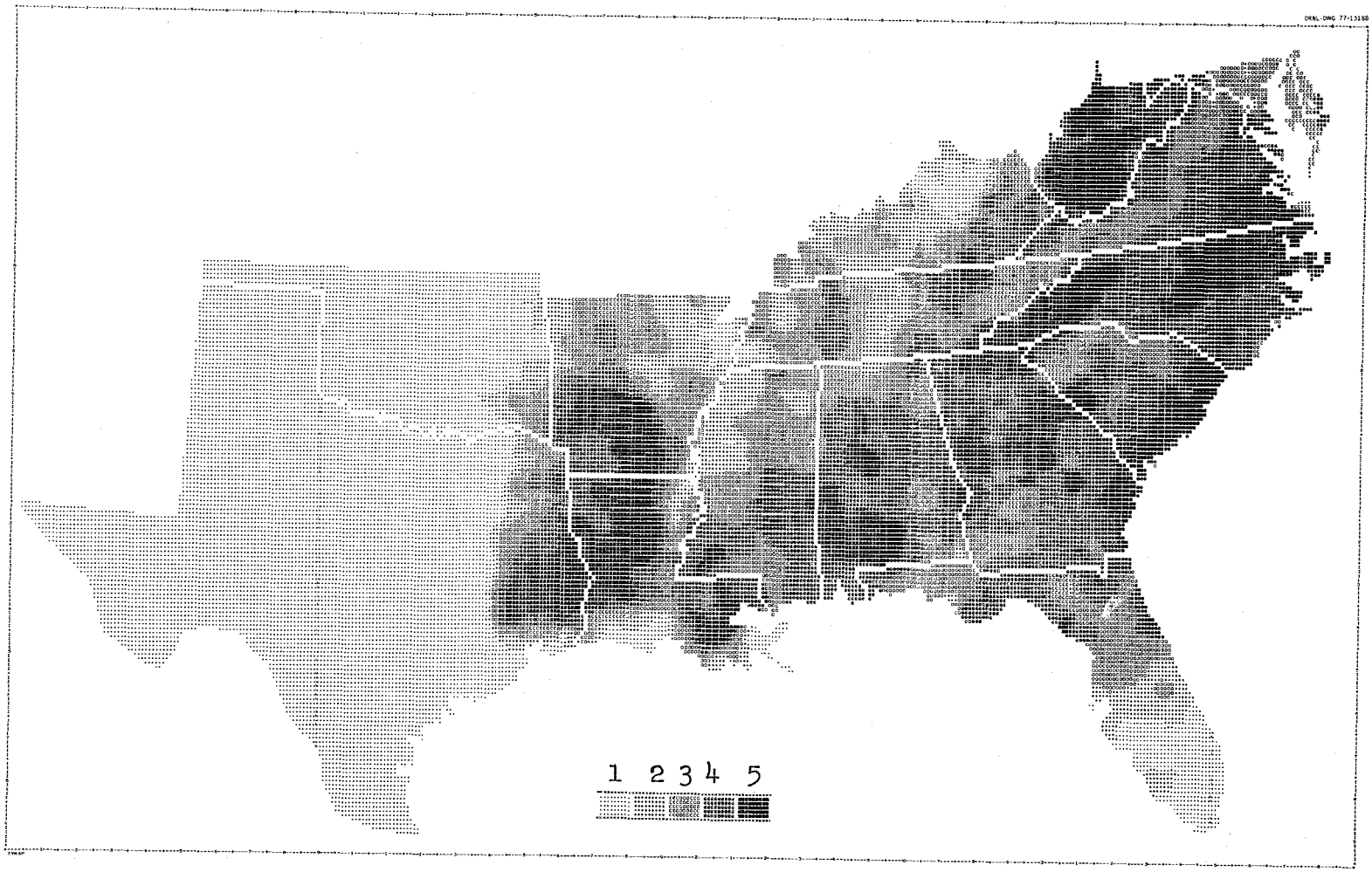

Fig. II-82. Forest stand growing stock volume 1963-1975 according to survey year. Growing-stock volumes are expressed as net volume of trees greater than 5.0 inches dbh per total county area. Interval limits are expressed in cubic feet per acre as: 1) 100; 2) 100-250; 3) 250-500; 4) 500-750; 5) 750. Source: ORNL Geoecology Database from U.S.D.A. Forest Service, State Forest Survey Reports published between 1963-1975.

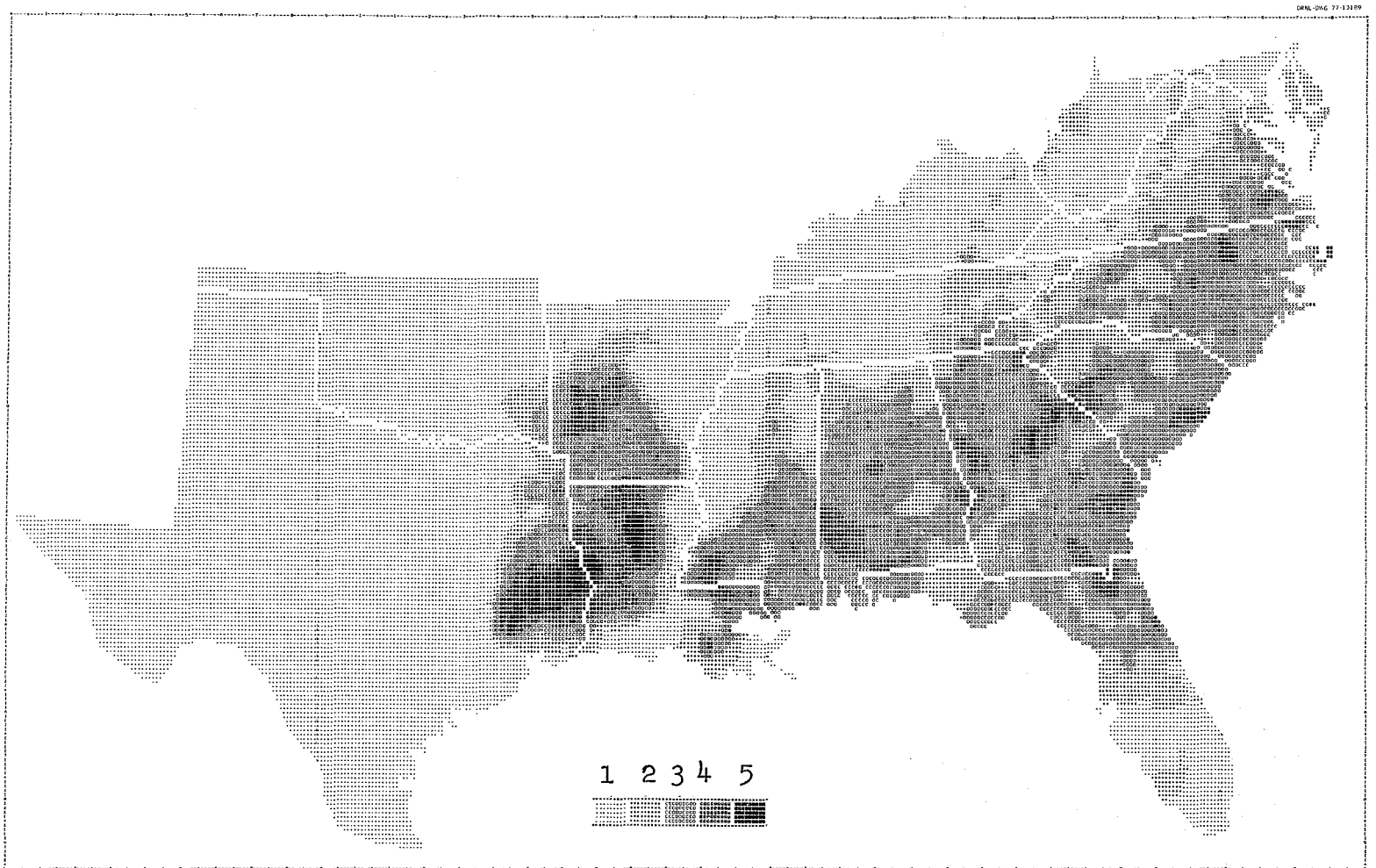

Fig. II-83. Softwood growing stock stand volume 1963-1975 according to survey year. Growing-Stock volumes are expressed as net volume of trees greater than 5.0 inches dbh per total county area. Interval limits are expressed in cubic feet per acre as: 1) 100; 2) 100-250; 3) 250-500; 4) 500-750; 5) 750. Source: ORNL Geoecology Database from U.S.D.A. Forest Service, State Forest Survey Reports published between 1963-1975.

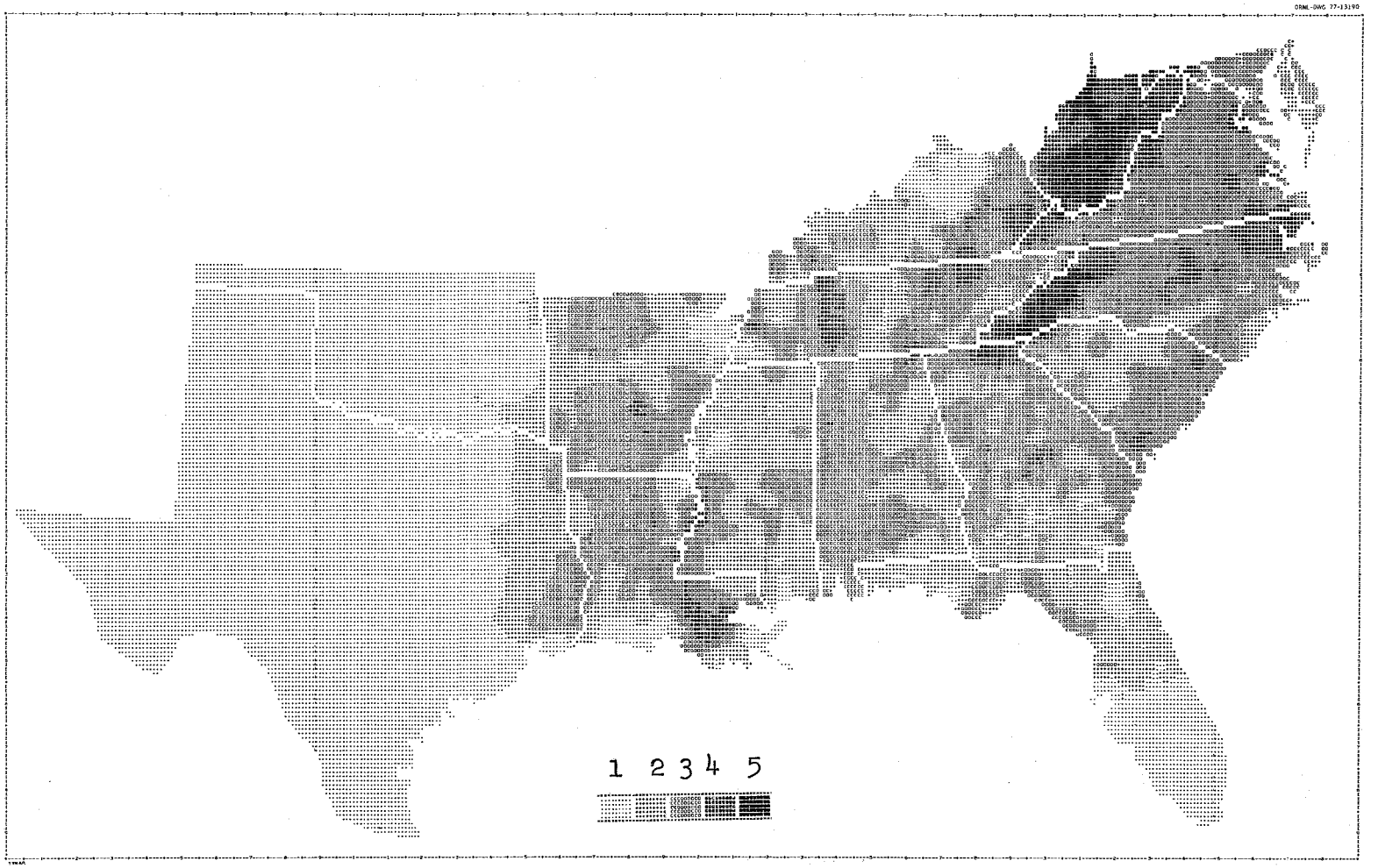

Fig. II-84. Hardwood growing stock stand volume 1963-1975 according to survey year. Growing-stock volumes are expressed as net volume of trees greater than 5.0 inches dbh per total county area. Interval limits are expressed in cubic feet per acre as: 1) 100; 2) 100-250; 3) 250-500; 4) 500-750; 5) 750. Source: ORNL Geoecology Database from U.S.D.A. Forest Service, State Forest Survey Reports published between 1963-1975.

TABLE II-57

NUMBER OF DESIGNATED NATURAL AREAS BY STATE

State	RNA[a]	EER[b]	NERP[c]	Bio-[d] Reserves	SAF[e]	TNC[f]	Natural landmarks Land[g]	Natural landmarks Wetland[h]	Conser. of Ecosystem Areas[i] Terrestrial	Conser. of Ecosystem Areas[i] Aquatic	Conser. of Ecosystem Areas[i] Marine
Alabama	3				2	1	6	3	-	5	2
Arizona	4				4	2	3	3	-	2	
Florida	6	(2)*			3	29	9	11	-	11	54
Georgia	9	(1)			6	16	11	13	18	32	15
Kentucky	4				4	4	-**	2	-	-	
Louisiana	2						6	9	-	1	12
Mississippi	6	(1)			4	1	7	4	-	-	5
North Carolina	3	(2)			19	11	16	1	25	-	9
Oklahoma	4	(2)				1	-	4	24	2	
South Carolina	7	(3)	1	(1)	8	2	6	4	33	-	10
Tennessee	4	(2)	(1)	(1)		4	-	5	15	-	
Texas	10	(2)			1	8	13	8	160	4	39
Virginia	3				7	25	13	14	153	-	9
West Virginia		(1)				10	-	12	38	-	
South	65	(16)	1 (1)	(3)	58	114	90	101	466	57	155
U.S.	389	(67)	4 (5)	14(4)	281		-	358	2,280	453	-

*( ) proposed **inventory not conducted

[a]Source: A Directory of Research Natural Areas of the U.S. USDA, FS, 1977.

[b]Source: Experimental Ecological Reserves, A Proposed National Network, TIE, 1977.

[c]Source: National Environmental Research Parks, J. T. Kitchings personal communication.

[d]Source: The Biosphere Reserve Program in the U.S., J. F. Franklin, Science Vol. 195, pp. 262-267, 1977.
[e]Source: Natural Areas of the Society of American Foresters, R. E. Buckman and R. L. Quintas, SAF. 1971.
[f]Source: The Nature Conservancy Preserve Directory, The Nature Conservancy, 1974.
[g]Source: Inventory of Natural Areas and Sites Recommended as Potential Natural Landmarks, Volume 1, Eastern Deciduous Forest, Southeastern Evergreen and Oak-Pine Region, NPS, 1975.
[h]Source: Inland Wetlands of the United States, Evaluated as Potential Registered Natural Landmarks, R. H. Goodwin and W. A. Niering, NPS, 1975.
[i]Source: Natural areas and their role in land and water resource preservation, Conservation of Ecosystems Program, R. M. Darnell, AIBS, 1974.

TABLE II-58

EXISTING AND PROPOSED WILDERNESS AREAS BY STATE, 1978

State	Existing		Endorsed		Inventory		Management		Study	
	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage
Alabama	1	12,726			17	71,074				
Arizona	3	27,030	2	37,000	21	172,027	1	5,200	3	14,279
Florida	10	73,476	1	1,378,400	17	119,110	1	13,540	1	1,171
Georgia	5	394,595			23	230,090				
Kentucky	1	4,791	1	6,647	2	23,441	1	17,265		
Louisiana	2	8,345			2	11,220				
Mississippi			1	1,200	3	8,315				
North Carolina	5	40,468	4	182,550	24	172,365	6	33,382	1	1,100
Oklahoma	1	8,900			4	33,500				
South Carolina	2	31,809	1	163	7	18,188	1	7,149	1	1,500
Tennessee	3	8,120	1	208,900	17	100,223	1	2,000	2	21,202
Texas			2	580,750	15	78,369	1	2,700		
Virginia	2	87,722	3	7,828	23	194,309			4	26,710
West Virginia	2	30,215			21	214,447			1	36,600
South	37	728,197	16	2,403,438	196	1,446,678	12	81,236	13	102,262
U.S.	167	14,852,210	107	27,776,642	1,955	63,900,614	34	702,916	30	1,706,569
% of U.S.	22	5	15	9	10	2	35	12	43	6

Source: USDA FS RARE II data base, April 1978.

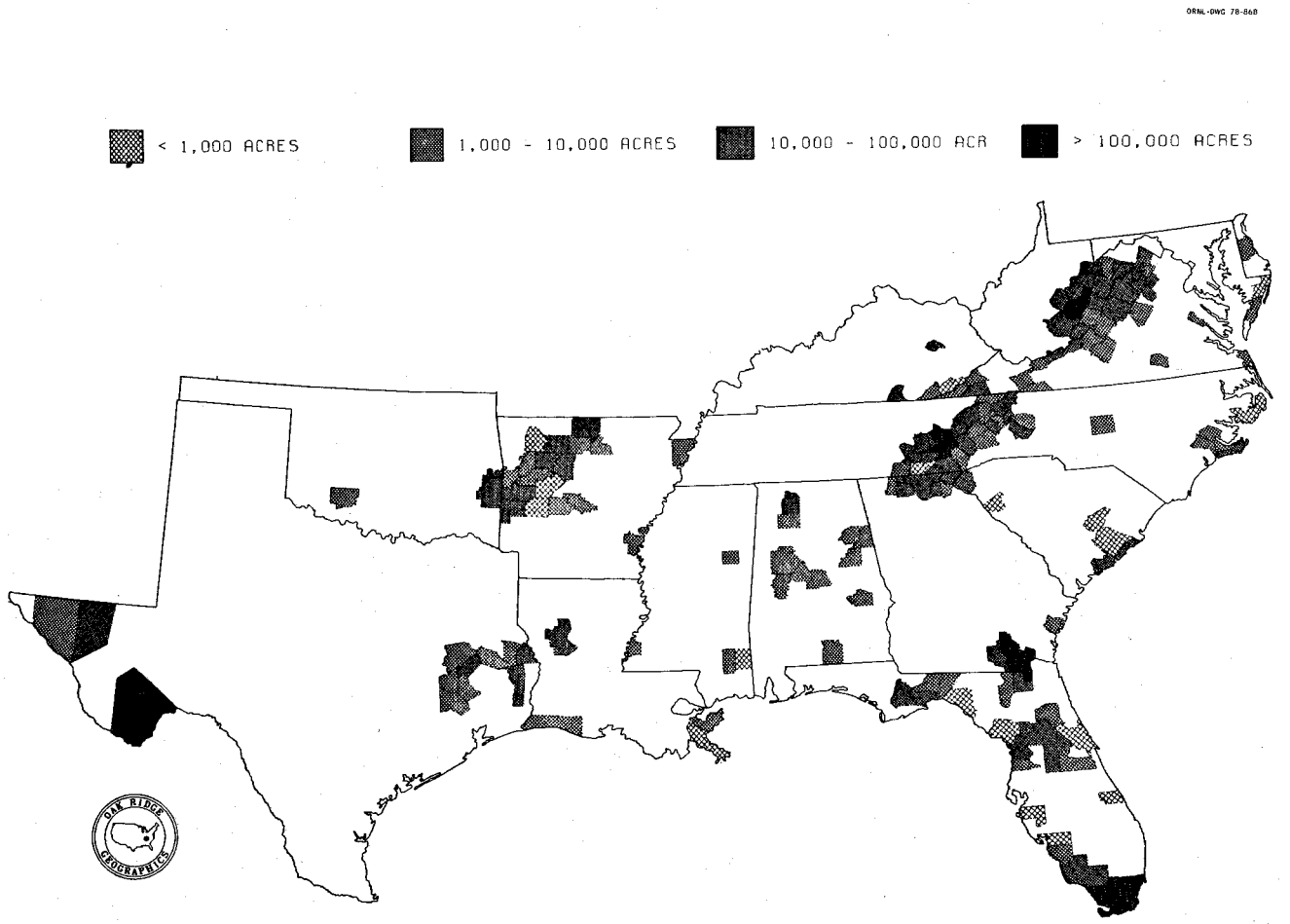

Fig. II-85. Counties with existing and proposed wilderness areas (RARE II), 1978. Source: USDA, Forest Service, RARE II data file.

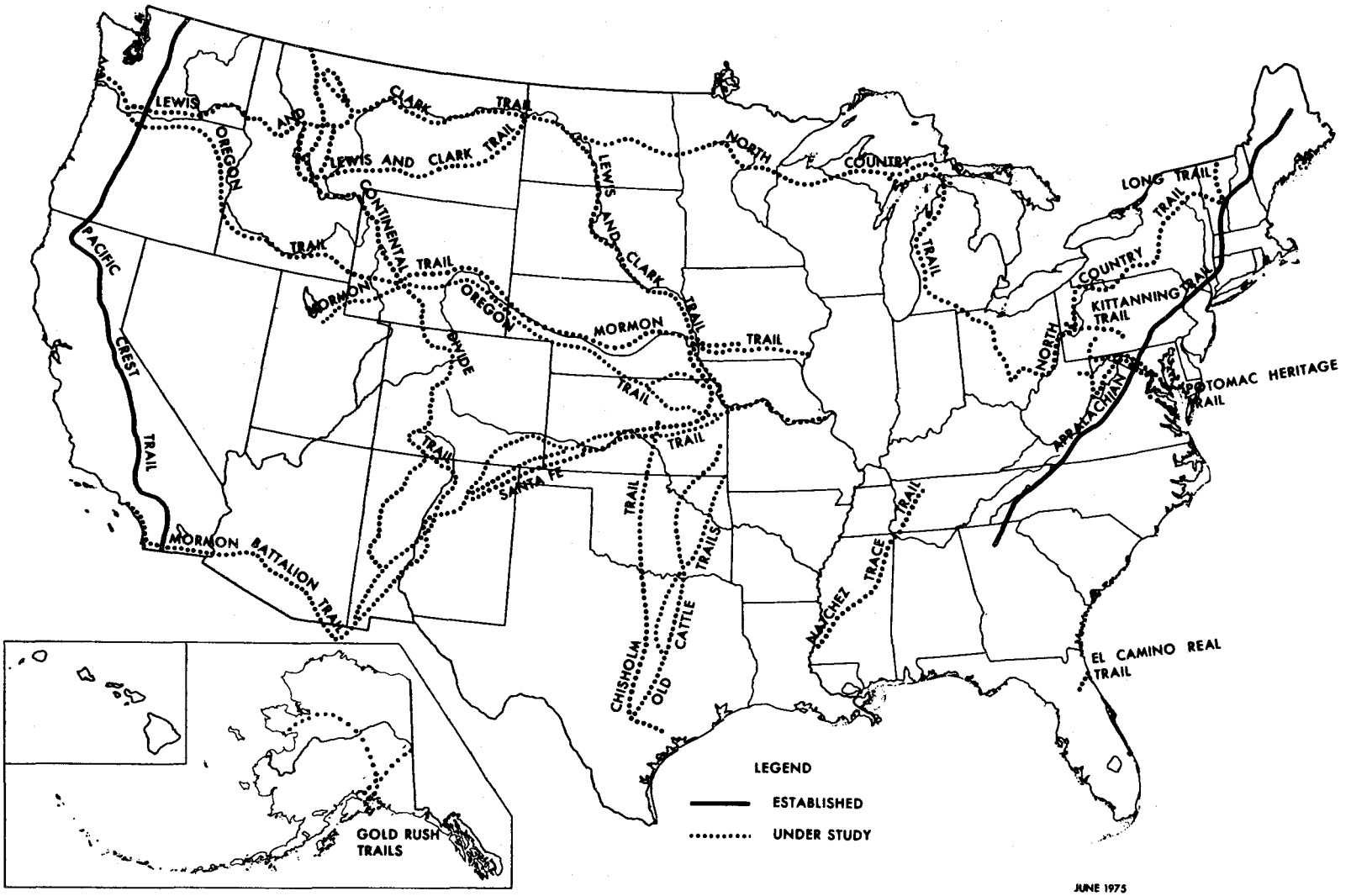

Fig. II-86. National Scenic Trails, 1975. Source: USDA Forest Service, 1977. The Nation's Renewable Resources - An Assessment, 1975, Forest Resource Report 21.

ORNL-DWG. 78-13446

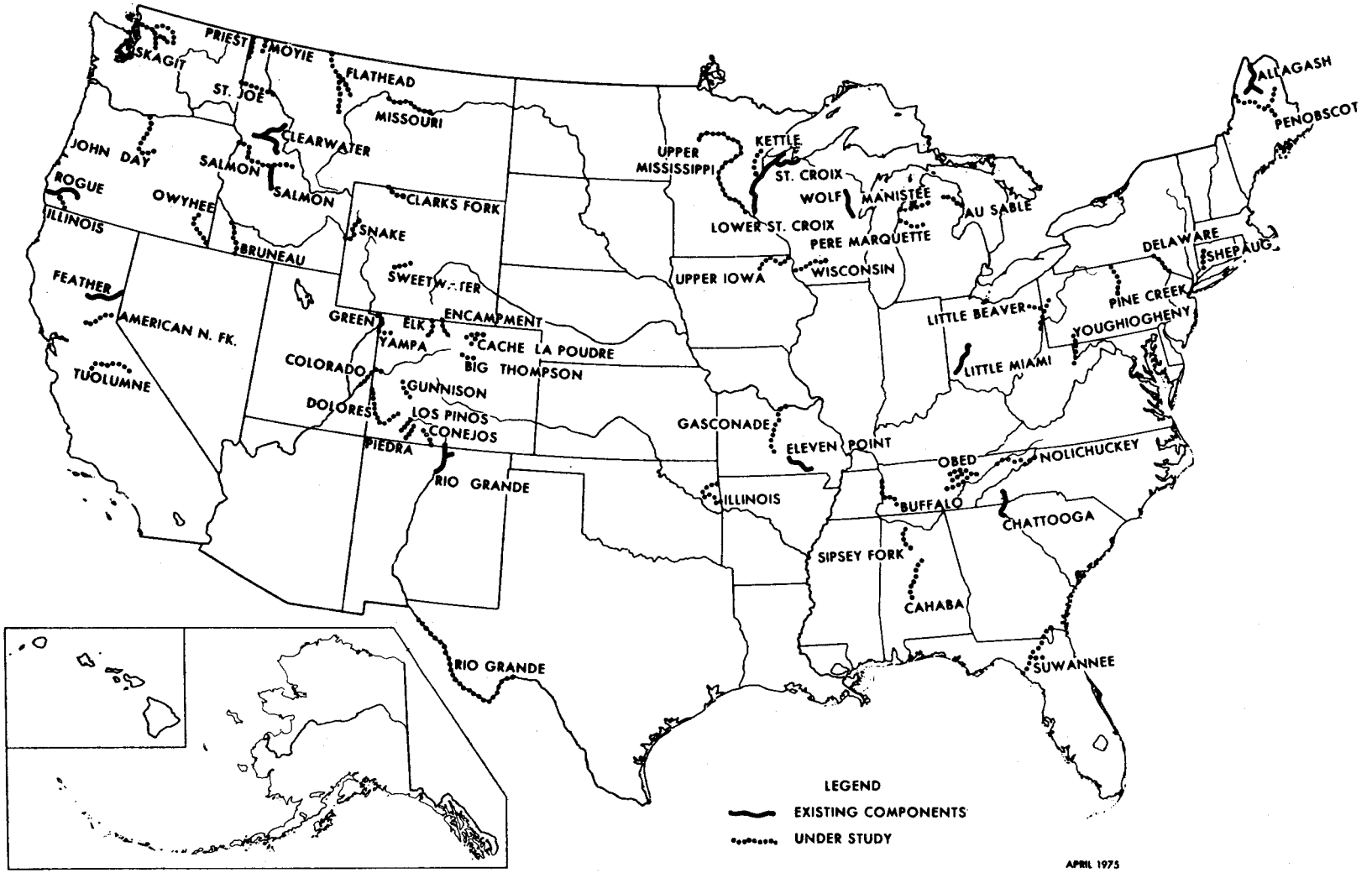

Fig. II-87. National Scenic Rivers, 1975. Source: USDA, Forest Service, 1977, The Nation's Renewable Resources-An Assessment, 1975, Forest Resource Report 21.

ORNL-DWG. 78-13451

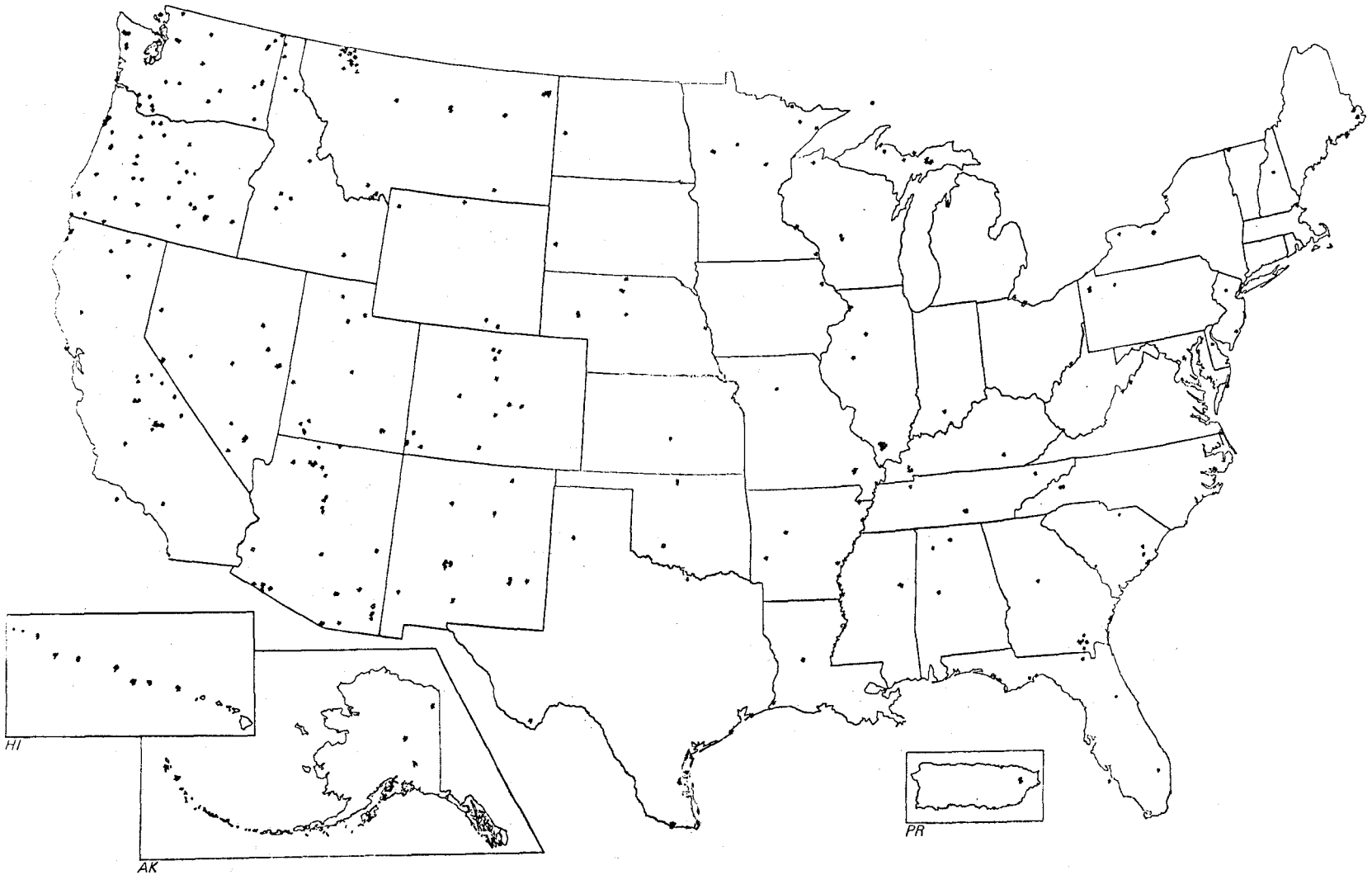

Fig. II-88. Distribution of Federal Research Natural Areas in the U.S. and Puerto Rico. Source: A directory of research natural areas on federal lands of the United States, U.S. Forest Service, 1977.

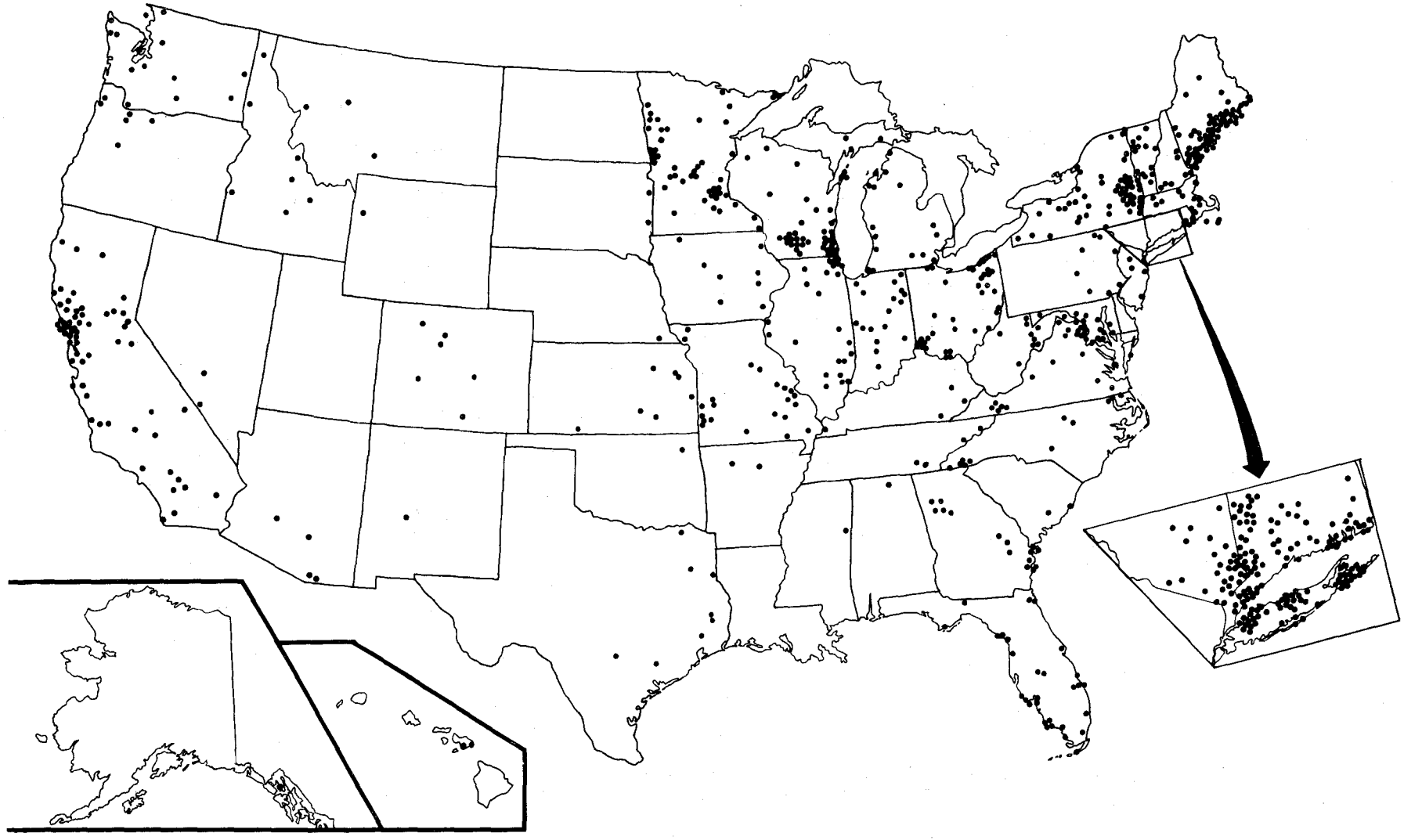

Fig. II-89. Projects of the Nature Conservancy, 1974. Source: 1974, The Nature Conservancy Preserve Directory.

TABLE II-59

LAND OWNERSHIP BY STATE AGENCIES, FEDERAL AGENCIES, FOREST SERVICE, NATIONAL PARK SERVICE, FISH AND WILDLIFE SERVICE, BUREAU OF LAND MANAGEMENT AND AGRICULTURAL RESEARCH SERVICE BY STATE, 1975 (10^3 ACRES)

STATE	BIA	DOE	COE	TVA	AIR	ARMY	NAVY
ALABAMA	0.0	0.0	67.3	213.1	5.6	170.3	3.6
ARKANSAS	0.0	0.0	513.2	0.0	9.4	86.0	0.1
FLORIDA	0.0	0.0	26.3	0.4	630.3	1.9	67.0
GEORGIA	0.0	0.0	340.9	9.5	11.9	523.5	17.4
KENTUCKY	0.0	3.4	321.8	159.2	0.0	162.8	0.1
LOUISIANA	0.0	0.0	92.5	0.0	24.9	116.4	3.5
MISSISSIPPI	0.2	0.0	297.7	10.2	6.0	4.4	11.3
NORTH CAROLINA	0.1	0.0	70.5	22.0	3.3	148.6	116.5
OKLAHOMA	28.4	0.0	860.5	0.0	9.5	127.6	45.0
SOUTH CAROLINA	0.0	192.3	98.0	0.0	14.8	53.7	33.3
TENNESSEE	0.0	37.0	190.6	0.0	40.0	105.6	3.6
TEXAS	0.0	0.0	705.1	0.0	65.2	366.9	23.4
VIRGINIA	0.0	0.0	114.2	1.6	3.9	158.9	108.7
WEST VIRGINIA	0.0	0.0	101.2	0.0	0.0	0.3	2.2
SOUTH	28.7	232.7	3799.8	416.0	824.8	2026.9	435.7

Source: Public Land Statistics, 1975, Bureau of Land Management.

Column Legend: BIA - Bureau of Indian Affairs; DOE - Department of Energy; COE - Corps of Engineers; TVA - Tennessee Valley Authority; AIR - Air Force; ARMY - Army; NAVY - Navy.

TABLE II-60

LAND OWNERSHIP BY THE BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF ENERGY AND MILITARY ORGANIZATIONS BY STATE, 1975 (10^3 ACRES)

STATE	ST_TOT	FED_TOT	USFS	NPS	FWS	BLM	ARS
ALABAMA	32678.4	1115.4	636.1	6.3	9.2	3.1	0.0
ARKANSAS	33599.4	3203.0	2461.9	7.7	122.2	1.6	0.0
FLORIDA	34721.3	3422.6	1081.6	1373.5	146.9	1.6	5.4
GEORGIA	37295.4	2215.3	854.7	15.8	437.8	0.0	2.3
KENTUCKY	25512.3	1348.0	634.6	62.2	2.2	0.0	0.0
LOUISIANA	28867.8	1075.2	595.4	0.1	230.9	7.1	0.2
MISSISSIPPI	30222.7	1646.4	1137.1	98.5	58.7	0.5	0.0
NORTH CAROLINA	31402.8	1952.4	1137.1	334.3	110.6	0.0	0.0
OKLAHOMA	44087.7	1536.9	291.2	0.9	79.7	8.1	11.5
SOUTH CAROLINA	19374.1	1141.6	606.8	4.0	138.0	0.0	0.5
TENNESSEE	26727.7	1781.7	618.3	25.5	20.5	0.0	0.5
TEXAS	168217.6	3178.0	779.3	863.4	152.3	0.0	3.3
VIRGINIA	25496.3	2348.9	1593.7	268.0	71.4	0.0	4.1
WEST VIRGINIA	15410.6	1066.6	958.3	0.5	0.2	0.0	0.0
SOUTH	553614.1	27032.0	13386.1	3060.7	1580.6	22.0	27.8

Source: Public Land Statistics, 1975, Bureau of Land Management.

Column Legend: ST_TOT - State Owned; FED_TOT - Federally Owned; USFS - USDA Forest Service; NPS - USDI National Park Service; FWS - USDI Fish and Wildlife Service; BLM - USDI Bureau of Land Management; ARS - USDA Agriculture Research Services.

TABLE II-61

FEDERAL AND STATE INDIAN RESERVATIONS BY STATE, 1972

State	No. of Reservations	Tribally-owned Acreage	Alloted Acreage	No. of Tribes	Major Tribes
Florida	5	183,319	--	2	Seminole, Miccosukee
Louisiana	1	262	--	1	Chitimacha
Mississippi	1	17,381	209	1	Choctaw
North Carolina	1	56,573	--	1	Cherokee
Oklahoma	-	56,741	991,715	27	Cherokee, Creek, Choctaw, Chickasaw, Cheyenne, Arapaho
Texas	2	4,400	--	3	Tigua (Pueblo), Alabama, Coushatta
Virginia	2	925	--	1	Algonquian

Source: U.S. Commerce Department (data as of circa December 1972), Statistical Abstracts of the United States. 1976.

TABLE II-62

NUMBER OF FEDERALLY OWNED PARKS, FORESTS, REFUGES, AND OTHER NATURAL AREAS BY STATE, 1977

State	NPS[a]			FS[b]		F&WS[c]	Scenic Rivers[d]		Scenic Trails[d]	
	Natural	Historic	Recreation	Forest	Grassland	Refuges	Existing	Study	Existing	Study
Alabama		3	1	4		3		2		1
Arizona	1	3	1	3		4				
Florida	2	7	2	3		22		1		1
Georgia		6	3	2		9		1		
Kentucky	1	2	1	2		1				
Louisiana		1		1		6				
Mississippi		3	2	6		2				1
North Carolina	1	5	4	5		7	2	1		
Oklahoma	1		1	1	2	5		1		3
South Carolina		5		2		4	1			
Tennessee	1	6	2	1		5		2		1
Texas	3	4	3	4	5	10		1		2
Virginia	1	10	5	2		11				1
West Virginia		2	1	3						2
South	11	57	26	39	7	89	3	9		12

[a]Source: Index of National Park System and affiliated areas as of June 30, 1977. USDI, NPS. (Natural = parks and preserves; Historic = monuments, memorials, military and historic; Recreation = recreation areas, seashores, rivers, trails and parkways).
[b]Source: Land Areas of the National Forest System as of September 30, 1977. USDA, FS. File 1380 (5400).
[c]Source: Final Environmental Statement, Operation of the National Refuge System, USDI, FWS. 1976.
[d]Source: The Nation's Renewable Resources. USDA, FS, Forest Resources Report 21, 1976.

TABLE II-63

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Alabama	Acreage
National Park Service:	
Horsehoe Bend NMP	2040
Natchez Trace Parkway	(see Mississippi)
Russell Cave NM	310
Tuskegee Institute NHS	74
National Forest Service:	
William R. Bankhead NF	348,917
Talladega NF	727,154
Tuskegee NF	15,628
Conecuh NF	171,177
Talladega PU	12,159
Rivers Under Consideration for National Wild and Scenic River System:	
Cahaba	
Sipsey Fork	
Trails Under Consideration for National Scenic System:	
Natchez Trace	
National Wildlife Refuge System:	
Wheeler NWR	34,184
Choctaw NWR	4,218
Eufaula NWR	7,929

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Arkansas	Acreage
National Park Service:	
Arkansas Post N. Mem.	389
Buffalo N.R.	94,146
Fort Smith NHS	66
Hot Springs NP	5,800
Pea Ridge NMP	4,300
National Forest Service:	
Ouachita NF	1,961.275
Ozark NF	1,488,918
St. Francis NF	29,608
Ozark PU	12,893
Crossett EF	1,675
National Wildlife Refuge System:	
Big Lake NWR	6,978
Holla Bend NWR	4,082
Wapanocca NWR	5,484
White River NWR	106,388

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Florida	Acreage
National Park Service:	
Big Cypress National Preserve	570,000
Biscayne NM	103,701
Canaveral NS	57,627
Castillo de San Marcos N.M.	20
DeSoto N Mem.	30
Everglades NP	1,398,780
Fort Caroline N. Mem.	128
Fort Jefferson N.M.	47,125
Fort Matanzas N.M.	298
Gulf Islands NS	65,816
Mar-A-Lago NHS	17
National Forest Service:	
Apalachicola NF	632,000
Ocala NF	430,122
Osceola NF	161,814
Rivers Under Consideration for National Wild and Scenic Rivers System:	
Suwannee	
Trails Under Consideration for National Scenic System:	
El Camino Real	
National Wildlife Refuge System:	
Caloosahatchee NWR	40
Cedar Keys NWR	378
Chassahowitzka NWR	30,072
Egmont Key NWR	
Great White Heron NWR	2,764
Hobe Sound NWR	773
Island Bay NWR	20
J.N. "Ding" Darling NWR	4,787
Key West NWR	2,019
Lake Woodruff NWR	18,416
Loxahatchee NWR	145,635
Matlacha Pass NWR	10
Merritt Island NWR	140,393
National Key Deer NWR	4,641
Okefenokee NWR	3,688
Passage Key NWR	36
Pelican Island NWR	4,358
Pine Island NWR	31
Pinellas NWR	377
St. Johns NWR	2,395
St. Marks NWR	64,073
St. Vincent NWR	12,489

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Georgia	Acreage
National Park Service:	
Andersonville NHS	488
Appalachian NST	
Chickamauga and Chattanooga NMP	8,095
Cumberland Island NS	36,876
Fort Frederica NM	214
Fort Pulaski NM	5,616
Ocmulgee NM	684
Kennesaw Mountain NBP	2,884
Chattooga NWSR	
National Forest Service:	
Chattahoochee NF	1,569,827
Oconee NF	261,645
Chattahoochee PU	71,088
Oconee PU	531
Rivers Under Consideration for National Wild and Scenic River System:	
Suwannee	
National Wildlife Refuge System:	
Blackbeard Island	5,617
Eufaula	3,231
Harris Neck	2,686
Okefenokee	373,860
Piedmont	34,678
Savannah	5,555
Tybee	100
Wassaw	10,064
Wolf Island	5,125

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Kentucky	Acreage
National Park Service:	
Abraham Lincoln Birthplace NHS	116
Big South Fork NR	(see Tennessee)
Cumberland Gap NHP	20,273
Mammoth Cave NP	51,310
National Forest Service:	
Daniel Boone NF	1,357,086
Jefferson NF	54,614
Redbird PU	687,061
National Wildlife Refuge System:	
Reelfoot NWR	2,039
Tennessee Valley Authority:	
Land Between the Lakes	

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Louisiana	Acreage
National Park Service:	
Chalmette NHP	142
National Forest Service:	
Kisatchie	1,017,288
National Wildlife Refuge System:	
Breton	9,047
Catahoula	5,308
Delta	48,799
Lacassine	31,776
Sabine	142,845
Shell Keys	8

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Mississippi	Acreage
National Park Service:	
Brices Cross Roads NBS	1
Gulf Islands NS	73,359
Natchez Trace Parkway	46,572
Tupelo NB	1
Vicksburg NMP	1,741
National Forest Service:	
Bienville NF	382,821
DeSoto NF	796,072
Delta NF	118,200
Holly Springs NF	519,943
Homochitto NF	373,497
Tombigbee NF	119,155
Trails Under Consideration for National Scenic System:	
Natchez Trace	
National Wildlife Refuge System:	
Noxubee	45,845
Yazoo	12,470

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

North Carolina	Acreage
National Park Service:	
Appalachian NSF	
Blue Ridge Parkway	81,569
Cape Hatteras NS	30,326
Cape Lookout NS	28,400
Carl Sandburg Home NHS	247
Fort Raleigh NHS	160
Great Smokey Mountains	273,551
Guilford Courthouse NMP	220
Moores Creek NMP	84
Wright Brothers N. Mem.	431
National Forest Service:	
Cherokee NF	327
Croatan NF	308,226
Nantahala NF	1,349,000
Pisgah NF	1,076,511
Uwharrie NF	220,202
Nantahala PU	17,027
Yadkin PU	194,496
National Wild and Scenic River System:	
New (South Fork) NWSR	
Chattooga NWSR	
Rivers Under Consideration for Natinal Wild and Scenic River System:	
Nolichucky	
National Wildlife Refuge System:	
Cedar Island NWR	12,526
Mackay Island NWR	6,181
Mattamuskeet NWR	50,179
Pea Island NWR	5,915
Pee Dee NWR	7,439
Pungo NWR	12,350
Swanquarter NWR	15,500

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Oklahoma	Acreage
National Park System:	
Chickasaw NRA	9,655
Fort Smith NHS	(see Arkansas)
National Forest System:	
Ouachita NF	412,912
Black Kettle NGL	32,537
Rita Blanca NGL	15,816
Rivers Under Consideration for National Wild and Scenic River System:	
Illinois	
Trails Under Consideration for National Scenic System:	
Chisholm	
Old Cattle	
Sante Fe	
National Wildlife Refuge System:	
Salt Plains NWR	32,008
Sequoyah NWR	20,800
Tishomingo NWR	16,464
Washita NWR	8,083
Wichita Mountains Wildlife Refuge NWR	59,019

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

South Carolina	Acreage
National Park Service:	
Congaree Swamp NM	15,135
Cowpens NB	824
Fort Sumter NM	62
Kings Mountain NMP	3,945
Ninety Six NHS	1,115
National Forest Service:	
Francis Marion NF	414,700
Sumter NF	965,762
National Wild and Scenic River System:	
Chattooga NWSR	
National Wildlife Refuge System:	
Cape Romain NWR	34,218
Carolina Sandhills NWR	45,591
Santee NWR	74,353
Savannah NWR	7,617

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Tennessee	Acreage
National Park Service:	
Andrew Johnson NHS	16
Appalachian NST	
Big South Fork NRRA	122,960
Chickamauga and Chattanooga NMP	(see Georgia)
Cumberland Gap NHS	(see Kentucky)
Donelson NMP	544
Great Smokey Mountains NP	241,206
Natchez Trace Parkway	(see Mississippi)
Obed NWSR	6,451
Shiloh NMP	3,753
Stones River NB	330
National Park Service:	
Cherokee NF	1,204,112
Cherokee PU	7,795
Rivers Under Consideration for National Wild and Scenic River System:	
Buffalo	
Nolichucky	
Trails Under Consideration for National Scenic System:	
Natchez Trace	
National Wildlife Refuge System:	
Cross Creeks NWR	8,861.
Hatchie NWR	11,220.
Lake Isom NWR	1,845.
Reelfoot NWR	8,101.
Tennessee NWR	51,346.

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Texas	Acreage
National Park Service:	
Alibates Flint Quarries and Texas Panhandle Pueblo Culture NM	92
Amistad NRA	62,451
Big Bend NP	708,118
Big Thicket National Preserve	84,550
Chamizal N. Mem.	54
Fort Davis NHS	460
Guadalupe Mountains NP	76,292
Lake Meredith NRA	45,964
Lyndon B. Johnson NHS	240
Padre Island NS	133,918
National Forest Service:	
Angelina NF	391,300
Davy Crockett NF	394,200
Sabine NF	439,667
Sam Houston NF	491,800
Sabine PU	1,502
Black Kettle NGL	576
Caddo NGL	17,736
Lyndon B. Johnson NGL	20,374
McClellan Creek NGL	1,449
Rita Blanca NGL	77,413
Rivers Under Consideration for National Wild and Scenic River System:	
Rio Grande	
Trails Under Consideration for National Scenic System:	
Chisholm	
Old Cattle	
National Wildlife Refuge System:	
Anahuac NWR	9,836
Aransas NWR	90,069
Attwater Prarie Chicken NWR	1,691
Brazoria NWR	9,625
Buffalo Lake NWR	7,663
Hagerman NWR	11,319
Laguna Atascosa NWR	45,204
Muleshoe NWR	5,809
San Bernard NWR	15,413
Santa Ana NWR	1,980

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

Virginia	Acreage
National Park Service:	
Appalachian NST	
Appomattox Court House NHP	1,263
Arlington House N. Mem.	27
Assateague Island NS	39,631
Blue Ridge Parkway	(see N. Carolina)
Booker T. Washington NM	223
Colonial NHP	9,833
Cumberland Gap NHP	(see Kentucky)
Fredericksburg and Spotsylvania County NMP	5,839
George Washington Birth Place NM	455
Manassas NBP	3,031
Petersburg NB	1,515
Prince William Forest Park	18,571
Richmond NBP	769
Shenandoah NP	190,538
Wolf Trap Farm Park	130
National Forest Service:	
George Washington NF	1,636,862
Jefferson NF	1,584,960
George Washington PU	1,918
Jefferson PU	2,917
Trails Under Consideration for National Scenic System:	
Potomac Heritage	
National Wildlife Refuge System:	
Back Bay NWR	4,588
Chincoteague NWR	9,021
Fisherman Island NWR	1,000
Great Dismal Swamp NWR	49,097
Mackay Island NWR	842
Marumsco NWR	62
Mason Neck NWR	1,494
Nansemond NWR	207
Plum Tree Island NWR	3,275
Presquile NWR	1,328
Wallops Island NWR	3,000

TABLE II-63 (continued)

NATIONAL PARKS, FORESTS, GRASSLANDS, REFUGES AND OTHER NATURAL AREAS BY STATE

West Virginia	Acreage
National Forest Service:	
George Washington NF	157,152
Jefferson NF	29,651
Monongahela NF	1,650,951
Jefferson PU	131
Monongahela PU	22,639
Trails Under Consideration for National Scenic System:	
North Country	
Potomac Heritage	

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a/ Key:

EF	Experimental Forest
NP	National Park
NS	National Seashore
NF	National Forest
NM	National Monument
NHS	National Historic Site
NHP	National Historic Park
NRA	National Recreation Area
NGL	National Grassland
N. Mem. P.	National Memorial Park
N. Mem.	National Memorial
NMP	National Military Park
NBS	National Battlefield Site
NBP	National Battlefield Park
NB	National Battlefield
NR	National River
NST	National Scenic Trail
NWSR	National Wild and Scenic River
NWR	National Wildlife Refuge
PU	Purchase Unit

Sources: Index of National Park System and affiliated areas as of June 30, 1977. USDI, NPS. (Natural = parks and preserves; Historic = monuments, memorials, military and historic; Recreation = recreation areas, seashores, rivers, trails and parkways). Land Areas of the National Forest System as of September 30, 1977. USDA, FS. File 1380 (5400). Final Environmental Statement, Operation of the National Refuge System, USDI, FWS. 1976. The Nation's Renewable Resources. USDA, FS. Forest Resources Report 21, 1976.

TABLE II-64

STATE OWNED LANDS ALLOCATED TO NATURAL RESOURCE MANAGEMENT BY STATE, 1977 (ACRES)

State	Parks	Forest	Fish and wildlife	Total
Alabama	44,744	14,249	35,489	94,482
Arizona	27,995	19,542	252,878	300,415
Florida	268,831	308,244	129,973	707,048
Georgia	53,712	40,242	47,890	141,844
Kentucky	40,400	43,440	162,281	246,121
Louisiana	26,291	7,875	331,303	365,469
Mississippi	13,744	364,051	1,034,407	1,412,202
North Carolina	69,348	33,702	131,097	234,147
Oklahoma	27,718	0	144,583	172,301
South Carolina	58,180	123,480	38,250	219,910
Tennessee	57,336	162,138	167,790	387,264
Texas	128,981	9,143	165,493	303,617
Virginia	39,489	49,140	168,255	256,884
West Virginia	64,190	79,621	83,616	227,427
South	920,959	1,254,867	2,762,208	5,069,131
U.S.	5,528,030	26,503,389	9,141,716	78,003,942
% of U.S.	17	5	30	6

Source: USDA, FS, Land Management Planning Unit, Fort Collins, CO, unpublished report.

TABLE II-65

STATE, AND MUNICIPAL AND COUNTY PARK AND RECREATION AREAS BY STATE

State	State[a]		Municipal and county[b]		State scenic
	N	Acreage	N	Acreage	Rivers[c]
Alabama	38	43,000	176	5,500	1
Arizona	30	18,000	67	2,200	2
Florida	75	176,000	397	11,900	
Georgia	62	40,000	1,061	6,600	1
Kentucky	40	30,000	82	3,900	6
Louisiana	25	13,000	288	6,400	14
Mississippi	19	14,000	53	1,600	
North Carolina	34	47,000	291	11,900	1
Oklahoma	67	88,000	177	12,100	2
South Carolina	40	54,000	56	900	2
Tennessee	29	48,000	343	11,700	8
Texas	70	71,000	1,109	73,500	
Virginia	29	39,000	711	22,600	5
West Virginia	31	60,000	63	2,000	5
South	589	741,000	4,874	172,800	47
U.S.	3,425	8,555,000	19,326	898,100	
% of U.S.	17	9	25	19	

[a]Covers 73 agencies in the 50 states, including all major ones that administer parks, recreation areas, historic sites, parkways, and related types of areas.
[b]Source: National Recreation and Park Association, Arlington, Virginia, State Park Statistics, 1970 and Parks and Recreation, August 1971 (Copyright, used by permission), as published by U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1973, Table 330.
[c]Source: Wild and Scenic Rivers of the U.S., National Geographic Society map, 1977

TABLE II-66

STATE AND LOCAL NATURAL AREAS BY STATE

Alabama	County
State Forests:	
Little River	Monroe, Escambia
Geneva	Geneva
State Parks:	
Elk River	Limestone, Lauderdale
DeSoto	DeKalb
Joe Wheeler	Lawrence
Buck's Pocket	DeKalb
Lake Guntersville	Marshall
Buhl	Tuscaloosa
Oak Mountain	Shelby
Mound State Monument	Hale
Chewaclea	Lee
Chickasaw	Marengo
Bladon Springs	Choctaw, Washington
Chattahoochee	Houston
Blue Springs	Barbour
Camden	Wilcox
Gulf	Baldwin
Cheaha	Cleburne
Lake Lurleen	Tuscaloosa
Lakepoint Resort	Barbour
Windcreek	Tallapoosa
Action	Shelby
Paul M. Grist	Dallas
Monte Sano	Madison
State Scenic Rivers:	
Little	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Arkansas	County
State Parks:	
Felsenthal	Union, Ashley, Bradley
Bull Shoals	Marion, Baxter
Mammoth	Fulton
Lake Charles	Lawrence
Old Davidsonville	Lawrence, Randolph
Ozark Folk Center	Stone
Crowleys Ridge	Greene
Lake Poinsett	Poinsett
Woolly Hollow	Faulkner
Petit Jean	Conway
Lake Dardanelle	Pope
Mt. Nebo	Yell
Lake Chicot	Chicot
White Oak Lake	Nevada
Poison Spring Battle Ground	Ouachita
Crater of Diamonds	Pike
White Rock	Crawford
Devils Den	Washington
Village Creek	Cross
Moro Bay	Union
Millwood	Little River
Daisy	Pike
Lake Catherine	Hot Spring
State Scenic Rivers:	
Lee Creek	
Mountain Fork	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Florida	County
State Forests:	
Withlacoochee	Citrus, Hernando, Sumter
Blackwater River	Santa Rosa, Okaloosa
Pine Log	Bay
Cary	Duval
State Parks:	
Blackwater River	Okaloosa
Fort Pickins SHS	Escambia
Fred Gannon	Okaloosa
Basin Bayou	Walton
Eden Garden	Walton
Grayton Beach	Walton
Falling Waters	Washington
St. Andrews	Bay
Florida Caverns	Jackson
Wekiwa Springs	Orange
Three Rivers	Jackson
Dead Lakes RA	Gulf
St. Joseph Penninsula	Gulf
Torreya	Liberty
Lake Jackson Mounds SHS	Leon
Alfred B. Maclay Gardens	Leon
Wakulla Springs	Wakulla
Forest Capital	Taylor
Suwannee River	Suwannee
Manatee Springs	Levy
Gold Head Branch	Clay
Magnolia Lake	Clay
Ravine Gardens	Putnam
Faver-Dykes	Johnson
Anastasia	Johnson
Washington Oaks Gardens	Flagler
Flagler Beach	Flagler
Tomoka	Volusia
Hontoon Island	Lake
Lake Griffen	Lake
Hillsborough River	Hillsborough
Caladesi Island	Pinellas
Ocklochonee River	Wakulla, Franklin
Jack Island	St. Lucie
Pepper	St. Lucie
Highlands Hammock	Highlands, Hardee
Myakka River	Manatee, Sarasota
Oscar Scherer	Sarasota
Jonathan Dickinson	Martin
Pahokee	Palm Beach
Koreshan Unity	Lee

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Florida	County
State Parks (continued):	
Hugh Taylor Birch	Broward
John Pennekamp Coral Reef	Dade
Long Key	Dade
Bahia Honda	Monroe
Collier-Seminole	Collier
Gulf Hammock	Levy
Lignumvitae & Shell Keys	Monroe
Private Natural Lands:	
Corkscrew Swamp Sancturary (NAS)	Collier
Cummer Sanctuary of Suwannee River (NC)	Levy
Rookery Bay (NC, NAS, CCC)	Collier
Honorable Theodore Roosevelt Preserve (NC)	Duval
St. Johns River Bluff (NC)	Duval
Sannibel Island (Sannibel Captiva Foundation)	Lee

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Georgia	County
State Forests:	
Waycross	Ware
State Parks:	
Cloudland Canyon	Dade
Georgia Veterans Memorial	Crisp
Black Rock Mountain	Rabun
Moccasin Creek	Rabun
Fort Mountain	Murray
Vogel	Union
Amicalola Falls	Dawson
Red Top Mountain	Bartow
John Tanner	Carroll
Fort Yargo	Walton, Barrow
Hard Labor Creek	Morgan
Victoria Bryant	Franklin
Hart	Hart
Watson Mill	Oglethorpe
George T. Bagby	Clay
Bobby Brown	Elbert
Mistletoe	Lincoln
Magnolia Springs	Jenkins
High Falls	Monroe
Indian Springs	Butts
Providence Canyons	Stewart
Franklin D. Roosevelt	Arris
Reed Bingham	Colquitt
General Coffee	Coffee
Little Ocmulgee	Telfair
Hamburg	Washington
Gordonia Alatamaha	Tattnall
Okefenokee Swamp	Ware
Laura S. Walker	Ware
Crooked River	Camden
Stephen C. Foster	Carlton
Jekyll Island	Camden
Richmond Hill	Chatham
Lewis Island Refuge	McIntosh
Phillip's Tract	Tattnall
Pickett's Mill Battlefield	Paulding
Watson's Pond	Emanuel
Wormsloe Plantation	Chatham
Sweetwater Creek	Douglas
State Scenic Rivers:	
Conasauga	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Kentucky	County
State Forests:	
Knobs	Nelson
Pennyrile	Caldwell, Christian
Kentucky Ridge	Bell
State Parks:	
Columbus - Belmont Battlefield	Hickman
Kenlake	Calloway
John James Audobon	Henderson
Lake Barkley	Trigg
Jefferson Davis Monument	Todd
Lake Malone	Muhlenberg
Barren River Lake	Barren
Rough River Dam	Breckinridge
Green River Lake	Taylor
Tom Sawyer	Jefferson
Old Mulkey Meeting House	Monroe
Dale Hollow Lake	Clinton
Lake Cumberland	Russell
General Burnside	Pulaski
Pine Mountain	Bell
Levi Jackson Wilderness Road	Laurel
Buckhorn Lake	Perry
Kingdom Come	Letcher
Jenny Wiley	Floyd
Grayson Lake	Carter
Carter Caves	Carter
Greenbo Lake	Greenup
Bluelicks Battlefield	Robertson
Kincaid Lake	Pendleton
Big Bone Lick	Boone
Fort Boonesborough	Clark
Perryville Battlefield	Boyle
Kentucky State Horse Park	Fayette
Lincoln Homestead	Washington
Lilly Cornett's Woods	Letcher
General Butler	Carroll
Breaks Interstate	Pike
State Scenic Rivers:	
Green	
Little South Fork	
Cumberland	
Rockcastle	
Red	
Martin's Fork	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Louisiana	County
State Parks:	
Lake D'Arbonne	Union
Chemin-a-Haut	Morehouse
Lake Bistineau	Bossier
Lake Bruin	Tensas
Fort Jessup	Sabine
Sam Houston	Calcasie
Marksville Prehistoric Indian	Avoyelles
Audobon Memorial	Feliciana
Chicot	Evangeline
Longfellow-Evangeline	St. Martin
Bogue Falaya	St. Tammany
Fairview Riverside	St. Tammany
Fontainebleu	St. Tammany
Grand Isle	Jefferson
Edward Douglas White	LaFouche
Lake Claiborne	Claiborne
St. Bernard	St. Bernard
State Scenic Rivers:	
Bayou Dorcheat	
Black Lake Bayou	
Whisky Chitto Creek	
Bayou Penchant	
Bayou des Allemands	
West Pearl	
Blind	
Comite	
Amite	
Tangipahoa	
Little	
Saline Bayou	
Bayou D'Arbonne	
Bayou Bartholomew	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Mississippi	County
State Parks:	
Hillside	Humphreys, Holmes, Yazoo
Mississippi Sandhill Crane	Jackson
J. P. Coleman	Tishomingo
John W. Kyle	Panola
Brices Crossroads	Lee
Tishomingo	Tishomingo
Tombigbee	Lee
Wall Doxey	Marshall
Yacona Ridge	Yalobusha
Sam Dale Memorial	Lauderdale
Percy Quinn	Pike
Holmes County	Holmes
Clark County	Clarke
Paul B. Johnson	Forrest
Lake Lowndes	Lowndes
Arkebutla	DeSoto
Hugh White	Grenada
Roosevelt	Scott
Buccaneer	Hancock

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

North Carolina	County
State Forests:	
Bladen Lakes	Bladen
State Parks:	
Mt. Jefferson	Ashe
Stone Mountain	Alleghany
Duke Power	Iredel
Hanging Rock	Stokes
Pilot Mountain	Surry
Boone's Cave	Davidson
Morrow Mountain	Stanley, Montgomery
William B. Umstead	Wake
Jones Lake	Bladen
Cliffs of Neuse	Wayne
Hammock's Beach	Onslow
Theodore Roosevelt NA	Carteret
Boyd Forest	Moore
Chowan Swamp	Cates
Eno River	Orange, Durham
Great Dismal Swamp	Camden
Mt. Mitchell	Yancey
Singletary Lake	Bladen
Pettigrew	Tyrrell
State Scenic Rivers:	
Linville	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Oklahoma	County
State Parks:	
Optima	Texas
Black Mesa	Cimarron
Boiling Springs	Woodward
Alabaster Caverns	Woodward
Little Sahara	Woods
Canton Lake	Dewey
Roman Nose	Blaine
Foss	Custer
Quartz Mountain	Greer
Red Rock Canyon	Caddo
Great Salt Plains	Alfalfa
Pioneer Woman Monument	Kay
Osage Hills	Osage
Walnut Creek	Osage
Keystone	Tulsa
Twin Bridges	Ottawa
Honey Creek	Deleware
Cherokee	Mayes
Greenleaf Lake	Muskogee
Tenkiller	Sequoyah
Beavers Bend	McCurtin
Raymond Gary	Choctaw
Baggy Depot RA	Atoka
Lake Texoma	Marshall
Lake Murray	Carter
Robbers Cave	Latimer
Okmulgee Lake	Okmulgee
Beaver	Beaver
Clayton Lake RA	Pushmataha
Talimena	LeFlore
Lake Wister	LeFlore
Sequoyah	Cherokee
Fountain Head	McIntosh
Great Plains	Kiowa
White Eagle	Osage
Will Rogers	Rogers
Arrowhead	Pillsburg
State Scenic Rivers:	
Mountain Fork	
Lee Creek	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

South Carolina	County
State Forests:	
Sandhills	Chesterfield
Manchester	Sumter
State Parks:	
Pinckney Island	Beaufort
Oconee	Oconee
Table Rock	Pickens
Pleasant Ridge	Greenville
Sadler's Creek	Anderson
Croft	Spartenburg
Greenwood	Greenwood
Baker Creek	McCormick
Hickory Knob	McCormick
Aiken	Aiken
Barnwell	Barnwell
Chester	Chester
Poinsett	Sumter
Cheraw	Chesterfield
Lee	Lee
Colleton	Colleton
Girhans Ferry	Dorchester
Edisto Beach	Colleton
Little PeeDee	Dillon
Huntington Beach	Georgetown
Santee Coastal Reserve	Georgetown, Charleston
Paris Mountain	Greenville
Myrtle Beach	Horry
Hunting Island	Beaufort
State Scenic Rivers:	
Ashley	
Congaree	
Private Natural Areas:	
Four Holes Sanctuary (NAS)	Berkeley, Dorchester

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Tennessee	County
State Forests:	
Chickasaw	Hardeman
Meeman-Shelby	Shelby
Natchez Trace	Henderson, Carroll
Franklin Marion	Franklin, Marion
Bledsoe	Bledsoe
Scott	Scott
Standing Stone	Overton, Clay
Pickett	Pickett, Fentress
Cedars of Lebanon	Wilson
Morgan	Morgan
Prentice-Cooper	Marion
Lewis	Lewis
Central Penninsula	Campbell
State Parks:	
Edgar Evin State Rustic	DeKalb
Reelfoot Lake	Lake
T. O. Fuller	Shelby
Pickwick Landing	Hardin
Paris Landing	Henry
Nathan B. Forrest	Benton, Humphreys
David Crockett	Lawrence
Montgomery-Bell	Dickson
Henry Horton	Marshall
Bledsoe Creek	Sumner
Old Stone Fort	Coffee
Rock Island	Warren
Lookout Mountain	Hamilton
Warriors Path	Sullivan
Roan Mountain	Carter
Fall Creek Falls	VanBuren
Cumberland Mountain	Cumberland
Harrison Bay	Hamilton
Booker T. Washington	Hamilton
Cove Lake	Campbell
Big Ridge	Union
Norris Dam	Anderson
Panther Creek	Hamblen
State Scenic Rivers:	
Hatchie	
Harpeth	
Collins	
Roaring	
Tuckahoe Creek	
French Broad	
Hiwassee	
Conasauga	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Texas	County
State Parks:	
Palo Duro Canyon	Randall, Armstrong
Copper Breaks	Foard, Hardeman
Mother Neff	Coryell
Bonham	Fannin
Daingerfield	Morris
Atlanta	Cass
Caddo Lake	Harrison
Meridian	Bosque
Tyler	Smith
Dinosaur Valley	Somervell
Cleburne	Johnson
Possum Kingdom	Palo Pinto
Big Spring	Howard
Abilene	Taylor
Monahans Sandhills	Ward, Winkler
Lake Whitney	Hill
Davis Mountains	Jefferson Davis
Sea Rim	Jefferson
Inks Lake	Burnet
Galveston Island	Galveston
Velasco	Brazoria
Varnor-Hogg Plantation	Brazoria
Port Lavaca	Calhoun
Goose Island	Aransas
Copano Bay Causeway	Aransas
Goliad	Goliad
Lake Corpus Christi	Live Oak, San Patricio
Brazos Island	Cameron
Bentsen-Rio Grande Valley	Hidalgo
Falcon	Starr, Zapata
Kerrville	Kerr
Garner	Uvalde
Palmetto	Gonzales
Bastrop	Bastrop
Blanco	Blanco
Caprock Canyons	Briscoe
Washington on the Brazas	Washington, Grimes
Martin Dies, Jr.	Tayler
Stephen F. Austin	Waller

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

Virginia	County
State Forests:	
Pocahontas	Chesterfield
Cumberland	Cumberland
Prince Edward	Prince Edward
Gallion	Prince Edward
Buckingham & Appomattox	Buckingham, Appomattox
State Parks:	
Chincoteague Island	Accomack
Pochontas	Chesterfield
Westemoreland	Westemoreland
Bear Creek Lake	Cumberland
Prince Edward & Goodwin Lake	Prince Edward
Holliday Lake	Appomattox
Staunton River	Halifax
Occoneechee	Mcklenburg
Douthat	Allagheny, Bath
Fairy Stone	Patrick
Claytor Lake	Pulaski
Hungry Mother	Smyth
Rocky Knob RA	Floyd
Breaks Interstate	Buchanan, Dickinson
Natural Tunnel	Scott
Crooked Creek Fishing Preserve	Carroll
Davis Tract	Fairfax
Mountain Meadow Farm	Smyth
Private Natural Lands:	
Fernbrook NA (NC)	Albermarle
Fraser Preserve (NC)	Fairfax
Virginia Coast Reserve (NC)	North Hampton, Accomack
Alexander Berger Memorial Sanctuary	Spotsylvania, Caroline
State Scenic Rivers:	
Martin's Fork	
Roanoke	
Appomattox	
Goose Creek	
Rivanna	

TABLE II-66 (continued)

STATE AND LOCAL NATURAL AREAS BY STATE

West Virginia	County
State Forests:	
Coopers Rock	Monongalia
Kumbrabow	Randolph
Greenbriar	Greenbriar
Camp Creek	Mercer
Panther	McDowell
Cabwaylingo	Wayne
Kanawha	Kanawha
State Parks:	
Tomlinson Run	Hancock
Grave Creek Mound	Marshall
Pricketts Fort	Marion
North Bend	Ritchie
Valley Falls	Taylor
Tygart Lake	Barbour, Taylor
Cathedral	Preston
Audra	Barbour
Cedar Creek	Gilmer
Blackwater Falls	Tucker
Canaan Valley	Tucker
Holly River	Webster
Cacapon Mountain	Morgan
Watoga	Pocahontas
Pinnacle Rock	Mercer
Bluestone	Summers
Babcock	Fayette
Hawks Nest	Fayette
Pipestem	Mercer
Twin Falls	Wyoming
Chief Logan	Logan
Beartown	Greenbriar, Pocahontas
Camifex Ferry Battlefield	Nicolas
Private Natural Lands:	
Cranesville Swamp (NC)	Preston
Greenland Gap (NC)	Grant
The Murphy Preserve (NC)	Ritchie
Yankaner Preserve (NC)	Berkeley
State Scenic Rivers:	
New	
Greenbriar	
Anthony Creek	
Cranberry	
Birch	

[a] Key: (CCC) Collier County Conservancy
(NAS) National Audubon Society
(NC) The Nature Conservancy
NA Natural Area
RA Recreation Area
SHS State Historic Site

Source: State maps and statistical abstracts.

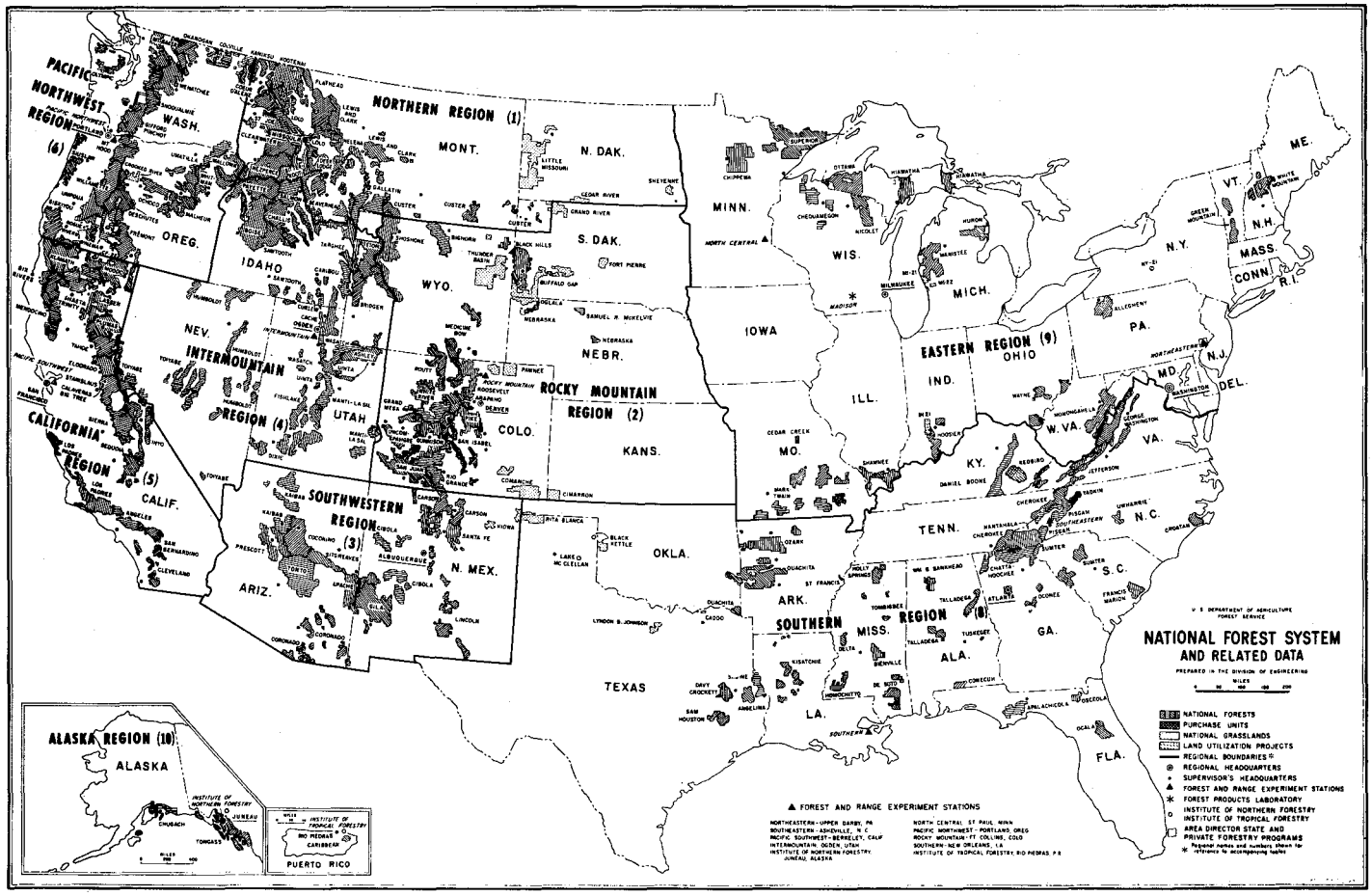

Fig. II-90. National Forest System, 1977. Source: USDA, Forest Service, Land Areas of the National Forest System. File 1380 (5400).

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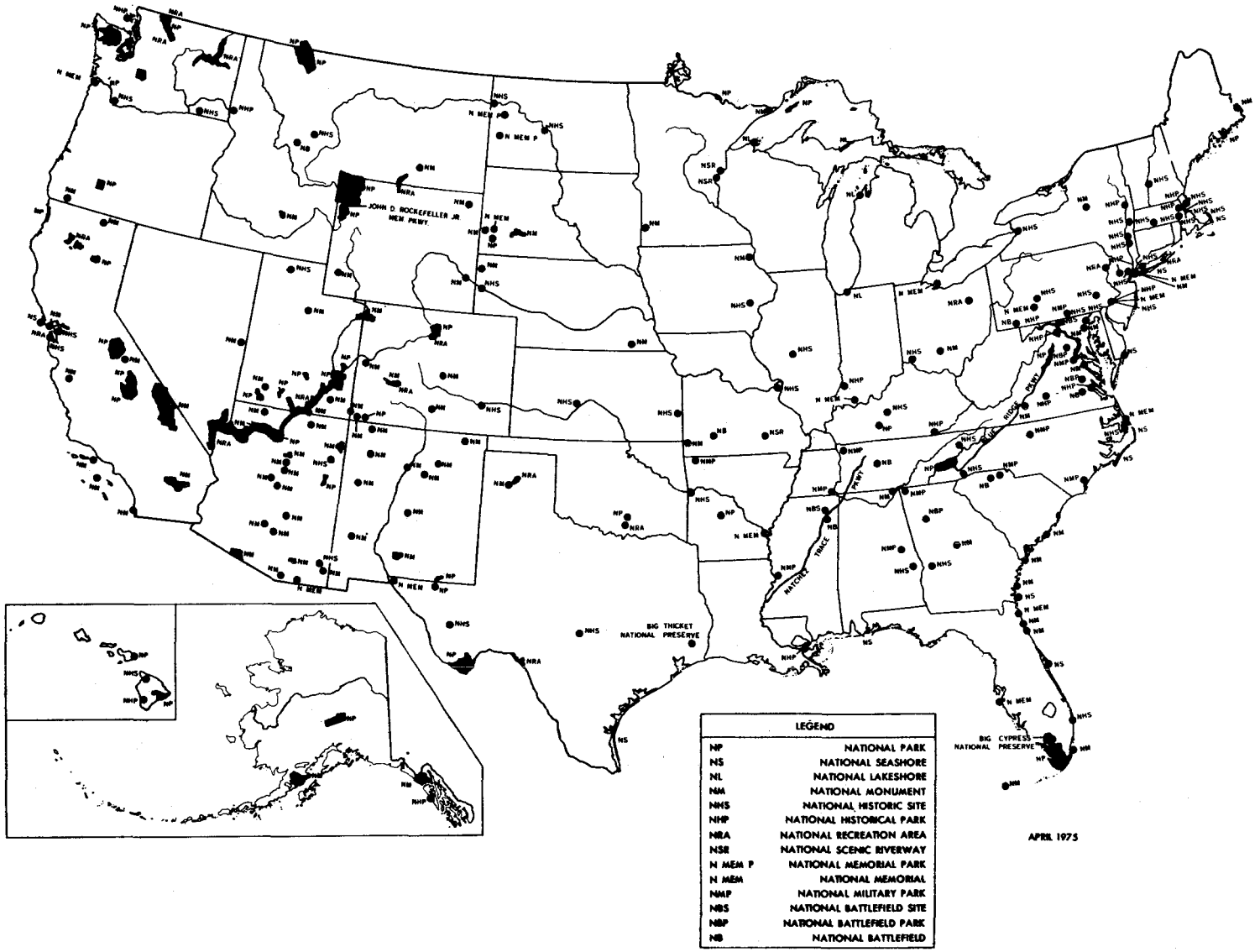

Fig. II-91. National Park System, 1975. Source: USDA Forest Service, 1977, The Nation's Renewable Resources - An assessment, 1975, Forest Resource Report 21.

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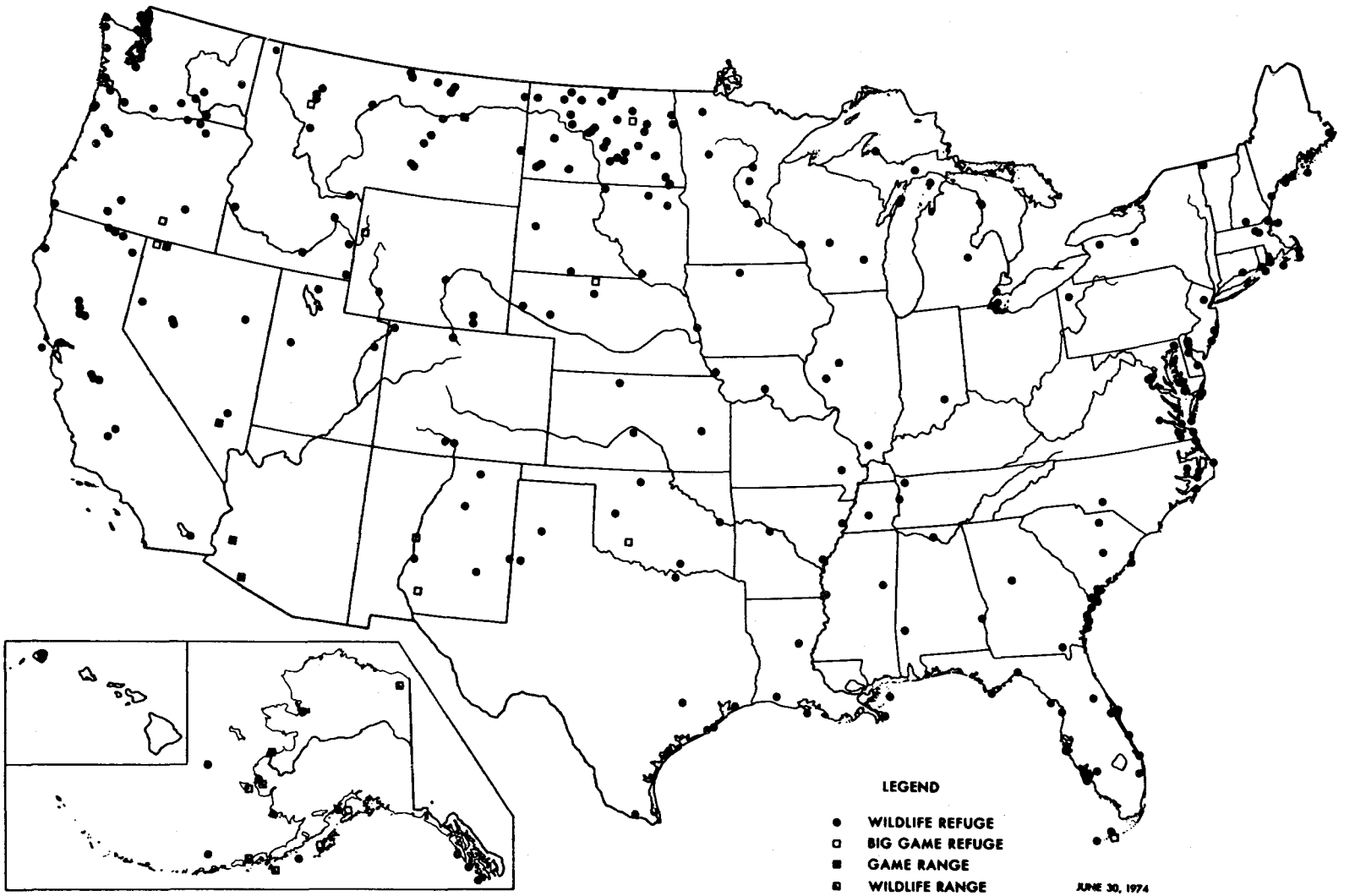

Fig. II-92. National Wildlife Refuge System, 1974. Source: USDA, Forest Service, 1977, The Nation's Renewable Resources-An Assessment, 1975, Forest Resource Report 21.

II-F. Biota

The biotic resources of any defined region can be classified, discussed, and portrayed in a variety of ways, depending on the purposes for which the information is intended. The species is the lowest practical level that contains useful information for regional analyses and assessments, and tables of species and maps of range distributions are examples. The total of the plant species in a region constitutes its flora (for animals, its fauna), while the addition of quantitative measures of plant species' sizes, numbers, and distribution constitutes a regional vegetation.

While vegetation is widely recognized as a major integrator of physical environmental parameters such as climate, soils, and topography, a recent work (Bailey 1976) attempts to use these regional attributes in a correlative way to portray ecoregions, areas in which various natural or technological perturbations can be expected to elicit similar responses from ecosystem units of the regional landscape.

Flora

The biotic resources section is subdivided into flora and fauna. The Flora subsection includes a table (II-67), maps (II-93 to II-95) and a discussion of Bailey's ecoregion classification, natural vegetation (Table II-68 and Fig. II-96) and lists of recommended endangered, threatened and extinct plant species by state (Table II-69 and II-70). The diversity of flora in the South is indicated by the presence of 12 of the 35 ecoregions in the conterminous U.S. and 50 of the 116 potential vegetation types. Fig. II-97 is an interpretation of existing forest

types compiled by the U.S. Forest Service and published in the National Atlas. While there is a strong correlation with both ecoregion classification and Küchler's "potential natural vegetation," the forest types tend to reflect existing forest cover and the extent of commercial (or merchantable) timber types. For purposes of environmental assessment, the use of forest types may permit better estimates of economic impact than either an ecoregion or a potential vegetation classification.

Fauna

The Fauna subsection includes species lists of mammals for states (Table II-71) based on literature giving historical range data. Bird lists such as available from the Breeding Bird Survey were not included due to lack of time. Fish catch statistics (Table II-72) do not include recreational fishing on inland waters. Animal information also includes those species designated as endangered, or threatened (Table II-73 and II-74). Fig. II-98 indicates the concentrations of endangered mammals by counting the number of endangered species within counties. It is difficult to find population and range data that are more specific than those for broad regions such as states. Until animal components (particularly vertebrates) can be tied more closely to specific habitat types, it is difficult to generate the kinds of regional data that would do more than simply characterize historical ranges of the species involved.

Ecoregion Classification

The natural ecological characteristics of the region are described in terms of ecoregions and potential natural vegetation. Ecoregions result from a hierarchical classification scheme in which each region is

characterized by distinctive combinations of flora, fauna, climate, landforms, soils, and vegetational climax. The U.S. ecoregion map (Fig. II-93), with accompanying explanation (Fig. II-94) and a county level map (Fig. II-95) portray the ecoregions of the South. Each ecoregion will respond differentially to environmental impacts so that the consequences of various environmental policies can be projected for the ecoregions as a whole. The following characterization of ecoregions (from Davis 1978) presents generalized information on those present in the South.

