

APPENDIX G • FOREST SERVICE REGIONAL HABITAT DIFFERENCES

SUMMARY OF HABITAT DIFFERENCES AMONG REGIONS FOR MEXICAN SPOTTED OWL AND THE NORTHERN GOSHAWK Rocky Mountain Region, Intermountain Region and Southwest Region (prepared and coordinated by Rocky Mountain Region)

Mexican Spotted Owl

The following summarizes Mexican spotted owl (MSO) habitat differences and similarities that occur between National Forest System lands in Colorado, Utah, and the Southwest Region. While the scope of the MSO and Goshawk EIS is limited to Forests in the Southwest Region, the following information may provide a context for future decisions by describing conditions that are present on National Forest Systems lands in Colorado and Utah adjacent to Arizona and New Mexico.

The US Fish and Wildlife Service (FWS) identified a total of six Recovery Units (RU's) throughout the range of the MSO in the United States (Draft Mexican Spotted Owl Recovery Plan, 1995). Two RU's established by the MSO Recovery Team include portions of Utah and Colorado as well as portions of New Mexico and Arizona. The two RU's are named the Colorado Plateau and Southern Rocky Mountain (see also range map in "Mexican Spotted Owl Status Review, Figure 2., 1991. Endangered Species No. 20, U.S. Fish and Wildlife Service, Albuquerque, NM.)

The Colorado Plateau is the largest RU of the six designated units. It covers almost all of southern Utah, southwestern Colorado, almost half of northern Arizona and northwestern New Mexico. The Southern Rocky Mountain RU is also large and covers all but the northwestern corner and the eastern plains of Colorado. The RU is split at the Colorado-New Mexico State line. The Southern Rocky Mountain-New Mexico RU occurs in the north central portion of New Mexico and includes the Carson and Santa Fe National Forests.

There are striking differences in MSO use patterns occurring between RU's in Colorado and Utah and the remaining MSO range. The most notable and distinctive differences occur between the northern (generally Colorado and Utah) and southern (generally Arizona and New Mexico) latitudes where climatic differences are hypothesized as being an important or possibly limiting factor. In the northern Colorado Plateau and Southern Rocky Mountain versus remaining RU's, the numbers of MSO sites are considerably different.

Additionally, Northern latitude habitat use patterns and habitat threats are considerably different between the Colorado Plateau/Southern Rocky Mountain and remaining RU's in New Mexico and Arizona. For example, the MSO exclusively nests in canyon habitat in the northern part of its range, yet fairly frequently nests in the montane conditions as we move southward. In Colorado, the threat of fire, not timber harvest is the principle threat. In Utah and Colorado, threats from stand-altering activities in narrow canyons are, in many instances, minimal.

Habitat differences and similarities that occur within the RU's between Colorado, Utah, and New Mexico are described below.

Colorado Plateau-Utah - Intermountain Region

Breeding owls inhabit deep, steep-walled canyons, and nest in crevices or ledges. These canyons are surrounded by terrain that does not appear to support breed breeding owls.

Colorado Plateau-Colorado - Rocky Mountain Region

Owls occupy sheer, slickrock canyons containing widely scattered patches of mature Douglas-fir in or near canyon bottoms or high on the canyon walls, in short, hanging canyons (Reynolds 1990).

Colorado Plateau-New Mexico and Arizona - Southwestern Region

Owls have been reported in both montane and canyon habitats. Forests in the montane zone may be nearly pure stands of ponderosa pine, mixed conifer species, or stands of spruce and fir.

Southern Rocky Mountain-Colorado - Rocky Mountain Region

Breeding owls inhabit steep canyons containing exposed bedrock cliffs either close to the canyon floor, or more typically, several tiers of exposed rock at various heights on the canyon walls. Mature Douglas-fir, white fir, and ponderosa pine dominate canyon bottoms and both north and east facing slopes. Ponderosa pine grows on the more xeric south and west-facing slopes, pinyon-juniper on the mesa tops.

Southern Rocky Mountain-New Mexico - Southwestern Region

Owls inhabit steep terrain and canyons in this RU. They prefer mixed-conifer forests on steep slopes in the Sangre de Cristo Range. In the Jemez Mountains they occur in canyons incised into the Los Alamos Tuff.

The above descriptions were taken from the Mexican Spotted Owl Draft Recovery Plan.

The following displays the total number of spotted owl sites from 1990-1993 within each RU including a breakout of those sites occurring only on National Forest System lands (Draft MSO Recovery Plan, 1995).

Recovery Unit	Sites on NFS lands	Total Sites in RU
Colorado Plateau (UT, NM, AZ)	16	62
Southern Rocky Mountain (CO)	14	20
Southern Rocky Mountain (NM)	34	34
Upper Gila Mountains (AZ, NM)	424	424
Basin and Range-West(-AZ, NM)	97	103
Basin and Range-East (NM)	111	121

The most common characteristic of the Colorado Plateau and Southern Rocky Mountain RU's in Colorado and Utah is the occupancy of canyon habitats, even though these canyon habitats display significant and even minor differences between them.

Northern Goshawk

The following summarizes habitat differences that occur across Forest Service Regional boundaries in Colorado, Utah, Arizona, and New Mexico. While the scope of the MSO/Goshawk EIS is limited to Forests in the Southwest Region, the following information may provide a context for future decisions by describing conditions that are present on National Forest System lands in Colorado and Utah adjacent to Arizona and New Mexico.

Habitat occupancy and differences are a bit more complex for the goshawk than it is for the Mexican spotted owl. The goshawk occurs over a larger continental U.S. range as well as extensive portions of Europe and Asia. (Refer to Range Map.)

Goshawks nest in every kind of coniferous forest in North America. These forests cover everything from the northern sub-arctic spruce forests to the high-elevation pine forests of the Mexican Cordillera. Deciduous and mixed woodlands are also used.

