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## Climate Change and Wildlife, Fish, and Birds

**Issue:** Changes in populations of wildlife, birds, and fish can be early barometers of climate change, and threatened and endangered species are likely to be especially sensitive. Scientists are analyzing the effects of climate change on wildlife habitat and working to identify hotspot areas of North America of greatest concern.

### Key Points:

- Scientists around the world have identified changing climate as a factor in substantial shifts in distribution and timing of reproduction in wildlife, fish, and birds.
- Changes in vegetation, temperature, and moisture conditions will force movement or extinction of wildlife, fish, and birds if the animal populations are unable to adjust.
- Habitat connectivity is important for species which cannot easily move.
- Lessening snowpack conditions may hurt animal species such as wolverines, Canada lynx, and snowshoe hare which are dependent on persistent snow cover. Habitat for amphibians such as frogs may be reduced if there is less snowmelt to replenish ponds and lakes.
- With increasing temperature, fragmentation of fish habitat will increase, leaving populations in small, isolated and vulnerable areas. Both drought and variation in stream flows are predicted to be more frequent/prevalent as warming increases.
- Bird populations respond dramatically to short-term changes in climate, as reductions at specific times in critical plant and animal food sources threaten population success in migration, nesting, and fledging nestlings.
- Historic records on bird species responses to climate and altitudinal variations can be used to predict the effects of long-term climate change on birds and their habitats.
- Scientists studying silvicultural impacts on Cerulean Warblers and other forest birds have demonstrated the overall range of the warbler has been shifting northeastward over time, probably as a result of climate change.

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