Ecoregions for the southern United States (Fig. II-95), are all shown at the province level except for the mixed mesophytic, Appalachian oak forest, and oak-hickory forest categories, which are sectional divisions of Bailey's eastern deciduous forest province, and the southern forest and southern mixed floodplain classes, which are sections of the outer coastal plain forest province.

The Tropical (Everglades) Province comprises the southernmost portion of the Florida peninsula. The area is very flat and lies only a few feet above mean sea level. Soils of the province are primarily inceptisols, entisols, and histosols, all relatively poorly drained and often highly organic.

Vegetation is mostly Everglades swamp, with mangrove along the Gulf Coast, some cypress savanna, southern Coastal Plain forest, and palmetto prairie, and, along the Atlantic Coast north of Miami, sand pine scrub.

Wildlife abounds in the Everglades National Park. Both the flora and fauna of this area contain many threatened and rare species, and conservation is a major requirement. Land development has taken place primarily along the eastern south-Florida coast, where the entire coastline is either "strip development" or urban-suburban development. Dade

and Broward counties average over 250 persons per square mile despite the fact that the majority of the land area of these counties is in forest or swampland. Truck farming (e.g., tomato farming) and other specialized uses also compete for land.

The Chihuahuan Desert occupies the majority of Trans-Pecos Texas. Most of the province was severely overgrazed in the last half of the 19th century. It has exhibited slow and little recovery (vegetational succession), and still suffers from widespread, wind-blown erosion. The region is relatively sparsely settled (except around El Paso) and therefore does not receive much culturally derived pollution.

The Shortgrass Prairie province covers most of the Texas and Oklahoma Panhandles. This region has been severely overgrazed in the past and was the heart of the "Dustbowl" of the 1930's. Irrigation has converted a large percentage of the land to high yield, industrialized agricultural use. Primary crops include cotton, corn, sorghum, and wheat.

A portion of the Tall Grass Prairie extends down into eastern and central Oklahoma. The majority of this province is currently either under cultivation, primarily for small grains, or in grazing systems as pasture or range land.

The Prairie Brushland province lies immediately east of the Chihuahuan Desert in central and southern Texas. Some dry land wheat and irrigated wheat are grown in the northern and central sections, while both corn and sorghum are grown in the northern and southern sections. A significant proportion of the Texas citrus crop is grown in the southern section.

The Prairie Parkland province is important for range and agricultural land. Two major coal deposits are found within this region, the Western Interior coal region, which enters from the north into eastern Oklahoma and western Arkansas, and the Texas Gulf coal region, which lies primarily in Texas, with some deposits in extreme western Louisiana. Most of the commercially important coal of the Western Interior region is in thin seams mined by the stripping of outcrop coal. Most of the coal is used for steam-electric generating plants where little preparation is required.

All of the identified coal reserves of the Texas Gulf Region are lignite. All current production is strip-mined north of the Colorado River, where up to 180 feet of overburden is removed. This production is captive, and includes coal for steam-electric plants and activated carbon. Because it is relatively uneconomical to transport bulky lignite considerable distances, use of the coal for conversion or combustion near its source can be expected.

The Southern Forest section occupies a comparatively narrow belt along with the Gulf Coast characterized by long growing seasons. The flat topography rests on Tertiary and Quaternary sediments. Soils are highly varied and generally not very fertile, but when properly treated (fertilized, drained, and sometimes irrigated), they are capable of high rates or production. Climate is highly favorable throughout this area, and a variety of specialty crops is grown.

Large commercial forests of the area are primarily pine (locally termed "piney woods"). Because so much of the section is low or of

locally poor drainage, slash pine and other species tolerant of poor aeration are widespread. Longleaf pine ranges from moist to dry sand-hill areas, where fire history has favored its regeneration.

Other forests consist of beech, sweetgum, and magnolia in mixtures with pine and/or oak. In a narrow belt along the coast, the evergreen live oak adds to the distinctive appearance of both wild and cultivated vegetation. Laurel oak and the semievergreen water oak extend to or beyond the inland limits of the section, especially in the moist low-lands. In many areas, hardwood species are considered more a nuisance to be overcome through forest management practices (for pine) than an asset. In bottomlands, hardwood production is excellent. Wildlife management is an important consideration throughout the area.

The Southern Floodplain Forest section extends through the Mississippi embayment of the Coastal Plain from the Louisiana Delta to lowlands around Cairo, Illinois. Through this area, soils are mostly of recent origin and tend to be highly organic. For millenia, this area has received the deposition of fine textured silts, clays, and organic matter from the upper Midwest. Consequently, soils are generally fertile and productive.

The native vegetation of southern floodplain forests consists mainly of lowland oaks, cypress, and gums. These are species-rich forests of high productivity. Although some of the area is covered by swampland, much of the land has been cleared and drained for cotton, soybeans, sugarcane and feed grain production during the past two decades.

Swamp hardwood species of great economic value as well as bald cypress, spanish moss, and a rich variety of animal life make these

lowland forests famous as national assets. Wildlife reservations and many ecologically important areas, which are not formally designated for these purposes or legally protected in other ways, are of national significance as refuges for game birds and for an abundance of nongame wildlife.

The Southeastern Mixed Forest is a broad province, not yet divided into sections by Bailey. A transitional or mosaic pattern combines some of the features noted above with others more typical of the central core of deciduous forest. This is the classical oak-hickory-pine forest region of the southeast and midsouth. The soils are mostly utisols (red and yellow lateritics) of relatively low intrinsic fertility. Surface landforms range from high hills (bordering on low mountains) along the inland border of the province to flat plains nearer the coast.

The vegetation of the unit is typically a mixture of oak, hickory, and pine. Along the northern border, hardwood forests are more common, while toward the coast, pine predominates. Much of this region is especially valuable for commercial forest enterprises, which have large land holdings throughout. Loblolly and shortleaf pines are the major commercial species grown in the section from Alabama through Virginia.

The Mixed Mesophytic Forest section of the Eastern Deciduous Forest was formerly interpreted as an area in the Cumberland Mountains and Cumberland Plateau where numerous trees persisted in place despite the climatic changes that must have accompanied Pleistocene glaciation. However, new evidence for speices migrations suggests that the famous floristic richness of this area (and of the higher Appalachians further

east) instead reflects the highlands' diversity of habitats and their location as a crossroads for species invading from the Southeast and the Southwest within the last 10,000 years.

The Cumberland and, northward, Allegheny areas are the locations of most of the Appalachian coals, mostly in gently dipping beds layered between thick (locally pyritic) shales and more or less massive sandstones which form the bold cliffs and other topographic features of these regions. Soils of the area have weakly differentiated horizons showing alternation of parent materials. Generally these are only poor to fair for agricultural purposes. Forests are rich in species, including maples, buckeye, beech, tulip tree, oaks, hickories, and basswood. Prior to the chestnut blight, chestnut was important throughout the area. From the point of view of commercial timber, this area currently produces far below its potential. The forests have, for the most part, been repeatedly and severely highgraded, leaving genetically and commercially inferior trees over much of the area. Wildlife production is far below potential due to poaching and relatively little active management.

The Appalachian Oak Forest section lies east of the Mixed Mesophytic section. The Appalachian range, containing the Blue Ridge and Smoky Mountains, displays local topographic relief up to approximately 3280 feet, with elevations reaching nearly 6560 feet. This is an area of vast scenic beauty, with long vistas, beautifully sculpted valleys, clear mountain streams, waterfalls, and rich upland forests.

On the higher elevations, forests of spruce and fir occur. These grade with decreasing elevation into hemlock-hardoood forests and then into tulip poplar, oak-hickory, mixed, and pine forests. Finally, at lower elevations, forests of tulip poplar, sycamore (on floodplains), and many additional deciduous species predominate.

The soils of the area are generally shallow, rocky, and poor for agriculture. Rapid erosion of hill slope farms led to reduction in fertility and eventually to abandonment of the land or to a shift to small pastures. Second growth forest (pine) became established over much of the area (this includes much white pine, especially on the Blue Ridge above 2625 feet). Only within the past two decades has the forest recovered from exploitive logging near the turn of the century. Extensive national forests offer prospects for a leading forest-products area in addition to intensive wilderness recreation use. Fish and wildlife are abundant and commercially important throughout the area.

Notable exceptions to the rugged mountainous terrain of the Blue Ridge Division are found in the "Valley and Ridge" physical division of the province lying along the section's northwestern belt. This area, from the valleys of the Clinch, Powell, Holston, and Tennessee rivers to Virginia's Shenandoah River, is characterized by thrust-fault-originated topography consisting of a series of washboard-like alternating ridges and valleys. The limestone valleys tend to be fertile, and those underlaid by shale are used mostly for pasture and small fields (gardens).

The Oak-Hickory Forest section covers a wide area of the interior uplands west of the Cumberland Plateau. Soils are residual and generally only moderately fertile. Oak and hickory forest systems are typical of this area, especially on many of the drier sites. On the moister slopes and on valley soils, mesophytic communities are so important that Braun[2] used the term "Western Mesophytic" for the section east of the Mississippi. Commercially valuable hardwood timber is produced throughout the area.

In the Cumberland River and other tributary valleys of the Mississippi bottomland, forests of gum, sycamore, silver maple, elm, and ash are highly productive. Wildlife is important in the area.

In western Kentucky, is the region underlaid by bituminous coal-bearing strata amenable to surface mining, and also containing oil and gas deposits. Land reclamation following mining on such gently sloping topography is much more economical than on the steep slopes further east. The western Kentucky coal region is geologically and topographically akin to its counterparts in southern Illinois.

Rare, Endangered, and Threatened Species

The Endangered Species Act of 1973 has given rise to many listings of plant and animal species at both Federal and state levels. Public concern for technological acceleration of species extinction rates has focussed much attention on those organisms whose population numbers are low and whose habitat quality is in danger of being diminished. Unfortunately, most available information is based on historical ranges of the species in question, and little is available in the way of recent, specific location data.

Tables II-69, II-70, II-73 and II-74 along with Fig. II-98 portray the available data on rare and endangered species distributions in the South. Source of the data is indicated on each table and figure. For specific problems of the siting of energy-related facilities, more locational detail would be needed. In order to flag regions of potential conflict, however, the data are useful, as they give an indication of the numbers of critical species in generalized areas, constitute an index of environmental diversity, and point out which regions need to be examined in greater detail.

Data Quality, Gaps, Limitations

Ecoregion and vegetation data are available in a digital form although potential vegetation data do not reflect current land use practices. Plant distribution data, even for endangered and threatened species, are not readily available at a finer resolution than the state level. Population and current range data for animals are also not readily available. Harvest data for fish and game species are maintained by states and not readily available in a consistent format.

	Resolution of data presented	Finer resolution of available data	Computerized?
F. Biota			
1. Flora			
Ecoregions	State	County	Yes (ORNL GDB)[1]
Vegetation Types	State	County	Yes (ORNL GDB)
Forest Types	State	County	Yes (ORNL GDB)
Endangered Plant Species	State	-	-
2. Fauna			
Mammals	Region	County	Yes (ORNL GDB)
Birds	Not Included	Survey Routes	Yes (USFWS BBS)[2]
Fish	State	?	?
Endangered Species	State	County	Yes (BNL)[3]

[1]ORNL GDB - ORNL Geoecology Data Base.

[2]USFWS BBS - U.S. Fish and Wildlife Service Breeding Bird Survey.

[3]BNL - Brookhaven National Laboratory.

TABLE II-67

ECOREGION ACREAGES IN THE SOUTH, 1976

ECORGN_C	ECORGN_D	N_COUNT	ECORGN_A
2211	MIXED MESOPHYTIC FOREST	107	22332761
2214	APPALACIAN OAK FOREST	142	30589349
2215	OAK-HICKORY FOREST	207	51213261
2311	SOUTHERN FOREST	207	72100405
2312	SOUTHERN FLOODPLAIN FORE	91	25612744
2320	SOUTHEASTERN MIXED FORES	498	155381885
2511	OAK-HICKORY-BLUESTEM PAR	9	2434192
2512	OAK-BLUESTEM PARKLAND	139	56985970
2521	MESQUITE-BUFFALO GRASS	50	22235660
2522	JUNIPER-OAK-MESQUITE	38	16200664
2523	MESQUITE-ACACIA	31	18400166
2531	BLUESTEM PRAIRE	5	684455
2533	BLUESTEM-GRAMA PRAIRIE	31	14617440
3113	GRAMA-BUFFALO GRASS	53	29810636
3212	TARBUSH-CREOSOTE BUSH	25	28842456
4110	EVERGLADES	6	4150956

Source: ORNL Geoecology Database, from Bailey, 1976, Ecoregions of the United States (Map), U.S. Forest Service.

Column Legend: ECORGN_C - Ecoregion Code; ECORGN_D - Ecoregion Description; N_COUNT - Number of County Occurrences; ECORGN_A - Ecoregion Acreage.

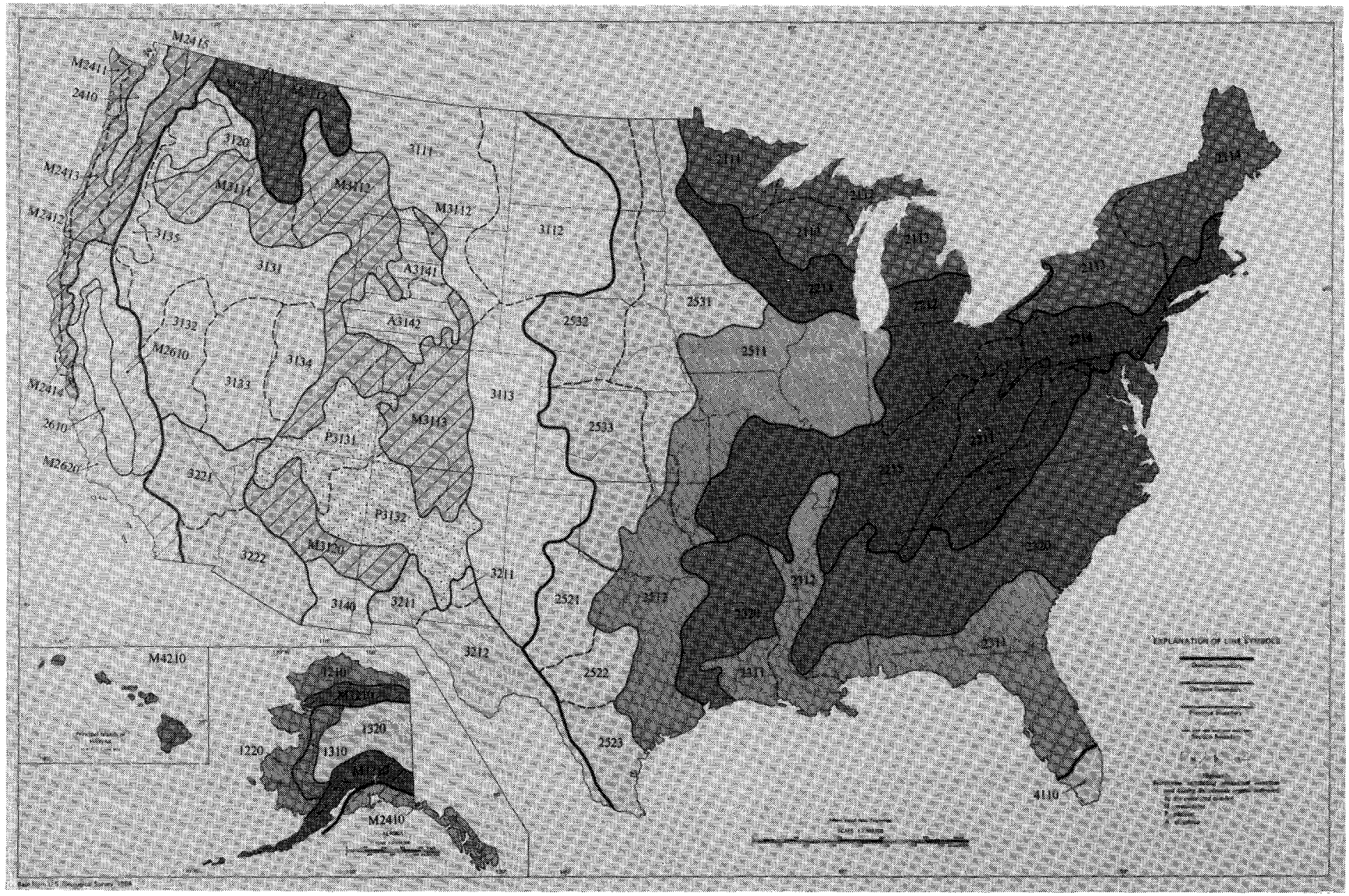

Fig. II-93. Ecoregions of the United States. Source: Bailey, 1976. Ecoregions of the United States, U.S. Forest Service.

EXPLANATION

DOMAIN	DIVISION	LOWLAND ECOREGIONS		HIGHLAND ECOREGIONS*	
		PROVINCE	SECTION	PROVINCE	SECTION
1000 POLAR	1200 TUNDRA	1210 ARCTIC TUNDRA 1220 BERING TUNDRA		M1210 BROOKS RANGE	
	1300 SUBARCTIC	1310 YUKON PARKLAND 1320 YUKON FOREST		M1310 ALASKA RANGE	
2000 HUMID TEMPERATE	2100 CONTINENTAL COOL - SUMMER	2110 LAURENTIAN MIXED FOREST	2111 SPRUCE-FIR FOREST 2112 NORTHERN HARDWOODS FIR FOREST 2113 NORTHERN HARDWOODS FOREST 2114 NORTHERN HARDWOODS SPRUCE FOREST	M2110 COLUMBIA FOREST (DRY SUMMER)	M2111 DOUGLAS FIR FOREST M2112 CEDAR-HEMLOCK-DOUGLAS FIR FOREST
	2200 CONTINENTAL WARM - SUMMER	2210 EASTERN DECIDUOUS FOREST	2211 MIXED MESOPHYTIC 2212 BEECH-MAPLE FOREST 2213 MAPLE-BASSWOOD FOREST + OAK SAVANNA 2214 APPALACHIAN OAK FOREST 2215 OAK-HICKORY FOREST		
	2300 HOT - SUMMER	2310 OUTER COASTAL PLAIN FOREST 2320 SOUTHEASTERN MIXED FOREST	2311 BEECH-SWEETGUM-MAGNOLIA-PINE OAK FOREST 2312 SOUTHERN FLOOD-PLAIN FOREST		
	2400 MARITIME	2410 WILLAMETTE-PUGET FOREST		M2410 PACIFIC FOREST	M2411 SITKA SPRUCE-CEDAR-HEMLOCK FOREST M2412 REDWOOD FOREST M2413 CEDAR-HEMLOCK DOUGLAS FIR FOREST M2414 CALIFORNIA MIXED EVERGREEN FOREST M2415 SILVER FIR-DOUGLAS FIR FOREST
	2500 PRAIRIE	2510 PRAIRIE PARKLAND	2511 OAK-HICKORY-BLUESTEM PARKLAND 2512 OAK + BLUESTEM PARKLAND		
		2520 PRAIRIE BRUSHLAND	2521 MESQUITE-BUFFALO GRASS 2522 JUNIPER - OAK - MESQUITE 2523 MESQUITE - ACACIA		
		2530 TALL GRASS PRAIRIE	2531 BLUESTEM PRAIRIE 2532 WHEATGRASS - BLUESTEM NEEDLEGRASS 2533 BLUESTEM - GRAMA PRAIRIE		
	2600 MEDITERRANEAN (DRY - SUMMER SUBTROPICAL)	2610 CALIFORNIA GRASSLAND		M2610 SIERRAN FOREST M2620 CALIFORNIA CHAPARRAL	
3000 DRY	3100 STEPPE	3110 GREAT PLAINS SHORT-GRASS PRAIRIE	3111 GRAMA - NEEDLEGRASS-WHEATGRASS 3112 WHEATGRASS - NEEDLEGRASS 3113 GRAMA - BUFFALO GRASS	M3110 ROCKY MOUNTAIN FOREST	M3111 GRAND FIR DOUGLAS-FIR FOREST M3112 DOUGLAS-FIR FOREST M3113 PONDEROSA PINE - DOUGLAS-FIR FOREST
		3120 PALOUSE GRASSLAND		M3120 UPPER GILA MOUNTAINS FOREST	
		3130 INTERMOUNTAIN SAGE-BRUSH	3131 SAGEBRUSH - WHEATGRASS 3132 LAHONTAN SALTBUSH-GREASEWOOD 3133 GREAT BASIN SAGEBRUSH 3134 BONNEVILLE SALTBUSH - GREASEWOOD 3135 PONDEROSA SHRUB FOREST	P3130 COLORADO PLATEAU	P3131 JUNIPER PINYON WOODLAND + SAGEBRUSH SALTBRUCH MOSAIC P3132 GRAMA-GALLETA STEPPE + JUNIPER - PINYON WOODLAND MOSAIC
		3140 MEXICAN HIGHLANDS SHRUB STEPPE		A3140 WYOMING BASIN	A3141 WHEATGRASS - NEEDLEGRASS-SAGEBRUSH A3142 SAGEBRUSH - WHEATGRASS
	3200 DESERT	3210 CHIHUAHUAN DESERT	3211GRAMA - TOBOSA 3212 TARBUSH - CREOSOTE BUSH		
		3220 AMERICAN DESERT (MOJAVE-COLORADO-SONORAN)	3221 CREOSOTE BUSH 3222 CREOSOTE BUSH - BUR SAGE		
4000 HUMID TROP-ICAL	4100 SAVANNA	4110 EVERGLADES			
	4200 RAINFOREST			M4210 HAWAIIAN ISLANDS	

*Key to letter symbols: M - mountains, P - plateau, A - altiplano

Fig. II-94. Ecoregion Codes. Source: Bailey, 1976. Ecoregions of the United States, USFS, (Map Legend).

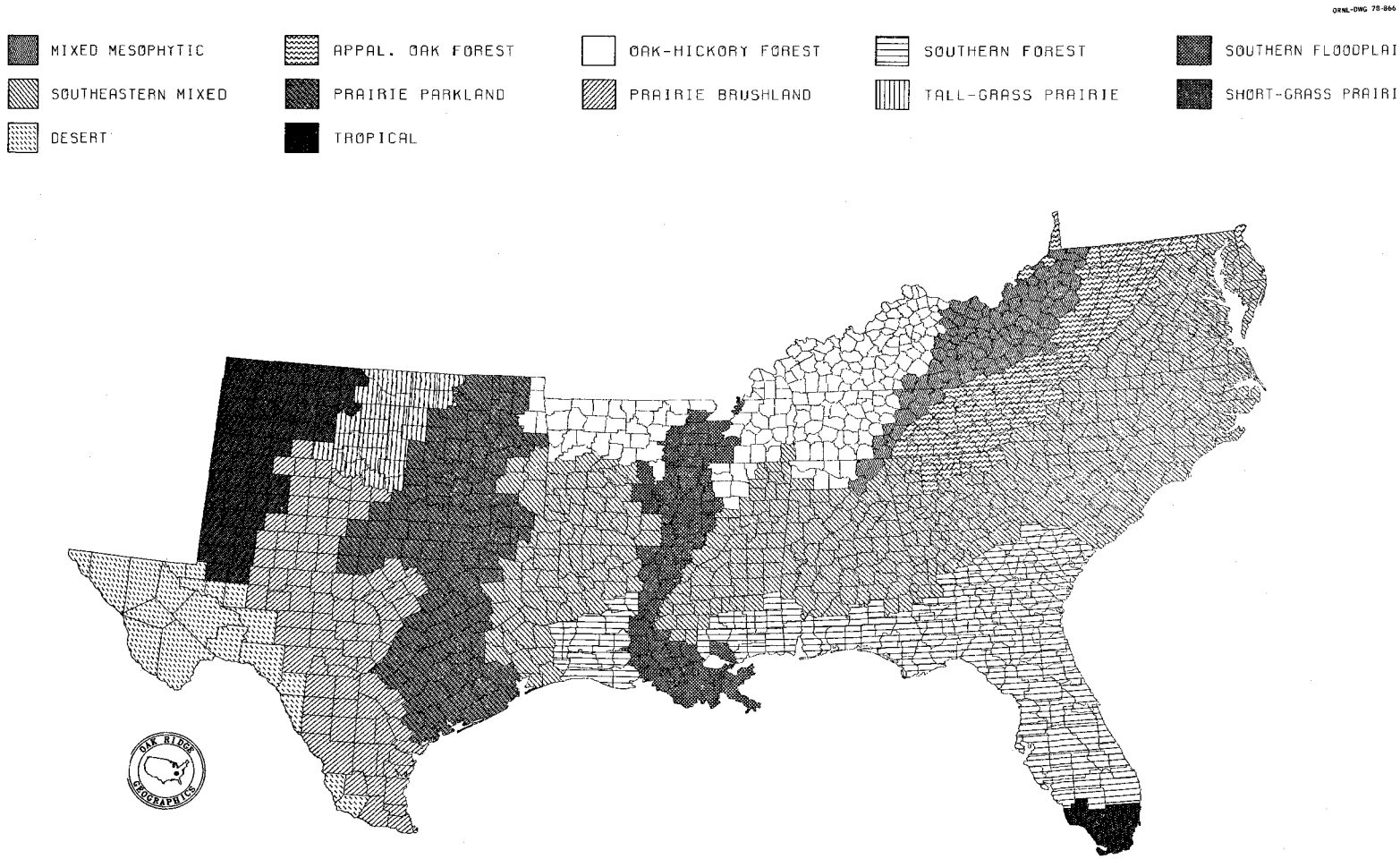

Fig. II-95. County ecoregion classification. Source: ORNL Geoecology Database, from Bailey, 1976, Ecoregions of the United States (Map), USDA Forest Service.

TABLE II-68

POTENTIAL NATURAL VEGETATION ACREAGES IN THE SOUTH, 1966

VEG_CODE	VEG_DSCP	N_COUNT	VEG_AREA
23	JUNIPER-PINYON WOODLAND	1	247680
31	OAK-JUNIPER WOODLAND	15	2412820
40	SALTBUSH-GREASEWOOD	4	246968
44	CREOSOTE BUSH-TARBUSH	1	60891
45	CENIZA SHRUB	9	1631330
54	GRAMA-TOBOSA PRAIRIE	20	3766462
58	GRAMA-TOBOSA SHRUBSTEPPE	1	182674
59	TRANS-PECOS SHRUB SAVANNA	42	18152960
60	MESQUITE SAVANNA	17	5486871
61	MESQUITE-ACACIA SAVANNA	35	15929000
62	MESQUITE-LIVE OAK SAVANNA	5	1910123
65	GRAMA BUFFALO-GRASS	58	24951581
69	BLUESTEM-GRAMA PRAIRIE	37	8119972
70	SANDSAGE-BLUESTEM PRAIRIE	17	2486449
71	SHINNERY	22	4481117
72	SEA OATS PRAIRIE	10	412365
73	NORTHERN CORDGRASS PRAIRIE	7	268971
74	BLUESTEM PRAIRIE	20	2227025
76	BLACKLAND PRAIRIE	53	11781711
77	BLUESTEM-SACAHUISTA PRAIRIE	36	10065310
78	SOUTHERN CORDGRASS PRAIRIE	33	5058861
79	PALMETTO PRAIRIE	22	2686839
80	MARL EVERGLADES	4	426848
82	TRANSITION BETWEEN 74 AND 100	46	4885283
83	CEDAR GLADES	18	1486893
84	CROSS TIMBERS	92	18537088
85	MESQUITE-BUFFALO GRASS	68	22894503
86	JUNIPER-OAK SAVANNA	49	15618031
87	MESQUITE-OAK SAVANNA	9	2063012
88	FAYETTE PRAIRIE	11	1792571
89	BLACKBELT	37	4238886
90	LIVE OAK-SEA OATS	44	1724946
91	CYPRESS SAVANNA	6	729392
92	EVERGLADES	9	2463980
96	NORTHEASTERN SPRUCE-FIR FOREST	8	322800
97	SOUTHEASTERN SPRUCE-FIR FOREST	4	102956
98	NORTHERN FLOODPLAIN FOREST	4	192010
100	OAK-HICKORY FOREST	301	57314874
102	BEECH-MAPLE FOREST	5	162691
103	MIXED MESOPHYTIC FOREST	108	19878951
104	APPALACHIAN OAK FOREST	148	22505882
105	MANGROVE	6	637010
106	NORTHERN HARDWOODS	48	3307997
111	OAK-HICKORY-PINE FOREST	586	142455697
112	SOUTHERN MIXED FOREST	241	60634097
113	SOUTHERN FLOODPLAIN FOREST	351	40801282
114	POCOSIN	27	2810934
115	SAND PINE SCRUB	10	596255
116	SUBTROPICAL PINE FOREST	3	434735

Source: ORNL Geoecology Database, from Küchler, 1964, Potential National Vegetation (Map).

Column Legend: VEG_CODE - Vegetation Code; VEG_DSCP - Vegetation Description; N_COUNT - Number of County Occurrences; VEG_AREA - Vegetation Acreage.

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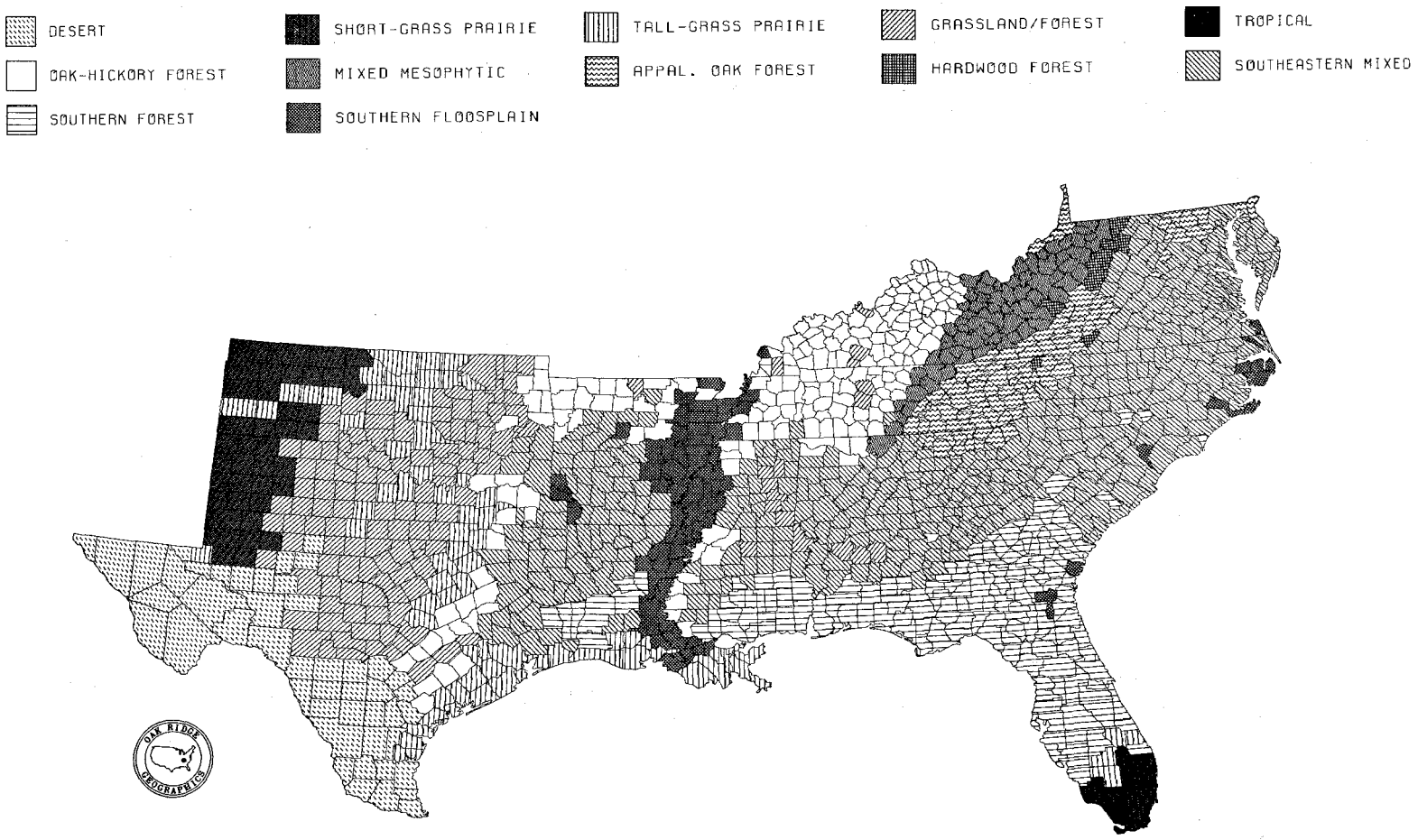


Fig. II-96. County potential vegetation classification. Source: ORNL Geoecology Database, from Küchler, 1964, Potential National Vegetation of the Conterminous United States, (map).

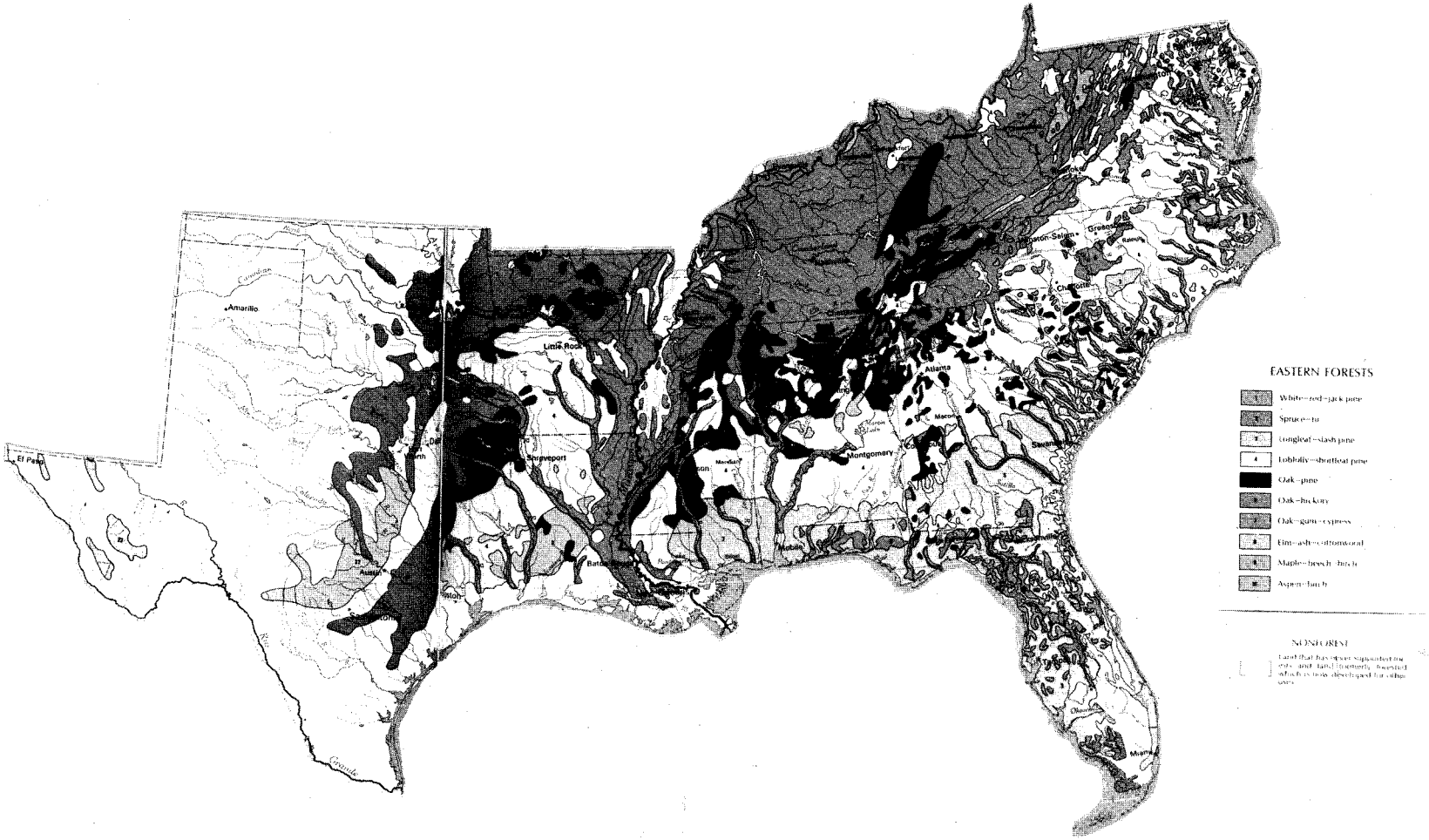


Fig. II-97. Major Forest Types. Source: USGS, 1970, The National Atlas of the United States, p 156.

TABLE II-69

NUMBERS OF RECOMMENDED ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

State	Endangered	Threatened	Extinct	Total
Alabama	33	57	0	90
Arizona	10	18	0	28
Florida	77	121	4	202
Georgia	26	68	4	98
Kentucky	7	23	0	30
Louisiana	1	8	3	12
Mississippi	2	17	0	19
North Carolina	20	55	2	77
Oklahoma	11	10	1	22
South Carolina	13	40	0	53
Tennessee	23	46	1	70
Texas	97	127	15	239
Virginia	13	30	1	44
West Virginia	0	11	0	11
South	286	348	30	664
U.S. (excluding Hawaii)	839	1,211	90	2,140
% of U.S.	34	29	33	31

Source: Ayensu and DeFilipps, 1978, Endangered and Threatened Plants of the United States. Smithsonian Institution and the World Wildlife Fund, Inc., Washington, D.C.

TABLE II-70

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
ALABAMA	THREATENED	VIOLACEAE	VIOLA EGGLESTONII
ALABAMA	THREATENED	XYRIDACEAE	XYRIS DRUMMONDII
ALABAMA	THREATENED	XYRIDACEAE	XYRIS LONGISEPALA
ALABAMA	THREATENED	XYRIDACEAE	XYRIS SCABRIFOLIA
ARKANSAS	ENDANGERED	BRASSICACEAE	DRABA APRICA
ARKANSAS	ENDANGERED	BRASSICACEAE	STREPTANTHUS SQUAMIFORMIS
ARKANSAS	ENDANGERED	CARYOPHYLLACEAE	GEOCARPON MINIMUM
ARKANSAS	ENDANGERED	ERIOCAULACEAE	ERIOCAULON KORNICKIANUM
ARKANSAS	ENDANGERED	FABACEAE	AMORPHA OUACHITENSIS
ARKANSAS	ENDANGERED	FAGACEAE	CASTANEA PUMILA VAR. OZARKENSIS
ARKANSAS	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
ARKANSAS	ENDANGERED	LILIACEAE	SCHOENOLIRION TEXANUM
ARKANSAS	ENDANGERED	ONAGRACEAE	OENOTHERA SESSILIS
ARKANSAS	ENDANGERED	ROSACEAE	NEVIUSIA ALABAMENSIS
ARKANSAS	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
ARKANSAS	THREATENED	FABACEAE	CLADRASTIS LUTEA
ARKANSAS	THREATENED	FAGACEAE	QUERCUS SHUMARDII VAR. ACERIFOLIA
ARKANSAS	THREATENED	LEITNERIACEAE	LEITNERIA FLORIDANA
ARKANSAS	THREATENED	LILIACEAE	TRILLIUM PUSILLUM VAR. OZARKANUM
ARKANSAS	THREATENED	LILIACEAE	VERATRUM WOODII
ARKANSAS	THREATENED	MALVACEAE	CALLIRHOE PAPAVER VAR. BUSHII
ARKANSAS	THREATENED	ONAGRACEAE	GAURA DEMAREEI
ARKANSAS	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
ARKANSAS	THREATENED	ORCHIDACEAE	PLATANTHERA LEUCOPHAEA
ARKANSAS	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
ARKANSAS	THREATENED	PRIMULACEAE	DODECATHEON FRENCHII
ARKANSAS	THREATENED	RANUNCULACEAE	DELPHINIUM NEWTONIANUM
ARKANSAS	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
ARKANSAS	THREATENED	SAXIFRAGACEAE	HEUCHERA ARKANSANA
ARKANSAS	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
ARKANSAS	THREATENED	SCROPHULARIACEAE	CHELONE OBLIQUA VAR. SPECIOSA
ARKANSAS	THREATENED	SCROPHULARIACEAE	PENSTEMON COBAEA VAR. PURPUREUS
FLORIDA	ENDANGERED	ACANTHACEAE	JUSTICIA COOLEYI
FLORIDA	ENDANGERED	ACANTHACEAE	JUSTICIA CRASSIFOLIA
FLORIDA	ENDANGERED	ANNONACEAE	ASIMINA TETRAMERA
FLORIDA	ENDANGERED	APIACEAE	OXYPOLIS GREENMANII
FLORIDA	ENDANGERED	APIACEAE	SIUM FLORIDANUM
FLORIDA	ENDANGERED	ARECACEAE	ROYSTONEA ELATA
FLORIDA	ENDANGERED	ASTERACEAE	ASTER PINIFOLIUS
FLORIDA	ENDANGERED	ASTERACEAE	BALDUINA ATROPURPUREA
FLORIDA	ENDANGERED	ASTERACEAE	LIATRIS OHLINGERAE
FLORIDA	ENDANGERED	BRASSICACEAE	WAREA AMPLEXIFOLIA
FLORIDA	ENDANGERED	BRASSICACEAE	WAREA CARTERI

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
FLORIDA	ENDANGERED	CACTACEAE	CEREUS ERIOPHORUS VAR. FRAGRANS
FLORIDA	ENDANGERED	CACTACEAE	CEREUS GRACILIS VAR. ABORIGINUM
FLORIDA	ENDANGERED	CACTACEAE	CEREUS GRACILIS VAR. SIMPSONII
FLORIDA	ENDANGERED	CACTACEAE	CEREUS ROBINII VAR. ROBINII
FLORIDA	ENDANGERED	CACTACEAE	CEREUS ROBINII VAR. DEERINGII
FLORIDA	ENDANGERED	CARYOPHYLLACEAE	PARONYCHIA CHARTACEA
FLORIDA	ENDANGERED	CARYOPHYLLACEAE	PARONYCHIA RUGELII VAR. INTERIOR
FLORIDA	ENDANGERED	CARYOPHYLLACEAE	SILENE POLYPETALA
FLORIDA	ENDANGERED	CYCADACEAE	ZAMIA INTEGRIFOLIA
FLORIDA	ENDANGERED	ERICACEAE	MONOTROPSIS REYNOLDSIAE
FLORIDA	ENDANGERED	ERICACEAE	RHODODENDRON MINUS VAR. CHAPMANII
FLORIDA	ENDANGERED	EUPHORBIACEAE	CHAMAESYCE DELTOIDEA SSP. SERPYLLUM
FLORIDA	ENDANGERED	EUPHORBIACEAE	CHAMAESYCE GARBERI
FLORIDA	ENDANGERED	EUPHORBIACEAE	CHAMAESYCE PORTERIANA VAR. KEYENSIS
FLORIDA	ENDANGERED	EUPHORBIACEAE	CHAMAESYCE PORTERIANA VAR. SCOPARIA
FLORIDA	ENDANGERED	EUPHORBIACEAE	CROTON ELLIOTTII
FLORIDA	ENDANGERED	EUPHORBIACEAE	CROTON GLANDULOSUS VAR. SIMPSONII
FLORIDA	ENDANGERED	FABACEAE	CASSIA KEYENSIS
FLORIDA	ENDANGERED	FABACEAE	CENTROSEMA ARENICOLA
FLORIDA	ENDANGERED	FABACEAE	GALACTIA PINETORUM
FLORIDA	ENDANGERED	FABACEAE	VICIA OCALENSIS
FLORIDA	ENDANGERED	GENTIANACEAE	GENTIANA PENNELLIANA
FLORIDA	ENDANGERED	HYPERICACEAE	HYPERICUM CUMULICOLA
FLORIDA	ENDANGERED	LAMIACEAE	CONRADINA BREVIFOLIA
FLORIDA	ENDANGERED	LAMIACEAE	CONRADINA GLABRA
FLORIDA	ENDANGERED	LAMIACEAE	DICERANDRA FRUTESCENS
FLORIDA	ENDANGERED	LAMIACEAE	DICERANDRA IMMACULATA
FLORIDA	ENDANGERED	LAMIACEAE	HEDEOMA GRAVEOLENS
FLORIDA	ENDANGERED	LAMIACEAE	MACBRIDEA ALBA
FLORIDA	ENDANGERED	LAMIACEAE	SALVIA BLODGETTII
FLORIDA	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
FLORIDA	ENDANGERED	LILIACEAE	HARPEROCALLIS FLAVA
FLORIDA	ENDANGERED	LILIACEAE	HYMENOCALLIS CORONARIA
FLORIDA	ENDANGERED	LILIACEAE	LILIUM IRIDOLLAE
FLORIDA	ENDANGERED	LILIACEAE	NOLINA ATOPOCARPA
FLORIDA	ENDANGERED	LILIACEAE	NOLINA BRITTONIANA
FLORIDA	ENDANGERED	LINACEAE	LINUM ARENICOLA
FLORIDA	ENDANGERED	LINACEAE	LINUM CARTERI VAR. CARTERI
FLORIDA	ENDANGERED	LINACEAE	LINUM CARTERI VAR. SMALLII
FLORIDA	ENDANGERED	LINACEAE	LINUM WESTII
FLORIDA	ENDANGERED	LOGANIACEAE	SPIGELIA GENTIANOIDES
FLORIDA	ENDANGERED	LOGANIACEAE	SPIGELIA LOGANIOIDES

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
FLORIDA	ENDANGERED	LYTHRACEAE	CUPHEA ASPERA
FLORIDA	ENDANGERED	MELASTOMATACEAE	RHEXIA PARVIFLORA
FLORIDA	ENDANGERED	OLEACEAE	FORESTIERA SEGREGATA VAR. PINETORUM
FLORIDA	ENDANGERED	ORCHIDACEAE	SPIRANTHES LANCEOLATA VAR. PALUDICOLA
FLORIDA	ENDANGERED	ORCHIDACEAE	TRIPHORA CRAIGHEADII
FLORIDA	ENDANGERED	ORCHIDACEAE	TRIPHORA LATIFOLIA
FLORIDA	ENDANGERED	PLUMBAGINACEAE	LIMONIUM CAROLINIANUM VAR. ANGUSTATUM
FLORIDA	ENDANGERED	POACEAE	ANDROPOGON ARCTATUS
FLORIDA	ENDANGERED	POACEAE	ARISTIDA FLORIDANA
FLORIDA	ENDANGERED	POACEAE	CALAMOVILFA CURTISSII
FLORIDA	ENDANGERED	POACEAE	SCHIZACHYRIUM RHIZOMATUM
FLORIDA	ENDANGERED	POACEAE	TRIPSACUM FLORIDANUM
FLORIDA	ENDANGERED	POLYGALACEAE	POLYGALA LEWTONII
FLORIDA	ENDANGERED	POLYGONACEAE	POLYGONELLA CILIATA VAR. BASIRAMIA
FLORIDA	ENDANGERED	POLYGONACEAE	POLYGONELLA MYRIOPHYLLA
FLORIDA	ENDANGERED	RANUNCULACEAE	AQUILEGIA CANADENSIS VAR. AUSTRALIS
FLORIDA	ENDANGERED	RANUNCULACEAE	CLEMATIS MICRANTHA
FLORIDA	ENDANGERED	ROSACEAE	PRUNUS GENICULATA
FLORIDA	ENDANGERED	SALICACEAE	SALIX FLORIDANA
FLORIDA	ENDANGERED	SAXIFRAGACEAE	RIBES ECHINELLUM
FLORIDA	ENDANGERED	SCHIZAEACEAE	SCHIZAEA GERMANII
FLORIDA	ENDANGERED	TAXACEAE	TAXUS FLORIDANA
FLORIDA	ENDANGERED	TAXACEAE	TORREYA TAXIFOLIA
FLORIDA	ENDANGERED	VERBENACEAE	VERBENA TAMPENSIS
FLORIDA	EXTINCT	CAMPANULACEAE	CAMPANULA ROBINSIAE
FLORIDA	EXTINCT	CERATOPHYLLACEAE	CERATOPHYLLUM FLORIDANUM
FLORIDA	EXTINCT	SCROPHULARIACEAE	AGALINIS STENOPHYLLA
FLORIDA	EXTINCT	SOLANACEAE	SOLANUM BAHAMENSE VAR. RUGELII
FLORIDA	THREATENED	ACANTHACEAE	ELYTRARIA CAROLINIENSIS VAR. ANGUSTIFOLIA
FLORIDA	THREATENED	ANNONACEAE	ASIMINA PULCHELLA
FLORIDA	THREATENED	ANNONACEAE	ASIMINA RUGELII
FLORIDA	THREATENED	APIACEAE	ERYNGIUM CUNEIFOLIUM
FLORIDA	THREATENED	APIACEAE	ZIZIA LATIFOLIA
FLORIDA	THREATENED	AQUIFOLIACEAE	ILEX OPACA VAR. ARENICOLA
FLORIDA	THREATENED	ARECACEAE	RHAPIDOPHYLLUM HYSTRIX
FLORIDA	THREATENED	ASCLEPIADACEAE	ASCLEPIAS VIRIDULA
FLORIDA	THREATENED	ASCLEPIADACEAE	MATELEA FLORIDANA
FLORIDA	THREATENED	ASTERACEAE	ASTER BRACHYPHOLIS
FLORIDA	THREATENED	ASTERACEAE	ASTER PLUMOSUS
FLORIDA	THREATENED	ASTERACEAE	ASTER SPINULOSUS
FLORIDA	THREATENED	ASTERACEAE	BRICKELLIA CORDIFOLIA
FLORIDA	THREATENED	ASTERACEAE	BRICKELLIA EUPATORIOIDES VAR. FLORIDANA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
FLORIDA	THREATENED	ASTERACEAE	CACALIA DIVERSIFOLIA
FLORIDA	THREATENED	ASTERACEAE	HARTWRIGHTIA FLORIDANA
FLORIDA	THREATENED	ASTERACEAE	HELIANTHUS CARNOSUS
FLORIDA	THREATENED	ASTERACEAE	HELIANTHUS DEBILIS SSP. VESTITUS
FLORIDA	THREATENED	ASTERACEAE	HETEROTHECA FLEXUOSA
FLORIDA	THREATENED	ASTERACEAE	MELANTHERA PARVIFOLIA
FLORIDA	THREATENED	ASTERACEAE	VERBESINA CHAPMANNII
FLORIDA	THREATENED	ASTERACEAE	VERBESINA HETEROPHYLLA
FLORIDA	THREATENED	BORAGINACEAE	HELIOTROPIUM POLYPHYLLUM VAR. HORIZONTALE
FLORIDA	THREATENED	BRASSICACEAE	WAREA SESSILIFOLIA
FLORIDA	THREATENED	CACTACEAE	OPUNTIA SPINOSISSIMA
FLORIDA	THREATENED	CACTACEAE	OPUNTIA TRIACANTHA
FLORIDA	THREATENED	CARYOPHYLLACEAE	ARENARIA GODFREYI
FLORIDA	THREATENED	CISTACEAE	LECHEA CERNUA
FLORIDA	THREATENED	CISTACEAE	LECHEA DIVARICATA
FLORIDA	THREATENED	CISTACEAE	LECHEA LAKELAE
FLORIDA	THREATENED	COMMELINACEAE	COMMELINA GIGAS
FLORIDA	THREATENED	CONVOLVULACEAE	BONAMIA GRANDIFLORA
FLORIDA	THREATENED	CONVOLVULACEAE	JACQUEMONTIA CURTISSII
FLORIDA	THREATENED	CONVOLVULACEAE	JACQUEMONTIA RECLINATA
FLORIDA	THREATENED	CUCURBITACEAE	CUCURBITA OKEECHOBEENSIS
FLORIDA	THREATENED	CYPERACEAE	CAREX BALTZELLII
FLORIDA	THREATENED	CYPERACEAE	CAREX CHAPMANII
FLORIDA	THREATENED	CYPERACEAE	RHYNCHOSPORA CULIXA
FLORIDA	THREATENED	CYPERACEAE	RHYNCHOSPORA PUNCTATA
FLORIDA	THREATENED	ERICACEAE	MONOTROPA BRITTONII
FLORIDA	THREATENED	ERICACEAE	RHODODENDRON AUSTRINUM
FLORIDA	THREATENED	ERIOCAULACEAE	LACHNOCAULON BEYRICHIANUM
FLORIDA	THREATENED	EUPHORBIACEAE	ARGYTHAMNIA BLODGETTII
FLORIDA	THREATENED	EUPHORBIACEAE	CHAMAESYCE CUMULICOLA
FLORIDA	THREATENED	EUPHORBIACEAE	CHAMAESYCE DELTOIDEA SSP. DELTOIDEA
FLORIDA	THREATENED	EUPHORBIACEAE	CHAMAESYCE PORTERIANA VAR. PORTERIANA
FLORIDA	THREATENED	EUPHORBIACEAE	EUPHORBIA DISCOIDALIS
FLORIDA	THREATENED	EUPHORBIACEAE	EUPHORBIA EXSERTA
FLORIDA	THREATENED	EUPHORBIACEAE	EUPHORBIA TELEPHIOIDES
FLORIDA	THREATENED	EUPHORBIACEAE	PHYLLANTHUS LIEBMANIANUS SSP. PLATYLEPIS
FLORIDA	THREATENED	EUPHORBIACEAE	PHYLLANTHUS PENTAPHYLLUS SSP. FLORIDANUS
FLORIDA	THREATENED	EUPHORBIACEAE	STILLINGIA SYLVATICA SSP. TENUIS
FLORIDA	THREATENED	EUPHORBIACEAE	TITHYMALUS AUSTRINUS
FLORIDA	THREATENED	EUPHORBIACEAE	TRAGIA SAXICOLA
FLORIDA	THREATENED	FABACEAE	BAPTISIA CALYCOSA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
FLORIDA	THREATENED	FABACEAE	BAPTISIA HIRSUTA
FLORIDA	THREATENED	FABACEAE	BAPTISIA MEGACARPA
FLORIDA	THREATENED	FABACEAE	BAPTISIA SIMPLICIFOLIA
FLORIDA	THREATENED	FABACEAE	CLITORIA FRAGRANS
FLORIDA	THREATENED	FABACEAE	LUPINUS WESTIANUS
FLORIDA	THREATENED	FABACEAE	RHYNCHOSIA CINEREA
FLORIDA	THREATENED	FABACEAE	TEPHROSIA MOHRII
FLORIDA	THREATENED	HALORAGACEAE	MYRIOPHYLLUM LAXUM
FLORIDA	THREATENED	HYPERICACEAE	HYPERICUM EDISONIANUM
FLORIDA	THREATENED	ILLICIACEAE	ILLICIUM PARVIFLORUM
FLORIDA	THREATENED	IRIDACEAE	NEMASTYLIS FLORIDANA
FLORIDA	THREATENED	IRIDACEAE	SPHENOSTIGMA COELESTINA
FLORIDA	THREATENED	JUNCACEAE	JUNCUS GYMNOCARPUS
FLORIDA	THREATENED	LAMIACEAE	CALAMINTHA ASHEI
FLORIDA	THREATENED	LAMIACEAE	CALAMINTHA DENTATUM
FLORIDA	THREATENED	LAMIACEAE	CONRADINA GRANDIFLORA
FLORIDA	THREATENED	LAMIACEAE	DICERANDRA ODORATISSIMA
FLORIDA	THREATENED	LAMIACEAE	PHYSOSTEGIA LEPTOPHYLLUM
FLORIDA	THREATENED	LAMIACEAE	PYCNANTHEMUM FLORIDANUM
FLORIDA	THREATENED	LAMIACEAE	SCUTELLARIA FLORIDANA
FLORIDA	THREATENED	LAMIACEAE	STACHYS LYTHROIDES
FLORIDA	THREATENED	LAURACEAE	LITSEA AESTIVALIS
FLORIDA	THREATENED	LAURACEAE	PERSEA BORBONIA VAR. HUMILIS
FLORIDA	THREATENED	LEITNERIACEAE	LEITNERIA FLORIDANA
FLORIDA	THREATENED	LENTIBULARIACEAE	PINGUICULA IONANTHA
FLORIDA	THREATENED	LILIACEAE	HYMENOCALLIS LATIFOLIA
FLORIDA	THREATENED	LILIACEAE	VERATRUM WOODII
FLORIDA	THREATENED	LILIACEAE	ZEPHYRANTHES SIMPSONII
FLORIDA	THREATENED	LILIACEAE	ZEPHYRANTHES TREATIAE
FLORIDA	THREATENED	LINACEAE	LINUM SULCATUM VAR. HARPERI
FLORIDA	THREATENED	MAGNOLIACEAE	MAGNOLIA ASHEI
FLORIDA	THREATENED	MALVACEAE	KOSTELETZKYA SMILACIFOLIA
FLORIDA	THREATENED	MALVACEAE	SIDA RUBROMARGINATA
FLORIDA	THREATENED	MELASTOMATACEAE	RHEXIA SALICIFOLIA
FLORIDA	THREATENED	MYRTACEAE	MYRCIANTHES FRAGRANS VAR. SIMPSONII
FLORIDA	THREATENED	NYMPHAEACEAE	NUPHAR LUTEUM SSP. ULVACEUM
FLORIDA	THREATENED	OLEACEAE	CHIONANTHUS PYGMAEUS
FLORIDA	THREATENED	OPHIOGLOSSACEAE	OPHIOGLOSSUM PALMATUM
FLORIDA	THREATENED	ORCHIDACEAE	ENCYCLIA BOOTHIANA VAR. ERYTHRONIOIDES
FLORIDA	THREATENED	ORCHIDACEAE	LEPANTHOPSIS MELANANTHA
FLORIDA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
FLORIDA	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
FLORIDA	THREATENED	ORCHIDACEAE	SPIRANTHES POLYANTHA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
FLORIDA	THREATENED	POACEAE	ARISTIDA SIMPLICIFLORA
FLORIDA	THREATENED	POACEAE	CTENIUM FLORIDANUM
FLORIDA	THREATENED	POACEAE	ERAGROSTIS TRACYI
FLORIDA	THREATENED	POACEAE	ERIOCHLOA MICHAUXII VAR. SIMPSONII
FLORIDA	THREATENED	POACEAE	GYMNOPOGON FLORIDANUS
FLORIDA	THREATENED	POACEAE	MANISURIS TUBERCULOSA
FLORIDA	THREATENED	POACEAE	PANICUM NUDICAULE
FLORIDA	THREATENED	POACEAE	PANICUM PINETORUM
FLORIDA	THREATENED	POACEAE	SCHIZACHYRIUM NIVEUM
FLORIDA	THREATENED	POLYGALACEAE	POLYGALA BOYKINII VAR. SPARSIFOLIA
FLORIDA	THREATENED	POLYGONACEAE	PERSICARIA PALUDICOLA
FLORIDA	THREATENED	POLYGONACEAE	POLYGONELLA MACROPHYLLA
FLORIDA	THREATENED	RHAMNACEAE	SAGERETIA MINUTIFLORA
FLORIDA	THREATENED	ROSACEAE	AGRIMONIA INCISA
FLORIDA	THREATENED	RUBIACEAE	PINCKNEYA PUBENS
FLORIDA	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
FLORIDA	THREATENED	SCROPHULARIACEAE	AGALINIS PURPUREA VAR. CARTERI
FLORIDA	THREATENED	SOLANACEAE	PHYSALIS VISCOSA VAR. ELLIOTII
FLORIDA	THREATENED	STEMONACEAE	CROOMIA PAUCIFLORA
FLORIDA	THREATENED	VERBENACEAE	VERBENA MARITIMA
FLORIDA	THREATENED	XYRIDACEAE	XYRIS ISOETIFOLIA
FLORIDA	THREATENED	XYRIDACEAE	XYRIS LONGISEPALA
FLORIDA	THREATENED	XYRIDACEAE	XYRIS SCABRIFOLIA
GEORGIA	ENDANGERED	ASTERACEAE	BALDUINA ATROPURPUREA
GEORGIA	ENDANGERED	ASTERACEAE	HELIANTHUS SMITHII
GEORGIA	ENDANGERED	ASTERACEAE	MARSHALLIA MOHRI
GEORGIA	ENDANGERED	BRASSICACEAE	DRABA APRICA
GEORGIA	ENDANGERED	CAPRIFOLIACEAE	VIBURNUM BRACTEATUM
GEORGIA	ENDANGERED	CARYOPHYLLACEAE	PARONYCHIA RUGELII VAR. INTERIOR
GEORGIA	ENDANGERED	CARYOPHYLLACEAE	SILENE POLYPETALA
GEORGIA	ENDANGERED	CYCADACEAE	ZAMIA INTEGRIFOLIA
GEORGIA	ENDANGERED	CYPERACEAE	CAREX BILTMOREANA
GEORGIA	ENDANGERED	CYPERACEAE	FIMBRISTYLIS PERPUSILLA
GEORGIA	ENDANGERED	DIAPENSIACEAE	SHORTIA GALACIFOLIA VAR. GALACIFOLIA
GEORGIA	ENDANGERED	ERICACEAE	ELLIOTTIA RACEMOSA
GEORGIA	ENDANGERED	EUPHORBIACEAE	CROTON ELLIOTTII
GEORGIA	ENDANGERED	FABACEAE	BAPTISIA ARACHNIFERA
GEORGIA	ENDANGERED	LAMIACEAE	PYCNANTHEMUM CURVIPES
GEORGIA	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
GEORGIA	ENDANGERED	LILIACEAE	HYMENOCALLIS CORONARIA
GEORGIA	ENDANGERED	LILIACEAE	TRILLIUM PERSISTENS
GEORGIA	ENDANGERED	MELASTOMATACEAE	RHEXIA PARVIFLORA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
GEORGIA	ENDANGERED	POACEAE	PANICUM HIRSTII
GEORGIA	ENDANGERED	PORTULACACEAE	PORTULACA SMALLII
GEORGIA	ENDANGERED	SALICACEAE	SALIX FLORIDANA
GEORGIA	ENDANGERED	SAPOTACEAE	BUMELIA THORNEI
GEORGIA	ENDANGERED	SCROPHULARIACEAE	AMPHIANTHUS PUSILLUS
GEORGIA	ENDANGERED	SCROPHULARIACEAE	LINDERNIA SAXICOLA
GEORGIA	ENDANGERED	TAXACEAE	TORREYA TAXIFOLIA
GEORGIA	EXTINCT	ASTERACEAE	SOLIDAGO PORTERI
GEORGIA	EXTINCT	LAMIACEAE	SCUTELLARIA OCMULGEE
GEORGIA	EXTINCT	SOLANACEAE	SOLANUM CAROLINENSE VAR. HIRSUTUM
GEORGIA	EXTINCT	THEACEAE	FRANKLINIA ALATAMAHA
GEORGIA	THREATENED	ANACARDIACEAE	RHUS MICHAUXII
GEORGIA	THREATENED	APIACEAE	OXYPOLIS CANBYI
GEORGIA	THREATENED	APIACEAE	PTILIMNIUM NODOSUM
GEORGIA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
GEORGIA	THREATENED	ARECACEAE	RHAPIDOPHYLLUM HYSTRIX
GEORGIA	THREATENED	ASTERACEAE	BRICKELLIA CORDIFOLIA
GEORGIA	THREATENED	ASTERACEAE	CACALIA DIVERSIFOLIA
GEORGIA	THREATENED	ASTERACEAE	COREOPSIS LATIFOLIA
GEORGIA	THREATENED	ASTERACEAE	ECHINACEA LAEVIGATA
GEORGIA	THREATENED	ASTERACEAE	HARTWRIGHTIA FLORIDANA
GEORGIA	THREATENED	ASTERACEAE	MARSHALLIA RAMOSA
GEORGIA	THREATENED	ASTERACEAE	RUDBECKIA HELIOPSIDIS
GEORGIA	THREATENED	ASTERACEAE	SENECIO MILLEFOLIUM
GEORGIA	THREATENED	ASTERACEAE	VERNONIA PULCHELLA
GEORGIA	THREATENED	ASTERACEAE	VIGUIERA PORTERI
GEORGIA	THREATENED	BRASSICACEAE	ARABIS GEORGIANA
GEORGIA	THREATENED	BRASSICACEAE	LEAVENWORTHIA EXIGUA VAR. EXIGUA
GEORGIA	THREATENED	CARYOPHYLLACEAE	ARENARIA UNIFLORA
GEORGIA	THREATENED	CRASSULACEAE	SEDUM PUSILLUM
GEORGIA	THREATENED	CUSCUTACEAE	CUSCUTA HARPERI
GEORGIA	THREATENED	CYPERACEAE	CAREX AMPLISQUAMA
GEORGIA	THREATENED	CYPERACEAE	CAREX AUSTROCAROLINIANA
GEORGIA	THREATENED	CYPERACEAE	CAREX MISERA
GEORGIA	THREATENED	CYPERACEAE	CAREX PURPURIFERA
GEORGIA	THREATENED	CYPERACEAE	CYPERUS GRANITOPHILUS
GEORGIA	THREATENED	CYPERACEAE	RHYNCHOSPORA CULIXA
GEORGIA	THREATENED	CYPERACEAE	RHYNCHOSPORA GLOBULARIS VAR. SAXICOLA
GEORGIA	THREATENED	CYPERACEAE	RHYNCHOSPORA PUNCTATA
GEORGIA	THREATENED	ERICACEAE	RHODODENDRON AUSTRINUM
GEORGIA	THREATENED	ERICACEAE	RHODODENDRON BAKERI
GEORGIA	THREATENED	ERICACEAE	RHODODENDRON PRUNIFOLIUM

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
GEORGIA	THREATENED	ERIOCAULACEAE	LACHNOCAULON BEYRICHIANUM
GEORGIA	THREATENED	FABACEAE	CLADRASTIS LUTEA
GEORGIA	THREATENED	FABACEAE	PETALOSTEMUM GATTINGERI
GEORGIA	THREATENED	FAGACEAE	QUERCUS GEORGIANA
GEORGIA	THREATENED	FAGACEAE	QUERCUS OGLETHORPENSIS
GEORGIA	THREATENED	HALORAGACEAE	MYRIOPHYLLUM LAXUM
GEORGIA	THREATENED	HAMAMELIDACEAE	FOTHERGILLA GARDENI
GEORGIA	THREATENED	HYDROPHYLLACEAE	PHACELIA DUBIA VAR. GEORGIANA
GEORGIA	THREATENED	ISOETACEAE	ISOETES MELANOSPORA
GEORGIA	THREATENED	ISOETACEAE	ISOETES VIRGINICA
GEORGIA	THREATENED	LAMIACEAE	CALAMINTHA DENTATUM
GEORGIA	THREATENED	LAMIACEAE	DICERANDRA ODORATISSIMA
GEORGIA	THREATENED	LAMIACEAE	PHYSOSTEGIA VERONICIFORMIS
GEORGIA	THREATENED	LAMIACEAE	SCUTELLARIA MONTANA
GEORGIA	THREATENED	LAURACEAE	LITSEA AESTIVALIS
GEORGIA	THREATENED	LEITNERIACEAE	LEITNERIA FLORIDANA
GEORGIA	THREATENED	LINACEAE	LINUM SULCATUM VAR. HARPERI
GEORGIA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
GEORGIA	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
GEORGIA	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
GEORGIA	THREATENED	POACEAE	CTENIUM FLORIDANUM
GEORGIA	THREATENED	POACEAE	MUHLENBERGIA TORREYANA
GEORGIA	THREATENED	POACEAE	PANICUM LITHOPHILUM
GEORGIA	THREATENED	POACEAE	SCHIZACHYRIUM NIVEUM
GEORGIA	THREATENED	POACEAE	SPOROBOLUS TERETIFOLIUS
GEORGIA	THREATENED	PORTULACACEAE	TALINUM MENGESII
GEORGIA	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
GEORGIA	THREATENED	RHAMNACEAE	SAGERETIA MINUTIFLORA
GEORGIA	THREATENED	ROSACEAE	WALDSTEINIA LOBATA
GEORGIA	THREATENED	RUBIACEAE	PINCKNEYA PUBENS
GEORGIA	THREATENED	SANTALACEAE	NESTRONIA UMBELLULA
GEORGIA	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
GEORGIA	THREATENED	SCROPHULARIACEAE	AUREOLARIA PATULA
GEORGIA	THREATENED	SCROPHULARIACEAE	PENSTEMON DISSECTUS
GEORGIA	THREATENED	STEMONACEAE	CROOMIA PAUCIFLORA
GEORGIA	THREATENED	VIOLACEAE	VIOLA EGGLESTONII
GEORGIA	THREATENED	XYRIDACEAE	XYRIS SCABRIFOLIA
KENTUCKY	ENDANGERED	ASTERACEAE	EUPATORIUM RESINOSUM VAR. KENTUCKIENSE
KENTUCKY	ENDANGERED	ASTERACEAE	SOLIDAGO ALBOPILOSA
KENTUCKY	ENDANGERED	ASTERACEAE	SOLIDAGO SHORTII
KENTUCKY	ENDANGERED	BRASSICACEAE	ARABIS PERSTELLATA VAR. PERSTELLATA
KENTUCKY	ENDANGERED	BRASSICACEAE	LEAVENWORTHIA EXIGUA VAR. LACINIATA
KENTUCKY	ENDANGERED	FABACEAE	APIOS PRICEANA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
KENTUCKY	ENDANGERED	LAMIACEAE	CONRADINA VERTICILLATA
KENTUCKY	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
KENTUCKY	THREATENED	ASTERACEAE	PRENANTHES ROANENSIS
KENTUCKY	THREATENED	BORAGINACEAE	ONOSMODIUM MOLLE
KENTUCKY	THREATENED	BRASSICACEAE	LEAVENWORTHIA TORULOSA
KENTUCKY	THREATENED	BRASSICACEAE	LESQUERELLA GLOBOSA
KENTUCKY	THREATENED	CARYOPHYLLACEAE	ARENARIA FONTINALIS
KENTUCKY	THREATENED	CYPERACEAE	CAREX PURPURIFERA
KENTUCKY	THREATENED	CYPERACEAE	CYMOPHYLLUS FRASERI
KENTUCKY	THREATENED	ERICACEAE	RHODODENDRON BAKERI
KENTUCKY	THREATENED	FABACEAE	CLADRASTIS LUTEA
KENTUCKY	THREATENED	HYPERICACEAE	HYPERICUM SPHAEROCARPUM VAR. TURGIDUM
KENTUCKY	THREATENED	LAMIACEAE	SYNANDRA HISPIDULA
KENTUCKY	THREATENED	ORCHIDACEAE	CYPRIPEDIUM CANDIDUM
KENTUCKY	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
KENTUCKY	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
KENTUCKY	THREATENED	POACEAE	MUHLENBERGIA TORREYANA
KENTUCKY	THREATENED	PRIMULACEAE	DODECATHEON FRENCHII
KENTUCKY	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
KENTUCKY	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAROLINIANA
KENTUCKY	THREATENED	SAXIFRAGACEAE	SULLIVANTIA SULLIVANTII
KENTUCKY	THREATENED	SCROPHULARIACEAE	AUREOLARIA PATULA
KENTUCKY	THREATENED	SCROPHULARIACEAE	SCHWALBEA AMERICANA
KENTUCKY	THREATENED	VIOLACEAE	VIOLA EGGLESTONII
LOUISIANA	ENDANGERED	ASTERACEAE	COREOPSIS INTERMEDIA
LOUISIANA	EXTINCT	ISOETACEAE	ISOETES LOUISIANENSIS
LOUISIANA	EXTINCT	SCROPHULARIACEAE	AGALINIS CADDOENSIS
LOUISIANA	EXTINCT	SCROPHULARIACEAE	CASTILLEJA LUDOVICIANA
LOUISIANA	THREATENED	APIACEAE	LILAEOPSIS CAROLINENSIS
LOUISIANA	THREATENED	APOCYNACEAE	AMSONIA GLABERRIMA
LOUISIANA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
LOUISIANA	THREATENED	LAMIACEAE	SCUTELLARIA THIERETII
LOUISIANA	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
LOUISIANA	THREATENED	ORCHIDACEAE	PLATANTHERA LEUCOPHAEA
LOUISIANA	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
LOUISIANA	THREATENED	SCROPHULARIACEAE	SCHWALBEA AMERICANA
MISSISSIPPI	ENDANGERED	FABACEAE	APIOS PRICEANA
MISSISSIPPI	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
MISSISSIPPI	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
MISSISSIPPI	THREATENED	ARECACEAE	RHAPIDOPHYLLUM HYSTRIX
MISSISSIPPI	THREATENED	ASTERACEAE	ASTER VERUTIFOLIUS
MISSISSIPPI	THREATENED	ERICACEAE	RHODODENDRON AUSTRINUM
MISSISSIPPI	THREATENED	JUNCACEAE	JUNCUS GYMNOCARPUS

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
MISSISSIPPI	THREATENED	LAURACEAE	LITSEA AESTIVALIS
MISSISSIPPI	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
MISSISSIPPI	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
MISSISSIPPI	THREATENED	POACEAE	ARISTIDA SIMPLICIFLORA
MISSISSIPPI	THREATENED	POACEAE	PANICUM NUDICAULE
MISSISSIPPI	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
MISSISSIPPI	THREATENED	RHAMNACEAE	SAGERETIA MINUTIFLORA
MISSISSIPPI	THREATENED	ROSACEAE	AGRIMONIA INCISA
MISSISSIPPI	THREATENED	SARRACENIACEAE	SARRACENIA ALABAMENSIS SSP. WHERRYI
MISSISSIPPI	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
MISSISSIPPI	THREATENED	SCROPHULARIACEAE	SCHWALBEA AMERICANA
MISSISSIPPI	THREATENED	XYRIDACEAE	XYRIS SCABRIFOLIA
NORTH CAROLINA	ENDANGERED	ALISMATACEAE	SAGITTARIA FASCICULATA
NORTH CAROLINA	ENDANGERED	ARISTOLOCHIACEAE	HEXASTYLIS NANIFLORA
NORTH CAROLINA	ENDANGERED	BRASSICACEAE	CARDAMINE MICRANTHERA
NORTH CAROLINA	ENDANGERED	CISTACEAE	HUDSONIA ERICOIDES SSP. MONTANA
NORTH CAROLINA	ENDANGERED	CYPERACEAE	CAREX BILTMOREANA
NORTH CAROLINA	ENDANGERED	DIAPENSIACEAE	PYXIDANTHERA BARBULATA VAR. BREVIFOLIA
NORTH CAROLINA	ENDANGERED	DIAPENSIACEAE	SHORTIA GALACIFOLIA VAR. BREVISTYLA
NORTH CAROLINA	ENDANGERED	DIAPENSIACEAE	SHORTIA GALACIFOLIA VAR. GALACIFOLIA
NORTH CAROLINA	ENDANGERED	ERICACEAE	KALMIA CUNEATA
NORTH CAROLINA	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
NORTH CAROLINA	ENDANGERED	LILIACEAE	TRILLIUM PUSILLUM VAR. VIRGINIANUM
NORTH CAROLINA	ENDANGERED	ORCHIDACEAE	ISOTRIA MEDEOLOIDES
NORTH CAROLINA	ENDANGERED	POACEAE	GLYCERIA NUBIGENA
NORTH CAROLINA	ENDANGERED	POACEAE	PANICUM MUNDUM
NORTH CAROLINA	ENDANGERED	PORTULACACEAE	PORTULACA SMALLII
NORTH CAROLINA	ENDANGERED	RANUNCULACEAE	THALICTRUM COOLEYI
NORTH CAROLINA	ENDANGERED	ROSACEAE	GEUM GENICULATUM
NORTH CAROLINA	ENDANGERED	ROSACEAE	GEUM RADIATUM
NORTH CAROLINA	ENDANGERED	SARRACENIACEAE	SARRACENIA JONESII
NORTH CAROLINA	ENDANGERED	SCROPHULARIACEAE	LINDERNIA SAXICOLA
NORTH CAROLINA	EXTINCT	ASTERACEAE	SOLIDAGO PORTERI
NORTH CAROLINA	EXTINCT	FABACEAE	PSORALEA MACROPHYLLA
NORTH CAROLINA	THREATENED	ANACARDIACEAE	RHUS MICHAUXII
NORTH CAROLINA	THREATENED	APIACEAE	LILAEOPSIS CAROLINENSIS
NORTH CAROLINA	THREATENED	APIACEAE	PTILIMNIUM FLUVIATILE
NORTH CAROLINA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
NORTH CAROLINA	THREATENED	ARISTOLOCHIACEAE	HEXASTYLIS CONTRACTA
NORTH CAROLINA	THREATENED	ARISTOLOCHIACEAE	HEXASTYLIS LEWISII
NORTH CAROLINA	THREATENED	ASTERACEAE	CACALIA RUGELIA
NORTH CAROLINA	THREATENED	ASTERACEAE	COREOPSIS LATIFOLIA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
NORTH CAROLINA	THREATENED	ASTERACEAE	ECHINACEA LAEVIGATA
NORTH CAROLINA	THREATENED	ASTERACEAE	HELIANTHUS SCHWEINITZII
NORTH CAROLINA	THREATENED	ASTERACEAE	LIATRIS HELLERI
NORTH CAROLINA	THREATENED	ASTERACEAE	PRENANTHES ROANENSIS
NORTH CAROLINA	THREATENED	ASTERACEAE	RUDBECKIA HELIOPSIDIS
NORTH CAROLINA	THREATENED	ASTERACEAE	SENECIO MILLEFOLIUM
NORTH CAROLINA	THREATENED	ASTERACEAE	SOLIDAGO PULCHRA
NORTH CAROLINA	THREATENED	ASTERACEAE	SOLIDAGO SPITHAMAEA
NORTH CAROLINA	THREATENED	ASTERACEAE	SOLIDAGO VERNA
NORTH CAROLINA	THREATENED	CARYOPHYLLACEAE	ARENARIA GODFREYI
NORTH CAROLINA	THREATENED	CARYOPHYLLACEAE	ARENARIA UNIFLORA
NORTH CAROLINA	THREATENED	CRASSULACEAE	SEDUM PUSILLUM
NORTH CAROLINA	THREATENED	CYPERACEAE	CAREX AUSTROCAROLINIANA
NORTH CAROLINA	THREATENED	CYPERACEAE	CAREX CHAPMANII
NORTH CAROLINA	THREATENED	CYPERACEAE	CAREX MISERA
NORTH CAROLINA	THREATENED	CYPERACEAE	CAREX PURPURIFERA
NORTH CAROLINA	THREATENED	CYPERACEAE	CYMOPHYLLUS FRASERI
NORTH CAROLINA	THREATENED	CYPERACEAE	SCIRPUS FLACCIDIFOLIUS
NORTH CAROLINA	THREATENED	DROSERACEAE	DIONAEA MUSCIPULA
NORTH CAROLINA	THREATENED	ERICACEAE	RHODODENDRON BAKERI
NORTH CAROLINA	THREATENED	ERICACEAE	RHODODENDRON VASEYI
NORTH CAROLINA	THREATENED	ERIOCAULACEAE	LACHNOCAULON BEYRICHIANUM
NORTH CAROLINA	THREATENED	FABACEAE	CLADRASTIS LUTEA
NORTH CAROLINA	THREATENED	HALORAGACEAE	MYRIOPHYLLUM LAXUM
NORTH CAROLINA	THREATENED	JUNCACEAE	JUNCUS GYMNOCARPUS
NORTH CAROLINA	THREATENED	LAMIACEAE	SYNANDRA HISPIDULA
NORTH CAROLINA	THREATENED	LAURACEAE	LITSEA AESTIVALIS
NORTH CAROLINA	THREATENED	LILIACEAE	LILIUM GRAYII
NORTH CAROLINA	THREATENED	LILIACEAE	TRILLIUM PUSILLUM VAR. PUSILLUM
NORTH CAROLINA	THREATENED	LILIACEAE	VERATRUM WOODII
NORTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
NORTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
NORTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
NORTH CAROLINA	THREATENED	POACEAE	CALAMAGROSTIS PORTERI
NORTH CAROLINA	THREATENED	POACEAE	CALAMOVILFA BREVIPILIS VAR. BREVIPILIS
NORTH CAROLINA	THREATENED	POACEAE	PANICUM ACULEATUM
NORTH CAROLINA	THREATENED	POACEAE	SPOROBOLUS TERETIFOLIUS
NORTH CAROLINA	THREATENED	PRIMULACEAE	LYSIMACHIA ASPERULAEFOLIA
NORTH CAROLINA	THREATENED	RANUNCULACEAE	CIMICIFUGA RUBIFOLIA
NORTH CAROLINA	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
NORTH CAROLINA	THREATENED	RANUNCULACEAE	RANUNCULUS SUBCORDATUS
NORTH CAROLINA	THREATENED	RUBIACEAE	HEDYOTIS PURPUREA VAR. MONTANA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
NORTH CAROLINA	THREATENED	SANTALACEAE	BUCKLEYA DISTICHOPHYLLA
NORTH CAROLINA	THREATENED	SANTALACEAE	NESTRONIA UMBELLULA
NORTH CAROLINA	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAREYANA
NORTH CAROLINA	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAROLINIANA
NORTH CAROLINA	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
OKLAHOMA	ENDANGERED	BRASSICACEAE	DRABA APRICA
OKLAHOMA	ENDANGERED	BRASSICACEAE	LEAVENWORTHIA AUREA
OKLAHOMA	ENDANGERED	BRASSICACEAE	STREPTANTHUS SQUAMIFORMIS
OKLAHOMA	ENDANGERED	CUSCUTACEAE	CUSCUTA ATTENUATA
OKLAHOMA	ENDANGERED	CYPERACEAE	CAREX LATEBRACTEATA
OKLAHOMA	ENDANGERED	ERIOCAULACEAE	ERIOCAULON KORNICKIANUM
OKLAHOMA	ENDANGERED	FABACEAE	AMORPHA OUACHITENSIS
OKLAHOMA	ENDANGERED	FAGACEAE	CASTANEA PUMILA VAR. OZARKENSIS
OKLAHOMA	ENDANGERED	LILIACEAE	HYPOXIS LONGII
OKLAHOMA	ENDANGERED	POACEAE	CALAMOVILFA ARCUATA
OKLAHOMA	ENDANGERED	POLEMONIACEAE	PHLOX LONGIPILOSA
OKLAHOMA	EXTINCT	FABACEAE	VICIA REVERCHONII
OKLAHOMA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
OKLAHOMA	THREATENED	BETULACEAE	ALNUS MARITIMA
OKLAHOMA	THREATENED	BRASSICACEAE	LESQUERELLA ANGUSTIFOLIA
OKLAHOMA	THREATENED	CYPERACEAE	CAREX FISSA
OKLAHOMA	THREATENED	FABACEAE	CLADRASTIS LUTEA
OKLAHOMA	THREATENED	GENTIANACEAE	FRASERA COLORADENSIS
OKLAHOMA	THREATENED	LILIACEAE	VERATRUM WOODII
OKLAHOMA	THREATENED	MALVACEAE	CALLIRHOE PAPAVER VAR. BUSHII
OKLAHOMA	THREATENED	POLEMONIACEAE	PHLOX OKLAHOMENSIS
OKLAHOMA	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
SOUTH CAROLINA	ENDANGERED	ALISMATACEAE	SAGITTARIA FASCICULATA
SOUTH CAROLINA	ENDANGERED	ARISTOLOCHIACEAE	HEXASTYLIS NANIFLORA
SOUTH CAROLINA	ENDANGERED	BRASSICACEAE	DRABA APRICA
SOUTH CAROLINA	ENDANGERED	DIAPENSIACEAE	PYXIDANTHERA BARBULATA VAR. BREVIFOLIA
SOUTH CAROLINA	ENDANGERED	DIAPENSIACEAE	SHORTIA GALACIFOLIA VAR. BREVISTYLA
SOUTH CAROLINA	ENDANGERED	DIAPENSIACEAE	SHORTIA GALACIFOLIA VAR. GALACIFOLIA
SOUTH CAROLINA	ENDANGERED	ERICACEAE	KALMIA CUNEATA
SOUTH CAROLINA	ENDANGERED	LAURACEAE	LINDERA MELISSIFOLIA
SOUTH CAROLINA	ENDANGERED	LILIACEAE	HYMENOCALLIS CORONARIA
SOUTH CAROLINA	ENDANGERED	LILIACEAE	TRILLIUM PERSISTENS
SOUTH CAROLINA	ENDANGERED	SARRACENIACEAE	SARRACENIA JONESII
SOUTH CAROLINA	ENDANGERED	SAXIFRAGACEAE	RIBES ECHINELLUM
SOUTH CAROLINA	ENDANGERED	SCROPHULARIACEAE	AMPHIANTHUS PUSILLUS
SOUTH CAROLINA	THREATENED	ANACARDIACEAE	RHUS MICHAUXII
SOUTH CAROLINA	THREATENED	APIACEAE	LILAEOPSIS CAROLINENSIS

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
SOUTH CAROLINA	THREATENED	APIACEAE	PTILIMNIUM FLUVIATILE
SOUTH CAROLINA	THREATENED	APIACEAE	PTILIMNIUM NODOSUM
SOUTH CAROLINA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
SOUTH CAROLINA	THREATENED	ASTERACEAE	COREOPSIS LATIFOLIA
SOUTH CAROLINA	THREATENED	ASTERACEAE	ECHINACEA LAEVIGATA
SOUTH CAROLINA	THREATENED	ASTERACEAE	HELIANTHUS SCHWEINITZII
SOUTH CAROLINA	THREATENED	ASTERACEAE	RUDBECKIA HELIOPSIDIS
SOUTH CAROLINA	THREATENED	ASTERACEAE	SENECIO MILLEFOLIUM
SOUTH CAROLINA	THREATENED	ASTERACEAE	SOLIDAGO VERNA
SOUTH CAROLINA	THREATENED	CARYOPHYLLACEAE	ARENARIA GODFREYI
SOUTH CAROLINA	THREATENED	CARYOPHYLLACEAE	ARENARIA UNIFLORA
SOUTH CAROLINA	THREATENED	CRASSULACEAE	SEDUM PUSILLUM
SOUTH CAROLINA	THREATENED	CYPERACEAE	CAREX AUSTROCAROLINIANA
SOUTH CAROLINA	THREATENED	CYPERACEAE	CAREX CHAPMANII
SOUTH CAROLINA	THREATENED	DROSERACEAE	DIONAEA MUSCIPULA
SOUTH CAROLINA	THREATENED	ERIOCAULACEAE	LACHNOCAULON BEYRICHIANUM
SOUTH CAROLINA	THREATENED	FAGACEAE	QUERCUS GEORGIANA
SOUTH CAROLINA	THREATENED	FAGACEAE	QUERCUS OGLETHORPENSIS
SOUTH CAROLINA	THREATENED	HALORAGACEAE	MYRIOPHYLLUM LAXUM
SOUTH CAROLINA	THREATENED	ISOETACEAE	ISOETES MELANOSPORA
SOUTH CAROLINA	THREATENED	JUNCACEAE	JUNCUS GYMNOCARPUS
SOUTH CAROLINA	THREATENED	LAMIACEAE	DICERANDRA ODORATISSIMA
SOUTH CAROLINA	THREATENED	LAURACEAE	LITSEA AESTIVALIS
SOUTH CAROLINA	THREATENED	LILIACEAE	TRILLIUM PUSILLUM VAR. PUSILLUM
SOUTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
SOUTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
SOUTH CAROLINA	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
SOUTH CAROLINA	THREATENED	POACEAE	CALAMOVILFA BREVIPILIS VAR. BREVIPILIS
SOUTH CAROLINA	THREATENED	POACEAE	PANICUM LITHOPHILUM
SOUTH CAROLINA	THREATENED	POACEAE	SPOROBOLUS TERETIFOLIUS
SOUTH CAROLINA	THREATENED	PRIMULACEAE	LYSIMACHIA ASPERULAEFOLIA
SOUTH CAROLINA	THREATENED	RHAMNACEAE	SAGERETIA MINUTIFLORA
SOUTH CAROLINA	THREATENED	ROSACEAE	AGRIMONIA INCISA
SOUTH CAROLINA	THREATENED	ROSACEAE	WALDSTEINIA LOBATA
SOUTH CAROLINA	THREATENED	RUBIACEAE	PINCKNEYA PUBENS
SOUTH CAROLINA	THREATENED	SANTALACEAE	NESTRONIA UMBELLULA
SOUTH CAROLINA	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
SOUTH CAROLINA	THREATENED	SCROPHULARIACEAE	SCHWALBEA AMERICANA
TENNESSEE	ENDANGERED	ASTERACEAE	ECHINACEA TENNESSEENSIS
TENNESSEE	ENDANGERED	ASTERACEAE	HETEROTHECA RUTHII
TENNESSEE	ENDANGERED	ASTERACEAE	SILPHIUM BRACHIATUM
TENNESSEE	ENDANGERED	ASTERACEAE	SILPHIUM INTEGRIFOLIUM VAR. GATTINGERI

