

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 FAX: (602) 242-2513

In Reply Refer To:
AESO/SE
02-21-02-F-0197-R1

October 14, 2004

Ms. Nora B. Rasure
Forest Supervisor
Coconino National Forest
1824 South Thompson Street
Flagstaff, Arizona 86001-2529

RE: Reinitiation of the Arizona Public Service Right-of-Way Clearing Project on the Mogollon Rim Ranger District

Dear Ms. Rasure:

Thank you for your request for reinitiation of formal consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated August 12, 2004, and received by us on August 16, 2004. This consultation concerns the possible effects of Arizona Public Service's (APS) Right-of-Way Clearing Project located in Coconino County, Arizona, on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and its designated critical habitat. On November 18, 2003, based on the October 10, 2003 decision in *Center for Biological Diversity v. Norton*, Civ. 01-409 TUC DCB (D. Ariz.), the Fish and Wildlife Service re-proposed critical habitat for the MSO. The final rule designating critical habitat became effective on September 30, 2004 (USDI 2004). The APS Right-of-Way Clearing Project has previously undergone formal section 7 consultation for effects to the MSO and its habitat.

This biological opinion is based on information provided in the original May 23, 2002 Biological Assessment and Evaluation (BAE), the revised BAE dated August 12, 2004, conversations with your staff, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the MSO or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

Details of the consultation history are summarized in Table 1.

Table 1. Summary of Consultation History

<i>Date</i>	<i>Event</i>
August 21, 2002	We issued a non-jeopardy biological opinion on the effects of the APS Right-of-Way Clearing Project on three MSO protected activity centers (PACs).
Fall 2002	Project implementation began.
August 12, 2004	The Forest Service reinitiated formal consultation on the effects of the APS Right-of-Way Clearing Project to MSO and MSO critical habitat due to changes in the proposed action and the recent designation of MSO critical habitat.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

APS needs to maintain a 21 kilovolt (kV) power line right-of-way on the Mogollon Rim Ranger District, Coconino National Forest. Arizona Public Service began removing trees within this corridor during the fall of 2002 due to high tree density under and adjacent to the power line, which posed a potential fire hazard (as analyzed in the August 21, 2002 Biological Opinion, Consultation #2-21-02-F-0197). The continuing drought conditions in the Southwest have exacerbated problems with bark beetles and dying pine trees along APS power lines in Arizona. APS personnel recently flew over the power line that runs from the Mogollon Rim to the Starlight Pines subdivision and found that clumps of trees have died along the power line in the two years since they maintained the right-of-way. These dead trees pose a hazard to the power line. If trees fall on the power line, they have the potential to start wildfires that could burn through many acres of forest, including MSO PACs and habitat, and disrupt power to residents in the Blue Ridge area.

The project area begins where the power line crosses Forest Road 300, approximately twelve miles east of Highway 87 (Township 12 North, Range 10 East, section 1) and runs along the existing right-of-way corridor for the 21 kV distribution line. The line runs primarily north and south along Forest Road 123. The power line then crosses the Blue Ridge Reservoir, following Forest Roads 138 and 138B, and eventually ends at the Blue Ridge Ranger Station. At that point the line crosses State Highway 87 and continues on to several communities. The total project area encompasses approximately 895 acres.

Activities will be in accordance with APS’s master special use permit for the Coconino National Forest dated April 14, 1997, including standards set forward by the Occupational Safety and Health Administration (OSHA). The original project description was also in accordance with those statutes.

All dead or dying trees that are tall enough to present a hazard to the power line will be removed. Dead and dying trees are defined as those where a majority of the needles have turned red.

Terrain and tree locations relative to the power line will be factored into decisions on which trees to remove. Slash may be chipped and broadcast, lopped and scattered, chipped and piled, chipped and removed, or removed through a salvage timber sale. The routine maintenance of the power line right-of-way will occur as defined in the original BAE, which includes the removal of live trees within 15 feet of the power line. Following the removal of these trees, APS will provide the number of trees greater than nine inches diameter-at-breast height (dbh) by size category and line segment to the Forest Service, who will forward this information to the Fish and Wildlife Service for our records.

Conservation Measures

Tree removal will occur only during the non-breeding season (1 September through 28 February) to minimize disturbance to MSO. The Forest Service established 100-acre “no treatment” buffers around known nest locations as described by Ward and Salas (2000) and recommended by the MSO Recovery Team. There will be no activity or tree removal within these buffer zones. The Forest Service also delineated a “potential” nest buffer for the Aqueduct PAC (#040734) based on the location of two nighttime audio responses and the most suitable habitat within the PAC.

