

ASEO/ES
2-21-00-F-398

October 20, 2000

Mr. Ken Anderson
District Ranger
Sedona Ranger District
U.S. Forest Service
P.O. Box 300
Sedona, Arizona 86339

Dear Mr. Anderson:

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Oak Creek Powerline Maintenance project located in Coconino County and its effects on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) in accordance with section 7 of the Endangered Species Act of 1973, as amended. Your May 3, 2000, request for formal consultation was received on May 5, 2000.

This biological opinion is based on information provided in the Oak Creek Powerline Maintenance Biological Assessment and Evaluation (BAE) (undated), numerous telephone conversations between Michele James of my staff and Janie Agyagos with the Forest Service, field investigations, and other sources of information. A complete administrative record of this consultation is on file at this office.

Critical habitat for the spotted owl was proposed on July 21, 2000 (65 FR 45336). If the Forest Service determines that the proposed maintenance project will destroy or adversely modify any areas of proposed critical habitat, conferencing with the Service should be reinitiated. Additional consultation may also be necessary for this project if the Forest Service determines that final designated critical habitat may be affected by maintenance and emergency work as outlined in this biological opinion; final critical habitat will be designated on or about January 15, 2001.

CONSULTATION HISTORY

Informal consultation on this project began in July 1999 when the Forest Service contacted the Service to discuss the project and the necessary components of the BAE. The Service reviewed a draft BAE in November 1999 and provided specific comments regarding content. The Service reviewed a second draft BAE in January 2000 and commented regarding content and options for further consultation. The Forest Service sent a final BAE on May 3, 2000, which was received by the Service on May 5, 2000.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Arizona Public Service (APS) currently manages a powerline that occurs within Oak Creek Canyon just north of Sedona in Coconino County. The powerline originates in the Sedona city limits, runs north through the canyon crossing Oak Creek in various locations, and terminates at the Sterling Fish Hatchery at the base of the switchbacks. APS has a special use permit with the Coconino National Forest for the operation and maintenance of this distribution powerline through Oak Creek Canyon; this special use permit expires in 2016. As a condition of the Forest Service permit, APS is to conduct routine maintenance along the distribution line. However, since there has been no maintenance in the last 10 years, a larger than normal effort is required to bring the powerline corridor up to standards. APS indicates that failure to clear the powerline of hazardous trees may increase the risk of wildfire and impact life, property, and resources within Oak Creek Canyon.

The proposed project is comprised of three parts: 1) 2000/2001 work involving large scale clearing of trees for a distance of five miles under and around the powerline for a maximum width of 40 feet; 2) routine maintenance every year for the life of permit (through 2016), and; 3) emergency maintenance activities through the life of permit. These three components are described in detail below. While the total Oak Creek Canyon distribution powerline is 13 miles in length, the project area has been narrowed down to include clearing, routine maintenance, and emergency maintenance associated with the powerline located between the Sterling Springs Fish Hatchery and Slide Rock State Park, a distance of five miles. The Forest Service indicates that the remaining eight miles of Oak Creek Canyon powerline is located within other forest and woodland habitat types.

1) Trees located under the powerline, as well as around the powerline will be removed. This includes trees located within a minimum distance of 10 feet on either side of the powerline. APS has indicated that the total width of the cleared area under and around the powerline may reach a maximum of 40 feet (Janie Agyagos, Sedona Ranger District, pers. comm.). Any limbs occurring anywhere over the powerline will also be removed in order to prevent damage to the lines and minimize the threat of wildfire. Trees and limbs will be removed using chainsaws and pruners. Most downed wood (approximately 95 percent) generated from this project will be left on site since much of the powerline is in inaccessible terrain and removal would be dangerous and expensive. In accessible areas, small diameter slash (less than 8 inches diameter at breast height [dbh]) will be chipped and removed from the sites. Larger diameter wood will be left on site. In highly visible areas such as Encinoso, Call of the Canyon, and the other campgrounds, native shrub species may be planted to improve visual quality. APS will be required to seed the corridor with native seed comprised of non-tree species. This component of the proposed action will occur from September 1, 2000, through February 28, 2001, in order to avoid disturbing nesting Mexican spotted owls.