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TENNESSEE	ENDANGERED	BRASSICACEAE	ARABIS PERSTELLATA VAR. AMPLA
TENNESSEE	ENDANGERED	BRASSICACEAE	DENTARIA INCISA
TENNESSEE	ENDANGERED	BRASSICACEAE	LEAVENWORTHIA EXIGUA VAR. LUTEA
TENNESSEE	ENDANGERED	BRASSICACEAE	LESQUERELLA DENSIPILA
TENNESSEE	ENDANGERED	BRASSICACEAE	LESQUERELLA PERFORATA
TENNESSEE	ENDANGERED	BRASSICACEAE	LESQUERELLA STONENSIS
TENNESSEE	ENDANGERED	CRASSULACEAE	SEDUM NEVII
TENNESSEE	ENDANGERED	EUPHORBIACEAE	CROTON ALABAMENSIS
TENNESSEE	ENDANGERED	FABACEAE	APIOS PRICEANA
TENNESSEE	ENDANGERED	FABACEAE	PETALOSTEMUM FOLIOSUM
TENNESSEE	ENDANGERED	LAMIACEAE	CONRADINA VERTICILLATA
TENNESSEE	ENDANGERED	LAMIACEAE	PYCNANTHEMUM CURVIPES
TENNESSEE	ENDANGERED	POACEAE	CALAMOVILFA ARCUATA
TENNESSEE	ENDANGERED	POACEAE	GLYCERIA NUBIGENA
TENNESSEE	ENDANGERED	POLYGONACEAE	ERIOGONUM LONGIFOLIUM VAR. HARPERI
TENNESSEE	ENDANGERED	POLYPODIACEAE	PHYLLITIS SCOLOPENDRIUM VAR. AMERICANUM
TENNESSEE	ENDANGERED	RANUNCULACEAE	CLEMATIS GATTINGERI
TENNESSEE	ENDANGERED	ROSACEAE	GEUM GENICULATUM
TENNESSEE	ENDANGERED	ROSACEAE	GEUM RADIATUM
TENNESSEE	EXTINCT	HYDROCHARITACEAE	ELODEA LINEARIS
TENNESSEE	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
TENNESSEE	THREATENED	ARISTOLOCHIACEAE	HEXASTYLIS CONTRACTA
TENNESSEE	THREATENED	ASTERACEAE	CACALIA RUGELIA
TENNESSEE	THREATENED	ASTERACEAE	PRENANTHES ROANENSIS
TENNESSEE	THREATENED	ASTERACEAE	SOLIDAGO SPITHAMAEA
TENNESSEE	THREATENED	BORAGINACEAE	ONOSMODIUM MOLLE
TENNESSEE	THREATENED	BRASSICACEAE	LEAVENWORTHIA EXIGUA VAR. EXIGUA
TENNESSEE	THREATENED	BRASSICACEAE	LEAVENWORTHIA STYLOSA
TENNESSEE	THREATENED	BRASSICACEAE	LEAVENWORTHIA TORULOSA
TENNESSEE	THREATENED	BRASSICACEAE	LESQUERELLA GLOBOSA
TENNESSEE	THREATENED	BRASSICACEAE	LESQUERELLA LESCURII
TENNESSEE	THREATENED	CAMPANULACEAE	LOBELIA GATTINGERI
TENNESSEE	THREATENED	CARYOPHYLLACEAE	ARENARIA FONTINALIS
TENNESSEE	THREATENED	CYPERACEAE	CAREX AUSTROCAROLINIANA
TENNESSEE	THREATENED	CYPERACEAE	CAREX MISERA
TENNESSEE	THREATENED	CYPERACEAE	CAREX PURPURIFERA
TENNESSEE	THREATENED	CYPERACEAE	CAREX ROANENSIS
TENNESSEE	THREATENED	CYPERACEAE	CYMOPHYLLUS FRASERI
TENNESSEE	THREATENED	ERICACEAE	RHODODENDRON BAKERI
TENNESSEE	THREATENED	FABACEAE	ASTRAGALUS TENNESSEENSIS
TENNESSEE	THREATENED	FABACEAE	CLADRASTIS LUTEA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TENNESSEE	THREATENED	FABACEAE	PETALOSTEMUM GATTINGERI
TENNESSEE	THREATENED	FABACEAE	PSORALEA SUBACAULIS
TENNESSEE	THREATENED	HYPERICACEAE	HYPERICUM SPHAEROCARPUM VAR. TURGIDUM
TENNESSEE	THREATENED	JUNCACEAE	JUNCUS GYMNOCARPUS
TENNESSEE	THREATENED	LAMIACEAE	SCUTELLARIA MONTANA
TENNESSEE	THREATENED	LAMIACEAE	SYNANDRA HISPIDULA
TENNESSEE	THREATENED	LILIACEAE	LILIUM GRAYII
TENNESSEE	THREATENED	LILIACEAE	TRILLIUM PUSILLUM VAR. PUSILLUM
TENNESSEE	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
TENNESSEE	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
TENNESSEE	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
TENNESSEE	THREATENED	POACEAE	CALAMAGROSTIS CAINII
TENNESSEE	THREATENED	POACEAE	MUHLENBERGIA TORREYANA
TENNESSEE	THREATENED	PORTULACACEAE	TALINUM CALCARICUM
TENNESSEE	THREATENED	PORTULACACEAE	TALINUM MENGESII
TENNESSEE	THREATENED	RANUNCULACEAE	CIMICIFUGA RUBIFOLIA
TENNESSEE	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
TENNESSEE	THREATENED	RUBIACEAE	HEDYOTIS PURPUREA VAR. MONTANA
TENNESSEE	THREATENED	SANTALACEAE	BUCKLEYA DISTICHOPHYLLA
TENNESSEE	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAREYANA
TENNESSEE	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAROLINIANA
TENNESSEE	THREATENED	SCHISANDRACEAE	SCHISANDRA GLABRA
TENNESSEE	THREATENED	SCROPHULARIACEAE	AUREOLARIA PATULA
TENNESSEE	THREATENED	SCROPHULARIACEAE	SCHWALBEA AMERICANA
TENNESSEE	THREATENED	VIOLACEAE	VIOLA EGGLESTONII
TEXAS	ENDANGERED	ASCLEPIADACEAE	MATELEA EDWARDSENSIS
TEXAS	ENDANGERED	ASCLEPIADACEAE	MATELEA TEXENSIS
TEXAS	ENDANGERED	ASTERACEAE	AMBROSIA CHEIRANTHIFOLIA
TEXAS	ENDANGERED	ASTERACEAE	BRICKELLIA VIEJENSIS
TEXAS	ENDANGERED	ASTERACEAE	COREOPSIS INTERMEDIA
TEXAS	ENDANGERED	ASTERACEAE	DYSSODIA TEPHROLEUCA
TEXAS	ENDANGERED	ASTERACEAE	ERIGERON GEISERI VAR. CALCICOLA
TEXAS	ENDANGERED	ASTERACEAE	GRINDELIA OOLEPIS
TEXAS	ENDANGERED	ASTERACEAE	HELIANTHUS PARADOXUS
TEXAS	ENDANGERED	ASTERACEAE	MACHAERANTHERA AUREA
TEXAS	ENDANGERED	ASTERACEAE	PERITYLE BISETOSA VAR. BISETOSA
TEXAS	ENDANGERED	ASTERACEAE	PERITYLE BISETOSA VAR. SCALARIS
TEXAS	ENDANGERED	ASTERACEAE	PERITYLE CINEREA
TEXAS	ENDANGERED	ASTERACEAE	PERITYLE LINDHEIMERI VAR. HALIMIFOLIA
TEXAS	ENDANGERED	ASTERACEAE	PERITYLE VITREOMONTANA
TEXAS	ENDANGERED	ASTERACEAE	VIGUIERA LUDENS
TEXAS	ENDANGERED	BRASSICACEAE	LEAVENWORTHIA AUREA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	EXTINCT	CACTACEAE	CORYPHANTHA SCHEERI VAR. UNCINATA
TEXAS	EXTINCT	CACTACEAE	ECHINOCEREUS BLANCKII VAR. ANGUSTICEPS
TEXAS	EXTINCT	CACTACEAE	OPUNTIA STRIGIL VAR. FLEXOSPINA
TEXAS	EXTINCT	CARYOPHYLLACEAE	ARENARIA LIVERMORENSIS
TEXAS	EXTINCT	FABACEAE	VICIA REVERCHONII
TEXAS	EXTINCT	LAMIACEAE	HEDEOMA PILOSUM
TEXAS	EXTINCT	ORCHIDACEAE	SPIRANTHES PARKSII
TEXAS	EXTINCT	SCROPHULARIACEAE	SEYMERIA HAVARDII
TEXAS	EXTINCT	STERCULIACEAE	NEPHROPETALUM PRINGLEI
TEXAS	THREATENED	ACANTHACEAE	DYSCHORISTE CRENULATA
TEXAS	THREATENED	ACANTHACEAE	JUSTICIA RUNYONII
TEXAS	THREATENED	ACANTHACEAE	JUSTICIA WARNOCKII
TEXAS	THREATENED	ACANTHACEAE	JUSTICIA WRIGHTII
TEXAS	THREATENED	ACANTHACEAE	STENANDRIUM FASCICULARIS
TEXAS	THREATENED	ACERACEAE	ACER GRANDIDENTATUM VAR. SINUOSUM
TEXAS	THREATENED	APIACEAE	ALETES FILIFOLIUS
TEXAS	THREATENED	APIACEAE	EURYTAENIA HINCKLEYI
TEXAS	THREATENED	APOCYNACEAE	AMSONIA GLABERRIMA
TEXAS	THREATENED	APOCYNACEAE	AMSONIA REPENS
TEXAS	THREATENED	APOCYNACEAE	AMSONIA THARPII
TEXAS	THREATENED	ASCLEPIADACEAE	MATELEA BREVICORONATA
TEXAS	THREATENED	ASCLEPIADACEAE	MATELEA PARVIFLORA
TEXAS	THREATENED	ASTERACEAE	ASTER SCABRICAULIS
TEXAS	THREATENED	ASTERACEAE	ASTRANTHIUM ROBUSTUM
TEXAS	THREATENED	ASTERACEAE	BAHIA BIGELOVII
TEXAS	THREATENED	ASTERACEAE	BRICKELLIA BRACHYPHYLLA VAR. HINCKLEYI
TEXAS	THREATENED	ASTERACEAE	BRICKELLIA BRACHYPHYLLA VAR. TERLINGUENSIS
TEXAS	THREATENED	ASTERACEAE	BRICKELLIA DENTATA
TEXAS	THREATENED	ASTERACEAE	BRICKELLIA SHINERI
TEXAS	THREATENED	ASTERACEAE	CHAETOPAPPA HERSHEYI
TEXAS	THREATENED	ASTERACEAE	CIRSIUM TURNERI
TEXAS	THREATENED	ASTERACEAE	ERIGERON BIGELOVII
TEXAS	THREATENED	ASTERACEAE	HELIANTHUS PRAECOX SSP. HIRTUS
TEXAS	THREATENED	ASTERACEAE	LIATRIS CYMOSA
TEXAS	THREATENED	ASTERACEAE	LIATRIS TENUIS
TEXAS	THREATENED	ASTERACEAE	PERITYLE WARNOCKII
TEXAS	THREATENED	ASTERACEAE	POROPHYLLUM GREGGII
TEXAS	THREATENED	ASTERACEAE	SENECIO WARNOCKII
TEXAS	THREATENED	ASTERACEAE	SOLIDAGO MOLLIS VAR. ANGUSTATA
TEXAS	THREATENED	BERBERIDACEAE	BERBERIS SWASEYI
TEXAS	THREATENED	BETULACEAE	OSTRYA CHISOSENSIS
TEXAS	THREATENED	BORAGINACEAE	CRYPTANTHA CRASSIPES

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	ENDANGERED	BRASSICACEAE	LESQUERELLA VALIDA
TEXAS	ENDANGERED	BRASSICACEAE	SELENIA JONESII
TEXAS	ENDANGERED	BRASSICACEAE	STREPTANTHUS SPARSIFLORUS
TEXAS	ENDANGERED	BRASSICACEAE	THELYPODIUM TEXANUM
TEXAS	ENDANGERED	CACTACEAE	ANCISTROCACTUS TOBUSCHII
TEXAS	ENDANGERED	CACTACEAE	CORYPHANTHA MINIMA
TEXAS	ENDANGERED	CACTACEAE	CORYPHANTHA RAMILLOSA
TEXAS	ENDANGERED	CACTACEAE	CORYPHANTHA SNEEDII VAR. SNEEDII
TEXAS	ENDANGERED	CACTACEAE	CORYPHANTHA STROBILIFORMIS VAR. DURISPINA
TEXAS	ENDANGERED	CACTACEAE	ECHINOCEREUS CHLORANTHUS VAR. NEOCAPILLUS
TEXAS	ENDANGERED	CACTACEAE	ECHINOCEREUS LLOYDII
TEXAS	ENDANGERED	CACTACEAE	ECHINOCEREUS REICHENBACHII VAR. ALBERTII
TEXAS	ENDANGERED	CACTACEAE	ECHINOCEREUS RUSSANTHUS
TEXAS	ENDANGERED	CACTACEAE	ECHINOCEREUS VIRIDIFLORUS VAR. DAVISII
TEXAS	ENDANGERED	CACTACEAE	NEOLLOYDIA GAUTII
TEXAS	ENDANGERED	CACTACEAE	NEOLLOYDIA MARIPOSENSIS
TEXAS	ENDANGERED	CAPPARIDACEAE	CLEOME MULTICAULIS
TEXAS	ENDANGERED	CARYOPHYLLACEAE	CERASTIUM CLAWSONII
TEXAS	ENDANGERED	CARYOPHYLLACEAE	PARONYCHIA CONGESTA
TEXAS	ENDANGERED	CARYOPHYLLACEAE	PARONYCHIA MACCARTII
TEXAS	ENDANGERED	CARYOPHYLLACEAE	SILENE PLANKII
TEXAS	ENDANGERED	CHENOPODIACEAE	ATRIPLEX KLEBERGORUM
TEXAS	ENDANGERED	CHENOPODIACEAE	SUAEDA DURIPES
TEXAS	ENDANGERED	CISTACEAE	LECHEA MENSALIS
TEXAS	ENDANGERED	CRASSULACEAE	LENOPHYLLUM TEXANUM
TEXAS	ENDANGERED	CYPERACEAE	ELEOCHARIS CYLINDRICA
TEXAS	ENDANGERED	ERIOCAULACEAE	ERIOCAULON KORNICKIANUM
TEXAS	ENDANGERED	EUPHORBIACEAE	ANDRACHNE ARIDA
TEXAS	ENDANGERED	EUPHORBIACEAE	ARGYTHAMNIA APHOROIDES
TEXAS	ENDANGERED	EUPHORBIACEAE	ARGYTHAMNIA ARGYRAEA
TEXAS	ENDANGERED	EUPHORBIACEAE	EUPHORBIA FENDLERI VAR. TRILIGULATA
TEXAS	ENDANGERED	EUPHORBIACEAE	EUPHORBIA GOLONDRINA
TEXAS	ENDANGERED	EUPHORBIACEAE	MANIHOT WALKERAE
TEXAS	ENDANGERED	EUPHORBIACEAE	PHYLLANTHUS ERICOIDES
TEXAS	ENDANGERED	FABACEAE	ACACIA EMORYANA
TEXAS	ENDANGERED	FABACEAE	BRONGNIARTIA MINUTIFOLIA
TEXAS	ENDANGERED	FABACEAE	CAESALPINIA DRUMMONDII
TEXAS	ENDANGERED	FABACEAE	CALLIANDRA BIFLORA
TEXAS	ENDANGERED	FABACEAE	GENISTIDIUM DUMOSUM
TEXAS	ENDANGERED	FABACEAE	HOFFMANNSEGGIA TENELLA
TEXAS	ENDANGERED	FABACEAE	PETALOSTEMUM REVERCHONII
TEXAS	ENDANGERED	FABACEAE	PETALOSTEMUM SABINALE
TEXAS	ENDANGERED	FAGACEAE	QUERCUS GRACILIFORMIS

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	ENDANGERED	FAGACEAE	QUERCUS HINCKLEYI
TEXAS	ENDANGERED	FAGACEAE	QUERCUS TARDIFOLIA
TEXAS	ENDANGERED	FRANKENIACEAE	FRANKENIA JOHNSTONII
TEXAS	ENDANGERED	GENTIANACEAE	BARTONIA TEXANA
TEXAS	ENDANGERED	HYDROPHYLLACEAE	PHACELIA PALLIDA
TEXAS	ENDANGERED	ISOETACEAE	ISOETES LITHOPHYLLA
TEXAS	ENDANGERED	LAMIACEAE	BRAZORIA PULCHERRIMA
TEXAS	ENDANGERED	LAMIACEAE	PHYSOSTEGIA CORRELLII
TEXAS	ENDANGERED	LILIACEAE	POLIANTHES RUNYONII
TEXAS	ENDANGERED	LILIACEAE	SCHOENOLIRION TEXANUM
TEXAS	ENDANGERED	MALVACEAE	CALLIRHOE SCABRIUSCULA
TEXAS	ENDANGERED	MALVACEAE	GAYA VIOLACEA
TEXAS	ENDANGERED	MALVACEAE	HIBISCUS DASYCALYX
TEXAS	ENDANGERED	POACEAE	MUHLENBERGIA VILLOSA
TEXAS	ENDANGERED	POACEAE	POA INVOLUTA
TEXAS	ENDANGERED	POACEAE	ZIZANIA TEXANA
TEXAS	ENDANGERED	POLEMONIACEAE	PHLOX NIVALIS SSP. TEXENSIS
TEXAS	ENDANGERED	POLEMONIACEAE	POLEMONIUM PAUCIFLORUM SSP. HINCKLEYI
TEXAS	ENDANGERED	POLYGALACEAE	POLYGALA MARAVILLASENSIS
TEXAS	ENDANGERED	POLYGALACEAE	POLYGALA RIMULICOLA
TEXAS	ENDANGERED	POLYGONACEAE	ERIOGONUM NEALLEYI
TEXAS	ENDANGERED	POLYGONACEAE	ERIOGONUM SUFFRUTICOSUM
TEXAS	ENDANGERED	POLYGONACEAE	POLYGONELLA PARKSII
TEXAS	ENDANGERED	POLYGONACEAE	POLYGONUM TEXENSE
TEXAS	ENDANGERED	POTAMOGETONACEAE	POTAMOGETON CLYSTOCARPUS
TEXAS	ENDANGERED	RANUNCULACEAE	AQUILEGIA CHAPLINEI
TEXAS	ENDANGERED	RANUNCULACEAE	AQUILEGIA HINCKLEYANA
TEXAS	ENDANGERED	RANUNCULACEAE	RANUNCULUS FASCICULARIS VAR. CUNEIFORMIS
TEXAS	ENDANGERED	RHAMNACEAE	COLUBRINA STRICTA
TEXAS	ENDANGERED	RHAMNACEAE	CONDALIA HOOKERI VAR. EDWARDSIANA
TEXAS	ENDANGERED	RUTACEAE	ZANTHOXYLUM PARVUM
TEXAS	ENDANGERED	SALICACEAE	POPULUS HINCKLEYANA
TEXAS	ENDANGERED	SCROPHULARIACEAE	CASTILLEJA CILIATA
TEXAS	ENDANGERED	STYRACACEAE	STYRAX PLATANIFOLIA VAR. STELLATA
TEXAS	ENDANGERED	STYRACACEAE	STYRAX TEXANA
TEXAS	ENDANGERED	URTICACEAE	URTICA CHAMAEDRYOIDES VAR. RUNYONII
TEXAS	ENDANGERED	VALERIANACEAE	VALERIANELLA TEXANA
TEXAS	EXTINCT	AIZOACEAE	SESUVIUM TRIANTHEMOIDES
TEXAS	EXTINCT	ASCLEPIADACEAE	MATELEA RADIATA
TEXAS	EXTINCT	ASTERACEAE	HYMENOXYS TEXANA
TEXAS	EXTINCT	ASTERACEAE	PERITYLE ROTUNDATA
TEXAS	EXTINCT	BRASSICACEAE	THELYPODIUM TENUE
TEXAS	EXTINCT	BROMELIACEAE	HECHTIA TEXENSIS

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	THREATENED	BORAGINACEAE	ONOSMODIUM HELLERI
TEXAS	THREATENED	BRASSICACEAE	LESQUERELLA ANGUSTIFOLIA
TEXAS	THREATENED	BRASSICACEAE	LESQUERELLA MCVAUGHIANA
TEXAS	THREATENED	BRASSICACEAE	LESQUERELLA THAMNOPHILA
TEXAS	THREATENED	BRASSICACEAE	STREPTANTHUS BRACTEATUS
TEXAS	THREATENED	BRASSICACEAE	STREPTANTHUS CARINATUS
TEXAS	THREATENED	BRASSICACEAE	STREPTANTHUS CUTLERI
TEXAS	THREATENED	CACTACEAE	CEREUS GREGGII
TEXAS	THREATENED	CACTACEAE	CORYPHANTHA DASYACANTHA VAR. VARICOLOR
TEXAS	THREATENED	CACTACEAE	CORYPHANTHA DUNCANII
TEXAS	THREATENED	CACTACEAE	CORYPHANTHA HESTERI
TEXAS	THREATENED	CACTACEAE	CORYPHANTHA SULCATA VAR. NICKELSIAE
TEXAS	THREATENED	CACTACEAE	ECHINOCEREUS REICHENBACHII VAR. CHISOSENSIS
TEXAS	THREATENED	CACTACEAE	ECHINOCEREUS REICHENBACHII VAR. FITCHII
TEXAS	THREATENED	CACTACEAE	ECHINOCEREUS VIRIDIFLORUS VAR. CORRELLII
TEXAS	THREATENED	CACTACEAE	EPITHELANTHA BOKEI
TEXAS	THREATENED	CACTACEAE	NEOLLOYDIA WARNOCKII
TEXAS	THREATENED	CACTACEAE	OPUNTIA ARENARIA
TEXAS	THREATENED	CACTACEAE	OPUNTIA IMBRICATA VAR. ARGENTEA
TEXAS	THREATENED	CACTACEAE	THELOCACTUS BICOLOR VAR. FLAVIDISPINUS
TEXAS	THREATENED	CAMPANULACEAE	CAMPANULA REVERCHONII
TEXAS	THREATENED	CAPRIFOLIACEAE	SYMPHORICARPOS GUADALUPENSIS
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA CHORIZANTHOIDES
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA DRUMMONDII SSP. PARVIFLORA
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA MONTICOLA
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA NUDATA
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA VIRGINICA VAR. PARKSII
TEXAS	THREATENED	CARYOPHYLLACEAE	PARONYCHIA WILKINSONII
TEXAS	THREATENED	COCHLOSPERMACEAE	AMOREUXIA WRIGHTII
TEXAS	THREATENED	COMMELINACEAE	TRADESCANTIA EDWARDSIANA
TEXAS	THREATENED	COMMELINACEAE	TRADESCANTIA WRIGHTII
TEXAS	THREATENED	CUCURBITACEAE	CUCURBITA TEXANA
TEXAS	THREATENED	CYPERACEAE	CAREX ONUSTA
TEXAS	THREATENED	CYPERACEAE	CYPERUS ONEROSUS
TEXAS	THREATENED	CYPERACEAE	ELEOCHARIS AUSTROTEXANA
TEXAS	THREATENED	EUPHORBIACEAE	EUPHORBIA JEJUNA
TEXAS	THREATENED	EUPHORBIACEAE	EUPHORBIA PERENNANS
TEXAS	THREATENED	EUPHORBIACEAE	EUPHORBIA ROEMERIANA
TEXAS	THREATENED	EUPHORBIACEAE	EUPHORBIA STRICTIOR
TEXAS	THREATENED	EUPHORBIACEAE	TRAGIA NIGRICANS
TEXAS	THREATENED	FABACEAE	AMORPHA ROEMERIANA
TEXAS	THREATENED	FABACEAE	ASTRAGALUS MOLLISSIMUS VAR. MARCIDUS

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	THREATENED	FABACEAE	CAESALPINIA BRACHYCARPA
TEXAS	THREATENED	FABACEAE	CASSIA RIPLEYANA
TEXAS	THREATENED	FABACEAE	COURSETIA AXILLARIS
TEXAS	THREATENED	FABACEAE	DALEA BARTONII
TEXAS	THREATENED	FABACEAE	DESMODIUM LINDHEIMERI
TEXAS	THREATENED	FABACEAE	SOPHORA GYPSOPHILA VAR. GUADALUPENSIS
TEXAS	THREATENED	HYDROPHYLLACEAE	NAMA XYLOPODUM
TEXAS	THREATENED	LAMIACEAE	HEDEOMA APICULATUM
TEXAS	THREATENED	LAMIACEAE	SALVIA PENSTEMONOIDES
TEXAS	THREATENED	LEITNERIACEAE	LEITNERIA FLORIDANA
TEXAS	THREATENED	LILIACEAE	AGAVE CHISOENSIS
TEXAS	THREATENED	LILIACEAE	ANTHERICUM CHANDLERI
TEXAS	THREATENED	LILIACEAE	NOLINA ARENICOLA
TEXAS	THREATENED	LILIACEAE	POLIANTHES MACULOSA
TEXAS	THREATENED	LILIACEAE	TRILLIUM TEXANUM
TEXAS	THREATENED	LILIACEAE	VERATRUM WOODII
TEXAS	THREATENED	LYTHRACEAE	HEIMIA LONGIPES
TEXAS	THREATENED	LYTHRACEAE	LYTHRUM OVALIFOLIUM
TEXAS	THREATENED	MALVACEAE	ABUTILON MARSHII
TEXAS	THREATENED	MELASTOMATACEAE	RHEXIA SALICIFOLIA
TEXAS	THREATENED	NYCTAGINACEAE	ACLEISANTHES CRASSIFOLIA
TEXAS	THREATENED	NYCTAGINACEAE	BOERHAAVIA MATHISIANA
TEXAS	THREATENED	ORCHIDACEAE	HEXALECTRIS GRANDIFLORA
TEXAS	THREATENED	ORCHIDACEAE	HEXALECTRIS NITIDA
TEXAS	THREATENED	ORCHIDACEAE	HEXALECTRIS REVOLUTA
TEXAS	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
TEXAS	THREATENED	ORCHIDACEAE	PLATANTHERA INTEGRA
TEXAS	THREATENED	PEDALIACEAE	PROBOSCIDEA SABULOSA
TEXAS	THREATENED	POACEAE	BROMUS TEXENSIS
TEXAS	THREATENED	POACEAE	CHLORIS TEXENSIS
TEXAS	THREATENED	POACEAE	FESTUCA LIGULATA
TEXAS	THREATENED	POACEAE	WILLKOMMIA TEXANA
TEXAS	THREATENED	POLEMONIACEAE	PHLOX OKLAHOMENSIS
TEXAS	THREATENED	POLYGONACEAE	ERIOGONUM CORRELLII
TEXAS	THREATENED	POLYGONACEAE	POLYGONUM STRIATULUM
TEXAS	THREATENED	POLYPODIACEAE	NOTHOLAENA SCHAFFNERI VAR. NEALLEYI
TEXAS	THREATENED	RANUNCULACEAE	ANEMONE EDWARDSIANA VAR. EDWARDSIANA
TEXAS	THREATENED	RANUNCULACEAE	ANEMONE EDWARDSIANA VAR. PETRAEA
TEXAS	THREATENED	ROSACEAE	PRUNUS HAVARDII
TEXAS	THREATENED	ROSACEAE	PRUNUS MINUTIFLORA
TEXAS	THREATENED	ROSACEAE	PRUNUS MURRAYANA
TEXAS	THREATENED	ROSACEAE	PRUNUS TEXANA
TEXAS	THREATENED	ROSACEAE	ROSA STELLATA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
TEXAS	THREATENED	RUBIACEAE	GALIUM CORRELLII
TEXAS	THREATENED	SAXIFRAGACEAE	PHILADELPHUS ERNESTII
TEXAS	THREATENED	SAXIFRAGACEAE	PHILADELPHUS TEXENSIS VAR. TEXENSIS
TEXAS	THREATENED	SCROPHULARIACEAE	CASTILLEJA ELONGATA
TEXAS	THREATENED	SOLANACEAE	LYCIUM BERBERIOIDES
TEXAS	THREATENED	SOLANACEAE	LYCIUM TEXANUM
TEXAS	THREATENED	STYRACACEAE	STYRAX YOUNGAE
TEXAS	THREATENED	VALERIANACEAE	VALERIANA TEXANA
TEXAS	THREATENED	VALERIANACEAE	VALERIANELLA FLORIFERA
VIRGINIA	ENDANGERED	ARISTOLOCHIACEAE	HEXASTYLIS NANIFLORA
VIRGINIA	ENDANGERED	BETULACEAE	BETULA UBER
VIRGINIA	ENDANGERED	CISTACEAE	LECHEA MARITIMA VAR. VIRGINICA
VIRGINIA	ENDANGERED	CYPERACEAE	CAREX BILTMOREANA
VIRGINIA	ENDANGERED	CYPERACEAE	SCIRPUS ANCISTROCHAETUS
VIRGINIA	ENDANGERED	LILIACEAE	HYPOXIS LONGII
VIRGINIA	ENDANGERED	LILIACEAE	TRILLIUM PUSILLUM VAR. VIRGINIANUM
VIRGINIA	ENDANGERED	MALVACEAE	ILIAMNA REMOTA
VIRGINIA	ENDANGERED	ORCHIDACEAE	ISOTRIA MEDEOLOIDES
VIRGINIA	ENDANGERED	POACEAE	PANICUM MUNDUM
VIRGINIA	ENDANGERED	RANUNCULACEAE	CLEMATIS ADDISONII
VIRGINIA	ENDANGERED	RANUNCULACEAE	CLEMATIS VITICAULIS
VIRGINIA	ENDANGERED	SCROPHULARIACEAE	BACOPA STRAGULA
VIRGINIA	EXTINCT	SCROPHULARIACEAE	BACOPA SIMULANS
VIRGINIA	THREATENED	ACANTHACEAE	JUSTICIA MORTUIFLUMINIS
VIRGINIA	THREATENED	APIACEAE	LILAEOPSIS CAROLINENSIS
VIRGINIA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
VIRGINIA	THREATENED	ARISTOLOCHIACEAE	HEXASTYLIS LEWISII
VIRGINIA	THREATENED	ASTERACEAE	ECHINACEA LAEVIGATA
VIRGINIA	THREATENED	ASTERACEAE	RUDBECKIA HELIOPSIDIS
VIRGINIA	THREATENED	BETULACEAE	ALNUS MARITIMA
VIRGINIA	THREATENED	BRASSICACEAE	CARDAMINE LONGII
VIRGINIA	THREATENED	CYPERACEAE	CAREX CHAPMANII
VIRGINIA	THREATENED	CYPERACEAE	CYMOPHYLLUS FRASERI
VIRGINIA	THREATENED	CYPERACEAE	SCIRPUS FLACCIDIFOLIUS
VIRGINIA	THREATENED	ERICACEAE	RHODODENDRON BAKERI
VIRGINIA	THREATENED	ISOETACEAE	ISOETES VIRGINICA
VIRGINIA	THREATENED	JUNCACEAE	JUNCUS CAESARIENSIS
VIRGINIA	THREATENED	LAMIACEAE	PYCNANTHEMUM MONOTRICHUM
VIRGINIA	THREATENED	LAMIACEAE	SYNANDRA HISPIDULA
VIRGINIA	THREATENED	LILIACEAE	LILIUM GRAYII
VIRGINIA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
VIRGINIA	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA

TABLE II-70 (continued)

ENDANGERED, THREATENED, AND EXTINCT NATIVE PLANT SPECIES
BY STATE, 1977

STATE	STATUS	FAMILY	SPECIES
VIRGINIA	THREATENED	POACEAE	CALAMAGROSTIS PORTERI
VIRGINIA	THREATENED	POACEAE	CALAMOVILFA BREVIPILIS VAR. BREVIPILIS
VIRGINIA	THREATENED	POACEAE	PANICUM ACULEATUM
VIRGINIA	THREATENED	RANUNCULACEAE	CIMICIFUGA RUBIFOLIA
VIRGINIA	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
VIRGINIA	THREATENED	SANTALACEAE	BUCKLEYA DISTICHOPHYLLA
VIRGINIA	THREATENED	SANTALACEAE	NESTRONIA UMBELLULA
VIRGINIA	THREATENED	SAXIFRAGACEAE	HEUCHERA HISPIDA
VIRGINIA	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAREYANA
VIRGINIA	THREATENED	SAXIFRAGACEAE	SAXIFRAGA CAROLINIANA
VIRGINIA	THREATENED	SCROPHULARIACEAE	MICRANTHEMUM MICRANTHEMOIDES
WEST VIRGINIA	THREATENED	APIACEAE	PTILIMNIUM FLUVIATILE
WEST VIRGINIA	THREATENED	ARALIACEAE	PANAX QUINQUEFOLIUS
WEST VIRGINIA	THREATENED	CYPERACEAE	CYMOPHYLLUS FRASERI
WEST VIRGINIA	THREATENED	LAMIACEAE	SCUTELLARIA OVATA SSP. PSEUDOARGUTA
WEST VIRGINIA	THREATENED	LAMIACEAE	SYNANDRA HISPIDULA
WEST VIRGINIA	THREATENED	ORCHIDACEAE	PLATANTHERA FLAVA
WEST VIRGINIA	THREATENED	ORCHIDACEAE	PLATANTHERA PERAMOENA
WEST VIRGINIA	THREATENED	POACEAE	CALAMAGROSTIS PORTERI
WEST VIRGINIA	THREATENED	RANUNCULACEAE	HYDRASTIS CANADENSIS
WEST VIRGINIA	THREATENED	ROSACEAE	PRUNUS ALLEGHANIENSIS
WEST VIRGINIA	THREATENED	SAXIFRAGACEAE	HEUCHERA HISPIDA

Source: E. S. Ayensu and R. A. DePhilipps, 1978, Endangered and Threatened Plants of the United States, Smithsonian Institution and the World Wildlife Fund, Inc., Washington, D. C.

TABLE II-71

MAMMALS OCCURRING IN THE SOUTH (NUMBERS AND PERCENTAGES OF COUNTIES IN WHICH THEY OCCUR)

Genus species	Common name	Number of counties	Percent
ANTILOCARPA AMERICANA	PRONGHORN	211	15.5
ANTROZOUS PALLIDUS	PALLID BAT	76	5.6
BASSARICUS ASTUTUS	RINGTAIL	273	20.1
BLARINA BREVICAUDA	SHORTTAIL SHREW	1140	83.8
CANIS LUTRANS	COYOTE	615	45.2
CANIS LUPUS	GRAY WOLF	216	15.9
CANIS RUFUS	RED WOLF	2	0.1
CASTOR CANADENSIS	BEAVER	1309	96.2
CERVUS CANADENSIS	ELK	331	24.3
CERVUS DAMA	FALLOW DEER	3	0.2
CLETHRIONOMYS GAPPERI	RED-BACK VOLE	113	8.3
CONDYLURA CRISTATA	STAR-NOSED MOLE	91	6.7
CONEPATUS MESOLEUCUS	HOG-NOSED SKUNK	114	8.4
CRYNORHINUS TOWNSENDII	TOWNSEND'S BIG-EARED BAT	145	10.7
CRATOGEOMYS CASTANOPS	YELLOW-FACED POCKET GOPHER	196	14.4
CRYPTOTIS PARVA	LEAST SHREW	1278	93.9
CYNOMYS LUDOVICIANUS	BLACK-TAIL PRAIRIE DOG	138	10.1
DASYPTERUS FLORIDANUS	FLORIDA YELLOW BAT	17	1.2
DASYPTERUS INTERMEDIUS	YELLOW BAT	19	1.4
DASYPUS NOVEMCINCTUS	NINE-BANDED ARMADILLO	542	39.8
DIDELPHIS VIRGINIANA	OPOSSUM	1360	99.9
DIPODOMYS MERRIAMI	MERRIAM'S KANGAROO RAT	18	1.3
DIPODOMYS ORDII	ORD'S KANGAROO RAT	135	9.9
DIPODOMYS SPECTABILIS	BANNER-TAILED KANGAROO RAT	10	0.7
EPTESICUS FUSCUS	BIG BROWN BAT	1360	99.9
ERETHOZIA DORSATUM	PORCUPINE	24	1.8
EUMOPS DERUTIS	GREATER MASTIFF BAT	13	1.0
FELIS CONCOLOR COUGAR	EASTERN COUGAR	349	25.6
FELIS CONCOLOR CORYI	FLORIDA PANTHER	10	0.7
GEOMYS BURSARIUS	PLAINS POCKET GOPHER	317	23.3
GEOMYS COLONUS	COLONIAL POCKET GOPHER	1	0.1
GEOMYS CUMBERLANDIUS	CUMBERLAND ISLAND POCKET GOPHER	1	0.1
GEOMYS FONTANELUS	SHERMAN'S POCKET GOPHER	1	0.1
GEOMYS PINETIS	SOUTHEASTERN POCKET GOPHER	166	12.2
GEOMYS PINETIS GOFFI	GOFF'S POCKET GOPHER	1	0.1
GLAUCOMYS VOLANS	SOUTH FLYING SQUIRREL	1129	83.0
LAGURUS CURTATUS	SAGEBRUSH VOLE	1	0.1
LASIURUS BOREALIS	RED BAT	1325	97.4
LASIURUS CINEREUS	HOARY BAT	1287	94.6
LASIONYCTERIS NOCTIVAGANS	SILVER-HAIRED BAT	755	55.5
LASIURUS SEMINOLUS	SEMINOLE BAT	644	47.3
LEPUS CALIFORNICUS	BLACKTAIL JACKRABBIT	331	24.3
LUTRA CANADENSIS	RIVER OTTER	1106	81.3
LYNX RUFUS	BOBCAT	1360	99.9
MARMOTA MONAX	WOODCHUCK	612	45.0
MEPHITIS MACROURA	HOODED SKUNK	9	0.7
MEPHITIS MEPHITIS	STRIPED SKUNK	1360	99.9

TABLE II-71 (continued)

MAMMALS OCCURRING IN THE SOUTH (NUMBERS AND PERCENTAGES OF COUNTIES IN WHICH THEY OCCUR)

Genus species	Common name	Number of counties	Percent
MICROSOREX HOYI	PYGMY SHREW	86	6.3
MICROTUS LUDOVICIANUS	LOUISIANA VOLE	19	1.4
MICROTUS MEXICANUS	MEXICAN VOLE	3	0.2
MICROTUS OCHROGASTER	PRAIRIE VOLE	207	15.2
MICROTUS PENNSYLVANICUS	MEADOW VOLE	295	21.7
MICROTUS PINETORUM	PINE MOUSE	1035	76.0
MUSTELA EVERGLADENSIS	EVERGLADES MINK	4	0.3
MUSTELA FRENATA	LONG-TAIL WEASEL	1360	99.9
MUS MUSCULUS	HOUSE MOUSE	1029	75.6
MUSTELA NIGRIPES	BLACKFOOTED FERRET	112	8.2
MUSTELA VISION	MINK	1360	99.9
MYOTIS AUSTRORIPARIUS	SOUTHEASTERN MYOTIS	407	29.9
MYOTIS CALIFORNICUS	CALIFORNIA MYOTIS	12	0.9
MYOCASTER COYPUS	NUTRIA	120	8.8
MYOTIS GRISESCENS	GRAY BAT	254	18.7
MYOTIS KEENI	KEEN'S BAT	414	30.4
MYOTIS LEIBII	LEIB'S BAT	78	5.7
MYOTIS LUCIFUGUS	LITTLE BROWN BAT	849	62.4
MYOTIS OCCULTUS	ARIZONA MYOTIS	2	0.1
MYOTIS SODALIS	INDIANA BAT	384	28.2
MYOTIS SUBULATUS	SMALL-FOOTED MYOTIS	91	6.7
MYOTIS THYSANODES	FRINGED MYOTIS	12	0.9
MYOTIS VELIFER	CAVE MYOTIS	224	16.5
MYOTIS VOLANS	LONG-LEGGED MYOTIS	12	0.9
MYOTIS YUMANENSIS	YUMA MYOTIS	53	3.9
NAPAEOZAPUS INSIGNIS	WOODLAND JUMPING MOUSE	143	10.5
NEOTOMA FLORIDANA SMALLI	KEY LARGO WOODRAT	1	0.1
NEOTOMA ALBIGULA	WHITE-THROATED WOODRAT	78	5.7
NEOFIBER ALLENI	ROUND-TAIL MUSKRAT	40	2.9
NEOTOMA FLORIDANA	WOOD RAT	1090	80.1
NEOTOMA MEXICANA	MEXICAN WOORAT	5	0.4
NOTIOSOREX CRAWFORDI	CRAWFORD'S DESERT SHREW	260	19.1
NYCTICEIUS HUMERALIS	EVENING BAT	1222	89.8
OCHROTOMUS NUTTALLI	GOLDEN MOUSE	905	66.5
OCHOTONA PRINCEPS	PIKA	67	4.9
ODOCOILEUS HEMIONUS	MULE DEER	64	4.7
ODOCOILEUS VIRGINIANUS	WHITE-TAIL DEER	1360	99.9
ODOCOILEUS VIRGINIANUS CLAVIUM	KEY DEER	1	0.1
ONDATRA ZIBETHICUS	MUSKRAT	930	68.3
ONYCHOMYS LEUCOGASTER	NO. GRASSHOPPER MOUSE	139	10.2
ONYCHOMYS TORRIDUS	SO. GRASSHOPPER MOUSE	20	1.5
ORYZOMYS PALUSTRIS	RICE RAT	878	64.5
ORYZOMYS-UNDES SPECIES	CUDOE KEY RICE RAT	1	0.1
PARASCALOPS BREWERI	HAIRY TAIL MOLE	160	11.8
PEROMYSCUS GOSSYPINUS ALLAPATICOL	KEY LARGO COTTON MOUSE	1	0.1

TABLE II-71 (continued)

MAMMALS OCCURRING IN THE SOUTH (NUMBERS AND PERCENTAGES OF COUNTIES IN WHICH THEY OCCUR)

Genus species	Common name	Number of counties	Percent
PEROMYSCUS MANICULATUS BAIRDII	PRAIRIE DEER MOUSE	137	10.1
PEROMYSCUS MANICULATUS NUBITERRAE	CLOUDLAND DEER MOUSE	91	6.7
PEROMYSCUS POLIONOTUS DECOLORATUS	PALLID BEECH MOUSE	2	0.1
PEROMYSCUS BOYLII	BRUSH MOUSE	180	13.2
PEROMYSCUS EREMICUS	CACTUS MOUSE	19	1.4
PEROMYSCUS FLORIDANUS	FLORIDA MOUSE	34	2.5
PEROGNATHUS FLAVESCENS	PLAINS POCKET MOUSE	34	2.5
PEROGNATHUS FLAVUS	SILKY POCKET MOUSE	97	7.1
PEROMYSCUS GOSSYPINUS	COTTON MOUSE	602	44.2
PEROGNATHUS HISPIDUS	HISPID POCKET MOUSE	303	22.3
PEROGNATHUS INTERMEDIUS	ROCK POCKET MOUSE	6	0.4
PEROMYSCUS LEUCOPUS	WHITE-FOOTED MOUSE	1144	84.1
PEROMYSCUS MANICULATUS	DEER MOUSE	331	24.3
PEROGNATHUS MERRIAMI	MERRIAM'S POCKET MOUSE	155	11.4
PEROMYSCUS NASTUS	ROCK MOUSE	35	2.6
PEROMYSCUS PECTORALIS	WHITE ANKLED MOUSE	37	2.7
PEROGNATHUS PENICILLARUS	DESERT POCKET MOUSE	12	0.9
PEROMYSCUS POLIONOTUS	OLD-FIELD MOUSE	237	17.4
PIPISTRELLUS SUBFLAVUS	EASTERN PIPISTRELLE	1247	91.6
PITYMYS PARVULUS	FLORIDA PINE MOUSE	10	0.7
PLECOTUS RAFINESQUII	RAFINESQUE'S BIG-EARED BAT	756	55.5
PLECOTUS TOWNSENDII INGENS	OZARK BIG-EARED BAT	28	2.1
PLECOTUS TOWNSENDII VIRGINIANUS	VIRGINIA BIG-EARED BAT	4	0.3
PROCYON LOTOR AUSPICATUS	KEY VACA RACCOON	1	0.1
PROCYON LOTOR	KEY VACA RACCOON	1	0.1
PROCYON LOTOR	RACCOON	1360	99.9
RATTUS NORVEGICUS	NORWAY RAT	1029	75.6
RATTUS RATTUS	BLACK RAT	1029	75.6
REITHRODONTOMYS FULVESCENS	FULVOUS HARVEST MOUSE	375	27.6
REITHRODONTOMYS HUMULIS	EASTERN HARVEST MOUSE	1003	73.7
REITHRODONTOMYS MEGALOTIS	WESTERN HARVEST MOUSE	52	3.8
REITHRODONTOMYS MONTANUS	PLAINS HARVEST MOUSE	172	12.6
SCALOPUS AQUATICUS	EASTERN MOLE	1300	95.5
SCIURUS CAROLINENSIS MATECUMBEI	KEY LARGO GRAY SQUIRREL	1	0.1
SCIURUS AUREOGASTER	RED-BELLIED GRAY SQUIRREL	1	0.1
SCIURUS CAROLINENSIS	GRAY SQUIRREL	1131	83.1
SCIURUS NIGER	FOX SQUIRREL	266	19.5
SCIURUS NIGER AVICENNIA	EVERGLADES FOX SQUIRREL	10	0.7
SCIURUS NIGER SHERMANI	SHERMAN'S FOX SQUIRREL	1	0.1
SCIRUS NIGER VOLPINUS	EASTERN FOX SQUIRREL	1	0.1
SIGMODON HISPIDUS	COTTON RAT	1088	79.9
SIGMODON HISPIDUS EXSPUTUS	LOWER KEYS COTTON RAT	1	0.1
SOREX CINEREUS	MASKED SHREW	86	6.3
SOREX DISPAR	LONG-TAIL SHREW	69	5.1
SOREX FUMEUS	SMOKEY SHREW	135	9.9
SOREX LONGIROSTRIS	SOUTHEASTERN SHREW	704	51.7
SOREX PALUSTRIS	WATER SHREW	74	5.4

TABLE II-71 (continued)

MAMMALS OCCURRING IN THE SOUTH (NUMBERS AND PERCENTAGES OF COUNTIES IN WHICH THEY OCCUR)

Genus species	Common name	Number of counties	Percent
SPERMOPHILUS SPILOSOMA	SPOTTED GROUND SQUIRREL	118	8.7
SPERMOPHILUS TRIDECEMLINEATUS	13-LINED GROUND SQUIRREL	240	17.6
SPERMOPHILUS VARIEGATUS	ROCK GROUND SQUIRREL	47	3.5
SPILOGALE GRACILIS	W. SPOTTED SKUNK	115	8.4
SPILOGALE PUTORIUS	E. SPOTTED SKUNK	894	65.7
SYLVILAGUS AQUATICUS	SWAMP RABBIT	556	40.9
SYLVILAGUS AUDUBONII	DESERT COTTONTAIL	132	9.7
SYLVILAGUS FLORIDANUS	EASTERN COTTONTAIL	1360	99.9
SYLVILAGUS PALUSTRIS	MARSH RABBIT	251	18.4
SYLVILAGUS TRANSITIONALIS	WOOD RABBIT	154	11.3
SYNAPTOMYS COOPERI	SOUTHERN BOG LEMMING	177	13.0
TADHRIDA BRASILINESIS	BRAZILIAN FREE-TAIL BAT	563	41.4
TADHRIDA MOLOSSA	BIG FREE-TAIL BAT	45	3.3
TAMIASCIURUS HUDSONICUS	RED SQUIRREL	114	8.4
TAMAIS STRIATUS	CHIPMUNK	592	43.5
TAXIDEA TAXUS	BADGER	214	15.7
THOMOMYS BAILEYI	BAILEY'S POCKET GOPHER	5	0.4
THOMOMYS UMBRINUS	SO. POCKET GOPHER	19	1.4
UROCYON CINEREOARGENTEUS	GRAY FOX	1075	79.0
URSUS AMERICANUS	BLACK BEAR	1360	99.9
VULPES FULVA	RED FOX	1121	82.4
ZAPUS HUDSONIUS	MEADOW JUMPING MOUSE	449	33.0

Source: Kitchings et al. 1976. Biogeographic Information System for Animal Species in Southeastern United States. ASB Bulletin 23(3):149-154.

TABLE II-72

COMMERCIAL AND MARINE RECREATIONAL FISHERIES CATCH (10^3 POUNDS) BY STATE, 1974

State	1976 Commercial landings[1]	1974 Marine recreational catch	
		Finfish[2]	Shellfish[3]
Alabama[4]	34,953	10,756	1,039
Arkansas[5]	10,300		
Florida	164,955	164,235	58,604
Georgia	14,524	9,601	1,165
Kentucky[5]	2,945		
Louisiana	1,227,958	61,541	17,409
Mississippi	291,904	9,883	1,447
North Carolina	226,065	26,753	7,641
Oklahoma[5]	575		
South Carolina	21,481	17,793	6,441
Tennessee[5]	6,800		
Texas	96,305	51,936	9,725
Virginia	528,430	17,609	4,285
West Virginia	10		
South	2,627,205	370,107	107,756
U.S.	5,350,400	-	-
% of U.S.	49	-	-

[1]Statistics are for round (live) weight of finfish and weight of meat (excluding shell) of shellfish.

[2]Statistics are for round (live) weight.

[3]Statistics are for live weight including shells.

[4]Landings of interior waters estimated.

[5]Estimated.

Source: Fisheries of the United States, 1977. 1978. National Marine Fisheries Service.

TABLE II-73

NUMBERS OF SPECIES FEDERALLY DESIGNATED AS ENDANGERED, THREATENED, PROPOSED, OR IN-REVIEW, SEPTEMBER, 1978

State	Mammals	Birds	Reptiles	Amphibians	Fish	Snails	Clams	Crustacean	Insects	Plant[1]	Total
AL	7	6	6	1	14	4	7	1	0	15	61
AR	8	7	2	0	7	3	1	0	0	24	52
FL	10	9	10	1	4	2	0	3	4	7	50
GA	8	6	3	1	7	2	0	1	1	19	48
KY	8	5	0	0	3	2	6	3	0	16	43
LA	6	8	5	0	2	0	1	0	0	5	27
MS	6	7	6	0	4	1	0	0	0	6	30
NC	7	6	1	2	9	3	0	0	2	32	62
OK	9	6	2	0	2	1	0	0	0	6	26
SC	7	6	2	1	1	0	0	0	1	20	38
TN	8	5	0	0	14	16	16	4	0	22	85
TX	12	9	8	5	9	3	1	0	3	6	56
VA	9	4	0	0	9	2	10	1	2	48	85
WV	9	2	0	0	2	1	2	0	0	13	29

[1]Plant lists from Federal Register for all states except AR, VA and WV are incomplete.

Source: Brookhaven National Laboratory Endangered Species Data Base.

TABLE II-74

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
ALABAMA				
1 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
3 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
4 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
5 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
6 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
7 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
8 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
9 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
10 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
11 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
12 - - - X E	WARBLER, (WOOD), BACHMANIS	VERMIVORA BACHMANII	PARULIDAE	BIRDS
13 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
14 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
15 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
16 - - - X T	SNAKE, INDIGO, EASTERN	DRYMARCHON CORAIS COUPERI	COLUBRIDAE	REPTILES
17 - - - X V	SNAKE, PINE, BLACK	PITUOPHIS MELANOLEUCUS LODINGI	COLUBRIDAE	REPTILES
18 - X - X V	TURTLE, MUSK, FLATTENED	STERNOTHAERUS DEPRESSUS	CHELYDRIDAE	REPTILES
19 - X - X V	TURTLE, RED-BELLIED, ALABAMA	CHRYSEMYS (PSEUDEMYS) ALABAMENSIS	TESTUDINIDAE	REPTILES
20 - X - X V	TURTLE, SAWBACK, BLACK-KNOBBED	GRAPTEMYS (GRAPTEMYS) NIGRINODA	TESTUDINIDAE	REPTILES
21 - X - X T	SALAMANDER, RED HILLS	PHAEOGNATHUS HUBRICHTI	PLETHODONTIDAE	AMPHIBIANS
22 X X - X T	CAVEFISH, ALABAMA	SPEOPLATYRHINUS POULSONI	AMBLYOPSIDAE	FISH
23 - X - X V	DARTER, COLDWATER	ETHEOSTOMA DITREMIA	PERCIDAE	FISH
24 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
25 - X - X V	DARTER, FRECKLED	PERCINA LENTICULA	PERCIDAE	FISH
26 X X - X P	DARTER, GOLDLINE	PERCINA AUROLINEATA	PERCIDAE	FISH
27 X X - X T	DARTER, SLACKWATER	ETHEOSTOMA BOSCHUNGI	PERCIDAE	FISH
28 - X - X V	DARTER, TUSCUMBIA	ETHEOSTOMA TUSCUMBIA	PERCIDAE	FISH
29 - - - X E	DARTER, WATERCRESS	ETHEOSTOMA NUCHALE	PERCIDAE	FISH
30 - X - X V	MADTOM, FRECKLEBELLY	NOTURUS MUNITUS	ICTALURIDAE	FISH
31 X X - X P	SCULPIN, PYGMY	COTTUS PYGMAEUS	COTTIDAE	FISH
32 - X - X V	SHINER, BLUESTRIPE	NOTROPIS CALLITAENIA	CYPRINIDAE	FISH
33 X X - X P	SHINER, CAHABA	NOTROPIS SP.	CYPRINIDAE	FISH
34 X X - X P	SUNFISH, SPRING, PYGMY	ELASSOMA SP.	CENTRARCHIDAE	FISH
35 - X - X V	TOPMINNOW, WHITELINE	FUNDULUS ALBOLINEATUS	CYPRINODONTIDAE	FISH
36 - - - X P	SNAIL, RIVER, ANTHONY)S	ATHEARNIA ANTHONYI	PLEUROCERIDAE	SNAILS
37 - - - X P	SNAIL, RIVER, ARMIGEROUS	IO ARMIGERA ARMIGERA	PLEUROCERIDAE	SNAILS
38 X X - X P	SNAIL, RIVER, ELK (FILE-)	IO VERRUCOSA LIMA	PLEUROCERIDAE	SNAILS
39 - - - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
40 - - - X E	MUSSEL, PEARLY, LAMP, ALABAMA	LAMPSILIS VIRESCENS	UNIONIDAE	CLAMS
41 - - - X E	MUSSEL, PEARLY, PALE LILLIPUT	TOXOLASMA (CARUNCULINA) CYLINDRELLA	UNIONIDAE	CLAMS
42 - - - X E	MUSSEL, PEARLY, PIGTOE, FINE-RAYED	FUSCONAIA CUNEOLUS	UNIONIDAE	CLAMS
43 - - - X E	MUSSEL, PEARLY, PIGTOE, SHINY	FUSCONAIA EDGARIANA	UNIONIDAE	CLAMS
44 - - - X E	MUSSEL, PEARLY, PINK MUCKET	LAMPSILIS ORBICULATA ORBICULATA	UNIONIDAE	CLAMS
45 - - - X E	MUSSEL, PEARLY, WHITE WARTY-BACK	PLETHOBASIS CICATRICOSUS	UNIONIDAE	CLAMS
46 - - - X E	PIMPLEBACK, ORANGE FOOTED	PLETHOBASIS COOPERIANUS	UNIONIDAE	CLAMS
47 - - - X P	SHRIMP, CAVE, ALABAMA	PALAEMONIAS ALABAMAE	ATYIDAE	CRUSTACEAN
48 - - - X V		PTILIMNIUM FLUVIATILE	APIACEAE (UMBELLIF	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
ALABAMA(CONT.)				
49 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
50 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
51 - - - X V		RUDBECKIA HELIOPSIDIS	ASTERACEAE (COMPOS	PLANTS
52 - - - X V		ASTRAGALUS TENNESSEENSIS	FABACEAE (LEGUMINO	PLANTS
53 - - - X P	CLOVER, PRAIRIE,	PETALOSTEMUM FOLIOSUM	FABACEAE (LEGUMINO	PLANTS
54 - - - X V		LINDERA MELISSIFOLIA	LAURACEAE	PLANTS
55 - - - X P	SUNNYBELL,	SCHOENOLIRION TEXANUM	LILIACEAE	PLANTS
56 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
57 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
58 - - - X V	SPLEENWORT,	ASPLENIUM EBENOIDES	POLYPODIACEAE	PLANTS
59 - - - X V		THALICTRUM DEBILE	RANUNCULACEAE	PLANTS
60 - - - X V		NEVIUSIA ALABAMENSIS	ROSACEAE	PLANTS
61 - - - X V		NESTRONIA UMBELLULA	SANTALACEAE	PLANTS
62 - - - X V		SCHISANDRA GLABRA	SCHISANDRACEAE	PLANTS
ARKANSAS				
1 - - - X P	BAT, BIG-EARED, OZARK	PLECOTUS TOWNSENDII INGENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
3 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
4 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
5 - - - X E	OCELOT	FELIS PARDALIS	FELIDAE	MAMMALS
6 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
7 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
8 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
9 - - - X E	CRANE, WHOOPING	GRUS AMERICANA	GRUIDAE	BIRDS
10 - - - X E	CURLEW, ESKIMO	NUMENIUS BOREALIS	SCOLOPACIDAE	BIRDS
11 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
12 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
13 - - - X E	WARBLER, (WOOD), BACHMANIS	VERMIVORA BACHMANII	PARULIDAE	BIRDS
14 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
17 - - - X V	SNAKE, KING-, DESERT (SONORA)	LAMPROPELTIS GETULUS SPLENDIDA	COLUBRIDAE	REPTILES
18 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
19 X X - X T	DARTER, LEOPARD	PERCINA PANTHERINA	PERCIDAE	FISH
20 - X - X V	DARTER, PALEBACK	ETHEOSTOMA PALLIDIDORSUM	PERCIDAE	FISH
21 - X - X V	DARTER, YELLOWCHEEK	ETHEOSTOMA MOOREI	PERCIDAE	FISH
22 - X - X V	MADTOM, CADDO	NOTURUS TAYLORI	ICTALURIDAE	FISH
23 X X - X P	MADTOM, OUACHITA	NOTURUS LACHNERI	ICTALURIDAE	FISH
24 - X - X V	SHINER, COLORLESS	NOTROPIS PERPALLIDUS	CYPRINIDAE	FISH
25 - X - X P	SNAIL, LAND, MIDDLE-TOOTHED, MAGAZINE MOUNTAIN	MESODON MAGAZINENSIS	POLYGYRIDAE	SNAILS
26 - X - X P	SNAIL, LAND, NARROW APERTURED, PILSBRY)S	STENOTREMA PILSBRYI	POLYGYRIDAE	SNAILS
27 - X - X J	SNAIL, LAND, STRANGE MANY-WHORLED	POLYGYRA PEREGRINA	POLYGYRIDAE	SNAILS
28 - - - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
29 - - - X E	MUSSEL, PEARLY, POCKETBOOK, FAT	POTAMILUS (=PROPTERA) CAPAX	UNIONIDAE	CLAMS
30 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
31 - - - X V		COREOPSIS HETEROLEPIS	ASTERACEAE (COMPOS	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
ARKANSAS(CONT.)				
32 - - - X P		DRABA APRICA	BRASSICACEAE (CRUC	PLANTS
33 - - - X P	JEWELFLOWER,	STREPTANTHUS SQUAMIFORMIS	BRASSICACEAE (CRUC	PLANTS
34 - - - X P		GEOCARPON MINIMUM	CARYOPHYLLACEAE	PLANTS
35 - - - X V		SEDUM PUSILLUM	CRASSULACEAE	PLANTS
36 - - - X P	PIPEWORT,	ERIOCAULON KORNICKIANUM	ERIOCAULACEAE	PLANTS
37 - - - X P	CHINQUAPIN, OZARK	CASTANEA OZARKENSIS	FAGACEAE	PLANTS
38 - - - X V		QUERCUS SHUMARDII VAR. ACERIFOLIA	FAGACEAE	PLANTS
39 - - - X P	SUNNYBELL,	SCHOENOLIRION TEXANUM	LILIACEAE	PLANTS
40 - - - X V		TRILLIUM PUSILLUM VAR. OZARKANUM	LILIACEAE	PLANTS
41 - - - X V		CALLIRHOE PAPAVER VAR. BUSHII	MALVACEAE	PLANTS
42 - - - X P	EVENING-PRIMROSE,	OENOTHERA SESSILIS	ONAGRACEAE	PLANTS
43 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
44 - - - X V		PLATANTHERA LEUCOPHAEA	ORCHIDACEAE	PLANTS
45 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
46 - - - X V	SPLEENWORT,	ASPLENIUM KENTUCKIENSE	POLYPODIACEAE	PLANTS
47 - - - X V		DODECATHEON FRENCHII	PRIMULACEAE	PLANTS
48 - - - X V		DELPHINIUM NEWTONIANUM	RANUNCULACEAE	PLANTS
49 - - - X V		DELPHINIUM TRIFLEASET	RANUNCULACEAE	PLANTS
50 - - - X V		THALICTRUM DEBILE	RANUNCULACEAE	PLANTS
51 - - - X V		NEVIUSIA ALABAMENSIS	ROSACEAE	PLANTS
52 - - - X V		HEUCHERA ARKANSANA	SAXIFRAGACEAE	PLANTS
53 - - - X V		PENSTEMON CORAEA VAR. PURPUREUS	SCROPHULARIACEAE	PLANTS
FLORIDA				
1 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
3 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
4 - X - X E	DEER, KEY	ODOCOILEUS (DAMA) VIRGINIANUS CLAVIUM	CERVIDAE	MAMMALS
5 X X - X E	MANATEE, WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
6 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
7 - X - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
8 - - - X P	SEAL, MONK, CARIBBEAN (WEST INDIAN)	MONACHUS TROPICALIS	PHOCIDAE	MAMMALS
9 - - - X R	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
10 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
11 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
12 - - - X R	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
13 - X - - D	EAGLE, BALD, SOUTHERN	HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
14 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
15 X X - X E	KITE, FLORIDA EVERGLADE (SNAIL HAWK)	ROSTRHAMUS SOCIABILIS PLUMBEUS	ACCIPITRIDAE	BIRDS
16 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
17 X - - X E	SPARROW, CAPE SABLE	AMMOSPIZA MARITIMA MIRABILIS	FRINGILLIDAE	BIRDS
18 X X - X E	SPARROW, SEASIDE, DUSKY	AMMOSPIZA MARITIMA NIGRESCENS	FRINGILLIDAE	BIRDS
19 - - - X E	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
20 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
21 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
FLORIDA (CONT.)				
22 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
23 X X - X E	CROCODILE, AMERICAN	CROCODYLUS ACUTUS	CROCODYLIDAE	REPTILES
24 - X - X V	SNAKE, CROWNED, MIAMI (RIM ROCK)	TANTILLA OOLITICA	COLUBRIDAE	REPTILES
25 - X - X T	SNAKE, INDIGO, EASTERN	DRYMARCHON CORAIS COUPERI	COLUBRIDAE	REPTILES
26 - X - X V	SNAKE, SHORT-TAILED	STILOSOMA EXTENUATUM	COLUBRIDAE	REPTILES
27 - - - X T	SNAKE, WATER-, SALT MARSH, ATLANTIC	NERODIA (NATRIX) FASCIATA TAENIATA	COLUBRIDAE	REPTILES
28 - X - X V	TURTLE, COOTER, SUWANEE	CHRYSEMYS (PSEUDEMYS) CONCINNA SUWANNIEN	TESTUDINIDAE	REPTILES
29 X X - X P	TURTLE, MUD, KEY	KINOSTERNON BAURI BAURI	CHELYDRIDAE	REPTILES
30 - - - X V	TURTLE, RED-BELLIED, ALABAMA	CHRYSEMYS (PSEUDEMYS) ALABAMENSIS	TESTUDINIDAE	REPTILES
31 - - - X E	TURTLE, SEA, LEATHERBACK	DERMOCHELYS CORIACEA	DERMOCHELYIDAE	REPTILES
32 X X - X E	FROG, TREE-, PINE BARRENS, FLORIDA	HYLA ANDERSONII	HYLIDAE	AMPHIBIANS
33 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
34 - X - X E	DARTER, OKALOOSA	ETHEOSTOMA OKALOOSAE	PERCIDAE	FISH
35 - X - X V	SHINER, BLUESTRIPE	NOTROPIS CALLITAENIA	CYPRINIDAE	FISH
36 - - - X E	STURGEON, SHORTNOSE	ACIPENSER BREVIROSTRUM	ACIPENSERIDAE	FISH
37 - - - X P	SNAIL, TREE, FLORIDA	LIGHUS FASCIATUS		SNAILS
38 - X - X T	SNAIL, TREE, STOCK ISLAND	ORTHALICUS RESES		SNAILS
39 - X - X P	CRAYFISH, CAVE, PALM SPRINGS	PROCAMBARUS ACHERONTIS	ASTACIDAE	CRUSTACEAN
40 - X - X P	SCUD, CAVE, FLORIDA	CRANGONYX GRANDIMANUS		CRUSTACEAN
41 - X - X P	SHRIMP, CAVE, SQUIRREL CAVE	PALAEMONETES CUMMINGI	PALAEMONIDAE	CRUSTACEAN
42 - - - X V	BUTTERFLY, ATALA	EUMAEUS ATALA FLORIDA	LYCAENIDAE	INSECTS
43 - X - X T	BUTTERFLY, SWALLOWTAIL, BAHAMA	PAPILIO ANDRAEMON BONHOTEI	PAPILIONIDAE	INSECTS
44 - X - X T	BUTTERFLY, SWALLOWTAIL, SCHAUS)	PAPILIO ARISTODEMUS PONCEANUS	PAPILIONIDAE	INSECTS
45 - X - X V	BUTTERFLY, YELLOW, DINA)S	EURFMA DINA DINA	PIERIDAE	INSECTS
46 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
47 - - - X V	SEDGE,	CAREX CHAPMANII	CYPERACEAE	PLANTS
48 - - - X V	RUSH,	JUNCUS GYMNOCARPUS	JUNCACEAE	PLANTS
49 - - - X V		LINDERA MELISSIFOLIA	LAURACEAE	PLANTS
50 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
51 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
52 - - - X V		SCHISANDRA GLABRA	SCHISANDRACEAE	PLANTS
GEORGIA				
1 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
2 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
3 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
4 - X - X E	MANATEE, WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
5 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
6 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
7 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
8 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
9 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
10 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
11 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
12 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
13 - - - X E	WARBLER, (WOOD), BACHMANIS	VERMIVORA BACHMANII	PARULIDAE	BIRDS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
GEORGIA(CONT.)				
14 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
17 - X - X T	SNAKE, INDIGO, EASTERN	DRYMARCHON CORAIS COUPERI	COLUBRIDAE	REPTILES
18 - X - X V	TURTLE, COOTER, SUWANEE	CHRYSEMYS (PSEUDEMYS) CONCINNA SUWANNIEN	TESTUDINIDAE	REPTILES
19 - - - X V	FROG, TREE-, PINE BARRENS, NJ+NC+SC	HYLA ANDERSONII	HYLIDAE	AMPHIBIANS
20 - X - X V	DARTER, COLDWATER	ETHEOSTOMA DITREMIA	PERCIDAE	FISH
21 - X - X V	DARTER, FRECKLED	PERCINA LENTICULA	PERCIDAE	FISH
22 - X - X P	DARTER, GOLDLINE	PERCINA AUROLINEATA	PERCIDAE	FISH
23 - X - X V	DARTER, TRISBOT	ETHEOSTOMA TRISELLA	PERCIDAE	FISH
24 - X - X V	MADTOM, FRECKLEBELLY	NOTURUS MUNITUS	ICTALURIDAE	FISH
25 - X - X V	SHINER, BLUESTRIPE	NOTROPIS CALLITAENIA	CYPRINIDAE	FISH
26 - - - X E	STURGEON, SHORTNOSE	ACIPENSER BREVIROSTRUM	ACIPENSERIDAE	FISH
27 - - - X P	SNAIL, RIVER, CRASS	ATHEARINA CRASSA	PLEUROCERIDAE	SNAILS
28 - - - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
29 - - - X P	CRAYFISH, CHICKAMAUGA	CAMBARUS EXTRANEUS	ASTACIDAE	CRUSTACEAN
30 - X - X V	BUTTERFLY, SKIPPER, RARE	PROBLEMA BULENTA	HESPERIIDAE	INSECTS
31 - - - X V	DROPWORT,	OXYPOLIS CANBYI	APIACEAE (UMBELLIF	PLANTS
32 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
33 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
34 - - - X V	CONEFLOWER,	ECHINACEA LAEVIGATA	ASTERACEAE (COMPOS	PLANTS
35 - - - X V		RUDBECKIA HELIOPSIDIS	ASTERACEAE (COMPOS	PLANTS
36 - - - X P		DRABA APRICA	BRASSICACEAE (CRUC	PLANTS
37 - - - X V		SEDUM PUSILLUM	CRASSULACEAE	PLANTS
38 - - - X P	SEDGE, BILTMORE	CAREX BILTMOREANA	CYPERACEAE	PLANTS
39 - - - X P	OCONEE BELLS, SHORT-STYLED	SHORTIA GALACIFOLIA VAR. GALACIFOLIA	DIAPENSIACEAE	PLANTS
40 - X - X E	RATTLEWEED, HAIRY	BAPTISIA ARACHNIFERA	FABACEAE (LEGUMINO	PLANTS
41 - - - X V	QUILLWORT,	ISOETES VIRGINICA	ISOETACEAE	PLANTS
42 - X - X E	TRILLIUM, PERSISTENT	TRILLIUM PERSISTENS	LILIACEAE	PLANTS
43 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
44 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
45 - - - X V	MUHLY,	MUHLENBERGIA TORREYANA	POACEAE (GRAMINEAE	PLANTS
46 - - - X P	GRASS, PANIC,	PANICUM HIRSTII	POACEAE (GRAMINEAE	PLANTS
47 - - - X V		THALICTRUM DEBILE	RANUNCULACEAE	PLANTS
48 - - - X V		NESTRONIA UMBELLULA	SANTALACEAE	PLANTS
49 - - - X V		SCHISANDRA GLABRA	SCHISANDRACEAE	PLANTS
KENTUCKY				
1 X - - X P	BAT, BIG-EARED, VIRGINIA	PLECOTUS TOWNSENDII VIRGINIANUS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
3 X - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
4 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
5 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
6 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
7 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
KENTUCKY(CONT.)				
8 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
9 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
10 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
11 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
12 - - - X F	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
13 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
14 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
15 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
16 - X - X V	DARTER, LONGHEAD	PERCINA MACROCEPHALA	PERCIDAE	FISH
17 - X - X V	DARTER, SAND, EASTERN	AMMOCRYPTA PELLUCIDA	PERCIDAE	FISH
18 X X - X P	SNAIL, RIVER, ARMIGEROUS	IO ARMIGERA ARMIGERA	PLEUROCERIDAE	SNAILS
19 X X - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
20 - - - X E	MUSSEL, PEARLY, BEAN, CUMBERLAND	VILLOSA (=MICROMYA) TRABILIS	UNIONIDAE	CLAMS
21 - - - X E	MUSSEL, PEARLY, PIGTOE, ROUGH	PLEUROBEMA PLENUM	UNIONIDAE	CLAMS
22 - - - X E	MUSSEL, PEARLY, PINK MUCKET	LAMPSILIS ORBICULATA ORBICULATA	UNIONIDAE	CLAMS
23 - - - X E	MUSSEL, PEARLY, SAMPSON'S	EPIOBLASMA (DYSNOMIA) SAMPSONI	UNIONIDAE	CLAMS
24 - - - X E	MUSSEL, PEARLY, TUBERCULED-BLOSSOM	EPIOBLASMA (DYSNOMIA) TORULOSA TORULOSA	UNIONIDAE	CLAMS
25 - - - X E	RIFFLE SHELL, TAN (MUSSEL, PEARLY, BROWN-BLOSSOM)	EPIOBLASMA WALKERI	UNIONIDAE	CLAMS
26 - - - X P	CRAYFISH, BIG SOUTH FORK	CAMBARUS BOUCHARDI	ASTACIDAE	CRUSTACEAN
27 - X - X P	CRAYFISH, LOUISVILLE	ORCONECTES JEFFERSONI	ASTACIDAE	CRUSTACEAN
28 - - - X P	SHRIMP, CAVE, KENTUCKY	PALAEMONIAS GANTERI	ATYIDAE	CRUSTACEAN
29 - - - X V	DROPWORT,	OXYPOLIS CANBYI	APIACEAE (UMBELLIF	PLANTS
30 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
31 - - - X P	GOLDENROD, SHORT'S	SOLIDAGO SHORTII	ASTERACEAE (COMPOS	PLANTS
32 - - - X V	BLADDERPOD,	LESQUERELLA GLOBOSA	BRASSICACEAE (CRUC	PLANTS
33 - - - X V	RHODODENDRON,	RHODODENDRON BAKERI	ERICACEAE	PLANTS
34 - - - X P	BEAN, POTATO-, PRICE'S	APIOS PRICEANA	FABACEAE (LEGUMINO	PLANTS
35 - - - X V	LADY'S-SLIPPER, SMALL WHITE	CYPRIPEDIUM CANDIDUM	ORCHIDACEAE	PLANTS
36 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
37 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
38 - - - X V	MUHLY,	MUHLENBERGIA TORREYANA	POACEAE (GRAMINEAE	PLANTS
39 - - - X V		PHLOX BIFIDA VAR. STELLARIA	POLEMONIACEAE	PLANTS
40 - - - X V		POLEMONIUM REPTANS VAR. VILLOSUM	POLEMONIACEAE	PLANTS
41 - - - X V	SPLEENWORT,	ASPLENIUM KENTUCKIENSE	POLYPODIACEAE	PLANTS
42 - - - X V		DODECATHEON FRENCHII	PRIMULACEAE	PLANTS
43 - - - X V	SAXIFRAGE,	SAXIFRAGA CAROLINIANA	SAXIFRAGACEAE	PLANTS
44 - - - X V		SULLIVANTIA SULLIVANTII	SAXIFRAGACEAE	PLANTS
LOUISIANA				
1 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
2 - - - X E	MANATEE, WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
3 - - - X E	OCELOT	FELIS PARDALIS	FELIDAE	MAMMALS
4 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
5 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
6 - X - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
LOUISIANA(CONT.)				
7 - - - X E	CRANE, WHOOPING	GRUS AMERICANA	GRUIDAE	BIRDS
8 - - - X E	CURLEW, ESKIMO	NUMENIUS BOREALIS	SCOLOPACIDAE	BIRDS
9 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
10 - X - - D	EAGLE, BALD, SOUTHERN	HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
11 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
12 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
13 - - - X E	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
14 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
17 - - - X V	SNAKE, PINE, BLACK	PITUOPHIS MELANOLEUCUS LODINGI	COLUBRIDAE	REPTILES
18 - - - X V	SNAKE, PINE, LOUISIANA	PITUOPHIS MELANOLEUCUS RUTHVENI	COLUBRIDAE	REPTILES
19 - X - X V	TURTLE, MAP, FALSE, SABINE	GRAPTEMYS PSEUDOGEOGRAPHICA SABINENSIS	TESTUDINIDAE	REPTILES
20 - X - X V	TURTLE, SAWBACK, RINGED	GRAPTEMYS OCULIFERA	TESTUDINIDAE	REPTILES
21 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
22 - X - X V	DARTER, FRECKLED	PERCINA LENTICULA	PERCIDAE	FISH
23 - X - X P	MUSSEL, PEARLY, POCKETBOOK, PLAIN	LAMPSILIS SATURA	UNIONIDAE	CLAMS
24 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
25 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
26 - - - X V		LINDERA MELISSIFOLIA	LAURACEAE	PLANTS
27 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
28 - - - X V		PLATANTHERA LEUCOPHAEA	ORCHIDACEAE	PLANTS
MISSISSIPPI				
1 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
3 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
4 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
5 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
6 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
7 X X - X E	CRANE, SANDHILL, MISSISSIPPI	GRUS CANADENSIS PULLA	GRUIDAE	BIRDS
8 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
9 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
10 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
11 - - - X E	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
12 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
13 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
14 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
15 - - - X T	SNAKE, INDIGO, EASTERN	DRYMARCHON CORAIS COUPERI	COLUBRIDAE	REPTILES
16 - - - X V	SNAKE, PINE, BLACK	PITUOPHIS MELANOLEUCUS LODINGI	COLUBRIDAE	REPTILES
17 - X - X V	TURTLE, SAWBACK, BLACK-KNOBBED	GRAPTEMYS (GRAPTEMYS) NIGRINODA	TESTUDINIDAE	REPTILES
18 - X - X V	TURTLE, SAWBACK, RINGED	GRAPTEMYS OCULIFERA	TESTUDINIDAE	REPTILES
19 - X - X V	TURTLE, SAWBACK, YELLOW-BLOTCHED	GRAPTEMYS FLAVIMACULATA	TESTUDINIDAE	REPTILES

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
MISSISSIPPI(CONT.)				
20 - - - X T	DARTER, BAYOU	ETHEOSTOMA RUBRUM	PERCIDAE	FISH
21 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
22 - X - X V	DARTER, FRECKLED	PERCINA LENTICULA	PERCIDAE	FISH
23 - X - X V	MADTOM, FRECKLEHELLY	NOTURUS MUNITUS	ICTALURIDAE	FISH
24 - - - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
25 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
26 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
27 - - - X P	BEAN, POTATO-, PRICE'S	APIOS PRICEANA	FABACEAE (LEGUMINO	PLANTS
28 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
29 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
30 - - - X V		THALICTRUM DEBILE	RANUNCULACEAE	PLANTS
NORTH CAROLINA				
1 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
3 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
4 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
5 - X - X E	MANATEE, WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
6 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
7 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
8 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
9 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
10 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
11 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
12 - - - X E	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
13 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
14 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
15 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
16 - X - X J	TURTLE, RED-BELLIED, (MID-ATLANTIC)	CHRYSEMYS (PSEUDEMYS) RUBRIVENTRIS R.	TESTUDINIDAE	REPTILES
17 - - - X V	FROG, TREE-, PINE BARRENS, NJ+NC+SC	HYLA ANDERSONII	HYLIDAE	AMPHIBIANS
18 - - - X V	WATERDOG, NEUSE RIVER	NECTURUS LEWISI	PROTEIDAE	AMPHIBIANS
19 X X - X T	CHUB, SPOTFIN	HYBOPSIS MONACHA	CYPRINIDAE	FISH
20 - X - X V	DARTER, LONGHEAD	PERCINA MACROCEPHALA	PERCIDAE	FISH
21 - X - X V	DARTER, SHARPHEAD	ETHEOSTOMA ACUTICEPS	PERCIDAE	FISH
22 X X - X P	DARTER, WACCAMAW	ETHEOSTOMA PERLONGUM	PERCIDAE	FISH
23 X X - X P	KILLIFISH, WACCAMAW	FUNDULUS WACCAMENSIS	CYPRINODONTIDAE	FISH
24 - X - X V	MADTOM, ORANGEFIN	NOTURUS GILBERTI	ICTALURIDAE	FISH
25 - X - X V	SHINER, CAPE FEAR	NOTROPIS MEKISTOCHOLAS	CYPRINIDAE	FISH
26 X X - X P	SILVERSIDE, WACCAMAW	MENIDIA EXTENSA	ATHERINIDAE	FISH
27 - - - X E	STURGEON, SHORTNOSE	ACIPENSER BREVIROSTRUM	ACIPENSERIDAE	FISH
28 - X - X T	SNAIL, AMBER, OVATE, CHITTENANGO	SUCCINEA CHITTENANGOENSIS (OVALIS C.)	SUCCINEIDAE	SNAILS
29 - X - X P	SNAIL, LAND, MIDDLE-TOOTHED, JONES)	MESODON JONESIANUS	POLYGYRIDAE	SNAILS
30 - X - X T	SNAIL, LAND, NOONDAY, (MIDDLE-TOOTHED, CLARK'S NAN	MESODON CLARKI NANTAHALA	POLYGYRIDAE	SNAILS
31 - X - X V	BUTTERFLY, HAIRSTREAK, HESSEL'S	CALLOPHRYS (MITOURA) HESSELI	LYCAENIDAE	INSECTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
NORTH CAROLINA(CONT.)				
32 - X - X V	BUTTERFLY, SKIPPER, RARE	PROBLEMA BULENTA	HESPERIIDAE	INSECTS
33 - - - X V	DROPWORT,	OXYPOLIS CANBYI	APIACEAE (UMBELLIF	PLANTS
34 - - - X V		PTILIMNIUM FLUVIATILE	APIACEAE (UMBELLIF	PLANTS
35 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
36 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
37 - - - X V	HEARTLEAF,	HEXASTYLIS LEWISII	ARISTOLOCHIACEAE	PLANTS
38 - - - X P	HEARTLEAF, DWARF-FLOWERED	HEXASTYLIS NANIFLORA	ARISTOLOCHIACEAE	PLANTS
39 - - - X V	CONEFLOWER,	ECHINACEA LAEVIGATA	ASTERACEAE (COMPOS	PLANTS
40 - - - X V		EUPATORIUM SALTUENSE	ASTERACEAE (COMPOS	PLANTS
41 - - - X V		RUDBECKIA HELIOPSIDIS	ASTERACEAE (COMPOS	PLANTS
42 - - - X V		SEDUM PUSILLUM	CRASSULACEAE	PLANTS
43 - - - X P	SEDGE, BILTMORE	CAREX BILTMOREANA	CYPERACEAE	PLANTS
44 - - - X V	SEDGE,	CAREX CHAPMANII	CYPERACEAE	PLANTS
45 - - - X V		CYMOPHYLLUS FRASERI	CYPERACEAE	PLANTS
46 - - - X V		SCIRPUS FLACCIDIFOLIUS	CYPERACEAE	PLANTS
47 - - - X P	OCONEE BELLS, SHORT-STYLED	SHORTIA GALACIFOLIA VAR. GALACIFOLIA	DIAPENSIACEAE	PLANTS
48 - - - X V	RUSH,	JUNCUS GYMNOCARPUS	JUNCACEAE	PLANTS
49 - - - X V		LINDERA MELISSIFOLIA	LAURACEAE	PLANTS
50 - - - X V	LILY,	LILIUM GRAYI	LILIACEAE	PLANTS
51 - - - X P	POGONIA, SMALL WHORLED	ISOTRIA MEDEOLOIDES	ORCHIDACEAE	PLANTS
52 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
53 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
54 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
55 - - - X V	GRASS, REED-,	CALAMAGROSTIS PORTERI	POACEAE (GRAMINEAE	PLANTS
56 - - - X V	GRASS, SAND,	CALAMOVILFA BREVIPILIS VAR. BREVIPILIS	POACEAE (GRAMINEAE	PLANTS
57 - - - X V	GRASS, PANIC,	PANICUM ACULEATUM	POACEAE (GRAMINEAE	PLANTS
58 - - - X P	GRASS, PANIC,	PANICUM MUNDUM	POACEAE (GRAMINEAE	PLANTS
59 - - - X V		CIMICIFUGA RUBIFOLIA	RANUNCULACEAE	PLANTS
60 - - - X V		BUCKLEYA DISTICHOPHYLLA	SANTALACEAE	PLANTS
61 - - - X V		NESTRONIA UMBELLULA	SANTALACEAE	PLANTS
62 - - - X V	SAXIFRAGE,	SAXIFRAGA CAREYANA	SAXIFRAGACEAE	PLANTS
63 - - - X V	SAXIFRAGE,	SAXIFRAGA CAROLINIANA	SAXIFRAGACEAE	PLANTS
64 - - - X V		SCHISANDRA GLABRA	SCHISANDRACEAE	PLANTS
OKLAHOMA				
1 - - - X P	BAT, BIG-EARED, OZARK	PLECOTUS TOWNSENDII INGENS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
3 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
4 - - - X T	BEAR, (BROWN), GRIZZLY	URSUS ARCTOS HORRIBILIS	URSIDAE	MAMMALS
5 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
6 - - - X E	FERRET, BLACK-FOOTED	MUSTELA NIGRIPES	MUSTELIDAE	MAMMALS
7 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
8 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
9 - - - X E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
10 X X - X E	CRANE, WHOOPING	GRUS AMERICANA	GRUIDAE	BIRDS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
OKLAHOMA(CONT.)				
11 - - - X E	CURLEW, ESKIMO	NUMENIUS BOREALIS	SCOLOPACIDAE	BIRDS
12 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
13 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
14 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - - - X P	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
17 - - - X V	SNAKE, KING-, DESERT (SONORA)	LAMPROPELTIS GETULUS SPLENDIDA	COLUBRIDAE	REPTILES
18 - X - X V	DARTER, CRYSTAL	AMMOCRYPTA ASPRELLA	PERCIDAE	FISH
19 X X - X T	DARTER, LEOPARD	PERCINA PANTHERINA	PERCIDAE	FISH
20 - X - X P	SNAIL, LAND, NARROW APERTURED, PILSBRY)S	STENOTREMA PILSBRYI	POLYGYRIDAE	SNAILS
21 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
22 - - - X V	ALDER,	ALNUS MARITIMA	BETULACEAE	PLANTS
23 - - - X P	JEWELFLOWER,	STREPTANTHUS SQUAMIFORMIS	BRASSICACEAE (CRUC	PLANTS
24 - - - X P	PIPEWORT,	ERIOCAULON KORNICKIANUM	ERIOCAULACEAE	PLANTS
25 - - - X P	CHINQUAPIN, OZARK	CASTANEA OZARKENSIS	FAGACEAE	PLANTS
26 - - - X V		CALLIRHOE PAPAVER VAR. BUSHII	MALVACEAE	PLANTS
SOUTH CAROLINA				
1 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
2 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
3 - X - X E	MANATEE, WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
4 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
5 - - - X E	PANTHER, FLORIDA	FELIS CONCOLOR CORYI	FELIDAE	MAMMALS
6 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
7 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
8 - - X - E	WOLF, RED	CANIS RUFUS	CANIDAE	MAMMALS
9 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
10 - X - - D	EAGLE, BALD, SOUTHERN	HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
11 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
12 - - - X E	PELICAN, BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
13 - - - X E	WARBLER, (WOOD), BACHMANNS	VERMIVORA BACHMANII	PARULIDAE	BIRDS
14 - - - X E	WOODPECKER, IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - - - X B	ALLIGATOR, AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
17 - - - X T	SNAKE, INDIGO, EASTERN	DRYMARCHON CORAIS COUPERI	COLUBRIDAE	REPTILES
18 - - - X V	FROG, TREE-, PINE BARRENS, NJ+NC+SC	HYLA ANDERSONII	HYLIDAE	AMPHIBIANS
19 - - - X E	STURGEON, SHORTNOSE	ACIPENSER BREVIROSTRUM	ACIPENSERIDAE	FISH
20 - X - X V	BUTTERFLY, SKIPPER, BARE	PROBLEMA BULENTA	HESPERIIDAE	INSECTS
21 - - - X V		PTILIMNIUM FLUVIATILE	APIACEAE (UMBELLIF	PLANTS
22 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
23 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
24 - - - X P	HEARTLEAF, DWARF-FLOWERED	HEXASTYLIS NANIFLORA	ARISTOLOCHIACEAE	PLANTS
25 - - - X V	CONEFLOWER,	ECHINACEA LAEVIGATA	ASTERACEAE (COMPOS	PLANTS
26 - - - X V		RUDBECKIA HELIOPSIDIS	ASTERACEAE (COMPOS	PLANTS
27 - - - X P		DRABA APRICA	BRASSICACEAE (CRUC	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
TENNESSEE(CONT.)				
30 - X - X T	SNAIL, AMBER, OVATE, CHITTENANGO	SUCCINEA CHITTENANGOENSIS (OVALIS C.)	SUCCINEIDAE	SNAILS
31 - X - X T	SNAIL, FOREST, PAINTED SNAKE COILED	ANGUISPIRA PICTA		SNAILS
32 - X - X P	SNAIL, LAND, MIDDLE-TOOTHED, JONES)	MESODON JONESIANUS	POLYGYRIDAE	SNAILS
33 - - - X P	SNAIL, RIVER, ANTHONY)S	ATHEARNIA ANTHONYI	PLEUROCERIDAE	SNAILS
34 - - - X P	SNAIL, RIVER, ARMIGEROUS	IO ARMIGERA ARMIGERA	PLEUROCERIDAE	SNAILS
35 - - - X P	SNAIL, RIVER, CRASS	ATHEARINA CRASSA	PLEUROCERIDAE	SNAILS
36 X - - X P	SNAIL, RIVER, DUTTON)S	IO ARMIGERA DUTTONIANA	PLEUROCERIDAE	SNAILS
37 X X - X P	SNAIL, RIVER, ELK (FILE-)	IO VERRUCOSA LIMA	PLEUROCERIDAE	SNAILS
38 X - - X P	SNAIL, RIVER, GENICULATE	IO GENICULATA GENICULATA	PLEUROCERIDAE	SNAILS
39 X - - X P	SNAIL, RIVER, JAY)S	IO ARMIGERA JAYANA	PLEUROCERIDAE	SNAILS
40 X X - X P	SNAIL, RIVER, MAINSTREAM	LEPTOXIS PRAEROSA	PLEUROCERIDAE	SNAILS
41 X - - X P	SNAIL, RIVER, RUGGED	IO SALEROSA	PLEUROCERIDAE	SNAILS
42 X - - X P	SNAIL, RIVER, SMALL GENICULATE	IO GENICULATA PENGUIS	PLEUROCERIDAE	SNAILS
43 X - - X P	SNAIL, RIVER, SPINY	IO FLUVIALIS	PLEUROCERIDAE	SNAILS
44 X - - X P	SNAIL, RIVER, UMBILICATE	LEPTOXIS SUBGLOBOSA UMBILICATA	PLEUROCERIDAE	SNAILS
45 X X - X P	SNAIL, RIVER, VERRUCOSE	IO VERRUCOSA VERRUCOSA	PLEUROCERIDAE	SNAILS
46 - - - X E	MUSSEL, PEARLY, RIDDING	CONRADILLA CAELATA	UNIONIDAE	CLAMS
47 - - - X E	MUSSEL, PEARLY, DROMEDARY	DROMUS DROMAS	UNIONIDAE	CLAMS
48 - - - X E	MUSSEL, PEARLY, GREEN-BLOSSOM	EPIOBLASMA (DYSNOMIA) TORULOSA GUBERNACU	UNIONIDAE	CLAMS
49 - - - X E	MUSSEL, PEARLY, MONKEYFACE, APPALACHIAN	QUADRULA SPARSA	UNIONIDAE	CLAMS
50 - - - X E	MUSSEL, PEARLY, MONKEYFACE, CUMBERLAND	QUADRULA INTERMEDIA	UNIONIDAE	CLAMS
51 - - - X E	MUSSEL, PEARLY, PALE LILLIPUT	TOXOLASMA (CARUNCULINA) CYLINDRELLA	UNIONIDAE	CLAMS
52 - - - X E	MUSSEL, PEARLY, PIGTOE, FINE-RAYED	FUSCONAIA CUNEOLUS	UNIONIDAE	CLAMS
53 - - - X E	MUSSEL, PEARLY, PIGTOE, ROUGH	PLEUROBEMA PLENUM	UNIONIDAE	CLAMS
54 - - - X E	MUSSEL, PEARLY, PIGTOE, SHINY	FUSCONAIA EDGARIANA	UNIONIDAE	CLAMS
55 - - - X E	MUSSEL, PEARLY, PINK MUCKET	LAMPSILIS ORBICULATA ORBICULATA	UNIONIDAE	CLAMS
56 - - - X E	MUSSEL, PEARLY, TUBERCULED-BLOSSOM	EPIOBLASMA (DYSNOMIA) TORULOSA TORULOSA	UNIONIDAE	CLAMS
57 - - - X E	MUSSEL, PEARLY, TURGID-BLOSSOM	EPIOBLASMA (DYSNOMIA) TURGIDULA	UNIONIDAE	CLAMS
58 - - - X E	MUSSEL, PEARLY, WHITE WARTY-BACK	PLETHOBASIS CICATRICOSUS	UNIONIDAE	CLAMS
59 - - - X E	MUSSEL, PEARLY, YELLOW-BLOSSOM	EPTOBLASMA (DYSNOMIA) FLORENTINA FLORENT	UNIONIDAE	CLAMS
60 - - - X E	PIMPLEBACK, ORANGE FOOTED	PLETHOBASIS COOPERIANUS	UNIONIDAE	CLAMS
61 - - - X E	RIFFLE SHELL, TAN (MUSSEL, PEARLY, BROWN-BLOSSOM)	EPIOBLASMA WALKERI	UNIONIDAE	CLAMS
62 - - - X P	CRAYFISH, BIG SOUTH FORK	CAMBARUS BOUCHARDI	ASTACIDAE	CRUSTACEAN
63 - - - X P	CRAYFISH, CHICKAMAUGA	CAMBARUS EXTRANEUS	ASTACIDAE	CRUSTACEAN
64 - X - X P	CRAYFISH, NASHVILLE	ORCONECTES SHOUPI	ASTACIDAE	CRUSTACEAN
65 - - - X P	CRAYFISH, OBEY	CAMBARUS OBEYENSIS	ASTACIDAE	CRUSTACEAN
66 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
67 - - - X V	BLADDERPOD,	LESQUERELLA GLOBOSA	BRASSICACEAE (CRUC	PLANTS
68 - - - X V		CYMOPHYLLUS FRASERI	CYPERACEAE	PLANTS
69 - - - X V	RHODODENDRON,	RHODODENDRON BAKERI	ERICACEAE	PLANTS
70 - - - X P	BEAN, POTATO-, PRICE'S	APIOS PRICEANA	FABACEAE (LEGUMINO	PLANTS
71 - - - X V		ASTRAGALUS TENNESSEENSIS	FABACEAE (LEGUMINO	PLANTS
72 - - - X P	CLOVER, PRAIRIE,	PETALOSTEMUM FOLIOSUM	FABACEAE (LEGUMINO	PLANTS
73 - - - X V	RUSH,	JUNCUS GYMNOCARPUS	JUNCACEAE	PLANTS
74 - - - X V	SYNANDRA,	SYNANDRA HISPIDULA	LAMIACEAE (LABIATA	PLANTS
75 - - - X V	LILY,	LILIUM GRAYI	LILIACEAE	PLANTS
76 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
TENNESSEE (CONT.)				
77 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
78 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
79 - - - X V	MUHLY.	MUHLENBERGIA TORREYANA	POACEAE (GRAMINEAE	PLANTS
80 - - - X V		PHLOX HIFIDA VAR. STELLARIA	POLEMONIACEAE	PLANTS
81 - - - X V	FERN. TONGUE. HART'S. AMERICAN	PHYLLITIS SCOLOPENDRIUM VAR. AMERICANA	POLYPODIACEAE	PLANTS
82 - - - X V		CIMICIFUGA RUBIFOLIA	RANUNCULACEAE	PLANTS
83 - - - X P	VIRGIN'S BOWER.	CLEMATIS ADDISONII	RANUNCULACEAE	PLANTS
84 - - - X V		BUCKLEYA DISTICHOPHYLLA	SANTALACEAE	PLANTS
85 - - - X V	SAXIFRAGE.	SAXIFRAGA CAREYANA	SAXIFRAGACEAE	PLANTS
86 - - - X V	SAXIFRAGE.	SAXIFRAGA CAROLINIANA	SAXIFRAGACEAE	PLANTS
87 - - - X V		SCHISANDRA GLABRA	SCHISANDRACEAE	PLANTS
TEXAS				
1 - - - X T	BEAR. (BROWN). GRIZZLY	URSUS ARCTOS HORRIBILIS	URSIDAE	MAMMALS
2 - X - X P	BEAVER. MEXICAN	CASTOR CANADENSIS MEXICANUS	CASTORIDAE	MAMMALS
3 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
4 - - - X E	FERRET. BLACK-FOOTED	MUSTELA NIGRIPES	MUSTELIDAE	MAMMALS
5 - - - X E	JAGUAR	PANTHERA ONCA	FELIDAE	MAMMALS
6 - - - X E	JAGUARUNDI. (CACOMITL)	FELIS YAGOUAROUNDI CACOMITLI	FELIDAE	MAMMALS
7 - - - X E	MANATEE. WEST INDIAN (FLORIDA)	TRICHECHUS MANATUS	TRICHECHIDAE	MAMMALS
8 - - - X E	MARGAY	FELIS WIEDII	FELIDAE	MAMMALS
9 - - - X E	OCELOT	FELIS PARDALIS	FELIDAE	MAMMALS
10 - - - X V	OTTER. RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
11 - - - X P	WOLF. GRAY	CANIS LUPUS	CANIDAE	MAMMALS
12 - - - X D	WOLF. GRAY. TEXAS	CANIS LUPUS MONSTRABILIS	CANIDAE	MAMMALS
13 - - - X D	WOLF. MEXICAN	CANIS LUPUS BAILEYI	CANIDAE	MAMMALS
14 - X - X E	WOLF. RED	CANIS RUFUS	CANIDAE	MAMMALS
15 X X - X E	CRANE. WHOOPING	GRUS AMERICANA	GRUIDAE	BIRDS
16 - - - X E	CURLEW. ESKIMO	NUMENIUS BOREALIS	SCOLOPACIDAE	BIRDS
17 - - - X D	DUCK. MEXICAN	ANAS DIAZI (PLATYRHYNCHOS DIAZI)	ANATIDAE	BIRDS
18 - - - X B	EAGLE. BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
19 - X - - D	EAGLE. BALD. SOUTHERN	HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
20 - X - X E	FALCON. PEREGRINE. AMERICAN	FALCO PEREGRINUS ANATUM	FALCONIDAE	BIRDS
21 - - - X E	FALCON. PEREGRINE. ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
22 - - - X E	PELICAN. BROWN	PELECANUS OCCIDENTALIS	PELECANIDAE	BIRDS
23 - - - X E	PRAIRIE CHICKEN. GREATER. ATTWATER'S	TYMPANUCHUS CUPIDO ATTWATERI	TETRAONIDAE	BIRDS
24 - - - X E	WOODPECKER. IVORY-BILLED	CAMPEPHILUS PRINCIPALIS	PICIDAE	BIRDS
25 - X - X E	WOODPECKER. RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
26 - - - X B	ALLIGATOR. AMERICAN	ALLIGATOR MISSISSIPPIENSIS	ALLIGATORIDAE	REPTILES
27 - - - X V	SNAKE. KING-. GRAY-BANDED	LAMPROPELTIS MEXICANA ALTERNA	COLUBRIDAE	REPTILES
28 - - - X V	SNAKE. PINE. LOUISIANA	PITUOPHIS MELANOLEUCUS RUTHVENI	COLUBRIDAE	REPTILES
29 - X - X V	TURTLE. MAP. CAGLE'S	GRAPTEMYS CAGLEI	TESTUDINIDAE	REPTILES
30 - X - X V	TURTLE. MAP. FALSE. SABINE	GRAPTEMYS PSEUDOGEOGRAPHICA SABINENSIS	TESTUDINIDAE	REPTILES
31 - X - X V	TURTLE. MAP. TEXAS	GRAPTEMYS VERSA	TESTUDINIDAE	REPTILES
32 - - - X V	TURTLE. RED-BELLIED. ALABAMA	CHRYSEMYS (PSEUDEMYS) ALABAMENSIS	TESTUDINIDAE	REPTILES
33 - - - X E	TURTLE. SEA. RIDLEY. KEMP'S (ATLANTIC)	LEPIDOCHELYS KEMPII	CHELONIIDAE	REPTILES