STATUS OF THE SPECIES

Mexican spotted owl

The MSO was listed as a threatened species in 1993 (USDI 1993). The primary threats to the species were cited as even-aged timber harvest and catastrophic wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The Fish and Wildlife Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (USDI 1995).

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the Final Rule listing the MSO as a threatened species (USDI 1993) and in the Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference. Although the MSO’s entire range covers a broad area of the southwestern United States and Mexico, the MSO does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to isolated forested mountain systems, canyons, and in some cases steep, rocky canyon lands. Surveys have revealed that the species has an affinity for older, uneven-aged forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico.

The U.S. range of the MSO has been divided into six recovery units (RU), as discussed in the Recovery Plan. The primary administrator of lands supporting the MSO in the United States is the Forest Service. Most owls have been found within Forest Service Region 3 (including 11 National Forests in Arizona and New Mexico). Forest Service Regions 2 and 4 (including two

National Forests in Colorado and three in Utah) support fewer owls. According to the Recovery Plan, 91 percent of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

The Upper Gila Mountains RU is a relatively narrow band bounded on the north by the Colorado Plateau RU and to the south by the Basin and Range-West RU. The southern boundary of this RU includes the drainages below the Mogollon Rim in central and eastern Arizona. The eastern boundary extends to the Black, Mimbres, San Mateo, and Magdalena mountain ranges of New Mexico. The northern and western boundaries extend to the San Francisco Peaks and Bill Williams Mountain north and west of Flagstaff, Arizona. This is a topographically complex area consisting of steep foothills and high plateaus dissected by deep, forested drainages. This RU can be considered a "transition zone" because it is an interface between two major biotic regions: the Colorado Plateau and Basin and Range Provinces (Wilson 1969). The Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila National Forests administer most habitat within this RU. The north half of the Fort Apache and northeastern corner of the San Carlos Indian reservations are located in the center of this RU and also support MSO.

The Upper Gila Mountains RU consists of pinyon/juniper woodland, ponderosa pine/mixed conifer forest, some spruce/fir forest, and deciduous riparian forest in mid- and lower-elevation canyon habitat. Climate is characterized by cold winters and over half the precipitation falls during the growing season. Much of the mature stand component on the gentle slopes surrounding the canyons had been partially or completely harvested prior to the species' listing as threatened in 1993; however, MSO nesting habitat remains in steeper areas. MSO are widely distributed and use a variety of habitats within this RU. Owls most commonly nest and roost in mixed-conifer forests dominated by Douglas fir and/or white fir, and canyons with varying degrees of forest cover (Ganey and Balda 1989, USDI 1995). Owls also nest and roost in ponderosa pine-Gambel oak forest, where they are typically found in stands containing well-developed understories of Gambel oak (USDI 1995).

Historical and current anthropogenic uses of MSO habitat include both domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction (e.g., timber, oil, gas), and development. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season. Livestock and wild ungulate grazing is prevalent throughout Region 3 National Forest lands and is thought to have a negative effect on the availability of grass cover for prey species. Recreation impacts are increasing on all forests, especially in meadow and riparian areas. There is anecdotal information and research that indicates that owls in heavily used recreation areas are much more erratic in their movement patterns and behavior. Fuels-reduction treatments, though critical to reducing the risk of catastrophic wildfire, can have short-term adverse effects to MSO through habitat modification and disturbance. As the human population grows, especially in Arizona, small communities within and adjacent to National Forest System lands are being developed. This trend may have detrimental effects to MSO by further fragmenting habitat and increasing disturbance during the breeding season. West Nile Virus also has the potential to adversely impact the MSO. The virus has been documented in Arizona, New Mexico, and Colorado and

preliminary information suggests that owls may be highly vulnerable to this disease. Unfortunately, due the secretive nature of owls and the lack of intensive monitoring of banded individual birds, we will most likely not know when owls contract the disease or the extent of its impact to MSO range-wide.