2) The second component of the proposed action involves the future maintenance of the powerline (from 2001 to 2016) which will occur on a much smaller scale than the initial clearing work. The number, species, and size of trees and snags to be removed in the future are not known. Future operation and maintenance activities can include the following: pruning of trees and shrubs; removal of sprouting trees; chipping of materials less than 8 inches diameter at breast height (dbh); cutting of evergreens, hardwoods, and snags in protected, restricted, and other forest and woodland habitat; retention of felled trees and snags as downed logs; replacement and/or repair of power poles, wire, or service boxes; and renewal of APS's special use permit to maintain and operate the powerline in Oak Creek Canyon.

The Forest Service indicates that in order to minimize impacts to nesting MSO and their habitat, the following conservation measures will be implemented for the second component of the proposed action:

The cutting of hardwoods and evergreens will be limited to trees <24 inches dbh in restricted and <9 inches dbh in protected habitat.

The cutting of snags will be limited to snags <12 inches dbh and 8 feet tall within restricted and protected habitat.

Activities involving the use of mechanized equipment will not occur within ¼ mile of a MSO protected activity center (PAC) during the breeding season (March 1 to August 31).

3) The third and last component of the proposed action involves emergency maintenance activities during the life of the special use permit (2001-2016). Because trees may fall on the powerline, it may be necessary for APS to remove trees and broken limbs from the powerline, and repair broken powerlines. These activities may occur within ¼ mile of MSO PACs during the breeding season. The Forest Service indicates that in the past, APS has responded to approximately two emergencies per year in Oak Creek Canyon. APS cannot indicate the time of year when most emergencies have occurred in the past, but they have stated that the spruce, fir, and pine trees located in the north half of the canyon within the project area were most likely to fall, as they occur on steep slopes and become unstable as their roots are exposed by erosion. APS will inform the Forest Service of the location and timing of such activities for monitoring purposes.

STATUS OF THE SPECIES

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 Final MSO Recovery Plan (USDI 1995). Critical habitat for the MSO was proposed on July 21, 2000,

(65 FR 45336). 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, much remains unknown about the species' distribution and ecology. This is especially true in Mexico where much of the MSO's range has not been surveyed. The MSO currently occupies a broad geographic area but does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to forested isolated mountain systems, canyons, and in some cases, steep, rocky canyon lands. The primary administrator of lands supporting MSO in the United States is the U.S. 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 2 National Forests in Colorado and 3 in Utah) support fewer owls. According to the Recovery Plan, 91% of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

Surveys have revealed that the species has an affinity for older, well-structured forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico. The range of the MSO has been divided into six Recovery Units (RUs), as discussed in the MSO Recovery Plan (USDI 1995). The Recovery Plan reports an estimate of owl sites. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. This information was reported for 1990-1993. The greatest known concentration of known owl sites in the United States occurs in the Upper Gila Mountains RU (55.9%), followed by the Basin and Range-East RU (16.0%), Basin and Range-West RU (13.6%), Colorado Plateau RU (8.2%), Southern Rocky Mountain-New Mexico RU (4.5%), and Southern Rocky Mountain-Colorado RU (1.8%). Owl surveys conducted from 1990 through 1993 indicate that the species persists in most locations reported prior to 1989.

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.

At the end of the 1995 field season, the Forest Service reported a total of 866 management territories (MTs) established in locations where at least a single MSO had been identified (U.S. Forest Service, *in litt.* November 9, 1995). The information provided at that time also included a summary of territories and acres of suitable habitat in each RU. Subsequently, a summary of all territory and monitoring data for the 1995 field season on Forest Service lands was provided to the Service on January 22, 1996. There were minor discrepancies in the number of MTs reported in the November and January data. For the purposes of this analysis we are using the more recent information.

