NCSE WILDLIFE HABITAT POLICY RESEARCH PROGRAM
Project Overview
Research Project 1B

Analysis of Potential Impacts of Climate Change on Wildlife Habitat in the U.S.

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The consensus among scientists is that global climate is changing. Because individual states have primary responsibility for wildlife management in the United States, state agencies need geographically specific information on the magnitude of projected climate change impacts on wildlife habitat and tenable options for responding to those impacts.

Key Issues

Every U.S. state and territory was required to develop a state wildlife action plan (SWAP) to be eligible to receive funds from the State Wildlife Grants Program created by Congress in 2000. These plans were intended to identify problems that may adversely affect species or their habitats.

Unlike other threats to wildlife resources, methods and approaches to assess the impacts of climate change on wildlife habitat are not widely available, or standardized.

Project Objective

The primary objective of this project was to develop information, methods and analyses to provide state wildlife agencies with information on the magnitude of projected impacts of climate change on terrestrial wildlife habitat and tenable options for ameliorating those impacts.

Approach

The project team integrated a review of scientific literature and the SWAPs, analyses based on state-of-the-art climate and ecological modeling, and current information on stressors to wildlife conservation. They developed a terrestrial climate stress index that incorporates changes in temperature, precipitation, habitat types and quality to rank areas along a gradient of high to low future climate stress to terrestrial wildlife habitat.

They adapted this national index to evaluate habitat-specific risk to climate change and applied this version in three case-study states: Arizona, Minnesota, and Tennessee.

Key Findings

Climate stress to terrestrial wildlife habitat is prominent along the transition between grassland and forest ecosystems and in areas of high topographic relief.

Potential impacts of climate change are multiple and interacting; recommendations to address climate change may need to be expanded to comprehensively address the diversity of potential impacts.

Because climate change involves many interacting components and impacts, management recommendations to conserve wildlife resources in response to climate change and other threats should be integrated.

Management to address climate change impacts should consider species of greatest conservation concern that are thought to be impacted by climate change.

States should broaden their criteria for identifying future species of greatest conservation concern to consider species sensitivity to climate change, as future climate change may expose secure populations to extinction risk.

Management of many species will require interstate collaboration, and the SWAPs should clearly outline such collaboration.

Deliverables

A project final report is available on the WHPRP web site at http://ncseonline.org/WHPRP/.

An ACCESS database of the terrestrial vertebrate species of greatest conservation concern will be available on request. It will be posted on the USFS Rocky Mountain Research Station web site at <http://www.fs.fed.us/rmrs/>.

An Endnote bibliographic database of the effects of climate change on wildlife and wildlife habitat is available on request and will be posted on the USFS Rocky Mountain Research Station web site.

Members of the project team have given presentations based on the project results at meetings of a number of scientific and conservation organizations.