Currently, high-intensity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. MSO habitat in the southwestern United States has been shaped over thousands of years by fire. Since MSO occupy a variety of habitats, the influence and role of fire has most likely varied throughout the owl's range. In 1994, at least 40,000 acres of nesting and roosting habitat were impacted to some degree by catastrophic fire in the Southwestern Region (Sheppard and Farnsworth 1995). Between 1991 and 1996, the Forest Service estimated that approximately 50,000 acres of owl habitat had undergone stand-replacing wildfires (G. Sheppard, Forest Service, Kaibab National Forest, Arizona, pers. comm.). However, since 1996, fire has become catastrophic on a landscape scale and has resulted in hundreds of thousands of acres of habitat lost to stand-replacing fires. This is thought to be a result of unnatural fuel loadings, past grazing and timber practices, and a century of fire suppression efforts. The 2002 Rodeo-Chediski fire, at 462,384 acres, burned through approximately 55 PACs on the Tonto and Apache-Sitgreaves National Forests and the White Mountain Apache Reservation. Of the 11,986 acres of PAC habitat that burned on National Forest lands, approximately 55% burned at moderate to high severity. Based on the fire severity maps for the fire perimeter, tribal and private lands likely burned in a similar fashion. We define moderate-severity burn as high scorch (trees burned may still have some needles) and high-severity burn as completely scorching all trees (trees completely dead).

Currently, catastrophic wildfire is probably the greatest threat to MSO within the Upper Gila Mountains RU. As throughout the West, fire intensity and size have been increasing within this geographic area. Table 2 shows several high-intensity fires that have had a large influence on MSO habitat in this RU in the last decade. Obviously the information in Table 2 is not a

Table 2. Some recent influential fires within the Upper Gila Mountains Recovery Unit, approximate acres burned, number of PACs affected, and PAC acres burned.

Fire Name	Year	Total Acres Burned	# PACs Burned	# PAC Acres Burned
Rhett Prescribed Natural Fire	1995	20,938	7	3,698
Pot	1996	5,834	4	1,225
Hochderffer	1996	16,580	1	190
BS Canyon	1998	7,000	13	4,046
Pumpkin	2000	13,158	4	1,486
Rodeo-Chediski	2002	462,384	55	~33,000

TOTAL		525,894	84	~43,645
-------	--	---------	----	---------

comprehensive analysis of fires in the Upper Gila Mountains RU or the effects to MSO. However, the information does illustrate the influence that stand-replacing fire has on current and future MSO habitat in this RU. This list of fires alone estimates that approximately 11% of the PAC habitat within the RU suffered high-to moderate-intensity, stand-replacing fire in the last seven years.

A reliable estimate of the numbers of owls throughout its entire range is not currently available (USDI 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico. However, Ganey *et al.* (2000) estimates approximately $2,950 \pm 1,067$ (SE) MSOs in the Upper Gila Mountains RU alone. The Forest Service Region 3 most recently reported a total of approximately 980 protected activity centers (PACs) established on National Forest lands in Arizona and New Mexico (USDA Forest Service, Southwestern Region, December 19, 2002). Based on this number of MSO sites, total numbers in the United States may range from 980 individuals, assuming each known site was occupied by a single MSO, to 1,960 individuals, assuming each known site was occupied by a pair of MSOs. The Forest Service Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than National Forest System lands have likely resulted in additional sites being located in all Recovery Units. Currently, we estimate that there are likely 12 PACs in Colorado (not all currently designated) and 105 PACs in Utah.

Researchers studied MSO population dynamics on one study site in Arizona (n = 63 territories) and one study site in New Mexico (n = 47 territories) from 1991 through 2002. The initial publication of the findings reported that both study populations were declining at $\geq 10\%$ a year and that owl survival rates in Arizona may be declining over time (Seamans et al. 1999). The authors noted that two possible reasons for the population decline were declines in habitat quality and regional trends in climate. The Final Report, titled “Temporal and Spatial Variation in the Demographic Rates of Two Mexican Spotted Owl Populations,” (*in press*) found that reproduction varied greatly over time, while survival varied little. The estimates of the population rate of change ($\Lambda = \text{Lamda}$) indicated that the Arizona population was stable (mean Λ from 1993 to 2000 = 0.995; 95% Confidence Interval = 0.836, 1.155) while the New Mexico population declined at an annual rate of about 6% (mean Λ from 1993 to 2000 = 0.937; 95% Confidence Interval = 0.895, 0.979). The study concludes that spotted owl populations could experience great ($>20\%$) fluctuations in numbers from year to year due to the high annual variation in recruitment. However, due to the high annual variation in recruitment, the MSO is likely very vulnerable to actions that impact adult survival (e.g., habitat alteration, drought, etc.) during years of low recruitment.