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
TEXAS(CONT.)				
34 - - - X V	SALAMANDER, BLIND, HONEY CREEK CAVE	TYPHLOMOLGE TRIDENTIFERA	PLETHODONTIDAE	AMPHIBIANS
35 - - - X E	SALAMANDER, BLIND, TEXAS	TYPHLOMOLGE RATHBUNI	PLETHODONTIDAE	AMPHIBIANS
36 X X - X P	SALAMANDER, SAN MARCOS	EURYCEA NANA	PLETHODONTIDAE	AMPHIBIANS
37 - - - X V	SALAMANDER, VALDINA FARMS	EURYCEA TROGLODYTES	PLETHODONTIDAE	AMPHIBIANS
38 X - - X E	TOAD, HOUSTON	BUFO HOUSTONENSIS	BUFONIDAE	AMPHIBIANS
39 - - - X E	DARTER, FOUNTAIN	ETHEOSTOMA FONTICOLA	PERCIDAE	FISH
40 - - - X E	GAMBUSIA, BIG BEND	GAMBUSIA GAIGEI	POECILIIDAE	FISH
41 - - - X E	GAMBUSIA, CLEAR CREEK	GAMBUSIA HETEROCHIR	POECILIIDAE	FISH
42 - - - X P	GAMBUSIA, GOODENOUGH	GAMBUSIA AMISTADENSIS	POECILIDAE	FISH
43 - X - X E	GAMBUSIA, PECOS	GAMBUSIA NOBILIS	POECILIIDAE	FISH
44 X X - X P	GAMBUSIA, SAN MARCOS	GAMBUSIA GEORGEI	POECILIDAE	FISH
45 X X - X P	MINNOW, DEVIL'S RIVER	DIONDA DIABOLI	CYPRINIDAE	FISH
46 - - - X E	PUPFISH, COMANCHE SPRINGS	CYPRINODON ELEGANS	CYPRINODONTIDAE	FISH
47 X X - X P	PUPFISH, LEON SPRINGS	CYPRINODON BOVINUS	CYPRINODONTIDAE	FISH
48 - X - X P	SNAIL, CHEATUM)S	TRYONIA CHEATUMI	BITHYNIIDAE	SNAILS
49 - X - X P	SNAIL, DIAMOND-Y POND	PHYSA VIRGATA BOTTOMERI	PHYSIDAE	SNAILS
50 - X - X P	SNAIL, REEVES COUNTY	COCHLIOPA TEXANA	BITHYNIIDAE	SNAILS
51 - X - X P	MUSSEL, PEARLY, POCKETBOOK, PLAIN	LAMPSILIS SATURA	UNIONIDAE	CLAMS
52 - X - X V	BUTTERFLY, CHECKERSPOT, MINUTE	POLADRYAS MINUTA	NYMPHALIDAE	INSECTS
53 - X - X V	BUTTERFLY, SKIPPER, MANFREDA, MACULATED	STALLINGSIA MACULOSUS		INSECTS
54 - X - X V	BUTTERFLY, SKIPPER, YUCCA, KENDALL)S	MEGATHYMUS COLORADENSIS KENDALLI	MEGATHYMIDAE	INSECTS
55 - - - X P	PIPEWORT,	ERIOCAULON KORNICKIANUM	ERIOCAULACEAE	PLANTS
56 - - - X P	SUNNYBELL,	SCHOENOLIRION TEXANUM	LILIACEAE	PLANTS
57 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
58 - - - X V		PLATANTHERA INTEGRA	ORCHIDACEAE	PLANTS
59 - X - X E	WILD-RICE, TEXAS	ZIZANIA TEXANA	POACEAE (GRAMINEAE	PLANTS
60 - - - X V		THALICTRUM DEBILE	RANUNCULACEAE	PLANTS
VIRGINIA				
1 - - - X P	BAT, BIG-EARED, VIRGINIA	PLECOTUS TOWNSENDII VIRGINIANUS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
3 - - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
4 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
5 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
6 - - - X V	LYNX	LYNX CANADENSIS	FELIDAE	MAMMALS
7 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
8 - X - X E	SQUIRREL, FOX, DELMARVA PENINSULA	SCIURUS NIGER CINEREUS	SCIURIDAE	MAMMALS
9 - - - X B	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
10 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
11 - - - X B	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
12 - X - - D	EAGLE, BALD, SOUTHERN	HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
13 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
14 - - - X E	WARBLER, (WOOD), BACHMAN'S	VERMIVORA BACHMANII	PARULIDAE	BIRDS
15 - X - X E	WOODPECKER, RED-COCKADED	PICOIDES (DENDROCOPUS) BOREALIS	PICIDAE	BIRDS
16 - X - X J	TURTLE, RED-BELLIED, (MID-ATLANTIC)	CHRYSEMYS (PSEUDEMYS) RUBRIVENTRIS R.	TESTUDINIDAE	REPTILES
17 X - - X T	CHUB, SLENDER	HYBOPSIS GAHNI	CYPRINIDAE	FISH

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
VIRGINIA(CONT.)				
18 X X - X T	CHUB, SPOTFIN	HYBOPSIS MONACHA	CYPRINIDAE	FISH
19 - X - X V	DARTER, LONGHEAD	PERCINA MACROCEPHALA	PERCIDAE	FISH
20 - X - X V	DARTER, SHARPHEAD	ETHEOSTOMA ACUTICEPS	PERCIDAE	FISH
21 - X - X V	LOGPERCH, ROANOKE	PERCINA REX	PERCIDAE	FISH
22 - X - X V	MADTOM, ORANGEFIN	NOTURUS GILBERTI	ICTALURIDAE	FISH
23 X X - X T	MADTOM, YELLOWFIN	NOTURUS FLAVIPINNIS	ICTALURIDAE	FISH
24 - - - X E	STURGEON, SHORTNOSE	ACIPENSER BREVIROSTRUM	ACIPENSERIDAE	FISH
25 - X - X V	SUCKER, RUSTYSIDE	MOXOSTOMA HAMILTONI	CATASTOMIDAE	FISH
26 - X - X E	SNAIL, MOUNTAIN, FRINGED, VIRGINIA	POLYGYRISCUS VIRGINIANUS		SNAILS
27 X - - X P	SNAIL, RIVER, SPINY	IO FLUVIALIS	PLEUROCERIDAE	SNAILS
28 - - - X E	MUSSEL, PEARLY, BIRDWING	CONRADILLA CAELATA	UNIONIDAE	CLAMS
29 - - - X E	MUSSEL, PEARLY, DROMEDARY	DROMUS DROMAS	UNIONIDAE	CLAMS
30 - - - X E	MUSSEL, PEARLY, GREEN-BLOSSOM	EPIOBLASMA (DYSNOMIA) TORULOSA GUBERNACU	UNIONIDAE	CLAMS
31 - - - X E	MUSSEL, PEARLY, MONKEYFACE, APPALACHIAN	QUADRULA SPARSA	UNIONIDAE	CLAMS
32 - - - X E	MUSSEL, PEARLY, MONKEYFACE, CUMBERLAND	QUADRULA INTERMEDIA	UNIONIDAE	CLAMS
33 - - - X E	MUSSEL, PEARLY, PIGTOE, FINE-RAYED	FUSCONAIA CUNEOLUS	UNIONIDAE	CLAMS
34 - - - X E	MUSSEL, PEARLY, PIGTOE, ROUGH	PLEUROBEMA PLENUM	UNIONIDAE	CLAMS
35 - - - X E	MUSSEL, PEARLY, PIGTOE, SHINY	FUSCONAIA EDGARIANA	UNIONIDAE	CLAMS
36 - - - X E	MUSSEL, PEARLY, TURGID-BLOSSOM	EPIOBLASMA (DYSNOMIA) TURGIDULA	UNIONIDAE	CLAMS
37 - - - X E	RIFFLE SHELL, TAN (MUSSEL, PEARLY, BROWN-BLOSSOM)	EPIOBLASMA WALKERI	UNIONIDAE	CLAMS
38 - X - X P	ISOPOD, MADISON CAVE	ANTROLANA LIRA		CRUSTACEAN
39 - X - X V	BUTTERFLY, HAIRSTREAK, HESSEL'S	CALLOPHRYS (MITOURA) HESSELI	LYCAENIDAE	INSECTS
40 - X - X V	BUTTERFLY, SKIPPER, BARE	BROBLEMA BULENTA	HESPERIIDAE	INSECTS
41 - - - X V	WATER-WILLOW,	JUSTICIA NORTHEFLUMINIS	ACANTHACEAE	PLANTS
42 - - - X V	DROPWORT,	OXYPOLIS CANBYI	APIACEAE (UMBELLIF	PLANTS
43 - - - X V	HOLLY,	ILEX AMELANCHIER	AQUIFOLIACEAE	PLANTS
44 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
45 - - - X V	HEARTLEAF,	HEXASTYLUS LEWISII	ARISTOLOCHIACEAE	PLANTS
46 - - - X P	HEARTLEAF, DWARF-FLOWERED	HEXASTYLIS NANIFLORA	ARISTOLOCHIACEAE	PLANTS
47 - - - X V	CONEFLOWER,	ECHINACEA LAEVIGATA	ASTERACEAE (COMPOS	PLANTS
48 - - - X V		EUPATORIUM SALTUENSE	ASTERACEAE (COMPOS	PLANTS
49 - - - X V		RUDBECKIA HELIOPSIDIS	ASTERACEAE (COMPOS	PLANTS
50 - X - X E	BIRCH, ROUND-LEAF, VIRGINIA	BETULA UBER	BETULACEAE	PLANTS
51 - - - X V		CARDAMINE LONGII	BRASSICACEAE (CRUC	PLANTS
52 - - - X P	PINWEED, VIRGINIAN	LECHEA MARITIMA VAR. VIRGINICA	CISTACEAE	PLANTS
53 - - - X P	SEDGE, BILTMORE	CAREX BILTMOREANA	CYPERACEAE	PLANTS
54 - - - X V	SEDGE,	CAREX CHAPMANII	CYPERACEAE	PLANTS
55 - - - X V		CYMOPHYLLUS FRASERI	CYPERACEAE	PLANTS
56 - - - X P	BULRUSH,	SCIRPUS ANCISTROCHAETUS	CYPERACEAE	PLANTS
57 - - - X V		SCIRPUS FLACCIDIFOLIUS	CYPERACEAE	PLANTS
58 - - - X V	RHODODENDRON,	RHODODENDRON BAKERI	ERICACEAE	PLANTS
59 - - - X V	QUILLWORT,	ISOETES VIRGINICA	ISOETACEAE	PLANTS
60 - - - X V	RUSH,	JUNCUS CAESARIENSIS	JUNCACEAE	PLANTS
61 - - - X V	MOUNTAIN-MINT,	PYCNANTHEMUM MONOTRICHUM	LAMIACEAE (LABIATA	PLANTS
62 - - - X V	SYNANDRA,	SYNANDRA HISPIDULA	LAMIACEAE (LABIATA	PLANTS
63 - - - X P	STARGRASS,	HYPOXIS LONGII	LILIACEAE	PLANTS
64 - - - X V	LILY,	LILIUM GRAYI	LILIACEAE	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
VIRGINIA(CONT.)				
65 - - - X P	TRILLIUM (WAKE ROBIN).	TRILLIUM PUSILLUM VAR. VIRGINIANUM	LILIACEAE	PLANTS
66 - - - X P		ILIAMNA REMOTA	MALVACEAE	PLANTS
67 - - - X P	POGONIA, SMALL WHORLED	ISOTRIA MEDEOLOIDES	ORCHIDACEAE	PLANTS
68 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
69 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
70 - - - X V	GRASS, REED-.	CALAMAGROSTIS PORTERI	POACEAE (GRAMINEAE	PLANTS
71 - - - X V	GRASS, SAND.	CALAMOVILFA BREVIPILIS VAR. BREVIPILIS	POACEAE (GRAMINEAE	PLANTS
72 - - - X V	GRASS, SAND.	CALAMOVILFA BREVIPILIS VAR. CALVIPES	POACEAE (GRAMINEAE	PLANTS
73 - - - X V	GRASS, PANIC.	PANICUM ACULEATUM	POACEAE (GRAMINEAE	PLANTS
74 - - - X P	GRASS, PANIC.	PANICUM MINDUM	POACEAE (GRAMINEAE	PLANTS
75 - - - X V	SPLEENWORT.	ASPLENIUM PRENOIDES	POLYPODIACEAE	PLANTS
76 - - - X V	SPLEENWORT.	ASPLENIUM KENTUCKIENSE	POLYPODIACEAE	PLANTS
77 - - - X V	ANEMONE.	ANEMONE MINIMA	RANUNCULACEAE	PLANTS
78 - - - X V		CIMICIFUGA RUBIFOLIA	RANUNCULACEAE	PLANTS
79 - - - X P	VIRGIN'S BOWER.	CLEMATIS ADDISONII	RANUNCULACEAE	PLANTS
80 - - - X P	VIRGIN'S BOWER.	CLEMATIS VITICAULIS	RANUNCULACEAE	PLANTS
81 - - - X V		BUCKLEYA DISTICHOPHYLLA	SANTALACEAE	PLANTS
82 - - - X V		NESTRONIA UMBELLULA	SANTALACEAE	PLANTS
83 - - - X V	ALUM ROOT.	HEUCHERA HISPIDA	SAXIFRAGACEAE	PLANTS
84 - - - X V	SAXIFRAGE.	SAXIFRAGA CAREYANA	SAXIFRAGACEAE	PLANTS
85 - - - X V	SAXIFRAGE.	SAXIFRAGA CAROLINIANA	SAXIFRAGACEAE	PLANTS
86 - - - X P	WATER-HYSSOP.	BACOPA SIMULANS	SCROPHULARIACEAE	PLANTS
87 - - - X P	WATER-HYSSOP.	BACOPA STRAGULA	SCROPHULARIACEAE	PLANTS
88 - - - X V		MICRANTHEMUM MICRANTHEMOIDES	SCROPHULARIACEAE	PLANTS
WEST VIRGINIA				
1 X - - X P	BAT, BIG-EARED, VIRGINIA	PLECOTUS TOWNSENDII VIRGINIANUS	VESPERTILIONIDAE	MAMMALS
2 - - - X E	BAT, GRAY	MYOTIS GRISESCENS	VESPERTILIONIDAE	MAMMALS
3 X - - X E	BAT, INDIANA	MYOTIS SODALIS	VESPERTILIONIDAE	MAMMALS
4 - - - X V	BOBCAT	LYNX RUFUS	FELIDAE	MAMMALS
5 - - - X E	COUGAR, EASTERN	FELIS CONCOLOR COUGAR	FELIDAE	MAMMALS
6 - - - X V	LYNX	LYNX CANADENSIS	FELIDAE	MAMMALS
7 - - - X V	MARTIN, EASTERN	MARTES AMERICANA AMERICANA	MUSTELIDAE	MAMMALS
8 - - - X V	OTTER, RIVER	LUTRA CANADENSIS	MUSTELIDAE	MAMMALS
9 - - - X R	WOLF, GRAY	CANIS LUPUS	CANIDAE	MAMMALS
10 - - - X D	WOLF, TIMBER, EASTERN	CANIS LUPUS LYCAON	CANIDAE	MAMMALS
11 - - - X R	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS	ACCIPITRIDAE	BIRDS
12 - - - X E	FALCON, PEREGRINE, ARCTIC	FALCO PEREGRINUS TUNDRIUS	FALCONIDAE	BIRDS
13 - X - X J	TURTLE, RED-BELLIED, (MID-ATLANTIC)	CHRYSEMYS (PSEUDEMYS) RUBRIVENTRIS R.	TESTUDINIDAE	REPTILES
14 - X - X V	DARTER, LONGHEAD	PERCINA MACROCEPHALA	PERCIDAE	FISH
15 - X - X V	DARTER, SAND, EASTERN	AMMOCRYPTA PELLUCIDA	PERCIDAE	FISH
16 - X - X T	SNAIL, LAND, THREE-TOOTHED, FLAT-SPIRED	TRIODOPSIS PLATYSAYOIDES		SNAILS
17 - - - X E	MUSSEL, PEARLY, PINK MUCKET	LAMPSILIS ORBICULATA ORBICULATA	UNIONIDAE	CLAMS
18 - - - X E	MUSSEL, PEARLY, TUBERCULED-BLOSSOM	FRIOBLASMA (DYSNOMIA) TORULOSA TORULOSA	UNIONIDAE	CLAMS
19 - - - X V	DROPWORT.	OXYPOLIS CANBYI	APIACEAE (UMBELLIF	PLANTS
20 - - - X V		PTILIMNIUM FLUVIATILE	APIACEAE (UMBELLIF	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

TABLE II-74 (continued)

FEDERALLY DESIGNATED ENDANGERED AND THREATENED ANIMALS BY STATES, 1978

TABLE (CONT.) FEDERALLY DESIGNATED ENDANGERED AND THREATENED SPECIES FOR STATES INCLUDING STATUS OF EACH SPECIES AND TYPE OF HABITAT OCCURRING WITHIN EACH STATE.

CODES	COMMON NAME	GENUS SPECIES	FAMILY	TYPE
WEST VIRGINIA(CONT.)				
21 - - - X V	GINSENG, AMERICAN	PANAX QUINQUEFOLIUS	ARALIACEAE	PLANTS
22 - - - X V		CYMOPHYLLUS FRASERI	CYPERACEAE	PLANTS
23 - - - X V	SKULLCAP, HEART-LEAVED,	SCUTELLARIA OVATA SSP. PSEUDOARGUTA	LAMIACEAE (LABIATA	PLANTS
24 - - - X V	SYNANDRA,	SYNANDRA HISPIDULA	LAMIACEAE (LABIATA	PLANTS
25 - - - X V		PLATANTHERA FLAVA	ORCHIDACEAE	PLANTS
26 - - - X V		PLATANTHERA PERAMOENA	ORCHIDACEAE	PLANTS
27 - - - X V	GRASS, REED-,	CALAMAGROSTIS PORTERI	POACEAE (GRAMINEAE	PLANTS
28 - - - X V	SPLEENWORT,	ASPLENIUM PRENOIDES	POLYPODIACEAE	PLANTS
29 - - - X V	ANEMONE,	ANEMONE MINIMA	RANUNCULACEAE	PLANTS
30 - - - X V	PLUM, ALLEGHANY	PRUNUS ALLEGHANIENSIS	ROSACEAE	PLANTS
31 - - - X V	ALUM ROOT,	HEUCHERA HISPIDA	SAXIFRAGACEAE	PLANTS

CODES:
HABITAT RANGE OCCURRING WITHIN THE STATE AS INDICATED BY AN "X" (COLUMNS 1-4):
COL 1-CRITICAL HABITAT, COL 2-PRESENT DISTRIBUTION, COL 3-POTENTIAL RANGE, COL 4-HISTORIC RANGE
STATUS (COLUMN 5): E-ENDANGERED, T-THREATENED, B-BOTH E&T, P-PROPOSED, V-REVIEW, D-DELISTED, J-REJECTED

Source: Brookhaven National Laboratory Endangered Species Data Base.

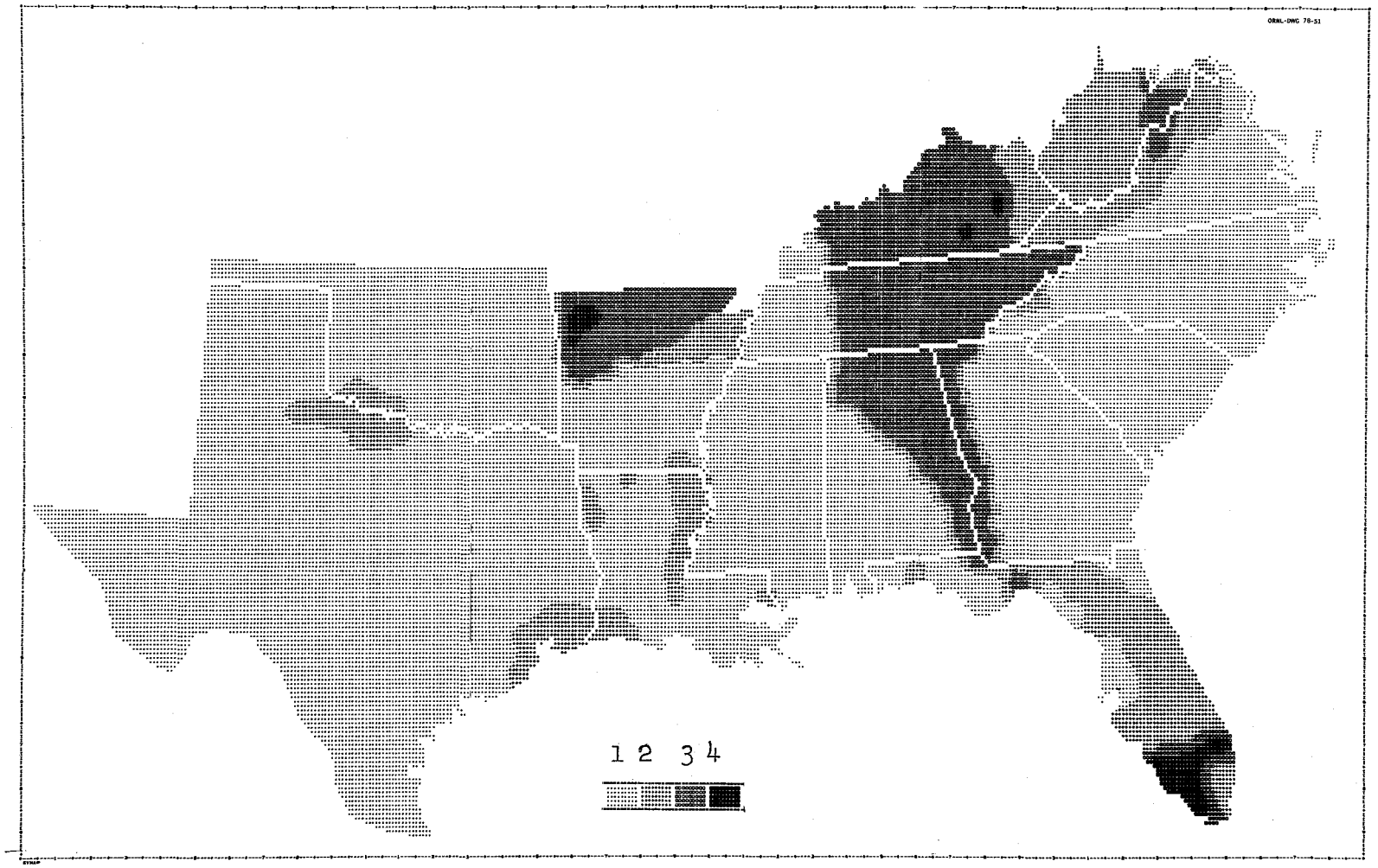


Fig. II-98. Endangered mammal species distribution. Dark shading is indicative of areas of higher density of endangered species. Source: ORNL J. T. Kitchings.

II-G. Socioeconomic Characteristics

Population

Between 1970 and 1975 the population of the South increased from 57.8 million to 62.7 million (the share of the region increased from 28% to 29% of the U.S. total). Every state in the region experienced population growth, particularly Florida, whose population increased 22% over the period. West Virginia had the smallest growth rate of 3.0%.

The male-female distribution of the population in the South is similar to that of the nation as a whole, the region having 5% more females than males. Almost 47% of the black population of the nation now resides in the South. In 1970, 18.5% of the population in the region was black, relative to a national figure of 11.1%. In 1975 the proportion of blacks in the South fell, both absolutely (to 18.2%) and relative to the U.S. (the national proportion was 11.5%).

In 1970 approximately 40% of the South's population was rural compared with a national rural population of 27%. Over 70% of the increase in the region's population between 1970 and 1975, however, occurred in metropolitan areas, which received 73% of the net migrants. During this period, the metro population of the South increased over twice as much as the nonmetro population.

These figures, however, mask the dispersed nature of the region's growth. About 65% of the increase in the metropolitan population reflects the change in status of 120 counties from nonmetropolitan to metropolitan between 1970 and 1975. Of these counties whose status changed, 29 occurred through the designation of 16 new free-standing SMSAs. The boundaries of many of the older SMSAs were expanded such that 90 new counties were added to existing SMSAs between 1970 and 1975. In 1970 those counties classified as metropolitan had 55% of the population. Between 1970 and 1975 these counties grew 8.7% while the non-metropolitan counties grew 8.5%. This comparison reveals that much of the new metropolitan growth in the South has been in less densely populated counties, many of which maintain rural characteristics.

The age distribution of the population in the South resembles the rest of the nation. The greatest absolute increase between 1970 and 1975 was in the 21-44 age group, but the greatest relative increase was in the under-5 age group. In 1975 the South had 8% more children under five years old than the national average. During the six-year period, the South grew twice as fast as the nation as a whole with 31% of the new births, but only 29% of the deaths. Net migration to the region was 5% higher than the average. This represents a nine-fold increase in net migration to the region since 1960-1970.

Population density in the region increased from 76.6 to 83.1 persons per square mile between 1970 and 1975. Density has increased in all the states in the South, with Florida showing the largest increase (125.5 to 154.5) and West Virginia the smallest (72.5 to 74.9). In general, population density is 38% higher within the South than within the nation as a whole. Southern SMSAs, of course, are not as densely populated as those in the Northeast and Midwest.

Employment

In 1970 the labor force participation of the region was 58.3% versus 60.3% for the nation. By 1976, however, the region's labor force increased--the participation rate increasing to 60.7% relative to 61.2% for the U.S. The female participation rate, which is lower than the total labor force participation rate in both the region and the nation, was slightly higher in the South than the U.S. in 1970.

The South has an employment distribution somewhat similar to the U.S. In agriculture, employment has been declining in both the region and the nation, but the South's rate of decline is greater (15% between 1970 and 1975). Overall, agricultural employment was 23% higher in the region than in the nation as a whole in 1975. Non-agricultural employment in the South grew at a faster pace than the national norm in three of the past five years (particularly services, finance, insurance, and real estate). In 1975 over three-fourths of the region's employment was in manufacturing, wholesale and retail trade, state and local government, and services.

Manufacturing is the most important industry to both the region and the nation (21% of the region's employment and 23% of the nation's), particularly in North and South Carolina, but is no longer the leading growth sector.

The most important manufacturing industries to the region are textiles, apparel, food, and machinery, which together account for almost 40% of total manufacturing employment in the South. Manufacturing employment in the U.S. declined 5.2% between 1970 and 1975, but increased by 10.7% in the region. Growth was particularly strong in Oklahoma, Texas, and Louisiana, most notably in machinery. Over a third of the capital investments in the sector in 1975 were made by southern manufacturers. While the region is dominated by low-wage manufacturing industries, the rapidly growing industries tend to be relatively high-wage industries. (The composition of manufacturing employment in the South improved with respect to employee earnings from 1970-1975).

Because the region has an unusually high mix of energy-intensive employment, it is instructive to note its relative energy usage. The energy usage per worker in each two-digit SIC in 1975 was 62% higher in the South than in the nation (primarily in Louisiana, Texas, and West Virginia). By adjusting these estimates to reflect the high mix of energy-intensive employment, however, we find that the region still consumes 13% more energy per worker than the national norm. In Louisiana and West Virginia, manufacturing activity results in more than twice as much energy usage per worker as is typical. This rate of energy usage reflects then the relatively cheaper prices of energy and different input mixes and technologies employed by southern industries.

Though the region has only 28% of the nation's employment, it has over 73% of the employees engaged in oil and gas extraction, 58% of those in pipeline transport, and 63% of the coal employment. The major energy-producing states of Texas, Oklahoma, Kentucky, West Virginia, and Alabama have had the highest rate of economic growth in the South. There are indications that energy production has become the most important single sector of the southern economy.

The South had lower unemployment rates than the national average between 1970 and 1975, but the difference narrowed during the 1974-1975 recession. Each state in the region experienced an increase in its unemployment rate between 1970 and 1975. For the period, Virginia had the lowest average unemployment rate and West Virginia the highest. In 1975, however, it was Florida which was hardest hit by the recession and had an unemployment rate of 10.7%. Overall, the South appears to be particularly vulnerable to swings in the economic cycle. Oklahoma had the highest minority unemployment rate in 1975 (20.3%) and Alabama the lowest (10.0%).

Income

The ratio of unemployment compensation to total personal income was 39% less than the national norm in 1970, but only 22% less in 1975. South Carolina had the highest ratio and Texas the lowest in 1975. Public assistance payments in the region, however, were greater both in 1970 and in 1975, though they declined slightly over the period. Mississippi had the lowest per capita income in the region and the highest rate of public assistance.

The average per capita income for the region was 17% less than the national average in 1970. By 1975 it had increased to $5,157, but remained 13% less than the national average. Virginia, Florida, and Texas have the highest per capita incomes in the region; and Mississippi, Arkansas, and Alabama have the lowest. Over 43% of the region's personal income originates in wholesale and retail trade, services, and state and local government.

In 1970 over 15% of the families in the South had income of less than $3,000 compared with 9% nationally. Mississippi had over a fourth of its families in this category. Almost two-thirds of the families in the region earned less than $10,000, while nationally only 51% made less than $10,000 per year. In 1975 the South had 46% more families classified as below the poverty level of income than the U.S. average.

Despite its high proportion of the poverty population, the South had only a third of its poor participating in the federal food stamp program in 1975. This is due to the fact that most states in the region restrict eligibility to public assistance recipients.

The consumer price index indicates a greater increase in the cost-of-living in the South between 1971 and 1975 than in the nation, particularly in food prices. Despite the inflation, real income growth in the South exceeded that in the nation. Most states in the region have living costs from 6-7% below national levels. (The higher CPI of the South reflects the change, not the level of prices).

Housing

With 28% of the nation's population, the South had 26% of the occupied housing units in 1970. In general, the region has newer housing, with 29% of its units having been built between 1960 and 1970 (14% more than the average). Georgia and Virginia have the largest share of new housing units and West Virginia the smallest.

Approximately 15% of the housing in the region is classified as substandard. In 1970 Kentucky had the highest ratio (20.1%) of substandard housing occupied by non-Negro households and Florida the lowest (4.1%). Over half the units with black household heads in 1975 were located in the South. Over a third of these households occupied substandard units, most of which are located in Mississippi and South Carolina.

One out of every four substandard housing units in the region was overcrowded. Twelve states had more crowding than the national average in 1970 (Oklahoma and Virginia had less). Mississippi had 15% of its occupied units housing more than one person per room (the U.S. average was 8% in 1970). Louisiana and South Carolina also had an unusually high incidence of crowding.

Though housing conditions in the region are relatively poor, one positive aspect is that over 34% of the new housing starts in the nation were in this region. Over 56% of the publicly-owned units constructed in 1975 were in the South. The region also had a relatively large number of single residences constructed in 1975.

Problems, Pressures, and Restrictions

The appeal of the South as an energy-abundant region has grown as people are becoming more cognizant of its job opportunities, moderate climate, and retirement and recreational facilities. Population and economic growth, however, imply increased demand for both public and private goods and services. The region's energy and environmental resources are being rapidly depleted. The costs as well as the benefits of continued inmigration must, therefore, be considered.

The large number of children under five and the increased birth rate of the region have increased the strain on the region's less-than-adequate educational system. Tennessee is the only state in the South with a fully-developed statewide public kindergarten system. Of the 13 states with the lowest per-pupil expenditures, 11 are located in the South. Despite increased educational expenditures over the past decade, over half the students in the region still rank below their grade level. With its large proportion of blacks, the South has almost all of the black colleges and universities within its borders. Given the unfavorable differential in the proportion of blacks enrolled in post-secondary education, the region has a special obligation to expand opportunities for blacks in all post-secondary institutions.

The region's population growth has been dispersed and decentralized. In South Carolina, Louisiana, and Mississippi the metropolitan areas grew faster than non-metropolitan areas accentuating the overcrowding and urban sprawl in the central cities. "Exurban" growth in counties adjacent to, but outside, SMSAs has increased throughout the region. In general, it appears that the rural to urban migration so characteristic of the region in the 1950's and 60's has ceased, though high density urban growth in Florida remains a problem. In the agricultural areas of the Mississippi delta economic diversification has not yet occurred, such that Mississippi is plagued by outmigration and slow economic growth. The complex and highly controversial trade-offs which accompany policy changes affecting economic growth and development vary from state to state and city to city.

The region has a disproportionate share of families below the poverty level and, therefore, a tremendous demand for public services. The high proportion of substandard housing is no doubt a result of the lower per capita income of the region. Much of the poverty and substandard housing is concentrated in rural areas. The American Medical Association has estimated that rural residents have only about half the access to health resources as is typically available. Among those surveyed in the five southern states in the HEW Ten State Nutrition Survey, 58% were found to be deficient or low in at least one essential nutrient. The health manpower shortage is such that about 21,400 physicians would be needed to bring the region's physician-patient ratio up to the national norm.

	Resolution of data presented	Finer resolution of available data	Computerized?[1]
G. Socioeconomic			
1. Population	State, 1970, 1975	County, Census Tract, 1970 (More detailed categories)	YES (RUSTIC)
2. Employment	State, 1970	County, Census Tracts 1970 (More detailed categories)	YES (RUSTIC)
3. Income	State, 1970, 1975	County, Census Tracts 1970 (More detailed categories)	YES (RUSTIC)
4. Health			
a. Hospital facilities	State, 1975	?	?
b and c. Mortality rates	State, 1966-72	County, 1966-74 More specific causes of death	YES (CEQ UPGRADE)

[1]RUSTIC — ORNL Regional and Urban Studies Information Center.
CEQ UPGRADE — Council on Environmental Quality UPGRADE Data System.

TABLE II-75

POPULATION IN THE SOUTH IN 1970 AND 1975
(IN THOUSANDS)

State	1970	1975
Alabama	3,451	3,614
Arkansas	1,932	2,116
Florida	6,848	8,346
Georgia	4,607	4,926
Kentucky	3,231	3,396
Louisiana	3,652	3,791
Mississippi	2,220	2,346
North Carolina	5,098	5,451
Oklahoma	2,567	2,712
South Carolina	2,597	2,818
Tennessee	3,937	4,188
Texas	11,236	12,236
Virginia	4,659	4,966
West Virginia	1,751	1,803
South	57,786	62,709
U.S.	203,795 (28.4%)	213,039 (29.4%)

Source: Statistical Abstract, 1976.

TABLE II-76

POPULATION COMPOSITION IN THE SOUTH
POPULATION, BY RACE, 1970 (IN THOUSANDS)

State	White		Negro		Total (includes other races)	
	Male	Female	Male	Female	Male	Female
Alabama	1,235	1,298	423	480	1,662	1,781
Arkansas	763	803	167	185	932	991
Florida	2,763	2,957	499	543	3,276	3,514
Georgia	1,667	1,725	558	629	2,231	2,359
Kentucky	1,464	1,517	112	119	1,579	1,639
Louisiana	1,250	1,292	515	572	1,772	1,870
Mississippi	685	710	387	429	1,076	1,143
North Carolina	1,921	1,981	541	586	2,489	2,594
Oklahoma	1,113	1,167	81	91	1,246	1,313
South Carolina	892	903	377	412	1,273	1,318
Tennessee	1,602	1,692	292	330	1,898	2,026
Texas	4,768	4,949	673	726	5,482	5,715
Virginia	1,865	1,897	419	442	2,297	2,351
West Virginia	811	862	32	36	845	900
South	22,799	23,753	5,076	5,580	28,058	29,514
U.S.	86,721 (26.3%)	91,028 (26.1%)	10,748 (47.2%)	11,832 (47.2%)	98,912 (28.4%)	104,300 (28.3%)

Source: Statistical Abstract, 1977.

TABLE II-77

POPULATION BY RACE IN THE SOUTH, 1975
(IN THOUSANDS)

State	White	Black	Total includes other races)
Alabama	2,682	920	3,602
Arkansas	1,723	356	2,110
Florida	7,045	1,179	8,277
Georgia	3,626	1,288	4,914
Kentucky	3,134	244	3,378
Louisiana	2,656	1,134	3,790
Mississippi	1,490	841	2,331
North Carolina	4,185	1,193	5,441
Oklahoma	2,409	191	2,715
South Carolina	1,937	867	2,804
Tennessee	3,509	651	4,160
Texas	10,637	1,530	12,237
Virginia	4,008	931	4,981
West Virginia	1,729	64	1,793
South	50,770	11,389	62,533
U.S.	185,141 (27.4%)	24,435 (46.6%)	213,032 (29.4%)

Source: Statistical Abstract, 1977.

TABLE II-78

RURAL AND URBAN POPULATION FOR THE SOUTH, 1970

State	Population (in thousands)	Percent Rural
Alabama	3,444	41.6
Arkansas	1,923	50.0
Florida	6,789	19.5
Georgia	4,590	39.7
Kentucky	3,219	47.7
Louisiana	3,641	33.9
Mississippi	2,217	55.5
North Carolina	5,082	55.0
Oklahoma	2,559	32.0
South Carolina	2,590	52.4
Tennessee	3,923	41.2
Texas	11,197	20.3
Virginia	4,649	36.9
West Virginia	1,744	61.0
South	52,977	40.0
U.S.	203,212	26.5

Source: County and City Data Book, 1972.

ORNL-DWG 78-12961

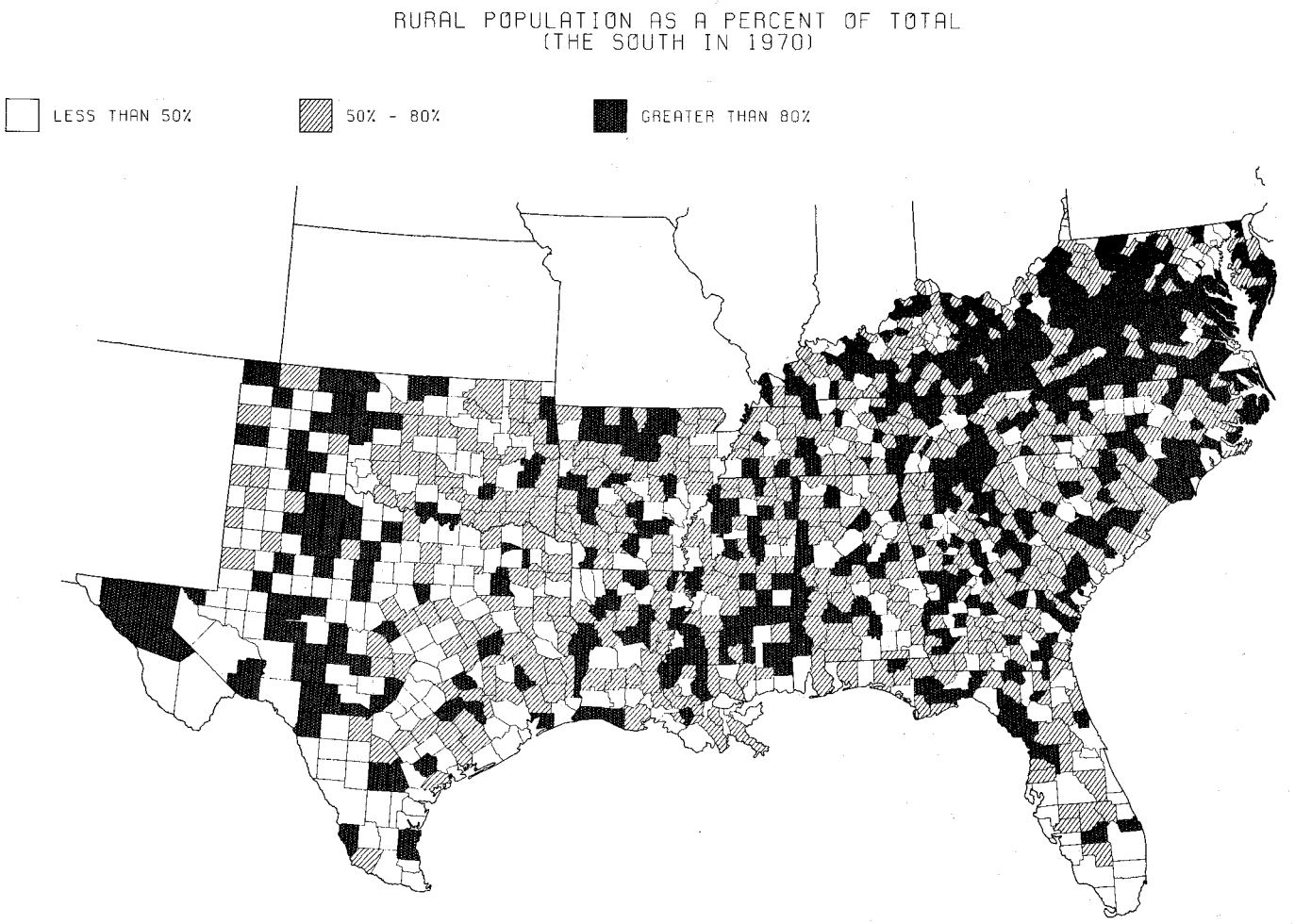
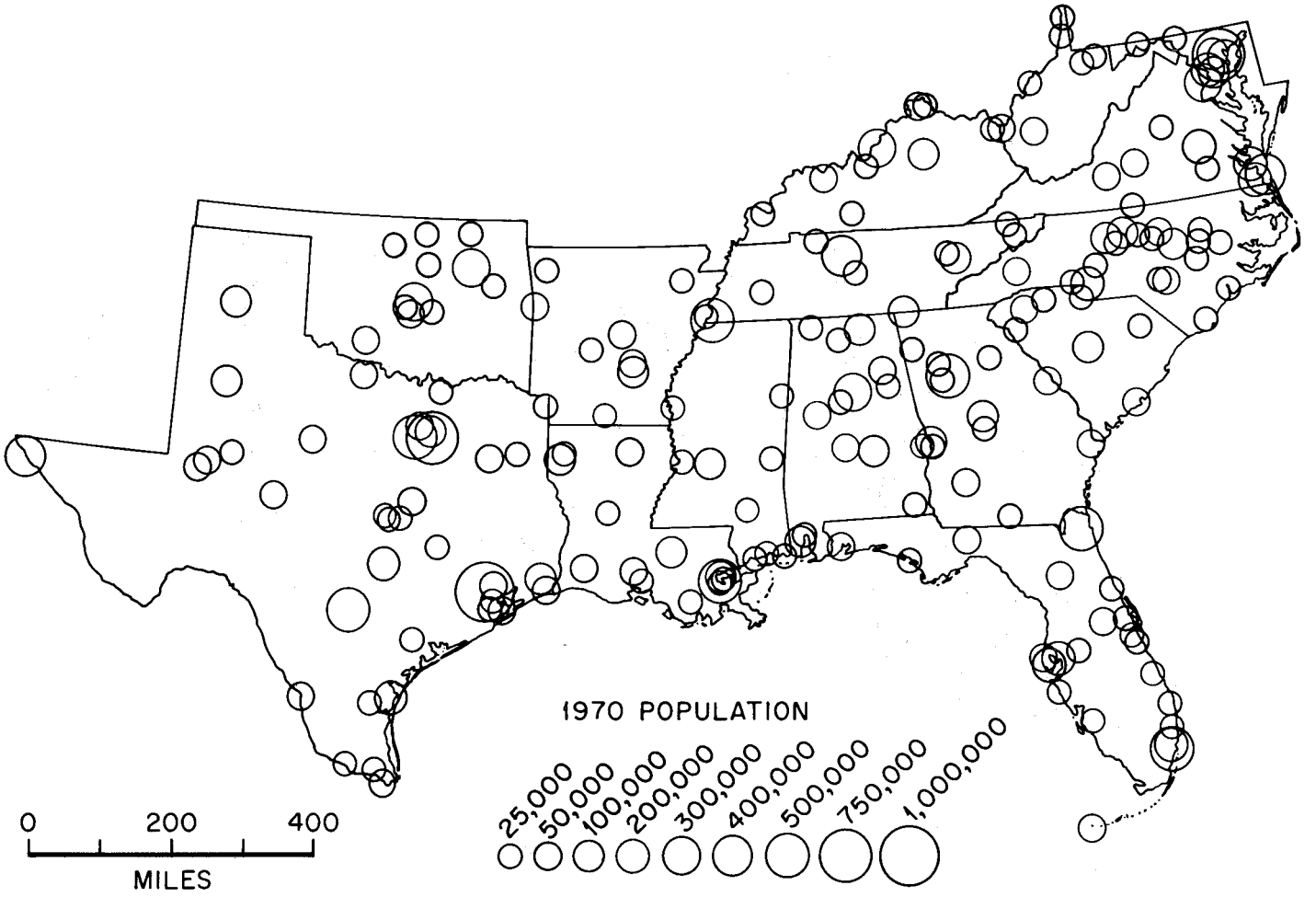


Fig. II-99. Rural Population as a Percent of Total (The South in 1970). Source: County and City Data Book, 1972.

ORNL-DWG 78-3630



URBAN CENTERS
1970 POPULATION: 25,000 OR MORE

Fig. II-100. Urban Centers with 1970 Population of 25,000 or More. Source: The Future of the South.

TABLE II-79

SOUTHERN METROPOLITAN POPULATION, 1970 and 1975
(IN THOUSANDS)

State	Metropolitan		Nonmetropolitan	
	1970	1975	1970	1975
Alabama	2,129	2,224	1,316	1,392
Arkansas	734	815	1,189	1,292
Florida	5,711	6,919	1,080	1,364
Georgia	2,594	2,793	1,994	2,138
Kentucky	1,511	1,557	1,710	1,831
Louisiana	2,260	2,393	1,382	1,411
Mississippi	543	610	1,674	1,733
North Carolina	2,285	2,456	2,799	2,985
Oklahoma	1,412	1,500	1,148	1,212
South Carolina	1,223	1,357	1,367	1,459
Tennessee	2,497	2,631	1,429	1,543
Texas	8,684	9,598	2,515	2,647
Virginia	3,068	3,264	1,584	1,717
West Virginia	664	660	1,080	1,139
South	35,315	38,777	22,267	23,863
U.S.	149,816 (23.6%)	155,021 (25.0%)	53,484 (41.6%)	58,041 (41.1%)

Source: Statistical Abstract, 1977.

TABLE II-80

METRO-NONMETRO POPULATION CHANGE
SOUTHERN STATES 1970-1975
(IN THOUSANDS)

State	Total Increase			Net Migration		
	Metro	Nonmetro	Total	Metro	Nonmetro	Total
Alabama	96.9	72.7	169.6	9.0	13.5	22.5
Arkansas	101.2	91.4	192.6	64.4	60.4	124.8
Florida	1,270.5	283.7	1,554.2	1,152.3	251.8	1,404.1
Georgia	208.8	128.9	337.7	58.0	40.5	98.5
Kentucky	61.1	113.9	175.0	-1.9	58.3	56.4
Louisiana	128.5	19.6	148.1	8.0	-44.6	-36.6
Mississippi	73.3	55.5	128.8	35.3	-24.6	10.7
North Carolina	186.1	180.7	366.8	77.1	61.9	139.0
Oklahoma	91.3	61.1	152.4	21.2	46.3	67.5
South Carolina	139.8	87.5	227.3	71.3	17.7	89.0
Tennessee	149.4	112.5	261.9	44.6	70.2	114.8
Texas	921.3	115.6	1,036.9	357.4	52.3	409.7
Virginia	187.8	128.9	316.7	42.7	83.0	125.7
West Virginia	.9	57.8	58.7	-16.8	27.9	11.1
South	3,616.9	1,509.8	5,126.7	1,922.6	714.6	2,637.2

Source: Southern Growth Trends 1970-1976.

TABLE II-81

POPULATION CHANGE IN THE SOUTH

State	1960-70 Net Increase		1970-75 Net Increase	
	Number (thousands)	Percent	Number (thousands)	Percent
Alabama	177	5.4	170	4.9
Arkansas	137	7.7	192	10.0
Florida	1,838	37.1	1,565	23.0
Georgia	646	16.4	338	7.4
Kentucky	181	6.0	175	5.4
Louisiana	386	11.9	148	4.1
Mississippi	39	1.8	129	5.8
North Carolina	526	11.5	367	7.2
Oklahoma	231	9.9	152	6.0
South Carolina	208	8.7	227	8.8
Tennessee	357	10.0	262	6.7
Texas	1,617	16.9	1,037	9.3
Virginia	682	17.2	315	6.8
West Virginia	-116	-6.2	59	3.4
South	6,909	13.6	5,136	8.9
U.S.	23,862	13.3	9,817	4.8

Source: Statistical Abstract, 1976.

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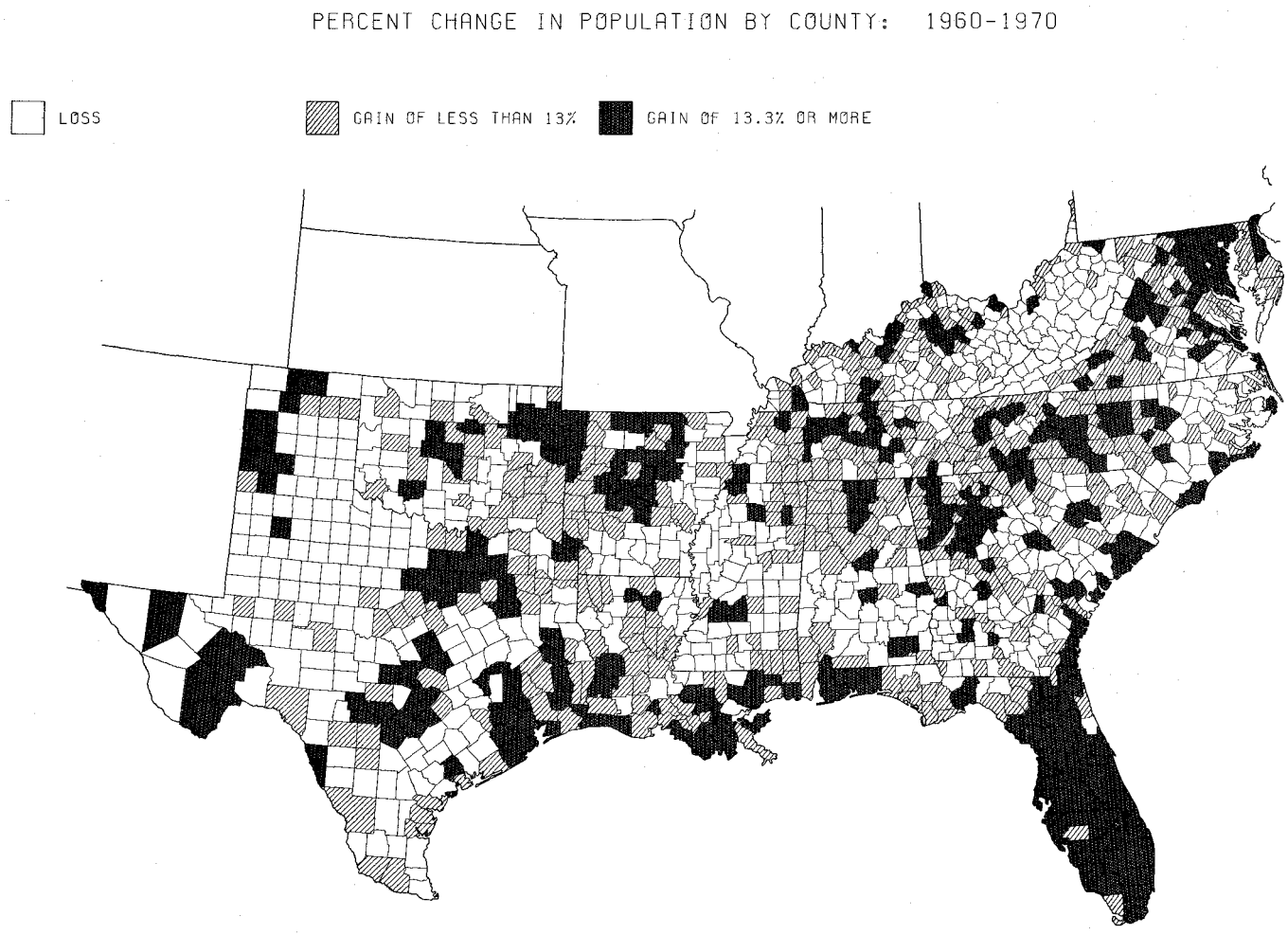

Fig. II-101. Percent Change in Population by County: 1960-1970.
Source: County and City Data Book, 1972.

TABLE II-82

POPULATION CHANGE IN THE SOUTH
BIRTHS, DEATHS, AND NET TOTAL MIGRATION
(IN THOUSANDS)

State	1960-70		Net Total Migration	1970-75		Net Total Migration
	Births	Deaths		Births	Deaths	
Alabama	729	319	-233	329	180	21
Arkansas	401	193	-71	182	114	125
Florida	1,107	596	1,326	587	438	1,416
Georgia	975	379	51	465	224	97
Kentucky	647	313	-153	295	177	57
Louisiana	832	316	-130	364	177	-38
Mississippi	534	228	-267	242	123	9
North Carolina	1,032	412	-94	472	242	137
Oklahoma	461	244	13	226	141	68
South Carolina	573	216	-149	265	125	88
Tennessee	755	353	-45	352	205	115
Texas	2,318	847	146	1,143	515	409
Virginia	909	369	141	401	211	125
West Virginia	339	190	-265	152	105	11
South	11,612	4,975	270	5,475	2,977	2,640
U.S.	39,033 (29.7%)	18,192 (27.3%)	3,020 (8.9%)	17,490 (31.3%)	10,200 (29.2%)	2,527 (104.5%)

Source: Statistical Abstract, 1976.

TABLE II-83

POPULATION DISTRIBUTION
(BY AGE, 1970, IN THOUSANDS)

State	Under 5 yrs	5-13	14-17	18-20	21-44	45-64	65 and Over	Total
Alabama	301	644	288	190	1,004	691	326	3,444
Arkansas	158	343	154	99	525	407	238	1,924
Florida	501	1,121	487	323	1,900	1,468	989	6,789
Georgia	422	856	367	260	1,450	868	367	4,590
Kentucky	271	584	259	186	937	644	337	3,218
Louisiana	348	727	312	213	1,058	677	307	3,642
Mississippi	210	439	195	130	599	422	222	2,217
North Carolina	437	910	411	319	1,591	999	414	5,081
Oklahoma	197	440	199	138	748	536	300	2,558
Tennessee	325	692	309	219	1,189	806	384	3,924
Texas	1,001	2,094	905	627	3,435	2,140	992	11,194
Virginia	392	838	359	267	1,511	913	366	4,646
West Virginia	138	300	142	95	483	392	194	1,744
South	4,701	9,988	4,387	3,066	16,430	10,963	5,436	54,971
U.S.	17,154 (27.4%)	36,650 (27.3%)	15,839 (27.7%)	10,817 (28.3%)	60,875 (27.0%)	41,810 (26.2%)	20,066 (27.1%)	203,211 (27.1%)

Source: 1970 Census of Population.

TABLE II-84

POPULATION DISTRIBUTION
(BY AGE, 1975, IN THOUSANDS)

State	Under 5 yrs.	5-13	14-17	18-20	21-44	45-64	65 & Over	Total
AL	295	582	298	212	1,134	715	378	3,614
AR	170	329	168	114	637	427	271	2,116
FL	574	1,153	610	438	2,430	1,804	1,347	8,356
GA	423	816	393	298	1,653	914	430	4,927
KY	270	537	273	199	1,077	672	368	3,396
LA	326	660	330	234	1,197	697	346	3,790
MS	219	404	204	142	699	425	253	2,346
NC	433	857	425	340	1,826	1,079	492	5,452
OK	208	400	208	157	853	551	334	2,711
SC	243	467	234	183	935	527	229	2,818
TN	323	645	325	237	1,371	846	441	4,188
TX	1,049	1,981	982	743	4,014	2,309	1,158	12,236
VA	365	777	396	321	1,696	988	424	4,967
WV	139	270	139	95	546	403	211	1,803
SOUTH	5,037	9,878	4,985	3,713	20,068	12,357	6,682	62,720
US	15,896 (31.7%)	33,456 (29.5%)	16,942 (29.4%)	12,419 (29.9%)	68,465 (29.3%)	43,544 (28.4%)	22,400 (29.8%)	213,122 (29.4%)

Source: Statistical Abstract, 1976.

TABLE II-85

POPULATION DENSITY IN THE SOUTH
(THOUSANDS OF PERSONS PER SQUARE MILE OF LAND AREA)

State	1970	1975
Alabama	67.9	71.3
Arkansas	37.0	40.7
Florida	125.5	154.5
Georgia	79.0	84.8
Kentucky	81.2	85.6
Louisiana	81.0	84.4
Mississippi	46.9	49.6
North Carolina	104.1	111.7
Oklahoma	37.2	39.4
South Carolina	85.7	93.2
Tennessee	94.9	101.3
Texas	42.7	46.7
Virginia	116.9	124.9
West Virginia	72.5	74.9
South	76.6	83.1
U.S.	57.5	60.1

Source: Statistical Abstract, 1976.

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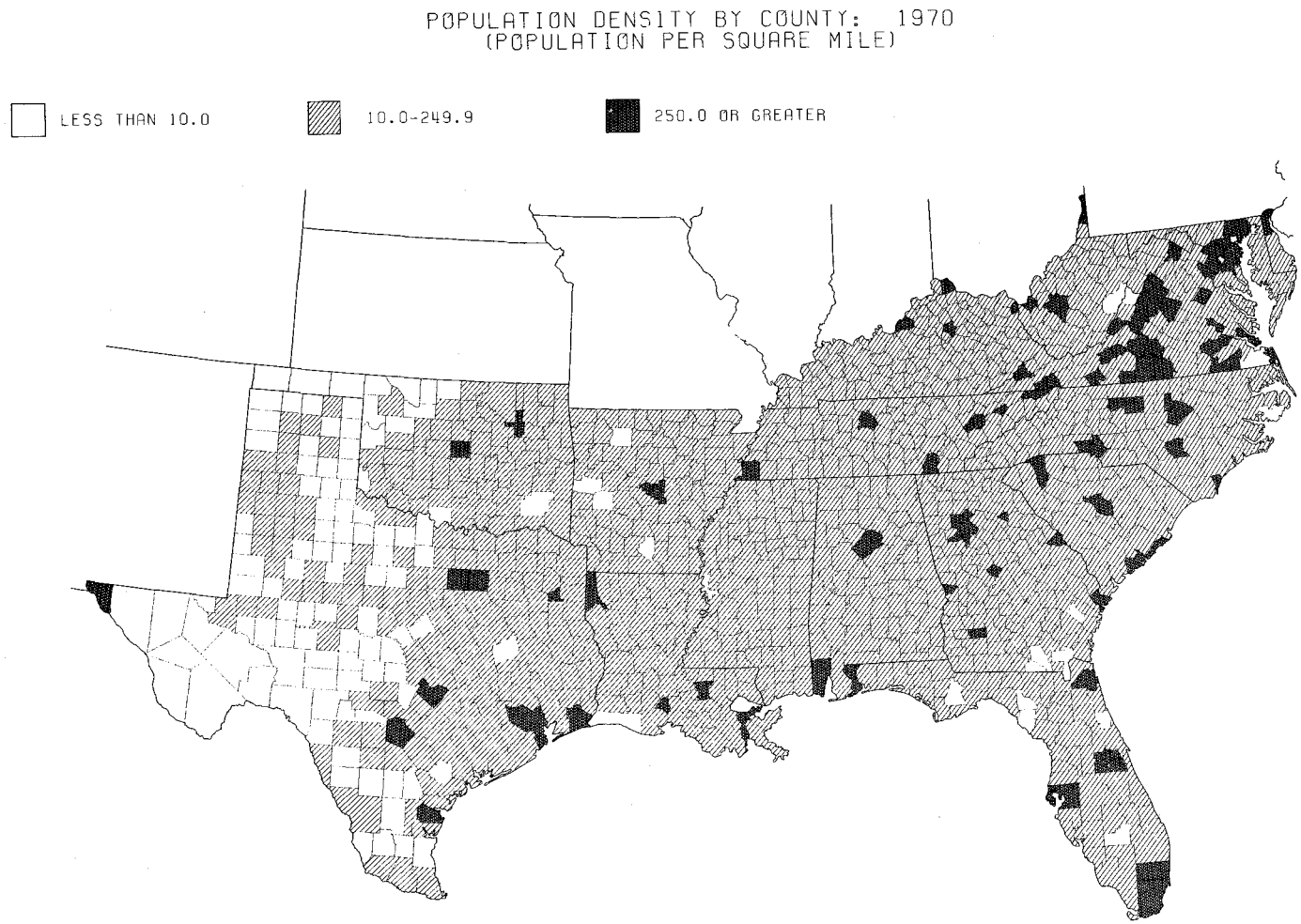

Fig. II-102. Population Density by County: 1970 (Population per Square Mile). Source: County and City Data Book, 1972.

TABLE II-86

LABOR FORCE PARTICIPATION RATES
1970 AND 1976

State	1970 Female	1970 Total	1976 Total
Alabama	38.1	54.6	57.1
Arkansas	37.4	52.1	57.5
Florida	39.1	53.4	55.4
Georgia	44.6	60.5	63.9
Kentucky	35.8	53.0	59.6
Louisiana	34.6	52.6	56.3
Mississippi	38.8	53.3	58.9
North Carolina	46.4	62.4	66.3
Oklahoma	38.6	55.3	58.4
South Carolina	45.3	60.9	64.7
Tennessee	41.1	51.6	59.9
Texas	40.7	58.6	63.7
Virginia	42.4	60.2	65.5
West Virginia	32.4	50.5	51.0
South	42.4	58.3	60.7
U.S.	42.8	60.3	61.2

Source: U.S. Census, 1970; Bureau of Labor Statistics, 1976.

TABLE II-87

CIVILIAN LABOR FORCE IN THE SOUTH IN 1970

State	Percentage			Total (thousands)
	Professionals and Managers	Clerical and Sales	Foremen and Craftsmen	
Alabama	20.2	20.5	15.2	1,193
Arkansas	19.4	19.6	13.8	650
Florida	23.3	26.6	14.5	2,426
Georgia	20.4	23.3	13.9	1,747
Kentucky	18.7	21.4	14.6	1,089
Louisiana	22.9	22.3	14.5	1,158
Mississippi	20.3	18.4	13.7	719
North Carolina	18.5	20.1	14.5	1,984
Oklahoma	23.7	24.2	14.2	928
South Carolina	18.6	18.7	15.3	955
Tennessee	20.0	21.5	14.2	1,458
Texas	23.3	25.2	14.3	4,142
Virginia	24.6	24.4	14.3	1,714
West Virginia	20.4	20.1	17.4	550
South	21.0	21.9	14.6	20,713
U.S.	23.2	25.1	13.9	76,554

Source: County and City Data Book, 1970.

TABLE II-88

FARM EMPLOYMENT IN THE SOUTH, 1975
(THOUSANDS)

State	Family Workers	Total
Alabama	64	91
Arkansas	68	98
Florida	37	96
Georgia	62	100
Kentucky	119	140
Louisiana	46	68
Mississippi	63	92
North Carolina	108	169
Oklahoma	89	105
South Carolina	44	76
Tennessee	117	138
Texas	173	255
Virginia	65	90
West Virginia	40	44
South	1,095	1,562
U.S.	3,034 (36.1%)	4,357 (35.9%)

Source: Agricultural Statistics, 1976.

TABLE II-89

EMPLOYMENT BY MAJOR INDUSTRY IN THE SOUTH, 1970-1975
(THOUSANDS OF WORKERS)

Industry	Year					
	1970	1971	1972	1973	1974	1975
Agriculture	1,862	1,804	1,769	1,712	1,656	1,586
Mining	336	331	342	348	377	406
Construction	1,164	1,220	1,373	1,533	1,557	1,334
Manufacturing	5,049	4,985	5,239	5,543	5,571	5,090
Durable goods	2,226	2,173	2,329	2,527	2,569	2,315
Nondurable goods	2,823	2,812	2,910	3,016	3,003	2,775
Transportation and Public Utilities	1,253	1,265	1,310	1,488	1,408	1,359
Wholesale Trade	1,058	1,093	1,157	1,221	1,254	1,254
Retail Trade	3,120	3,242	3,489	3,733	3,809	3,802
Finance, Insurance and Real Estate	917	959	1,035	1,122	1,174	1,173
Services	2,870	2,990	3,221	3,467	3,651	3,711
Federal Government	898	897	901	895	919	945
State and Local Government	2,814	2,934	3,074	3,217	3,363	3,555
Total Nonagricultural	19,479	19,917	21,141	22,567	23,083	22,652
Total Employment	21,341	21,721	22,910	24,279	24,739	24,238

Source: Southern Growth Trends 1970-1976.

TABLE II-90

EMPLOYMENT, RANKED BY MAJOR INDUSTRY
SOUTH VS. U.S.

South		U.S.	
Industry	Percent	Industry	Percent
Manufacturing	21.0	Manufacturing	22.5
Wholesale and Retail Trade	20.9	Wholesale and Retail Trade	20.8
Government	18.6	Government	18.2
Services	15.3	Services	17.2
Agriculture	6.5	Transportation, Public Utilities	5.5
Transportation, Communications and Public Utilities	5.6	Finance, Insurance and Real Estate	5.5
Construction	5.5	Agriculture	5.3
Finance, Insurance and Real Estate	4.8	Construction	4.3
Mining	1.7	Mining	0.9

Source: Southern Growth Trends 1970-1976.

TABLE II-91

RELATIVE IMPORTANCE OF INDUSTRIAL SOURCES OF PERSONAL INCOME, BY STATE, 1975
(INDUSTRIAL SOURCE AS PERCENT OF TOTAL PERSONAL INCOME)

Sector	AL	AR	FL	GA	KY	LA	MS
Primary metals	5.33	.93	.14	.79	2.06	.71	.35
Fabricated metal	1.80	1.42	.87	.87	1.71	1.18	1.24
Machinery, exc. electrical	1.11	1.17	.84	1.00	4.08	.77	1.48
Electrical equip. & supplies	.87	2.25	1.46	.79	2.74	.64	2.22
Motor vehicles & equip.	.59	.56	.06	1.34	1.79	.06	.31
Trans., exc. motor vehicles	1.34	.38	1.01	1.16	—	1.94	4.80
Misc. manufacturing	.21	.43	.16	.27	.27	.09	.42
Food & kindred prod.	1.88	3.09	1.63	2.66	2.19	1.99	2.32
Textile mill prod.	2.67	.46	.09	4.76	.22	.11	.51
Apparel & other textile prod.	2.21	1.15	.58	2.02	1.50	.37	3.12
Paper & allied prod.	2.17	1.82	.69	1.66	.61	1.44	1.17
Printing & publishing	.71	.93	1.01	.95	1.11	.57	.48
Chemicals & allied prod.	1.71	1.21	1.06	.98	1.68	3.43	1.10
Petroleum & coal prod.	.13	.38	.06	.11	.51	1.75	.49
Coal mining	1.36	.08	—	—	6.65	—	—
Oil & gas extraction	.13	.51	.10	.01	.34	6.30	1.17
Metal mining	—	.11	.02	.01	—	—	—
Nonmetallic min., exc. fuels	.20	.25	.31	.39	.26	.39	—
Contract construction	6.56	5.52	7.66	5.29	5.71	8.76	5.69
Wholesale & retail trade	15.73	16.04	19.52	19.28	15.50	17.49	15.63
Fin., ins. & real estate	4.16	4.01	7.06	5.65	3.60	4.59	4.10
Trans., comm., elec., gas & san.	6.47	6.88	8.16	8.57	6.95	9.47	1.12
Services	13.31	12.32	19.88	14.05	12.78	14.75	13.11
Other industries	.33	.58	.76	.36	.30	.45	.55
Federal, civilian	7.25	3.60	3.88	5.69	4.12	3.18	4.75
Federal, military	2.90	2.14	3.26	2.99	3.72	2.54	3.84
State & local	10.91	9.47	13.07	11.13	9.71	11.32	11.73

TABLE II-91 (continued)

RELATIVE IMPORTANCE OF INDUSTRIAL SOURCES OF PERSONAL INCOME, BY STATE, 1975
(INDUSTRIAL SOURCE AS PERCENT OF TOTAL PERSONAL INCOME)

Sector	NC	OK	SC	TN	TX	VA	WV
Primary metals	.37	.54	.54	1.45	1.09	.63	5.91
Fabricated metal	1.01	2.27	1.06	1.97	1.67	1.04	1.35
Machinery, exc. electrical	1.98	2.79	2.52	2.04	2.62	.77	1.34
Electrical equip. & supplies	2.13	1.45	1.42	1.93	1.34	1.75	.70
Motor vehicles & equip.	.42	.62	.08	.94	.41	.35	.22
Trans., exc. motor vehicles	.26	1.01	.30	.65	1.84	1.82	.55
Misc. manufacturing	.23	.15	.35	.54	.18	.17	.07
Food & kindred prod.	1.72	1.63	1.18	2.69	1.77	1.67	.89
Textile mill prod.	8.79	.18	11.62	1.29	.09	1.53	.07
Apparel & other textile prod.	2.03	.66	2.43	2.42	.86	2.42	.97
Paper & allied prod.	1.20	.23	1.71	1.14	.43	.82	.28
Printing & publishing	.78	.86	.58	1.28	.92	.85	.63
Chemicals & allied prod.	2.20	.37	4.62	5.42	2.29	2.52	6.07
Petroleum & coal prod.	.01	1.66	.05	.08	1.78	—	.31
Coal mining	—	.13	—	.48	—	1.61	15.39
Oil & gas extraction	.01	6.72	—	.04	4.43	.01	1.28
Metal mining	—	—	—	.13	—	.01	—
Nonmetallic min., exc. fuels	.21	.15	—	.24	.16	.14	.25
Contract construction	5.35	5.67	6.34	5.80	7.25	6.25	6.43
Wholesale & retail trade	15.89	18.14	14.21	17.86	18.94	11.25	14.39
Fin., ins. & real estate	4.27	4.78	4.00	4.97	5.27	4.51	2.90
Trans., comm., elec., gas & san.	6.15	7.87	5.09	4.90	7.60	6.79	8.32
Services	13.32	14.08	12.08	15.05	14.93	14.67	12.17
Other industries	.30	.40	.35	.28	.39	.32	.12
Federal, civilian	2.90	6.79	3.90	5.17	4.28	11.42	2.90
Federal, military	5.01	3.42	6.94	13.90	3.64	6.96	.68
State & local	10.36	10.35	7.15	10.53	9.99	11.22	10.42

Source: Southern Growth Trends 1970-1976.

TABLE II-92

EMPLOYEES IN NON-AGRICULTURAL ESTABLISHMENTS IN 1970

State	Total (thousands)	Percentage							
		Mfg.	Wholesale and Retail Trade	Gov.	Services	Transportation Public Utilities	Finance Insurance Real Estate	Contr. Const.	Mining
Alabama	1,007	32.2	18.9	20.8	13.0	5.6	4.1	4.9	.8
Arkansas	532	31.2	19.9	19.2	13.7	6.0	3.9	4.9	.9
Florida	2,156	15.0	26.3	18.5	18.4	7.2	6.1	8.0	.4
Georgia	1,546	29.9	21.4	19.3	12.1	6.9	4.9	5.0	.5
Kentucky	914	27.5	19.8	19.0	15.0	6.5	3.8	5.4	3.1
Louisiana	1,046	16.8	21.9	20.7	15.1	8.9	4.7	7.1	4.9
Mississippi	576	32.2	18.4	22.1	11.6	5.2	3.6	5.7	1.0
North Carolina	1,746	40.0	17.8	15.3	11.8	5.3	4.0	5.6	.2
Oklahoma	771	17.5	21.8	24.1	15.2	6.7	4.8	4.9	5.1
South Carolina	839	40.5	16.9	17.8	10.6	4.4	3.6	6.0	.2
Tennessee	1,328	35.2	19.4	17.1	13.8	5.0	4.4	4.7	.5
Texas	3,640	20.4	24.0	18.2	16.1	7.0	5.2	6.1	2.9
Virginia	1,464	24.9	20.8	20.5	15.0	6.6	4.6	6.5	1.0
West Virginia	514	24.5	17.7	18.7	13.0	8.2	3.1	5.4	9.5
South	18,079	26.3	21.3	18.9	14.5	6.5	4.7	5.9	1.9
U.S.	70,664 (25.6%)	27.4	21.2	17.8	16.4	6.4	5.2	4.7	.9

Source: Statistical Abstract, 1971.

TABLE II-93

EMPLOYEES IN NON-AGRICULTURAL ESTABLISHMENTS IN 1975

State	Total (thousands)	Percentage							
		Mfg.	Wholesale and Retail Trade	Gov.	Services	Transportation Public Utilities	Finance Insurance Real Estate	Contr. Const.	Mining
Alabama	1,150	27.8	19.7	21.4	14.6	5.2	4.3	5.9	1.0
Arkansas	620	28.4	21.5	19.7	14.5	6.0	4.5	5.0	.6
Florida	2,730	12.0	26.3	20.1	21.2	6.6	7.0	6.3	.4
Georgia	1,725	25.1	22.5	20.5	14.7	6.6	5.6	4.6	.4
Kentucky	1,042	24.4	20.5	20.6	15.9	5.8	4.0	4.5	4.3
Louisiana	1,199	15.2	23.0	20.5	16.1	8.1	4.9	7.5	4.7
Mississippi	667	29.7	19.8	21.9	13.0	5.1	4.2	5.4	.9
North Carolina	1,996	36.9	18.9	15.7	13.3	5.0	4.3	5.8	.2
Oklahoma	887	16.9	23.6	22.9	15.9	6.2	5.3	4.8	4.5
South Carolina	978	34.4	18.0	20.4	12.6	4.1	4.0	6.2	.2
Tennessee	1,497	30.3	21.0	18.1	15.8	4.7	4.5	4.8	.6
Texas	4,413	18.1	24.4	18.5	17.4	6.5	5.8	6.3	2.9
Virginia	1,755	20.9	20.5	24.0	16.6	5.9	5.0	6.0	1.1
West Virginia	561	21.4	19.4	19.3	14.3	7.0	3.2	4.6	11.1
South	21,220	22.9	22.2	19.8	16.2	6.0	5.2	5.8	1.9
U.S.	76,985 (27.6%)	23.8	22.0	19.2	18.2	5.8	5.5	4.5	1.0

Source: Statistical Abstract, 1976.

