Boreal Owl - Aegolius funereus

Abundance: Unknown

Status: NSS3 (Bb) NatureServe: G5 S2

Population Status: distribution is restricted but extirpation is not imminent

Limiting Factor: Habitat (and Human Activity): limiting factors are severe; elimination of coniferous forest habitat from beetle kill, logging, and climate change is on-going; recent surveys provided additional information about population

Comment:

Introduction

The Boreal Owl inhabits boreal and subalpine forests in North America and Eurasia. In North America, it occurs from treeline in Alaska, east to Newfoundland, and south through the Rocky Mountains to northern New Mexico. It winters mainly in its breeding range, although it is nomadic in response to cyclic prey populations. It is found primarily in western Wyoming and in the Sierra Madre Range in south-central Wyoming. The abundance of the Boreal Owl in Wyoming is unknown.

Habitat

The Boreal Owl inhabits mature, high elevation forests of Engelmann spruce, subalpine fir, Douglas fir, mixed conifer, and lodgepole pine; interspersed mature aspen stands are also important as they can provide additional nesting cavities. Boreal owls are secondary cavity nesters and use holes excavated by norther flicker, and other large forest woodpeckers or natural cavities. The Boreal Owl requires large areas of forest habitat, as home ranges range over 1000 ha (2500 ac). It prefers mature and old-growth forests with characrteristics including large downed logs, a high overstory canopy, large snags, multi-story stands with large basal area, small openings, and an open stand structure for foraging. Mature spruce-fir forest provide the most important foraging habitat for the owl's dominant prey species: red-backed voles and microtus species. In winter, the boreal owl requires foraging habitat with uncrusted snow and abundant rodent populations.

Problems

- Population status and trends are largely unknown in Wyoming.
- Impacted by forest fragmentation and removal of mature forest habitats on a regional scale, which result in reductions of prey populations, nesting cavities, and foraging habitat.
- With a relatively large home range and a close association with old-growth and mature conifer forests, this species is sensitive to forest harvesting and fragmentation.
- Unknown effects of possible climate change on summer and winter habitat
- Given the patchy distribution of subalpine forests and the small dispersed populations of boreal owls, persistence probabilities may be lower for this species compared to species with larger populations. Small land management activies may have large effects on persistence at the local scale.

Conservation Actions

- Work cooperatively with other agencies to conduct surveys and manage habitat for this species.
- Continue inventory and monitoring efforts and implement the Monitoring Wyoming's Birds grid-based monitoring program to determine density and population trends.
- Maintain large stands of high elevation mature and old-growth forests with abundant snags in areas where this species occurs. At a landscape scale, maintain a portion of each watershed in mature or older forest, and over half of each watershed in stands older than saplings.
- Maintain abundant small mammal populations and large woodpecker populations in high elevation forests to provide a food source and cavity nest sites.
- Maintain mature aspen stands dispersed across the landscape, in a mosaic with other age classes.
- Avoid management actions, such as large clear-cuts, that reduce arboreal lichen and primary prey species of boreal owls.

Monitoring/Research

Cooperative monitoring efforts between the Wyoming Game and Fish Department and US Forest Service have been initiated.

Recent Developments

Major habitat alterations due to climate change and drought-related beetle infestations are occurring in portions of this species' range. Response of olders forests to treatments and large-scale disturbances may be different in the future resulting in much different habitat than what owls currently use. In addition, winter recreation (i.e. snow machining in forest habitat) has dramatically increased over the past several years and may have a detrimental affect on range occupancy, nesting, foraging and productivity.

References

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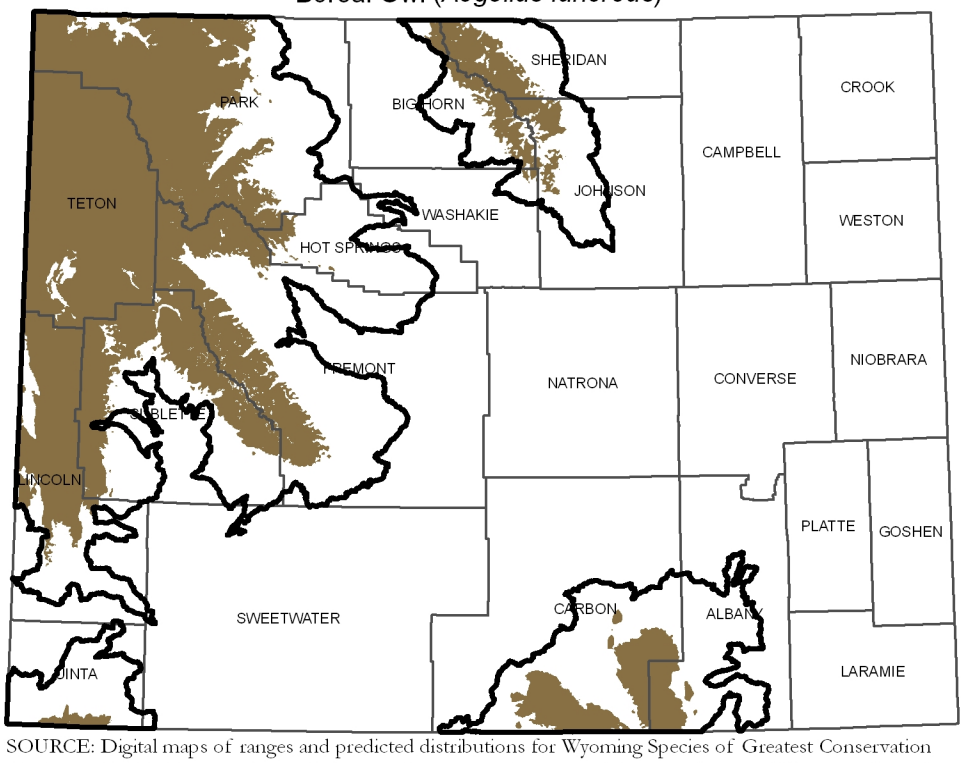
Boreal Owl (*Aegolius funereus*)



SOURCE: Digital maps of ranges and predicted distributions for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Natural Diversity Database. University of Wyoming, Laramie, Wyoming. Note that brown indicates the predicted distribution of the species; heavy black lines indicate outermost boundaries of possible occurrence.