Since the owl was listed, we have completed or have in draft form a total of 139 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 327 PACs. The form of this incidental take is almost entirely harm or harassment. These consultations have primarily dealt with actions proposed by the Forest

Service, Region 3. However, in addition to actions proposed by the Forest Service, Region 3, we have also reviewed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other activities. Only two of these projects (release of site-specific owl location information and then-existing forest plans) have resulted in biological opinions that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, we issued a biological opinion on Forest Service Region 3's adoption of the Recovery Plan recommendations through an amendment of their Forest Plans. In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with approximately 91 of those PACs located in the Upper Gila Mountains RU. In addition, on January 17, 2003, we completed a reinitiation of the 1996 Forest Plan Amendments biological opinion, which anticipated the additional incidental take of five MSO PACs in Region 3 due to the rate of implementation of the grazing standards and guidelines, for a total of 156 PACs. To date, consultation on individual actions under the amended Forest Plans has resulted in 233 PACs adversely affected, with 126 of those in the Upper Gila Mountains RU. Region 3 of the Forest Service reinitiated consultation on the Forest Plans on April 8, 2004.

Mexican spotted owl Critical Habitat

The final MSO critical habitat rule (USDI 2004) designated approximately 8.6 million acres of critical habitat in Arizona, Colorado, New Mexico, and Utah, mostly on Federal lands (USDI 2004). Within this larger area, proposed critical habitat is limited to areas that meet the definition of protected and restricted habitat, as described in the Recovery Plan. Protected habitat includes all known owl sites and all areas within mixed conifer or pine-oak habitat with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years. Restricted habitat includes mixed conifer forest, pine-oak forest, and riparian areas outside of protected habitat.

The primary constituent elements for proposed MSO critical habitat were determined from studies of their habitat requirements and information provided in the Recovery Plan (USDI 1995). Since owl habitat can include both canyon and forested areas, primary constituent elements were identified in both areas. The primary constituent elements which occur for the MSO within mixed-conifer, pine-oak, and riparian forest types that provide for one or more of the MSO's habitat needs for nesting, roosting, foraging, and dispersing are in areas defined by the following features for forest structure and prey species habitat:

Primary constituent elements related to forest structure include:

- A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30% to 45% of which are large trees with dbh of 12 inches or more;
- A shade canopy created by the tree branches covering 40% or more of the ground; and,
- Large, dead trees (snags) with a dbh of at least 12 inches.

Primary constituent elements related to the maintenance of adequate prey species include:

- High volumes of fallen trees and other woody debris;
- A wide range of tree and plant species, including hardwoods; and
- Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration.

The forest habitat attributes listed above usually are present with increasing forest age, but their occurrence may vary by location, past forest management practices or natural disturbance events, forest-type productivity, and plant succession. These characteristics may also be observed in younger stands, especially when the stands contain remnant large trees or patches of large trees. Certain forest-management practices may also enhance tree growth and mature stand characteristics where the older, larger trees are allowed to persist.

There are 13 critical habitat units located in the Upper Gila Mountains RU that contain 3.1 million acres of designated critical habitat.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat to provide a platform from which to assess the effects of the action now under consultation.

A. Status of the species and critical habitat within the action area

The power line transects three MSO PACs within the project area: Aqueduct (#040734), Blue Ridge (#040705), and Rock Crossing (#040712). There is no additional protected or restricted habitat within the project area, and the majority of the project encompasses even-aged, pure pine stands. These PACs were monitored as a part of the original proposed action.

The Aqueduct PAC was established in 1999 based on locations of a female spotted owl. The Forest Service has not located owls in this PAC since 1999, despite monitoring in 2000, 2002-2004 (Table 3). Currently, there is no known nest location in the Aqueduct PAC. In 2002 the

Forest Service delineated a 100-acre “nest buffer” using owl locations and the best nesting and roosting habitat. However, in our August 21, 2002, biological opinion we stated the following:

“Though a nest tree or roost has never been located in the Aqueduct PAC, the Forest Service designated an area of potential nesting habitat within the PAC based on the nighttime detections. We support your effort to protect the best nesting and roosting habitat within the PAC, but based on Ward and Salas (2000) the delineation of a nest/roost core can only be based on a nest location, location of young-of-the-year, or daytime roost locations in at least two different years of owls of any age. Therefore, based on survey information to date, there is no identified means to accurately determine the 100-acre nest buffer for the Aqueduct PAC. The Forest Service will informally monitor the Aqueduct PAC during the 2002 breeding season.”