TABLE II-94

MANUFACTURING EMPLOYMENT IN THE SOUTH BY SIC
(IN THOUSANDS)

	Alabama		Arkansas		Florida		Georgia		Kentucky		Louisiana		Mississippi	
SIC	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975
20	22.7	23.8	24.0	23.7	44.9	44.8	43.3	44.8	21.9	21.2	28.8	28.5	15.5	17.2
21	—	—	—	—	5.8	3.8	—	—	11.3	9.1	—	—	—	—
22	42.0	42.9	3.9	3.9	2.4	4.8	109.0	102.3	2.9	6.5	—	1.9	6.8	7.3
23	42.0	48.4	15.2	14.5	20.6	29.7	69.0	67.0	27.6	25.2	7.0	8.8	37.0	35.9
24	21.1	19.8	18.7	18.0	12.9	13.0	18.8	24.5	8.5	10.8	14.1	14.6	23.3	19.5
25	5.7	4.7	10.9	9.4	11.3	8.2	9.4	7.5	5.6	4.5	—	1.2	11.1	12.7
26	15.8	17.5	8.5	8.8	16.4	14.5	23.0	23.6	4.7	6.9	15.0	13.6	6.2	5.6
27	8.8	7.0	5.9	6.1	23.3	27.5	14.3	14.3	12.1	11.9	7.6	6.1	4.0	4.0
28	11.6	10.6	3.7	5.0	20.2	22.7	14.1	13.9	13.7	14.1	22.3	27.0	5.4	5.6
29	0.8	—	1.3	3.0	0.9	0.9	1.0	1.5	—	—	11.0	9.9	—	1.3
30	9.1	13.1	5.2	6.1	5.2	9.8	7.3	12.5	6.1	5.9	0.2	0.5	4.3	5.0
31	—	0.7	6.7	8.6	2.5	3.5	4.5	3.2	—	4.8	—	—	2.0	2.0
32	8.2	9.0	4.2	4.8	15.1	14.7	13.2	16.3	6.0	8.0	6.0	7.2	6.1	7.7
33	46.8	40.4	4.9	5.3	3.7	3.0	9.3	10.6	13.3	16.5	5.4	6.5	1.9	2.2
34	16.5	21.9	8.4	13.2	22.8	22.5	14.0	16.3	17.4	17.9	9.2	12.4	8.1	7.0
35	9.0	12.6	6.0	9.2	16.7	19.2	11.8	14.4	29.0	39.6	5.4	10.1	8.6	10.0
36	11.5	11.3	16.3	16.5	28.5	34.2	10.8	13.1	33.1	27.3	5.2	7.4	12.6	15.3
37	21.3	18.6	6.0	5.0	28.7	29.9	49.4	25.8	10.6	12.8	17.1	22.2	17.2	29.0
38	0.8	2.0	—	—	4.1	6.4	—	—	3.7	3.4	0.6	0.4	1.7	1.5
39	3.2	2.7	3.7	—	4.3	6.3	6.2	6.3	3.9	3.6	1.4	0.8	3.8	3.4
Total	269.9	312.7	153.5	174.7	290.3	327.8	428.4	453.6	231.4	264.6	156.3	182.9	175.6	194.4

TABLE II-94 (continued)

MANUFACTURING EMPLOYMENT IN THE SOUTH BY SIC
(IN THOUSANDS)

	North Carolina		Oklahoma		South Carolina		Tennessee		Texas		Virginia		West Virginia		South	
SIC	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975
20	37.6	38.2	16.0	14.9	12.3	11.4	32.6	34.9	79.3	77.1	32.8	33.6	6.8	4.5	418.5	418.7
21	24.6	25.4	—	—	1.0	0.6	0.9	1.0	—	—	14.6	15.3	—	15.3	58.2	55.2
22	271.9	250.6	—	1.8	137.7	135.3	32.4	26.9	6.7	5.5	40.4	40.0	1.7	0.8	657.8	630.4
23	69.1	68.5	8.5	11.3	41.9	42.4	63.9	63.8	57.2	68.0	34.6	34.5	4.4	4.6	498.0	522.7
24	25.9	28.2	1.6	3.1	13.3	12.7	15.0	13.1	18.9	25.9	20.3	19.4	4.3	4.8	216.7	227.4
25	66.5	66.4	2.2	2.0	4.5	3.9	21.6	21.4	15.0	14.9	23.7	22.9	1.3	1.0	188.8	180.7
26	15.9	14.8	1.1	1.7	11.9	11.9	14.9	14.8	17.6	16.7	13.5	11.7	1.4	1.6	165.9	163.7
27	15.3	16.3	9.0	9.9	4.2	5.2	20.6	23.1	33.1	43.1	14.5	16.0	4.2	3.9	176.9	194.4
28	21.1	31.1	1.4	—	23.7	27.3	53.7	50.4	54.2	61.3	37.9	31.6	22.9	18.9	305.9	319.5
29	—	0.8	5.2	4.7	—	—	0.8	0.8	34.8	34.5	—	—	0.6	1.0	56.4	58.4
30	11.9	16.5	4.5	7.8	4.5	—	13.4	15.1	11.2	19.1	8.7	9.8	—	—	91.6	121.2
31	2.9	3.7	—	—	—	—	17.7	18.0	—	3.0	5.0	3.2	1.7	—	43.0	50.7
32	14.1	15.5	7.4	7.1	9.1	9.8	14.1	16.5	26.1	30.3	9.3	9.4	19.7	18.2	158.6	174.5
33	6.0	6.3	3.8	4.7	2.4	4.5	17.5	16.3	39.7	37.0	7.7	8.3	23.0	23.2	185.4	184.9
34	16.2	18.9	13.9	15.0	7.1	8.8	28.1	30.4	55.2	72.6	11.8	15.7	6.9	7.6	235.6	280.3
35	27.2	33.1	19.8	26.5	15.3	21.8	23.2	26.8	63.6	101.8	8.9	16.1	4.4	6.7	248.9	347.9
36	34.4	33.1	10.4	10.9	12.9	15.2	31.2	30.0	53.9	49.6	26.5	28.4	5.8	5.0	293.1	297.3
37	8.2	8.9	12.3	9.8	6.9	4.3	18.5	19.0	93.9	62.4	26.2	4.1	—	2.8	316.3	254.6
38	5.5	7.2	0.4	—	2.4	3.8	2.8	3.0	—	10.2	2.5	—	0.7	0.8	25.2	38.7
39	4.7	5.9	2.0	—	4.1	4.4	7.7	11.5	8.0	8.6	3.9	3.1	1.8	1.3	58.7	57.9
Total	679.0	715.7	119.5	151.8	315.2	340.5	430.6	452.7	668.4	783.8	342.8	398.1	111.6	118.1	4,399.5	4,871.4

Source: Census of Manufactures, 1970, and Annual Survey of Manufactures, 1975.

TABLE II-95

MANUFACTURING IN THE SOUTH, 1975

State	Employment	Capital Investments	Value Added	Index #2	Index #1
Alabama	312.7	$ 1,062.0	$ 6,623.4	1.13	1.50
Arkansas	174.7	328.8	3,701.0	1.05	1.40
Florida	327.8	834.9	7,461.2	.99	.84
Georgia	453.6	752.3	9,785.3	.88	.77
Kentucky	264.6	486.3	7,394.9	.90	1.35
Louisiana	182.9	1,155.0	7.345.9	2.29	6.47
Mississippi	194.4	260.1	3,685.5	.79	1.10
North Carolina	715.7	1,225.8	13,642.6	.75	.59
Oklahoma	151.8	303.2	3,451.2	1.00	1.38
South Carolina	340.5	805.7	5,941.9	.97	.92
Tennessee	452.7	836.5	9,297.7	1.15	1.09
Texas	783.8	3,836.2	24,379.6	1.63	3.50
Virginia	398.1	672.7	8,355.3	.89	.76
West Virginia	118.1	367.9	3,070.2	2.17	2.66
South	4,871.4	12,927.4	114,135.7	1.13	1.62
U.S.	18,344.7	35,698.7	441,850.0		
Share	(26.6%)	(36.2%)	(25.8%)		

Source: Annual Survey of Manufactures, 1975.

TABLE II-96

ENERGY EMPLOYMENT IN THE SOUTH IN 1975

State	Crude Oil and Gas Extraction	Petroleum Refining	Pipeline Transport	Gas Production and Distribution	Wholesale Petroleum	Service Stations	Coal
Alabama	966	376	98	2,402	3,511	8,087	8,400
Arkansas	2,039	811	297	2,222	2,306	5,212	180
Florida	1,166	187	37	2,192	6,622	27,150	0
Georgia	65	113	449	3,348	6,922	14,957	40
Kentucky	2,299	2,751	169	2,659	3,628	10,676	36,070
Louisiana	51,800	10,400	900	8,700	6,300	3,500	0
Mississippi	5,555	1,270	167	2,219	2,824	5,165	0
North Carolina	56	39	92	1,958	700	10,960	0
Oklahoma	38,200	7,100	2,300	4,500	4,200	6,800	870
South Carolina	10	0	38	447	0	7,364	0
Tennessee	355	267	43	1,631	4,640	13,625	3,140
Texas	128,143	37,356	4,828	22,498	23,831	35,900	440
Virginia	100	200	100	2,200	6,700	15,900	16,510
West Virginia	2,800	700	100	5,400	1,700	4,500	54,210
South	233,584	61,570	9,618	62,376	73,884	169,796	119,860
U.S.	321,037 (72.8%)	155,540 (39.6%)	16,459 (58.4%)	161,956 (38.5%)	208,746 (35.4%)	621,454 (27.3%)	169,880 (63.1%)

Source: The Oil Producing Industry in Your State - 1975.

TABLE II-97

UNEMPLOYMENT IN THE SOUTH
(IN THOUSANDS OF PERSONS, 16 YEARS AND OLDER)

State	Total		Minority Races
	1970	1975	1975
Alabama	62	129	31
Arkansas	38	76	NA
Florida	94	384	106
Georgia	71	206	77
Kentucky	62	113	13
Louisiana	85	118	51
Mississippi	40	72	NA
North Carolina	85	230	74
Oklahoma	45	73	17
South Carolina	54	131	38
Tennessee	76	157	33
Texas	168	324	70
Virginia	58	150	43
West Virginia	40	51	NA
South	978	2,215	553
U.S.	4,088 (23.9%)	8,331 (26.6%)	1,458 (37.9%)

Source: Statistical Abstract, 1971 and 1976.

TABLE II-98

UNEMPLOYMENT RATES IN THE SOUTH
ANNUAL AVERAGE, 1970-1975
(PERCENT UNEMPLOYED)

State	Year						1975 Minority Rates
	1970	1971	1972	1973	1974	1975	
Alabama	4.8	5.3	4.9	3.9	5.5	7.7	10.0
Arkansas	5.2	5.4	4.7	4.1	4.8	8.3	NA
Florida	3.4	4.2	3.2	3.6	6.2	10.7	17.0
Georgia	3.6	4.0	3.7	3.9	5.2	8.6	16.1
Kentucky	5.1	5.4	4.6	4.3	4.5	7.3	12.7
Louisiana	6.2	6.6	5.9	6.0	7.1	7.4	14.1
Mississippi	4.8	5.0	4.2	3.6	4.1	7.1	NA
North Carolina	3.7	3.9	3.1	3.5	4.5	8.6	13.8
Oklahoma	4.3	5.0	4.8	4.2	4.4	7.2	20.3
South Carolina	5.0	5.2	4.1	3.6	5.9	8.7	13.2
Tennessee	4.4	4.6	3.5	3.0	5.1	8.3	12.8
Texas	3.6	4.2	3.6	3.9	4.3	5.6	10.9
Virginia	3.2	3.6	2.8	3.4	4.5	6.4	10.9
West Virginia	6.4	6.9	6.9	5.8	5.9	7.4	NA
South	4.6	5.0	4.3	4.1	5.1	7.8	NA
U.S.	4.9	5.9	5.6	4.9	5.6	8.5	13.9

Source: Southern Growth Trends 1970-1976.

TABLE II-99

RATIO OF TRANSFER PAYMENTS TO TOTAL PERSONAL INCOME IN THE SOUTH (INDEX, U.S. = 100)

State	Public Assistance		Unemployment Compensation	
	1970	1975	1970	1975
Alabama	129	118	72	92
Arkansas	153	133	85	97
Florida	49	71	32	71
Georgia	101	112	46	103
Kentucky	121	130	79	85
Louisiana	180	137	108	61
Mississippi	188	179	49	65
North Carolina	68	92	58	109
Oklahoma	127	95	53	56
South Carolina	85	118	71	119
Tennessee	108	104	90	100
Texas	73	65	35	31
Virginia	49	63	23	45
West Virginia	141	109	69	64
South	112	109	61	78
U.S.	100	100	100	100

Source: Statistical Abstract, 1977.

TABLE II-100

PER CAPITA INCOME IN THE SOUTH

State	1970		1975	
	Dollars	% of U.S.	Dollars	% of U.S.
Alabama	2,947	74.3	4,643	78.7
Arkansas	2,886	72.8	4,620	78.3
Mississippi	2,630	66.3	4,052	68.7
Georgia	3,357	84.6	5,086	86.2
Florida	3,741	94.3	5,638	95.5
Louisiana	3,097	78.1	4,904	83.1
Kentucky	3,118	78.6	4,871	82.5
Tennessee	3,127	78.8	4,895	82.9
North Carolina	3,256	82.1	4,952	83.9
South Carolina	2,992	75.4	4,618	78.2
Virginia	3,720	93.8	5,785	98.0
West Virginia	3,070	77.4	4,918	83.3
Texas	3,600	90.8	5,631	95.4
Oklahoma	3,381	85.2	5,250	89.0
South	3,297	83.1	5,157	87.4
U.S.	3,966	100.0	5,902	100.0

Source: Southern Growth Trends 1970-1976.

TABLE II-101

SOURCES OF PERSONAL INCOME IN THE SOUTH, 1975
(MILLIONS OF DOLLARS)

Sector	1975	
	Dollars	% of Total
Coal mining	2,492	.95
Oil & gas extraction	4,242	1.62
Petroleum & coal production	1,605	.61
Services	39,138	14.99
State & local	28,736	11.01
Machinery, exc. electrical	4,531	1.74
Fabricated metal	3,468	1.33
Fin., ins. & real estate	12,928	4.95
Misc. manufacturing	581	.22
Motor vehicles & equip.	1,485	.57
Wholesale & retail trade	45,481	17.42
Trans., comm., elec., gas & san.	18,914	7.24
Nonmetallic min., exc. fuels	569	.22
Contract construction	17,162	6.57
Federal, civilian	14,451	5.54
Metal mining	42	.02
Chemicals & allied prod.	5,790	2.22
Primary metals	3,476	1.33
Printing & publishing	2,380	.91
Paper & allied prod.	2,470	.95
Electrical equip. & supplies	3,667	1.40
Apparel & other textile prod.	3,346	1.28
Food & kindred prod	4,640	1.78
Textile mill prod.	5,047	1.93
Federal, military	9,523	3.65
Trans., exc. motor vehicles	2,512	.96
Other industries	1,069	.41

Source: Southern Growth Trends 1970-1976.

TABLE II-102

PERCENT OF FAMILIES BY INCOME LEVEL, 1970

State	$0-2,999	$3-4,999	$5-6,999	$7-9,999	$10-14,999	$15-24,999	$25 and up	Total (thousands)
Alabama	18.5	14.4	15.1	20.8	20.0	8.9	2.4	875
Arkansas	22.0	17.3	16.6	19.9	16.2	6.2	1.9	506
Florida	11.7	12.9	13.9	19.3	26.3	11.8	4.1	1,905
Georgia	14.0	12.7	14.4	20.7	22.9	12.0	3.3	1,141
Kentucky	18.5	14.0	14.3	20.7	20.9	9.2	2.4	825
Louisiana	18.9	13.7	13.8	20.0	20.8	9.9	2.9	873
Mississippi	25.2	16.5	15.4	18.2	16.4	6.4	1.9	534
North Carolina	14.6	13.7	15.8	22.2	22.2	9.0	2.5	1,292
Oklahoma	15.6	13.9	15.0	21.3	21.2	10.1	2.9	679
South Carolina	15.8	13.7	15.7	21.6	22.0	8.9	2.2	629
Tennessee	16.8	14.4	15.5	21.3	20.4	9.0	2.6	1,024
Texas	13.1	12.5	13.8	20.7	23.4	12.7	3.8	2,818
Virginia	11.0	11.0	13.4	20.8	23.9	15.2	4.7	1,163
West Virginia	17.1	14.6	14.8	23.7	20.1	7.8	1.8	454
South	15.3	13.4	14.5	20.7	22.2	10.7	3.2	14,720
U.S.	8.9	10.4	11.8	19.9	26.8	17.6	4.6	51,168

Source: County and City Data Book, 1972.

TABLE II-103

FAMILIES BELOW POVERTY LEVEL IN THE SOUTH, 1975

State	Number of Families (in thousands)	Percent of Families
Alabama	125	12.9
Arkansas	82	14.1
Florida	259	11.0
Georgia	188	14.6
Kentucky	136	14.9
Louisiana	141	15.0
Mississippi	122	20.4
North Carolina	182	12.1
Oklahoma	83	11.1
South Carolina	94	12.9
Tennessee	146	12.6
Texas	381	11.7
Virginia	110	8.3
West Virginia	57	11.5
South	2,106	13.1
U.S.	5,051	9.0

Source: Statistical Abstract, 1977.

TABLE II-104

FEDERAL FOOD STAMP PROGRAM IN THE SOUTH, 1975

State	Persons Participating (in thousands)	Value of Coupons (in millions of dollars)
Alabama	393	155.8
Arkansas	267	115.2
Florida	767	281.9
Georgia	569	205.9
Kentucky	449	191.4
Louisiana	502	216.8
Mississippi	390	162.7
North Carolina	537	192.3
Oklahoma	184	72.0
South Carolina	421	172.2
Tennessee	435	170.8
Texas	1,085	469.3
Virginia	293	104.5
West Virginia	204	88.4
South	6,496	2,599.2
U.S.	19,197	7,265.4

Source: Statistical Abstract, 1977.

TABLE II-105

RATE OF FOOD PROGRAM PARTICIPATION IN SOUTHERN STATES, 1972

State	Percent of Poor Participating	Percent of Those Below 125% of Poverty Income Participating
Alabama	45.5	35.4
Arkansas	47.1	36.0
Florida	45.3	33.1
Georgia	43.8	33.2
Kentucky	56.5	43.6
Louisiana	56.8	44.7
Mississippi	46.0	37.6
North Carolina	30.2	22.6
Oklahoma	38.9	—
South Carolina	60.9	44.6
Tennessee	39.9	30.2
Texas	47.5	35.1
Virginia	31.6	23.2
West Virginia	60.7	—

Source: The Future of the South.

TABLE II-106

CONSUMER PRICE INDEX, BY MAJOR CATEGORY
1971-75

	1971	Percent Change	1972	Percent Change	1973	Percent Change	1974	Percent Change	1975	Percent Change	Percent Change 1971-75	Dec. 1975
All Items												
The South	121.5	NA	124.8	2.7	133.0	6.6	149.0	12.0	163.7	9.9	34.7	168.7
United States	121.3	4.3	125.3	3.3	133.1	6.2	147.7	11.0	161.2	9.1	32.9	166.3
Food												
The South	118.9	NA	123.6	4.0	142.9	15.6	164.0	14.8	178.7	8.9	50.3	183.4
United States	118.4	3.0	123.5	4.3	141.4	14.5	161.7	14.4	175.4	8.5	48.1	180.7
Housing												
The South	125.3	NA	129.4	3.3	135.6	4.8	153.4	13.1	171.8	12.0	37.1	178.0
United States	124.3	4.5	129.2	3.9	135.0	4.5	150.6	11.6	166.8	10.8	34.2	172.2
Apparel and Upkeep												
The South	120.0	NA	122.3	1.9	127.7	4.4	137.3	7.5	144.0	4.9	20.0	147.3
United States	119.8	3.2	122.3	2.1	126.8	3.7	136.2	7.4	142.3	4.5	18.8	145.2
Transportation												
The South	117.0	NA	116.4	-0.5	120.0	3.1	136.0	13.3	149.2	9.7	27.5	154.8
United States	118.6	5.2	119.9	1.1	123.8	3.3	137.7	11.2	150.6	9.4	27.0	157.6
Health & Recreation												
The South	122.1	NA	125.7	2.9	129.8	3.3	140.9	8.6	154.7	9.8	26.7	158.5
United States	122.2	5.2	126.1	3.2	130.2	3.3	140.3	7.8	153.5	9.4	25.6	157.5

Source: Southern Growth Trends 1970-1976.

TABLE II-107

AGE BREAKDOWN OF HOUSING STOCK IN THE SOUTH

State	Percent Occupied			Total (thousands)
	Prior to 1950	1950-59	1960-70	
Alabama	46.9	23.4	29.7	1,034.1
Arkansas	51.0	19.3	29.7	615.4
Florida	58.8	19.2	22.0	2,284.8
Georgia	42.7	23.0	34.3	1,369.2
Kentucky	55.0	19.8	25.2	983.6
Louisiana	46.9	25.0	28.1	1,052.1
Mississippi	49.7	20.5	29.8	636.8
North Carolina	46.6	22.5	30.8	1,509.6
Oklahoma	52.2	21.6	26.2	850.8
South Carolina	45.5	23.0	31.5	734.4
Tennessee	46.9	22.9	30.1	1,212.9
Texas	41.6	28.3	30.2	3,433.6
Virginia	45.1	23.2	31.7	1,390.6
West Virginia	68.0	15.9	16.1	547.2
South	48.5	23.0	28.6	17,655.1
U.S.	53.5	21.4	25.1	67,657.0

Source: 1970 Census of Population.

TABLE II-108

NEW CONSTRUCTION RATE OF HOUSING UNITS IN THE SOUTH IN 1970

State	Privately Owned Units			Publicly Owned	Privately Owned Structures With 5 or More Units
	1 Unit	2-4 Units	5 or More Units		
Alabama	11,235	885	4,886	1,601	352
Arkansas	4,948	609	3,069	844	240
Florida	42,440	7,876	53,923	1,959	2,361
Georgia	24,185	1,376	25,656	2,631	1,930
Kentucky	7,537	450	8,173	1,500	450
Louisiana	11,838	1,662	5,293	550	252
Mississippi	7,277	537	4,561	24	413
North Carolina	16,679	2,599	11,023	2,231	1,114
Oklahoma	8,416	868	8,961	616	488
South Carolina	15,878	1,309	4,198	550	370
Tennessee	14,157	1,607	6,735	2,270	306
Texas	36,840	3,319	53,345	762	2,616
Virginia	24,841	2,235	16,447	175	1,409
West Virginia	1,212	174	1,130		55
South	227,483	25,506	207,400	15,713	12,356
U.S.	646,767 (35.2%)	88,096 (29.0%)	616,671 (33.6%)	32,494 (48.4%)	35,016 (35.3%)

Source: 1970 Census of Population.

TABLE II-109

HOUSING CONDITIONS IN THE SOUTH, 1970—CROWDING
(IN THOUSANDS OF OCCUPIED UNITS)

State	Persons Per Room			Total
	1 or Less	1.01-2.00	More Than 2	
Alabama	89.1%	9.6%	1.3%	1,034.1
Arkansas	89.5	9.4	1.1	615.4
Florida	91.4	8.0	.6	2,284.8
Georgia	89.3	9.6	1.1	1,369.2
Kentucky	89.7	9.6	.7	983.6
Louisiana	85.8	12.8	1.4	1,052.1
Mississippi	85.1	12.4	2.5	636.8
North Carolina	90.0	9.3	.7	1,509.6
Oklahoma	92.9	6.8	.3	850.8
South Carolina	88.0	10.8	1.2	734.4
Tennessee	90.5	8.7	.8	1,212.9
Texas	88.9	9.9	1.2	3,433.6
Virginia	92.3	7.2	.5	1,390.6
West Virginia	91.1	8.3	.6	547.2
South	89.7	9.3	1.0	17,655.1
U.S.	91.8	7.4	.8	67,657.0

Source: 1970 Census of Population.

TABLE II-110

HOUSING IN 1975: THE SOUTH* AND THE U.S.
(BLACK HOUSEHOLD HEAD)

	South	U.S.	Ratio
Number of Occupied Housing Units	3,854	7,561	51.0 %
Year Structure Built			
1970-1975	12.8%	9.4%	1.36
1960-1970	22.4	18.8	1.19
1950-1960	17.7	15.5	1.14
Prior to 1950	47.2	56.3	.84
Crowding			
Less than one person per room	84.6	87.8	.96
More than one person per room	15.4	12.2	1.26

*South is here defined to include Delaware, Maryland, and Washington, D.C.

Source: 1975 Annual Housing Survey.

TABLE II-111

PERCENT OF ALL HOUSEHOLDS WHICH OCCUPY SUBSTANDARD HOUSING UNITS IN SOUTHERN STATES, BY RACE OF OCCUPANT, BY STATE, 1970

State	Race of Occupant	
	Negro	White and Other
Alabama	44.4	11.0
Arkansas	53.0	13.3
Florida	27.0	4.1
Georgia	39.7	7.9
Kentucky	26.0	20.1
Louisiana	35.4	6.0
Mississippi	58.4	10.8
North Carolina	43.5	10.5
Oklahoma	24.7	7.4
South Carolina	54.3	8.4
Tennessee	26.2	13.9
Texas	25.3	7.2
Virginia	37.7	9.6
West Virginia	32.6	17.6
South	37.7	10.6

Source: The Future of the South.

TABLE II-112

NEW CONSTRUCTION RATE OF HOUSING UNITS IN THE SOUTH IN 1975

State	Privately Owned Units			Publicly Owned	Privately Owned Structures With 5 or More Units
	1 Unit	2-4 Units	5 or More Units		
Alabama	9,792	724	2,105	161	165
Arkansas	5,300	720	637	210	56
Florida	33,899	4,391	8,301	1,398	552
Georgia	18,718	602	1,221	468	80
Kentucky	7,659	667	2,207	142	176
Louisiana	9,340	591	1,068	700	59
Mississippi	4,643	173	403	16	49
North Carolina	17,003	928	1,815	1,147	196
Oklahoma	8,701	581	926	0	104
South Carolina	12,166	598	2,082	512	144
Tennessee	10,711	1,112	2,202	459	86
Texas	39,138	2,380	20,767	464	1,303
Virginia	27,025	630	5,555	0	464
West Virginia	1,240	189	643	0	40
South	205,335	14,286	49,932	5,677	3,474
U.S.	675,480 (30.4%)	63,844 (22.4%)	199,835 (25.0%)	10,075 (56.3%)	13,158 (26.4%)

Source: Construction Reports, Housing Authorized by Building Permits and Public Contracts C40-75-13.

TABLE II-113

HOSPITAL FACILITIES IN THE SOUTH IN 1975

State	Active Physicians	Physician/ Patient Ratio	Hospitals	Beds (thousands)	Patients Admitted (millions)
Alabama	3,802	105	147	25.4	.7
Arkansas	2,207	105	96	11.7	.4
Florida	13,691	165	239	55.0	1.5
Georgia	6,548	133	182	31.3	.9
Kentucky	4,209	124	127	19.7	.6
Louisiana	5,194	136	156	24.6	.7
Mississippi	2,376	101	115	17.4	.4
North Carolina	7,193	132	161	34.4	.9
Oklahoma	3,171	117	147	17.5	.5
South Carolina	3,311	118	88	18.3	.5
Tennessee	5,907	142	158	30.3	.8
Texas	17,488	143	571	78.6	2.3
Virginia	7,812	157	129	32.3	.8
West Virginia	2,238	124	86	16.0	.4
South	85,147	136	2,402	412.5	11.4
U.S.	366,425 (23.2%)	170	7,156 (33.6%)	1,465.8 (28.1%)	36.2 (31.5%)

Source: Statistical Abstract, 1977.

TABLE II-114

DEATH RATES FOR THE TEN LEADING CAUSES OF DEATH, BY STATE, 1974
(RATES PER 100,000)

	Diseases of the heart	Malignant neoplasms	Cerebrovas-cular disease	Accidents	Influenza & pneumonia	Diabetes mellitus	Cirrhosis of the liver	Arterio-sclerosis	Certain early infancy diseases	Bronchitis, emphasema & asthma	Death rate (per 1000)	Birth rate (per 1000)
Alabama	323.7	158.8	126.9	67.1	23.5	20.0	10.3	14.1	18.1	11.8	9.7	16.6
Arkansas	385.9	192.5	144.7	61.3	27.2	20.1	9.0	18.6	14.4	14.5	10.8	16.8
Florida	400.0	218.1	118.3	56.1	26.6	18.0	20.5	16.2	12.7	17.7	10.9	13.6
Georgia	304.9	137.6	114.8	64.2	26.6	14.3	12.9	12.7	16.2	12.0	8.8	17.1
Kentucky	392.4	175.6	116.9	57.4	27.8	18.7	11.6	17.7	13.3	12.9	10.0	15.9
Louisiana	329.4	158.5	98.2	60.5	21.6	21.4	10.6	15.4	18.0	11.2	8.9	17.5
Mississippi	332.9	160.2	126.9	65.3	23.9	18.2	8.5	12.8	23.3	10.5	10.0	19.0
North Carolina	311.9	140.5	103.1	60.1	24.0	18.4	13.3	12.4	17.3	11.1	8.6	15.7
Oklahoma	375.7	175.0	123.1	62.3	31.5	15.3	12.6	19.7	15.1	12.0	10.1	15.7
South Carolina	301.1	135.8	103.7	67.7	22.2	20.8	11.1	10.1	19.6	10.8	8.7	17.4
Tennessee	353.6	162.6	125.6	61.4	25.1	14.9	10.6	15.7	14.9	13.9	9.5	15.6
Texas	281.3	147.3	94.6	55.1	25.0	15.0	11.7	15.2	16.6	12.2	8.3	17.5
Virginia	299.3	152.5	85.3	52.1	27.7	14.7	13.1	13.2	14.1	10.7	8.2	14.5
West Virginia	443.2	181.7	108.9	56.2	31.5	19.9	15.0	17.4	18.2	16.8	10.9	15.6
South	345.4	164.0	113.6	60.5	26.0	17.8	12.2	15.1	16.6	12.7	9.5	16.3
U.S.	349.2	170.5	98.1	49.5	25.9	17.7	15.8	15.3	13.6	12.7	9.2	14.9
% difference from U.S.	-1	-4	+16	+22	0	+1	-23	-1	+22	0	+3	+9.4

Source: U.S. National Center for Health Statistics, Vital Statistics of the United States, annual reproduced in Statistical Abstracts of the United States, 1976, Tables 74, 90, and 94.

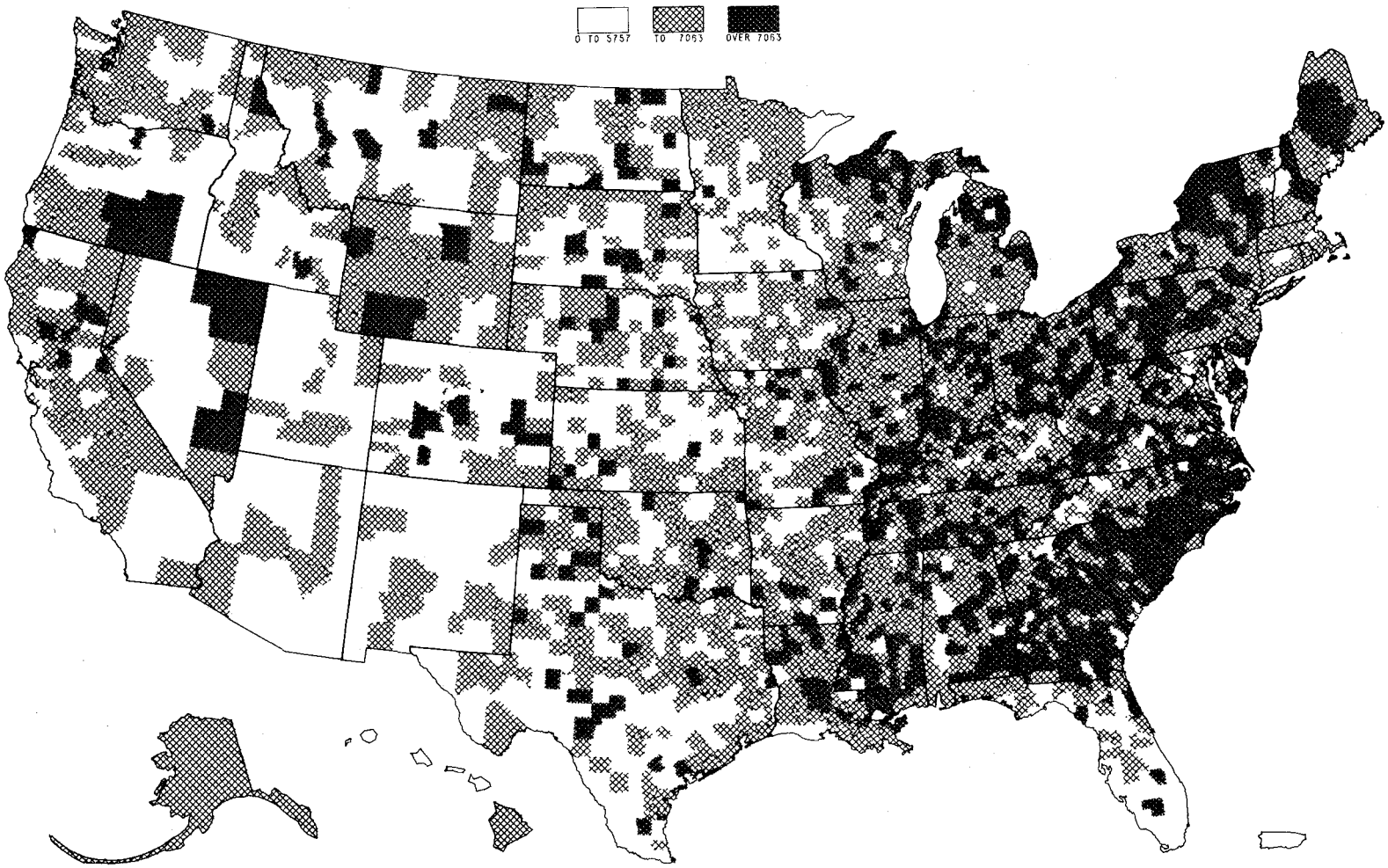

Fig. II-103. Age-Adjusted Mortality from Major Cardiovascular Diseases (ICDA 390-446) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

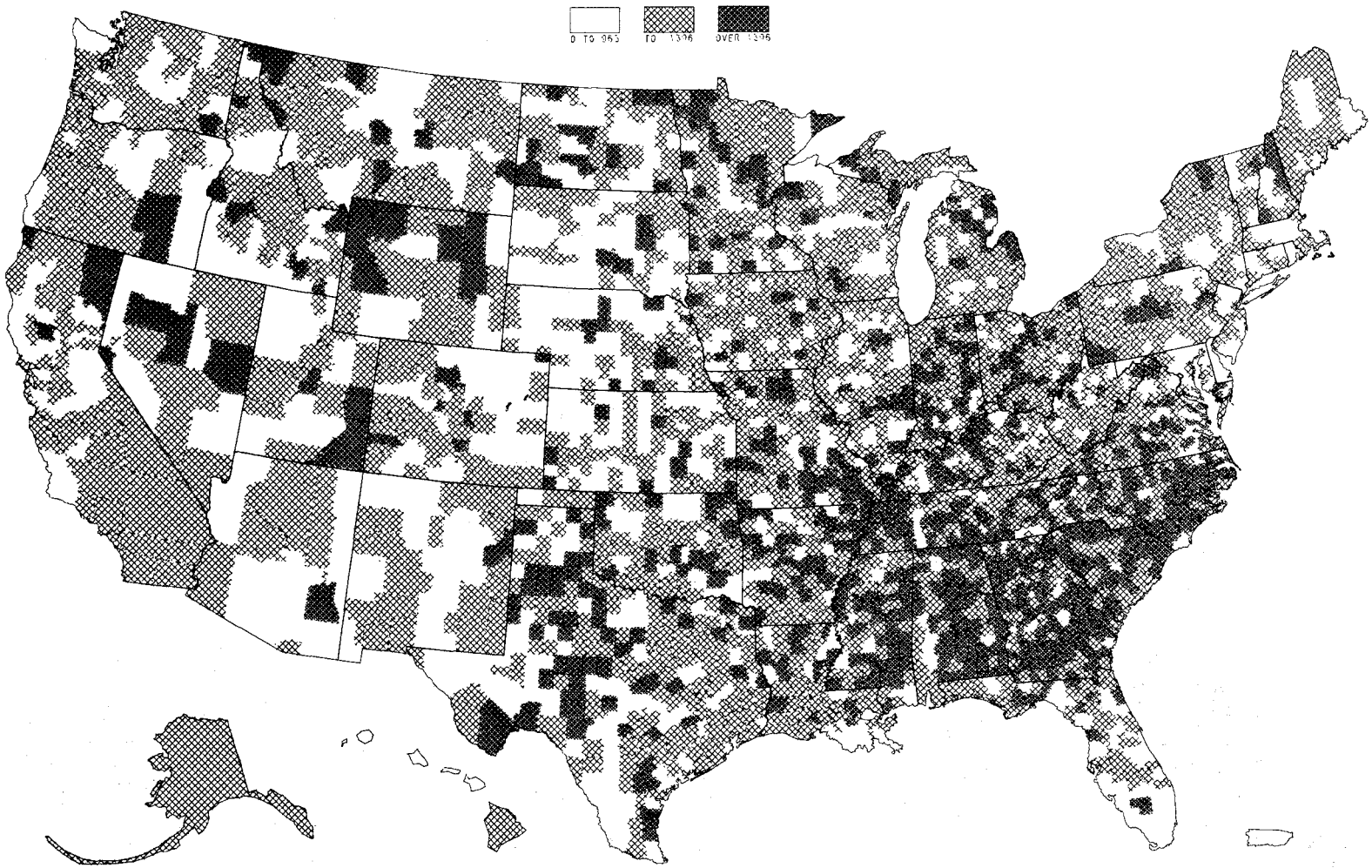

Fig. II-104. Age-Adjusted Mortality from Cerebrovascular Disease (ICDA 430-438) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

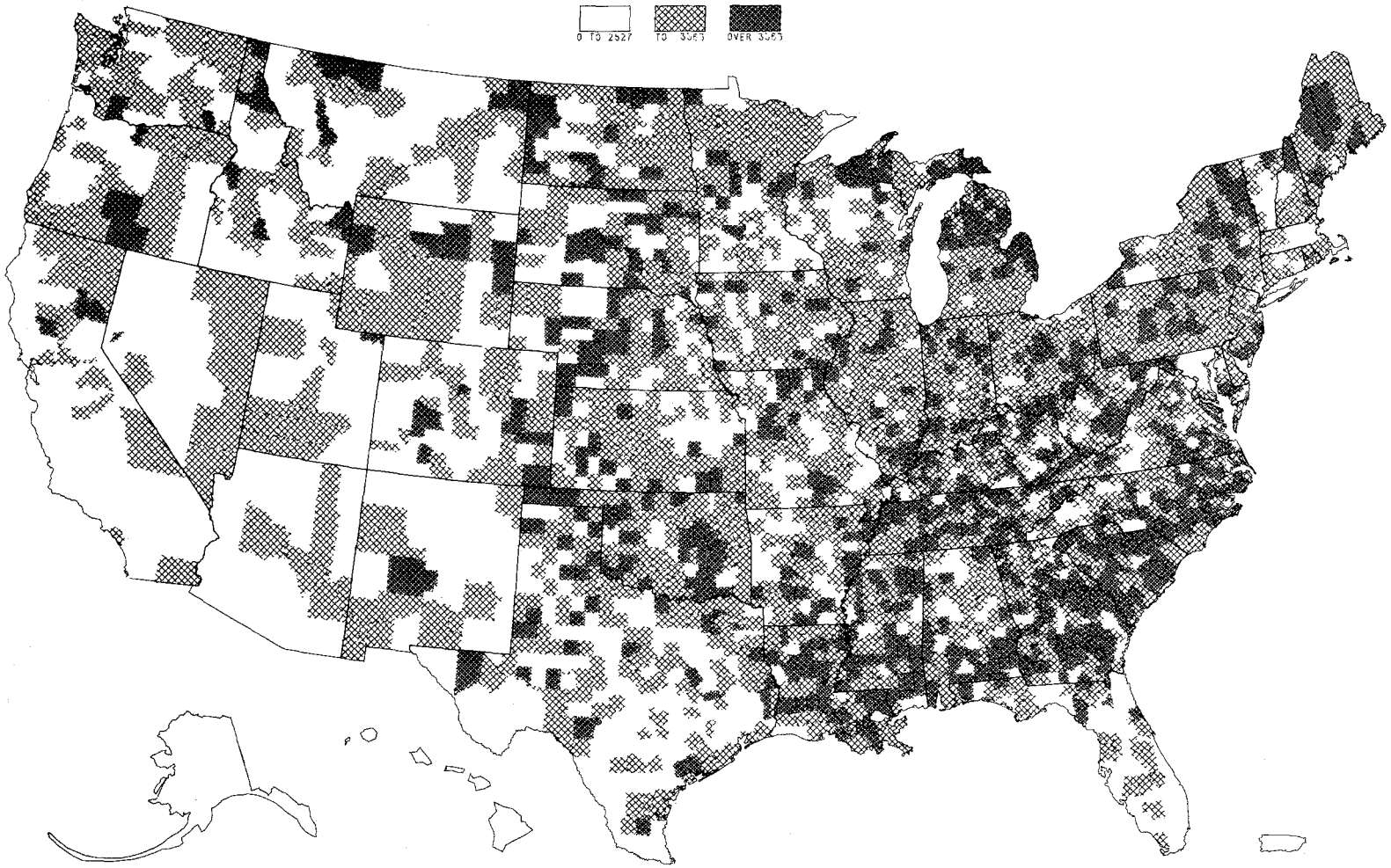

Fig. II-105. Age-Adjusted Mortality from Acute Ischemic Heart Disease (ICDA 410-411) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

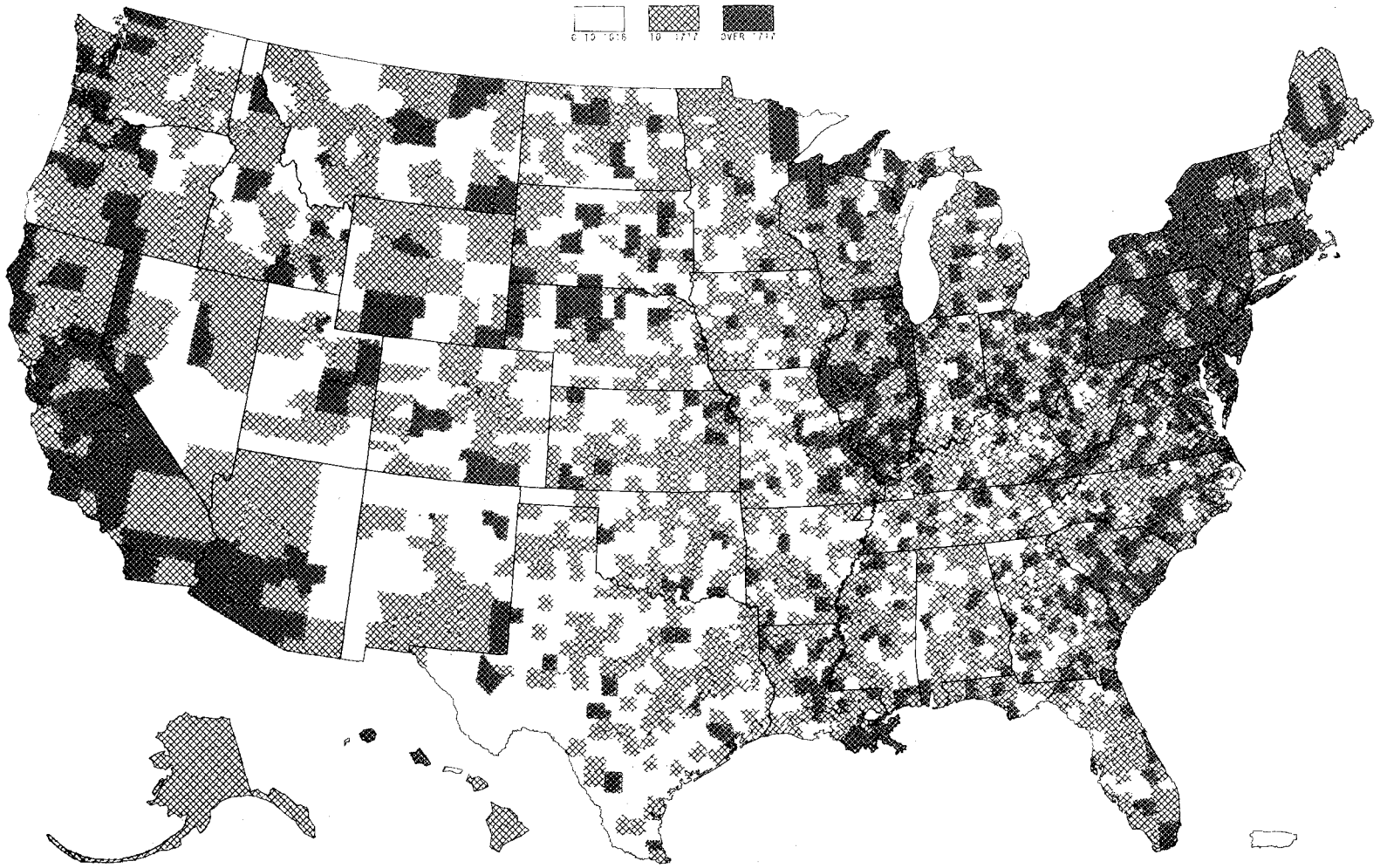

Fig. II-106. Age-Adjusted Mortality from Chronic Ischemic Heart Disease (ICDA 412-413) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

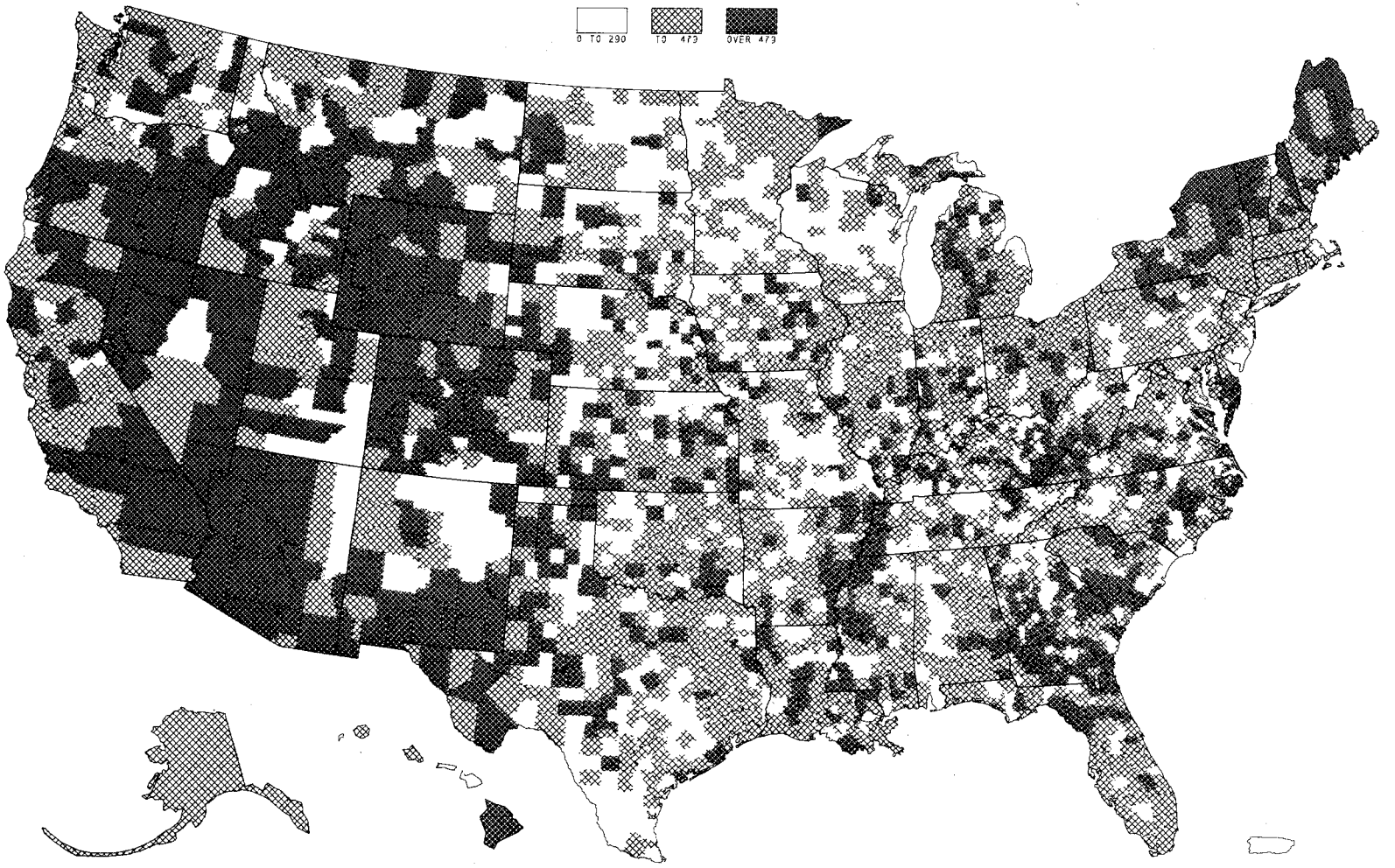

Fig. II-107. Age-Adjusted Chronic Respiratory Disease Mortality (ICDA 490-493, 517-519) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

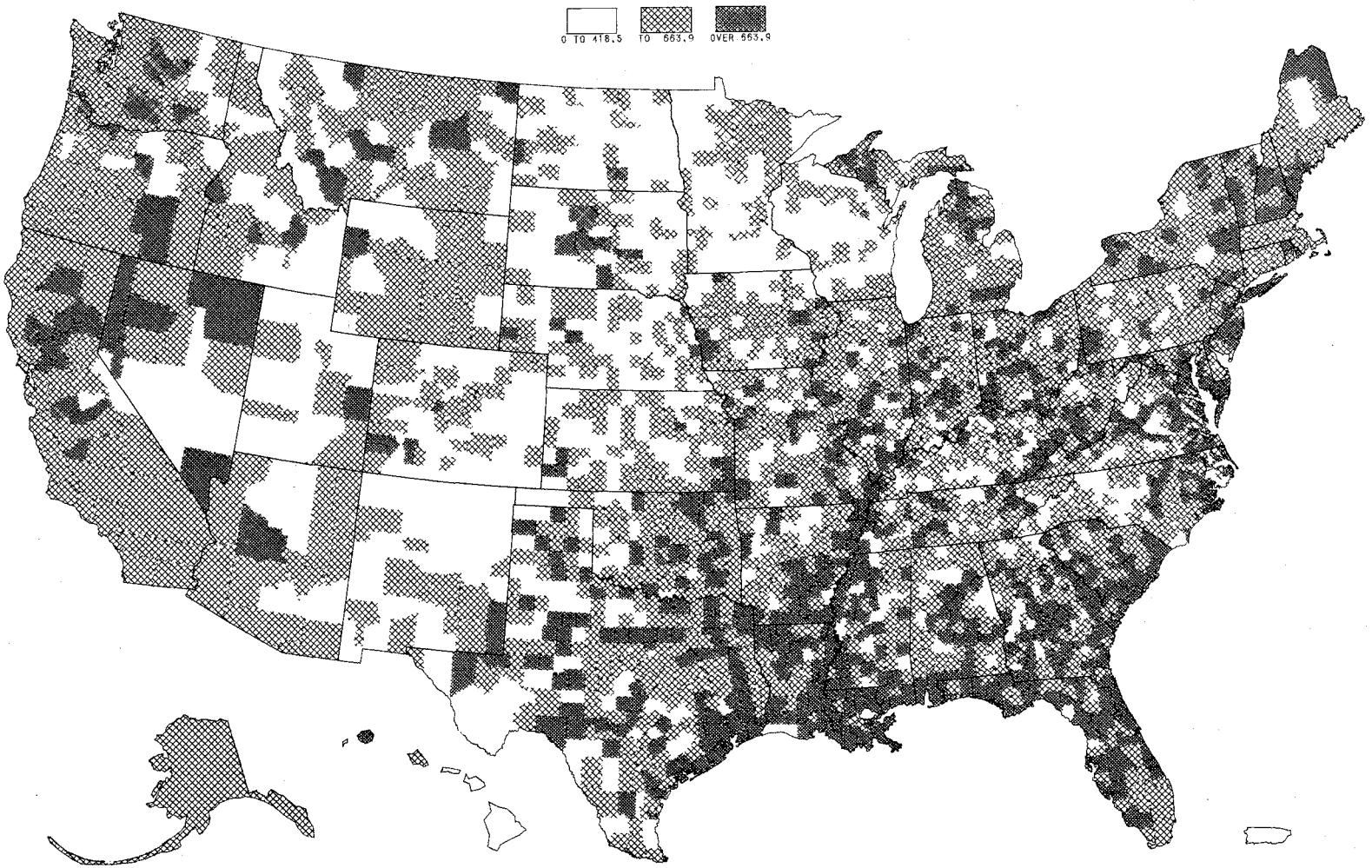

Fig. II. 108. Age-Adjusted Respiratory Cancer Mortality (ICDA 160-163) Per 1,000,000 Population at Risk. White Males, 1968-1972. Source: Council on Environmental Quality.

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III. PERSPECTIVES AND DATA ON INSTITUTIONAL CONDITIONS

A. Regional Overview

The institutions affecting environmental and energy issues in the Southern region are as diverse as the physical environment, energy resources, population, and economics of the region. Several Federal agencies have activities affecting the region, and all of the Standard Federal Region IV, most of Region VI, and 2 states of Region II are included in our reporting area (Fig. III-1). Major Federal agencies are identified in Section III-B, along with their regional offices and numerous other regional and interstate organizations.

Title V Commissions are regional acting planning commissions created under Title V of the Public Works and Economic Development Act of 1965. There are now eight commissions covering 34 states, with some states belonging to more than one (Fig. III-2). Five more commissions have been proposed (Fig. III-3), including two in the Southern region. River Basin Commissions to coordinate water resource planning from the federal to the local levels were created under Title II of the Water Resources Planning Act of 1962. Though 33 states are members of one or more of the six commissions, only the Ohio River Basin Commission contains Southern states (KY, WV, parts of TN, VA, and SC). However, other states do belong to interstate compact commissions. There are several other interstate organizations, having only States as members, dealing with water resources, mining, oil, forest fire protection, fisheries, energy, and economic growth. These organizations are detailed in Section III-B.

Two of the best known of these regional organizations are the Tennessee Valley Authority, a government-owned corporation, which conducts a unified program of resource development for the advancement of economic growth in the Tennessee Valley region, and the Appalachian Regional Commission, a quasi-official regional agency covering special programs for thirteen Middle Atlantic and Southern states. Also, the South has the oldest existing regional energy organization known — the Southern State Energy Board (known earlier as the Southern Interstate

Nuclear Board), established in 1961 as the scientific and technical office of the Southern Governors' Conference. The SSEB serves 16 states and Puerto Rico, and has just been selected by the Department of Energy to establish and operate a southern center for energy and environmental information. Smaller but equally important to other parts of the region are the Southwest Regional Energy Board, the Coastal Plains Regional Commission, and the Ozarks Regional Commission.

Until recent years the state institutions supporting and/or governing environmental-energy factors were fragmented or non-existent. Within each state the institutional mechanisms now appear to be evolving into central agencies dealing with energy and environmental concerns.

Though state environmental agencies and regulations have existed in some states since 1949, most of the laws and regulations have been enacted in the past ten years. Thirty-two states have reorganized their assorted environmental organizations into central agencies between 1967 and 1974 (Table III-7). Six of these 32 states are in the South: Arkansas, Florida, Georgia, Kentucky, North Carolina, and South Carolina. Since 1974 four more Southern states have reorganized (Louisiana, Oklahoma, Tennessee and Mississippi), providing consolidation of environmental functions in more than half of the South.

The institutional apparatus for dealing with energy is of very recent origin. Most energy legislation, regulation, and other institutional structures have come about after the 1973 OPEC embargo forced the nation to acknowledge that the era of "cheap energy" is coming to an end. State energy offices have been established in all of the states, one half created by statutes and the other half by executive order. Only 6 of the 14 Southern state offices are separate agencies (compared to only 18 of 50 for U.S.); the others are part of another organization, primarily the Governor's office or state planning units. Federally funded for the most part (a nationwide trend), only Arkansas, Kentucky, and North Carolina provide significant levels of state funding (30-40%; see Table III-8).

State summary tables for the major environmental-energy issues are included in Section III-C on State Legislation, Standards, and Regulations; and reasonably complete listings of state environmental laws and

regulations are compiled in Table III-27. Many of these laws and regulations are patterned after the Federal legislation covering air, water, waste disposal, and some land use.

For instance, the Federal Surface Mining Control and Reclamation Act passed in 1977 requires states to adopt Federally approved plans for reclamation of mined land or lose the right to issue new surface mining permits. In 1978, Kentucky, Oklahoma, Virginia and West Virginia passed legislation to comply with this legislation. Table III-18 surveys states of mining laws and regulations in the Southern region. Another Federal Act, The Resource Conservation and Recovery Act of 1976, requires new state plans for solid waste disposal and control of hazardous wastes. Though the final Federal regulations for hazardous waste control have not been finalized, some states are passing legislation that may be more restrictive than the final Federal regulations. Kentucky, Tennessee, Louisiana, and Georgia have passed hazardous waste control laws, and Table III-17 reviews solid waste practices as of 1977. The special problem of nuclear wastes is also discussed under energy legislation.

With the nation's national energy policy in a state of flux, the states' energy policies are being developed with widely different legislative patterns reflecting the diverse energy resources and political climates within the 14 states. Some indication of how the Southern states are approaching these issues can be found in Tables III-25 and III-26, and a few pertinent energy state laws and regulations are listed in Table III-27.

Compilations of state energy legislation have been published by the Southern States Energy Board (Southern Interstate Nuclear Board) (1974, 1978) and the National Conference of State Legislatures (1975, 1976, 1977 [in press]). The 1975-1977 collections include complete copies of the energy bills, and Table III-26 presents a simple categorized record of this legislation. Both organizations, along with the Council of State Governments, publish special collections of laws and regulations dealing with solar energy, energy facility siting, emergency planning, conservation, etc. The South's greatest concern has been in developing its varied energy resources while protecting its relatively good environment and, more recently, guarding against rapid depletion of the region's energy

reserves. Approximately 100 actions by the 14 states during 1975-1977 dealt with resource development. Aware that accelerated resource development requires additional state and local services, all the Southern states except South Carolina and West Virginia had some severance taxes on the extraction of natural resources by 1975 (Table III-19). Since then West Virginia has established a mechanism for county collection and use of coal severance taxes. Louisiana has approached revenue gain on resources by studying "first use" taxes on oil and gas coming ashore in that state, while Kentucky has levied a 10¢/lb. tax on radioactive waste delivered to that state for disposal.

New laws and regulations have been passed to deal with emerging energy resources such as geothermal in Louisiana and Texas, energy recovery from wastes in Florida and Tennessee, and solar energy in Florida, Louisiana, Arkansas, Georgia, Tennessee and Virginia.

Though nuclear safety has become a highly visible issue in other regions of the country, it has not surfaced in the South to any significant degree. However, nuclear waste disposal is a more active issue in the region, with Kentucky and South Carolina containing existing radioactive waste disposal sites and salt domes in states such as Louisiana being considered by the Federal government as potential disposal sites. Kentucky's excise tax on hazardous material being disposed of is unique, and may set the stage for additional state revenue bills.

The state energy legislation record (Tables III-25 and III-26) also reflects the states' strong activity in the area of utilities. Rising utility prices have increased public pressure on state legislators to exercise regulatory control on the costs of utility services; legislation in Kentucky, North Carolina, Oklahoma, Tennessee, and West Virginia has centered upon study of utility regulation in general and rate increases in particular. The utility control issue is being extended to include environmental and social concerns in facility siting decisions; until recently, the only criterion for facility siting was growing customer demand. Figure III-6 shows the major electric utilities in the South, and listings of the major electrical utilities state-by-state are given in Section III-B. The status of public utility regulation in the South is given in Table III-10. The Public Service Commissions or Public

Utilities Commissions regulate electric light and power (11 states), natural gas (14 states), energy pipelines of various kinds (12 states), and most transportation networks. In 3 of the 4 states having power plant siting legislation, the Commission controls siting (Table III-15). In 1978 Kentucky altered by law the structure of its Public Service Commission, distinguishing between "energy" and "non-energy" types of utilities and creating separate regulatory commissions.

The significant energy/environmental issues as seen from the Southern states' viewpoint are being collected and summarized by Fred Boercker and his associates in the Regional Studies Program at ORNL as well as by organizations such as the Southern States Energy Board. With all fuels, environment concerns are a significant factor to the states. The Southern states view transportation and economic questions as particularly pertinent in the case of coal, petroleum and natural gas, and solar; and identify problems with either Federal regulations and policy or the government infrastructure as significant in consideration of coal, petroleum and natural gas, nuclear, and solar resources. Tables reviewing state issues on each major fuel resource are reprinted from ORNL/TM-6280 (Draft), Identification of Energy and Environmental Issues in the South: Views of Officials from Selected State Agencies. As noted earlier, two oil- and gas-producing states and two coal-producing states from the South provide over 50% of the nation's total domestic energy production. Though the different fuels often reflect different problems, certain common problems for the three fuel cycles have been identified in these tables:

1. A lack of regional flexibility — uniform Federal rules and regulations do not fit the situations in all regions in a equitable manner.

2. Mandates such as industrial conversion from gas or scrubbers on all power plants shift energy demands in the region without full consideration of regional impacts.

3. Transportation and distribution concerns — Simultaneous import/export of various fuels requires attention to vehicles for energy flow.

4. Reserves conservation — should region be exporting its dwindling supplies of the exhaustible fuels and intergenerational considerations.

Data Quality, Gaps and Limitations

Most of the material in this chapter is being summarized for the first time, and comprehensive sources for all the needed information have not been located. The data given does not include a guide to the interaction between different levels of government or more than a fundamental identification of most of the players.

The summary of state organizations was compiled from existing sources and updated by a telephone survey of the affected state agencies in July 1978. The listing of state laws and regulations (Table III-27) is more comprehensive in the environmental than in the energy area; however, the summary tables of types of state legislation during 1974-1978 may alleviate some of the imbalance between environment and energy. Wherever possible, a reference to a copy of the complete legislation in Environmental Reporter or on microfiche from the Environmental Information Center has been given in Table III-27.

		Resolution of data presented	Finer resolution of available data
B.	Institutional Structures	Major Federal agencies State agencies concerned with environment and energy development.	County-level data sometimes available, but too voluminous for data book.
C.	Standards and Regulations	Environmental laws and regs. for air and water pollution control and solid waste disposal.	Strip mining, water rights, shoreland protection, sediment control, endangered species, mining spoils and dumping laws and regs. are not available from recommended sources. Available from state environmental control agencies or state legislative research services by mail or phone, but it is too time consuming to obtain.
		Environmental laws and regs.	Copies of many of the laws cited available at laboratory.
		Energy laws	Energy laws through 1978 are not available from recommended sources (Energy Conservation Project and Energy: The State's Response). Best available data included in data book; copies of many of the laws cited through 1976 are available at laboratory.
		Correct legal citation (codified version) of energy and environmental laws.	Available through mid 1977 by phone from secretary of state and/or legislative research service, but it is too time consuming and imposes on state agencies. Laws passed in late 1977 and 1978 are not yet codified.

TABLE III-1

REGIONAL COAL ISSUES

Type of issue or problem	State commenting on issue:													
	AL	AR	FL	GA	KY	LA	MS	NC	OK	SC	TN	TX	VA	WV
ENVIRONMENTAL PROBLEMS	X	X	X	X	X	X	X	X	X	X		X	X	X
Air quality -- SO_2, NO_x, particulates	X	X	X	X	X	X	X	X	X	X		X	X	X
Water quality -- acid leaching acid rain	X	X	X	X	X	X	X	X	X	X			X	X
Water quantity			X	X			X	X	X	X		X	X	
Land disturbances; land area impacts	X		X		X		X		X					X
Thermal impacts		X	X					X						X
Waste disposal -- ash, sludge, catalysts					X			X						
Other: aesthetics, barge traffic impact, etc.			X						X				X	
TRANSPORTATION PROBLEMS		X	X	X	X	X	X		X				X	X
Barge, ship			X		X									
Rail lines		X	X	X	X	X	X		X					X
Coal haul roads, truck					X		X						X	X
Rail vs slurry		X							X					
FEDERAL REGULATIONS & POLICY	X				X		X	X		X	X	X	X	X
Overlapping agency authority											X	X		
Lack of regional flexibility													X	
Impact on coal production and use	X						X	X		X		X	X	X
Lack of Federal commitment to coal; incentives					X		X	X		X				
SHORTAGES	X			X	X					X			X	X
Risk capital					X					X				
Skilled labor; labor-management strife	X				X									X
Equipment -- hopper cars, mining equipment boilers	X			X									X	
ECONOMIC PROBLEMS & NEED FOR INFORMATION		X		X	X		X					X	X	X
Economic comparison: coal vs other fuels		X			X		X					X		
Economic comparison: direct burn coal vs utility use				X										
Economic comparison: capture methan vs vent it													X	X
Advice on uses of high-sulfur coal													X	
Advice to industry regarding best coal technologies				X										X
GOVERNMENT INFRASTRUCTURE PROBLEMS			X	X				X		X		X		
Interstate decisions regarding utility siting			X											
Federal-state-local responsibilities			X	X				X		X		X		
LIGNITE POTENTIAL		X				X						X		
Economic/environmental costs and benefits		X				X						X		
Assess reserves and chemical properties		X				X						X		
OTHER			X	X	X			X				X	X	X

TABLE III-2

REGIONAL PETROLEUM AND NATURAL GAS ISSUES

Type of issue or problem	State commenting on issues:													
	AL	AR	FL	GA	KY	LA	MS	NC	OK	SC	TN	TX	VA	WV
ENVIRONMENTAL PROBLEMS		X	X	X	X	X		X	X				X	X
Oil spills from ships and from tanker trucks			X	X	X			X	X				X	
Hydrocarbon emissions — wells, refineries, autos			X	X	X	X		X	X				X	
Brine from wells		X			X				X					X
SO_2 from burning high-sulfur oil		X						X	X				X	
Offshore drilling			X	X									X	
ECONOMIC IMPACTS	X	X	X			X	X	X	X	X		X	X	
Deregulation of natural gas		X							X	X		X	X	
Industrial conversion: gas to coal		X	X			X	X		X					
National energy planned taxes and rebates	X					X		X	X			X		
Contingency plans for gas										X		X		
DISTRIBUTION AND STORAGE PROBLEMS	X				X	X	X	X	X	X	X		X	
Adequacy of pipelines	X				X			X	X	X	X		X	
Adequacy of storage, including strategic reserve	X						X	X		X	X		X	
Energy cost of mandated regional energy shifts						X								
Safety and adequacy of winter propane transportation	X									X	X		X	
GOVERNMENT INFRASTRUCTURE	X		X				X	X		X		X		
Need state & county data to monitor gas	X		X					X						
Federal-state-local coordination and conflict	X							X						
Contingency plans — legality; rational basis	X						X		X	X				
PETROLEUM-NATURAL GAS RESOURCE ASSESSMENT		X	X			X		X	X			X	X	X
Assess amount recoverable by enhanced recovery technology						X			X			X		X
Assess oil and natural gas resources accurately								X					X	
Assess oil shale resources & environmental impacts		X												X
Redefine "new oil"									X			X		
Legal problems of mineral rights and surface rights									X					X
U.S.G.S. core sample data made available			X											
OTHER		X	X	X	X		X	X	X	X	X	X		

TABLE III-3

REGIONAL NUCLEAR ISSUES

Type of issue or problem	State commenting on issue:													
	AL	AR	FL	GA	KY	LA	MS	NC	OK	SC	TN	TX	VA	WV
ENVIRONMENTAL PROBLEMS (other than waste disposal)		X	X	X	X			X	X	X			X	
Thermal pollution of water		X			X				X	X			X	
Water quantity, quality			X						X				X	
Land-use and aesthetic problems			X											
Need baseline air, soil, water data				X										
Comparison of cooling lakes vs cooling towers								X						
NUCLEAR WASTE DISPOSAL	X	X	X		X		X	X	X	X	X	X	X	X
Assess disposal methods	X	X	X		X		X		X	X	X	X	X	X
Assess reprocessing methods	X						X	X		X	X	X	X	
STATE PLANNING				X			X	X	X		X	X		
Need model codes for transporting radioactive materials; contingency code for nuclear accident				X			X		X		X	X		
Need state plans for escrow funds to decommission nuclear plants												X		
Need state data								X				X	X	
BREEDER PROGRAM	X	X						X			X			
Assess benefits, costs, and safety of breeder types	X	X						X			X			
LICENSING AND PERMIT PROCESS		X							X	X	X	X	X	
Investigate causes of increasing time for permits; recommend methods to reduce time.		X							X	X	X	X	X	
ECONOMIC FEASIBILITY					X			X	X		X			X
Provide cost comparisons of nuclear vs other energy sources					X			X	X		X			X
PUBLIC IMAGE OF NUCLEAR			X			X	X		X					
Study sources and causes for anti-nuclear attitudes			X			X	X		X					
OTHER			X	X		X		X	X		X	X	X	X

TABLE III-4

REGIONAL GEOTHERMAL AND GEOPRESSURE ISSUES

Type of issue or problem	State commenting on issue													
	AL	AR	FL	GA	KY	LA	MS	NC	OK	SC	TN	TX	VA	WV
RESOURCE ASSESSMENT	X	X					X	X				X		
Assess, by state, geothermal and geopressure resources	X	X					X	X				X		
Project economic and environmental impacts of development	X											X		
ENVIRONMENTAL PROBLEMS						X								
Radon emission from drillings						X								
Brine disposal from drilling						x								
Subsidence						X								
POSSIBLE SOURCES		X	X						X					
Brine (at about 200°F) from oil and bromine wells		X												
High pressure molten sulfur									X					
Underground water (at about 70-80°F) for citrus freeze protection			X											
OTHER												X		

TABLE III-5

REGIONAL SOLAR ISSUES

Type of issue or problem	State commenting on issues:													
	AL	AR	FL	GA	KY	LA	MS	NC	OK	SC	TN	TX	VA	WV
SOLAR HEATING AND COOLING		X	X	X			X	X		X		X	X	
Impact of tax incentives, other subsidization			X	X				X		X			X	
Assess reduced use of fossil fuels				X				X						
Determine who buys solar				X										
Need model "sun rights" legislation			X							X		X		
Need model consumer protection procedures										X		X		
Need information and training of professional and trade groups		X					X			X		X		
Assess agriculture uses of solar heating										X				
ELECTRIC UTILITY PRICING			X	X				X						
Assess impact of solar on rate structure			X	X				X						
BIOMASS		X	X				X	X	X	X		X	X	X
Assess economic, environmental impacts of burning wood		X					X	X	X			X	X	X
Feasibility of methane from chicken waste							X			X				
Feasibility of public lands for biomass												X		
Hyacinth use -- damage to streams							X							
Land-use competition with solar plantations			X											
WIND			X					X	X					
Aesthetic problems			X					X	X					
Safety problems			X											
HYDROELECTRIC													X	X
Land-use conflicts														X
Threat to fish													X	
OTEC			X											
Impact of transmission lines on coastal zone			X											
Aesthetic problems			X											
OTHER	X		X	X				X	X	X		X		

B. Institutional Structures

1. FEDERAL AGENCIES - WASHINGTON OFFICES

Department of Energy
1600 Pennsylvania Avenue, N.W.
Washington, D.C.
301-376-4000
Manages all energy functions of Federal Government; provides for development of national energy policy; carries out energy research and development; establishes central data collection and analysis program, and in a national emergency regulates energy prices.

Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426
202-566-6061
Controls rates for natural gas and wholesale electricity; regulates mergers and securities acquisitions under the Federal Power and Natural Gas Acts; regulates transportation rates for oil pipelines.

Economic Regulatory Administration
Federal Building
12th and Pennsylvania Avenue, N.W.
Washington, D.C. 20461
Administers policies of the Department and FERC as deemed appropriate by the Secretary of DOE.

Nuclear Regulatory Commission
Washington, D.C. 20555
301-492-7000
Regulates all commercial uses of nuclear energy to protect the health and safety of the public and the environment.

Environmental Protection Agency
401 "M" Street, S.W.
Washington, D.C. 20460
202-755-2673
Sets and enforces environmental standards for air and water pollution, solid wastes management, pesticides, toxic substances, radiation, and noise. Conducts research on the causes, effects, and control of environmental problems. Assists state and local governments.

Department of the Interior
Interior Building
18th and "C" Streets, N.W.
Washington, D.C.
202-343-1100
Office of Surface Mining Reclamation and Enforcement will administer Federal Surface Mining Control and Reclamation Act of 1977.

Bureau of Land Management
Interior Building
18th and "C" Streets, N.W.
Washington, D.C. 20240
202-343-5717
Administers public lands which are located primarily in the western states. These lands are managed for multiple uses including outdoor recreation, fish and wildlife production, livestock grazing, timber, industrial development, watershed protection, and mineral production including that on the Outer Continental Shelf.

Bureau of Reclamation
Interior Building
18th and "C" Streets, N.W.
Washington, D.C. 20240
202-343-4662
Administers Federal water resource development program in western states to provide fish and wildlife protection and recreational opportunities; water for farm irrigation, municipal, and industrial use; hydroelectric power; flood control; and other natural resource conservation benefits.

Fish and Wildlife Service
Interior Building
18th and "C" Streets, N.W.
Washington, D.C. 20240
202-343-5634
Aids in conservation of the Nation's migratory birds, certain mammals and sport fishes.

Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590
202-426-4000
Establishes transportation policy including highway planning, development, and construction, urban mass transit; railroads; aviation; and the safety of waterways, ports, highways, and oil and gas pipelines.

Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210
202-523-8165
Administers more than 130 Federal labor laws guaranteeing workers' rights to safe and healthful working conditions, a minimum hourly wage and overtime pay, freedom from employment discrimination, unemployment insurance, and workers compensation.

Department of Health, Education, and Welfare
300 Independence Avenue, S.W.
Washington, D.C. 20201
202-245-6296
Covers large span of human activities. Includes the Public Health Service and National Institutes of Health.

Department of Agriculture
Fourteenth Street and Independence Avenue, S.W.
Washington, D.C. 20250
202-655-4000
Objectives include enhancement of the environment and the maintenance of U.S. production capacity by helping landowners protect the soil, water, forests, and other natural resources.

Department of Commerce
Fourteenth Street
Washington, D.C. 20230
202-377-2000
Promotes the U.S.'s economic development and technological advancement.

U.S. Army Corps of Engineers
Office of Chief of Engineers
Washington, D.C. 20314
Has programs to protect the environment, improving waterway navigation, flood and beach control, and water resource development.

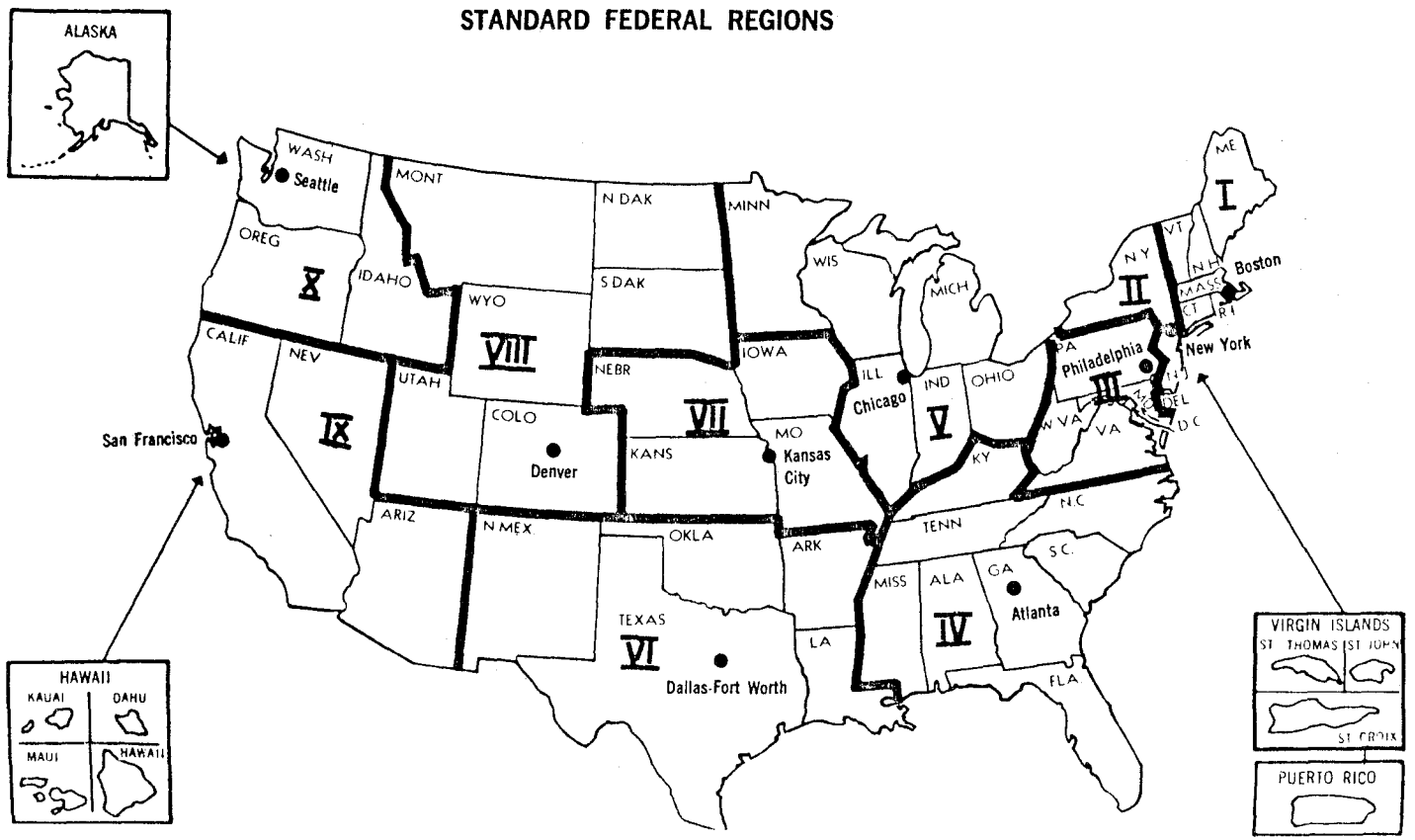

Fig. III-1. Standard Federal Regions
Source: Government Manual, 1977/78.

2. FEDERAL AGENCIES WITH REGIONAL OFFICES

Department of Energy

Regional Representatives of the Secretary:

Region III - Forrestal Building, 1000 Independence Avenue
Washington, D.C. 20545
215-597-3890

Region IV - 1655 Peachtree Street, N.W.
Atlanta, Georgia 30309
404-881-2838
Roy Pettit, Regional Representative of the Secretary

Region VI - P.O. Box 35228
Dallas, Texas 75235
214-749-7345
Curtis E. Carlson, Jr., Acting Regional Representative of the Secretary

Field Offices in Region:

Oak Ridge Operations Office
P.O. Box E
Oak Ridge, Tennessee 37830
Robert J. Hart, Manager

Energy Research Centers and National Laboratories in Region

Bartlesville Energy Research Center
P.O. Box 1398
Bartlesville, Oklahoma 74003
918-336-2400
John S. Ball, Director

Morgantown Energy Research Center
P.O. Box 880
Morgantown, West Virginia 26505
304-599-7764
Augustine Pitrolo, Director

Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, Tennessee 37830
615-483-8611
Herman Postma, Director

Economic Regulatory Administration:

Region III - 1421 Cherry Street
Philadelphia, Pennsylvania 19102
215-597-3870
Bernard Snyder

Region IV - 1655 Peachtree Street, N.W.
Atlanta, Georgia 30309
404-881-2661
James C. Easterday

Region VI - 2625 W. Mockingbird Street
P.O. Box 25228
Dallas, Texas 75235
214-749-7626
L. K. Jones, Acting Director of Enforcements

Federal Energy Regulatory Commission
730 Peachtree Building, Room 500
Atlanta, Georgia 30308
404-881-4134
Kenneth Bird, Acting Regional Engineer

Environmental Protection Agency

Region III - Curtis Building
6th and Walnut Streets
Philadelphia, Pennsylvania 19106
215-597-9801
Jack J. Schramn, Administrator

Region IV - 345 Courtland Street N.E.
Atlanta, Georgia 30308
404-881-4727
John C. White, Administrator

Public Awareness. 881-3004
Library 881-4216
Congressional & Intergovernmental
Relations 881-3714
Regional Counsel. 881-2335
Enforcement 881-2211
Emergency Spills. 881-4062
Environmental Impact Statements 881-7458
Water Pollution Control 881-4450
Safe Drinking Water 881-3781
Air & Hazardous Materials 881-3454
Solid Waste Management. 881-3016
Pesticides. 881-3621
Toxic Substances. 881-3864
Noise 881-4816

Civil Rights & Urban Affairs. 881-3053
Surveillance & Analysis (Athens). 546-3136
EPA News of the Day 1-800-424-0222
Status of Regulations 1-800-424-9064

Region VI - Suite 1100
1201 Elm Street
Dallas, Texas 75201
214-749-1962
Adlene Harrison, Administrator

Research Laboratories in South:

Environmental Monitoring and Support Laboratory
Research Triangle Park, N.C. 27711
919-541-2111
Thomas Hauser, Director

Industrial and Environmental Research Laboratory
Research Triangle Park, N.C. 27711
919-541-2111
John K. Burchard, Director

Environmental Sciences Research Laboratory
Research Triangle Park, N.C. 27711
919-541-2111
A. Paul Altshuller, Director

Robert S. Kerr Environmental Research Laboratory
Ada, Oklahoma 74820
405-253-2224
William C. Galegar, Director

Environmental Research Laboratory
Athens, Georgia 30601
404-546-3134
David W. Duttweiler, Director

Health Effects Research Laboratory
Research Triangle Park, N.C. 27711
919-541-2111
John H. Knelson, Director

Environmental Research Laboratory
Gulf Breeze, Florida 32561
904-377-5268
Thomas W. Duke, Director

Army Corps of Engineers

Fort Worth District
P.O. Box 17300
Fort Worth, Texas 76102
817-334-2300
Col. John F. Wall, District Engineer

Galveston District
P.O. Box 1229
Galveston, Texas 77553
713-763-1211, Ext. 301
Col. Jon C. Vanden Bosch, District Engineer

Huntington District
P.O. Box 2127
Huntington, West Virginia 25721
304-529-5252
Col. George A. Bicher, District Engineer

Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32201
904-792-2241
Col. Donald A. Wisdom

Little Rock District
P.O. Box 867
Little Rock, Arkansas 72203
501-378-5531
Col. Charles E. Edgar III, District Engineer

Louisville District
P.O. Box 59
Louisville, Kentucky 40201
502-582-5601
Col. T. P. Nack, District Engineer

Lower Mississippi Valley
P.O. Box 80
Vicksburg, Mississippi 39180
601-636-1311, Ext. 201
Maj. Gen. R. C. Marshall, Division Engineer

Memphis District
668 Clifford Davis Federal Building
Memphis, Tennessee 38103
901-521-3221
Col. Robert W. Lockridge, Jr., District Engineer

Mobile District
P.O. Box 2288
Mobile, Alabama 36628
205-690-2511
Col. Charlie L. Blalock, District Engineer

Nashville District
P.O. Box 1070
Nashville, Tennessee 37202
615-251-5626
Col. Robert K. Tener, District Engineer

New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160
504-865-1121
Col. Early Rush III, District Engineer

Norfolk District
803 Front Street
Norfolk, Virginia 23510
804-446-3601
Col. Newman A. Howard, Jr., District Engineer

Savannah District
P.O. Box 889
Savannah, Georgia 31402
912-233-8822
Col. Frank Walter, District Engineer

South Atlantic Division
30 Pryor Street, S.W., 510 Title Building
Atlanta, Georgia 30303
404-221-6711
Brigadier General Kenneth E. McIntyre, Division Engineer

Tulsa District
P.O. Box 61
Tulsa, Oklahoma 74102
918-581-7311
Col. Anthony A. Smith, District Engineer

Wilmington District
P.O. Box 1890
Wilmington, North Carolina 28401
919-763-9971, Ext. 466
Col. Adolph A. Hight, District Engineer

Department of Agriculture

Agricultural Research Service
P.O. Box 53326
New Orleans, Louisiana 70153
504-527-6753
Dr. Arthur W. Cooper, Deputy Administrator
(TX, OK, LA, OK, MS, AL, GA, FL, NC, SC, TN, KY, VA)

Agricultural Research Center West
Beltsville, Missouri 20705
301-344-3418
Dr. Steven C. King, Deputy Administrator

Soil Conservation Service
Regional Technical Service Center, Federal Center
Fort Worth, Texas 76110
817-334-5456
William L. Vaught, Director
(All except VA and WV)

Regional Technical Service Center
7700 West Chester Pike
Upper Darby, Pennsylvania 19082
215-352-5800, Ext. 333
Albert C. Addison, Director
(VA and WV)

Forest Service, State and Private Forestry
1920 Peachtree Road, N.W.
Atlanta, Georgia 30309
404-526-5964
Sidney Weitzman, Area Director, Southeast

Department of the Interior

Geological Survey
12201 Sunrise Valley Drive
Reston, Virginia
703-860-7481
Montis R. Klepper, Assistant Director

National Park Service
3401 Whipple Avenue
Atlanta, Georgia 30344
404-526-7594
D. D. Thompson, Jr., Regional Director

Bureau of Reclamation
813 East Third Street
Amarillo, Texas 79105
806-376-2401
James A. Bradley, Director
(OK, TX)

Bureau of Sport Fisheries and Wildlife
17 Executive Park Drive, N.E.
Atlanta, Georgia 30329
404-526-4671
Kenneth E. Black, Director
(AR, LA, MS, AL, GA, FL, SC, NC, TN, KY)

500 Gold Avenue S.W.
Albuquerque, New Mexico 87103
505-766-2321
Wilford O. Nelson, Director
(Includes OK and TX)

U.S. Post Office and Courthouse
Boston, Massachusetts 02109
617-223-2961
Richard E. Griffith, Director
(Includes WV and VA)

Bureau of Land Management
Eastern States - All states bordering on and east of the Mississippi River
7981 Eastern Avenue
Silver Spring, Maryland 20910
301-427-7500

Atlantic - Atlantic OCS (north from Florida-Georgia State line)
6 World Trade Center, Suite 600D
New York, N.Y. 10048
212-264-2960

Gulf of Mexico - Gulf of Mexico and Florida OCS
Hale Boggs Federal Building
500 Camp Street
New Orleans, Louisiana 70130
504-589-6541

Bureau of Indian Affairs
Federal Building
P.O. Box 368
Anadarko, Oklahoma 73005

Federal Building
Muskogee, Oklahoma 74401

Eastern Area
1951 Constitution Avenue N.W.
Washington, D.C. 20245

Department of Commerce

Region III - 600 Arch Street
Philadelphia, Pennsylvania 19106
215-597-7527

Region IV - 1365 Peachtree Street
Atlanta, Georgia 30309
404-526-3165

Region VI - 1100 Commerce Street
Dallas, Texas 75242
214-749-2891
Edward L. Coker, Representative

Economic Development Administration
Atlantic - 600 Arch Street
Philadelphia, Pennsylvania 19106
(CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, PR, RI, VT, VI, VA, WV)

Southeastern - 1365 Peachtree Street N.E.
Suite 700
Atlanta, Georgia 30309
(AL, FL, GA, KY, MS, NC, SC, TN)

Southwestern - 221 West 6th Street
Austin, Texas 78701
(AR, LA, NM, OK, TX)

Department of Health, Education, and Welfare

Region III - 3535 Market Street
Philadelphia, Pennsylvania 19101
215-596-6492
Benjamin Guy, Acting Regional Director

Region IV - 50 7th Street, N.E.
Atlanta, Georgia 30323
404-526-5817
Charles Cain, Acting Regional Director

Region VI - 1200 Main Tower Building
Dallas, Texas 75202
214-729-3301
Stuart Clark, Regional Director

Department of Labor

Region III - 3535 Market Street
Philadelphia, Pennsylvania 19104

Region IV - 1371 Peachtree Street, N.E.
Atlanta, Georgia 30309

Region VI - 555 Griffin Square Building
Dallas, Texas 75202

Occupational Safety and Health Administration

Region III - 3535 Market Street
Philadelphia, Pennsylvania 19104
Daivd H. Rhone, Regional Administrator

Region IV - 1375 Peachtree Street, N.E.
Atlanta, Georgia 30309
Donald E. MacKenzie, Regional Administrator

Region VI - 555 Griffin Square Building
Dallas, Texas 75201
Robert Tice, Regional Administrator

Department of Transportation

Region III - 434 Walnut Street
Philadelphia, Pennsylvania 19106
Robert Brown, Jr., Representative

Region IV - 1720 Peachtree Road, N.W.
Atlanta, Georgia 30309
Glen E. Jermstad, Representative

Region VI - 1100 Commerce Street
Dallas, Texas 75242
Ed Foreman, Representative

Materials Transportation Bureau
(hazardous materials transportation and pipeline safety)
Eastern - Room 5607
2100 2nd Street, S.W.
Washington, D.C. 20590
Lance F. Heverly, Chief
(CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA, WV, and PR)

Southern - 1568 Willingham Drive
Atlanta, Georgia 30337
James C. Thomas, Chief
(AL, FL, GA, KY, MS, NC, SC, and TN)

Southwest - 6634 Hornwood Drive
Houston, Texas 77036
Robert Aubry, Chief
(AR, LA, NM, OK, and TX)

3. REGIONAL AND INTERSTATE ORGANIZATIONS

Appalachian and Title V Regional Commissions

Appalachian Regional Commission
1666 Connecticut Avenue, N.W.
Washington, D.C. 20235
202-673-7856
Robert W. Scott, Federal Cochairman
George G. Geibels, Jr., Alternate Federal Cochairman
Leonard Schwartz, States' Regional Representative
Harry Teter, Jr., Executive Director
Francis Moravitz, Deputy Executive Director
Robert L. McCloskey, General Counsel
James E. Bleckley, Director of Congressional Relations
13 Middle Atlantic and Southern States
(Includes GA, KY, MS, NC, SC, TN, VA, and WV)
To foster the economic and social development of the Appalachian region and its people.

Coastal Plains Regional Commission
1725 K Street, N.W.
Suite 413
Washington, D.C. 20006
202-634-3910
Regional offices at:
215 East Bay Street
Charleston, South Carolina 29401
803-723-5326
P.O. Box 165
333 Fayetteville Street
Raleigh, North Carolina 27603
919-755-4757
Dr. Claude Anderson, Federal Cochairman
James E. Butler, Executive Director
(FL, GA, NC, SC, and VA)
To promote economic development in the Coastal Plains region.

Ozarks Regional Commission
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
202-377-2572
Regional office at:
109 Evergreen Place
1100 North University Avenue, Suite 109
Little Rock, Arkansas 72207
501-378-5905
Patsy H. Danner, Federal Cochairman
Frank J. Iuen, Executive Director
(AR, LA, KS, MO, and OK)
To promote economic development in the Ozark region.