From 1991 through 1997, Gutierrez *et al.* (1997, 1998) studied the demographic characteristics of two Mexican spotted owl populations in the Upper Gila Mountains Recovery Unit. The owl populations studied were located on the Coconino and Gila National Forests. Results of this

several-year study have shown a decline in the population trend of Mexican spotted owls within these areas. The reason for the reported decline is unknown. According to Gutierrez *et al.* (1997), such a trend could be a result of: 1) density dependent responses to an increase over carrying capacities; 2) a response to some environmental factor; or 3) senescence. The latter (i.e. senescence) seems unlikely because there was also a negative linear trend in survival estimates for owls less than three years of age. Regarding carrying capacities, responses to density dependence are difficult to prove in the absence of removal or addition experiments. Environmental factors undoubtedly play a role in owl survival, either through weather events causing direct mortality or indirectly through reduced habitat or prey (Gutierrez *et al.* 1997). This study found that the ability of adult birds to survive successive years of poor environmental conditions may be low (Gutierrez *et al.* 1998).

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.2) define the environmental baseline as the 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 impacts of State and private actions that are contemporaneous with the consultation in process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

A total of 224 projects have undergone formal consultation for the MSO. Of that aggregate, 84 projects resulted in a total anticipated incidental take of 189 owls plus an additional unknown number of owls. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3, but have also addressed 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 overflights, and other activities.

On the Coconino National Forest, past and present Federal, State, private, and other human activities what may affect the owl or its habitat include timber sales, prescribed burning, wildfires, recreational activities, development of recreation sites (campgrounds and trails), fuelwood gathering activities, livestock grazing, road construction, maintenance and widening, land exchanges, issuance of right-of-way, off-road vehicle use, and powerline construction and maintenance. In addition, the risk of catastrophic habitat loss due to fire is extremely high. Past wildfires such as the Hochderffer, Pot, and Pumpkin fires have modified thousands of acres of habitat and impacted several owl territories.

Status of the Mexican Spotted Owl and its Habitat in the Action Area

The Oak Creek Powerline Maintenance project is located within the Upper Gila Mountains RU as defined by the MSO Recovery Plan (USDI 1995). This RU contains the largest known concentration of MSO with approximately 55% of known MSO territories (USDI 1995). 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). This RU is located near the center of the MSO's range within the United States and is contiguous to four of the other five RUs within the United States. Because of its central location and its large and relatively continuous spotted owl population, the MSO Recovery Team believes that the population in this RU could be uniquely important to the overall stability and persistence of the MSO population in the United States. Specifically, this population could serve as the source population, providing immigrants to smaller, more isolated populations in other RUs. Although the Recovery Team has no data on dispersal patterns or movements between RUs, the Recovery Team believes that this population should be maintained at current levels and with at least the current level of connectivity within the RU (USDI 1995). Significant discontinuities that develop in the MSO's distribution within this RU, and the loss of habitat to support the local sub-populations, may compromise the recovery of the species.

Five MSO Protected Activity Centers (PACs) occur within ½ mile of the Oak Creek Powerline. A portion of the powerline is adjacent to the Sterling (040215), Lost (040607), and Banjo Bill (040608) PACs. The Pumphouse (040512) and Cave Springs (040601) PACs occur ½ and ¼ mile, respectively, from the powerline.

Survey data exist for the Sterling PAC beginning in 1990. While the PAC had pair occupancy, nesting status was unknown for 1990 and 1994. Surveys in 1991 resulted in a male response. One and two young were produced in 1992 and 1993 respectively. There was no response in 1995 or 1998 and the PAC was not surveyed in 1996, 1997, or 1999. Surveys conducted in 2000 in some portions of the PAC did not locate MSO (Janie Agyagos, Sedona Ranger District, pers. comm.). Responses from owls in the Sterling PAC to date have been concentrated above the rim at distances between ¼ and ½ mile from the powerline; however, 3 of 16 responses from past surveys occurred within ¼ mile of the powerline. No nest site(s) have been located in this PAC.

