



Background:

The Department of Defense (DoD) is beginning to grapple with the complex and daunting challenge of managing lands and waters in a changing climate. Ensuring that DoD installations can continue meeting the military's training and testing needs will require the development of climate change adaptation plans and strategies, designed to help wildlife species and natural ecosystems survive the deleterious effects of climate change.

A key step in the development of such adaptation strategies is the identification of those ecological resources that are likely to be at greatest risk from current and future climate impacts, and conversely, those resources that might be expected to flourish. Climate change vulnerability assessments are a technique for identifying such resources, and these assessments are emerging as a critical need for DoD and other federal resource managers. Vulnerability assessments not only identify which resources are most vulnerable, but also why—essential information for developing effective management responses

Objective:

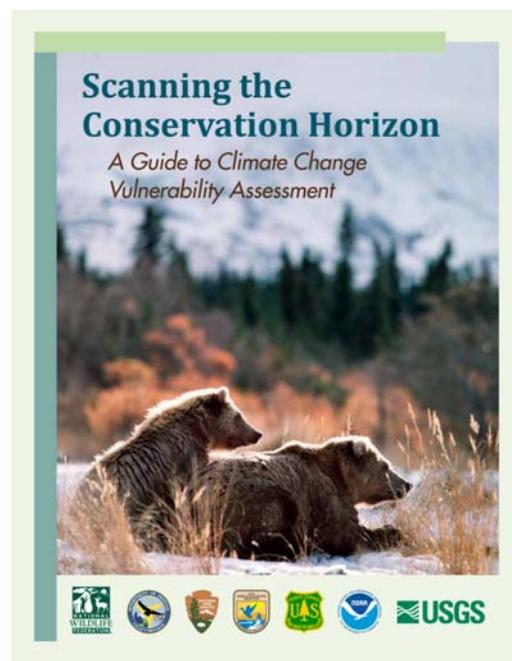
The objective of this project was to convene leading practitioners in the emerging field of climate adaptation, and develop guidance for planners and natural resource managers for carrying out climate change vulnerability assessments. Beyond publishing such guidance, the project was also designed to develop a training curriculum, based on the guidance, to assist managers in applying this tool in the development of climate adaptation plans and strategies.

The project had three inter-related components: 1) to develop and publish a vulnerability assessment guidance document—published in 2011 as *Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment*; 2) to develop training materials based on that guidance that are targeted towards land and resource managers; and 3) to conduct a series of online and in-person training sessions on vulnerability assessment for DoD installation managers and others.

Summary of Approach:

Because climate change adaptation is a relatively new field, the approach to this project involved convening an expert workgroup consisting of some of the leading practitioners in the field of climate change vulnerability assessment. National Wildlife Federation (NWF) in collaboration with the U.S. Fish and Wildlife Service convened a workgroup consisting of 20 individuals from federal and state agencies, universities, and private organizations. To ensure that the guidance could be applied with confidence by DoD and other federal agencies, the publication underwent formal peer review coordinated by the U.S. Geological Survey.

Following publication of the guidance, workgroup representatives collaborated with training specialists from the U.S. Fish and Wildlife Service's National Conservation Training Center (NCTC) and the National Oceanic and Atmospheric Administration (NOAA) to develop a training curriculum based on the guidance. This curriculum was piloted in an April 2011 training course, and the resulting vulnerability assessment course has since become a regular offering in the NCTC training program.



Benefit:

DoD lands are home to large numbers of federally-listed threatened and endangered species as well as species at risk. Managing these lands in a way that maintains their ecological integrity as well as their availability for military training and testing is a high priority for the department. Without specific strategies to ameliorate the negative effects of climate change on the species and habitats on DoD lands, many more species may decline to the point where federal regulation under the Endangered Species Act is required, effectively reducing the military's options for use of these installations.

Climate change has been specifically identified in the 2010 Quadrennial Defense Review, which notes that "DoD will need to adjust to the impacts of climate change on our facilities...", and to undertake "... a comprehensive assessment of all installations to assess the potential impacts of climate change on its missions and adapt as required."

Vulnerability assessment is widely recognized as a critical step in understanding the risks climate change can pose to both the natural and built environment, and will be an important element of DoD's efforts to address the impacts of climate change on its installations. Because climate adaptation focuses on actions and strategies designed to reduce key vulnerabilities, vulnerability assessment and adaptation planning will become an increasingly important aspect of installation natural resource management.

Accomplishments:

Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment was published in January 2011. This guidance document has been widely disseminated and broadly adopted: it is now in use across many federal and state agencies, as well as in the private sector. Reflecting the significance of the document for federal conservation efforts, in June 2011 the publication received a "Partners in Conservation Award" from the Secretary of the Interior, one of the Department of Interior's highest honors. The publication is available online at: www.nwf.org/vulnerabilityguide.

The training course developed under this project, and based on *Scanning the Conservation Horizon*, is now being offered on a regular basis through the U.S. Fish and Wildlife Service's National Conservation Training Center. These courses are open to natural resource managers from DoD as well as other federal and state

agencies. As of April 2012, the course has been offered seven times and attended by 300 resource professionals. The schedule and registration for future sessions of this course can be found at:

http://training.fws.gov/CSP/Resources/climate_change/vul_trng.html.

In addition to the in-person training course, an online webinar on the vulnerability assessment guide is available. A recording of this webinar, first offered in January 2011 is available at:

http://training.fws.gov/CSP/Resources/climate_change/safeguarding_bc.html.

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