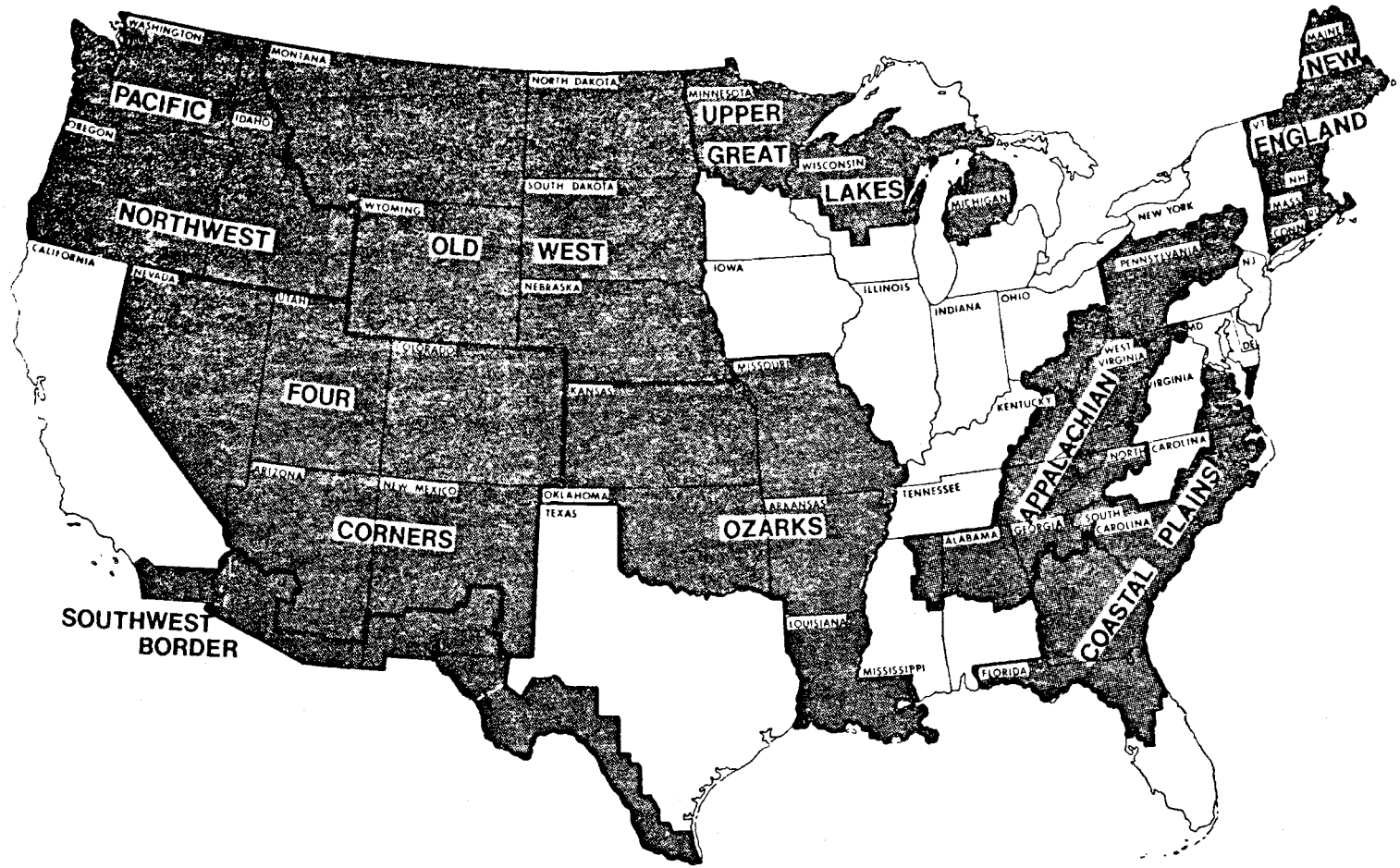

Fig. III-2. Existing Title V Regional and ARC Commissions. Source: L. U. Wilson, State Strategies for Multistate Organizations, 1977.

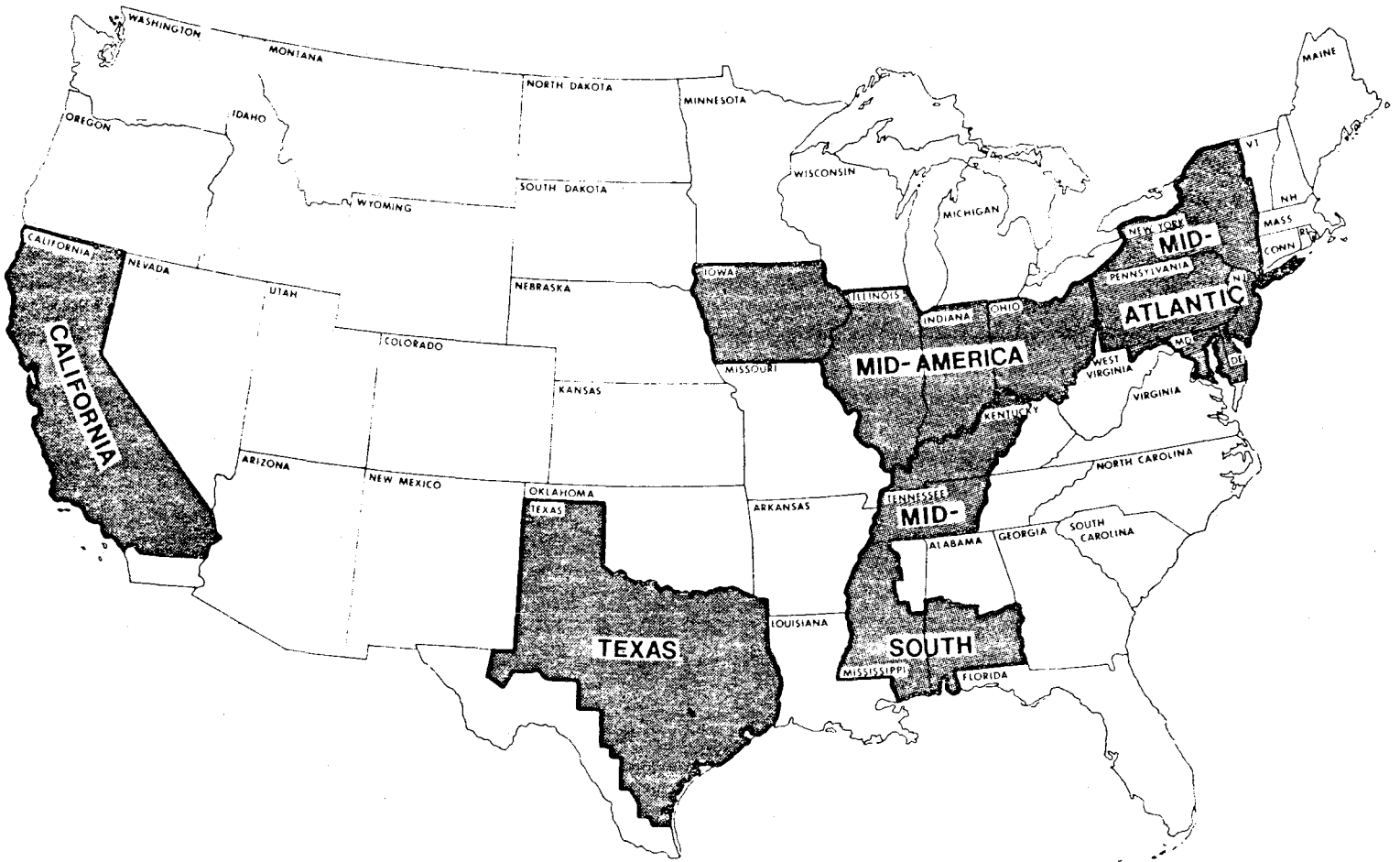

Fig. III-3. Proposed Title V Regional Commissions.
Source: L. U. Wilson, State Strategies for Multistate Organizations, 1977.

Southwest Border Regional Commission
1111 20th Street, N.W., Suite 308
Washington, D.C. 20006
202-634-3917
Cristobal Aldrete, Federal Cochairman
(AZ, CA, NM, and TX)
To promote economic development in the Southwest Border region.

Associations of States

Southern Governors' Conference
3384 Peachtree Road, N.E.
Atlanta, Georgia 30326
404-266-1271
Gov. Dolph Briscoe (TX), Chairman
Herbert L. Wiltsee, Executive Director
(Includes, AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, and WV)
To provide a medium of communication, cooperation and development to the people of the southern States; an affiliate of the Council of State Governments.

Midwestern Governors' Conference
203 North Wabash Avenue
Chicago, Illinois 60601
312-236-4011
Gov. A. A. Link (ND), Chairman
John N. Bowhay, Executive Director
15 States
(Including KY, OK, and WV)
To provide a medium of communication, cooperation and development to the people of the midwestern States; an affiliate of the Council of State Governments.

Mid-Atlantic Governors' Conference
1500 Broadway
New York, New York 10036
212-221-3630
Gov. Brenden T. Byrne (NJ), Chairman
Alan V. Sokolow, Executive Director
7 States
(Includes WV)
To provide a medium for communication, cooperation and development to the people of the mid-Atlantic States; an affiliate of the Council of State Governments.

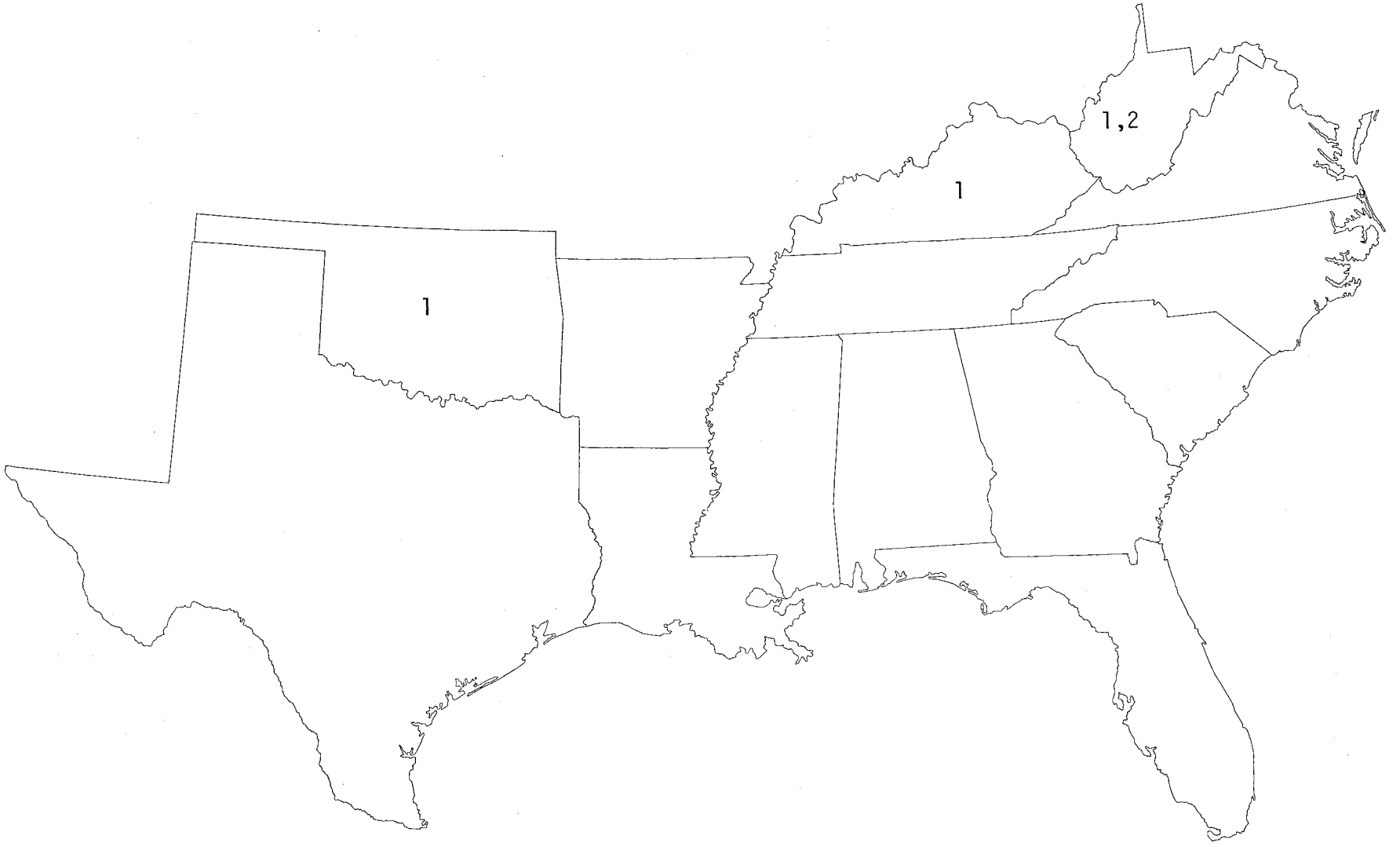

Fig. III-4. Regional Governors Conferences. All 14 states belong to the Southern Governors Conference. Some also members of Midwestern (1) and Mid-Atlantic Conferences (2). Source: L. U. Wilson, State Strategies for Multistate Organizations, 1977.

The Southern States Energy Board
(Also known as Southern Interstate Nuclear Board)
One Exchange Place, Suite 1230
Atlanta, Georgia 30341
404-455-8841
Kenneth Nemeth, Executive Director
Established in 1961 as the scientific and technical office of the Southern Governor's Conference. Serves 16 states and Puerto Rico: AL, AR, FL, GA, KY, LA, MD, MS, MD, NC, OK, SC, TN, TX, VA, WV. Helps states obtain federal grants or energy programs and analyzes the efforts of national energy activities in the states. Funding from the states and SSEB functions as staff to the Southern Governors' Conference Energy Committee.

Southwest Regional Energy Board
3300 West Mockingbird Lane, Suite 507
Dallas Texas 75235
214-358-1254
William J. Robertson, Executive Director
Established in 1974 via a meeting of state legislators, governors' representatives and energy office directors for Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. Has adopted more than 30 policy statements, guided by five standing committees on various energy issues.

Southern Growth Policies Board
P.O. Box 12293
Research Triangle Park, North Carolina 27709
919-549-8167
E. Blaine Liner, Executive Director
A public, interstate agency governed and supported by 15 Southern state governments. Helps member states anticipate and cope with the forces of change, especially growth. Reports annually to the Southern Governors' Conference. Member states: AL, AR, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA. WV.

<u>River Basin Commissions</u>

Ohio River Basin Commission
36 East Fourth Street, Suite 208-220
Cincinnati, Ohio 45202
513-684-3831
Fred E. Marr, Chairman
Robert W. Teter, Vice Chairman
11 states, including KY, WV, and parts of NC, TN, and VA

Commissions Established Under Interstate Regional Compacts

Interstate Commission on the Potomac River Basin
4350 East West Highway, Suite 814
Bethesda, Maryland 20014
301-652-5758
Paul W. Eastman, Executive Director
(DC, MD, PA, VA, and WV)

Ohio River Valley Water Sanitation Commission
414 Walnut Street
Cincinnati, Ohio 45215
513-421-1151
R. K. Horton, Executive Director
8 states, including KY, VA, and WV

Pecos River Commission
P.O. Box 123
Carlsbad, New Mexico 88220
505-885-2327
Wilma I. Sandford, Office Manager
(NM, TX)

Sabine River Compact Commission
6554 Florida Boulevard, Room 215
P.O. Box 66492
Baton Rouge, Louisiana 70896
504-389-0281
William H. Robinson, Chairman
(LA, TX)

Southeast River Basins Resources Advisory Board
Walton Building, Room 402
Atlanta, Georgia 30303
404-552-9963
Horace P. Morgan, Executive Director
(AL, FL, GA, MS, SC)

Tennessee-Tombigbee Waterway Development Authority
P.O. Drawer 671
Columbus, Mississippi 39701
601-328-3286
Glover Wilkins, Administrator
(AL, FL, KY, MS, TN)

Atlantic States Marine Fisheries Commission
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036
202-387-5330
Irwin M. Alperin, Executive Director
15 Atlantic Coast States

Gulf States Marine Fisheries Commission
203A Wildlife & Fish Building
400 Royal Street
New Orleans, Louisiana 70130
504-524-1765
Carlton Jackson, Acting Executive Director
AL, FL, LA, MS, TX

Interstate Mining Compact Commission
P.O. Box 11751
Iron Works Pike
Lexington, Kentucky 40511
606-253-1576
K. C. Bowling, Executive Director
12 states, including AL, KY, NC, OK, SC, TN TX, WV

Interstate Oil Compact Commission
900 Northeast 23rd Street
P.O. Box 53127
Oklahoma City, Oklahoma 73105
405-525-3558
W. Timothy Dowd, Executive Director
30 member and 6 associate member states; including AL, AR, KY, MS, TN, TX, WV (FL, NC, SC, associate members).
To conserve oil and gas by preventing physical waste.

Southern Forest Institute
1 Corporate Square, N.E.
Atlanta, Georgia 30329
404-633-5137
Forest industry in 13 Southern states.

Southern Forest Products Association
P.O. Box 52468
New Orleans, Louisiana 70152

Electric Reliability Councils

Southeastern Electric Reliability Council
Daniel Building, Room 308
15 South 20th Street
Birmingham, Alabama 35233
205-252-0069
Mr. Brownlee, Administrative Manager
Includes FL, AL, GA, SC, NC, TN, parts of MS and VA

Southwest Power Pool
P.O. Box 5637
Little Rock, Arkansas 72215
501-664-0145
Mr. Hosley, Executive Director
Includes LA, AR, OK, and parts of TX and MS

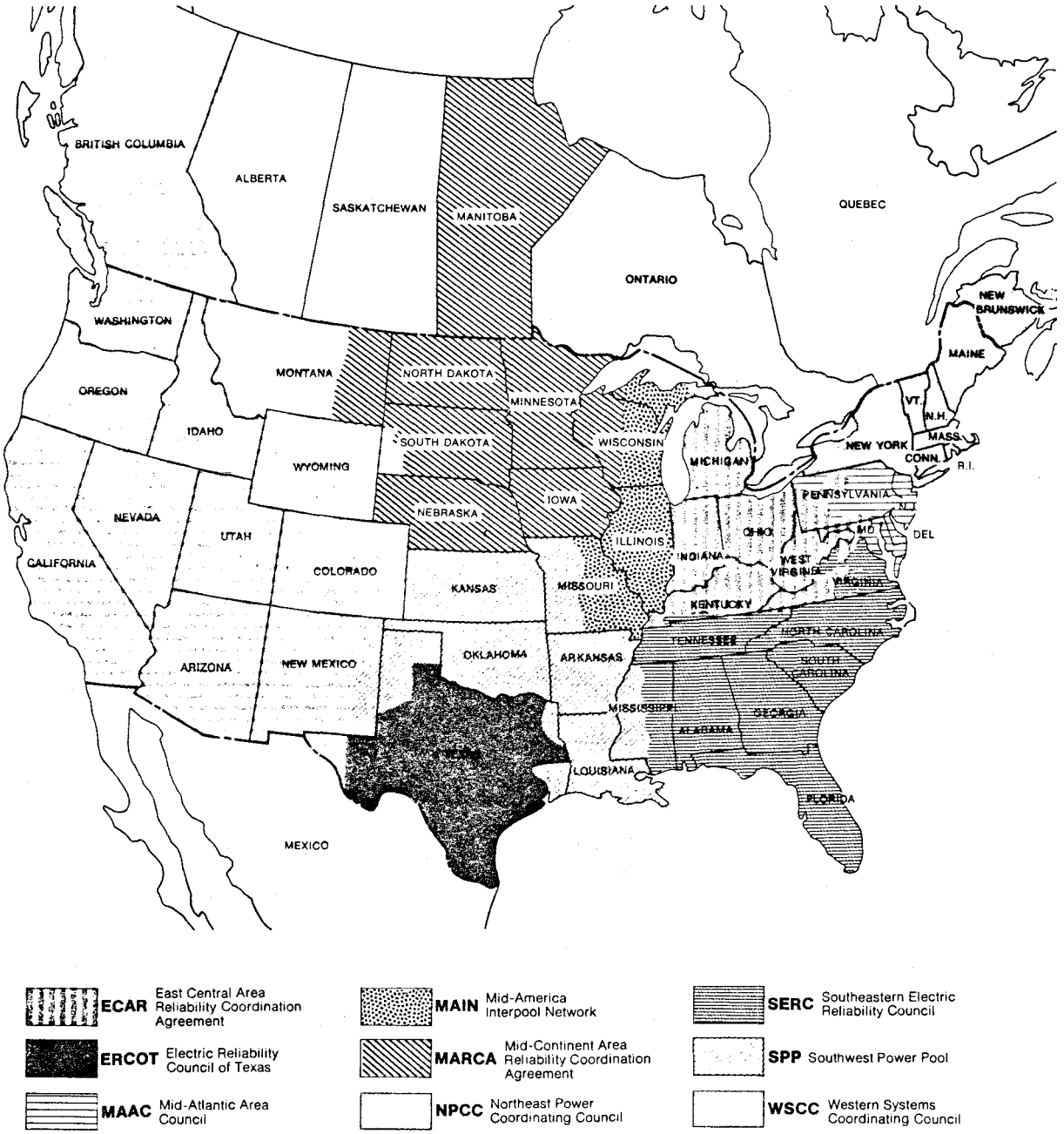

Fig. III-5. Electric Reliability Councils. Source: T. J. Nagel, Science 201, 985 (1978).

TABLE III-6

ELECTRIC RELIABILITY COUNCILS

Reliability Council	Power resources available for peak (megawatts)	Load responsibility (megawatts)	Reserve (megawatts)	Reserve margin (percent)
ECAR	79,715 mw	62,205 mw	14,510 mw	22.3%
MAAC	43,046 mw	32,309 mw	10,737 mw	33.2%
MAIN	41,814 mw	35,204 mw	6,610 mw	18.8%
MARCA	22,014 mw	18,497 mw	3,517 mw	19.0%
NPCC	47,349 mw	35,799 mw	11,550 mw	32.2%
SERC	104,266 mw	85,965 mw	18,310 mw	21.3%
SWPP	46,805 mw	38,261 mw	8,544 mw	22.3%
ERCOT	36,006 mw	28,291 mw	9,715 mw	34.3%
WSCC	88,941 mw	70,858 mw	18,083 mw	25.5%

ECAR....East Central Area Reliability Coordination Agreement
MAAC....Mid Atlantic Area Council
MAIN....Mid-America Interpool Network
MARCA...Mid-Continent Area Reliability Coordination Agreement
NPCC....Northeast Power Coordinating Council
SERC....Southeast Electric Reliability Council
SWPP....Southwest Power Pool
ERCOT...Electric Reliability Council of Texas
WSCC....Western Systems Coordinating Council

Source: Department of Energy news release July 3, 1978.

Electric Reliability Council of Texas
P.O. Box 32507
San Antonio, Texas 78216
512-344-8443
Mr. Tynen, Executive Secretary
Cover most of TX

East Central Area Reliability Coordination Agreement
P.O. Box 102
Canton, Ohio 44701
Includes KY, WV, part of VA

Other

Tennessee Valley Authority
Knoxville, Tennessee 37902
615-632-2101

Washington Office:
Woodward Building
15th and H Streets, N.W.
Washington, D.C. 20444
202-566-1401

S. David Freeman, Chairman
H. N. Stroud, General Manager (acting)
Herbert S. Sanger, Jr., General Counsel and Secretary to the Corporation
John Rozek, Director, Property and Services
H. Peter Claussen, Director, Tributary Area Development
E. H. Lesene, Director, Water Management
Godwin Williams, Jr., Manager, Power
George H. Kimmons, Manager, Office of Engineering Design and Construction
Lawrence L. Calvert, Washington Representative
Government-owned corporation that conducts a unified program of resource development for the advancement of economic growth in the Tennessee Valley region. Includes flood control, navigation development, electric power production, fertilizer development, recreation improvement, and forestry and wildlife development.

4. STATE ORGANIZATIONS

Table III-7

STATE ENVIRONMENTAL REORGANIZATIONS, 1967-74*

State	Year	Type of agency adopted	Type of reorganization
Minnesota	1967	Little EPA	Environmentally specific
Wisconsin	"	Superagency	Overall executive
California	1968	Umbrella Agency (a)	Overall executive
Delaware	1969	Superagency	Overall executive
Florida	"	Little EPA (b)	Overall executive
Maryland	"	Health Department (c)	Overall executive
Massachusetts	"	Superagency (d)	Overall executive
Oregon	"	Little EPA	Environmentally specific
Vermont	"	Superagency	Overall executive
Illinois	1970	Little EPA	Environmentally specific
New Jersey	"	Superagency	Environmentally specific
New York	"	Superagency	Environmentally specific
Pennsylvania	"	Superagency	Environmentally specific
Washington	"	Superagency	Environmentally specific
Alaska	1971	Superagency	Environmentally specific
Arkansas	"	Little EPA	Overall executive
Connecticut	"	Superagency	Environmentally specific
Maine	"	Little EPA	Overall executive
Montana	"	Health Department	Overall executive
Nebraska	"	Little EPA	Environmentally specific
New Mexico	"	Little EPA	Environmentally specific
North Carolina	"	Superagency	Overall executive
Georgia	1972	Superagency	Overall executive
Idaho	"	Health Department (e)	Overall executive
Iowa	"	Little EPA	Environmentally specific
Ohio	"	Little EPA	Environmentally specific
Kentucky	1973	Superagency	Overall executive
Michigan	"	Superagency	Environmentally specific
South Dakota	"	Little EPA	Overall executive
Wyoming	"	Little EPA	Environmentally specific
Missouri	1974	Superagency	Overall executive
South Carolina	"	Health Department	Environmentally specific

*Colorado (1968), Utah (1969), Louisiana (1972), and Arizona (1974) had reorganization activities within their health departments which changed the internal relationships of their environmental programs.

(a) California created the Resources Agency, with only limited coordination powers. Individual units assigned to this agency continued to exercise considerable autonomy.

Table III-7 (continued)

STATE ENVIRONMENTAL REORGANIZATIONS, 1967-74*

(b) In 1975, Florida carried out a second reorganization limited solely to health and environmental programs. Its pollution control agency remains essentially a Little EPA. The major action taken was the consolidation of all water programs (including water supply, potable water, and dredge and fill regulation) in a new Department of Environmental Regulation, which superseded the Department of Pollution Control.

(c) Reorganization involved the state health or human resources department, which already had responsibility for environmental programs. The reorganization did not entail any creation of a new environmental department or agency or the transfer of these environmental functions to another agency, although intraorganizational changes may have taken place within the health department.

(d) In 1969, reorganization established the Executive Office of Environmental Affairs as one of 10 umbrella agencies into which all existing executive departments and agencies were eventually to be merged. Under this plan, departments and agencies were to retain their separate identies but were to be subject to the policy and coordinative authority of the heads of the umbrella agencies, including budgetary review and approval. In 1971 legislation was enacted placing all conservation programs, the water quality and coastal zone management programs, and several other miscellaneous functions under the Executive Office of Environmental Affairs; the State's air quality and solid waste management programs remained in the state health department. In 1975, the Executive Office of Environmental Affairs was further reorganized by adding these two programs as well as all of the State's agricultural programs to its jurisdiction. This umbrella agency has been treated here as an environmental superagency because it does exercise strong control over each of its five constituent agencies.

(e) In addition, Idaho has an Office of Environmental Control within the Governor's Office (created in 1970), which has overall coordinative responsibility for environmental programs.

Source: The Book of States, 1976-77, p. 477.

TABLE III-8

STATE ENERGY OFFICES

	Office created by			Energy office organization						Funding		State source		
	Statute	Executive order	Both	Separate agencies	Part of another agency	Gov's. office	Nat. resources	Dept. of Admin.	Ec. Planning & Dev.	% Fed.	% State	General	Ear-marked	Both
Alabama		X			X				X	100				
Arkansas	X			X						60	40	X		
Florida			X		X			X		90	10	X		
Georgia	X				X				X	90	10	X		
Kentucky			X	X						62	38	X		
Louisiana		X			X		X			90	10	X		
Mississippi		X		X						100				
North Carolina	X				X				X	67	33	X		
Oklahoma			X	X						75	25	X		
South Carolina		X			X	X				90	10	X		
Tennessee	X			X						90	10	X		
Texas	X				X	X				N/A*	N/A			
Virginia		X		X						95	5	X		
West Virginia		X			X	X				90	10	X		
U.S. Totals	20	25	5	18	32	16	3	2	11			32	3	3

*N/A (No answer).

Source: Energy Report to the States 4(5), p. 65-71 (1978).

TABLE III-9

STATE ENERGY OFFICE FUNCTIONS

	EPCA mandates	Alternate R&D	Emer. planning	Weatherization	Insulation	Public information	Energy audits	Power plant siting	Industrial cons.
Alabama	X		X	X	X	X	X		
Arkansas	X			X	X		X		
Florida	X		X				X		
Georgia	X	X	X	X	X		X		
Kentucky	X		X				X		
Louisiana	X	X	N/A*				X		
Mississippi	X			X			X		
North Carolina	X		X	X	X		X		
Oklahoma	X	X		X			X		X
South Carolina	X	X		X			X		
Tennessee	X		X			X	X		
Texas	X			X	X		X		
Virginia	X	X	X		X				
West Virginia	X		X	X			X		
U.S. Totals	50	32	32	31	28	11	43	2	7

*N/A (No answer).

Source: Energy Report to the States 4(5), p. 65-71 (1978).

TABLE III-10

REGULATORY FUNCTIONS OF STATE PUBLIC UTILITY COMMISSIONS

State or other jurisdiction	Commissions have jurisdiction over rates of privately owned utilities rendering the following services												
		Transportation									Communications		
	Street railways	Inter-urban railways	Motor buses	Motor trucks	Electric light and power	Manufactured gas	Natural gas	Water	Oil pipeline	Gas pipeline	Telephone	Telegraph	CATV
Alabama	(a)	(a)	(b)	(b)	(c)	(a)	X	X			X	X	
Arkansas†	(d)	(d)	(d)	(d)	X	X	X	X	(d)	X	X	X	
Florida		X	X	X	X		X	X(f)			X	X	X
Georgia			X	X	(c)	X	X			X	X	X	
Kentucky			(d)	(d)	X	X	X	X	X	X	X	X	
Louisiana	X	X	X	X	X	X	X	X	(h)	(f)	X	X	
Mississippi		X	X	X	(c)		X	X		(f)	X	X	X
North Carolina			X	X	(c)	X	X	X	X	X	(c)	X	
Oklahoma	(a)	X	X	X	X		X	X	X	X	X	X	
South Carolina	X	X	X	X	X	X	X	X		X	X	X	
Tennessee		X	X	X	X	X	(j)	X			X	X	
Texas		X	X	X			X		X	X			
Virginia	X	X	X	X	X	X	X	X		X	X	X	
West Virginia†	(a)	(a)	X	X	X	X	X	X	X	X	X	X	

†Commission regulates some aspect of municipally owned public utilities.
(a) Statute confers jurisdiction but no utility now renders this service.
(b) Jurisdiction applies only to operations outside of corporate limits not contiguous. In Ohio exemption from regulation applies when the transportation line is wholly within a municipality and its immediately contiguous municipalities.
(c) Authority does not extend to rural electric cooperative units. Mississippi: except for service areas; Missouri: operational safety only except for full authority over a few requesting cooperatives; North Carolina: service areas where there is found to be discrimination as to rates or service.
(d) Regulated by another governmental unit. Alaska: Transportation Commission; Arkansas: Commerce Commission; Hawaii: Department of Regulatory Agencies; Kentucky: Department of Motor Transportation; Massachusetts: CATV Commission; Minnesota: CATV Commission; New Mexico: Corporation Commission; New York: Department of Transportation, Commission on CATV.
(e) Jurisdiction is limited to those situations wherein the consumer has no alternative in his choice of supplier of a comparable product and service at an equal or less price.
(f) Limited jurisdiction. Florida: in some counties at the request of county commission; Illinois, Louisiana, Mississippi: natural gas pipelines; Utah: attachment to utility poles.
(g) Jurisidction over radio common carriers.
(h) If common carrier.
(i) Original jurisdiction in unincorporated areas, within corporate limits upon appeal.
(j) Local distribution only.

Source: Book of States 1976-1977, p. 442.

ALABAMA

Governor: George C. Wallace, State Capitol, Montgomery 36104 (205-832-3511).

Legislative Reference Service, State Capitol, Montgomery 36130, Louis Greene, Director (205-832-3496).

Energy

State Legislative Energy-Related Committees: House of Representatives, State Capitol, Montgomery 36104, Clerk of the House (205-832-3501); State Senate, State Capitol, Montgomery 36104, Secretary of the Senate (205-832-5224).

Energy Advisory Council, P.O. Box 1297, Birmingham 35201, John Harbert III, Chairman (205-879-2211) - to conduct comprehensive, in-depth studies in order to identify demand trends and supply potentials for all forms of energy; to reconcile environmental quality requirements with energy needs; to study incentives necessary for resource development; and to make recommendations to the Governor on the most effective use of the State's energy resources.

Energy Management Board, Executive Building, Suite 203, 312 Montgomery Street, Montgomery 36104, R. C. Bamberg, Chairman, Edwin G. Hudspeth, Staff Director (205-832-5010) - to advise the Governor on energy matters and develop an equitable distribution of energy supplies in Alabama; prepare the necessary studies of the sources of energy available to the State of Alabama; prepare plans and programs for the conservation of all available energy; prepare plans and procedures for the implementation of all State and Federal laws, rules, and regulations pertaining to energy resources, supplies, and distribution and recommend to the Governor such plans and programs as may be necessary for implementation.

Energy Facilities Siting: Ameraport Offshore Harbor and Terminal Commission, 203 Executive Building, 312 Montgomery Street, Montgomery 36104, Edwin G. Hudspeth, Executive Director (205-832-5010).

Alabama Public Service Commission, P.O. Box 991, Montgomery 36130, Juanita McDaniel, President (205-832-5176).

Environment

Environmental Health Administration, Dept. of Public Health, State Office Building, Room 328, Montgomery 36130, W. T. Willis, Director (205-832-3176).

Division of Public Water Supplies, c/o State Health Dept., State Office Building, Montgomery 36130, Joe Downey, Director (205-832-3170).

Radiological Health Division, c/o State Health Dept., State Office Building, Montgomery 36130, A. U. Godwin, Director (205-832-5992).

Air Pollution Control Commission, c/o State Health Dept., State Office Building, Montgomery 36130, James W. Cooper, Director (205-832-6770).

Division of Inspection, c/o State Health Dept., State Office Building, Montgomery 36130, R. J. Griffith, Director (205-832-3175).

Division of General Sanitation, c/o State Health Dept., State Office Building, Montgomery 36130, Cicil M. Cork, Director (205-832-3179).

Alabama Water Improvement Commission, c/o State Health Dept., State Office Building, Montgomery 36130, James W. Wawr, Director (205-277-3630).

Alabama Coastal Area Board, General Delivery, Daphne, Alabama 36526, Dr. E. Bruce Trickey, Director (205-626-1880).

Alabama Development Office, State Capitol Building, Montgomery 36130, R. C. Bamberg, Director (205-832-6810).

Industrial Development Division, c/o Alabama Development Office, State Capitol Building, Montgomery 36130, Fred Denton, Director (205-832-6980).

Public Relations Division, c/o Alabama Development Office, State Capitol Building, Montgomery 36130, Rawdon Barnes, Director, (205-832-6438).

Housing Division, c/o Alabama Development Office, State Capitol Building, Montgomery 36130, Hal Hendricks, Director (205-832-6666).

Office of Economic Opportunity, c/o Alabama Development Office, State Capitol Building, Montgomery 36130, Freddie Washington, Director (205-832-3975).

Communication Division, c/o Alabama Development Office, State Capitol Building, Montgomery 36130, Ned Butler, Director (205-832-5834).

Land Use Planning: Alabama Development Office, State Capitol Building, Montgomery 36130, Bill J. Starnes, Director of State Planning (205-832-6400).

Environmental Impact Assessments: State Clearinghouse, Alabama Development Office, State Capitol Building, Montgomery 36130, Michael R. Amos, Administrator (205-832-5646).

Dept. of Agriculture and Industries, The Richard Beard Building, 1445 Federal Drive, Montgomery 36109, McMillan Lane, Commissioner (205-832-6693).

Dept. of Conservation and Natural Resources, 64 N. Union Street, Montgomery 36130, John W. Hodnett, Commissioner (205-832-6361).

Alabama Water Improvement Commission, State Office Building, Montgomery 36130, James W. Warr, Director (205-277-3630) - to conserve the waters of the State and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish, and aquatic life, and for domestic, agricultural, industrial, recreational, and other legitimate beneficial uses; to provide for the prevention, abatement, and control of new or existing water pollution. (Offices also located in Mobile and Birmingham, same mailing address as above.)

Division of Solid Waste and Vector Control, Environmental Health Administration, Dept. of Public Health, State Office Building, Montgomery 36130, Alfred S. Chipley, Director (205-832-6728).

ARKANSAS

Governor: David H. Pryor, State Capitol, Little Rock 72201 (501-371-2345).

Legislative Council, 315 State Capitol, Little Rock 72201, Marcus Halbrook, Director (501-371-1937).

Legislative Council Fiscal Review Section, Bill Goodman, Section Head.

Energy

State Legislative Energy-Related Committee: Joint Committee on Public Transportation, General Assembly, State Capitol, Little Rock 72201, Rep. Ode Maddox and Sen. W. K. Ingram, co-chairmen (501-371-1937).

State Energy Office, 960 Plaza West Building, Little Rock 72205, M. B. Woodward, Director (501-371-1379) - to develop a State energy policy; to coordinate with the Governor's Division of Planning, the Department of Local Services, and the State Economic Study Commission in plans and activities to insure that wise and careful use is made of all energy expenditures; to catalogue energy use in the State by geographic area for forecasting purposes; the develop short and long-range programs of energy alternatives; to chart the supply, distribution, and consumption components of the State's energy situation; and to estimate the needs and priorities of Arkansas and its people.

Arkansas Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, John S. Choate, Director (501-371-2051).

Legal Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Larry Chisenhall, Section Chief (501-371-2047).

Rates Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Leigh Riddick, Section Chief (501-371-3579).

Accounting Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Jerrell Clark, Section Chief (501-371-2054).

Finance and Research Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Jerrell Clark, Section Chief (501-371-2054).

Pipeline Safety Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Tony Creston, Section Chief (501-371-2080).

Engineering Section, c/o Public Service Commission, Justice Building, State Capitol Grounds, Little Rock 72201, Larry Hoaglan, Section Chief (501-371-1591).

Arkansas Oil and Gas Commission, Dept. of Commerce, 314 E. Oak Street, El Dorado 71730, Ralph A. Dumas, Director (501-862-4965).

Environment

Arkansas Dept. of Pollution Control and Ecology, 8001 National Drive, Little Rock 72209, S. L. Davies, Director (501-371-1701) - to prevent, abate, and control all types of pollution and maintain the state's natural environment. Created in 1949 as the Water Pollution Control Commission; in 1965 became Pollution Control Commission when air division was added; present title in 1971 after solid waste and environmental preservation were included.

Dept. of Local Services, Suite 900, 1st National Building, Little Rock 72201, Ron Copeland, Director (501-371-1211).

Adminstrative Services Division, Suite 900, 1st National Building, Little Rock 72201, Fred Kleinhauer, Manager (501-371-1211).

Community Services Division, Suite 900, 1st National Building, Little Rock 72201, George Ivory, Manager (501-371-1201).

Local And Regional Services Division, Suite 900, 1st National Building, Little Rock 72201, Larry Witcher, Manager (501-371-2671).

Employment Development Division, Executive Building, 2020 West 3rd St., Little Rock 72203, Jack Thiele, Manager (501-371-1785).

Aeronautics Division, Old Terminal, Adam Field, Little Rock 72202, Eddie Holland, Manager (501-376-6781).

Soil and Water Conservation Commission, Dept. of Commerce, 1818 W. Capitol Avenue, Building A, Little Rock 72202, John P. Saxon, Director (501-371-1611).

Water Division, Dept. of Commerce, 1818 W. Capitol Avenue, Building A, Little Rock 72202, Hugh Hannah, Chief (501-371-1611).

Solid Waste Division, Dept. of Commerce, 1818 W. Capitol Avenue, Building A, Little Rock 72202, Ray Hightower, Chief (501-371-2130).

Air Division, Dept. of Commerce, 1818 W. Capitol Avenue, Building A, Little Rock 72202, John Mitchell (501-371-2135).

Environmental Preservation, Dept. of Commerce, 1818 W. Capitol Avenue, Building A, Little Rock 72202, Trusten Holder (501-371-1611).

FLORIDA

Governor: Reubin O'D. Askew, State Capitol, Tallahassee 32304 (904-488-4441).

Joint Legislative Management Committee, Room 827, Capitol, Tallahassee 32304, Tom Wade, Exec. Director (904-488-2194).

Administrative Services Division, Room 827, Capitol, Tallahassee 32304, Earl Bush, Director (904-488-4173).

Legislative Information Division, Room 826, Capitol, Tallahassee 32304, Bunny Van Vrunt, Director (904-488-4371).

Statutory Revision Division, Room 727, Capitol, Tallahassee 32304, Jane Harris, Director (904-488-8403).

Legislative Systems and Data Processing Division, Room 117, Holland Building, Tallahassee 32304, Dozier Johnson, Director (904-488-8412).

Energy

State Legislative Energy-Related Committees: Growth and Energy Committee, House of Representatives, 26 House Building, Tallahassee 32304, Rep. Hyatt Brown, Chairman, William Ryan, Staff Contact (904-488-6333); Commerce Committee, State Senate, 412 Senate Building, Tallahassee 32304, Sen. W. D. Childers, Chairman, Huey Ray, Staff Contact (904-488-3746); Florida Energy Committee, State Legislature, 226 W. Pensacola, Tallahassee 32304, Sen. George Firestone and Rep. Hyatt Brown, co-chairmen, Marvin Yarosh, Executive Director, Staff Contact (904-488-5162).

Dept. of Administration, State Energy Office, 301 Bryant Building, Tallahassee 32304, Carlos Warren, Director (904-488-6764) - responsible for the planning, development, coordination, and implementation of State programs concerning energy; the Secretary of the Department of Administration, to whom the State Energy Director reports, may adopt and promulgate such rules and regulations as are necessary to carry out the provisions of such programs. The State Energy Office has prime responsibility for energy conservation, contingency planning, allocation, data collection, analysis, public information, and education. The Office will also monitor energy research and development of interest

to Florida, provide forecasts of energy conditions, assess shortages and recommend energy legislation; the Office coordinates intergovernmental efforts at local, State, and Federal levels to achieve the objectives of energy programs.

Governor's Petroleum Allocation and Energy Conservation Council, 301 Bryant Building, Tallahassee 32304, (904-488-6764) - to advise and assist the State Allocation Official in implementing the mandatory allocation program and to minimize the adverse effects of fuel shortages.

Energy Facilities Siting: Department of Environmental Regulation, 2600 Blair Stone Rd., Twin Towers Office Building, Tallahassee 32301, Hamilton S. Oven, Jr., Administrator Power Plant Siting Program (904-488-2657).

Public Service Commission, 101 East Gaines Street, Tallahassee 32304, J. B. Kennedy, Executive Director (904-488-7868).

Commission Clerk Dept., 101 East Gaines Street, Tallahassee 32304, David L. Swafford, Director (904-488-8371).

Administration Dept., 101 East Gaines Street, Tallahassee 32304, Mary F. Everton, Director (904-488-4733).

Research Dept., 101 East Gaines Street, Tallahassee 32304, James H. Gentry, Director (904-487-1326).

Consumer Affairs Dept., 101 East Gaines Street, Tallahassee 32304, George Hanna, Director (904-488-7238).

Engineering Dept., 101 East Gaines Street, Tallahassee 32304, Harold E. Janes, Director (904-488-8501).

Transportation Dept., 101 East Gaines Street, Tallahassee 32304, A. E. Pooser, Director (904-488-0150).

Legal Dept., 101 East Gaines Street, Tallahassee 32304, Prentice P. Pruitt, Director (904-488-7921).

Accounting Dept., 101 East Gaines Street, Tallahassee 32304, William D. Talbott, Director (904-488-8147).

Rate Dept., 101 East Gaines Street, Tallahassee 32304, Richard N. Tudor, Director (904-488-8482).

Environment

Dept. of Environmental Regulation, 2600 Blair Stone Rd., Twin Towers Office Building, Tallahassee 32301, J. W. Landers, Secretary (904-488-4807).

Dept. of Natural Resources, Crown Building, 202 Blount Street, Tallahassee 32304, Harmon Shields, Executive Director (904-488-1555).

Division of Recreation and Parks, Crown Building, 202 Blount Street, Tallahassee 32304, Ney Landrum, Director (904-488-6131).

Division of Resource Management, Crown Building, 202 Blount Street, Tallahassee 32304, Charles Sanders, Director (904-488-7500).

Division of Marine Resources, Crown Building, 202 Blount Street, Tallahassee 32304, Ed Joyce, Director (904-488-6058).

Division of Law Enforcement, Crown Building, 202 Blount Street, Tallahassee 32304, Colonel Clifford Willis, Director (904-488-6559).

Division of Administrative Services, Crown Building, 202 Blount Street, Tallahassee 32304, Charles Davies, Director (904-488-8589).

State Soil and Water Conservation Office, P.O. Box 1269, Gainesville 32602, Herman Bowers, Coordinator (904-376-1990) - as a result of governmental reorganization in 1969, the State Soil and Water Conservation Council was created replacing the State Soil and Water Conservation Board organized in 1939. The State Soil and Water Conservation Office provides administrative and promotional assistance to soil and water conservation districts in addition to considering and studying the entire field of soil and water conservation in Florida.

Bureau of Coastal Zone Planning, Dept. of Environmental Regulation, 2600 Blair Stone Rd., Twin Towers Office Bldg., Tallahassee 32301, Ted LaRoe, Bureau Chief (904-488-8614).

Bureau of Comprehensive Planning, Division of State Planning, Carlton Building, Room 530, Tallahassee 32304, Helge Swanson, Bureau Chief (904-488-2401).

GEORGIA

Governor: George Busbee, State Capitol, Atlanta 30334 (404-656-1776).

Office of Legislative Counsel, 316 State Capitol, Atlanta 30334, Frank H. Edwards, Legislative Counsel (404-656-5000).

Energy

Legslative Energy-Related Committees: Industry Committee, House of Representatives, State Capitol, Atlanta 30334, Rep. Gerald T. Horton, Chairman, Jack Littleton, Assistant Legislative Counsel, Staff Contact (404-656-5000); State Planning and Community Affairs Committee, House of Representatives, State Capitol, Atlanta 30334, Rep. G. D. Adams, Chairman, Charles E. Tidwell, Chief Deputy Counsel, Staff Contact (404-656-6000); Public Utilities Committee, State Senate, State Capitol, Atlanta 30334, Sen. M. Parks Brown, Chairman, Charles E. Tidwell, Chief Deputy Legislative Counsel, Staff Contact (404-656-5000);

Consumer Affairs Committee, State Senate, State Capitol, Atlanta 30334, Sen. Ed Barker, Chairman, Virlyn Slaton, Deputy Legislative Counsel, Staff Contact (404-656-5038).

Office of Energy Resources, 270 Washington Street, S.W., Atlanta 30334, Omi Walden, Director (404-656-3874) - to ensure as far as possible no unnecessary hardship for lack of fuel or other forms of energy; to prevent any significant instability in Georgia's economy due to lack of fuel or other forms of energy; to equitably allocate from the State set-aside quantities of product to alleviate emergencies affecting citizens and firms within the State; energy facilities siting; energy conservation.

Public Service Commission, Room 162, 244 Washington Street, S.W., Atlanta 30334, H. S. Jordan, Executive Director (404-656-4539).

Environment

Dept. of Natural Resources, 270 Washington Street, S.W., Atlanta 30334, Joe D. Tanner, Commissioner (404-656-3500).

Game And Fish Division, 270 Washington Street, S.W., Atlanta 30334, Leon Kikland, Director (404-656-3500).

Parks and Historic Sites Division, 270 Washington Street, S.W., Atlanta 30334, Henry Sprudle, Director (404-656-2753).

Information and Education Division, 270 Washington Street, S.W., Atlanta 30334, David Cranshew, Director (404-656-2750).

Environmental Protection Division, 270 Washington Street, S.W., Atlanta 30334, Lenord J. Ledbetter, Director (404-656-4713).

Air Protection Branch, 270 Washington Street, S.W., Atlanta 30334, Robert H. Collum, Chief (404-656-6900).

Water Quality Control Branch, 270 Washington Street, S.W., Atlanta 30334, Jean B. Welsh, Chief (404-656-6593).

Solid Waste Management Branch, 270 Washington Street, S.W., Atlanta 30334, Moses N. McCall, Chief (404-656-2833).

Geologic and Water Resources Division, 270 Washington Street, S.W., Atlanta 30334, Sam M. Pickering, Director (404-656-3214).

Office of Administrative Services, Room 807, 270 Washington Street, S.W., Atlanta 30334, James H. Pittman, Director (404-656-2795).

Office of Planning and Research, Room 700, 270 Washington Street, S.W., Atlanta 30334, David Sherman, Director (404-656-5160).

State Soil and Water Conservation Committee, 1867 West Broad Street, Athens 30606, Dennis Hopper, Executive Director (404-542-3065) - established in 1937 under the Soil Conservation Districts Act to work with and assist the 27 Soil and Water Conservation Districts and their 324 District Supervisors throughout Georgia.

Office of Planning and Budget, 270 Washington Street, S.W., Atlanta 30334, Clark T. Steven, Director (404-656-3820).

Coastal Zone Management Division, 270 Washington Street, S.W., Atlanta 30334, James Dodd, Director (404-656-3819).

State Clearinghouse, 270 Washington Street, S.W., Atlanta 30334, Chuck Badger, Administrator (404-656-3855).

Education Division, 270 Washington Street, S.W., Atlanta 30334, Larry Gess, Coordinator (404-656-3800).

KENTUCKY

Governor: Julian M. Carroll, State Capitol, Frankfort 40601 (502-564-3450).

Legislative Service Agency: Legislative Research Commission, State Capitol, Frankfort 40601, Vic Hellard, Jr., Director (502-564-8100).

Energy

Legislative Energy-Related Committees: Public Utilities and Transportation Committee, House of Representatives, State Capitol, Frankfort 40601, Brian Kiernan, Legislative Research Commission, Staff Contact (502-564-7740); Public Utilities and Transportation Committee, State Senate, State Capitol, Frankfort 40601, Senator Delbert Murphy, Chairman, Brian Kiernan, Legislative Research Commission, Staff Contact (502-564-7740).

Department of Energy, Capital Plaza Tower, Frankfort 40601, D. W. Harrison, Commissioner (502-564-7416) - (1) to administer the mandatory petroleum allocation program; (2) provide staff support for the Kentucky Energy Council; (3) inventory energy needs for the Commonwealth and contingency plans for meeting such needs; (4) energy conservation practices; (5) energy shortages; (6) research and development on Kentucky's energy resources; (7) siting and certification of energy production and transmission facilities; (8) State building codes; (9) utility rates, tax rates, license fees, and other regulatory or revenue-raising practices for their impact on energy consumption.

Development Cabinet, Office of the Secretary, Second Floor, Capital Plaza Tower, Frankfort 40601, William Short, Secretary, (502-564-7670).

Kentucky Dept. of Energy, 3rd Floor, Capital Plaza Tower, Frankfort 40601, David Drake, Secretary (502-564-7070).

Public Service Commission, 730 Schenkel Lane, P.O. Box 615, Frankfort 40601, Perry White, Executive Director (502-564-3940).

Environment

Dept. for Natural Resources and Environmental Protection, 5th Floor, Capital Plaza Tower, Frankfort 40601, Eugene Mooney, Secretary (502-564-3350).

Division of Air Pollution, 5th Floor, Capital Plaza Tower, Frankfort 40601, J. T. Smither, Director (502-564-3382).

Division of Water Quality, 5th Floor, Capital Plaza Tower, Frankfort 40601, W. S. Forster (502-564-3410).

Division of Solid Waste, 5th Floor, Capital Plaza Tower, Frankfort 40601, S. N. Johnson, (502-564-6717).

Division of Forestry, 5th Floor, Capital Plaza Tower, Frankfort 40601, Harry Nadler, Director (502-564-4496).

Division of Conservation, 5th Floor, Capital Plaza Tower, Frankfort 40601, H. S. Head, Director (502-564-3080).

Division of Reclamation, 5th Floor, Capital Plaza Tower, Frankfort 40601, Dave Rosenbaum (502-564-6940).

Division of Water Resources, 5th Floor, Capital Plaza Tower, Frankfort 40601, L. E. Brandenburg (502-564-3980)

Dept. of Fish and Wildlife Resources, 592 East Main St., Frankfort 40601, Carl E. Kays, Commissioner (502-564-3400).

Division of Law Enforcement, 592 East Main St., Frankfort 40601, R. W. Garrison, Director (502-564-3176).

Division of Public Relations, 592 East Main St., Frankfort 40601, Hope Carleton, Director (502-564-4336).

Division of Game, 592 East Main St., Frankfort 40601, Joe Bruna, Director (502-564-4406).

Division of Fishery, 592 East Main St., Frankfort 40601, Charles C. Bowers, Director (502-564-3596).

Division of Engineering, 592 East Main St., Frankfort 40601, Don C. Hayes, Director (502-564-4762).

Division of Conservation Education, 592 East Main St., Frankfort 40601, Bill Bell, Director (502-564-4762).

Division of Fiscal Control, 592 East Main St., Frankfort 40601, Harold Wallace, Director (502-564-4224).

Dept. of Agriculture, Capital Plaza Tower, Frankfort 40601, T. O. Harris, Commissioner (502-564-4696).

Administrative Services, Capital Plaza Tower, Frankfort 40601, Elwyn Stockdale, Director (502-564-6676).

Information and Promotion, Capital Plaza Tower, Frankfort 40601, Barbara Helphenstine, Director (502-564-3394).

Statistics, Capital Plaza Tower, Frankfort 40601, Tom Reed, Director (502-564-2448).

Kentucky Geological Survey, Breckinridge Hall, University of Kentucky, Lexington 40506, D. C. Haney, Director (606-258-8991).

Oil and Gas Section, Breckinridge Hall, University of Kentucky, Lexington 40506, Lou Ponsetto, Head (606-257-3691).

Coal Section, Breckinridge Hall, University of Kentucky, Lexington 40506, Rus Brant, Head (606-257-3976).

Industrial Minerals Section, Breckinridge Hall, University of Kentucky, Lexington 40506, Preston McGrain, Head (606-257-1642).

Publications Sales Section, Breckinridge Hall, University of Kentucky, Lexington 40506, John Gragg, Head (606-257-2896).

LOUISIANA

Governor: Edwin Edwards, State Capitol, Baton Rouge 70804 (504-389-5281).

Legislative Council, P.O. Box 44012, Baton Rouge 70804, D. D. Daggett, Executive Director (504-342-2350).

Energy

Legislative Energy-Related Committees: Natural Resources Committee, House of Representatives, P.O. Box 44012, Baton Rouge 70804, Rep. Morris A. Lottinger, Jr., Chairman, Wallace J. Henderson, Committee Counsel, Staff Contact (504-289-6141); Natural Resources Committee, State Senate, P.O. Box 44012, Baton Rouge 70804, Senator William D. Brown, Chairman, Wallace J. Henderson, Committee Counsel, Staff Contact (504-389-6141).

Division of Natural Resources and Energy, P.O. Box 44396, Capitol Station, Baton Rouge 70804, T. C. Landrum, Chief (504-389-2771) - to regulate the use, end-use, production, transportation, conservation, sale and price of the State's energy resources; to improve the available transportation facilities for movement of intrastate natural gas between the different parts of the State; to provide for the equitable distribution of energy supplies to the residents and the commercial and industrial users of the energy supplies; to insure the maintenance of the highest practical level of energy supplies commensurate with the general health, safety, welfare, and prosperity of the State.

Public Utility Regulation: Public Service Commission, 2 American Place, Suite 1630, Baton Rouge 70825, Louis Quinn, Chairman (504-342-4427).

Environment

Dept. of Health and Human Resources, P.O. Box 60630, New Orleans 70760, Dr. William A. Cherry, Secretary (504-342-6711).

Office of Health Services and Environmental Quality, P.O. Box 60630, New Orleans 70760, Dr. Waldo Treuting, Asst. Secretary (504-568-5050).

Office of Human Services, P.O. Box 3716, Baton Route 70812, A. Z. Young, Asst. Secretary (504-342-6721).

Office of Rehabilitation Services, P.O. Box 44371, Baton Rouge 70804, Melvin Meyers, Jr., Asst. Secretary (504-342-2297).

Office of Management and Finance, P.O. Box 3776, Baton Rouge 70804, Ronald F. Falgout, Under Secretary (504-342-6716).

Bureau of Environmental Services, P.O. Box 60630, New Orleans 70160, James Coerber, Director (504-568-5100).

Water Quality Section, P.O. Box 60630, New Orleans 70160, Charles E. Bishop, Jr., Director (504-568-5101).

Air Quality Section, P.O. Box 60630, New Orleans 70160, Gus Von Bogungen, Director (504-568-5121).

Consumer Products Control Section, P.O. Box 60630, New Orleans 70160, J. C. Watson, Director (504-568-5181).

General Environmental Progress Section, P.O. Box 60630, New Orleans 70160, Vernon C. Parker, Director (504-568-5140).

Sanitarian Services, P.O. Box 60630, New Orleans 70160, J. C. Watson, Director (504-568-5181).

Planning Services, P.O. Box 60630, New Orleans 70160, Leonard Medal, Director (504-568-5110).

Louisiana Stream Control Commission, P.O. Box FC, University Station, Baton Rouge 70893, Robert Lafleur, Commission Executive Secretary (504-342-6365).

Dept. of Agriculture, Box 44302, Capitol Station, Baton Rouge 70804, G. L. Dozier, Commissioner (504-342-7270).

Office of Management and Finance, Box 44302, Capitol Station, Baton Rouge 70804, Edward Newsham, Director (504-925-4637).

Office of Agro Consumer Services, Box 44302, Capitol Station, Baton Rouge 70804, Jimmie Meadows, Director (504-925-4655).

Office of Agricultural and Environmental Sciences, Box 44302, Capitol Station, Baton Rouge 70804, Phil Collins, Director (504-342-5809).

Office of Animal Health Services, Box 44302, Capitol Station, Baton Rouge 70804, Dr. Forrest Henderson, Director (504-342-4986).

State Soil and Water Conservation Committee, Louisiana State University, P.O. Box CS, Baton Rouge 70893, C. S. Staples, Executive Director (504-342-7534).

Louisiana Dept. of Wildlife and Fisheries, 400 Royal Street, New Orleans 70130, J. B. Angelle, Secretary (504-586-5667).

Water Pollution Control Division, P.O. Drawer FC, University Station, Baton Rouge 70893, Robert A. Lafleur, Director (504-342-6363).

Fur and Refuge Division, 400 Royal Street, New Orleans 70130, Allan Ensminger, Chief (504-568-5886).

Enforcement Division, 400 Royal Street, New Orleans 70130, Vincent Purpera, Chief (504-568-5676).

Sea Foods Division, 400 Royal Street, New Orleans 70130, Harry Shafer, Chief (504-568-5676).

Fish Division, P.O. Box 44095, Capitol Station, Baton Rouge 70804, Kenneth Smith, Chief (504-342-5864).

Game Division, P.O. Box 44095, Capitol Station, Baton Rouge 70804, Joe L. Herring, Chief (504-342-5868).

Geological Survey, P.O. Box G, University Station, Baton Rouge 70893, Dr. Charles Grote, State Geologist (504-342-6754).

Governor's Office of Science Technology and Environmental Policy, P.O. Box 44066, Baton Rouge 70804, Lee W. Jennings, Executive Director (504-923-0599).

State Planning Office, 4528 Dennington Ave., Baton Rouge 70808, Donna M. Irvin, Executive Director (504-925-4085).

Coastal Resources Program, Dept. of Transportation and Development, P.O. Box 44245, Baton Rouge 70804, Dr. Paul Templet, Coordinator (504-923-0765).

MISSISSIPPI

Governor: Charles C. Finch, State Capitol, Jackson 39205 (601-354-7575).

Legislative Reference Bureau, P.O. Box 1040, Jackson 39205, Jerry Barham, Director (601-354-6165).

Energy

Legislative Energy-Related Committees: Oil, Gas, and Other Minerals Committee, House of Representatives, New Capitol Building, Jackson 39201, Rep. John A. Neill, Chairman, Francis Hicks, Clerk of the House, Staff Contact (601-354-6156); Public Utilities Committee, State Senate, New Capitol Building, Jackson 39201, Sen. Berta Lee White, Chairman, Jesse L. White, Jr., Secretary to the Senate, Staff Contact (601-354-6790); Water Resources Committee, State Senate, New Capitol Building, Jackson 39201, Sen. George C. McLeod, Chairman, Jesse L. White, Jr., Secretary to the Senate, Staff Contact (601-354-6790); Public Utilites Committee, House of Representatives, New Capitol Building, Jackson 39201, Rep. Joe G. Moss, Francis Hicks, Clerk of the House, Staff Contact (601-354-6156); Conservation and Water Resources Committee, House of Representatives, New Capitol Building, Jackson 39201, Rep. W. A. Wilkerson, Francis Hicks, Clerk of the House, Staff Contact (601-354-6156); Oil and Gas Committee, State Senate, New Capitol Building, Jackson 39201, Sen. Willard L. McIllewain, Chairman, Jesse L. White, Jr., Secretary to the Senate, Staff Contact (601-354-6790).

Fuel And Energy Management Commission, 1307 Woolfolk State Office Building, 501 N. West Street, Jackson 39205, Pete Walley, Director (601-354-7406) - to monitor and respond to fuel and energy problems; to serve as a central communications point and clearinghouse for receiving and disseminating information on fuel problems; to conduct surveys of essential facilities and services to determine effect of fuel shortages; to develop a list of priority uses and identify priority users; to meet with all involved groups; to develop contingency plans and procedures; to keep the public informed; to recommend legislation; to administer the State's role in the mandatory petroleum allocation program.

Mississippi Public Service Commission, P.O. Box 1174, Jackson 39205, E. W. Robinson, Executive Secretary (601-354-7474).

Environment

Air and Water Pollution Control Commission, P.O. Box 827, Jackson 39205, Charles Chisolm, Director (601-354-2550).

Division of Air Pollution Control, P.O. Box 827, Jackson 39205, Dwight K. Wylie, Chief (601-354-2550).

Division of Water Pollution Control, P.O. Box 827, Jackson 39205, Charles T. Branch, Chief (601-354-2550).

Mississippi Board of Health, Bureau of Environmental Health, P.O. Box 1700, Jackson 39205, Joe Brown, Chief (601-354-6616).

Division of Solid Waste Management and Vector Control, P.O. Box 1700, Jackson 39205, J. M. McMillan, Director (601-982-6317).

Division of Water Supply, P.O. Box 1700, Jackson 39205, J. C. McDonald, Director (601-354-6616).

Division of Food and General Sanitation, P.O. Box 1700, Jackson 39205, Paul Rankin, Director (601-354-6616).

Division of Milk and Shell Fish Sanitation, P.O. Box 1700, Jackson 39205, Clinton Van Denver, Director (601-982-6400).

Division of Radiological Health, P.O. Box 1700, Jackson 39205, Eddie Fuente, Director (601-354-6657).

Division of Occupational Safety and Health, P.O. Box 1700, Jackson 39205, Henry Laird, Director (601-982-6315).

Federal/State/Local Programs, Office of the Governor, 20th Floor, Walter Sillers Building, 500 High Street, Jackson 39202, Glenn Smith, Coordinator (601-354-7575).

Environmental Impact Assessment, Clearing House, Executive Building, 401 Mississippi St., Jackson 39201, Lester Howell, Director (601-354-7787).

Coastal Zone Management: Marine Resources Council, P.O. Drawer 959, Long Beach 39560, J. E. Thomas, Executive Director (601-864-4602).

Marine Programs for Coastal Zone Management, P.O. Drawer 959, Long Beach 39560, Jerry Mitchell, Manager (601-864-4602).

Marine Projects for the Wetlands Division, P.O. Drawer 959, Long Beach 39560, Joe Gild, Jr., Manager (601-864-4602).

Scientific and Technical Department, P.O. Drawer 959, Long Beach 39560, Cornell Ladner, Coordinator (601-864-4602).

Dept. of Agriculture and Commerce, P.O. Box 1609, Jackson 39205, Honorable Jim Buck, Commissioner (601-354-6556).

Forestry Commission, 908 Robert E. Lee Building, Jackson 39201, B. T. Gaddis, State Forester (601-354-7124).

Game and Fish Commission, 3rd Floor, Robert E. Lee Building, 239 N. Lamar Street, P.O. Box 451, Jackson 39201, Joe Stone, Executive Director (601-354-7333).

State Board of Health, 2423 North State, Box 1700, Jackson 39205, Dr. A. B. Cobb, Executive Director (601-354-6646).

State Board of Water Commissioners, 416 N. State Street, Jackson 39201, J. W. Pepper, State Water Engineer (601-354-7236).

State Soil and Water Conservation Commission, 754 N. President St., Jackson 39202, Gale Martin, Administrator (601-354-7469).

NORTH CAROLINA

Governor: James B. Hunt, Jr., Administration Building, Raleigh 27611 (919-829-5811).

Legislative Services Office, Legislative Building, Raleigh 27611, John Allen, Legislative Services Officer (919-733-7044).

Energy

Legislative Energy-Related Committees: Public Utilities and Energy Committee, House of Representatives, Legislative Building, Raleigh 27611, Rep, George M. Miller, Jr., Chairman, William Potter, Director of Research, Staff Contact (919-829-7044); Public Utilities and Energy Committee, State Senate, Legislative Building, Raleigh 27611, Sen. Wesley D. Webster, Chairman, William Potter, Director of Research, Staff Contact (919-829-7044).

Energy Division, Dept. of Commerce, P.O. Box 25249, Raleigh 27611, Brian Flattery, Director (919-733-2230) - to provide a central point in State government charged with responsibility for the operational and planning aspects of energy management, except where otherwise provided by law, and to provide the focus for implementation of the State elements of national energy policy.

Energy Policy Council, P.O. Box 25249, Raleigh 27611 (919-733-2230) - to recommend energy programs to the Governor and the General Assembly; serves as the central energy policy planning body of the State and communicates and cooperates with Federal, State, regional, and local agencies in order to establish an effective coordinated energy policy. The Energy Policy Council consists of 14 members: two from the House of Representatives, two from the State Senate, seven from the public, the Chairman of the Utilities Commission, the Secretary of the Department of Natural and Economic Resrouces, and the Commissioner of Agriculture.

Utilites Commission, Dept. of Commerce, P.O. Box 991, Raleigh 27602, Robert K. Koger, Chairman (919-733-4249).

Environment

Dept. of Natural Resources and Community Development, P.O. Box 27687, Raleigh 27611, Howard N. Lee, Secretary (919-733-4984).

Division of Environmental Management, P.O. Box 27687, Raleigh 27611, A. F. McRorie, Director (919-733-7015).

Air Quality Section, P.O. Box 27687, Raleigh 27611, J. A. McColman, Chief (919-733-4058).

Water Quality Section, P.O. Box 27687, Raleigh 27611, L. P. Benton, Chief (919-733-5083).

Land Quality Section, P.O. Box 27687, Raleigh 27611, Charles Gardner, Chief (919-733-4574).

Wildlife Resources Commission, P.O. Box 27687, Raleigh 27611, Robert B. Hazel, Executive Director (919-733-3391).

Division of Land Resources, P.O. Box 27687, Raleigh 27611, Steve Conrad, Director (919-733-3781).

State Soil and Water Conservation Commission, P.O. Box 27687, Raleigh 27611, Grady Lane, Chief (919-733-3833).

Division of Earth Resources, P.O. Box 27687, Raleigh 27611, S. G. Conrad, Director (919-733-3833).

Dept. of Agriculture, P.O. Box 27647, Raleigh 27611, J. A. Graham, Commissioner (919-733-7125).

Dept. of Human Resources, Division of Health Services, 225 N. McDowell Street, P.O. Box 2091, Raleigh 27602, J. Koomen, Director (919-733-3446).

Office of Intergovernmental Relations, Dept. of Natural Resources and Community Development, P.O. Box 27687, Raleigh 27611, John Booth, Director (919-733-4672).

Environmental Impact Assessment for the State Clearing House Review, 116 W. Jones St., Raleigh 27601, Mrs. Denny McGuire, Clearinghouse Supervisor (919-733-4131).

Division of Policy Development, Dept. of Administration, Administration Building, 116 W. Jones Street, Raleigh 27603, Arnold Zogry, Assistant Secretary (919-829-4131).

OKLAHOMA

Governor: David L. Boren, State Capitol, Oklahoma City 73105 (405-521-2345).

Oklahoma State Legislative Council, 305 State Capitol, Oklahoma City 73105, Dr. James H. Johnson, Director (405-521-3201).

Energy

Legislative Energy-Related Committees: Oil and Gas Committee, House of Representatives, State Capitol, Oklahoma City 73105, Rep. Billy F. Kennedy, Chairman, Legislative Council, Staff Contact (405-521-3201); Environmental Quality Committee, House of Representatives, Oklahoma City 73105, Rep. Mark Hammons, Chairman, Mrs. Gloris Shadid, Staff Contact (405-521-3201); Oil and Gas Committee, State Senate, State Capitol, Oklahoma City 73105, Sen. Don Baldwin, Chairman, Legislative

Council, Staff Contact (405-521-3201); Environmental and Natural Resources Committee, State Senate, State Capitol, Oklahoma City 73105, Sen. Gilmore Capps, Chairman, Mrs. Gloria Shadid, Staff Contact (405-521-3201).

Dept. of Energy, 4400 N. Lincoln Blvd., Suite 251, Oklahoma City 73105, Richard G. Hill, Director (405-521-3941 or 521-2995) - to allocate fuels, interpret Federal energy guidelines, and implement rules and regulations necessary to perform the duties imposed by Federal and State laws; to coordinate the State's effort in data collection and conservation; to cooperate with the Governor's Advisory Council on Energy, the Southwest Regional Energy Council, and the Legislative Task Force on Energy.

Governor's Advisory Council on Energy, 4400 N. Lincoln Blvd., Suite 251, Oklahoma City 73105 (405-521-3941 or 521-2995) - to develop public policy with respect to energy production, distribution, and use in Oklahoma.

Public Utilities: Oklahoma Corporation Commission, Jim Thorpe Office Building, Oklahoma City 73105, Rex Privett, Chairman (405-521-2264).

Environment

State Dept. of Health, NE 10th Street and Stonewall, P.O. Box 53551, Oklahoma City 73152, Joan K. Leavitt, M. D., Commissioner of Health (405-271-4200).

Environmental Health Services, NE 10th Street and Stonewall, P.O. Box 53551, Oklahoma City 73152, Kalvin Grant, Deputy Commissioner (405-271-5204).

Air Quality Service, J. W. Gallion, Chief (405-271-5220).

State of Oklahoma Dept. of Pollution Control, NE 10th Street and Stonewall, P.O. Box 53504, Oklahoma City 73152, D. Talley, Director (405-271-4677).

Industrial and Solid Waste Management Division, State Dept. of Health, H. A. Caves, Director (405-271-5338).

Water Quality Service, C. Newton, Chief (405-271-5205) - municipal discharge control.

Water Resources Board, Water Quality Division, 5th Floor, Jim Thorpe Building, 2101 N. Lincoln Blvd., Oklahoma City 73105, James R. Barnett, Board Executive Director (405-521-3947) - industrial discharge, water quality control.

Environmental Impact Assessment and Land Use Planning: Dept. of Economic and Community Affairs, 4901 N. Lincoln, Oklahoma City 73105, Don Strain, Director, State Clearinghouse (405-840-2811); Gary Witt, Director, State Planning and Management (405-840-2811).

State Dept. of Agriculture, Room 122, State Capitol, Oklahoma City 73105, David Stratton, President of the Board (405-521-3868).

Dept. of Wildlife Conservation, 1801 N. Lincoln, P.O. Box 53465, Oklahoma City 73105, G. Wint, Director (405-521-3851).

Oklahoma Geological Survey, University of Norman, Room 163, 830 Van Vleet Oval, Norman 73019, C. J. Mankin, Director (405-325-3031).

Oklahoma Conservation Commission, Room 20, State Capitol, Oklahoma City 73105, L. A. Solomon, Executive Director (405-521-2384).

SOUTH CAROLINA

Governor: James B. Edwards, State House, Columbia 29211 (803-753-3261).

Legislative Council, P.O. Box 11417, Columbia 29211, T. S. Linton, Director (803-758-2334).

Energy

Legislative Energy-Related Committees: Joint Committee on Fuel Allocation and Energy, General Assembly, P.O. Box 11867, Columbia 29211, Rep. W. Green DesChamps, Jr., and Sen. John Drummond, Co-chairmen (803-758-5240 or 758-3260).

Energy Management Office, Edgar Brown Building, 1205 Pendleton Street, Room 342, Columbia 29201, Robert J. Hirsch, Director (803-758-2050) - to administer the mandatory petroleum allocation program; to provide staff assistance to the Governor in areas of energy management, conservation, public information and education and consumer assistance.

Public Utility Regulation: Public Service Commission, P.O. Drawer 11469, Columbia 29211, Lewis Moss, Chairman (803-758-3565).

Environment

Dept. of Health and Environmental Control, 2600 Bull Street, J. Marion Sims Building, P.O. Box 11628, Columbia 29201, Albert G. Randall, M. D., Dept. Commissioner (803-758-5445) - includes environmental impact assessments.

Bureau of Air Quality Control, W. G. Crosby, Chief (803-758-5406).

Bureau of Water Quality Control, Charles R. Jeter, Chief (803-758-3877).

Bureau of Special Environmental Programs, Solid Waste Management Division, Hartsill W. Truesdale, Division Director (803-758-5681).

Dept. of Agriculture, Wade Hampton Office Building, Box 11280, Columbia 29211, G. Bryan Patrick, Jr., Commissioner (803-758-2426).

South Carolina Geological Survey, State Development Board, Harbison Forest Road, Columbia 29210, N. K. Olson, State Geologist (803-758-6431).

Water Resources Commission, P.O. Box 4515, 3830 Forest Drive, Columbia 29240, C. P. Guess, Jr., Executive Director (803-758-2514).

South Carolina State Land Resources Conservation Commission, 2222 Devine Street, Suite 222, Columbia 29205, J. W. Parris, Executive Director (803-758-2824).

State Commission of Forestry, Box 21707, Columbia 29221, Leonard A. Kilian, Jr., State Forester (803-758-2261).

Wildlife and Marine Resources Dept., Building D., Dutch Plaza, Box 167, Columbia 29202, J. A. Timmerman, Jr., Executive Director (803-758-6314).

South Carolina Coastal Council, Suite 1116, Bankers Trust Tower, Columbia 29201, Dr. Wayne Beam, Director (803-758-8442).

TENNESSEE

Governor: Ray Blanton, State Capitol, Nashville 37219 (615-741-2001).

Office of Legislative Services, State Capitol, Nashville 37219, Barbara Langley, Executive Director (615-741-3511).

Energy

Legislative Energy-Related Committees: Conservation and Environment Committee, House of Representatives, Suite 22 Legislative Plaza, Capitol Hill, Nashville 37219, Rep. William C. Watson, Chairman, James C. Free, Clerk of the House, Staff Contact (615-741-2902); General Welfare and Environment Committee, State Senate, Suite 5 Legislative Plaza, Capitol Hill, Nashville 37219, Sen. Fred O. Berry, Chairman, J. T. Craig, Clerk of the Senate, Staff Contact (615-741-2730).

Tennessee Energy Authority, 250 Capitol Hill Building, Nashville 37219. Edward Spitzer, Director (615-741-2994 - to advise the Governor and Legislature on the energy situation and develop measures to minimize State energy problems; to plan, develop, coordinate, and implement a State energy program and policy; to coordinate all intergovernmental energy programs; to coordinate energy conservation, contingency planning, energy allocation, data collection, analysis, R and D public information, and education; to provide forecasts of energy conditions, assess shortages, and recommend energy legislation for State policy; to administer the Emergency Petroleum Allocation Act of 1973; to maintain continous liaison with energy suppliers, distributors, and agencies of other States and the Federal government on energy matters; to be a clearinghouse for information on all energy-related programs and research and development projects in the State.

Tennessee Public Service Commission, Cordell Hull Building, Nashville 37219, Bob Clement, Chairman (615-741-2785).

Power Manager's Office: Tennessee Valley Authority, 830 Power Building, Chattanooga 37401, N. B. Hughes, Manager of Power (615-755-3011).

Environment

Dept. of Public Health, Bureau of Environmental Health Services, Nashville 37219, E. Fowinkle, Dept. Commissioner (615-741-3111); J. L. Church, Bureau Director (615-741-3657).

Air Pollution Control Division, 256 Capitol Hill Building, 301 Seventh Avenue, N., Nashville 37219, H. E. Hodges, Division Director (615-741-3931).

Water Quality Control Division, 621 Cordell Hull Building, Nashville 37219, D. Elmo Lunn, Director (615-741-2275).

Sanitation and Solid Waste Management Division, 320 Capitol Hill Building, Nashville 37219, J. Tom Tiesler, Division Director (615-741-3424).

Dept. of Conservation, 2611 W. End Avenue, Nashville 37203, B. R. Allison, Commissioner (615-741-2301) - includes surface mining regulations, geology, forestry, state parks, water resources, etc.

Environmental Impact Assessments: Urban and Federal Affairs, 108 Parkway Towers, Nashville 37219, Joe Maynard, Grant Review Coordinator (615-741-2714).

Land Use Planning: State Planning Office, 660 Capitol Hill Building, Nashville 37219, Stephen H. Norris, Director (615-741-1676).

Dept. of Agriculture, P.O. Box 40627, Melrose Station, Ellington Agricultural Center, Nashville 37204, E. S. Porter, Commissioner (615-741-2601).

Tennessee Wildlife Resources Agency, P.O. Box 40747, Ellington Agricultural Center, Nashville 37204, Gary Myers, Executive Director (615-741-1431).

State Soil Conservation Committee, P.O. Box 1071, Knoxville 37901, J. H. Robinson, Executive Secretary (615-974-7208).

Environment Center, University of Tennessee, South Stadium Hall, Knoxville 37916, J. H. Gibbons, Director (615-974-4251).

TEXAS

Governor: Dolph Briscoe, State Capitol, Austin 78711 (514-475-4101).

Legislative Council, P.O. Box 12128, Capitol Station, Austin 78711, R. E. Johnson, Executive Director (512-475-2736).

Energy

Legislative Energy-Related Committees: Energy Resources Committee, House of Representatives, State Capitol, Austin 78711, Rep. Joe Hanna, Chairman, Elton Fewell, Staff Contact (512-475-3864); Natural Resources Committee, State Senate, State Capitol, Austin 78711, Sen. Max Sherman, Chairman, Frank Sheffield, Staff Contact (512-475-3222).

Governor's Energy Advisory Council, 7703 N. Lamar Blvd., Austin 78752, A. C. Askew, Executive Director (512-475-5491) - to formulate a state energy policy for recommendation to the Legislature and Executive Offices; to develop and maintain an energy data base system and econometric modeling; to encourage and promote energy development in the State; to promote and coordinate all energy-related research in the State and to maintain an information exchange; to recommend legislation and executive action to develop increased conservation; to review and comment on existing and proposed actions by the Federal government; to administer a public information program for energy conservation.

Public Utility Regulation: Railroad Commission, Drawer 12967, Capitol Station, Austin 78711, Mack Wallace, Chairman (512-475-2644).

Texas Energy Advisory Council, 7703 N. Lamar Blvd., Austin 78752, M. Holloway, Executive Director (512-475-7017).

Environment

Air Control Board, 8520 Shoal Creek Blvd., Austin 78758, Bill Stewart, Board Executive Director (512-451-5711).

Dept. of Water Resources, P.O. Box 13087, Capitol Station, Austin 78711, D. Whittington, Deputy Director (512-475-3761).

Enforcement Field Operation, Dept. of Water Resources, 1700 N. Congress, P.O. Box 13246, Capitol Station, Austin 78711, Harvey Dadis, Board Executive Director (512-475-2651) - includes industrial solid waste.

Dept. of Health, Division of Solid Waste Management, 1100 W. 49th Street, Austin 78756, Fratis L. Duff, Department Commissioner (512-454-7375), J. Carmichael, Division Director (512-458-7271).

Budget and Planning, Office of the Governor, 411 W. 13th Street, Austin 78701, Ward Goesling, Coordinator, Natural Resources Section, (512-475-2411).

Dept. of Health Resources, 1100 W. 49th Street, Austin 78756, F. L. Duff, Commissioner (512-458-7111).

Bureau of Economic Geology, University Station, Box X, Austin 78712, Dr. William Fisher, Acting Director (512-471-1534).

Texas Dept. of Agriculture, P.O. Box 12847, Capitol Station, Austin 78711, Reagan V. Brown, Commissioner (512-475-6346).

Texas Water Rights Commission, P.O. Box 13087, Capitol Station, Austin 78711, J. D. Carter,Chairman (512-475-4514).

Forest Service, College Station 77843, P. R. Kramer, Director (713-845-2641).

Parks and Wildlife Dept., 4200 Smith School Road, Austin 78744, Henry B. Burkett, Executive Director (512-475-4888).

State Soil and Water Conservation Board, P.O. Box 658, 1002 First National Building, Temple 76501, A. C. Spencer, Executive Director (817-773-2250).

VIRGINIA

Governor: Mills E. Godwin, Jr., State Capitol, Richmond 23219 (804-770-2211).

Division of Legislative Services, P.O. Box 3-AG, Richmond 23208, J. A. Banks, Jr., Director (804-786-3591).

Energy

Legislative Energy-Related Committees: Conservation and Natural Resources Committee, House of Delegates, P.O. Box 406, Richmond 23203, Delegate John Gray, Chairman, Joseph Holleman, Jr., Clerk of the House, Staff Contact (804-770-8826); Agriculture, Conservation and Natural Resources Committee, State Senate, State Capitol, Richmond 23219, Sen. William V. Rawlings, Chairman, Mrs. Louise Lucas, Clerk of the Senate (804-770-2366).

Energy Office, 823 E. Main Street, Room 300, Richmond 23219, Boyd Spencer, Acting Director (804-786-8451) - to administer the State set-aside program for hardship and emergency allocation requirements; to implement energy allocation or conservation programs; to establish contingency allocation plans for fuel oil, gasoline, and other energy resources; to encourage cooperative efforts by and amoung Virginia business, industry, utilities, the academic community, State, local, and Federal Governments and private institutions to develop conservation programs and sources of energy.

State Corporation Commission, Division of Energy Regulation, P.O. Box 1197, Richmond 23209, T. P. Harwood, Jr., Chariman (804-786-3608), James R. Wittine, Director (804-786-3614).

Environment

Council on Environment, 903 9th St. Office Building, Richmond 23219, J. B. Jackson, Jr., Council Administrator (804-786-4500), Reginald Wallace, EIS Coordinator (804-786-2189).

State Air Pollution Control Board, Ninth Street Office Building, Room 1106, Richmond 23219, W. R. Meyer, Board Executive Director (804-786-2378).

State Water Control Board, 2111 N. Hamilton Street, P.O. Box 11143, Richmond 23230, Robert Davis, Board Executive Secretary (804-257-0056).

Dept. of Health, James Madison Building, 109 Governor Street, Richmond 23219, James B. Kenley, M. D., Commissioner (804-786-3561).

Division of Solid and Hazardous Waste Management, 903 Madison Bldg., 109 Governor St., Richmond 23219, William F. Gilley, Acting Director (804-786-5271).

Division of Local and Regional Planning, Dept. of Housing and Community Development, 205 North 4th St., Richmond 23219, Stanley Kidwell, Associate Director (804-786-4966).

Commerce and Resources, 9th St. Office Building, Richmond 23218, Maurice B. Rowe, Secretary (804-786-7831).

Dept. of Agriculture and Consumer Services, P.O. Box 1163, Richmond 23209, S. M. Carbaugh, Commissioner (804-786-3501).

Dept. of Conservation and Economic Development, 1100 State Office Building, Richmond 23219, Fred W. Walker, Director (804-786-2121) - includes forestry, mineral resources, mined land reclamation, state parks, etc.

Commission of Game and Inland Fisheries, 4010 W. Broad Street, Box 11104, Richmond 23230, C. F. Phelps, Executive Director (804-257-1000).

Marine Resources Commission, P.O. Box 756, 2401 West Avenue, Newport News 23607, J. E. Douglas, Jr., Commissioner (804-245-2811).

Soil and Water Conservation Commission, Suite 800, 830 E. Main Street, Richmond 23219, J. B. Willson, Jr., Director (804-786-2064).

Virginia Institute of Marine Sciences, Glovcester Point 23062, W. J. Hargis, Jr., Director (804-642-2111).

WEST VIRGINIA

Governor: J. D. Rockefeller IV, State Capitol, Charleston 25305 (304-348-2000).

Legislative Services, E-132 State Capitol, Charleston 25305, Earl Vickers, Director (304-348-2040).

Energy

Legislative Energy-Related Committees: House of Delegates, State Capitol, Charleston 25305, George Carenbauer, Legislative Services (304-348-2040); State Senate, State Capitol, Charleston 25305, George Carenbauer, Legislative Services, Staff Contact (304-348-2040).

Fuel and Energy Division, Governor's Office of Economic and Community Development, 1262 1/2 Greenbrier Street, Charleston 25305, J. Herholdt, Director (304-348-8860) - provide current information regarding energy availability and distribution; act as liaison between citizens, industry and government agencies in the State; promote and implement long and short-term energy conservation programs; provide a public information program to citizens on how to save energy; develop educational programs and presentations for schools; recommend energy legislation; forecast possible fuel shortages for the State; develop contingency plans in the event of energy shortages; collect data on energy distribution networks; administer the mandatory petroleum allocation program and the State set-aside; locate coal producers who will make home heating coal available to low and fixed income families.

Public Service Commission of West Virginia, Capitol Building, Charleston 25305, E. Dandridge McDonald, Chairman (304-348-2182).

West Virginia Fuel and Energy Office, 1262 1/2 Greenbrier Street, Charleston 25311, Jeff Herholt, Director (304-348-8860).

Environment

Air Pollution Control Commission, 1558 Washington Street, East, Charleston 25311, C. G. Beard II, Commission Director (304-348-3286).

Dept. of Natural Resources, 1800 Washington Street, East, Charleston 25305, David C. Callaghan, Director (304-348-2754) - includes water resources, wildlife resources, fish and game, forestry, reclamation, parks, etc.

Division of Water Resources, 1201 Greenbrier Street, Charleston 25311, David W. Robinson, Division Chief (304-348-2107).

Dept. of Health, Environmental Health Service, Bureau of Solid Waste Disposal, 1800 E. Eashington Street, Room 520, Charleston 25305, Dr. George E. Pickett, Dept. Director (304-348-2971), Dale Parsons, Bureau Director (304-348-2925).

State Clearinghouse, Program Support Services, Building 6, Room 548, 1900 Washington St., Tim Oxley, Director (304-348-4010).

Program Support Services, Governor's Office of Economic and Community Development, Building 6, Room 548, State Capitol Complex, Charleston 25305, Daniel S. Green, Manager (304-348-2246).

Dept. of Agriculture, Building 1, Charleston 25305, G. R. Douglass, Commissioner (304-348-2201).

Geological and Economic Survey, Box 879, Morgantown 26505, R. B. Erwin, Director and State Geologist (304-292-6331).