The Lost PAC was recently designated by the Forest Service based on 1998 MSO locations. The Forest Service indicates that two single owl responses were recorded in the area between Wilson Mountain and Sterling Canyon, over ½ mile from the powerline. A 910-acre PAC has been designated. The PAC was not surveyed in 1999 or 2000 and no nest or roost sites have been located. Approximately ¼ mile of the Lost PAC boundary is located immediately adjacent to the powerline.

The Banjo Bill PAC was also recently designated based on 1998 MSO locations. The Forest Service indicates that two single owl responses were recorded west of Banjo Bill Campground, within $\frac{1}{4}$ and $\frac{1}{2}$ mile, respectively, of the powerline. A 650-acre PAC has been designated. The PAC was not surveyed in 1999 or 2000 and no nest or roost sites have been located. Approximately $1\frac{1}{2}$ miles of the PAC boundary occurs immediately adjacent to the powerline.

The Pumphouse PAC was surveyed beginning in 1989. Males were detected in 1989, 1991, and 1992. While surveyed in 1990, there was no response. The PAC had pair occupancy in 1993, 1994, 1997, and 2000, but there were no young in 1993 and nesting status was unknown for 1994, 1997, and 2000 (Tammy Randall Parker, Peaks Ranger District, pers. comm.). Surveys were not conducted from 1995-1996 and 1998-1999. A nest site has not been located for this PAC. The southwest corner of the Pumphouse PAC is $\frac{1}{2}$ mile from the powerline.

The Cave Springs PAC had pair occupancy but nesting status was unknown for the years 1990 and 1991. Surveys in 1996 and 1998 detected males only. The PAC was not surveyed in the years 1992-1995, 1997, and 1999. A single survey visit in 2000 elicited an owl response (Janie Agyagos, Sedona Ranger District, pers. comm.). Owls in the Cave Springs PAC have been consistently detected in a side drainage of the West Fork of Oak Creek, over $\frac{1}{2}$ mile from the powerline. The eastern edge of the Cave Springs PAC is approximately $\frac{1}{4}$ mile from the powerline.

The Forest Service has identified all protected, restricted, and other forest and woodland habitat types in the project area. Due to the inaccessibility of owl habitat in Oak Creek Canyon and its side canyons, and the resulting absence of timber stand surveys, there are no data available to determine the stands where restricted habitat meets the conditions of target/threshold habitat as described in the MSO Recovery Plan. The inaccessibility of most of the side canyons of Oak Creek precludes the Forest Service from implementing management activities such as grazing, timber treatments, and prescribed fire. According to the MSO Recovery Plan, the purpose for determining the amount of target/threshold habitat is to protect nesting habitat where present and manage other stands to develop needed structure. Most of the land within the action area is non-manageable in terms of timber or fire treatments. Protected and restricted habitat have been identified to the extent possible without stand exams. The Forest Service indicates that their estimates have likely included other forest and woodland habitat in the category of protected or restricted habitat.

EFFECTS OF THE ACTION

The proposed action will result in the clearing of trees for a width of 40-feet under and around the powerline for this distance encompasses approximately 25 acres of disturbed area adjacent to MSO PACs and in protected habitat, restricted habitat, and other forest and woodland habitat. In order to minimize disturbance to nesting owls, the initial maintenance tree removal along the

powerline will not occur during the MSO breeding season (March 1 to August 31). Future maintenance will also be conducted outside the breeding season adjacent to the Sterling, Lost, and Bajo Bill PACs.

Within the five miles of powerline where tree removal will take place, approximately 1.65 miles are located within protected habitat (steep slopes), 2.9 miles are located within restricted habitat, and 0.5 miles are located within other forest and woodland habitat. Along this five miles of the powerline, 68 trees are proposed for removal. These trees fall into the following categories: 1) hardwoods of any size; 2) evergreens greater than 9 inches dbh in protected MSO habitat; or, 3) evergreens greater than 24 inches dbh in restricted MSO habitat.

