Chapter 8

Current Management Situation: Boreal Owls

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The range of boreal owls (*Aegolius funereus*) in the United States includes Alaska, the mountains of the western United States, and the northern tier states from the Atlantic to Pacific (see Chapter 9). Based on the species'; documented distribution (see National Geographic Society 1987, Hayward *et al.* 1987, Johnsgard 1988, and others) the owl may occur on 81 National Forests across 7 Regions. To document the management status of the boreal owl throughout its range we queried management personnel on all National Forests where the species is likely to occur. Our questionnaire requested information on:

1. Documented breeding status of boreal owls on the National Forest (no records, recorded but breeding not confirmed, recorded breeding).
2. The range of habitats (by forest type) in which the species has been recorded on the Forest.
3. The existence of any Forest or Regional level conservation strategies and/or management plans.
4. The management status of the species in each Region (state list, USDA Forest Service-sensitive species list).
5. Whether forests are conducting distribution surveys for boreal owls.
6. The distribution of boreal owls plotted on a National Forest map, based on all data available from the Forest data base.

The questionnaire asked for additional, more qualitative, information. For instance, we asked how forests are addressing the needs of this species in biological evaluations (evaluating important habitat or population viability) and in monitoring plans. We were also interested in whether forests had information on changes in vegetation used by boreal owls over the last two centuries.

We also reviewed refereed literature sources for documented owl sightings and locations where museum specimens were collected. Most of these locations were plotted using U.S. Geological Survey 7.5" topographic maps. Where definite locations could be obtained they were plotted based on the latitude and longitude of the site. When locations were not clearly defined or described, the approximate center of the appropriate U. S. Geological Survey 7.5" topographic map was used. Forest Service source locations were plotted on 0.5-inch per mile Forest recreation maps using the same methods.

The distribution of boreal owls based on literature and agency locations is depicted in Map 2. This map also displays the combined potential distribution of subalpine fir (*Abies lasiocarpa*), balsam fir (*Abies balsamea*), Engelmann spruce (*Picea engelmannii*), black spruce (*Picea mariana*), and Sitka spruce (*Picea sitchensis*) — forest types where boreal owls most commonly breed (see Chapter 9). Vegetation boundaries were derived from Kuchler's potential natural vegetation (Kuchler 1964) for the region south of Canada and from Burns and Honkala (1990) for Alaska. The owl locations and vegetation distribution were digitized and plotted on an existing map of the United States.

Boreal owls were reported to occur on 43 of the 81 forests where the species may be expected. The owl has been recorded breeding on 13 of these forests. The boreal owl is listed as a USDA Forest Service sensitive species in four regions and on one additional forest (Superior National Forest) in a region where the species has no regional status (table 1). Despite these special management designations, specific forest or regional level management plans have been written for only two Forests (Tongass and Superior National Forest). General raptor management guidelines or general statements concerning nest protection have been written on the Willamette National Forest and these refer to the boreal owl in a general way. Management on the Superior National Forest provides for managing 200-acre tracts of black spruce for the boreal owl as an indicator species. On the Tongass National Forest, management direction indicates (Suring 1993, our synopsis):

1. Establish Habitat Conservation Areas (HCAs) of old-growth forests 5,000 acres in size or larger. These HCAs should be approximately 10 miles apart edge-to-edge and distributed across the landscape. Each block would provide habitat for 1 to 13 pairs of boreal owls.

2. An alternative strategy would be:
   a. Manage the 5,000 acre HCAs allowing low intensity timber harvest (i.e., maintain 60% of the old growth and harvest 40% using group selection).
   b. Provide an additional 5,000 acres of old-growth forest for travel corridors between blocks with moderate intensity timber harvest (i.e., maintain 40% old-growth and harvest 60% using group selection).
   c. Manage the remainder of the watershed under intensive forest management (i.e., clearcut).
3. When individual nests are found outside of the HCAs, they should be protected with a half-mile buffer, thus providing approximately 500 acres of habitat adjacent to the nest.

Although many forests report the presence of boreal owls, there is little information on population or habitat trends. In those Regions where the boreal owl is classified as "sensitive," distribution surveys targeting this owl are being conducted and distribution information should improve over time.

In addition to its designation as a sensitive species by the USDA Forest Service, boreal owls are given special management status in three states: Idaho (Species of Concern), Montana (Species of Concern), and Washington (to be monitored). Breeding status has only recently been established in many states; therefore, other state designations may be forthcoming.

The response we received from National Forests throughout the range of boreal owls indicates that little is known about the species in these management units (table 2). Furthermore, there is no mechanism in place to gather much of the data necessary for management. On Forests where some attempt has been made to manage boreal owls or raptors in general, there appears to be little scientific basis for their management.

The status and trend of subalpine and aspen forests throughout the range of the boreal owl is critical to assessing the species' current management status. During the time available to produce this report we were unable to accumulate accurate information necessary to infer changes that have occurred and can be expected to occur in forests used by the species. We feel this information is important, however, and our interest in understanding the status and ecological trends of important forest habitats is reflected in Chapter 10 of this report.

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Table 1.—Status of the boreal owl on National Forests as reported by managers in early 1993.