In 2003 and 2004, an MSO was detected west of the Aqueduct PAC, in an area with better owl habitat. The owl was not located during the day. It is surmised that the owl originally located in the Aqueduct PAC may have moved into more suitable habitat. The owl’s location is farther from the power line. The habitat within the Aqueduct PAC that includes the power line is a ridge containing pure ponderosa pine and is not considered MSO nesting or roosting habitat.

The Blue Ridge PAC was occupied by a pair from 1998 through 2001, and produced three young in 2000. During informal monitoring in 2002, no owls were detected (Table 3). A bird research crew staying at the Blue Ridge Campground heard a single owl in the area on one occasion in 2002. Monitoring in 2003 and 2004 did not locate any owls. A 100-acre nest buffer was established within the PAC in 2002. No tree cutting or line maintenance will occur in the nest buffer.

The Rock Crossing PAC has been occupied by a pair of owls for at least 12 of the past 14 years and has produced at least 15 young. This summer, a pair was not located, but a male was present within the PAC (Table 3). A 100-acre nest buffer was established within the PAC in 2002. No tree cutting or line maintenance will occur in the nest buffer.

In the original consultation, the BAE stated that the only MSO habitat within the project area was included within the three PACs. However, the revised BAE states that pine-oak restricted habitat lies north of the Blue Ridge Reservoir. This area was surveyed in 2003 and 2004. No MSO were detected.

Most of the project area is within designated critical habitat unit #10, within the Upper Gila Mountains Recovery Unit (UGM-10). As stated above, the power line runs through three PACs, which are protected habitat as defined in the Recovery Plan, and through some pine-oak restricted habitat located north of the Blue Ridge Reservoir.

Table 3. Survey results in the Aqueduct, Blue Ridge, and Rock Crossing PACs for 2002, 2003, and 2004.

PAC Name	PAC Number	2002 Results	2003 Results	2004 Results
Aqueduct	040734	Informal monitoring, no response	Informal monitoring, no response	Informal monitoring, no response
Blue Ridge	040715	Single owl, non-nesting	Informal monitoring, no response	Informal monitoring, no response
Rock Crossing	040712	Pair, one young	Pair, one young	Single male, non-nesting

B. Factors affecting the species and its critical habitat within the action area

In the initial right-of-way clearing project, APS removed approximately 2,900 pine trees less than nine inches dbh, 40 trees nine to 18 inches dbh, two trees 18 to 24 inches dbh, and one tree greater than 24 inches from the three PACs. These numbers are based upon the estimated numbers given to us in the May 29, 2002, BAE. We have not received a report from the Forest Service or APS indicating how many trees were actually removed in 2002.

Additional actions within the project area that affect MSO include both domestic and wild ungulate grazing, recreation, and fuels-reduction treatments. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season. The Aqueduct and Rock Crossing PACs are located within the Buck Springs Range Allotment. Livestock grazing has occurred and is planned within these PACs, and elk populations are thought to have a large effect on the availability of grass cover for prey species. Under the proposed management plan for the Buck Springs Allotment, livestock will have access to approximately 100% of the Aqueduct PAC and 20% of the Rock Crossing PAC every other year during the breeding season.

In addition, recreation impacts are increasing on the District and at Blue Ridge Reservoir, especially in meadow and riparian areas. The Mogollon Rim Ranger District owl survey crews report that owls in heavily used recreation areas are much more erratic in their movement patterns and behavior. This referenced information is based on observations of the Rock Crossing PAC, which is located near a heavily used boat ramp on Blue Ridge Reservoir. The Aqueduct PAC and Blue Ridge PACs are also impacted by recreation. The Aqueduct PAC contains a portion of the popular Fred Haught Trail and the Blue Ridge PAC encompasses the Blue Ridge Campground. Fuels reduction treatments, though critical to reducing the risk of catastrophic wildfire, and watershed health projects planned within the area may also have short-term adverse effects to MSO through habitat modification and disturbance.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with

that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

The direct and indirect effects of the proposed action include removal of trees from within protected and restricted habitat, potentially resulting in reduced basal area of large-diameter trees, reduced canopy closure adjacent to the right-of-way, reduced snags, and a loss of potential coarse woody debris recruitment. We do not expect any disturbance to nesting birds because the proposed action will not occur during the MSO breeding season (March 1 through August 31). In addition, because no actions will occur within the Blue Ridge or Rock Crossing nest buffers, we expect potential nesting habitat to remain intact and unaffected.