Southern Power Companies

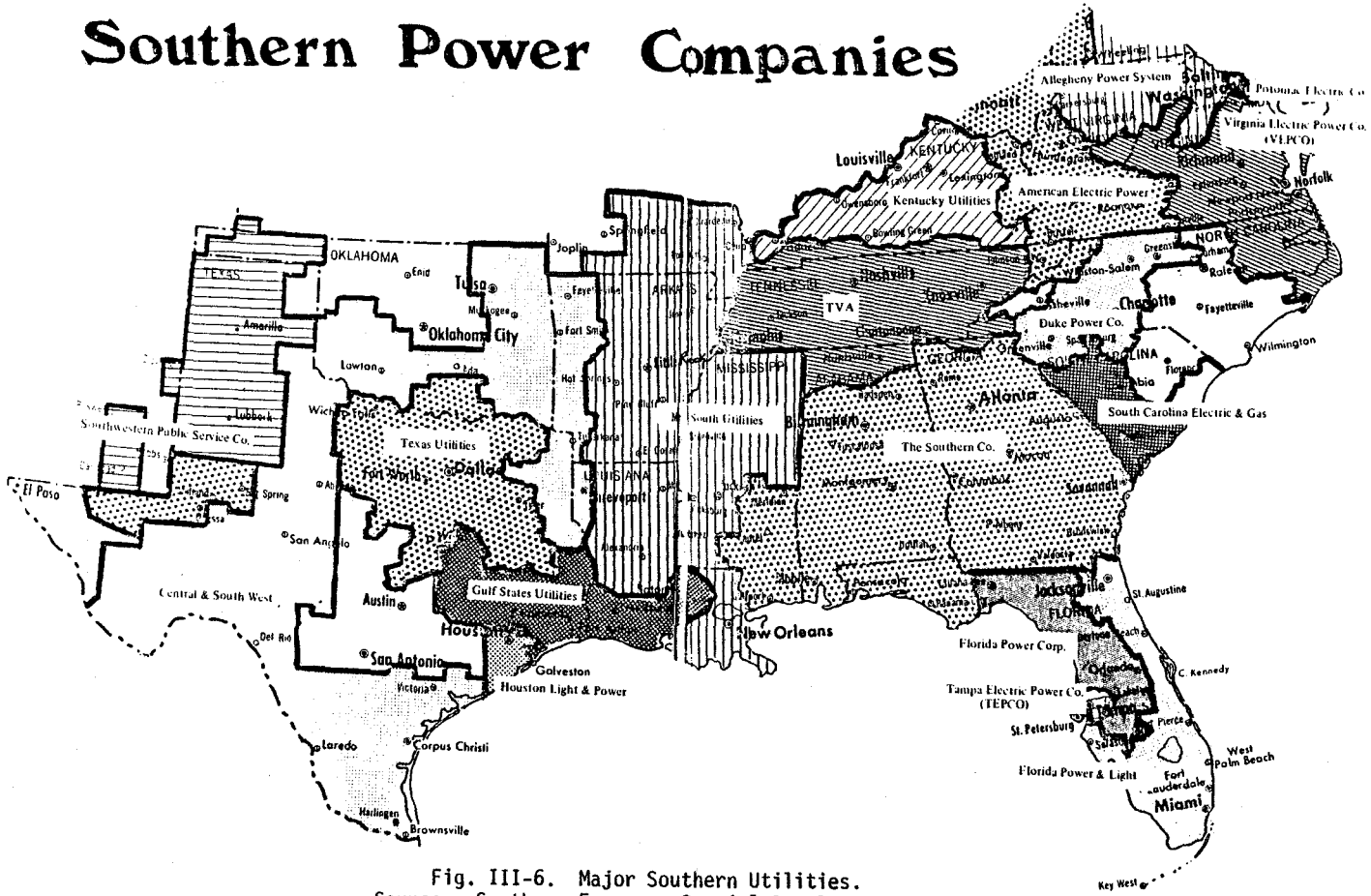

Fig. III-6. Major Southern Utilities.
Source: Southern Exposure Special Supplement on Energy.

5. MAJOR UTILITIES BY STATE

ALABAMA

Alabama Power Company, 600 N. 18th Street, Birmingham 35202, 205-323-5341, (Subsidiary of The Southern Co., Atlanta).

Southern Electric Generating Company, 600 N. 18th Street, Birmingham 35202, 205-323-5341, 50% owned by Alabama Power Company, 50% by Georgia Power Company.

36 Municipal Systems - Complete Listing in Electrical World Directory of Electric Utilities.
23 Rural Electric Cooperatives - Complete Listing in Electrical World Directory of Electric Utilities.

ARKANSAS

Arkansas-Missouri Power Company, 405 West Park Street, Blytheville 72315, 501-763-6821, (Subsidiary of Middle South Utilities).

Arkansas Power and Light Company, P.O. Box 551, Little Rock 72203, 501-371-4000, (controlled by Middle South Utilities, New Orleans).

Citizens Light and Power Company, 413 Main Street, Tuckerman 72473, 501-349-2623.

15 Municipal Systems
19 Rural Electric Cooperatives

FLORIDA

Florida Power and Light Company, 9250 W. Flagler Street, Miami 33174, Mail Address: P.O. Box 013100, Miami 33101, 305-552-3552.

Florida Power Corporation, 3201 34th Street, S., P.O. Box 14042, St. Petersburg 33733, 813-866-5151.

Florida Public Utilities Company, 401 S. Dixie, West Palm Beach 33402, 305-832-2461.

Gulf Power Company, 75 N. Pace Blvd., P.O. Box 1151, Pensacola 32520, 904-434-8111.

Tampa Electric Company, 111 N. Dale Mabry Highway, P.O. Box 111, Tampa 33601, 813-876-4111.

34 Municipal Systems
16 Rural Electric Cooperatives

GEORGIA

Georgia Power Company, 270 Peachtree Street, Atlanta 30303, 404-522-6060 (Subsidiary of The Southern Company, Atlanta).

Savannah Electric and Power Company, 600 Bay Street, E., Savannah 31402, 912-232-7171.

The Southern Company, 64 Perimeter Center East, P.O. Box 720071, Atlanta 30346, 404-393-0650 (Associated Companies: Alabama Power, Georgia Power, Gulf Power, Mississippi Power, Southern Electric Generating, and Southern Services, Inc.).

Southern Services, Inc., 64 Perimeter Center East, P.O. Box 720071, Atlanta 30346, 404-393-0650; 800 Shades Creek Parkway, P.O. Box 2625, Birmingham 35202, 205-870-6011; Bway, Suite 3321, New York 10005, 212-269-8842 (System Service Company associated with: The Southern Co., Alabama Power, Georgia Power, Gulf Power, Mississippi Power, and Southern Electric Generating Co.).

Southeastern Power Administration, Samuel Elbert Building, Elberton 30635, 404-283-3261 (SPA, a Bureau of U.S. Dept. of Interior, markets power from Army Corps of Engr. Projects in the SE).

50 Municipal Systems
42 Rural Electric Cooperatives
1 County System

KENTUCKY

Berea College Utilities, C.P.O. Box 2337, Berea 40403, 606-986-3451.

Kentucky Power Company, Carter Avenue at 15th Street, Ashland 41101, 606-324-2144 (Subsidiary of American Electric Power Co., N.Y.).

Kentucky Utilities Company, 120 S. Limestone, Lexington 40507, 606-255-1461 (Owns and Operates The Old Dominion Power Co.).

Louisville Gas and Electric Company, 311 W. Chesnut Street, Louisville 40201, 502-582-3511.

Union Light, Heat and Power Company, 107 Brent Spence Square, Covington 41011, 606-381-4100 (Controlled by The Cincinnati Gas & Electric Co.).

27 Municipal Systems
28 Rural Cooperatives

LOUISIANA

Central Louisiana Electric Co., Inc., 415 Main Street, Pineville 71360, 318-445-8211 (Controls Louisiana Rural Electric Corp., Louisiana Intrastate Gas Corp., and South Louisiana Production Co., Inc.).

Louisiana Power and Light Company, 142 Delaronde Street, New Orleans 70174, 504-366-2345 (Controlled by Middle South Utilities, Inc.).

Middle South Services, Inc., 225 Baronne Street, P.O. Box 61000, New Orleans 70161, 504-529-5262 (Controls: Arkansas Power and Light, Arkansas-Missouri Power, Crossett Electric, Louisiana Power and Light, Mississippi Power and Light, New Orleans Public Service, Middle South Services, and Middle South Energy, Inc.).

New Orleans Public Services, Inc., 317 Baronne Street, New Orleans 70160, 504-586-2121 (Controlled by Middle South Utilities).

Southwestern Electric Power Company, 428 Travis Street, P.O. Box 1106, Shreveport 71156, 318-222-2141 (Controlled by Central and South West Corp.).

28 Municipal Systems
15 Rural Electric Cooperatives

MISSISSIPPI

Mississippi Power Company, 2992 W. Beach, Gulfport 39501, 601-864-1211 (Subsidiary of The Southern Co.).

Mississippi Power and Light Company, Electric Building, Jackson 39205, 601-969-2311 (Controlled by Middle South Utilities, N.Y.).

24 Municipal Systems
27 Rural Electric Cooperatives

NORTH CAROLINA

Carolina Power and Light Company, 336 Fayetteville Street, Raleigh 27602, 919-828-8211.

Cascade Power Company, Brevard 28712, 704-883-9011 (All power generated sold to Duke Power Co.).

Duke Power Company, 422 S. Church Street, Charlotte 28242, 704-373-4011.

Laurel Hill Electric Company, Inc., P.O. Box 157, Laurel Hill 28351, 919-462-2160.

Nantahala Power and Light Company, P.O. Box 260, Franklin 28734, 704-524-2121.

Pinehurst, Inc. (Power Dept.), P.O. Box 4000, Pinehurst 28374, 919-295-5720.

Roselle Lighting Co., Inc., P.O. Box 55, Landis 28088, 704-933-7676.

67 Municipal Systems
30 Rural Electric Cooperatives
2 State-Owned Systems

OKLAHOMA

Oklahoma Gas and Electric Company, 321 N. Harvey Avenue, Oklahoma City 73101, 405-272-3000 (One of 3 Lessees of the Arklahoma Corp.).

Public Service Company of Oklahoma, 2932 First National Tower, Tulsa 74103, 918-583-3611 (Subsidiary of Central and Southwest Corp.).

Southwestern Power Administration, P.O. Drawer 1619, Tulsa 74101, 918-581-7474 (SPA markets power from Army Corps of Engineers Hydroelectric plants in the SW).

64 Municipal Systems
28 Rural Electric Cooperatives
1 State-Owned System

SOUTH CAROLINA

Heath Springs Light and Power Company, P.O. Box 8, Heath Springs 29058, 803-273-4275.

Lockhart Power Company, P.O. Box 10, Lockhart 29364, 803-545-2211.

South Carolina Electric and Gas Company, 328 Main Street, P.O. Box 764, Columbia 29218, 803-749-1234.

21 Municipal Systems
21 Rural Electric Cooperatives
1 State-Owned System

TENNESSEE

Kingsport Power Company, 422 Broad Street, Kingsport 37662, 615-245-3115 (Subsidiary of American Electric Power Co., Inc., N.Y.).

Tennessee Valley Authority, New Sprankle Building, Knoxville 37902, 615-637-0101 (Federal).

Nashville District, Army Corps of Engineers, P.O. Box 1070, 306 Federal Office Building, Nashville 37202, 615-749-5626 (Federal).

62 Municipal Systems
20 Rural Electric Cooperatives

TEXAS

Central Power and Light Company, 120 N. Chaparral Street, Corpus Christi 78403, 512-883-2631 (Operating Subsidiary - Central and Southwest Corp.).

Cochran Power and Light Company, Morton 79346.

Community Public Service Company, 501 W. Sixth Street, Fort Worth 76102, 817-335-3311.

CSR Services, Inc., One Main Place, Dallas 75250, 214-748-8481 (Controlled by Central and Southwest Corp., Wilmington, Del.).

Dallas Power and Light Company, 1506 Commerce Street, Dallas 75201, 214-747-4011 (Subsidiary of Texas Utilities Co.).

El Paso Electric Company, 215 N. Stanton Street, P.O. Box 982, El Paso 79999, 915-543-5711.

Gulf States Utilities Company, 285 Liberty Avenue, Beaumont 77701, 713-838-6631.

Houston Lighting and Power Company, P.O. Box 1700, Houston 77001, 713-228-9211.

Southwestern Electric Service Company, 1012 Mercantile Bank Building, Dallas 75201, 214-741-3125.

Southwestern Public Service Company, SPS Tower, 6th at Tyler, Amarillo 79170, 806-378-2121.

Texas Electric Service Company, P.O. Box 970, Fort Worth 76101, 817-336-9411 (Subsidiary of Texas Utilities Co. and operates Old Ocean Fuel Company).

Texas Power and Light Company, 1511 Bryan, P.O. Box 6331, Dallas 75222, 214-748-5411 (Subsidiary of Texas Utilities Co.).

Texas Utilities Company, 2001 Bryan Tower, Dallas 75201, 214-653-4600 (Subsidiary companies: Dallas Power and Light, Texas Electric Service, Texas Power and Light, Texas Utilities Fuel Co., Texas Utilities Generating Co., and Texas Utilities Generating Services).

West Texas Utilities Company, 1062 N. Third Street, Abilene 79604, 915-672-3251 (Controlled by Central and Southwest Corp., Wilmington, Delaware).

71 Municipal Systems
78 Rural Electric Cooperatives
5 State-Owned Systems

VIRGINIA

Appalachian Power Company, 40 Franklin Road, S.W., Roanoke 24009, 703-344-1411 (Subsidiary of American Electric Power Co., N.Y.; owns Kanawha Valley Power Co.; owns jointly with Ohio Power Co. Central Operating Co. which operates Philips Sporn Generating Station, Graham Station, W.V.).

Delmarva Power & Light Company of Virginia, U.S. 13 & Naylor-Mill Road, Salisbury, Maryland 21801, 301-759-6111 (Subsidiary of Delmarva Power & Light Co., Wilmington, Delaware).

Virginia Electric & Power Company, 700 E. Franklin Street, Richmond 23261, 804-771-3000.

16 Municipal Systems
16 Rural Electric Cooperatives
1 State-Owned System

WEST VIRGINIA

Black Diamond Power Company, 709 Security Building, Charleston 25301, 304-342-2721.

Chesapeake Light & Power Company, Box 2307, Charleston 25328, 304-949-1222.

Elk Power Company, Clay 25043.

Elkhorn Public Service Company, 709 Security Building, Box 2109, Charleston 25328, 304-342-2721.

Kanawha Valley Power Company, 301 Virginia Street, E., Charleston 25327, 304-348-5745 (Subsidiary of Appalachian Power Co., Roanoke).

Kimball Light & Water Company, 709 Security Building, Box 2109, Charleston 25328, 304-342-2721.

Monogahela Power Company, 1310 Fairmont Avenue, Fairmont 26554, 304-366-3000.

United Light & Power Company, 709 Security Building, Charleston 25301, 304-342-2721.

War Light & Power Company, 709 Security Building, Charleston 25301, 304-342-2721.

Wheeling Electric Company, 51 Sixteenth Street, Wheeling 26004, 304-232-1200 (Subsidiary of American Electric Power Co., Inc., N.Y.).

Union Power Company, 709 Security Building, Charleston 25301, 304-342-2721.

2 Municipal Systems
1 Rural Electric Cooperative

TABLE III-11

FEDERALLY APPROVED STATE WATER QUALITY STANDARDS

State	Date of EPA approval	Documented in
Alabama	1-29-74 5-23-74	1. "State of Alabama Water Improvement Commission Water Quality Criteria," and 2. "Water Use Classifications for Interstate and Intrastate Waters of the State of Alabama."
Arkansas	10-22-75	"Arkansas Water Quality Standards Regulation No. 2 as Amended September 1975."
Florida	12-20-74 12-02-75	"Rules of the Florida Department of Pollution Control, Chapter 17-3, Pollution of Waters," as amended by Florida on October 16, 1974, February 12, 1975, and June 27, 1975.
Georgia	5-23-74 6-12-74 8-18-75 6-28-77	"Rules of State Water Quality Control Board, Chapter 730-3, Water Use Classifications and Water Quality Standards," as amended by Georgia on March 18, 1974, August 4, 1975 and April 18, 1977.
Kentucky	2-22-74	1. "401 KAR 5:025, Water Quality Standards"; 2. "Water Quality Standards for the Commonwealth of Kentucky, July 23, 1971"; 3. "Antidegradation Statement, March 5, 1971"; 4. "401 KAR 5:035, Use Classification of Waters, Treatment Requirements, and Compliance"; and 5. "Policy for Addition of Streams Not Shown on the Map, 'Streams of Kentucky,' February 6, 1974"; except as set forth in paragraph (b) of this section. (b) State water quality standards for the commonwealth of Kentucky established by Federal promulgation effective January 2, 1975, (FR Vol. 39, No 232) are amended as identified in 120.102, Subpart C.
Louisiana	9-17-73	"State of Louisiana Water Quality Criteria, Louisiana Stream Control Commission, 1973."
Mississippi	3-6-75	"State of Mississippi Water Quality Criteria for Intrastate, Interstate and Coastal Waters" as amended on November 12, 1974 and April 25, 1977.
North Carolina	11-06-74 8-26-75 2-25-76 12-23-76	"Rules, Regulations, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina" as amended on August 22, 1974, July 17, 1975, December 11, 1975, and September 22, 1976.
Oklahoma	10-24-73 7-25-77	"Oklahoma's Water Quality Standards, September 1973" and May 1977.
South Carolina	1-15-72 3-07-73 4-18-77	1. "Classification Standards System for the State of South Carolina, 1972"; 2. "Stream Classifications for the State of South Carolina, 1972"; 3. "Water Pollution Control Implementation Plan for the State of South Carolina, January 23, 1973"; and 4. "Water Classification Standards."
Tennessee	5-14-74 9-02-75 4-14-77	Chapters 1200-4-3, "General Water Quality Criteria for the Definition and Control of Pollution in the Waters of Tennessee" and 1200-4-4, "Stream Use Classifications for Interstate and Intrastate Streams," of the document entitled, "Rules of Tennessee Department of Public Health, Bureau of Environmental Health Sciences, Division of Water Quality Control", as amended on October 30, 1973, July 8, 1975 and September 1976.
Texas	2-09-76	"Texas Water Quality Standards, February 1976."
Virginia	8-03-73	"Commonwealth of Virginia Water Quality Standards" as amended.
West Virginia	7-11-74	"West Virginia Administrative Regulations, State Water Resources Board, Chapter 20, Articles 5 and 5A, Code of West Virginia, Series I (1965) and Series II (1967)" as amended.

Source: Environmental Reporter, State Water Laws, Vol. 1.

TABLE III-12

SUMMARY OF STATE WATER QUALITY STANDARDS FOR METALS[a]

State	Metal	Criteria values in mg/l	Use classification to which applied
Alabama	All toxic materials, including metals	Not to exceed 0.1 of the 48 hr. median tolerance limit for fish, aquatic life or shellfish, including shrimp and crabs.	Shellfish harvesting fish and wildlife
		Narrative statement	All classes
Arkansas	All toxic materials, including metals	0.1 48-hr TLm[b]	Fish and wildlife
Florida	Copper	0.5	All waters
	Zinc	1.0	All waters
	Chromium (hexavalent)	0.50	All waters
	Chromium (total)	1.0 in effluent	All waters
		0.05 after mixing	All waters
	Lead	0.05	All waters
	Iron	0.30	All waters
Georgia	No specific criteria		
Kentucky	Cadmium	0.01	Water supply
	Chromium (hexavalent)	0.05	Water supply
	Lead	0.05	Water supply
	Silver	0.05	Water supply
	All toxic materials, including metals	0.1 48-hr. TLm	Fish and Wildlife
Louisiana	All toxic materials, including metals	0.1 48-hr. TLm	All classifications
Mississippi	Cadmium	0.01	Water supply
	Chromium (hexavalent)	0.05	Water supply
	Lead	0.05	Water supply
	Silver	0.05	Water supply
	All toxic materials, including metals	0.1 48-hr. TLm	Fish and wildlife
North Carolina	All toxic materials, including metals	0.0	Water supply
Oklahoma	All toxic materials, including metals	0.1 48-hr. TLm	Water supply
South Carolina	All toxic materials, including metals	0.0	Water supply
Tennessee	No specific criteria		
Texas	No specific criteria		
Virginia	No specific criteria		
West Virginia	Cadmium	0.01	
	Chromium (hexavalent)	0.05	
	Lead	0.05	
	Silver	0.05	All uses

The maximum limits for toxic and other deleterious substances in receiving waters shall not exceed the values recommended in the most recent edition of the "Report of the National Technical Advisory Committee on Water Quality" where stated and in cases where such values are not included in the report bioassays will be conducted according to the standards techniques recommended therein to determine safe levels for such substances on the basis of the discharge and characteristics of the waters under consideration.

[a]Heavy metals considered: Cadmium, Chromium, Copper, Iron, Lead, Manganese, Silver, and Zinc.
[b]The TLm is the concentration of a toxic material which produced death to one-half of the test organisms in a bioassay test within a specified length of time (e.g., 48 hours or 96 hours).

Source: Environmental Reporter, State Water Laws, Vol. 1.

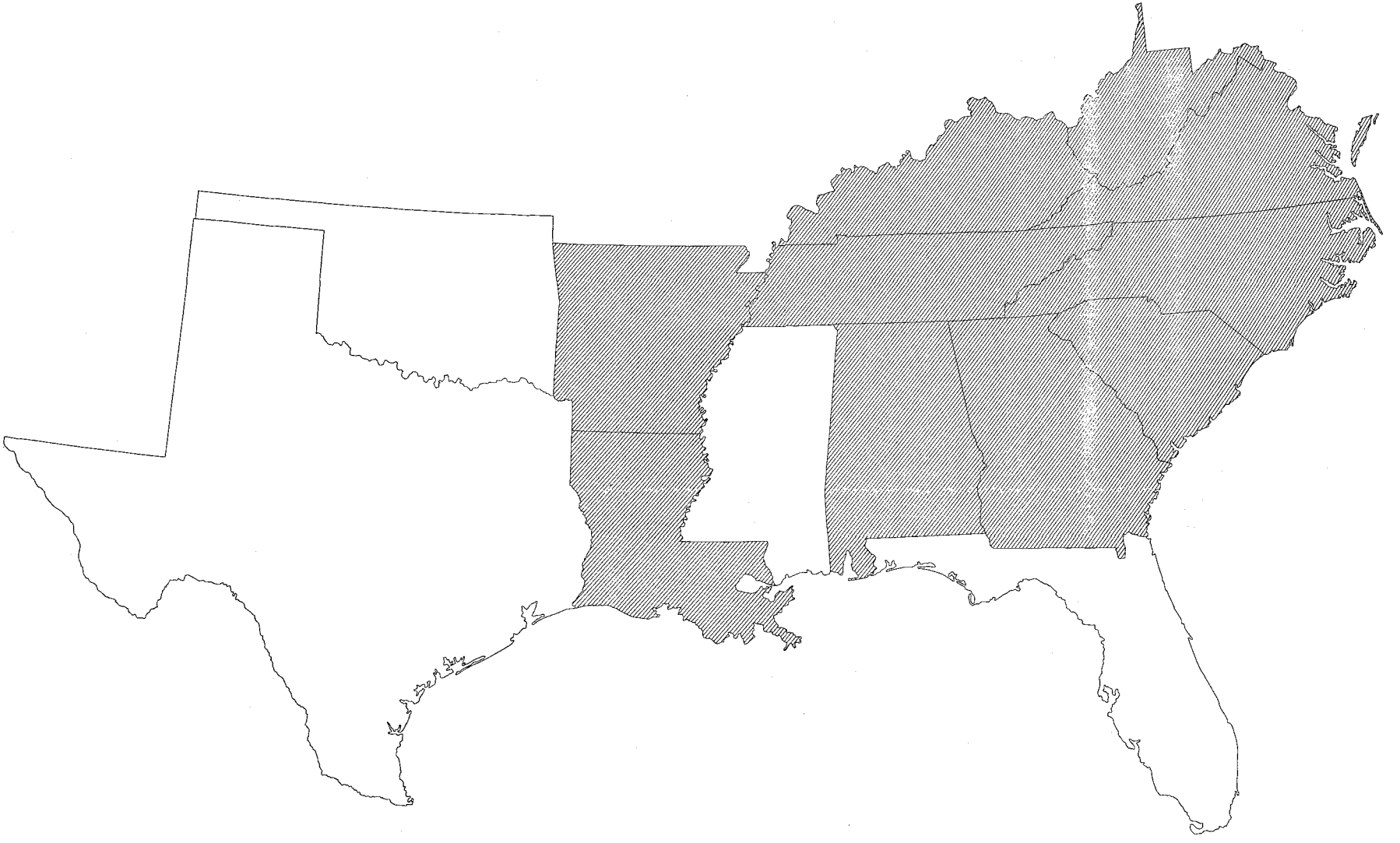

Fig. III-7. Surface Water Laws. Shaded states apply Riparian code, and white states use both Riparian and Appropriation codes. Source: J. Geraghty et al., Water Atlas of the United States, 1973.

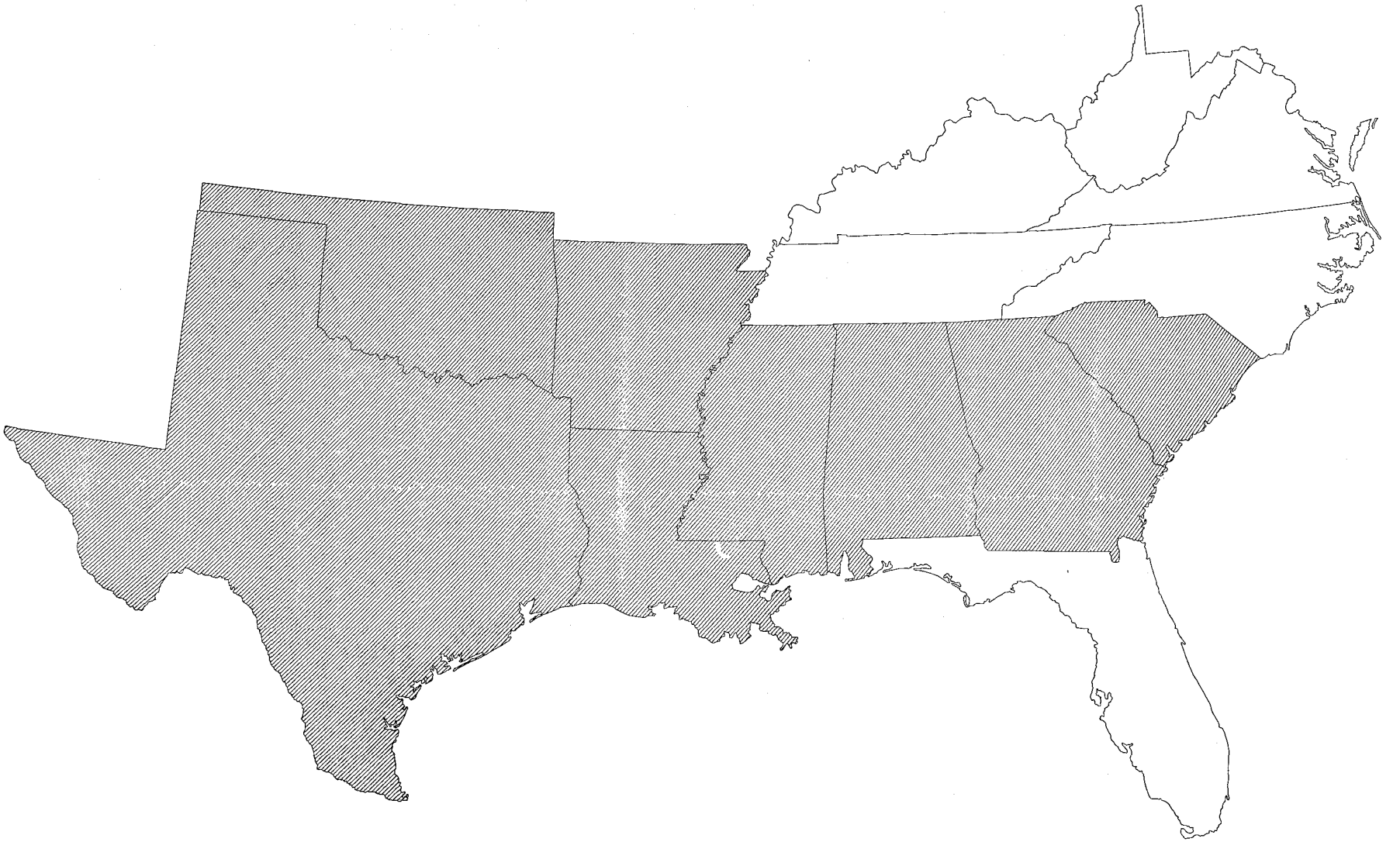

Fig. III-8. Ground Water Laws. Shaded states apply common law Riparian and others resonable use Doctrine. Source: J. Geraghty et al., Water Atlas of the United States, 1973.

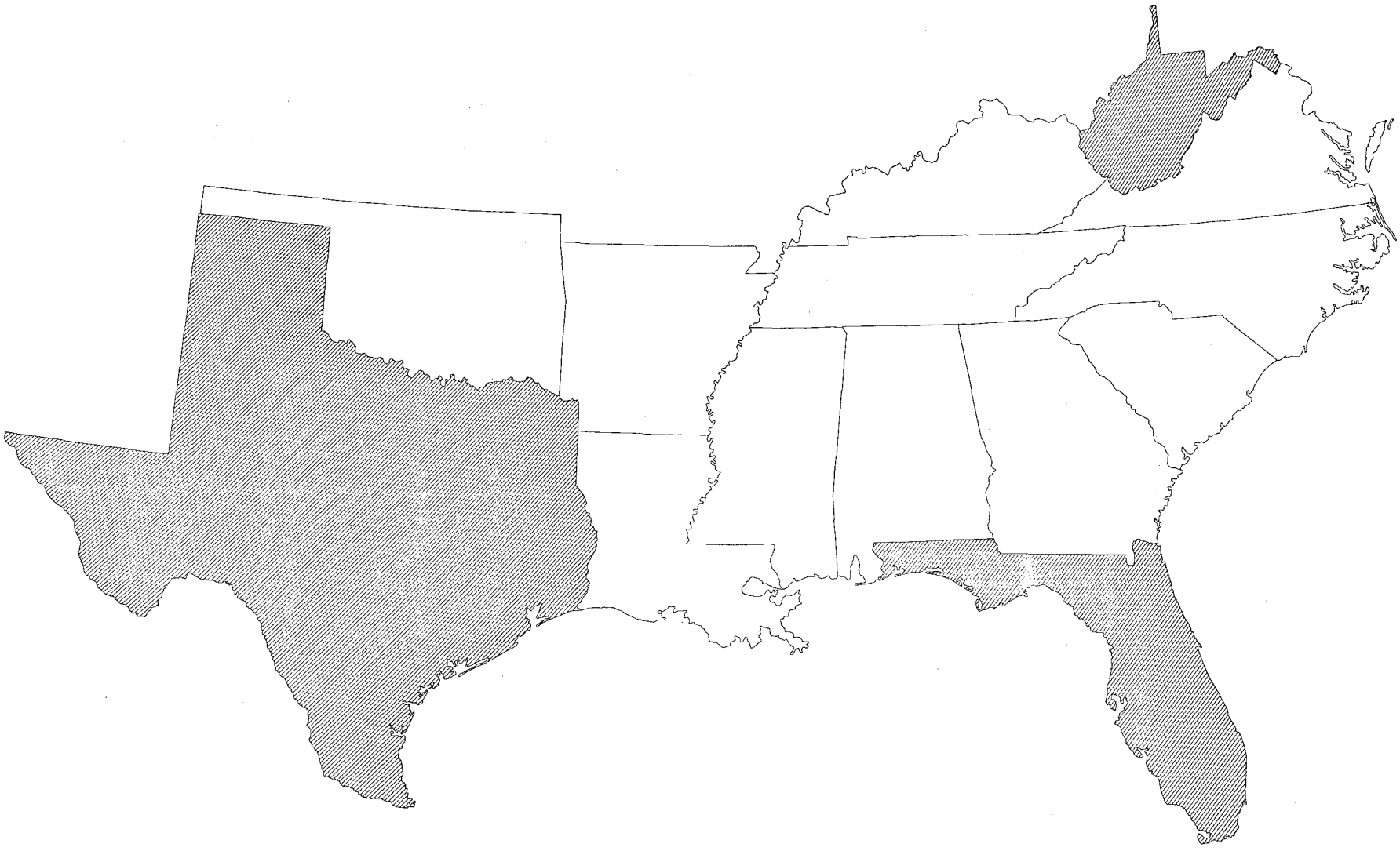

Fig. III-9. Deep Well Disposal Laws Exist in States Shaded.
Source: J. Geraghty et al., Water Atlas of the United States, 1973.

TABLE III-13

STATE LAND USE PROGRAMS

State	Type of program			Coastal zone management[d]	Wetlands management[e]	Power-plant siting[f]	Surface mining[g]	Designation of critical areas[h]	Differential assessment laws[i]	Flood-plain management[j]	Statewide Shorelands Act[k]
	Comprehensive permit system[a]	Coordinated incremental[b]	Mandatory local planning[c]								
Alabama				X		X	A			X	
Arkansas						X	A, B		A		
Florida	X	X	X	X	X	X	A	X	A, C		
Georgia		X		X	X		A, B				
Kentucky						X	A, B		B		
Louisiana				X	X						
Mississippi				X	X					X	
North Carolina		X		X	X		X		B	X	
Oklahoma							X		A	X	
South Carolina				X		X	A		B		
Tennessee						X	A, B				
Texas				X	X		X		B		
Virginia			X	X	X		A, B		B		
West Virginia							A, B			X	

[a]State has authority to require permits for certain types of development.
[b]State-established mechanism to coordinate state land-use-related problems.
[c]State requires local governments to establish a mechanism for land use planning (e.g., zoning, comprehensive plan, planning commission).
[d]State is participating in the federally funded coastal zone management program authorized by the Coastal Zone Management Act of 1972.
[e]State has authority to plan or review local plans and the ability to control land use in the wetlands.
[f]State has authority to determine the siting of powerplants and related facilities.
[g]State has statutory authority to regulate surface mines. (A) State has adopted rules and regulations; (B) State has issued technical guidelines.
[h]State has established rules, or is in the process of establishing rules, regulations, and guidelines for the identification and designation of areas of critical state concern (e.g., environmentally fragile areas, areas of historical significance).
[i]State has adopted a tax measure which is designed to give property tax relief to owners of agricultural or open space lands. (A) Preferential Assessment Program: Assessment of eligible land is based upon a selected formula, which is usually use value. (B) Deferred Taxation: Assessment of eligible land is based upon a selected formula, which is usually use value and provides for a sanction, usually the payment of back taxes, if the land is converted to a noneligible use. (C) Restrictive Agreements: Eligible land is assessed at its use value; there is a requirement that the owner sign a contract, and a sanction, usually the payment of back taxes if the owner violates the terms of the agreement.
[j]State has legislation authorizing the regulation of floodplains.
[k]State has legislation authorizing the regulation of shorelands of significant bodies of water.

Source: CEQ 8th Annual Report, p. 68-69, Table I-25.

TABLE III-14

STATE WETLANDS REGULATORY PROGRAMS

State	Program coverage	Statutory authorization	Date of enactment
		Permitting Programs	
Florida	Inland and coastal wetlands	Fla. Stat. Secs. 253.01 to 253.37 Fla. Stat. Secs. 403.061 to 403.141	1975
Georgia	Coastal wetlands	Ga. Code Ann. Secs. 45-136 to 45-147	1970
Mississippi	Coastal wetlands	Miss. Code Ann. Secs. 49-27-1 to 49-27-69	1973
North Carolina	Coastal wetlands	N.C. Gen. Stat. Secs. 113-229,330	1971
Virginia	Coastal wetlands	Va. Code Secs. 62.1.1-13.1 to 62.1-13.20	1972
		Restrictive Order Programs	
North Carolina	Coastal wetlands	N.C. Gen. Stat. Secs. 113-330	1971

Source: Nelson Rosenbalm, Environmental Comment, p. 9 (July 1978).

TABLE III-15

PROVISIONS OF ENERGY FACILITY SITING LAWS

State	Power siting law	One stop provision	Site cert. authority	Size & comp of site panel*	Method of acquisition	Applic. fee	Annual utility forecast
Alabama	No						
Arkansas	Yes	2 stop	Public Serv. Commission	Size of PSC	Eminent domain	$500	2 yr. plan
Florida	Yes	Yes	Governor and cabinet	7 gov. appts. Environ. Reg. Com.	Cert. of environ. compatibility	$25,000 maximum	10 yr. plan
Georgia	No						
Kentucky	Yes	Yes	Public Serv. Commission	Size of PSC	Cert. of environ. compatibility	None	None
Louisiana	No						
Mississippi	No						
North Carolina	No						
Oklahoma	No						
South Carolina	Yes	Yes	Public Serv. Commission	Size of PSC	Eminent domain	None	10 yr. plan updated annually
Tennessee	No						
Texas	No						
Virginia	No						
West Virginia	No						

Source: Southern States Energy Board, Energy Facility Siting in the United States, 1978.

TABLE III-16

APPLICABLE STATE AMBIENT AIR QUALITY STANDARDS[a]
(ALL CONCENTRATIONS IN μg/m[1])

State	Total suspended particulates				Sulfur dioxide					Nitrogen dioxide	
	Primary		Secondary		Primary		Secondary			Primary	Secondary
	Annual[b]	24-hour[d]	Annual[b]	24-hour[d]	Annual[c]	24-hour[d]	Annual[c]	24-hour[e]	3-hour[d]	Annual[c]	Annual[c]
Region III											
Virginia	75	260	60	150	80	365	80	36	1300	100	100
West Virginia	75	260	60	150	80	365	60	260	1300	-	-
Region IV											
Alabama	75	260	60	150	80	365	-	-	1300	100	100
Florida [l]	-	-	60	150	-	-	60	260	1300	100	-
[f,l]	-	-	50	180[e]	-	-	8.6	28.6[e]	-	-	-
Georgia[f]	-	-	60	150	-	-	43	229[e]	-	-	-
Kentucky	75	260	60	150	80	365	60	-	1300	100	-
Mississippi	-	-	60	150[e]	-	-	60	260	1300	100	-
North Carolina[m]	-	-	60	150	-	-	60	260	1300	100	-
South Carolina	-	-	60	250[e]	80	365	-	-	1300	100	-
Tennessee	75	260	60	150	80	365	60	364	1300	100	100
Region VI											
Arkansas	75	260	60	150	80	365	-	-	1300	100	100
Louisiana	75	260	60	150	80	365	60	260	1300	100	100
New Mexico	-	-	60	150[e]	-	-	60	260	-	100	-
Oklahoma	75	260	60	150	80	365	-	-	1300[e]	100	100
Texas	75	260	60	150	80	364	-	-	1300	100	100

[a]For states that did not adopt both primary and secondary standards, the entries are made in the "Primary" column if state standards are less stringent than or equivalent to the corresponding primary NAAQS.
[b]Geometric mean.
[c]Arithmetic mean.
[d]Not to be exceeded more than once per year.
[e]Not to be exceeded.
[f]State also has SO_2 standards for other averaging times.
[g]New York's TSP standards are based on four land-use categories. SO_2 standards apply statewide.
[h]Not to be exceeded by more than 16% of the 24-hour values in any 12 months.
[i]Not to be exceeded by more than 50% of the 24-hour values in any 12 months.
[j]Not to be exceeded more than 1% of the time.
[k]State also has TSP standards for other averaging times.
[l]Apply in part of state only.
[m]State also has NO_2 standards for other averaging times.

Source: EPA-450/3-75-053-b, p. 48-50, Table A.5.

TABLE III-17

SUMMARY OF SOLID WASTE PRACTICES

	Revision of state solid waste legis. since 1974?	Special collection for hazardous wastes		Special processing or disposal or hazardous wastes		Control of liquids/ semi-solids/pastes/ sludges regulated:	
		Required?	By state rules & regs.?	Required?	By state rules & regs.?	By current legislation?	Effective date
Alabama	No	No	No	Yes		Yes	General
Arkansas	No	No		No	No	No	
Florida	Yes	No		Yes	Yes	No	
Georgia	No	Yes	Guidelines	Yes	Guidelines	Yes	April, 1972
Kentucky	Yes	Yes	Yes	Yes	Yes	Yes	1974
Louisiana	No	Yes	No	Yes	No	No	
Mississippi	Yes	Yes	Yes	Yes	Yes	Yes	March, 1976
North Carolina	Yes	No		Yes	Ind. Basis		
Oklahoma	Yes	Yes	Yes	Yes	Yes	Yes	Sept., 1976
South Carolina	No	Yes	Yes	Yes	Yes	No	March, 1972
Tennessee	No	Yes	No	Yes	No	Yes	1972
Texas	No	Yes	Yes	Yes		Yes	1969, amended 1972
Virginia	Yes	Yes	No	Yes	No	No	
West Virginia	No	Yes	ICC Reg.	Yes	Yes	Yes	AS#19

Source: Waste Age, Feb., April, 1977.

TABLE III-18

SUMMARY OF MINING AND RECLAMATION PROVISIONS

State	Stage of program development: Act(s)	Rules and regulations	Technical guidelines	State law: Title of Act(s)	Administering agency(ies)	Mineral or commodity covered	Rules vary by mining method	Reclamation – main actions required and standards set: Control water flow and quality	Conserve and replace topsoil	Backfill and grade	Reduce highwall or pitwall	Bury or neutralize toxic wastes	Revegetate for beneficial use
Alabama	X	X		Alabama Surface Mining Act of 1969 and Alabama Surface Mining Reclamation Act of 1975.	Department of Industrial Relations and Surface Mining Reclamation Commission.	All minerals except limestone, marble, and dolomite (coal covered by 1975 Act).		X	X	X	X	X	X
Arkansas	X	X	X	The Arkansas Open Cut Land Reclamation Act of 1971.	Department of Pollution Control and Ecology.	All minerals		X	X	X	X	X	X
Florida	X	X		Chapter 211, II Florida Statutes	Department of Natural Resources	All minerals		X	X	X			X
Georgia	X	X	X	Georgia Surface Mining Act of 1968, as amended.	Department of Natural Resources	All minerals		X	X	X	X	X	X
Kentucky	X	X	X	Chapter 350, Kentucky Revised Statutes	Department for Natural Resources and Environmental Protection.	All minerals	For contour mining, limits are placed on cut benches and slope.	X		X	X	X	X
Louisiana				NOTE: Local governmental land-use controls and permit activities may be applicable to mining and reclamation.									
Mississippi				NOTE: Local governmental land-use controls and permit activities may be applicable to mining and reclamation.									

TABLE III-18 (continued)

SUMMARY OF MINING AND RECLAMATION PROVISIONS

Stage of program development				State law				Reclamation – main actions required and standards set					
State	Act(s)	Rules and regulations	Technical guidelines	Title of Act(s)	Administering agency(ies)	Mineral or commodity covered	Rules vary by mining method	Control water flow and quality	Conserve and replace topsoil	Backfill and grade	Reduce highwall or pitwall	Bury or neutralize toxic wastes	Revegetate for beneficial use
North Carolina	X			The Mining Act of 1971.	Department of Natural and Economic Resources.	All minerals		X		X		X	X
Oklahoma	X			Mining Lands Reclamation Act.	Department of Mines.	All minerals				X	X	X	X
South Carolina	X	X		South Carolina Mining Act.	Land Resources Conservation Commission.	All minerals		X		X		X	X
Tennessee	X	X	X	The Tennessee Surface Mining Act.	Department of Conservation.	All minerals except dimension stone, limestone, and marble.	Contour mining rules apply on slopes <15°; area mining on slopes <15°; quarries are a special case.	X	X	X	X	X	X
Texas	X			Texas Surface Mining and Reclamation Act.	Railroad Commission of Texas.	Coal, lignite, and uranium.		X	X	X	X	X	X
Virginia	X	X	X	(1) 45.1-198, and (2) title 45.1-180, chap. 16.	Department of Conservation and Economic Development	Act (1) coal, Act (2) all other minerals.	Quarries are a special case – especially in backfilling.	X		X	X	X	X

TABLE III-18 (continued)

SUMMARY OF MINING AND RECLAMATION PROVISIONS

Stage of program development				State law				Reclamation — main actions required and standards set					
State	Act(s)	Rules and regulations	Technical guidelines	Title of Act(s)	Administering agency(ies)	Mineral or commodity covered	Rules vary by mining method	Control water flow and quality	Conserve and replace topsoil	Backfill and grade	Reduce highwall or pitwall	Bury or neutralize toxic wastes	Revegetate for beneficial use
West Virginia	X	X	X	Article 6, Chap. 20, Code of West Virginia, as amended.	Department of Natural Resources.	All minerals.	Grading and backfilling rules vary by area mining or contour mining.	X	X	X	X	X	X

Source: USGS Circ. 731, p. 12-21.

Table 3.17

STATE SEVERANCE TAXES: 1975

State	Title and application of tax (a)	Rate
Alabama	Iron Ore Mining Tax	3¢/ton
	Forest Products Severance Tax	Varies by species and ultimate use
	Oil and Gas Conservation Tax	2% of gross value at point of production
	Oil and Gas Production Tax	4% of gross value at point of production
	Coal Severance Tax	13.5¢/ton (b)
Arkansas	Natural Resources Severance Tax	Separate rate for each substance
	Oil and Gas Conservation Tax	Less than 10 mills/bbl oil and 1 mill/1,000 cu. ft. of gas
Florida	Oil and Gas Production Tax	5% of gross value at point of production
	Solid Minerals Tax (e)	5% of market value at point of severance
Georgia	Oil and Gas Production Tax	5 mills/bbl of oil and 1/2 mill/1,000 cu. ft. of gas
Kentucky	Oil Production Tax	1/2% of market value (1)
	Coal Severance Tax	4% of gross value
Louisiana	Natural Resources Severance Tax	Rate varies according to substance
	Gas Gathering Tax	1¢/1,000 cu. ft. of gas (j)
Mississippi	Oil and Gas Severance Tax	The greater of 6% of value or 6¢/bbl for oil and 6% of value or 3 mills/1,000 cu. ft. of gas
	Timber Severance Tax	(o)
	Salt Severance Tax	3% of value of amount produced
North Carolina	Oil and Gas Conservation Tax	5 mills/bbl oil and 1/2 mill/1,000 cu. ft. of gas (f)
Oklahoma	Oil, Gas and Mineral Gross Production Tax (t)	Separate rate for each substance
Tennessee	Oil Production Tax (g)	5¢/bbl oil and 5% of sale price of gas
	Coal Severance Tax	20¢ per ton
Texas	Natural Gas Production Tax	7 1/2% of market value
	Oil Production Tax	4.6% of value if greater than $1/bbl; otherwise 4.6¢/bbl
	Sulphur Production Tax	$1.03/long ton
	Cement Distributor's Tax	2 3/4%/100 lbs.
Virginia	Forest Products Tax	Varies by species and ultimate use

(a) Application of tax is same as that of title unless otherwise indicated by a footnote.
(b) Tax schedule to terminate upon the redemption of all bonds issued by the Alabama State Docks Department.
(c) Applies to those persons operating a salmon, crab, or clam cannery or a herring processing plant.
(d) Persons not taxed by the raw fish tax who are engaged in cold storage or processing of fish.
(e) Clay, gravel, phosphate rock, lime, shells, stone, sand and rare earths.

Table 3.17 (continued)

STATE SEVERANCE TAXES: 1975

State	Title and application of tax (a)	Rate

(f) Maximum ratio--set annually by administrative action.
(g) Oil and gas.
(h) Figures are the total of parts of the tax designed for conservation and pollution prevention.
(i) 43 counties impose an additional 1% tax.
(j) In addition to Natural Resources Severance Tax.
(k) Plus a fee (not to exceed 1% of gross value) on oil and gas produced the previous year.
(l) All ores.
(m) Plus additional tax based on the percentage iron content of the product.
(n) Plus miscellaneous taxes on royalties and additional tax based on the percentage copper-nickel content of the ore.
(o) Only imposed on annual market value if above $100,000.
(p) Metals and gems and precious stones.
(q) Cement and gypsum or allied products.
(r) Natural resources except oil and gas.
(s) Oil, gas, geothermal energy, coal, and uranium.
(t) Asphalt, oil, gas, uranium, and metals.
(u) Metals, oil, and gas.

Source: Book of States, 1976-1977, p. 304; Original Source: Commerce Clearing House State Tax Guide.

TABLE III-20

SUMMARY OF SELECTED STATE HEALTH STATUTES

State	Certificate of need	Blue Cross regulation — premium rates	Blue Shield regulation — premium rates	Health Maintenance Organization laws	Statutory right to treatment in mental health facilities	Nurse practioner — role recognized	Physician assistants — role recognized	Emergency medical system organization created by statute	Approved occupational safety & health plan	Clinical labs — state licensing laws	Blood Banks — license & inspect
Alabama		X	X		X		X	X			
Arkansas	X						X				
Florida	X	X		X	X		X	X		X	X
Georgia		X	X		X		X	X		X	X
Kentucky	X	X	X	X	X				X	X	
Louisiana											
Mississippi		X	X			X		X			
North Carolina	X	X	X			X	X	X	X		
Oklahoma	X	X	X		X		X				
South Carolina	X							X	X	X	
Tennessee	X	X	X	X	X			X	X	X	
Texas	X				X			X			
Virginia	X						X	X			
West Virginia		X	X				X				

Source: Book of states, 1976-1977, p.____; Gary J. Clarke, Health Programs in the States: A Survey (New Brunswick, N.J.: Eagleton Institute, Rutgers University, 1975), plus revisions.

TABLE III-21

SUMMARY OF STATE LABOR LAWS

Labor Laws	Union Shop Contracts[1]	Negotiated Checkoff[2]	State Minimum Wage[3]	Prevailing Wage Law	Maximum Work Hours	Workman's Compensation[9]	Unemployment Insurance[10]	Public Employees Rights to Representation[11]	Current OSHA Enforcement[13]	% Nonagricultural Workers in Unions	State Rank
Alabama	No	No	None	Yes	None	$102	$ 90	fire fighters' organizations are authorized to have memoranda with employers.	Fed.	19.1%	26
Arkansas	No	Yes	$1.90	Yes	None[5]	$ 77	$ 92	Port Authority has duty to bargain with employees; other public employees may bargain if employer permits, check off permitted.	Fed.	16.8%	31
Florida	No	No	None	Yes	10 hr. day	$105	$ 82	Pub. Employee have right to barg.	Fed.	12.5%	46
Georgia	No	No	$1.25	No	None[6]	$ 95	$ 90	fire fighters may bargain coll.	Fed.	14.5%	41
Kentucky	Yes	Yes	$1.60	Yes	None[7]	$ 96	$ 80	fire and police in towns over 300,000 can barg. coll.; others may discuss terms, not binding.	State	25.1%	21
Louisiana	No	Yes	None	Yes	None	$110	$ 90	no prohibitive state law	Fed.	16.3%	32
Mississippi	No	Yes	None	No	11 hr. day	$ 84	$ 80	no state law	Fed.	12.0%	47
North Carolina	No	No	$2.00	No	10 hr. day 56 hr. wk.	$146	$ 97	collective bargaining contracts not allowed	State	6.9%	50
South Carolina	No	No	None	No	8 hr. day 40 hr. wk.	$ 95	$ 96	represtn allowed in greivance procedures	State	8.0%	49
Tennessee	No	No	None	Yes	None	$ 85	$ 85	contracts not allowed, but they exist, esp. in Memphis	State	18.7%	28
Texas	No	No	$1.40	Yes	None[8]	$ 70	$ 63	represtn. allowed in greivance proced; fire, police can barg.[12]	Fed.	13.0%	45
Virginia	No	No	$2.00	No	None	$149	$ 87	no law; governor against barg.	Fed.	13.8%	44
West Virginia	Yes	Yes	$2.00	Yes	44 hr. wk.	$173	$115	no state law	Fed.	38.2%	2

1. In Ark. and Miss., union shop contracts have been outlawed by constitutional amendments.
2. In all states, union members may have their dues deducted from their wages if they sign written authorizations with the employer.
3. State minimum wage laws apply to employees not covered under the federal Fair Labor Standards Act. Southern states generally exclude public employees, farm laborers, domestics, persons paid by piece-work or commission, and many others.
4. Prevailing wage laws require businesses with contracts from the state to pay their employees wages at least as high as similar workers in the area receive.
5. Limit for saw mill workers: 10 hrs./day.
6. Limit for textile workers: 10 hrs/day; 60 hrs. wk.
7. Limit on public projects workers: 8/day; 40/wk.
8. Same as No. 7 except 48 hours per week.
9. Maximum benefits are tied to a percentage of the state's average weekly wage in the following states: Fla., La., SC, each 66%; NC, Va., each 100%.
10. Benefits are tied to a percentage of the state's average weekly wage in the following states: Ark., La., NC, SC, WVa., each 66%, Ky. 50%.
11. Public employees have been guaranteed the right to join employee organizations (including unions) in every Southern state except Tennessee; however, except as noted, they have no legal standing to negotiate. Where they can bargain collectively, they cannot strike.
12. Texas firemen and police can bargain collectively if voters in their cities endorse the right by referendum.
13. The 1970 Occupational Safety & Health Act allowed states to enforce their own plans; these plans are monitored by the feds and none have been finally certified as the official OSHA enforcement mechanism.

Source: Southern Exposure
p. 171 (1974)

TABLE III-22

SUMMARY OF STATE ENERGY CONSERVATION PROGRAM ACTIVITIES, INCLUDING BUILDING CODES

State	State has authority to issue energy-efficient building standards?	Are standards mandatory?	Are standards comprehensive?	Building code in effect	Energy regulations adopted	State agencies involved (other than energy agency)
Alabama	No	Yes	Yes	163/400 cities and 3/67 counties have adopted SBC		
Arkansas	No	Yes	Yes	SBCC		
Florida	Yes 1977 — authorizes thermal efficiency standards for new residential and nonresidential bldgs.	Yes	Yes	BOCA SBCC		State Board of Building Codes and Standards (Dept. of Community Affairs)
Georgia	No 1977 — Directs State Bldg. Administrative Board to develop thermal standards and make recommendations to the 1978 leg. session			36/158 counties and 124/150 cities larger than 2,500 have adopted all or parts of SBC. There is a state model code based on SBC.		
Kentucky	Yes (the Kentucky Fire Marshall Office has authority to adopt and implement standards but may need confirmation by the legislature)	N/A	N/A			
Louisiana	No			SBCC BOCA ICBO		

TABLE III-22 (continued)

SUMMARY OF STATE ENERGY CONSERVATION PROGRAM ACTIVITIES, INCLUDING BUILDING CODES

State	State has authority to issue energy-efficient building standards?	Are standards mandatory?	Are standards comprehensive?	Building code in effect	Energy regulations adopted	State agencies involved (other than energy agency)
Mississippi	No			SBCC (60% of state)		
North Carolina	Yes	Yes	Yes	Modified version of SBC	Min. insulation requirements for all new 1- and 2-family units and multifamily units of 3 stories or less	Bldg. Code Council Dept. of Insurance
Oklahoma	No			SBCC, BOCA, ICBO		
South Carolina	No			SBCC (70% of state)		
Tennessee	No			SBCC		
Texas	No			SBCC, ICBO, BOCA (90% of 1,034 incorporated cities have local code)		
Virginia	Yes	Yes	No	BOCA	BOCA and sec. 9 of ASHRAE except for min. insulation stds. for 1- and 2-family units	State Board of Housing
West Virginia	No			BOCA, SBCC		
Wisconsin	Yes	Yes	Yes	ICBO, BOCA	13 Btu code for commercial bldgs.	Dept. of Industry and Human Relations
Wyoming	No 1977 – requires LCC for state buildings			34/42 cities and counties have adopted UBC or NBC (65% of state covered)		

Note: BOCA = Building Officials and Code Administrators, International; ICBO = International Conference of Building Officials; SBCC = Southern Building Code Conference; UBC = Uniform Building Code (ICBO); NBC = National Building Code (American Insurance Co.); SCT = Standard Building Code (SBCC)

*The authority covers all buildings and is broad in terms of the type of standards that can be adopted.

Source: Q. B. Q. Laughlin, Energy Conservation, The State of the States (1978).

TABLE III-23

STATE LIGHTING AND THERMAL STANDARDS FOR NEW CONSTRUCTION

Region	Type of code used or expected based on ASHRAE 90-75	Enabling legislation in place	Expected date of implementation	Actual date of implementation	Local codes used
Region III					
Virginia	BOCA and Section 9 of ASHRAE 90-75	Yes	1/1/78	10/1/77	BOCA
West Virginia	BOCA and Section 9 of ASHRAE 90-75	No	6/30/78		BOCA, SBCC
Region IV					
Alabama	Based on ASHRAE 90-75	Yes	4/1/78		SBCC
Florida	Based on ASHRAE 90-75	Yes	1/1/79		BOCA, SBCC
Georgia	State specific	Yes	4/1/78		SBCC
Kentucky	Based on ASHRAE 90-75	Yes	7/1/78		
Mississippi	Based on ASHRAE 90-75	Yes	4/1/78		Based on ASHRAE 90-75
North Carolina	Based on ASHRAE 90-75	Yes	5/3/77**	1/1/78*	State
South Carolina	Based on ASHRAE 90-75	No	4/1/78		SBCC
Tennessee	NCSBCS	Yes	7/1/78		SBCC
Region VI					
Arkansas	SBCC	No	7/1/79		SBCC
Louisiana	SBCC	No	9/1/78		SBCC, BOCA, ICBO
Oklahoma	SBCC	No	9/1/78		SBCC, BOCA, ICBO
Texas	NCSBCS	Yes	7/1/79		SBCC, ICBO, BOCA, other

Note: BOCA = Building Officials and Codes Administrators International; SBCC = Southern Building Code Congress International; ICBO = International Conference of Building Officials; NCSBCS = National Center for Standard Building Codes Service; ASHRAE = American Society of Heating, Refrigeration, and Air Conditioning Engineers.

*Non Residential

**Residential

Source: Various reports and personal contacts.

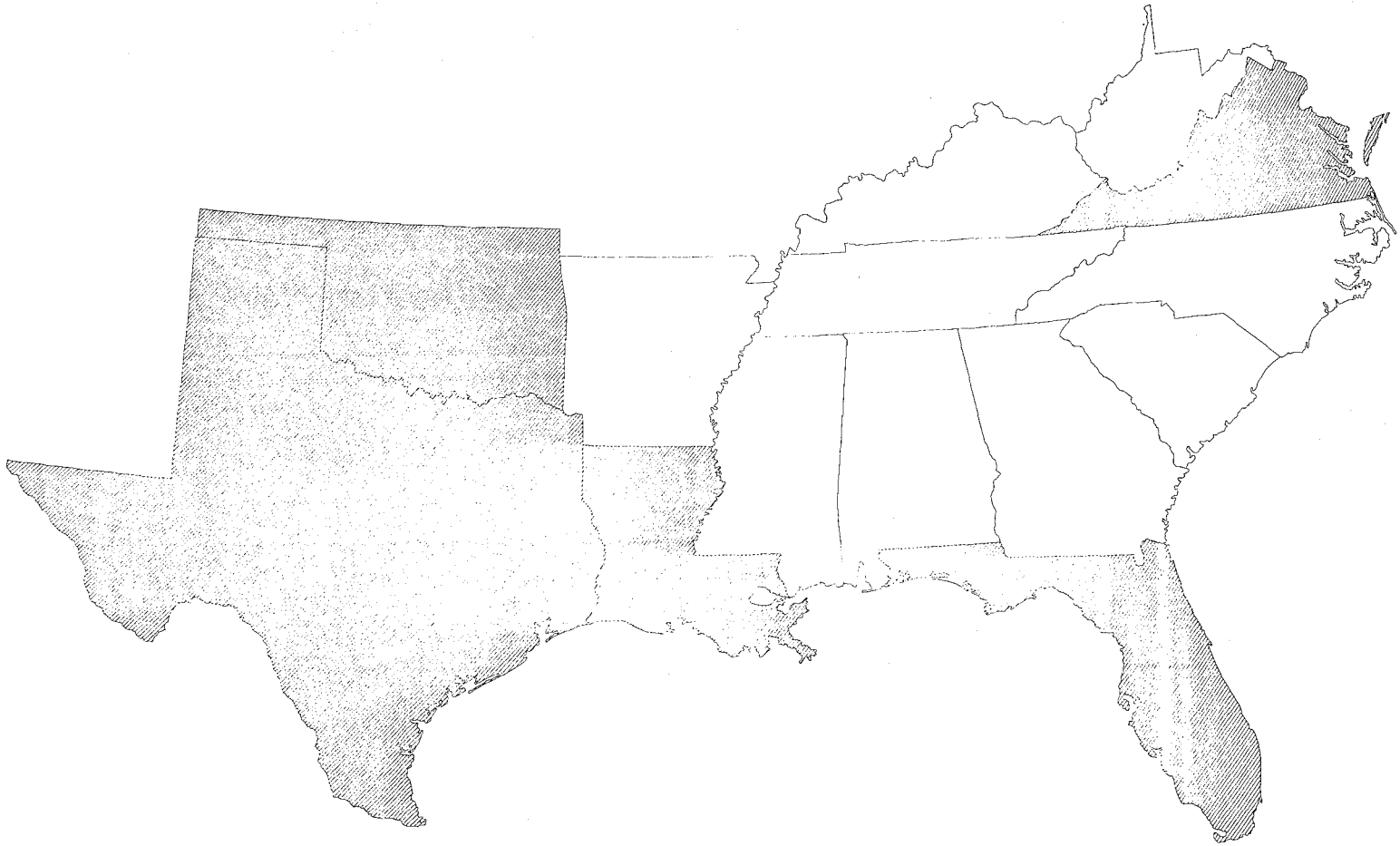

Fig. III-10. Weather Modification Laws. Shaded states have laws in effect. Source: J. Geraghty et al., Water Atlas of the United States, 1973.

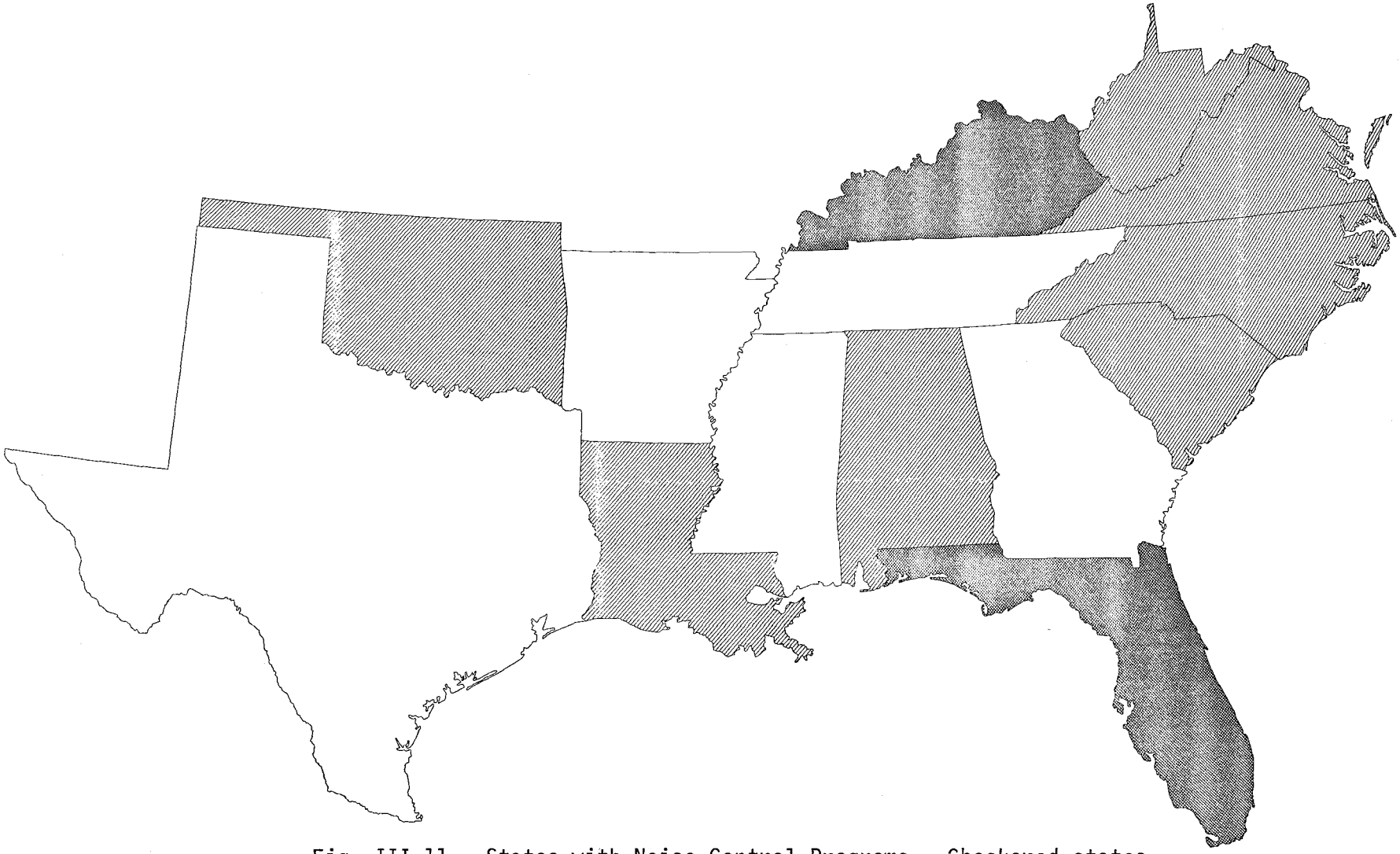

Fig. III-11. States with Noise Control Programs. Checkered states have Limited Programs, while Diagonal Shading Indicates States with Minimal Activities. Source: EPA 550/9-76-006, Jan. 1976.

TABLE III-24

STATE ENERGY EMERGENCY AUTHORITY

State	No authority	Limited authority	Specific authority
Alabama	X		
Arkansas			Act 103-1977
Florida			Chapter 74-186
Georgia			Georgia Laws 1973, p. 74
Kentucky			Enacted Acts 1974, Chapter 114
Louisiana			Sec. 1, Chapter 7, Title 30
Mississippi	X		
North Carolina			Chapter 877, 1975
Oklahoma	X		
South Carolina		Disaster Act	
Tennessee			Tennessee Code Annotated Title 7, Chapter 6, Section 1
Texas	X		
Virginia			Virginia Emergency Services and Disaster Law of 1973
West Virginia			Disaster Act as amended 1975

Source: Energy Report to the States 4(4), p. 45-31 (1978).

TABLE III-25

1978 SOUTHERN ENERGY/ENVIRONMENTAL LEGISLATION SUMMARY

State	Energy							Environmental						
	EPCA	Energy conservation in buildings	Reorganization coordination	Utilities	Solar	Other resources	Incentives for conservation	Air quality	Water quality & conservation	Nuclear waste	Solid waste	Mining	Coastal zone management	Pollution
Alabama	X	X		X										
Arkansas		convenes in August												
Florida		currently in session												
Georgia	X				X	X		X	X				X	
Kentucky	X		X	X	X					X	X	X		
Louisiana		currently in session												
Mississippi	X		X	X										
North Carolina		currently in session												
Oklahoma+		X					X	X	X			X		
South Carolina		currently in session												
Tennessee	X	X			X		X							
Texas		Biennial Session convenes 1979												
Virginia+		X	X		X		X	X				X		X
West Virginia									X			X		

+Legislation in these states is not easily identified "energy" and "environment".

Source: Southern States Energy Board, Energy/Environmental Legislation in the Southern States, Legislative Update — 1978.

TABLE III-26

STATE ENERGY LEGISLATION RECORD, 1975-1977

		Utilities	Tax Applic/ Exemptions- Fuels & Alter- natives	Conser- vation	Resource Develop- ment	Mgt./ Org.	Emergency Powers	Misc.	Franchise
Alabama	1975		2		5				
	1976	2			2	1		1	
	1977								
Arkansas	1975				1				2
	1976	2			1			1	
	1977	1	2	1	5	1		1	
Florida	1975	3			1	4	1	1	
	1976	2		1	6				
	1977			4	1				
Georgia	1975	2	1		3				
	1976	1	2		2	1	1		
	1977			2	3	1	1		
Kentucky	1975								
	1976	4			7	1			
	1977			(No Session)					
Louisiana	1975				3	1			
	1976		3		8	2		1	
	1977				6	1		6	

TABLE III-26 (continued)

STATE ENERGY LEGISLATION RECORD, 1975-1977

		Utilities	Tax Applic/ Exemptions- Fuels & Alter- natives	Conser- vation	Resource Develop- ment	Mgt./ Org.	Emergency Powers	Misc.	Franchise
North Carolina	1975	5			1				
	1976			(No Energy Legislation Passed)					
	1977	10	3	1	2	1		3	
Oklahoma	1975	1						1	
	1976	2			3			1	
	1977	4	1		4			1	
South Carolina	1975								
	1976				1	1			
	1977	2	1	1	2	1	2		
Tennessee	1975	2			1	1	1	3	
	1976	2		1	3	2			
	1977					1			
Texas	1975		1	1	3	1		1	
	1976								
	1977	1	2	2	9	2	1	3	
Virginia	1975		1		2				
	1976				1				1
	1977	6	1	1	4	1	1		
West Virginia	1975	1			2	1			
	1976	12	1	1	2	1			
	1977	1	1	1	6	1			

Source: National Council of State Legislatures publications, which arry full texts of bills and acts summarized here.

TABLE III-27

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ALABAMA		
Alabama Air Pollution Control Act of 1971. Alabama Laws, Act. No. 769, Regular Session, 1971; Approved September 3, 1971.	Air Pollution Control Commission, State Office Building, Montgomery, Alabama 36104.	ER 301:0101 EIC AL-2-01L
Alabama Air Pollution Control Rules and Regulations. Chapter 1, General Provisions; Chapter 2, Air Pollution Emergency; Chapter 3, Control of Open Burning and Incineration; Chapter 4, Control of Particulate Emissions; Chapter 5, Control of Sulfur Compound Emissions; Chapter 6, Control of Hydrocarbon Emissions; Chapter 7, Control of Carbon Monoxide Emissions; Chapter 8, Control of Nitrogen Oxide Emissions; Chapter 9, Control of Emissions from Motor Vehicles; Chapter 10, Control of Complex Sources; Chapter 11, Rules of Administrative Procedure; Chapter 12, Standards of Performance for New Stationary Sources; Chapter 13, National Emission Standards for Hazardous Air Pollutants; Chapter 14, Continuous Monitoring Requirements for Existing Sources; Adopted January 18, 1972, Amended July 26, 1972, January 30, 1973; May 29, 1973, September 15, 1973; June 12, 1974; January 31, 1975; September, 1976.	"	ER 301:0501 EIC AL-2-02R through AL-2-14R
Water Pollution Control Act (Water Improvement Commission Act). Act. No. 1260, 1971; Amended by H. 617, 1973.	Water Improvement Commission, State Office Building, Montgomery, Alabama 36104.	ER 701:0101 EIC AL-3-01L

[a]ER = Environment Reporter; EIC = Environment Information Center

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ALABAMA, Cont'd.		
Procedural Regulations of Water Improvement Commission (and Amendments), 1972, 1974, 1975.	Water Improvement Commission, State Office Building, Montgomery, Alabama 36104.	ER 701:0541 EIC AL-3-03R
Water Quality Criteria, 1973, 1974.	"	40 CFR 120 ER 131:2301 EIC AL-3-04R
Public Water Supply Systems and Wastewater Treatment Plants. 1971; Act. No. 1594;	"	EIC AL-3-02L
Policies and Procedures; 1972; 1974.		ER 701:0561
NPDES	Region IV EPA	ER 701:0564
Alabama Solid Wastes Disposal Act. Act. No. 771, Regular Session, 1969; amended by Act. No. 2247, Regular Session, 1971.	Division of Solid Waste and Vector Control, Bureau of Environmental Health, State Department of Public Health, State Office Building, Montgomery, Alabama 36104.	ER 1101:0101 EIC AL-4-01L
Alabama Solid Waste Financing Act. Act No. 1197, Regular Session, 1971; Effective September 17, 1971 - to authorize each county in the state to finance the acquisition by such county of facilities for the collection and disposal of solid wastes by the sale and issuance of interest-bearing warrants of such county.	"	ER 1101:0141 EIC AL-4-02L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ALABAMA, Cont'd.		
Alabama Solid Waste Management Regulations. State of Alabama Rules and Regulations for Solid Waste Management, Adopted July 19, 1972 - rules and regulations governing (1) general conditions, (2) hazardous and other special problem wastes, (3) solid waste storage, (4) collection and transportation of solid waste, (5) treatment, processing, and utilization of solid waste, (6) disposal of solid waste, (7) site and plan approval, denial, and cancellation of approvals for solid waste disposal facilities, (8) operational requirements for disposal of solid wastes, (9) dump closing, and (10) exceptions.	Division of Solid Waste and Vector Control, Bureau of Environmental Health, State Department of Public Health, State Office Building, Montgomery, Alabama 36104.	ER 1101:0501 EIC AL-4-04R
Alabama Standards for Disposal of Solid Wastes. Adopted by the State Board of Health, June 18, 1969.	"	ER 1101:1001 EIC AL-4-03R
The Alabama Surface Mining Reclamation Act of 1975. All areas surface mined under this act shall be reclaimed. (Replaces Surface Mining Act of 1969.)	Department of Industrial Relations, Industrial Relations Building, Montgomery, Alabama 36130.	ER 1101:4101 EIC AL-5-01L
Alabama Surface Mining Regulations. Alabama Water Improvement Commission Surface Mining Regulations, Adopted June 14, 1974; Revisions Adopted December 19, 1977, effective January 13, 1978 - these regulations are promulgated pursuant to Section 4 (i) of Act 1260 (Regular Session, 1971), as amended, in order to protect, maintain	"	ER 1101:4501 EIC AL-5-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ALABAMA, Cont'd.		
Alabama Surface Mining Regulations. Cont'd. and improve the quality of waters of the state and to provide for the prevention, abatement, and control of new or existing water pollution associated with mining operations.		
Radiation Control Act. Act. No. 582, 1963, effective September 16, 1963.		EIC AL-6-01L
Regulations for Control of Radiation. August 28, 1974.		EIC AL-6-02R
The Coastal Area Act. Act No. 1274, September 20, 1974.	Development Office	State Land Use Activity, p. 141
Environmental Land and Water Management Committee. Act 1237, September 20, 1973 - to study all facets of land resource management and land development regulations.		The States and The Energy Crisis, p. 3

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ARKANSAS		
Water and Air Pollution Control Act & Amendments. Act 472 of 1949; Act 232 of 1953; Act 281 of 1959; Act 120 of 1961; Act 503 of 1963; Act 183 of 1965; Act 236 of 1971; Act 262 of 1973; Act 743 of 1975..	Arkansas Department of Pollution Control and Ecology, 8001 National Drive, Little Rock, Arkansas 72209.	ER 716:0101 EIC AR-1-01L
Water Quality Standards for Surface Waters, 1975.	"	40 CFR 120 ER 716:0601 EIC AR-3-04R
Arkansas Air Pollution Control Code. Sections 1-9. Effective July 30, 1969; Amended January 26; July 7, 1972; July 30, 1973, June 27, 1975	"	ER 316:0501 EIC AR-2-01L
Arkansas Solid Waste Management Act. Act 237, Senate Bill 341, Approved by the 1971 Legislature.	"	ER 1116:0101 EIC AR-4-07L
Arkansas Solid Waste Disposal Regulations. Arkansas Solid Waste Disposal Code; Effective June 28, 1973.	"	ER 1116:0501 EIC AR-4-01R
Open Cut Land Reclamation Act. Act No. 236 of 1971.	"	EIC AR-5-01L
Reclamation Plan Procedures, Requirements and Applications.	"	EIC AR-5-02R
Utility Facility Environmental Protection Act of 1973 - covers electric generating plants, electric and gas transmission lines and associated facilities.	Public Service Commission	Energy Facility Siting in the U.S., V. 1, p. 9.

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
ARKANSAS, Cont'd.		
Utility Facility Environmental & Economic Protection Act of 1977. Act. No. 866 - revised 1973 Act.	Public Service Commission	Energy Facility Siting in the U.S., V. 1, p. 9.
Rules and Regulations for Control of Sources of Ionizing Radiation, Revised, 1970.	Division of Radiological Health.	EIC AR-6-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
FLORIDA		
Florida Air and Water Pollution Control Act. Excerpts from Florida Statutes, Chapter 403, Environmental Control; Amended by Florida Laws Chapters 69-106, 69-158, 70-82, 70-84, 70-114, 70-139, 70-141, 70-203, 70-270, 70-351, 70-356, 70-439, 71-36, 71-79, 71-136, 71-137, 71-138, 71-203, 71-204, 71-259, 71-274, 71-343, 71-355, 71-377, 72-39, 72-53, 72-58, 72-223, 72-286, 72-723, 73-46, 73-256, 73-333, 73-360, 74-60, 74-133, 74-170, 74-308, 74-342, 75-22, 75-266, 76-112, 77-21, 77-82, 77-104, 77-117, 77-147, 77-170, 77-337, 77-366.	Department of Environmental Regulation, Montgomery Building, 2562 Executive Center Circle, Tallahassee, Florida 32301.	ER 746:0101 EIC FL-1-01L
Florida Pollutant Spill Prevention and Control Act. Florida Statutes, Chapter 376, Effective July 1, 1970; Amended June 27, 1974; Effective July 1, 1974.	" (Dept. of Pollution Control replaced by Dept. of Environmental Regulation in 1975.)	ER 746-0151 EIC FL-3-05L
Florida Water Resources Act of 1972. Excerpts from Florida Statutes, Chapter 373; Approved by the Governor April 24, 1972; Amended by Chapters 75-22; 76-243; 77-72, 77-104, 77-117.	Department of Natural Resources, Tallahassee, Florida 32304.	ER 746:0201 EIC FL-3-08L
Florida Rules on Pollution of Waters. (Water Quality Standards.) Chapter 17-3, Rules of the Florida Department of Pollution Control; Amended October 28, 1970; February 17, 1971; June 10, 1972; August 30, 1972; October 17, 1972; July 3, 1973; May 24, 1974; February 12, 1975; August 26, 1975; June 10, 1976.	Dept. of Environmental Regulation	40 CFR 120 ER 746:0501 EIC FL-3-06R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
FLORIDA, Cont'd.		
Florida Rules on Assessment of Damages. Rules of State of Florida Department of Pollution Control, Chapter 17-11, Assessment of Damages; Adopted May 15, 1971.	Dept. of Environmental Regulation Montgomery Building, 2562 Executive Center Circle, Tallahassee, Florida 32301.	ER 746:0641 EIC FL-3-03R
Florida Rules on Sewage Works. Chapter 17-6, Rules of the Department of Pollution Control; Amended August 7, 1973.	"	ER 746:0601 EIC FL-4-05R
Florida Environmental Protection Act of 1971. Florida Statutes, Section 403-412; Approved by the governor June 28, 1971.	"	ER 346:0121
Florida Administrative Procedures. Rules of the Department of Pollution Control, Chapter 17-1, Rules of Administrative Procedures, Part I, Rule Making Proceedings, and Part II, Adjudicatory Proceedings; Effective October 20, 1973; Amended December 31, 1974; June 24, 1976; February 10, 1977.	"	ER 346:0461
Florida Air Pollution Rules of the Department of Pollution Control. Florida Administrative Code, Chapter 17-2, Air Pollution; Amended February 11, 1972; September 24, 1973; April 9, 1974; April 25, 1974; December 28, 1974; June 30, 1975; June 30, 1976; July 30, 1976; 1978.	"	ER 346:0501

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
FLORIDA, Cont'd.		
Florida Rules on Permits of the Department of Pollution Control. Rules of the Department of Pollution Control, Chapter 17-4, Permits; Adopted March 4, 1970; Amended May 17, 1972; August 8, 1973; March 26, 1974; June 19, 1974; June 10, 1975; October 26, 1975; July 8, 1976; September 15, 1977.	Department of Environmental Regulation, Montgomery Building, 2562 Executive Center Circle, Tallahassee, Florida 32301.	ER 346:0601 EIC FL-1-03R
Florida Open Burning and Frost Protection Fires Regulations. Rules of the Department of Air and Water Pollution Control, Chapter 17-5, Open Burning and Frost Protection Fires; Adopted July 1, 1971.	"	ER 346:0641
Florida Resource Recovery and Management Act. Chapter 403, Environmental Control, Part IV, Resource Recovery and Management; Established by Florida Laws Chapter 74-342; Amended by Chapter 75-54; 77-104, 77-466.	"	ER 1146:0101
Florida Resource Recovery and Management Regulations. Rules of the Department of Environmental Regulation, Chapter 17-7 - Resource Recovery and Management, Part I - Solid Waste Facilities; adopted October 1, 1974; Amended April 15, 1975; July 1, 1976. Part II - State Resource Recovery and Management Program; Adopted July 1, 1976; Amended October 14, 1976.	"	ER 1146:0501

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
FLORIDA, Cont'd.		
Florida Environmental Land and Water Management Act of 1972. Chapter 72-317, Laws of Florida; Effective July 1, 1972; Amended by 73-131; 74-326; 75-22; 75-81; 75-167; 75-175; 76-69, 76-190; 77-117; 77-215.	Division of State Planning, Department of Administration, State House, Tallahasse, Florida.	ER 1146:2101 EIC FL-5-04L
Florida Beach and Shore Preservation Act. Florida Statutes, Chapter 161, Laws of 1971; Effective September 1, 1971.	Department of Natural Resources 202 Blount Street, Tallahassee, Florida 32304.	ER 1146:2141 EIC FL-5-01L
Land Conservation Act of 1972 - to acquire environmentally endangered lands and to acquire and improve recreational facilities.	Division of State Planning	State Land Use Activity, p. 150
Electrical Power Plant Siting Act of 1973, Chapter 73-33-403. 501-16 - to annually evaluate suitability of ten-year site plans of the electric utilities.	Dept. of Environmental Regulation	State Land Use Activity, p. 157; Energy Facility Siting in U.S., Vol. 1, p. 27
Coastal Mapping Act of 1974.	Dept. of Natural Resources	State Land Use Activity, p. 159
Senate Bill 116 of 1976 - Numerous changes in Siting Law of 1973.		