The Forest Service indicates that the 68 trees scheduled for removal during initial maintenance of the powerline consist of 57 live trees ranging in size from 7 to 43 inches dbh; 55 of these trees are over 9 inches dbh; 26 of these trees are ≥ 24 inches dbh. One additional live tree consists of a 37-inch ponderosa pine tree that contains a raptor stick nest which could potentially be used by MSO for nesting. Ten snags are to be removed which range in size between 11 and 44 inches dbh, and consist of ponderosa pine, Douglas fir, and one alder. Three oaks (12-19 inches dbh) are scheduled for felling. Cavities or broken tops present in the snags or oak trees could potentially be used by nesting MSO. The Forest Service indicates that they are unable to correspond the type or size of the trees to be removed with their location in a particular habitat type such as protected or restrict habitat. Therefore, it is unclear exactly how many trees over 9 inches are to be removed in protected habitat, and how many trees over 24 inches are to be removed in restricted habitat. Trees will be removed in protected and restricted habitat that exceed the size limits detailed in the Recovery Plan recommendations.

The Recovery Plan indicates that stands which contain potential nesting/roosting habitat exhibit high tree basal area, large trees (>18 inches dbh), multi-storied canopy, high canopy cover, hardwoods, and decadence in the form of snags and down logs. The felling of 68 trees in this 25 acres under and adjacent to the powerline will result in a decrease in canopy cover, live tree basal area, and the number of large trees and snags in the immediate vicinity of this corridor. When coupled with the location of three PACs immediately adjacent to the corridor and that nest sites have not been located in these PACs to date, there exists the possibility that the initial clearing of trees along this powerline may impact current or future MSO nest groves or nest trees. The Service believes the possibility is relatively small, but if impacts to a nest tree(s) or nest grove(s) occurs through tree removal, this could result in deleterious effects to MSO nesting success.

In addition, the Forest Service indicates that future maintenance (from 2001 to 2016) will occur within the same five-mile corridor where the initial clearing work will take place. The number, species, and sizes of trees and snags to be removed in the future are not known. Future operation and maintenance activities can include removal of evergreens, hardwoods, and snags in protected and restricted habitat. All work would not occur within $\frac{1}{4}$ mile of a PAC during the breeding

season. The Service's concerns regarding future maintenance work has already been outlined in the paragraphs above.

Emergency maintenance activities conducted at any time of the year between 2001 and 2016 may require the use of chainsaws and other mechanized equipment adjacent to the Sterling, Banjo Bill and Lost PACs. The use of such mechanized equipment adjacent to these three PACs during the breeding season may disturb nesting MSO. The Service does not expect owls in the Pumphouse and Cave Springs PACs to be disturbed by emergency maintenance activities during the breeding season, as the boundaries of these PACs are $\frac{1}{4}$ and $\frac{1}{2}$ mile, respectively, from the powerline. In addition, although the Cave Springs PAC is proximate to the powerline, MSOs in this PAC have been consistently located in a side drainage over one mile from the Powerline, and a large ridge is present between the PAC and the powerline which will act as a buffer to noise.

Owls in the Sterling, Banjo Bill, and Lost PACs may be directly affected by disturbance caused by emergency maintenance activities of the proposed action because either owls have been located proximate to (with $\frac{1}{4}$ mile) the powerline, and/or potential nesting/roosting habitat is located proximate to the powerline. Nesting locations are unknown for these three PACs and monitoring has occurred sporadically in the recent past. Delaney et al. (1997) reviewed literature on the response of owls and other birds to noise and drew the following conclusions: 1) raptors are more susceptible to disturbance-caused nest abandonment early in the nesting season, 2) birds generally flush in response to disturbance when distances to the source are less than approximately 200 feet and when sound levels are in excess of 95 dBA, and 3) the tendency to flush from a nest declines with experience or habituation to the noise, although the startle response cannot be completely eliminated by habituation. Service policy is to limit disturbing activities within 1,320 feet of MSO nest sites during the breeding season (March 1-August 31). This corresponds well with the Delaney *et al.*'s 1,330-foot threshold for alert responses to helicopter flights. Emergency maintenance activities associated with this project will likely occur within 1,330 feet ($\frac{1}{4}$ mile) of potential nesting habitat during the MSO breeding season. Delaney *et al.* (1997) found that ground-based disturbances elicited a greater flush response than aerial disturbances.

