

Chapter 3

Current Management Situation: Flammulated Owls

Jon Verner, Rocky Mountain Region, Lakewood, CO 80225

The flammulated owl (*Otus flammeolus*) is a western mountain species associated mainly with ponderosa (*Pinus ponderosa*) and Jeffrey pine (*Pinus jeffreyi*) forests in the United States and Canada (see Chapter 4). As a neotropical migrant, this small forest owl occurs on national forests in the United States during the breeding season and winters mainly south of the border but also in southern Texas, Arizona, and California. Based on the owl's documented distribution (see National Geographic Society 1987, Johnsgard 1988), it may occur on 89 National Forests across 6 Regions. To establish the management status of flammulated owls 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 flammulated owls on the Forest (no records, recorded, recorded breeding).
2. The range of habitats in which this 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 flammulated owls.
6. The distribution of flammulated 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 dealing with 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 flammulated 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 flammulated owls based on literature and agency locations is depicted in Map 1. This map also displays the combined potential distribution of ponderosa pine and Jeffrey pine based on Kuchler's potential natural vegetation (Kuchler 1964). The owl locations and vegetation distribution were digitized and plotted on an existing map of the United States.

Flammulated owls were documented to occur on 72 of the 89 forests where the species may be expected. The owl has been recorded breeding on 24 of these forests. The flammulated owl is listed as a U. S. Forest Service "sensitive species" in four regions covering a majority of the owl's range (table 1). Despite this designation, specific Forest- or Regional-level management plans have not been written and in many cases presence/absence of the species has not been confirmed (table 2). General raptor management guidelines or general statements concerning nest protection refer to the flammulated owl on five national forests. The Payette National Forest in Idaho goes further than other forests by outlining a direction to develop management guidelines and indicating some interim management recommendations (Moore and Fredricks 1991). The direction on the Payette National Forest indicates (our synopsis):

1. Conduct nocturnal surveys of all forested areas within a project planning area for flammulated owls.
2. Develop 1:24,000 maps of all existing mature ponderosa pine, Douglas-fir, old ponderosa pine, and old Douglas-fir on the Payette and Hell's Canyon National Recreation area to

Table 1.—Status of the flammulated 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	11	None	No	Sensitive
Intermountain	16	13	1	No	Sensitive
Pacific Southwest	18	14	None	1 Forest	None
Pacific Northwest	19	10	None	4 Forests	None
Eastern		Not reported in this Region			
Alaska		Not reported in this Region			

- determine the extent of available habitat.
3. Develop permanent monitoring areas in managed and unmanaged areas to determine population trends.
4. Implement uneven-aged management in flammulated owl habitat.
5. Develop plans to retain mature to old ponderosa pine.
6. Retain areas of high flammulated owl densities until population viability, habitat requirements, and effects of forest fragmentation on flammulated owls are known.
7. Provide snags for meeting the nesting requirements of flammulated owls. Live trees must be preserved in harvest areas to provide for future snag recruitment.
8. Encourage and support studies of the relationship of flammulated owl habitat requirements to forest management practices.

The Northern and Intermountain Regions reported that forests within their region are conducting flammulated owl surveys on a regular basis. All other Regions and the southern portion of the Intermountain Region were recording and documenting flammulated owl locations, but only incidental to Northern spotted owl (*Strix occidentalis caurina*), California spotted owl (*Strix occidentalis occidentalis*), and Mexican spotted owl (*Strix occidentalis lucida*) surveys.

In addition to its designation as a sensitive species by the USDA Forest Service, flammulated owls are given special management status in four states: Idaho (Species of Concern), Montana (Species of Concern), Oregon (Sensitive), and Washington (Candidate). Arizona, California, Colorado, Nevada, New Mexico, Texas, Utah, and Wyoming have not given the owl any special status.

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

REFERENCES

- Johnsgard, P. A. 1988. North American owls: Biology and natural history. Smithsonian Institution Press, Washington, DC, USA.
- Kuchler, A. W. 1964. Potential natural vegetation of the conterminous United States. American Geographical Society, Special Publication Number 36.
- Moore, T. L. and G. P. Fredricks. 1991. Distribution and habitat of Flammulated Owls (*Otus flammeolus*) in West Central Idaho. unpublished management report, Payette National Forest, McCall, Id.
- National Geographic Society. 1987. Birds of North America. Second edition. National Geographic Society, Washington, DC, USA.

Table 2.—Habitat associations of flammulated owls based on surveys of USDA Forest Service data bases. Habitat is described by dominant overstory tree species: PP - Ponderosa pine forest, DF - Douglas-fir forest, MC - Mixed conifer forest, QA - Quaking aspen forest, SF - Spruce-fir forest, LP - Lodgepole pine forest, WF - White fir forest, JP - Jeffrey pine forest, CP - Coulter pine forest. Status for National Forests who did not respond is listed as “not present.”

