

Great Gray Owl - *Strix nebulosa*

Abundance: Unknown

Status: NSSU

NatureServe: G5 S2

Population Status: population status and trends are unknown; additional forest owl surveys are needed to adequately determine population status and trends

Limiting Factor: Habitat (and Human Activity): limiting factors are severe and continue to increase in severity; the elimination of coniferous forest habitat due to beetle kill, logging, and climate change is on-going

Comment: change is attributed to unknown population status and trends; moved from NSS4 to NSSU

Introduction

The Great Gray Owl inhabits the boreal climatic zones of North America and Eurasia. In North America, it breeds from central Alaska and Canada south to central California, the northern Rocky Mountains, northwestern Minnesota, and south-central Ontario. It winters mainly in its breeding range, although it wanders south irregularly into the northern US. It is a year-round resident in Wyoming, primarily in the mountainous areas in the western third of the State. The abundance of the Great Gray Owl is unknown in Wyoming.

Habitat

The Great Gray Owl inhabits dense coniferous forests interspersed with natural meadows or clear-cuts. It forages primarily in wet montane meadows in British Columbia. In the southern part of its range, it nests and forages in dry montane evergreen or deciduous forests up to 2,800 m in elevation. Nest structures include the top of large broken-off tree trunks, stick nests of other large birds especially northern goshawk, or in debris platforms formed by dwarf mistletoe. Nesting habitat includes lodgepole pine, Douglas fir, and conifer/aspens forest types. Nest sites are located near abundant sources of prey species (microtine rodents and pocket gophers) which are found in grassy meadows and in open conifer stands with grass understory. In winter, great grays are often observed along cottonwood riparian corridors or roadsides where prey may be more accessible in deep snow conditions.

Problems

- h May be impacted by intensive timber harvesting if nest sites or roost trees needed by adults and fledged young are eliminated.
- h 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.
- h Timber harvesting can fragment and reduce high quality nesting and foraging habitat, and degrade habitat quality by reducing stand density and canopy cover. Over extensive harvesting can reduce available nest stands, reduce abundance of forest prey species, and increase number of more habitat-generalist raptors such as red-tailed hawk and great horned owl that can prey on goshawk young and out-compete goshawks for nest sites and prey.
- h Nesting sites and foraging areas may be impacted by timber harvesting practices that remove older trees and snags.
- h Population status and trends are largely unknown in Wyoming.
- h 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.

Conservation Actions

- h Avoid using pesticides for rodent, insect, and grasshopper control in areas where this species nests and forages.
- h Continue inventory and monitoring efforts.
- h Delineate crucial range and work cooperatively with land management agencies to maintain habitat within the designated area.
- h Identify and survey additional potential breeding sites where this species has not been documented before to avoid focusing management on only a portion of the population.
- h Implement monitoring in suitable habitat where it is presently not being conducted, and continue monitoring in areas where it is currently in place.
- h Increase monitoring efforts to document population trends and identify needed management.
- h Manage nesting areas to minimize the potential for degradation and conflicts with recreation, grazing, and forest management.
- h Work cooperatively with other agencies to conduct surveys and manage habitat for this species.
- h Maintain mid to late successional stages of mixed conifer and aspen stands with an herbaceous understory.
- h Use landscape planning as developed for the USFS Southwestern Northern Goshawk management guidelines to maintain adequate forest habitat for nesting goshawks over the long-term on public lands where the species occurs in Wyoming. This will require planning forest treatments both temporally and spatially.

Monitoring/Research

Monitoring surveys for Great Gray Owl are conducted at night using broadcast vocalizations during the pre-nesting season from mid-February through March. A transect should be run more than once per season as this species is not as responsive as some other owls. Follow up surveys can be conducted later in the year to find nest sites and determine productivity.

Research priorities for this species would include:

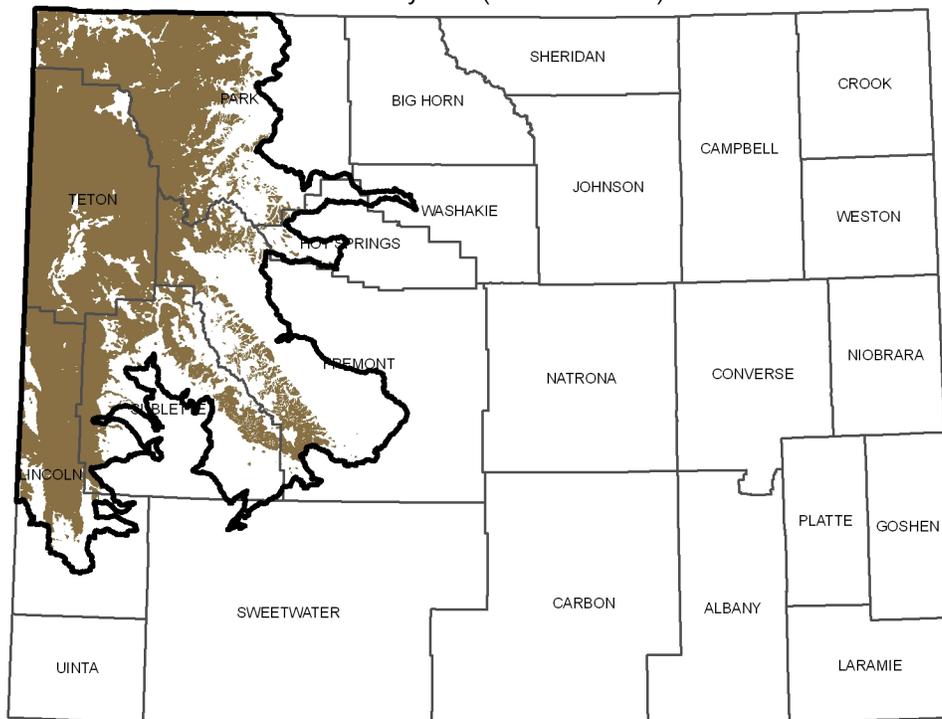
1. determine response of prey species (microtines and pocket gophers) to forest treatments, and also the availability of nesting structures in post-treatment areas
2. determine how different habitat configurations influence persistence and reproductive success
3. investigate winter ecology including owl movements and habitat use

Recent Developments

Large-scale conifer mortality may result in increased foraging habitat for the Great Gray Owl but decreased availability of nesting structures in the long term. Landscape planning for Northern Goshawk habitat should provide adequate mature and old growth forest habitat for the great gray except in areas of Wyoming where a large proportion of the mature stands die quickly. Providing nesting platforms may be necessary in some areas where extensive conifer mortality has occurred.

References

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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.