It is apparent that each Region is significantly different in the amounts of forested habitats that are used by the goshawk using the best available data. A breakdown by acreages for each Region is in the following table. The

table does not address the differences in structure, historical influences that also exist between types across the range of these States.

Table 1. - Acres of forest types on National Forest Service System lands in Region's 2, 3, and 4. These forest types are known to be used by the northern goshawk.

	Arizona, New Mexico Southwestern Region (a)	Colorado Rocky Mountain Region (b)	Utah Intermountain Region (c)
Ponderosa pine	3,851,968	2,129,780	292,530
Mixed species	1,199,838	1,459,205	157,633
Spruce-fir	182,115	4,187,879+	1,094,192
Lodgepole pine	0	2,783,379	579,395
Aspen	**	2,135,628	668,236

** Acreage figure not available. Aspen is very limited in the Southwest Region. Aspen is often mixed with Douglas fir, limber pine, white fir, spruce, other softwoods.

(a) Data from "Management Recommendations for the Northern Goshawk in the Southwestern United States, Appendix 5," USDA Forest Service, 1991.

(b) Data from "Table 1. RPA Cover Types-All Region 2, 1987. Inventory of Colorado, Wyoming, South Dakota, Nebraska NFS Lands Administered By Region 2."

(c) Data from "USFS TRACS Database," Region 4, 1995.

The above table shows that ponderosa pine is the predominant habitat type found in Region 3, while mixed conifer, spruce-fir, lodgepole, and aspen are the more prevalent habitat types found in the Rocky Mountain and Intermountain Regions.

A brief description for each habitat type for each Region follows.

Rocky Mountain Region (CO)

Ponderosa pine-Found primarily along the Front Range, southward to New Mexico, west to Mesa Verde, and northward to the Colorado River at elevations ranging from 6,000 to 9,500 feet. It is associated with the Big Sagebrush, Arizona Fescue, Gambel Oak, and Pinyon-Juniper series at lower elevations, and the Lodgepole Pine, Douglas Fir, series at higher elevations. This forest type comprises 16% of the forested lands on National Forest System lands in Colorado.

Mixed species (Mixed conifer)- Distributed throughout montane zone of Colorado at elevations between 7,000 to 10,000 feet. Although Douglas fir is the dominant species, it often occurs intermixed with other conifers such as ponderosa pine, lodgepole pine, Engelmann spruce, and subalpine fir. Aspen and Rocky Mountain maple are common hardwood components. White fir becomes a significant component in southwestern Colorado. In northern Colorado, it exists in pure or nearly pure stands. This forest type comprises 11% of the forested lands on NFS lands in Colorado.

Spruce-fir-Single largest forested area on NFS lands in Colorado. Engelmann spruce and subalpine fir usually occur as co-dominants within a stand, but can occur in near or nearly pure stands of one species or the other. Usually found from 9,000 to approximately 10,000 feet in elevation. Associated tree species include bristlecone

pine, limber pine, lodgepole pine, Douglas fir, and aspen. This forest type is 33% of the forested land on NFS lands in Colorado.

Southwestern Region (AZ & NM)

Ponderosa pine-The most dominant habitat type in Region 3 (74% of non-reserved forested area). Found in pure stands as a climax species or in mixed stands as a seral species. Has undergone significant changes during last 100 years due to livestock grazing, timber harvests, and fire suppression.

Mixed species - This Forest type comprises about 23% of the non-reserved forested area in R3. Like ponderosa pine, this forest type has undergone changes brought about grazing, timbering, and fire suppression. Douglas fir and white fir are the dominant species. Blue spruce, aspen, and limber pine are the major associates found in this type. Other species that may occur in minor amounts are subalpine fir, corkbark fir, Engelmann spruce, southwestern white pine, ponderosa pine, aspen, and Gambel oak.

Spruce-fir-This forest type comprises 3% of the non-reserved forested area in R3. Engelmann spruce and subalpine fir are the dominant species. Minor tree species are Douglas fir, blue spruce, white fir, aspen, corkbark fir, limber pine, and bristlecone pine.

Intermountain Region (UT)

Ponderosa pine

It is found throughout Utah at elevations ranging from 6,500 feet to 9,000 feet. It is found in pure stands as a climax species or in stands as a seral species. Stands are significantly denser than under pre-settlement conditions due to fire suppression activities. Associated species at low elevations include gambel oak, pinyon pine, juniper, big sagebrush, manzanita, and bitterbrush. High elevation species include Douglas fir, Engelmann spruce, subalpine fir, and lodgepole pine in the northern portion of Utah. This cover type makes up approximately 15% of the forested area in Utah.

Mixed species (mixed conifer)

This is the single largest forest component in Utah. It ranges in elevation between 7,000 and 10,000 feet. While Douglas fir is sometimes the dominant species, it often occurs intermixed with other conifers, such as ponderosa pine, Engelmann spruce, subalpine fir, and white fir. Aspen is a very common hardwood component which is believed to be increasing in distribution and density. This cover type makes up approximately 40% of the forested area in Utah.

Spruce-fir

The second largest forest type, comprising 28% of the forested area in Utah. Engelmann spruce and subalpine fir are co-dominant species within these stands but can occur in nearly pure stands of one species or the other. Elevation ranges between 8,500 feet to 11,000 feet. Associated species include lodgepole pine, Douglas fir, blue spruce, aspen, and bristlecone pine. Acreage of this forest type is remaining constant throughout the state.

Lodgepole pine and aspen habitats do not exist or are not as extensive in Region 3 as they are in Regions 2 and 4. There were no guidelines developed for these types. However, these forest habitats are more extensive in Regions 2 and 4 and are used by the goshawk.

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