Region	No. of Forests in Region	No. of Forests where owl is present	No. of strategies or plans in place	Addressed in Forest management plan?	Forest Service conservation status
Northern	13	13	None	No	Sensitive
Rocky Mountain	12	10	None	No	Sensitive
Southwestern	11	2	None	No	Sensitive
Intermountain	16	7	None	No	Sensitive
Pacific Southwest		Not reported in this Region			
Pacific Northwest	19	6	None	1 forest	None
Eastern	14	1	None	1 forest	None
Alaska	4	4	3	No	None

Table 2.—Habitat associations of the boreal owl based on surveys of USDA Forest Service data bases. Habitat is described by dominant overstory tree species: SF - Spruce-fir forest, LP - Lodgepole pine forest, DF - Douglas-fir forest, ES - Engelmann Spruce forest, MC - Mixed conifer forest, PP - Ponderosa pine forest, QA - Quaking aspen forest, MH - Mountain hemlock forest, RF - Red fir forest, BS - Black spruce forest. Status for National Forests who did not respond is listed as "not present."

State	Forest	Occurrence	Habitats
		Northern Region (Region 1)	
Montana	Beaverhead	Breeding	>8000 ft., SF, LP
Montana	Bitterroot	Present	>5300 ft., SF, LP
Idaho	Idaho Panhandle	Present	>5000 ft., SF
Idaho	Clearwater	Breeding	>4000 ft., LP
Montana	Custer	Present	~7000 ft., SF, LP
Montana	Deerlodge	Present	LP, DF
Montana	Flathead	Present	>5500 ft. SF
Montana	Gallatin	Present	LP, SF
Montana	Helena	Present	>5000 ft., SF, LP
Montana	Kootenai	Present	>5000 ft., SF
Montana	Lewis and Clark	Present	6400-8400 ft., SF, DF
Montana	Lolo	Breeding	Mature, Old SF, DF
Idaho	Nez Perce	Present	~6300 ft., SF, DF
		Rocky Mountain Region (Region 2)	
Wyoming	Bighorn	Present	
South Dakota	Black Hills	Not present	
Colorado	Grand Mesa etc.	Present	SF, LP, MC
Wyoming	Medicine Bow	Suspected	
Colorado	Rio Grande	Breeding	SF
Colorado	Arapaho/Roosevelt	Breeding	SF Old Growth
Colorado	Routt	Suspected	SF, LP
Colorado	Pike/San Isabel	Suspected	SF, ES
Colorado	San Juan	Present	SF
Wyoming	Shoshone	Present	
Colorado	White River	Present	
Nebraska	Nebraska	Not present	
		Southwest Region (Region 3)	
Arizona	Apache/Sitgreaves	Not present	
New Mexico	Carson	Present	SF
New Mexico	Cibola	Not present	
Arizona	Coconino	Not present	
Arizona	Coronado	Not present	
New Mexico	Gila	Not present	
Arizona	Kaibab	Not present	
New Mexico	Lincoln	Not present	
Arizona	Prescott	Not present	
New Mexico	Santa Fe	Present	SF
Arizona	Tonto	Not present	
		Intermountain Region (Region 4)	
Utah	Ashley	Present	
Idaho	Boise	Present	SF Over 6000 ft.
Wyoming	Bridger-Teton	Breeding	MC, LP
Idaho	Caribou	Present	DF, SF, LP
Idaho	Challis	Not present	

Table 2 - (continued),

Utah	Dixie	Not present	
Utah	Fishlake	Not present	
Nevada	Humboldt	Not present	
Utah	Manti-La-Sal	Not present	
Idaho	Payette	Breeding	SF, PP, DF, QA
Idaho	Salmon	Breeding	SF
Idaho	Sawtooth	Present	
Idaho	Targhee	Breeding	LP, DF, QA
Nevada	Toiyabe	Not present	
Utah	Uinta	Not present	
Utah	Wasatch-Cache	Suspected	
	Pacific Northwest Region (Region 6)		
Oregon	Deschutes	Present	MH, RF
Oregon	Fremont	Not present	
Washington	Gifford Pinchot	Not present	
Oregon	Malheur	Not present	
Washington	Mt. Baker	Not present	
Oregon	Mt. Hood	Not present	
Oregon	Ochoco	Not present	
Washington	Okanogan	Breeding	
Washington	Olympic	Not present	
Oregon	Rogue River	Not present	
Oregon	Siskiyou	Not present	
Oregon	Siuslaw	Not present	
Oregon	Umatilla	Present	
Oregon	Umpqua	Not present	
Oregon	Wallowa-Whitman	Present	
Washington	Wenatchee	Present	
Oregon	Willamette	Present	
Oregon	Winema	Not present	
Washington	Colville	Not present	
	Eastern Region (Region 9)		
Wisconsin	Chequamegon	Not present	
Minnesota	Chippewa	Not present	
Michigan	Huron-Manistee	Not present	
Missouri	Mark Twain	Not present	
Wisconsin	Nicolet	Not present	
Michigan	Ottawa	Not present	
Illinois	Shawnee	Not present	
Minnesota	Superior	Breeding	Lowland BS
Michigan	Hiawatha	Not present	
Pennsylvania	Allegheny	Not present	
Vermont	Green Mt.-Finger Lake	Not present	
West Virginia	Monongahela	Not present	
New Hampshire	White Mountain	Not present	
Indiana	Wayne-Hoosier	Not present	
	Alaska Region (Region 10)		
Alaska	Tongass-Stikine	Present	
Alaska	Tongass-Chatham	Present	
Alaska	Chugach	Present	
Alaska	Tongass-Ketchikan	Present	