
Boreal Owl

Aegolius funereus

Aves — Strigiformes — Strigidae

CONSERVATION STATUS / CLASSIFICATION

Rangewide: Secure (G5)
Statewide: Imperiled (S2)
ESA: No status
USFS: Region 1: No status; Region 4: Sensitive
BLM: Watch list (Type 5)
IDFG: Protected nongame

BASIS FOR INCLUSION

Limited populations and unknown population trends.

TAXONOMY

There are 7 recognized subspecies of boreal owl, of which 6 are from Eurasia (Hayward and Hayward 1993). *Aegolius funereus richardsoni* is the only recognized subspecies found in North America. It is among the darkest forms of this species.

DISTRIBUTION AND ABUNDANCE

A circumpolar species occupying boreal and montane forests across northern Eurasia, Canada, and Alaska, southward through the Cascade, Blue Mountains, and Rocky Mountain ranges of western U.S. into Colorado and New Mexico. In Idaho, boreal owls occupy high elevation mixed conifer forests in the north, central, and southeast portions of the state. Boreal owls are year-round residents within their home ranges, but may make periodic, food-induced irruptions southward in winter (Hayward and Hayward 1993). State abundance of boreal owls is estimated at 1000–3000 individuals based on the extent of spruce-fir habitat in Idaho.

POPULATION TREND

Long-term population trends are unknown at both continental and state levels due to the technical difficulty of surveying and censusing this species. Nomadic/irruptive movements, fluctuations in prey populations, and catastrophic fire events further exacerbate survey efforts.

HABITAT AND ECOLOGY

The boreal owl inhabits boreal and subalpine forested habitats of the Rocky Mountain states (Hayward et al. 1993). Mature, mixed stands of subalpine fir and Engelmann spruce are favored, with nesting associated with deciduous (primarily aspen) and mixed deciduous-conifer habitats (Hayward et al. 1993). Other conifer types used include Douglas-fir, lodgepole pine, and mature mixed conifer. In Idaho and Montana, 75% of breeding sites are above 1,580 m (5,184 ft). Boreal owls nest in natural tree cavities and old woodpecker holes in snags and live trees, favoring cavities created by large woodpeckers (Mansell and Low 1980). Nest boxes also are used where mature and old

forest structural features are present. Foraging typically occurs after dark from perches in spruce-fir forest types. Acute hearing allows the owl to locate and capture prey under snow or vegetation. Prey mainly consists of red-backed voles, deer mice, shrews, and pocket gophers, but also includes small birds and insects. Boreal owls use new roost sites each day, which are dispersed throughout the home range, typically in conifers. Seasonal roost characteristics in Idaho suggest boreal owls are not stressed by winter temperatures but do select roosts with higher canopy cover, higher basal area, and greater tree density to reduce summer heat stress (Hayward et al. 1993)