Owls have more sensitive hearing than other birds (Bowles 1995). The Sterling, Banjo Bill, and Lost PACs are located immediately adjacent to the powerline where emergency maintenance activity will take place during the breeding season. If a noisy sound source (i.e., chainsaw) arouses an animal, it has the potential to affect its metabolic rate by making it more active. Increased activity can, in turn, deplete energetic reserves (Bowles 1995). Noisy human activity can cause raptors to expand their home ranges, but often the birds return to normal use patterns when the humans are not present (Bowles 1995). Such expansions in home ranges could affect the fitness of the birds, and thus their ability to successfully reproduce and raise young. Species that are sensitive to the presence of people may be displaced permanently, which may be more detrimental to wildlife than recreation-induced habitat changes (Hammitt and Cole 1987;

Gutzwiller 1995; Knight and Cole 1995). If animals are denied access to areas that are essential for reproduction and survival, then that population will decline. Likewise, if animals are disturbed while performing essential behaviors such as foraging or breeding, that population will also likely decline (Knight and Cole 1995).

Birds may respond to disturbance during the breeding season by abandoning their nests or young, by altering their behavior such that they are less attentive to the young, which increases the risk of the young being preyed upon, or by disrupting feeding patterns, or by exposing young to adverse environmental stress (Knight and Cole 1995). There is also evidence that disturbance during years of a diminished prey base can result in lost foraging time which, in turn, may cause some raptors to leave an area or not to breed at all (Knight and Cole 1995). The physical characteristics of the canyons in which the three PACs are located may assist in providing topographic screening. Topographic screening between the area of disturbance and the birds location creates a noise buffer, and may assist in the reduction of noise disturbance (Knight and Cole 1995). But, the physical structure of canyons can also tend to magnify disturbances and limit escape/avoidance routes for owls (Service 1995).

Research on all subspecies of the spotted owl indicate that it exhibits docile behavior when approached by researchers, and there is no clear evidence of significant impact by research activity except for a negative effect on reproduction from back-pack radio transmitters (Gutierrez *et al.* 1995). However, researchers purposefully make as little noise as possible, and disturbance is very limited in duration. In the long term, some species may become less responsive to human disturbance if they are not deliberately harassed; others may become very stress-prone towards humans (Bowles 1995; Hammitt and Cole 1987). Excessive interaction with humans may cause a lowering of call response rates or habituation; the effects of habituation on spotted owls are unknown (Gutierrez *et al.* 1995). Owls have been known to begin calling during the breeding season in response to the sound of human voices (Michele James, Service, personal observation). Such behavior is likely characteristic of a certain percentage of individuals, and this response to humans may create a situation where these owls are discovered by humans, thereby exposing themselves to potential direct impacts. The Service believes there is a risk that MSO associated with the Sterling, Banjo Bill, and Lost PACs will be affected as described above.

The potential for disturbance of unknown MSO nesting in areas outside of the five known PACs within the Oak Creek Powerline Maintenance project area is a small possibility. The highest quality nesting habitat in Oak Creek Canyon occurs on north and east facing slopes. All currently known owls in the Canyon are located on these slopes. Potential nest/roost habitat is present on the east side of the Canyon from the switchbacks to Slide Rock Canyon, but there have been no owl responses during past surveys; these surveys have been intermittent however, and have not occurred in recent years, therefore there is a small possibility that unknown owls are present. A review of the locations of this potential habitat as it relates to the powerline location, indicates that nearly all of it is located at least $\frac{1}{4}$ mile from the powerline itself. In addition, there is adequate space for MSO to be located between the Banjo Bill and Cave Springs PACs,

but the Forest Service indicates that the area contains some riparian habitat, but no mixed conifer or ponderosa pine, thus use by nesting owls is unlikely.

