OAK RIDGE NATIONAL LABORATORY
MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY
FACT SHEET

Geographic Information Science and Technology

QDR Climate Change Support

Translating the Science of Climate Extremes into Tools for Decision Support for the Quadrennial Defense Review

We define climate extremes as severe weather or hydrological events as well as large shifts in regional climate which are caused or exacerbated by climate change or natural climate variability and results in extreme stresses on natural, engineered and human systems. The state-of-the-art and peer-reviewed science of climate and global change has been leveraged to support assessments of threats and readiness levels of relevance to the United States Department of Defense.

Technical Approach

The Community Climate System Model version 3 (CCSM3), one of the most comprehensive of the suite of climate models used by the IPCC, was forced by multiple IPCC SRES scenarios to develop regional and decadal projections of climate change and extreme events. In addition, a synthesis of the latest peer-reviewed science was performed to develop guidelines for climate change consequences and extremes. The analysis methods were drawn from statistics, computer science, and geographical information science.

Primary Benefits

- Support the US DOD's preparedness for climate and global change.
- Methodologies to translate climate change and impacts science to tools for decision support.

Assessments of threat and readiness levels in the context of climate and global change for the US combatant command regions

Sponsors

- Office of the Secretary of Defense of the United States DOD
- ORNL LDRD Program

References

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