ISSUES

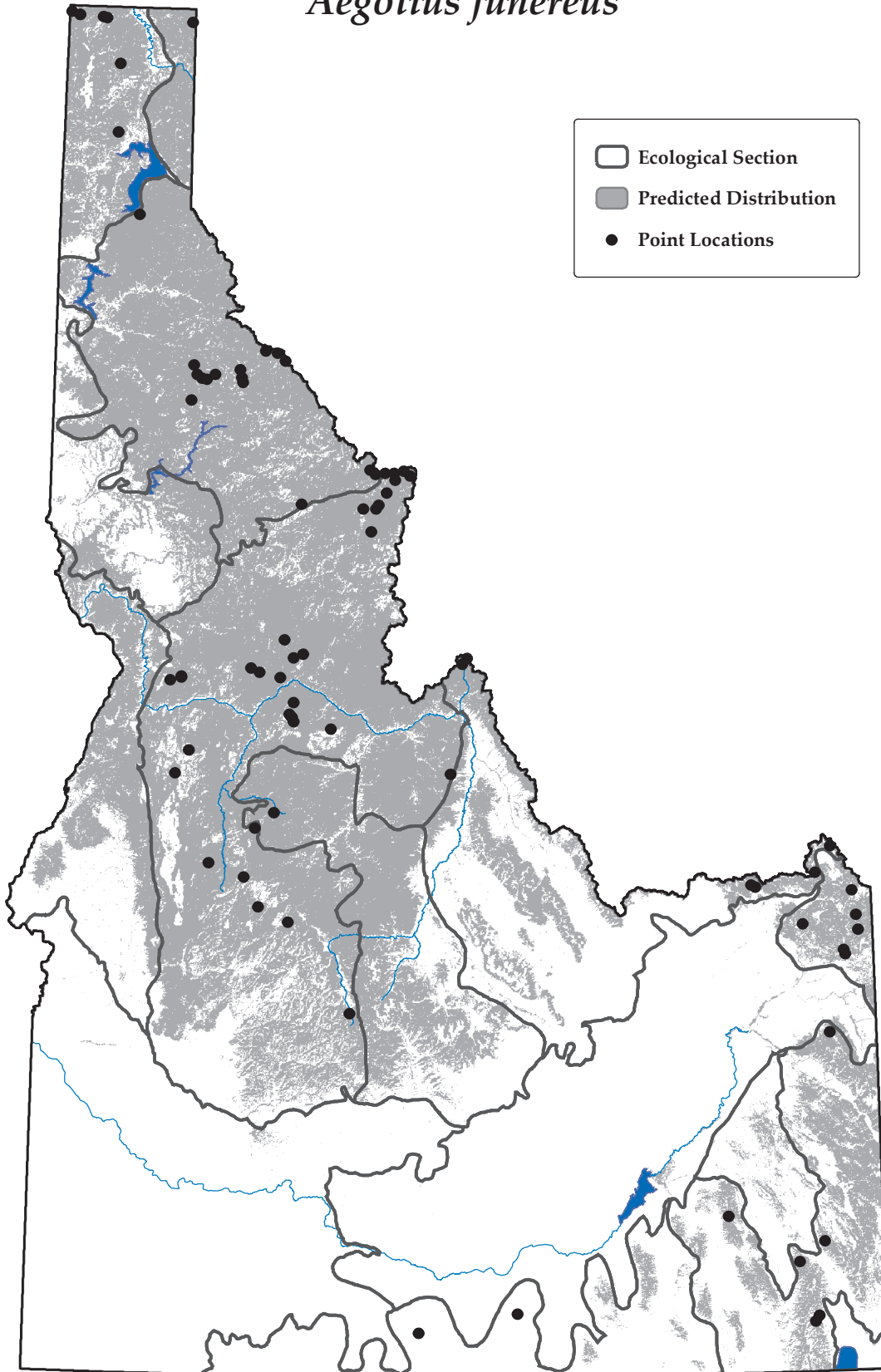
Primary threat to this species is timber harvest (e.g., clearcutting), which often eliminates large-diameter snags and live trees used for nesting, reduces primary prey populations, and removes forest structure needed for foraging and roosting (Hayward 1997).

RECOMMENDED ACTIONS

Due to the relatively slow rate of succession in spruce-fir forest types, land managers should consider spatial and cumulative impacts of timber harvest on boreal owl populations. Clearcut sites may require up to 2 centuries before suitable nest trees develop (Hayward and Hayward 1993). Selective tree harvest may allow tree removal while maintaining overall forest structure and composition. Management should involve retention of large-diameter snags, protection and restoration of aspen, and retention of subnivean structural features important to the small mammal prey base. A coordinated, statewide, count-based monitoring program for nocturnal birds would help refine population estimates and trend data needed for this species.

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Map created on September 22, 2005
and prepared by Idaho Conservation Data Center.
Sources: Point data are from Idaho Conservation Data Center,
Idaho Department of Fish and Game (2005). Predicted distribution
is from the Wildlife Habitat Relationships Models (WHR),
A Gap Analysis of Idaho: Final Report. Idaho Cooperative Fish
and Wildlife Research Unit, Moscow, ID (Scott et al. 2002).
Predicted distribution is approximate (for more information, go to
http://www.wildlife.uidaho.edu/idgap/idgap_report.asp).