State	Forest	Occurrence	Habitats
Northern Region (Region 1)			
Montana	Beaverhead	Suspected	
Montana	Bitterroot	Present	Low Elev. DF, PP
Idaho	Idaho Panhandle	Present	Mature, PP, DF
Idaho	Clearwater	Present	DF, PP
Montana	Custer	Suspected	
Montana	Deerlodge	Present	Low Elev. DF, PP
Montana	Flathead	Present	Low Elev. DF, PP
Montana	Gallatin	Suspected	
Montana	Helena	Suspected	PP, DF
Montana	Kootenai	Present	PP, DF
Montana	Lewis and Clark	Suspected	Low Elev. PP, DF
Montana	Lolo	Present	Mature, PP, DF
Idaho	Nez Perce	Present	PP
Rocky Mountain Region (Region 2)			
Wyoming	Bighorn	Suspected	
South Dakota	Black Hills	Not present	
Colorado	Grand Mesa	Present	PP, Oak, MC
Wyoming	Medicine Bow	Suspected	
Colorado	Rio Grande	Present	SF, MC, PP
Colorado	Arapahoe/Roosevelt	Present	PP/DF
Colorado	Routt	Suspected	
Colorado	Pike/San Isabel	Breeding	PP
Colorado	San Juan	Breeding	PP
Wyoming	Shoshone	Suspected	
Colorado	White River	Present	
Nebraska	Nebraska	Not present	
Southwest Region (Region 3)			
Arizona	Apache/Sitgreaves	Breeding	PP, PP/QA, MC
New Mexico	Carson	Breeding	PP, PP/QA, MC
New Mexico	Cibola	Breeding	PP, PP/QA, MC
Arizona	Coconino	Breeding	PP, PP/QA, MC
Arizona	Coronado	Breeding	PP, PP/QA, MC
New Mexico	Gila	Breeding	PP, PP/QA, MC
Arizona	Kaibab	Breeding	PP, PP/QA, MC
New Mexico	Lincoln	Breeding	PP, PP/QA, MC
Arizona	Prescott	Breeding	PP, PP/QA, MC
New Mexico	Santa Fe	Breeding	PP, PP/QA, MC
Arizona	Tonto	Breeding	PP, PP/QA, MC
Intermountain Region (Region 4)			
Utah	Ashley	Suspected	LP, PP, DF
Idaho	Boise	Suspected	
Wyoming	Bridger-Teton	Not present	
Idaho	Caribou	Breeding	Mature DF
Idaho	Challis	Suspected	PP

Table 2 - (continued),

Utah	Dixie	Not present	
Utah	Fishlake	Present	MC, SF
Nevada	Humboldt	Suspected	PP, MC
Utah	Manti-La-Sal	Breeding	PP
Idaho	Payette	Breeding	PP, DF
Idaho	Salmon	Breeding	PP, DF, SF
Idaho	Sawtooth	Suspected	LP, SF
Idaho	Targhee	Suspected	LP, DF, MC
Nevada	Toiyabe	Suspected	JP, WF
Utah	Uinta	Suspected	
Utah	Wasatch-Cache	Not present	

**Pacific Southwest Region
(Region 5)**

California	Angeles	Breeding	JP, CP
California	Cleveland	Breeding	JP, CP, DF
California	Eldorado	Present	
California	Inyo	Present	
California	Klamath	Present	DF, MC, PP
California	Lassen	Present	PP/JP, MC
California	Los Padres	Present	JP
California	Mendicino	Present	MC
California	Modoc	Present	JP, MC
California	Six Rivers	Present	WF, DF, PP
California	Plumas	Present	MC
California	San Bernardino	Present	PP, JP
California	Sequoia	Present	PP, MC
California	Shasta-Trinity	Present	MC, DF
California	Sierra	Not present	
California	Stanislaus	Not present	
California	Tahoe	Not present	
California	Lake Tahoe	Not present	

**Pacific Northwest Region
(Region 6)**

Oregon	Deschutes	Breeding	MC, PP
Oregon	Fremont	Not present	
Washington	Gifford Pinchot	Present	WF, PP, LP, MC
Oregon	Malheur	Breeding	WF, PP, LP, MC
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	Breeding	
Oregon	Umpqua	Present	WF, PP, LP, MC
Oregon	Wallowa-Whitman	Breeding	
Washington	Wenatchee	Present	WF, PP, LP, MC
Oregon	Willamette	Present	
Oregon	Winema	Present	WF, PP, LP, MC
Washington	Colville	Not present	