The proposed project would cut ponderosa pine trees, some of which may be greater than 24 inches. As stated above, under the original proposal it was estimated that within the three PACs a total of one tree greater than 24 inches dbh, one tree and one snag between 18 inches and 24 inches dbh, and 40 trees between nine and 18 inches dbh were removed. The Forest Service states in the August 12, 2004, BAE that based on the initial cut tree estimates, it is likely that only a few trees greater than 18 inches dbh, and approximately 40 trees nine to 18 inches dbh would be removed from the PACs in addition to what was removed in the original action. The loss of large-diameter trees, even in small amounts within PACs, is significant due to the amount of time it takes for replacement trees to grow to diameters greater than 24 inches. In addition, the removal of trees greater than nine inches dbh from within PACs is inconsistent with recommendations provided in the Recovery Plan.

The proposed action states that all trees will be chipped or hauled off as part of a salvage sale. Therefore, MSO prey habitat will not be enhanced through the addition of large downed logs. However, there is potential for the created openings along the power line to increase grass, forb, and shrub production, which may improve habitat conditions in the immediate area for some prey species. This action is also consistent with discussion in the Recovery Plan emphasizing the need to reduce the risk of severe wildfire within and adjacent to PACs. By removing the proposed trees, APS will reduce the chance of the power line igniting a tree and a fire burning habitat within and adjacent to the Aqueduct, Blue Ridge, and Rock Crossing PACs.

In summary, we believe that MSO associated with the Aqueduct, Blue Ridge, and Rock Crossing PACs and designated critical habitat could be adversely affected through impacts to protected habitat from clearing work along the power line corridor and the removal of large trees and snags. In addition, the chipping or removal of all slash (including large trees) will also reduce the recruitment of coarse woody debris. However, conservation measures proposed by the Forest Service should minimize adverse affects to the owl by eliminating disturbance during the breeding season, and minimize effects to protected and critical habitat by not removing trees within the nest buffers of the PACs.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Future actions within the project area that are reasonably certain to occur include recreation, fuels-reduction treatments and/or commercial logging on the adjacent private land, increased development, and other associated actions. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and cause disturbance to breeding MSOs, and therefore contribute as cumulative effects to the proposed action. However, because of the predominant occurrence of MSOs on Federal lands in this area, and because of the role of the respective Federal agencies in administering the habitat of the MSO, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered to be of minor impact to the owl population, but may have significant impacts on the Aqueduct, Blue Ridge, and Rock Crossing MSO PACs and critical habitat.

CONCLUSION

After reviewing the current status of the MSO and its designated critical habitat, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the MSO, or destroy or adversely modify designated critical habitat. We base our conclusion on the following:

1. The proposed action will not modify habitat within the Aqueduct, Blue Ridge, and Rock Crossing PACs or in restricted pine-oak habitat such that the habitat no longer supports MSO, and it will reduce the risk of a wildfire starting in the power line corridor and burning MSO habitat.
2. The proposed project includes approximately 895 acres of critical habitat (though not all of this acreage meets the definition of protected or restricted habitat). This is approximately .0016% of the critical habitat in unit UGM-10. Due to the relatively small size of the area in comparison to the entire unit, the impacts to primary constituent elements will not appreciably reduce the value of critical habitat for the species' conservation, and do not rise to the level of destruction or adverse modification.
3. While large dbh trees and snags will be removed by the proposed action, which may result in short-term disturbance and loss of primary constituent elements, we do not believe it will destroy the habitat for use by MSO or their prey species.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

As we stated in the August 21, 2002, biological opinion, we do not anticipate that the proposed action will incidentally take any MSO. We base this on the following reasons:

1. There will be no tree removal or maintenance activities during the MSO breeding season. This will minimize impacts to the MSO.
2. There will be no tree removal from the 100-acre nest buffers delineated for the Rock Crossing and Blue Ridge PACs. Though current survey information for the Aqueduct PAC is insufficient to delineate a nest buffer, the area of tree removal within the PAC is on a ridge that contains pure ponderosa pine and is not considered nesting or roosting habitat, though it is within the PAC.
3. The best information we have indicates that the number of trees greater than nine inches dbh that will be removed is relatively small and should not reduce the overall habitat quality within protected and restricted habitat.
4. Only ponderosa pine trees will be removed. No Gambel oak, Douglas-fir, or white fir will be harvested.