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
FLORIDA, Cont'd.		
Senate Bill 659 of 1976 - Facility siting - energy impact to be considered in region.		
Environment Reorganization Act, July, 1975 - creates Commission (includes authority for power plant siting as well as air and water quality).	Environmental Regulation Commission	Energy Facility Siting in U.S., V. 1, p. 27
Energy Coordination Act of 1977, H.B. 1275 - addresses state's basic organizational approach to energy.	Department of Administration	Legislative Update - 1978
Radiation Health Act, H.B. 212 - authority to license certain sources of ionizing radiation; provides for rule-making, fee schedules, bonds, inspection of facilities, and emergency situations; also creates perpetual care trust fund for managing nuclear wastes.	Department of Health and Radiation Services	Legislative Update - 1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
GEORGIA		
Georgia Water Quality Control Act. Georgia Code Annotated (supp 1966). Ch. 17-5 and Ch. 88-26, as Amended by Public Acts of 1971, Senate Bills 493 and 494, House Bill 1483, 1972 Legislature, Approved by the Governor April 5, 1972, House Bill 1060, 1973 Legislature, Effective April 18, 1973; Act. No. 1029 of 1974 Legislature, Approved March 21, 1974; Act No. 232 of 1977 Legislature, Approved March 16, 1977; Effective July 1, 1977.	State Water Quality Control Board, State Health Building, 47 Trinity Avenue, S.W., Atlanta, Georgia 30334	ER 751:0101 EIC GA-3-03L
Georgia Water Quality Control Regulations. Rules of Georgia Department of Natural Resources Environmental Protection Division; Chapter 391-3-6; Effective June 30, 1974.	"	40 CFR 120 ER 751:0501 EIC GA-3-04R
Groundwater Use Act, Act. No. 1478, as amended through 1973.	Department of Natural Resources, Environmental Protection Division, 37 Trinity Avenue, S.W., Atlanta, Georgia 30334.	State Land Use Activity, p. 167-8, EIC GA-3-01L
Groundwater Use Rules and Regulations. Chapter 391-3-2, June, 1974.	"	EIC GA-3-02R
Georgia Water Classifications. Department of Natural Resources Classifications for the Waters of the State of Georgia; Effective March, 1974; Amended August 4, 1975.	"	ER 751-0541

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
GEORGIA, Cont'd.		
NPDES, approved 1974.	Department of Natural Resources	ER 611:0111
Georgia Solid Waste Management Act. Act 1486, Georgia Laws of 1972; Effective April 5, 1972; Amended April, 1973.	Division of Environmental Protection, Department of Natural Resources, 270 Washington St., NW, Atlanta, Georgia 30334	ER 1151:0101 EIC GA-4-01L
Georgia Solid Waste Management Rules. Georgia Department of Natural Resources Rules and Regulations for Solid Waste Management, Chapter 391-3-4; Effective December 12, 1972; Amended September 26, 1973; October 9, 1974.		ER 1151:0501 EIC GA-4-02R
Georgia Surface Mining Act. Act 620; Approved February 1, 1968; Amended by Act 75, March 29, 1971; Act 1482, April 5, 1972; Act 984, April 17, 1976.	Division of Environmental Protection, Department of Natural Resources, 270 Washington St., NW, Atlanta, Georgia 30334	ER 1151:3101 EIC GA-5-02L
Land Reclamation Rules and Regulations, Chapter 391-3-3, November, 1974.		EIC GA-5-01R
Radiation Control Act, Act 1964, Sections 88-1301 through 88-1315, as amended through 1976.		EIC GA-6-01L
Georgia Coastal Marshlands Protection Act. Act No. 1332, 1970, Georgia Code Annotated, Sections 45-137 through 45-148; As Amended by Georgia Laws, 1972; Georgia Laws, 1973.	Coastal Marshlands Protection Agency, Box 636, Darien, Georgia 31305	ER 1151:2101

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
GEORGIA, Cont'd.		
Power Plant Siting Study Committee, Senate Resolution 123, 1975. Senate Bill 123 of 1976; Senate Resolution 99, March 23, 1977 - to develop legislation to streamline laws and regulations applicable to power plant siting.	State Legislature	Energy Facility Siting in U.S., V. 1, P. 29
House Bill, 1968 of 1976 - creates "Office of Energy Resources" and gives duties (includes preparation of standby emergency plant).		
Georgia Air Quality Control Law. Enacted by HB 1545, Laws of 1978, approved and effective March 6, 1978 (replaces 1967 Act as amended).	Georgia Department of Natural Resources, 270 Washington St., SW, Atlanta, Georgia 30324.	ER 351-0101 EIC GA-2-01L
Georgia Air Quality Control Rules. Rules and Regulations for Air Quality Control, Chapter 391-3-1; Effective September 26, 1973; Amended June 27, 1974; Effective August 5, 1974; October 31, 1975; Effective November 20, 1975.		ER 351:0501 EIC GA-2-02R
Georgia Vehicular Visible Emission Control Act. SB 68, 1972 Legislature; Approved by the Governor April 5, 1972; Effective July 1, 1972.	Georgia Highway Patrol, State Department of Public Safety, 950 E. Confederate Ave., Atlanta, Georgia 30303	ER 351:0151 EIC GA-2-06R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
GEORGIA, Cont'd.		
Coastal Zone Management Commission, House Bill 1465 - established to assist Department of Natural Resources in setting policy for land and waste resources in the coastal zone.	Department of Natural Resources	Legislative Update-1978
Solar Easement Act of 1978.		Legislative Update-1978
Resource Recovery Development Authority, House Bill 1811 - permits each county and municipality to establish authority to use garbage and sewage as energy sources.		Legislative Update-1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
KENTUCKY		
Kentucky Environmental Protection Law. Revised Statutes, Chapter 224; Amended through September 15, 1973; Amended by Chapter 355, Laws of 1974, March 1, 1976, Air; Water; Solid Waste.	Department for Natural Resources and Environmental Control, 275 East Main Street, Frankfort, Kentucky 40401. (Divisions of Water, Air Pollution, Control, and Solid Waste.)	ER 786:0101 EIC KY-1-01L
Kentucky Water Quality Standards. Kentucky Department for Natural Resources and Environmental Protection Division of Water Quality, 401 KAR 5:025; Adopted June 5, 1975; Effective July 2, 1975.	"	40 CFR 120 ER 786:0501 EIC KY-3-03R
Kentucky Waste Discharge Permits Regulations. Department for Natural Resources and Environmental Protection, Division of Water Quality Regulation on Permits to Discharge Sewage: Industrial and Other Wastes; Definitions, 401 KAR 5:005; Adopted June 5, 1975; Effective July 2, 1975.	"	ER 786:0541 EIC KY-3-01R
Kentucky Stream Discharge Regulations. Kentucky Department for Natural Resources and Environmental Protection, Division of Water Quality, 401 KAR 5:035; Adopted March 13, 1975; Effective July 2, 1975.	"	ER 786:0581
Kentucky Spills Regulations. Kentucky Department for Natural Resources and Environmental Protection Division of Water Quality Regulations on Spills and Bypasses to be Reported, 401 KAR 5:015; Adopted June 5, 1975; Effective July 2, 1975.	"	ER 786:0621 EIC KY-3-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
KENTUCKY, Cont'd.		
Kentucky Biochemically Degradable Wastes Regulation. Kentucky Department for Natural Resources and Environmental Protection, Division of Water Quality, 401 KAR 5:045; Adopted June 6, 1975; Effective July 2, 1975.	Department for Natural Resources and Environmental Control.	ER 786:0661 EIC KY-3-05R
Kentucky Air Pollution Control Regulations. Kentucky Administrative Regulations; Department for Natural Resources and Environmental Protection; 401 KAR 3:010-401 KAR 3:070; Relates to KRS Chapter 224; Adopted June 5, 1975; Effective July 2, 1975; 401 KAR 3:080; Adopted October 14, 1976; Amended by 401 KAR 3:071, April, 1978.	"	ER 386:0501 EIC KY-2-01R through KY-2-09R
Kentucky Solid Waste Regulations. 401 KAR 2:010, Landfills; Construction and Operation Requirements; Adopted by the Kentucky State Department for Natural Resources and Environmental Protection; Effective June 11, 1975.		ER 1186:0501 EIC KY-4-02R
Kentucky Garbage and Refuse Disposal Law. Kentucky Revised Statutes, Chapter 109, Garbage and Refuse Disposal; Effective June, 1966.		ER 1186:0141 EIC KY-4-01L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
KENTUCKY, Cont'd.		
Kentucky Strip Mining Law. Kentucky Revised Statutes, Title XXVIII - Mines and Minerals, Chapter 350 - Strip Mining, as Amended by Chapter 3, Laws of 1972, Effective January 1, 1973; Ch. 69, 74, 256, 258, 315, 373, 399; Laws of 1974; Ch. 140, 289, 291, 332, Laws of 1976; Amended by Senate Bill 281, 1978.	Bureau of Surface Mining and Reclamation and Enforcement, Department for Natural Resources and Environmental Protection, Frankfort, Kentucky 40601.	ER 1186:4101 EIC KY-5-02L
Power Plant Siting Law, 1974. (House Bill 438) requires certification of environmental compatability.	Public Service Commission	State Land Use Activity, p. 182
House Bill 499, 1976, Ky. Revised Statutes. Sections 30-32 - established Department of Energy.	Department of Energy	Energy Facilities Siting in the U.S., V. L, p. 47
Reorganization of State Energy Agencies, House Bill 307.	Secretary of Energy	Legislative Update-1978
Reorganization of Public Service Commission, House Bill 547 - sets up separate regulatory commissions for energy utilities (electric power, gas, crude oil) and non-energy utilities (water, sewage, communications).		Legislative Update-1978
Management of Solid and Hazardous Wastes, House Bill 174, 1978	Department of Natural Resources and Environmental Protection	Legislative Update-1978
Radiation Control Act, Senate Bill 94, 1978 - issue licenses for radioactive materials; provide for disposal and monitoring radioactive waste disposal.	Department of Human Resources	Legislative Update-1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
LOUISIANA		
Louisiana Council on Environmental Quality. 1972 Legislature, Senate Bill 691; Approved by the Governor July 1, 1972 - to provide with respect to environmental quality in the state by creating the Governor's Council on Environmental Quality, its membership, powers and duties, and authorize compensation; to provide for the creation of the Citizens Advisory Board, its membership, powers and duties; to provide for the continuous legislative oversight of environmental matters through operation of existing committees.		ER 391:0151 EIC LA-1-01L
Louisiana Air Control Law. Louisiana Revised Statutes of 1950, Title 40, Chapter 12, Sections 2201-2216 and Title 32, Section 1304, Subsection A; Amended by Acts 1967, No. 98; Acts 1971, Nos. 34, 101, 102, 105; Acts 1972, No. 364, Acts 1974, No. 356; Acts 1975, No. 188.	Louisiana Air Control Commission, P.O. Box 60630, New Orleans, Louisiana 70130.	ER 391:0101 EIC LA-2-02L
Louisiana Air Pollution Control Regulations. Regulations, Air Control Commission, State of Louisiana; Amended through February 20, 1978.		ER 391:0501 EIC LA-2-01R
Louisiana Stream Control Commission Acts. Louisiana Revised Statutes, Title 56, Chapter 3, Stream Control; As Amended through July, 1972; Acts 1975, No. 712.	Louisiana Stream Control Commission P.O. Drawer FC, University Station, Baton Rouge, Louisiana 70893	ER 741-0101 EIC LA-3-01L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
LOUISIANA, Cont'd.		
Louisiana Water Quality Criteria. Louisiana Stream Control Commission Regulations; Adopted August 14, 1973; Amended May 26, 1977.	Louisiana Stream Control Commission, P.O. Drawer FC, University Station, Baton Rouge, Louisiana 70893.	40 CFR 120 ER 791:0581 EIC LA-3-05R
Louisiana Regulation on Reports of Industrial Waste Discharges. A Regulation Requiring the Submission of Reports for the Discharge of Industrial Waste and for the Construction or Alteration of Treatment Works, Adopted by the Stream Control Commission, State of Louisiana, Under Authority of Section 1435, Chapter 3, Part I, of Title 56, Louisiana Revised Statutes of 1950, August 1, 1951.	"	ER 791:0501 EIC LA-3-03R
Louisiana Rules Relating to Oil and Gas. Rules Governing Disposal of Waste Oil, Oil Field Brine, and All Other Materials Resulting from the Drilling for, Production of, or Transportation of Oil, Gas or Sulphur, Adopted by the Stream Control Commission, State of Louisiana, As Amended January 27, 1953, Under Authority of Section 1435, Chapter 3, Part I, of Title 56, Louisiana Revised Statutes of 1950.	"	ER 791:0541 EIC LA-3-04R
Louisiana Solid Waste Laws. Louisiana Revised Statutes of 1950: Title 33, Section 1333; Title 40, Sections 11.1 and 1299.36; Amended by Act 675, effective July 12, 1977.	Louisiana Department of Health, State Office Building, New Orleans, Louisiana 70160	ER 1191:0101 EIC LA-4-01L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
LOUISIANA, Cont'd.		
Louisiana Solid Waste Regulations. Chapter X, Sanitary Codes, Sections 10.50-10.56.4, State of Louisiana, Sewerage and Waste Disposal, Refuse, Garbage, Rubbish, Ashes; Adopted by the Louisiana State Board of Health January 26, 1968.	Louisiana Department of Health, State Office Building, New Orleans, Louisiana 70160.	ER 1191:0501 EIC LA-4-01L
Noise Law, Act. No. 461, Amending Statutes, Title 40, Section 11.1, Approved 1972.		EIC LA-8-01L
Energy Act of 1973, Act. No. 16 - regulate the allocation and curtailment of intrastate gas.	Department of Natural Resource, Office of Conservation.	Energy Facility Siting in U.S., V. 1, P. 50
Mining and Rehabilitation of Land Act.	Department of Environmental Protection.	USGS Circ. 731, p. 14
Site Location of Development Act.	"	USGS Circ. 731, p. 14
Geothermal and Geopressured Energy Research and Development Act, Act. No. 735, 1975.	Department of Conservation	EPA-600/7-78-014, p. 74
Geothermal Energy Resources Act, Act No. 134, 1976.	"	EPA-600/7-78-014, p. 76
Statewide Order Governing the Drilling for and Producing of Oil & Gas, Order No. 29-B - governs disposition of salt water.		EPA-600/7-78-014, p. 76

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
LOUISIANA, Cont'd		
First Use Tax Act, Act 294, 1978 - .07 per mcf tax on all natural gas imported in state		Legislative Update-1978
Surface Mining Act, House Bill 687, 1978		Legislative Update-1978
Hazardous Waste Management, House Bill 600, 1978		Legislative Update-1978
Radioactive Material Storage, Senate Bill 38, 1978 - prohibits storage of radioactive materials in salt domes.		Legislative Update-1978
Intrastate Transportation of Hazardous Materials, House Bill 866.		Legislative Update-1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
MISSISSIPPI		
Mississippi Air and Water Pollution Control Act. Mississippi Code of 1942, Sections 7106-111 through 7106-136; as Amended by Mississippi Laws of 1966, Chapter 258; Chapter 440, Laws of 1968; Chapters 456 and 496, Laws of 1971; Chapter 505, Laws of 1972; HB 687, HB 743, and HB 941, Laws of 1973; HB 717, Laws of 1977.	Mississippi Air and Water, Pollution Control Commission, P.O. Box 827, Jackson, Mississippi 39205.	ER 421:0101 EIC MS-1-01L
Mississippi Air Pollution Control Regulations. APC-S-1 - Air Quality Regulations for the Prevention, Abatement, and Control of Air Contaminants; Adopted May 11, 1972; Amended May 27, 1975. APC-S-2 - Permit Regulations for the Construction and/or Operation of Air Emissions Equipment; Adopted May 11, 1972. APC-S-3 - Regulations for Prevention of Air Pollution Emergency Episodes; Adopted January 25, 1972.	"	ER 421:0501 EIC MS-2-01R through MS-2-03R
Mississippi Water Quality Criteria. Mississippi Air and Water Pollution Control Commission Water Quality Criteria for Intrastate. Interstate, and Coastal Waters; Adopted April 24, 1973; Amended November 12, 1974; April 12, 1977.	"	40 CFR 120 ER EIC MS-3-02R
Mississippi NPDES Regulations. State of Mississippi and National Pollutant Discharge Elimination System Wastewater Permit Regulation MPC 3-74; Effective May 1, 1974; Amended March 11, 1975.	"	
Mississippi Solid Wastes Disposal Act of 1974. Mississippi Statutes, Chapter 573; Approved April 24, 1974; Amended by HB 269, Chapter 341, Laws of 1976.	"	ER 1221:0101 EIC MS-4-01L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
MISSISSIPPI, Cont'd.		
Mississippi Solid Waste Regulation. Mississippi State Board of Health Sanitary Regulation Government Disposal of Refuse.	Mississippi Air and Water, Pollution Control Commission, P.O. Box 827, Jackson, Mississippi 39205.	ER 1221:0501 EIC MS-4-02R
Mississippi Sanitary Landfills Standards. State Board of Health Standards and Guidelines for Sanitary Landfills, Issued April, 1971.	"	ER 1221:0101 EIC MS-4-01L
Coastal Wetlands Protection Act, 1973, H. B. 140	Mississippi Marine Resources Council, P.O. Drawer 959, Long Beach, Mississippi 39560.	State Land Use Activity p. 190
Coastal Zone Protection Rules and Regulations, July 10, 1973, revised April 15, 1975.	"	8th CEQ Annual Rpt. p. 134
Radiation Protection Act of 1976, SB 2229.		EIC MS-6-01L
Energy and Environment Reorganization, Senate Bill 23-6, 1978 - created two super depts. - Department of Natural Resources (DNR) and Commission on Wildlife Conservation. DNR state's primary agency with its four bureaus of Geology and Energy Resources, Land and Water Resources, Recreation and Parks, and Pollution Control.	Department of Natural Resources (being established)	Legislative Update-1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
NORTH CAROLINA		
North Carolina Environmental Policy Act of 1971. General Statutes of North Carolina, Chapter 113A, Pollution Control and Environment, Article 1; Amended by Chapter 119, 1973 Session; Effective October 1, 1971 through September 1, 1977; Chapter 113, Conservation and Development, Section 113-15.2; Effective July 12, 1971.	Department of Natural and Economic Resources, P.O. Box 27048, Raleigh, North Carolina 27611.	ER 866:0201 EIC NC-1-01L
North Carolina Water and Air Resources Acts. Chapter 143, Article 21, General Statutes of North Carolina, Part 1 - North Carolina Water and Air Resources Act, and Part 7 - Water and Air Quality Reporting Act of 1971; Amended by Laws of 1971, Chapters 111, 1090 and 1167; Laws of 1973, Chapters 108, 476, 698, 821, 929, and 1262; Laws of 1975, Chapters 583, 655, and 842; Laws of 1973, Chapter 821; Amended by Laws of 1973, Chapter 1262; Laws of 1975, Chapter 784 and Chapter 842.	"	ER 866:0101 ER 466:0101 EIC NC-1-03L
North Carolina Motor Vehicle Emissions Laws. General Statutes of North Carolina, Volume 1C, Chapter 20 - Motor Vehicles; Article 3, Motor Vehicle Act of 1937, Amended by Laws of 1971, Chapters 455 and 1167, Effective July 1, 1971; Article 3A, Motor Vehicle Act of 1947, Amended by Laws of 1965, Chapter 734, Laws of 1969, Chapter 378, and Laws of 1971, Chapters 455 and 478; Effective January 1, 1972.	"	ER 466:0201

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]	
NORTH CAROLINA, Cont'd.			
North Carolina Rules and Regulations Governing the Control of Air Pollution. North Carolina Rules and Regulations Governing the Control of Air Pollution; Section I, Definitions; Section II, Regulations; Regulation 1, Control and Prohibition of Open Burning; Regulation 2, Control and Prohibition of Visible Emissions; Regulation 3, Classification for Air Contaminant Sources; Regulation 4, Registration of Air Contaminant Sources; Regulation 5, Control and Prohibition of Odorous Emissions; Regulation 6, Compliance with Emission Control Standards; Regulation 7, Air Pollution Emergencies; Section III, Ambient Air Quality Standards; Section IV, Emission Control Standards; Adopted January 21, 1972; Regulation 8, Monitoring and Reporting Air Contaminant Emissions; Effective July 1, 1973; Regulation 9, Control of the Effects of Complex Sources on Air Quality; Effective March 21, 1974; Regulation 10, Control of Conical Incinerators; Effective March 21, 1974.	Department of Natural and Economic Resources, P.O. Box 27048, Raleigh, North Carolina 27611.	ER	466:0501
North Carolina Oil Pollution Control Act of 1973. G. S. Chapter 143, Article 53, Oil Pollution Control; Effective September 1, 1973.	"	ER EIC	866:0301 NC-3-02L
North Carolina Procedures for Assignment of Water Quality Standards. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2B, Section .0100, Procedures for Assignment of Water Quality Standards, Adopted February 1, 1976.	"	ER	866:0501

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
NORTH CAROLINA, Cont'd.		
North Carolina Surface Water Classifications and Water Quality Standards. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2B, Section .0200, Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina; Adopted February 1, 1976.	Department of Natural and Economic Resources, P.O. Box 27048, Raleigh, North Carolina 27611.	40 CFR 120 ER 866:0521 EIC NC-3-01R
North Carolina Assignment of Stream Classifications. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2B, Section .0300, Assignment of Stream Classifications; Adopted February 1, 1976.	"	ER 866:0541
North Carolina Effluent Limitations. North Carolina North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2B, Section .0400, Surface Water Effluent Limitations; Adopted February 1, 1976.	"	ER 866:0581
North Carolina Monitoring Regulations. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2B, Section .0500, Surface Water Monitoring, Reporting; Adopted February 1, 1976.	"	ER 866:0621
North Carolina Wastewater Discharge Permit Regulations. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2H, Section .0100. Wastewater Discharges to the Surface Waters; Adopted February 1, 1976.		ER 866:0661
North Carolina Permit Regulations for Waste Not Discharged to Surface Waters. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2H, Section .0200, Waste Not Discharged to Surface Waters; Adopted February 1, 1976.		ER 866:0681

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
NORTH CAROLINA, Cont'd.		
North Carolina Water Quality Certification Regulations. North Carolina Administrative Code, Title 15, Chapter 2, Subchapter 2H, Section .0500, Water Quality Certification; Adopted February 1, 1976.		ER 866:0721
NPDES Programs, Approved October 19, 1975.		8th CEQ Annual Report, p. 134
North Carolina Solid Waste Disposal Law. Chapter 130, Article 13B, General Statutes of North Carolina; Laws of 1969, Chapter 899; Amended by Laws of 1973, Chapter 476; Laws of 1975, Chapter 311.	North Carolina State Board of Health, Sanitary Engineering Division, Raleigh, North Carolina 27602.	ER 1266:0101 EIC NC-4-01L
North Carolina Solid Waste Disposal Regulations. Rules And Regulations Providing Standards for Solid Waste Disposal; Effective March 11, 1971.		ER 1266:0501 EIC NC-4-02R
Radiation Protection Act, General Statutes, Chapter 104E, effective 1975.		EIC NC-6-01R
Land Policy Act, 1975 - creates a Land Policy Council and the Advisory Committee on Land Policy.	Department of Administration Office of State Planning	State Land Use Activity, p. 196
Coastal Area Management Act of 1974.	Coastal Resources Commission	State Land Use Activity, p. 198

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
NORTH CAROLINA, Cont'd.		
The Mining Act of 1971.	Department of Natural and Economic Resources	USGS Circ. 731, p. 16
Senate Bill 420, 1975 - to develop and keep current long range power demand forecast and a generation capacity model.	Utilities Commission	Energy Facility Siting in U.S., V. 1, p. 87

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
OKLAHOMA		
Oklahoma Clean Air Act. Chapter 30, 63 O.S. Supp. 1971; As amended by the First Session, 35th Legislature, June 12, 1975.	Division of Air Pollution Control, Oklahoma State Department of Health, N.E. 10th and Stonewall, Oklahoma City, Oklahoma 73105.	ER 481:0101
Oklahoma Clean Air Regulations		
Regulation 1, Prohibition of Open Burning; Adopted March 9, 1969; Amended January 23, 1972; Effective January 1, 1971.		ER 481:0201
Regulation 2, Prohibition of Removal and/or Disabling of Motor Vehicle Pollution Control Devices; Effective December 28, 1968.		ER 481:0541
Regulation 3, Defining Terms Used in Oklahoma Air Pollution Control Regulations; Adopted June 21, 1970; Effective July 21, 1970; Amended January 23, 1972; Amended June 5, 1974; Amended July 1, 1977.		ER 481:0581
Regulation 4, Pertaining to the Registration of Air Contaminant Sources; Effective July 21, 1970; Amended January 23, 1972; June 29, 1975.		ER 481:0621
Regulation 5, Pertaining to the Type, Operation and Maintenance of Incinerators and Defining Acceptable Emissions Emitting Therefrom; Effective July 21, 1970; Figure 1 Amended and Effective January 23, 1972.		ER 481:0661

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
OKLAHOMA, Cont'd.		
Oklahoma Clean Air Regulations, Cont'd.		
Regulation 6, Pertaining to the Control of the Emission of Particulate Matter from Fuel-Burning Equipment; Effective July 21, 1970.		ER 481:0661
Regulation 7, Control of Smoke, Visible Emissions and Particulates; Effective April 15, 1971; Amended December 6, 1975; Effective January 1, 1976; Regulation 8, Control of the Emission of Particulate Matter from Industrial and Other Processes and Operations; Effective April 15, 1971; Regulation 9, Control of Fugitive Dust; Adopted January 23, 1972; Effective October 15, 1972; Amended December 6, 1975; Regulation 19, Control of Emissions of Hazardous Contaminants; Adopted December 8, 1974; Effective December 31, 1974.		ER 481:0701 ER 481:0741
Regulation 11, Malfunction of Equipment, Reports Required; Effective October 15, 1972; Regulation 12, Sampling and Testing Methods, Effective July 1, 1972; Regulation 13, Monitoring of Emissions, Recording and Reporting of the Same are Required, Effective July 1, 1972; All Adopted January 23, 1972.		ER 481:0901
Regulation 14, Permits Required; Adopted January 23, 1972; Effective October 15, 1972; Amended June 29, 1975.		ER 481:0941

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
OKLAHOMA, Cont'd.		
Oklahoma Clean Air Regulations, Cont'd.		
Regulation 15, Control of Emissions of Organic Materials; Adopted December 8, 1974; Effective December 31, 1974.		ER 481:0981
Regulation 16, Control of Emission of Sulfur Oxides; Adopted January 23, 1972, Effective July 1, 1972;[1] Amended December 8, 1974, Effective December 31, 1974.		ER 481:1021
Regulation 17, Control of Emission of Carbon Monoxide, Effective July 1, 1972; Regulation 18, Control of Emission of Nitrogen Oxides; Adopted January 23, 1972; Effective July 1, 1972.		ER 481:1061
Oklahoma Water Pollution Control Laws. Title 63, Oklahoma Statutes 1971; Article 1, General Administration; Article 9, Sewage, Amended by Laws 1974, Chapter 172, Effective May 9, 1974; and Article 17, Miscellaneous.	Environmental Health Service, State Department of Health, 3400 N. Eastern, Oklahoma City, Oklahoma 73111.	ER 881:0101
Oklahoma Pollution Remedies Laws. Oklahoma Statutes, Title 82, Chapter 9, Pollution of Waters; Sections 926.1 through 926.13; Laws of 1972, Chapter 242.	Water Resources Board, 2241 Northwest 40th Street, Oklahoma City, Oklahoma 73112.	ER 881:0141

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
OKLAHOMA, Cont'd.		
Oklahoma Pollution Control Coordinating Act of 1968. Oklahoma Statutes, Title 82, Chapter 9, Pollution of Waters, Sec. 931-940; Approved May 2, 1968. Amended by Laws of 1971, HJR No. 1003; April 6, 1971, and Chapter 338, Approved June 24, 1971; Laws of 1974, Chapter 78; Laws of 1976, Chapter 206, Approved June 7, 1976.	Department of Pollution Control, Water Quality Control Division, N.E. 10th and Stonewall, Oklahoma City, Oklahoma 73105.	ER 881:0201 EIC OK-1-01L
Oklahoma Solid Waste Acts. Oklahoma Solid Waste Management Act; Oklahoma Statutes, Supplement 1971, Title 63, Public Health and Safety, Paragraphs 2251-2265 inclusive; Oklahoma Controlled Industrial Waste Disposal Act; Supplement 1976, Title 63, Paragraphs 2751-2765 inclusive.	Oklahoma State Department of Health, Environmental Health Services, Sanitation Division, Solid Waste Management Section, Northeast 10th Street and Stonewall, P.O. Box 53551, Oklahoma City, Oklahoma 73105.	ER 1281:0101 EIC OK-4-01L
Oklahoma Solid Waste Management Regulations. Rules and Regulations for the Collection and Disposal of Solid Waste and Setting Standards for Sanitary Landfills; Regulation 1, Definitions; Regulation 2, Permits; Regulation 3, Collection and Transportation of Solid Waste; Regulation 4, Disposal of Solid Waste; Regulation 5, Disposal of Hazardous Waste; Regulation 6, Construction and Demolition Wastes Disposal Sites and/or Rock and Dirt Fill Disposal Sites; Regulation 7, Dead Animal, Carrion, Slaughter Waste, Cannery Waste and other Highly putrescible Waste Sanitary Landfill Disposal Sites; Adopted June 13, 1971; Amended June 3, 1973; June 2, 1974.	"	ER 1281:0501 EIC OK-4-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
OKLAHOMA, Cont'd.		
Mining Land Reclamation Act, 1974.	Department of Mines	USGS Circ. 731, p. 16
Ionizing Radiation Protection Law, S.B. 26, 1963, as Amended through July 15, 1969.		EIC OK-6-01L
Radiation Protection Regulations, Effective April 1, 1969.		EIC OK-6-02R
Noise Control Act, S. B. 163, May 20, 1971.		EIC OK-8-01L
Senate Bill 386, May 17, 1973 - creates Energy Advisory Council.		The States and The Energy Crisis, p. 91-93
House Bill 1638, February 27, 1974 - creates State Dept. of Energy and Abolishes Energy Advisory Council.		"
Diesel Fuel Tax Code and Diesel Fuel Importer for Use Tax Code, Senate Bill 618, 1978		Legislative Update-1978

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
SOUTH CAROLINA		
South Carolina Pollution Control Acts. Pollution Control Act, Act 1157, Laws of 1971; Amended by the 1971-72 General Appropriations Act for Fiscal 1971-72 and by Act 446, Laws of 1973; Reorganization Plan 10, Act 390, Laws of 1973; Act 1094; Laws of 1974; Act 203, Laws of 1975. The Pollution Control Act (Act 1157) established a Pollution Control Authority with power to adopt standards for water and air, issue permits, and conduct hearings. Reorganization Plan 10 (Act 390) created a Department of Health and Environmental Control and a Board of Health and Environmental Control, and transferred all of the functions, powers, and duties of the Pollution Control Authority to the department.	Department of Health and Environmental Control, 2600 Bull Street, P.O. Box 11628, Columbia, South Carolina 29201.	ER 506:0101 EIC SC-1-01L
South Carolina Air Pollution Control Regulations and Standards. Adopted by the South Carolina Pollution Control Authority July 26, 1972; Amended August 15, 1973; January 25, Effective January 30, 1974; and March 23 and April 22, 1975; December 14, 1976.	"	ER 506:0501 EIC SC-2-01R
South Carolina Classification Standards. South Carolina Department of Health and Environmental Control Water Classification - Standards System; Adopted September 8, 1971; Approved by the U.S. Environmental Protection Agency December 21, 1971 and January 15, 1973; Amended December 14, 1976.	"	ER 906:0501 EIC SC-3-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
SOUTH CAROLINA, Cont'd.		
NPDES, Approved July 3, 1975.	Department of Health and Environmental Control, 2600 Bull Street, P.O. Box 11628, Columbia, South Carolina 29201.	ER 611:0111
South Carolina Landfill Regulation. PC-SW Regulation 1, Regulation Requiring Minimum Standards for Sanitary Landfill Design, Construction and Operation; Approved September 22, 1971; Effective September 29, 1971.	"	ER 1306:0501 EIC SC-4-04R
South Carolina Industrial Solid Waste Disposal Site Regulation. Regulation PC-SW-2, Regulation Requiring Minimum Standards for Industrial Solid Waste Disposal Sites and Facilities; Approved March 8, 1972; Effective March 16, 1972.	"	ER 1306:0541 EIC SC-4-02R
South Carolina Guidelines for Waste Disposal Permits. SCPCA-SWG 1, Guideline on the Minimum Submission Requirements for a Permit to Dispose of Inert, Nonburnable, Nontoxic Wastes by Earth Burial in a Manner that Environmental Pollution Does Not Result, and SCPCA-SWG-2, Guideline on the Minimum Submission Requirements for a Permit to Dispose of Hazardous Wastes by Earth Burial in a Manner that Environmental Pollution Does Not Result; Approved September 19, 1972, and SCPCA-SWG-3, Guidelines on the Minimum Submission Requirements for a Permit to Dispose of Cellulosic Material By Earth Burial in a Manner That Environmental Pollution Does Not Result; Approved February 14, 1973.	"	ER 1306:1001 EIC SC-4-01R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
SOUTH CAROLINA, Cont'd.		
Mining Act	Land Resources Conservation Commission	USGS Circ. 731, p. 18
Utility Siting and Environmental Protection, Bill 487 (R 664, H 2025), June, 1971.	Public Service Commission	
Atomic Energy and Radiation Control Act of 1970, Act No. 1157, Amended through 1975.	Division of Radiological Health	EIC SC-6-01L
Rules and Regulations for Radiation Control, Title C, Particle Accelerators.	Division of Radiological Health	EIC SC-6-02R
South Carolina Hazardous Waste Management Act, Approved March 14, 1978.	South Carolina Board of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201.	ER 1306:1041

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TENNESSEE		
Tennessee Air Quality Act. Secs. 53-3408 to 53-3422, Tennessee Code Annotated, Effective April 3, 1972; Amended by Chapter 787, Laws of 1972, December 15, 1972; Chapter 325, Laws of 1973, May 4, 1973; Chapter 453, Laws of 1974, February 20, 1974; Chapter 598, Laws of 1974, March 25, 1974; Chapter 155, Laws of 1975, May 13, 1975; Chapter 359, Laws of 1975, June 4, 1975; Chapter 639, March 28, 1976; Chapter 843, March 30, 1976.	Air Pollution Control Board, 727 Cordell Hull Building, Nashville, Tennessee 37219.	ER 516:0101 EIC TN-2-15L
Tennessee Air Pollution Control Regulations. Tennessee Department of Public Health, Bureau of Environmental Health Services, Division of Air Pollution Control Rules, Chapters 1200-3-1 through 1200-3-17; June 7, 1974; Amended effective June 16, 1974; March 20, 1976; April 21, 1976; February 9, 1977.	"	ER 516:0501 EIC TN-2-01R through TN-2-14R TN-2-16R
Tennessee Water Quality Control Act of 1971. Tennessee Code Annotated, Sections 70-324 through 70-342; Adopted as Chapter 164, Public Acts of 1971 and Amended by Chapter 386, Public Acts of 1971; Chapters 444 and 631, Public Acts of 1972; Chapters 98 and 105, Public Acts of 1973; Chapter 366, Public Acts of 1977.	Tennessee Water Quality Control Board, Cordell Hull Building, Sixth Avenue, N., Nashville, Tennessee 37219.	ER 916:0101 EIC TN-3-01L
Tennessee General Regulations. Tennessee Water Quality Control Board General Regulations, Chapters 1200-4-1, 1200-4-2; Adopted February 1, 1972; Amended April 1973; Amended October 20, 1977, to be effective December 26, 1977.	"	ER 916:0501 EIC TN-3-02R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TENNESSEE, Cont'd.		
Tennessee Water Quality Criteria. Tennessee Water Quality Control Board Chapter 1200-4-3, General Water Quality Criteria for the Definition and Control of Pollution in the Waters of Tennessee; Adopted May 26, 1967; Amended November 17, 1967, May 22, 1970, October 26 and December 14, 1971; October 30, 1973; December 30, 1975; Amended October 20, 1977, effective December 26, 1977.	Tennessee Water Quality Control Board, Cordell Hull Building, Sixth Avenue, N., Nashville, Tennessee 37219.	ER 916:0541 EIC TN-3-03R 40 CFR 120
Tennessee Effluent Limitations and Standards. Tennessee Water Quality Control Board Chapter 1200-4-5, Effluent Limitations and Standards; Adopted October 20, 1977, Effective December 26, 1977.	"	ER 916:1001
Tennessee Solid Waste Disposal Act. Tennessee Code Annotated - Sections 53-4301 - 53-4315 and 53-4321; Created by Acts 1969, Chapter 295; Amended by Acts 1971, Chapter 165; Acts 1974, Chapters 446, 486, 666; Acts 1975, Chapter 109.	Division of Environmental Sanitation, Tennessee Department of Public Health, 320 Capitol Hill, Nashville, Tennessee 37219.	ER 1316:0101 EIC TN-4-02L
Tennessee Solid Waste Regulations. Regulations Governing the Planning, Construction, Operation and Maintenance of Solid Waste Processing and Disposal Systems in Tennessee; Filed with the Secretary of State January 20, 1971; Amended November 19, 1971; June 13, 1974; October 10, 1975; Effective November 9, 1975; November 30, 1976; Effective January 16, 1977.	"	ER 1316:0501 EIC TN-4-03R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TENNESSEE, Cont'd.		
Tennessee Hazardous Waste Management Act. Created by Acts 1977, Chapter 175, Effective May 2, 1977.	Division of Solid Waste Management, Bureau of Environmental Health Sciences, Tennessee Department of Public Health, 301 Seventh Ave., North, Nashville, Tennessee 37219.	ER 1316:2101
Tennessee Surface Mining Law. Tennessee Code Annotated, Chapter 15, Sections 58-1540 through 58-1564; Effective March 23, 1972; Amended by House Bill 1630, Approved March 20, 1974; Amended by Senate Bill 187, March 10, 1975.	Department of Conservation, 2611 West End Avenue, Nashville, Tennessee 37219.	ER 1316:4101 EIC TN-5-01L EIC TN-5-02R
Act to Providing for State Loans for Solid Waste Energy Recovery Facilities and Solid Waste Resources Recovery Facilities, H Bill 1661, Chapter 761, Effective May, 1974.		EIC TN-4-01L
Energy Act of 1977.	Tennessee Energy Authority	Energy Facility Siting in U.S., v. 1, p. 107

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS		
Texas Clean Air Act. Article 4477-5, Vernon's Texas Civil Statutes; Chapter 727, Acts of the 60th Legislature, Regular Session, 1967, as Amended by House Bill 322 of 1971, and House Bill 739 of 1973.	Texas Air Control Board, 8520 Shoal Creek Blvd., Austin, Texas 78758.	ER 521:0101 EIC TX-2-01L
Texas Air Control Regulations: General Provisions. Adopted January 26, 1972; Effective March 5, 1972; Rule 1 Amended February 13, 1973, Effective May 13, 1973; Rule 9 Amended July 27, 1972, Effective August 31, 1972, and Amended October 30, 1973, Effective December 1, 1973; Rule 23 Amended March 28, 1975, Effective April 27, 1975.	"	ER 521:0521 EIC TX-2-03R
Texas Regulation I: Control of Air Pollution From Smoke, Visible Emissions, and Particulate Matter. Adopted January 26, 1972; Effective March 5, 1972; Amended December 19, 1973, Effective January 19, 1974; October 31, 1975, Effective December 5, 1975.	"	ER 521:0541 EIC TX-2-10R
Texas Regulation II: Control of Air Pollution from Sulfur Compounds. Adopted January 26, 1972, Effective March 5, 1972; Amended December 19, 1973, Effective January 19, 1974; Amended January 30, 1975, Effective March 5, 1975.	"	ER 521:0561 EIC TX-2-11R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Texas Air Control Regulations, Cont'd.		
Texas Regulation III: Control of Air Pollution from Toxic Materials. Effective June 8, 1974. (Inorganic fluoride compounds and beryllium.)	Texas Air Control Board, 8520 Shoal Creek Blvd., Austin, Texas 78758.	ER 521:0581 EIC TX-2-12R
Texas Regulation IV: Control of Air Pollution from Motor Vehicles. Adopted January 26, 1972; Effective March 5, 1972; Amended February 13, 1973, Effective May 12, 1973; Amended October 30, 1973, Effective December 5, 1975.	"	ER 521:0601 EIC TX-2-13R
Texas Regulation V: Control of Air Pollution from Volatile Carbon Compounds; Adopted July 27, 1972; Effective August 31, 1972; Amended April 10, 1973; Effective May 12, 1973; Amended December 10, 1976; Effective January 12, 1977; Regulation VI: Control of Air Pollution by Permits for New Construction or Modification; Adopted July 27, 1972; Effective August 31, 1972; Amended March 27, 1975; Effective April 27, 1975. Adopted January 9, 1978, Effective February 12, 1978; Adopted May 19, 1978, Effective September, 1978.	"	ER 521:0621 EIC TX-2-14R EIC TX-2-15R
Texas Regulation VII: Control of Air Pollution from Nitrogen Compounds. Adopted July 27, 1972; Effective August 31, 1972; Amended April 26, 1976; Effective May 26, 1976.	"	ER 521:0681 EIC TX-2-16R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Texas Air Control Regulations, Cont'd.		
Texas Regulation VIII: Control of Air Pollution Emergency Episodes. Adopted January 30, 1975; Effective March 5, 1975.	Texas Air Control Board, 8520 Shoal Creek Blvd., Austin, Texas 78758.	ER 521:0721 EIC TX-2-17R
Texas Temporary Fuel Shortage Control Plan Rules. State of Texas Air Control Board Rules 201.11-201.15, Temporary Fuel Shortages; Effective January 19, 1974 - December 21, 1976.	"	ER 521:1181
Texas Permit Exemptions Procedures. Effective May 8, 1972; Amended September 17, 1973; Amended April 4, 1975; August 13, 1975; January 12, 1976, May 5, 1976.		ER 521:1121 EIC TX-2-05R
Texas Procedural Rules. Texas Air Control Board Procedural Rules 50 through 56; Adopted December 9, 1975; Effective January 8, 1976.		ER 521:0741 EIC TX-2-09R
Texas Water Quality Act. Excerpts from Vernon's Texas Code Annotated Title 2, Water Code, created by S.B. 1139, 65th Legislature, Effective September 1, 1977. Effective September 1, 1977, S.B. 1139 of the 65th Texas Legislature reorganized the state's water code, including former Chapter 21, the Texas Water Quality Act. During the course of its regular session in 1977, the 65th Legislature	Texas Department of Water Resources, P.O. Box 13246, Austin, Texas 78711.	ER 921:0101 EIC TX-3-01L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Texas Water Quality Act, Cont. also enacted, with the Governor's signature, amendments to the former Chapter 21; the amendments are in legislative limbo until they are conformed to the new code.		
Texas Water Quality Standards. Texas Water Quality Board Water Quality Standards; Approved October 25, 1973; Amended October 1974; January 1975; Approved by the Environmental Protection Agency February 9, 1976.	Texas Department of Water Re-Sources, P.O. Box 13246, Austin, Texas 78711.	ER 921:1001 EIC TX-3-04R 40 CFR 120
Texas Water Quality Rules. Rules of the Texas Water Quality Board, Chapters I through VII; Adopted March 26, 1970; Amended October 2, 1970; December 7, 1971; October 2, 1974; January 1, 1976; May 5, 1977.		ER 921:0501 EIC TX-3-02R
Texas Solid Waste Disposal Act. Acts of 1969, 61st Legislature, Chapter 405, Article 4477-7, Vernon's Annotated Civil Statutes; Amended by Acts of 1971, 62nd Legislature, Chapters 516 and 863, and Acts of 1973, S.B. 871 and Chapter 149, and Acts of 1977, S.B. 764, 1139.	Texas State Department of Health, 1100 W. 49th Street, Austin, Texas 78756.	ER 1321:0101 EIC TX-4-04L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Texas Solid Waste Regulations. Texas Department of Health Resources Municipal Solid Waste Management Regulations; Adopted December 13, 1975; Effective January 2, 1976; Revised March 26, 1977; Effective April 20, 1977.		ER 1321:0501 EIC TX-4-02R
Texas Regulation on Industrial Solid Waste Management. Texas Water Quality Board Industrial Solid Waste Management Regulation; Established by Order No. 75-1125-1, November 25, 1975; Effective December 31, 1975; Amended March 3, 1977.	Texas Water Quality Board, P.O. Box 13246, Austin, Texas 78711.	ER 1321:0541 EIC TX-4-06R
Uranium Mining Operation Regulations. Established by Order No. 75-1125-1, effective August 27, 1975.	"	EIC TX-5-01R
Hazardous Metals Discharge Regulations, Order No. 75-1125-5, Adopted November 25, 1975.	"	EIC TX-9-03R
Radiation Control Act. Articles 4590f, Revised Civil Statutes, Adopted June 9, 1971.		EIC TX-6-01L
Regulations for Control of Radiation. As Amended through September, 1972.		EIC TX-6-02R
Open Beaches Act of 1959. The Open Beaches Act of 1959 established public ownership of the state's beach areas up to the vegetation line. When the line of vegetation cannot be determined or when		State Land Use Activity, p. 329

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Open Beaches Act of 1959, Cont'd.		
it is located a substantial distance from the shoreline, the line is to be drawn 200 feet from the mean low tide. State, county and district attorneys are authorized to bring suit to remove anything obstructing public access to these areas.		
Submerged Lands Act of 1969. The Submerged Lands Act of 1969 requires the Natural Resources Interagency Council, in consultation with the Submerged Lands Advisory Commission, to undertake a comprehensive study of the state's submerged lands, beaches, island estuaries and estuarine areas. A moratorium on any alteration of these areas was declared until completion of the study. The study recommended adoption of regulations to prohibit the sale of submerged public lands to navigation districts and to prohibit the resale of such lands previously acquired from the state.		State Land Use Activity, p. 329
Law Creating Council on Marine-Related Affairs, 1971 - to advise the governor and the legislature on the comprehensive assessment and planning of marine-related affairs.		State Land Use Activity, p. 329

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
1973 Coastal Public Funds Management Act - includes statutes to: preserve dunes by requiring local permits for activities threatening dunes or vegetation (the state General Land Office will identify critical dune areas and assume review powers for permits in those areas); establish new underground conservation districts to combat surface subsidence in coastal zones by regulating ground water withdrawal and well location; tighten regulatory powers over industrial activities in coastal zones to ensure that the estuarine environment is not jeopardized; develop a continuing coastal zone management plan in response to the federal Coastal Zone Management Act of 1972; prohibit cities and counties from removing or authorizing the removal of sand from beaches in their jurisdictions; and provide state funding for a number of coastal-related research programs.		State Land Use Activity p. 329-330
Geothermal Resources Act. The regulatory authority of the Railroad Commission extends to exploration, development, and production on all public and private lands. The General Land Office acts through the School Land Board to lease geothermal/geopressured resources on lands belonging to the Permanent School Fund of Texas (except wildlife refuges and recreational areas) and on its own to lease up to three leagues (10 1/2 miles) of offshore lands pursuant to the Submerged Lands Act (43 USC Sections 1301-1315).	Railroad Commission (regulatory powers); General Land Office (leasing powers).	EPA 600/7-78-014

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
TEXAS, Cont'd.		
Railroad Commission Rules and Regulations, implement Geothermal Resources Act. The majority of the 80 rules concern themselves more with the technological requirements for oil and gas operations than with the conservation of the environment or geothermal/geopressured operations, and include the most comprehensive specific engineering and documentation requirements.	Railroad Commission	EPA 600/7-78-014
Environmental Impact Statement Requirements: By Comprehensive Executive or Administrative Order - Source and Guidelines: Policy for the Environment, adopted by the Interagency Council on Natural Resources and the Environment on March 7, 1972, and published in "Environment for Tomorrow: The Texas Response," subsequently updated by "The Environment Policy - Guidelines and Procedures for Processing EISs," developed and adopted by the Interagency Council on Natural Resources and the Environment, published November, 1975.	Governor's Budget and Planning Office, Executive Office Building, 411 W. 13th Street, Austin, Texas 78701.	CEQ 8th Annual Report, p. 133

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
VIRGINIA		
Virginia Council on the Environment Law. Code of Virginia, Title 10, Article 2; Effective July 1, 1972; Amended July 1, 1973; Amended by Chapter 263, Laws of 1975; Chapter 466, Laws of 1976.		ER 936:0201
Virginia Air Pollution Control Laws. Code of Virginia, Title 10, Conservation Generally, Chapter 12, Air Pollution Control; Amended by Chapter 251, Laws of 1973; Chapter 126, Approved March 5, 1975; Chapter 622, Approved April 19, 1976; Title 46.1, Motor Vehicles, Chapter 4, Article 8, Section 46.1-301.1; Title 58, Taxation, Chapter 1, Article 3, Section 58-16.3, Certified Pollution Control Equipment and Facilities.	State Air Pollution Control Room 1106, Ninth Street Office Building, Richmond, Virginia 23219.	ER 536:0101 EIC VA-2-03L
Virginia Air Pollution Regulations. State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution; Parts I through VII; Issued March 17, 1972; Amended August 11, 1972; September 15, 1972; October 5, 1973; December 5, 1973; February 3, 1974; July 5, 1974; December 10, 1976; April 8, 1977; September 30, 1977. General Provisions; Ambient Air Quality Standards; Existing and Certain Other Sources; New and Modified Sources; Hazardous Pollutant Sources; Air Pollution Episode.		ER 536:0501 EIC VA-2-01R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
VIRGINIA, Cont'd.		
Virginia Emergency Fuel Variance Regulation. State of Virginia Air Pollution Control Board Emergency Regulation, Section 2.01(g), Emergency Fuel Variances; Effective December 5, 1973.		ER 536:0981 EIC VA-2-02R
Virginia State Water Control Law. Title 62.1, Code of Virginia, 1950, as Amended through 1973; Chapter 3.1, State Water Control Law; Chapter 3.2, Conservation of Water Resources; and Chapter 3.4, Groundwater Act of 1973; Amended March 30, 1974; Effective July 1, 1974; June 1, 1975; March 30, 1976.	State Water Control Board, P.O. Box 11143, Richmond, Virginia 23230.	ER 936:0101 EIC VA-3-02L
Virginia Miscellaneous Laws Relating to Water Pollution. Code of Virginia, 1950, as Amended by the 1970 General Assembly; Title 62.1 Chapter 20, Sections 62.1-194 - 62.1-195; Amended April 8, 1974. These provisions generally pertaining to water pollution are not a part of the State Water Control Law. They are criminal provisions, subject to enforcement by all law enforcement officials. In addition, they may be invoked by any citizen who wishes to swear out a complaint.	"	ER 936:0121
Virginia Water Pollution Control Regulations. Rules of the Virginia Water Control Board; Effective July 18, 1974.	"	ER 936:1001

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
VIRGINIA, Cont'd.		
Virginia Discharge Permit Regulations. Virginia State Water Control Board Regulation 6, National Pollutant Discharge Elimination System (NPDES) Permit Program; Adopted January 23, 1975; Effective February 23, 1976.	State Water Control Board, P.O. Box 11143, Richmond, Virginia 23230.	ER 936:0521
Virginia Water Quality Standards. Rules with General State-Wide Application; Adopted April 8 and June 9, 1970, effective July 20, 1970; Amended through November, 1974. The Virginia water quality standards also include the classification of waters in all of the river basins of the state and certain special standards.	"	ER 936:1001 EIC VA-3-05R
Virginia Environmental Impact Report Law. Code of Virginia, Sections 10-17.107 - 10-17.112; Effective July 1, 1973; Amended April 2, 1974.	Governor's Council on the Environment, Eighth Street Office Building, Richmond, Virginia 23219.	ER 936:0201
Virginia Solid Waste Disposal Law. Code of Virginia Title 32, Section 32-9.1; Amended by Chapter 628, Laws of 1974.	Health Department, Bureau of Solid Waste and Vector Control, Room 209, 401 A Colley Avenue, Norfolk, Virginia 23507.	ER 1336:0101 EIC VA-4-02L
Virginia Solid Waste Regulations. Rules and Regulations of the Virginia Department of Health, Chapter XXVIII, Disposal of Solid Waste; Effective April 1, 1971.	"	ER 1336:0501 EIC VA-4-01R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
VIRGINIA, Cont'd.		
Electrical Utility Plant Siting, House Bill 967, 1972, amended 1974.	State Corporation Commission	Energy Facility Siting in U.S., v. 1, p. 117
Wetlands Act	Marine Resources Commission	State Land Use Activity, p. 121-122
Ionizing Radiation: Rules and Regulations, 1972.	Department of Health	EIC VA-6-01R
Virginia Tax Amortization for Pollution Control. Title 58. Taxation. Chapter 4. Income Taxes. Article 2. Deductions.		ER 536:0201
Mining. Title 45.1-198 (coal) and Title 45.1-180, Chapter 16 (all other minerals).	Department of Conservation	USGS Circ. 731, p. 20
Minerals Other than Coal Reclamation Fund, House Bill 268, 1978	Department of Conservation	Legislative Update-1978
Surface Mining and Reclamation, House Bill 400, 1978 - ensures state compliance with Federal Act of 1977.	Division of Mined Land Reclamation	Legislative Update-1978
State Air Pollution Study Commission, Senate Joint Resolution 37, 1978 - established to assist State Air Pollution Control Board to implement the 1977 Amendments to Federal Clean Air Act.		Legislative Update-

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
WEST VIRGINIA		
West Virginia Air Pollution Control Law. Chapter 16, Article 20, Code of West Virginia, as Amended by 1971 H.B. 916.	West Virginia Air Pollution Control Commission, 1558 Washington Street, E., Charleston, West Virginia 25311.	ER 546:0101 EIC WV-2-13R
West Virginia Regulations on Air Pollution Prevention and Control; Ambient Air Quality Standards; and Stationary Source Permit, Registration, and Evaluation Procedures. West Virginia Administrative Regulations, Air Pollution Control Commission, Chapter 16-20, Series I, Adopted November 15, 1963, Effective January 1, 1964, To prevent and control particulate air pollution; Series II, Regulation II, Adopted July 23, 1974, Effective September 1, 1974; Series III, Regulation III, Adopted August 22, 1964, Effective October 1, 1966; Series IV, Regulation IV, Adopted August 17, 1967, Effective October 1, 1967; Series V, Regulation V, Adopted July 11, 1968, Effective September 1, 1968; Series VI, Regulation VI, Adopted July 22, 1969, Effective September 1, 1969; Series VII, Regulation VII, Adopted August 28, 1974, Effective October 1, 1974; Series VIII, Regulation VIII, Adopted January 19, 1972, Effective March 15, 1972; Amended June 25, 1975; Series IX, Regulation IX, Adopted June 24, 1971, Effective September 1, 1971; Series X, Regulation X, Adopted June 28, 1973, Effective July 30, 1973; Series XI, Regulation XI, Adopted January 19, 1972, Effective March 15, 1972; Series XII, Regulation XII, Adopted January 19, 1972, Effective March 15,	"	ER 546-0501 EIC WV-2-01R through WV-2-13R

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
WEST VIRGINIA, Cont'd.		
West Virginia Regulations on Air Pollution Prevention and Control; Ambient Air Quality Standards; and Stationary Source Permit, Registration, and Evaluation Procedures. Cont'd. 1972; Series XIII, Regulation XIII, Adopted April 19, 1974, Effective June 1, 1974.		
West Virginia Water Pollution Control Act. Chapter 20, Article 5A, West Virginia Code, as Amended, 1969.	Division of Water Resources, Department of Natural Resources, 1201 Greenbriar Street, Charleston, West Virginia 25305.	ER 946:010 EIC WV-3-01L
West Virginia Water Quality Regulations. West Virginia Administrative Regulations, State Water Resources Board; Chapter 20, Articles 5 and 5A, Code of West Virginia; Effective April 15, 1974.		ER 946:0501 EIC WV-3-02R
West Virginia Solid Waste Laws. Excerpted Paragraphs from the Code of West Virginia, County Courts and Officers, Chapter 7, Article 1; Municipal Law, Municipalities and Counties: Intergovernmental Relations, Chapter 8, Article 11-3; Article 12-5 (10 and 11); Article 13-13; Article 16-2; Article 23-2; Article 23-3; Article 23-7; Public Health, Chapter 16, Articles 1, 3 and 9; Roads and Highways, Chapter 17, Article 23; Agriculture, Chapter 19, Articles 9 and 9A; Natural Resources, Chapter 20, Articles 4, 5A and 6; Chapter 16, Article 1 Amended by 1973 Senate Bill 335, Effective July 13, 1973.	West Virginia State Department of Health, 1800 Washington St., E., Charleston, West Virginia 25305.	ER 1346:0101 EIC WV-4-04L

TABLE III-27 (continued)

STATE LAWS AND REGULATIONS

Laws and Regulations	Administering Agency	Ref. to Citation or Complete Copy[a]
WEST VIRGINIA, Cont'd.		
West Virginia Surface Mining Act. Surface Mining and Reclamation Act, West Virginia Code, Volume 8, 1970 Replacement Volume, Chapter 20 - Natural Resources, Sections 2, 5-11, 14-17, and 30; Adopted by the State Legislature, Regular Session, 1971; Effective March 13, 1971. Amended by Senate Bill 448, 1978.	State Department of Natural Resources, Charleston, West Virginia 25305.	ER 1346:4101 EIC WV-5-01L Legislative Update-1978
Radiological Health Regulation, Part 1.0 through 7.0, Effective July 1, 1968.		EIC WV-6-01R
Placement of Oil and Gas Wells in Coal Fields, House Bill 1670, 1978 - procedures for locating wells to prevent interference with mining or mine safety.		Legislative Update-1978
NPDES, Senate Bill 517, 1978.		Legislative Update-1978
Modification of Tax Exemption for Coal Gasification and Liquifaction, House Bill 1649, 1978.		Legislative Update-
Tax Rates and Taxable Income from Production of Electric Power, House Bill 163, 1978.		Legislative Update-

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APPENDIX A. GLOSSARY*

ABATEMENT: The method of reducing the degree or intensity of pollution, also the use of such a method.

ACRE-FOOT: The quality of water required to cover 1 acre to a depth of 1 foot; equal to 43,560 cubic feet or 325, 851 gallons.

AEROSOLA: Either solid or liquid particles in the air such as smoke, fumes, dust, pollen, fibers, or microbial spores.

AIR POLLUTION: The presence of contaminants in the air in concentrations that prevent the normal dispersive ability of the air and that interfere directly or indirectly with man's health, safety, or comfort or with the full use and enjoyment of his property.

AIR QUALITY CONTROL REGION: An area designated by the federal government where two or more communities — either in the same or different states — share a common air pollution problem.

AIR QUALITY STANDARDS: The prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.

ALKALINE: Having marked basic properties with a pH of more than 7.

AMBIENT AIR: Any unconfined portion of the atmosphere; the outside air.

ANTI-DEGRADATION CLAUSE: A provision in air quality and water quality laws that prohibits deterioration of air or water quality in areas where pollution levels are presently below those allowed.

APPROPRIATION DOCTRINE: The system of water law adopted by (and dominant in) most Western States. The basic tenets of the appropriation doctrine are (1) that a water right can be acquired only be diverting the water from a watercourse and applying it to a beneficial use and (2) in accordance with the date of acquisition, an earlier acquired water right shall have priority over other late acquired rights. The first in time of beneficial use is the first in right, and the right is maintained only by use. Water in excess of that needed to satisfy existing rights is viewed as unappropriated water, available for appropriation by diversion and application to a beneficial use. (See riparian doctrine.)

APPROPRIATION (FUNDS): At the Federal level, the process whereby Congress enacts a statute permitting expenditure of funds, sometimes repeatedly over a period of several years, for construction of authorized projects or implementation of authorized programs.

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*This glossary was prepared by the Data Book Project team at Los Alamos Scientific Laboratory; ORNL has added a few terms.

AQCR: Air Quality Control Region.

AQUATIC WILDLIFE: Any species of fish, crustaceans, aquatic insects or amphibians.

AQUIFER: A saturated underground body of rock or similar material capable of storing water and transmitting it to wells or springs.

AREA OF ORIGIN: In the case of interbasin water transfers, the area exporting water.

AREA SOURCE: In air pollution, any small individual fuel combustion source, including any transportation sources. Area source is defined legally and precisely in federal regulations.

A-SCALE SOUND LEVEL: The measurement of sound approximating the auditory sensitivity of the human ear. The A-scale sound level is used to measure the relative noisiness of common sounds.

AUTHORIZATION: At the Federal level, the process whereby Congress enacts a statute approving construction of a project or implementation of a program, frequently specifying a maximum amount to be appropriated for the purpose (but not appropriating the required funds).

BACKGROUND LEVEL: With respect to air pollution, amounts of pollutants present in the ambient air due to natural sources.

BARREL (OIL): A volumetric unit of measurement equivalent to 42 U.S. Standard gallons.

BBL: Barrels.

BEST KNOWN TECHNOLOGY: For water pollution control, is a shorthand term to describe those techniques and methods known by the NWC staff to be under consideration in the spring of 1972 when the Commission's estimates of cost of various pollution control measures were prepared. Does not necessarily bear any relationship to the term "best available technology" as used in the Federal Water Pollution Control Act Amendments of 1972.

BIG GAME: Any species of hoofed protected wildlife.

BIOCHEMICAL OXYGEN DEMAND (BOD): A measure of the amount of oxygen consumed in five days by the biological processes breaking down organic matter in water. Large amounts of organic waste use up large amounts of dissolved oxygen, thus the greater the degree of pollution, the greater the BOD.

BIOME: A major regional ecological community of plants and animals extending over large natural areas. The plants of land biomes comprise the 'formations' of plant ecologists.

BIOTA: The flora and fauna of a region.

BOD: Biochemical oxygen demand.

BOR: Bureau of Outdoor Recreation, a federal agency.

BRITISH THERMAL UNIT (BTU): The amount of heat required to raise the temperature of one pound of water one degree fahrenheit at its point of maximum density.

BTU: British thermal unit.

BUREAU OF RECLAMATION: Bureau of Reclamation, a federal agency.

BY-PRODUCTS (RESIDUALS): Secondary products which have commercial value and are obtained from the processing of a raw material. They may be the residues of the gas production process, such as coke, tar, and ammonia, or they may be the results of further processing of such residues, such as ammonium sulphate.

CAMP: Continuous Air Monitoring Program.

CARBON DIOXIDE (CO_2): A colorless, odorless, non-poisonous gas that is a normal part of the ambient air. CO_2 is a product of fossil fuel combustion.

CARBON MONOXIDE (CO): A colorless, ordorless, highly toxic gas that is a normal by product of incomplete fossil fuel combustion. CO, one of the major air pollutants, can be harmful in small amounts if breathed over a certain period of time.

CEQ: National Council on Environmental Quality (established by NEPA).

CHANNELIZATION: The straightening and deepening of streams to permit water to move faster, to reduce flooding, or to drain marshy areas. Channelization reduces the organic waste assimilation capacity of the stream and may destroy fish breeding, the stream's natural beauty, flood retention capability, and aquifers recharge capacity.

CHEMICAL OXYGEN DEMAND (COD): A measure of the amounts of oxygen required to oxidize organic and oxidable inorganic compounds in water. (The greater the degree of pollution, the greater the COD.)

CHESS: Community Health and Environmental Surveillance System.

CHLORINATED HYDROCARBONS: A class of generally long-lasting insecticides, of which the best known is DDT.

CHLORINATION: The application of chlorine to drinking water, sewage, or industrial waste for disinfection or oxidation of undesirable compounds.

CLIMAX VEGETATION: A stable, balanced vegatation community in an ecosystem which will remain in an area if undisturbed. The vegetative types present is determined by the climate.

CO: Carbon monoxide.

CO_2: Carbon dioxide.

COASTAL ZONE: Coastal water and adjacent lands that exert a measurable influence on the uses of the sea and its ecology.

COD: Chemical oxygen demand.

COLIFORM INDEX: An index of the purity of water based on a count of its coliform bacteria.

CONDUCTANCE (CONDUCTIVITY): A common way to express general mineral content of water. It is literally the specific electrical conductance (or electrical conductivity); a measure of the capcity of water to conduct an electrical current under standard test conditions. Conductivity increases as concentrations of dissolved and ionized constituents increase. It is actually measured as resistance (in millionths of an ohm) but reported as microhms (the repciprocal of millionths of an ohm). As a rule of thumb, dissolved solids concentration (in mg/l) is 60-70 percent of specific conductance (in micro ohms).

CONSERVATION: Those measures of management directed toward perpetuating resources for the enjoyment of present and future generations. Conservation is inclusive of preservation.

CONSUMPTIVE USE: Water withdrawn from a supply which, because of absorption, transpiration, evaporation, or incorporation is a manufactured product, is not returned directly to a surface or ground water supply; hence, water which is lost for immediate further use. Also called "consumption."

COOLING TOWER: A structure designed for the evaporative cooling of heated water.

COST ALLOCATION: The appointment of the costs of a multipurpose water project among the various purposes served.

CRUDE OIL: A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

CRUDE OIL STOCKS: Stocks of crude oil and lease condensate held at refineries, pipeline terminals, and on leases.

CUBIC FOOT: The most common unit of measurement of gas volume. It is the amount of gas required to fill a volume of one cubic foot under stated conditions of temperature, pressure, and water vapor.

DECIBEL: The unit of measurement of the intensity of sound.

DECLINING: Any species of animal which, although still occurring in numbers adequate for survival, has been greatly depleted and continues to decline. A management program, including protection or habitat manipulation, is needed to stop or reverse decline.

DEPLETED URANIUM: Uranium consisting primarily of ^{238}U and depleted of the ^{235}U isotope. Depleted uranium generally contains less than 0.2 wt % ^{235}U.

DEPLETION: The withdrawal of water from surface or ground water reservoirs at a rate greater than the rate of replenishment.

DESALTING: The technical process of converting sea water or brackish water to fresh water or otherwise more usable condition by removing dissolved solids. Also called "desalinization" and "Desalination."

DISCHARGE: The rate of flow of a spring, stream, canal, sewer, or conduit.

DISTILLATE FUEL OIL: The lighter fuel oils distilled off during the refining process. Included are products known as ASTM grades Nos. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. The major uses of distillate fuel oils including heating, fuel for on- and off-highway diesel engines, and railroad diesel fuel.

DISSOLVED OXYGEN: Oxygen suspended in water in the form of microscopic bubbles.

DISSOLVED SOLIDS: The total amount of dissolved material organic and inorganic, contained in water or wastes.

DIVERSION: See "Withdrawal."

DRAINAGE BASIN: The land area from which water drains into a river, as for example the Columbia.

ECOLOGY: The study of interrelationships of living organisms to one another and to their surroundings.

ECOSYSTEM: The interaction of living things with each other and their habitat, forming an integrated unit or system in nature, sufficient unto itself with a balanced assortment of life forms.

ECOTONE: A fairly broad transition region between adjacent biomes.

EFFLUENT: A discharge from a pollution source that is relatively self-contained, generally referred to in regard to discharges into waters but can also mean discharges into air.

ELECTRICITY CONSUMPTION, COMMERCIAL SECTOR: Sales of electricity to businesses with a demand generally less than 1,000 kilowatts.

ELECTRICITY CONSUMPTION, INDUSTRIAL SECTOR: Sales of electricity to businesses with a demand generally greater than 1,000 kilowatts.

ELECTRICITY CONSUMPTION, RESIDENTIAL SECTOR: Sales of electricity for residential and household purposes.

ELECTRIC POWER PRODUCTIVITY: Value added divided by electricity consumed expressed in dollars per kilowatt hours.

EMISSION: See Effluent. Emissions is generally used in regard to discharges into air.

EMISSION FACTOR: The average amount of a pollutant emitted from each type of polluting source in relation to a specific amount of material processed. An emission factor for a residential furnace would be a number of pounds of particulates per cubic foot of fuel.

EMISSION INVENTORY: A list of air pollutants emitted into a community's atmosphere, in amounts such as tons per day, by type of source. The emission inventory is basic to the establishment of emission standards.

EMISSION STANDARD: The maximum amount of a pollutant legally permitted to be discharged from a single source, either mobile or stationary.

ENDANGERED: Any species, subspecies or sub-population of animal which is threatened with extinction resulting from very low or declining numbers, alteration and/or reduction of habitat, detrimental environmental changes, or any combination of the above. Continued survival in this state is unlikely without implementation of special measures.

ENVIRONMENT: The external conditions which exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

ENVIRONMENTAL QUALITY: The properties and characteristics of the environment, either generalized or local, as they impinge on human beings and other organisms. Environmental quality can refer to varied characteristics or the potential effects such characteristics may have on physical and mental health.

ENVIRONMENTAL IMPACT STATEMENT (EIS): A detailed statement setting forth the environmental effects and considerations anticipated by a proposed action, policy or project which has been determined to be a "major federal action significantly affecting the environment" under the provisions of the National Environmental Policy Act.

ENERGY CONSUMPTION, INDUSTRIAL SECTOR: Real consumption by, apparent demand by, sales to, or deliveries to construction, manufacturing, agricultural, and mining establishments.

ENERGY CONSUMPTION, RESIDENTIAL AND COMMERCIAL SECTOR: Real consumption by, apparent demand by, sales to, or deliveries to private households, housing units, nonmanufacturing business establishments (e.g., wholesale and retail businesses), health and educational institutions, and public buildings.

ENERGY CONSUMPTION, TRANSPORTATION SECTOR: Real consumption by, apparent demand by, sales to, or deliveries to both private and public passenger and freight transportation, as well as government transportation, including military operations.

ENERGY CONSUMPTION, ELECTRIC UTILITY SECTOR: Real consumption by, apparent demand by, sales to, or deliveries to privately and publicly owned establishments which generate electricity primarily for sale or resale.

EPA: Environmental Protection Agency, which administers the National Environmental Protection Act as well as other environmental legislation such as the Clean Air Act.

ERODABILITY FACTOR: The "k" factor in soil loss equations. The amount of soil which erodes from a standard experimental plot of bare soil under standard conditions of slope, rainfall, etc. It varies with the physical characteristics of the soil.

ESTUARIES: Areas where the fresh water meets salt water. For example, bays, mouths of rivers, salt marshes and lagoons. Estuaries are delicate ecosystems; they serve as nurseries, spawning and feeding grounds for a large group of marine life and provide shelter and food for birds and wildlife. (EPA)

EUTROPHICATION: Overfertilization of a water body due to increases in mineral and organic nutrients, producing an abundance of plant life which uses up oxygen, sometimes creating an environmen hostile to higher forms of marine and animal life.

EVAPOTRANSPIRATION: Water dissipated to the atmosphere by evaporation from water surfaces and moist soil, and by plant transpiration.

EXPORTS: Shipments from the 50 States and the District of Columbia to foreign countries and U.S. possessions and territories.

EXTIRPATED: Any species of animal that has disappeared, as part of full time resident, from the state. (This is different from the word "extinct," which means the total loss of the species in the world).

FECAL COLIFORM BACTERIA: A group of organisms common to the intestinal tracts of man and other mammals. The presence of fecal coliform bacteria in water is an indicator of pollution and of potentially dangerous bacterial contamination.

FISHING: To take fish by any means.

FLOOD PLAIN: The land area bordering a river which is subject to flooding.

FLOODWAY: The riverbed and immediately adjacent lands needed to convey high velocity flood discharges.

FLOODWAY FRINGE: Lands immediately adjacent to floodways which are still subject to flooding but which are not needed for high velocity flood discharge and are flooded less frequently and for shorter durations than floodways.

FOSSIL FUELS: Coal, oil and natural gas; so-called because they are derived from the remains of ancient plant and animal life. (EPA)

FUR BEARER: Any mammal of the families Mustalidae and Casteridae.

GROUND COVER: Grasses or other plants grown to keep soil from being blown or washed away.

GROUNDWATER: The supply of fresh water under the earth's surface in an aquifer.

GROUND WATER MINING: The condition when withdrawals are made from an aquifer at rates in excess of net recharge; sooner or later the underground supply will be exhausted or the water tables will drop below economic pump lifts.

GAS, NATURAL: A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in porous geologic formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

ASSOCIATED: Free natural gas in immediate contact, but not in solution with crude oil in the reservoir.

DISSOLVED: Natural gas in solution in crude oil in the reservoir.

LIQUEFIED (LNG): Natural gas which has been liquefied by reducing its temperature to -260°F at atmospheric pressure. It remains a liquid at -116°F and 673 PSIG. In volume it occupies 1/600 of the gas in the vapor state.

LIQUIDS: Those liquid hydrocarbon mixtures which are gaseous at reservoir temperatures and pressures, but are recoverable by condensation or absorption. Natural gasoline and liquefied petroleum gases fall in this category.

NON-ASSOCIATED: Free natural gas not in contact with, nor dissolved in, crude oil in the reservoir.

GAS, SUBSTITUTE NATURAL (SNG): A gas manufactured from carbonaceous material whose characteristics are substantially interchangeable with natural gas. The resultant gas is composed primarily of methane. At

this writing, SNG feedstocks are the light hydrocarbons, propane, butane and the naphthas. Development is underway of processes for production from heavier feedstocks and from coal.

HABITAT: The sum total of environmental conditions of a specific location. Habitat includes the whole complex of physical factors forming the environment.

HARDNESS: Derived largely from contact with soil and rock formations, hardness in water is caused by divalent metallic cations, principally calcium, magnesium, strontium, ferrous iron, and manganour ions. Hard waters are as satisfactory for human consumption as soft waters. Because of their adverse action with soap, however, the use for cleaning purposes is quite unsatisfactory, and they produce scale in hot water pipes, heaters, boilers, and other units in which the temperature of water is increased materially.

HAZARDOUS AIR POLLUTANT: According to law, a pollutant to which no ambient air quality standard is applicable and that may cause or contribute to an increase in mortality or in serious illness, such as asbestos, beryllium, and mercury.

HC: Hydrocarbons.

HEADWATERS: The place where a river originates.

HEATING DEGREE DAYS: The departure of the mean daily temperature below a given standard (in this case, 65°F or 18.3°C). One degree-day is counted for each degree of departure below the standard during one day. Degree days are usually accumulated over a month, season, or year.

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*from Glossary of Meterology, R. E. Hushke, ed., AMS, Boston, 1959.

HEW: Department of Health, Education and Welfare, a federal agency.

H_2S: Hydrogen sulfide, a type of air pollution.

HUD: Department of Housing and Urban Development, a federal agency.

HUNTING: To take any bird or mammal by any means.

HYDROCARBONS: A type of air pollution including organic acids, aldehydes, unsaturated hydrocarbons, and aromatics.

IMPORTS: Imports (receipts) in the 50 States and the District of Columbia for consumption from foreign countries including U.S. territories and the Hawaiian Foreign Trade Zone. Excludes receipts into bonded warehouse, includes withdrawal from bonded warehouses for onshore consumption, offshore bunker use, and military use.

INDICATED RESERVES: Crude oil potentially available from known productive reservoirs in existing fields expected to respond to improved recovery techniques such as fluid injection where (a) an improved recovery technique has been installed but its effect cannot yet be fully evaluated, or (b) an improved technique has not been installed but knowledge of reservoir characteristics and the results of a known technique installed in a similar situation are available for use in the estimating procedure.

INFERRED RESERVES: Reserves in addition to demonstrated reserves eventually to be added to known fields through extensions, revisions, and new pays.

INSTREAM USE: Use of water which does not require withdrawal or diversion from its natural water course. For example, the use of water for navigation, waste disposal, recreation, and support of fish and wildlife.

INTERBASIN TRANSFER: The physical transfer of water from one watershed to another. On a large scale, the transfer of large quantities of water from one major river basin to another.

INTERSTATE COMPACT: In the case of water resources, agreements between two or more States for dealing with water resources problems involving more than one State and beyond the legal authority of one State alone to solve. Such agreements require the consent of Congress. The Federal Government may participate in some compacts, in which case the agreement is called a Federal-interstate compact.

KW-hr (KILOWATT-HOUR): The amount of energy equal to 1 kilowatt for 1 hour. It is equivalent to 3,412 Btu.

LACUSTRINE: Pertaining to lakes generally as distinguished from other bodies of water such as rivers, oceans, ground water aquifers, and estuaries.

LIMITED: Any species of animal occurring in limited numbers due to a restricted or specialized habitat or at the perimeter of its historic range.

MAN-REM: A unit of population dose, often the average dose per individual expressed in rems times the population affected.

Mcf: An abbreviation meaning 1000 cubic feet.

MGD: Millions of gallons per day, a measurement of the rate of flow of water.

MMcf: Million cubic feet.

MULTIPLE USE: Management of natural resources to serve two or more uses simultaneously.

NAAQS: National Ambient Air Quality Standards.

NADB: National Aerometric Data Bank.

NASN: National Aerometric Surveillance Network.

NATURAL GAS: A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions.

NATURAL GAS CONSUMPTION, COMMERCIAL SECTOR: Deliveries to nonmanufacturing establishments including those engaged in agriculture, forestry, and fishing.

NATURAL GAS CONSUMPTION, ELECTRIC UTILITY SECTOR: Deliveries to electric utilities for the generation of electric power.

NATURAL GAS CONSUMPTION, INDUSTRIAL SECTOR: Deliveries to establishments engaged primarily in processing unfinished materials into another form or product. Includes mining, petroleum refining, and manufacturing.

NATURAL GAS CONSUMPTION, RESIDENTIAL SECTOR: Deliveries to private households for heating, cooking, and other household uses.

NATURAL GAS LIQUIDS (INPUT TO REFINERIES): Products obtained from natural gasoline plants, cycling plants, and fractionators after processing the natural gas. Included are ethane, liquefied petroleum (LP) gases (propane, butane, and propane-butane mixtures), natural gasoline, and plant condensate.

NEDB: National Emissions Data Bank.

NEDS: National Emissions Data System.

NEPA: National Environmental Policy Act (1969).

NO: Nitrogen oxide.

NO_2: Nitrogen dioxide.

NO_x: Nitrogen oxide, either nitrogen dioxide or nitrogen oxide, also referred to as nitric oxides.

NO DISCHARGE POLICY: The policy which prohibits discharge of any harmful substances into a water body. Strictly applied, the policy would forbid discharges which are within the capacity of a water body to assimilat and render harmless.

NOISE: Any undesired audible signal. Thus, in acoustics, noise is any undesired sound. (EPA)

NONGAME WILDLIFE: All species which are not commonly pursued, killed, or consumed, either for sport or profit, and includes wild mammals, birds, reptiles, fish, amphibians, mollusks, and crustaceans, which are not classified as big game, small game birds, or mammals, raptors, fur-bearers, varmints, or sport fish, sport amphibians, or sport crustaceans or mollusks.

NONPOINT SOURCE: The diffuse discharge of waste into a water body which cannot be located as to specific source, as with sediment, certain agricultural chemicals, and acid mine drainage.

O_X: Total Oxidants.

ONCE-THROUGH PROCESS: The withdrawal of water from a water body for use in cooling or processing and subsequent return of that water, usually at a higher temperature or other altered condition, into the same body of water from which it came. Contrasts with water recycling processes.

OVERSTORY: The layer of foliage in a forest canopy; also, its trees.

PARTICULATE: Liquid or solid material in the air, either organic or inorganic, including dust, flyash, dirt, smoke, soot, and metallic fume.

PERMEABILITY: A measure of the ease with which water can pass through the sediment of an aquifer.

PESTICIDE: An agent used to control pests. This includes insecticides for use against harmful insects; herbicides for weed control; fungicides for control of plant diseases; ordenticides for killing rats, mice, etc.; and germicides used in disinfectant products, algaecides, slimicides, etc. Some pesticides can contaminate water, air or soil and accumulate in man, animals and the environment, particularly if they are misused. Certain of these chemicals have been shown to interfere with the reproductive processes of predatory birds and possibly other animals. (EPA)

PETROLEUM: Crude oil (including lease condensate), refined petroleum products including natural gas liquids, and non-hydrocarbon compounds blended into finished petroleum products.

PETROLEUM CONSUMPTION, ELECTRIC UTILITY SECTOR: Domestic demand for all fuel oils at electric utilities.

PETROLEUM CONSUMPTION, INDUSTRIAL SECTOR: Domestic demand for petroleum products for use by establishments engaged in processing unfinished materials into another form or product. Excludes industrial space heating.

PETROLEUM CONSUMPTION, "OTHER" SECTOR. Domestic demand for miscellaneous products and for some agricultural uses.

PETROLEUM CONSUMPTION, RESIDENTIAL AND COMMERCIAL: Domestic demand for petroleum products by private households, and nonmanufacturing establishments. Includes industrial space heating and road paving.

PETROLEUM CONSUMPTION, TRANSPORTATION SECTOR. Domestic demand for petroleum products for on-highway use, aircraft and vessel bunkering, and railroad use.

pH: A measure of the acidity or alkalinity of a material, liquid, or solid. pH is represented on a scale of 0 to 14 with 7 representing a netural state, 0 representing the most acid, and 14 the most alkaline.

PHOTOCHEMICAL OXIDANTS: A type of air pollution formed by interaction of the atmosphere with nitrogen oxides.

PM: Particulate Matter.

POINT SOURCE: In air pollution, a stationary source of a large individual emission, generally of an industrial nature. Also, a specific site from which wastewater is discharged into a water body and which can be located as to source, as with effluent, treated or otherwise, from a municipal sewage system, out-flow from an industrial plant, or run-off from an animal feedlot.

POLLUTANT: Any introduced gas, liquid, or solid that makes a resource unit for a specific purpose.

POLLUTION: The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

PPM: Parts per million.

PRECIPITATION: Any form of rain or snow falling to the earth's surface.

PRIMARY TREATMENT: The first stage in waste water treatment in which substantially all floating or settleable solids are mechanically removed by screening and sedimentation.

PRIORITY CLASSIFICATION: A system designed to guide the States in allocating resources for pollution control measures; provides an indication of the relative complexity of the required measures.

PROVED RESERVES, CRUDE OIL: Proved reserves of crude oil as of December 31 of any given year are the estimated quantities of all liquids statistically defined as crude oil, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

PROVED RESERVES, NATURAL GAS: Proved reserves of natural gas as of December 31 of any given year are the estimated quantities of natural gas which geological and engineering data demonstrate with reasonable certainty to be recoverable in the future from known natural oil and gas reservoirs under existing economic and operating conditions.

PROVED RESERVES, NATURAL GAS LIQUIDS: Estimates of proved reserves of natural gas liquids on December 31 of any given year include (1) reserves of liquids which are expected to be recovered from associated and nonassociated gas produced from gas wells and processed through lease separators; and (2) reserves of liquids expected to be recovered from associated-dissolved and nonassociated gas which processed in-field facilities or gas processing plants. Estimates of proved reserves of natural gas liquids are based on (1) proved reserves of natural gas on December 31, and (2) rates at which liquids can be recovered from natural gas by using processing equipment of the type currently installed or planned as of December 31.

RARE: A species that occupies only a small percentage of the preferred habitat within its range or a species that is found throughout its range in extremely low densities; cannot always be found by a skilled observer even during intensive survey work.

RADIONUCLIDE: A radioactive nuclide.

RECYCLING: The process by which waste materials are transformed into new products in such a manner that the original products may lose their identity. (EPA)

REFINED PETROLEUM PRODUCTS: Products obtained from the processing of crude oil, unfinished oils, and natural gas liquids. Includes aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphthas, lubricants, wax, coke, asphalt, oils, road oil, still gas, and miscellaneous products.

REM: A unit of measure for the dose of ionizing radiation that has the same biological effect as one roentgen of xrays. One rem is approximately equal to one rad for X, gamma, or beta radiation.

RESERVES, ENERGY: Refers to the bank of natural resources, such as natural gas, natural gas liquids, petroleum, coal, lignite, and energy available from water power.

ESTIMATED POTENTIAL NATURAL GAS RESERVES: Refers to an estimate of the ultimate finding of natural gas in a specified area, whether or not presently considered proved or recoverable.

ESTIMATED PROVED RECOVERABLE NATURAL GAS RESERVES: An estimated quantity of natural gas which analysis of geologic and engineering data demonstrates with reasonable certainty to be recoverable in the future from known oil and gas reservoirs, under existing economic and operating conditions. Reservoirs are considered proved that have demonstrated the ability to produce by either actual production or conclusive formation test.

RESERVOIR: A pond, lake, aquifer, or basin, either natural or artificial, in which water is stored, regulated, or controlled.

RESIDUAL: Material or energy flow, the value of which is less than the cost of using it.

RESIDUAL FUEL OIL: The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as ASTM grades Nos. 5 and 6 oil, heavy diesel oil, Navy Special Fuel Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, for heating, and for various industrial purposes.

RESOURCE ENERGY PRODUCTIVITY: Value added divided by energy consumed per man hour expressed in dollars per 10^9 BTU.

RETURN FLOW: The portion of withdrawn water that is not consumed by evapotranspiration and that returns instead to its source or to another body of water.

RIPARIAN DOCTRINE: The system of water law historically recognized by the Eastern States. The reparian doctrine protects landowners adjacent to lakes and streams from withdrawals or uses which unreasonably diminish water quantity or quality. Under the riparian doctrine, individuals have a right to make reasonable use of the stream waters flowing by lands they own so long as that use does not substantially diminish either the quantity or the quality of the water passing to landowners downstream. Where diversions or uses have been unreasonable, they either have been enjoined or reparian owners adversely affected have been compensated for interference with their rights (See appropriation doctrine).

RIVER BASIN: See "Drainage basin."

RUNOFF: Streamflow unaffected by artificial diversions, storage, or other works of man in or on the stream channels, or in the drainage basin or watershed.

SALINE: Containing salt.

SAROAD: Storage and Retrieval of Aerometric Data.

SCS: Soil Conservation Service, a federal agency.

SECONDARY TREATMENT: Waste water treatment, beyond the primary stage, in which bacteria consume te organic parts of the wastes. The biochemical action is accomplished by use of trickling filters or the activated sludge process.

SEDIMENT: Soil or mineral material transported by water and deposited in streams or other bodies of water.

SILTATION: The deposit of sediment downstream of the site as a result of erosion.

SIP: State Implementation Plan for prevention of significant air quality deterioration as required by the Clean Air Act Amendments of 1977 (PL 95-95).

SITE-SPECIFIC: Phenomena which occur under certain conditions at a particular site but which would not necessarily occur at another site.

SMALL GAME: Any species of protected wildlife normally pursued for sporting purposes which is not classified as big game, aquatic wildife, or fur bearers.

SOLID WASTE: Useless, unwanted, or discarded material with insufficient liquid content to be free flowing. (1) Agricultural — solid wastes that results from the raising and slaughtering of animals, and the processing of animal products and orchard and field crops; (2) Commercial — waste generally by stores, offices and other activities that do not actually turn out a product; (3) industrial — waste that results from industrial processes and manufacturing; (4) institutional — waste originating from education, health care and research facilities; (5) municipal — residential and commercial solid waste generated within a community; (6) pesticide — the residue from the manufacturing, handling or use of chemicals intended for killing plant and animal pests; (7) residential — waste that normally originates in a residential environment, sometimes called domestic solid waste. (EPA)

SOLID WASTE MANAGEMENT: The purposeful, systematic control of the generation, storage, collection, transport, separation, processing, recycling, recovery and disposal of solid wastes.

SO_2: Sulfur dioxide, a form of air pollution.

SO_3: Sulfur trioxide, a form of air pollution.

SO_X: Sulfur oxides, either sulfur dioxide or sulfur trioxide.

STANDARD METROPLITAN STATISTICAL AREA (SMSA): An integrated economic and social unit with a large population nucleus. There are over 245 SMSA's in the United States. Each contains at least one central city with 50,000 inhabitants or more, or two adjoining cities constituting, for economic and social purposes, a single large community.

STATUS QUESTIONED: Insufficient data available on which to base a reliable assessment as to the status of endangered wildlife.

STORAGE: The impoundment in surface reservoirs or accumulation of underground reservoirs of water for later use or release.

STORAGE, UNDERGROUND: The utilization of subsurface facilities for storing gas which has been transferred from its original location for the primary purposes of load balancing, better utilization of piepline facilities, and more effective and economic delivery to markets. The

facilities are usually natural geological reservoirs such as depleted oil or gas field water-bearing sands sealed on the top by an impermeable cap rock. The facilities also may be man-made or natural caverns.

STREAMFLOW: The discharge in a surface stream course.

SULPHUR DIOXIDE (SO_2): A heavy, pungent, colorless gas formed primarily by the combustion of fossil fuels. SO_2 damages the respiratory tract as well as vegetation and materials and is considered a major air pollutant. (EPA)

SUSTAINED YIELD: In the case of ground water aquifers, the quantity of water which can be withdrawn annually without, over a period of years, depleting the available supply.

TERTIARY TREATMENT: Waste water treatment beyond the secondary, or biological, stage that includes removal of nutrients such as phosphorus and nitrogen, and a high percentate of suspended solids. Tertiary treatment, also known as advanced waste treatment, produces a high quality effluent.

THREATENED SPECIES: Any species or subspecies of wildife which is not in immediate jeopardy of extinction but is vulnerable because it exists in such small numbers or is so extremely restricted throughout all or a significant portion of its range that it may become endangered.

TRANSMISSIVITY: A coefficient relating the volumetric flow through a unit width of groundwater to the driving force (hydraulic potential). It is a function of the porous medium, fluid properties, and saturated thickness of the aquifer.

TRANSPIRATION: The process in which plant tissues give off water vapor to the atmosphere.

TRANSURANIC WASTE: Those wastes contaminated with long-lived alpha-emitting radionuclides including ^{233}U and its daughter products, plutonium and transplutonium nuclides (those with atomic number ≥ 94) except ^{238}Pu and ^{241}Pu.

TSP: Total Suspended Particulates.

UNDERSTORY: A layer of foliage in a forest below the level of the main canopy; also, the trees forming such a layer.

UNDISCOVERED RECOVERABLE RESOURCES: Those economic resources, yet undiscovered, which are estimated to exist in favorable geologic settings.

USGS: United States Geological Survey.

U_3O_8 (URANIUM OXIDE): The international standard for the form in which uranium concentrate is marketed.

VALUE ADDED: Value of goods sold, less the cost of the necessary materials and power, expressed in 1958 dollars to account for inflation.

WASTE: Protected wildlife that has been abandoned, allowed to deteriorate or used in a manner not normally associated with beneficial uses of the species involved.

WATER POLLUTION: The addition of sewage, industrial wastes, or other harmful or objectionable material to water in concentrations or in sufficient quantities to result in measurable degradation of water quality.

WATER QUALITY STANDARD: A plan for water quality management containing four major elements: The use (recreation, drinking water, fish and wildlife propagation, industrial or agricultural) to be made of the water; criteria to protect those uses; implementation plans (for needed industrial-municipal waste treatment improvements) and enforcement plans; and an anti-degradation statement to protect existing high quality waters.

WATERSHED: A geographic area which drains into a particular water body. (See drainage basin.)

WATER TABLE: The upper level of an underground water body.

WILDLIFE: Any form of animal life generally living in a state of nature.

WIND ROSE: A diagrammatic representation of the distribution of prevailing wind directions at a given location; some variations include wind speed groupings by direction.

WITHDRAWAL: The diversion and removal of water from a natural watercourse. Also called "diversion."

APPENDIX B. METRIC CONVERSION TABLES

Volume Conversions

From To	in.^{3}	ft^3	U.S. gal	liter	bbl
in.^{3}	1	5.787×10^{-4}	4.329×10^{-3}	0.01639	1.031×10^{-4}
ft^3	1728	1	7.481	28.32	0.1781
U.S. gal	231	0.1337	1	3.785	2.381×10^{-2}
liter	61.02	3.531×10^{-2}	0.2642	1	6.29×10^{-3}
bbl	9702	5.615	42	158.97	1

Mass Conversions

From To	lb (avoirdupois)	kg	Short ton	Long ton	Metric ton
lb (avoirdupois)	1	0.4536	5.0×10^{-4}	4.4643×10^{-4}	4.5362×10^{-4}
kg	2.205	1	1.1023×10^{-3}	9.8425×10^{-4}	1.0×10^{-3}
Short ton	2000	907.2	1	0.8929	0.9072
Long ton	2240	1016	1.12	1	1.016
Metric ton	2205	1000	1.102	0.9842	1

Length Conversions

From \ To	cm	in.	ft	yd	m	mile	km
cm	1	0.3937	3.281×10^{-2}	1.0936×10^{-2}	1.0×10^{-2}	6.214×10^{-6}	1.0×10^{-5}
in.	2.54	1	8.333×10^{-2}	2.778×10^{-2}	2.54×10^{-2}	1.578×10^{-5}	2.54×10^{-5}
ft	30.48	12	1	0.333	0.3048	1.894×10^{-4}	3.048×10^{-4}
yd	91.44	36	3	1	0.9144	5.682×10^{-4}	9.144×10^{-4}
m	100	39.37	3.281	1.0936	1	6.214×10^{-4}	1.0×10^{-3}
mile	160,934	63,630	5280	1760	1609	1	1.609
km	100,000	39,370	3281	1093.6	1000	0.6214	1

Energy Conversions

From \ To	ft-lb	kg-m	hp-hr	Metric hp-hr	Btu	kWhr	Joule
Ft-lb	1	0.1383	5.0505×10^{-7}	5.12×10^{-7}	1.285×10^{-3}	3.766×10^{-7}	1.355
kg-m	7.233	1	3.653×10^{-6}	3.704×10^{-6}	9.295×10^{-3}	2.724×10^{-6}	9.808
hp-hr	1.93×10^{5}	2.7375×10^{5}	1	1.0139	2544	0.7457	2.683×10^{6}
Metric hp-hr	1.953×10^{6}	270,000	0.9863	1	2510	0.7555	2.646×10^{6}
Btu	778.2	107.6	3.93×10^{-4}	3.985×10^{-4}	1	2.931×10^{-4}	1055
kWhr	2.655×10^{6}	3.671×10^{5}	1.341	1.3596	3412	1	3.6×10^{6}
Joule	0.738	0.102	3.727×10^{-7}	3.779×10^{-7}	9.479×10^{-4}	2.778×10^{-7}	1

Heat Content for Various Fuels

Fuel oils			Natural gas		
Crude	138,100	Btu/gal	Liquid	95,800	Btu/gal
Residual	149,700	Btu/gal	Wet	1,095	Btu/ft^3
Distillate	138,700	Btu/gal	Dry	1,021	Btu/ft^3
Automotive gasoline	125,000	Btu/gal	Coal		
AVGAS	124,000	Btu/gal	Anthracite	25.4 x 10^5	Btu/short ton
Jet fuel (kerosine)	135,000	Btu/gal	Bituminous	26.2 x 10^5	Btu/short ton
Jet fuel (naphta)	127,500	Btu/gal	Lignite	13.4 x 10^5	Btu/short ton
Diesel oil (#2)	138,700	Btu/gal	(Electrical generation and distribution efficiency		≈30%
Coal products			Lubricants	144,405	Btu/gal
Crude light oil	130,000	Btu/gal	Waxes	155,643	Btu/gal
Crude coal tar	150,000	Btu/gal	Petroleum coke	143,423	Btu/gal
Crude petroleum	135,100	Btu/gal	Asphalt and road oil	158,000	Btu/gal
Ethane	73,390	Btu/gal	Natural gasoline and cycle products	110,000	Btu/gal
Still gas	142,286	Btu/gal			

1 Btu/gal = 278.7 joule/liter = 2.787 x 10^5 joule/m^3

1 Btu/short ton = 942.0 joule/metric ton

Source: G. E. Liepins, M. A. Smith, A. B. Rose, and K. Haygood, Buildings Energy Use Data Book, Edition 1. Oak Ridge National Laboratory, ORNL-5363 (1978).

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