



Climate Change and Threatened and Endangered Species

FY 2011 President's Budget

ISSUE

With continued and possibly accelerated warming, many species will find current habitats hostile and will be forced to adapt or move. Listed species tend to be habitat specialists with reduced ranges and critically low populations and are therefore particularly likely to be negatively affected by even modest climate change. Other species, particularly endemics, will likely become endangered. Maintaining populations of threatened and endangered species is a high priority for the Forest Service and other land management agencies, and climate change will make this task much more challenging. Biologists need to predict likely crises and help managers to determine efficient management solutions before conditions become acute.

IMPORTANCE

Probably no single issue affects land management as powerfully as the need to maintain populations of threatened and endangered species. In many areas in the West, the all of the high elevation habitats and cold water sources are managed by the Forest Service. These lands currently provide critical habitats for cool climate specialists such as bull trout and Canada lynx and alpine plants such as the San Francisco Peaks groundsel and Penland alpine fen mustard. These high elevation habitats may also become the last refuges for many species as climates warm.

EXPECTED OUTCOMES

Ecological studies now focus on climatic drivers both of species and their habitats. Genetic

methods developed by RMRS allow dispersal evaluation and GPS technologies allow migration to be evaluated with high precision. We are currently working with climate change scientists to obtain the most current climate change projections and are using these projections both to analyze future habitats and movement corridors for threatened and endangered species. Ecologists are coordinating with social scientists to apply spatial economic optimization tools to the combined problems of human resource use and species protection.

PARTNERS AND COLLABORATORS

We are proceeding in cooperation with:

- USDA Forest Service National Forest System
- USDI BLM and USFWS
- Numerous state agencies
- Non-governmental organizations (e.g., The Nature Conservancy)



*Canada lynx, a federally
Threatened snow-dependent
species*