The Fish and Wildlife Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§

703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Forest Service work with APS to maintain some of the larger cut trees as coarse woody debris within MSO protected and restricted habitat and not chip or haul all large cut trees from these areas. We are willing to assist in identifying areas where this may be possible.
2. We recommend that APS evaluate the potential for building new power lines on Forest Service lands underground. Though the initial cost may be higher and there will be ground disturbance where the trench is dug, the future impacts to habitat are potentially much less.
3. We recommend that the Forest Service and APS continue to work with the Fish and Wildlife Service to programmatically consult on all maintenance needs for existing power lines on the Coconino National Forest. This would assist APS, the Forest Service, and the Fish and Wildlife Service in completing consultation in a timely manner and avoid the need for expedited consultation in the future.
4. We recommend that the Forest Service work with us to evaluate the Aqueduct PAC boundaries. The latest survey data indicate that there may be a need to review the PAC history, examine the habitat, and determine if the boundary needs to be adjusted.

In order for us to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new

species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continued efforts to conserve endangered species. If you have any questions or concerns about this consultation, or the consultation process in general, please contact Shaula Hedwall or Brenda Smith of our Flagstaff Suboffice at (928) 226-0614.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
District Ranger, Mogollon Rim Ranger District, Happy Jack, AZ
Wildlife Staff, Mogollon Rim Ranger District, Happy Jack, AZ (Attn: Cathy Taylor)
Forest Biologist, Coconino National Forest, Flagstaff, AZ (Attn: Cecelia Overby)

Bob Broscheid, Habitat Branch, Arizona Game and Fish, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Flagstaff, AZ

LITERATURE CITED

- Fletcher, K. 1990. Habitat used, abundance, and distribution of the Mexican spotted owl, *Strix occidentalis lucida*, on National Forest System Lands. U.S. Forest Service, Southwestern Region, Albuquerque, New Mexico. 78 pp.
- Ganey, J.L., G.C. White, A.B. Franklin, J.P. Ward, Jr., and D.C. Bowden. 2000. A pilot study on monitoring populations of Mexican spotted owls in Arizona and New Mexico: second interim report. 41 pp.
- Ganey, J.L. and R.P. Balda. 1989. Distribution and habitat use of Mexican spotted owls in Arizona. *Condor* 91:355-361.
- Seamans, M.E., R.J. Gutierrez, C.A. May, and M.Z. Peery. 1999. Demography of two Mexican spotted owl populations. *Conservation Biology* 13(4):744-754.
- Sheppard, G. and A. Farnsworth. 1995. Fire effects and the use of prescribed fire in Mexican spotted owl habitat. Pages 131-135 *In* Proceedings First Conference on Fire Effects on Rare and Endangered Species and Habitats Conference, November 13-16, 1995. Coeur d'Alene, Idaho.
- U.S. Department of the Interior (USDI), Fish and Wildlife Service. 1991. Mexican spotted owl status review. Endangered species report 20. Albuquerque, New Mexico.
- U.S. Department of the Interior (USDI), Fish and Wildlife Service. 1993. Endangered and Threatened Wildlife and Plants; final rule to list the Mexican spotted owl as threatened. *Federal Register* 58(49):14248-14271. March 16, 1993.
- U.S. Department of the Interior (USDI), Fish and Wildlife Service. 1995. Recovery Plan for the Mexican Spotted Owl. Albuquerque, New Mexico.
- U.S. Department of the Interior (USDI), Fish and Wildlife Service. April 10, 2001. Biological opinion on the Forest Service's proposed wildland urban interface fuel treatments in New Mexico and Arizona, R2/ES-TE, CL 04-005. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.
- U.S. Department of the Interior (USDI), Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants; final designation of critical habitat for the Mexican spotted owl; final rule. *Federal Register* 69(168):53182-53298. August 31, 2004.
- Ward, J.P. and D. Salas. 2000. Adequacy of roost locations for delineating buffers around Mexican spotted owl nests. *Wildlife Society Bulletin* 28(3):688-698.