Sustaining Canada Lynx in a Changing Climate

FY 2009 President's Budget

ISSUES

Fundamental to the stewardship of lynx is determining how to sustain spruce-fir habitats through informed land management. According to the Intergovernmental Panel on Climate Change, boreal forests are one of the most endangered ecosystems from climate change. The boreal forests that support lynx and their primary prey, snowshoe hares, are structured by disturbance processes that include fire, insects, disease, wind, and human-actions; climate change greatly alters the rate and extent that disturbance processes alter boreal forests. Thus, the management and sustainability of spruce-fir forests is an important stewardship issue, not only to threatened lynx populations, but to all species that depend on this vulnerable forest type.

IMPORTANCE

As a federally-listed species, the habitat needs of lynx affect the management of 20 million acres of federal land. The U.S. Fish and Wildlife Service (USFWS) in their listing of the lynx as a threatened species, identified that human alteration of forest abundance, forest composition, and habitat connectivity were the most influential factors affecting lynx habitat (Federal Register 63(130):36994-37013). In addition, increased disturbances due to climate change are directly impacting lynx populations. In 2003, fires burned 37 % of lynx habitat in Washington; in 2007, thousands of acres of important lynx habitat burned in Montana. Thus, there is a pressing need to determine if forest and fire management can be used to sustain lynx habitat for the long-term in the face of changing climates.

FUTURE PLANS

Global Positioning System (GPS) technology represents a major advancement in our ability to

study mid-sized carnivores. Since 2003, the U.S. Forest Service Rocky Mountain Research Station (RMRS) has collected 68,000 location points from 30 lynx as part of a study to evaluate movements and population connectivity. In the future we hope to be able to measure and model the vegetative structure of the spruce-fir forests that sustain lynx. We will then use silvicultural models to project management (fire and forest management) scenarios into the future in light of climate change.

EXPECTED OUTCOMES

The silvicultural models produced from this research will allow managers to visualize and predict how the various management prescriptions that sustain lynx will also affect the spatial and temporal configuring of spruce-fir forests within a multi-use context. This is important because managers are currently in the difficult position of making management recommendations based on little data relative to lynx, especially when they also need to consider how climate change may impact their recommendations. Results will be communicated to managers through seminars, workshops, field trips, web sites, and peer-reviewed publications. Interest in this work has been widespread, including non-governmental organizations and industries that manage corporate timber lands.

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