The Recovery Plan (USDI 1995) indicates that improved habitat conditions for MSO prey such as mice, woodrats, and voles can be accomplished through the retention and/or enhancement of large downed logs (> 12 inches diameter at midpoint), grasses, forbs, and shrubs. The cutting of trees along this five mile corridor adjacent to PACs will create numerous large downed logs (56 of the 68 trees to be cut are greater than 12 inches dbh) and slash piles. The felling of these trees will result in a more open canopy which may improve conditions for the growth of shrubs, grasses and forbs along this corridor. Thus, improved habitat for MSO prey species may result from the proposed project.

In summary, the Service believes that MSO associated with the Sterling, Banjo Bill, and Lost PACs could be adversely affected through impacts to nest grove and/or nest trees from initial clearing work (2000-2001) and future maintenance work (2001-2016) along the corridor. In addition, emergency maintenance (2001-2016) which has the potential to take place during the MSO breeding season adjacent to these three PACs has the potential to disturb nesting MSO. Conservation measures proposed by the Forest Service and the anticipated rarity of emergency maintenance activities should minimize the adverse affects.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, 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. In past Biological Opinions, it has been stated that, "Because of the predominant occurrences of MSO on Federal lands, 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 of minor impact." However, there has been a recent increase of harvest activities on non-Federal lands within the range of the MSO. In addition, future actions within the project area that are reasonably certain to occur include the alteration of habitat and the presence of humans at numerous residential areas and business establishments throughout the canyon, road building and widening, trail construction, aircraft overflights from private and commercial tours, 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 MSO, and would contribute as cumulative effects to the proposed action.

CONCLUSION

After reviewing the current status of the Mexican spotted owl, the environmental baseline for the action area, the effects of the proposed actions, and the cumulative effects, it is the Service's biological opinion that the Oak Creek Powerline Maintenance project as proposed, is not likely to jeopardize the continued existence of the MSO.

Critical habitat for the spotted owl was proposed on July 21, 2000 (65 FR 45336). If the Forest Service determines that the proposed maintenance project will destroy or adversely modify any areas of proposed critical habitat, conferencing with the Service should be initiated. Additional consultation may also be necessary for this project if the Forest Service determines that final designated critical habitat may be affected by maintenance and emergency work as outlined in this biological opinion; final critical habitat will be designated on or about January 15, 2001.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation 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 further defined by FWS 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 by FWS 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.

The measures described below are non-discretionary, and must be undertaken by the Forest Service so that they become binding conditions of any grant or permit issued to APS, as appropriate, for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest Service (1) fails to assume and implement the terms and conditions or (2) fails to require APS to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Forest Service must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

For the purposes of consideration of incidental take of MSO from the proposed action under consultation, incidental take can be broadly defined as either the direct mortality of individual birds, or the alteration of habitat that affects the behavior (i.e. breeding or foraging) of birds to such a degree that the birds are considered lost as viable members of the population and thus “taken.” They may fail to breed, fail to successfully rear young, raise less fit young, or desert the area because of disturbance or because habitat no longer meets the owl’s needs.

In past Biological Opinions, the management territory was used to quantify incidental take thresholds for MSO (see Biological Opinions provided by the Service to the Forest Service from August 23, 1993 through 1995). The current section 7 consultation policy provides for incidental take if an activity compromises the integrity of a PAC. Actions outside PACs will generally not be considered incidental take, except in cases when area that may support owls have not been adequately surveyed.

Amount or extent of take

The Service anticipates that two spotted owls (one pair) and/or associated eggs/juveniles will be taken during the 2001 to 2016 breeding seasons associated with the Sterling, Banjo Bill, or Lost PACs. The incidental take will be in the form of harm and harassment. As defined by the regulations at 50 CFR 17.3, harm includes 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 means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The Service anticipates that incidental take of MSO will be difficult to detect because owl day roosts, as well as the location of nest groves or structures, have proven difficult to locate in these three PACs. Any incident of harm or harassment is likely to be of limited extent and intensity, and therefore difficult to distinguish from normal behavior and difficult to document.

If, during project activities, the amount of extent of take is exceeded, the Forest Service must reinitiate consultation with the Service immediately to avoid violation of section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible or adverse impact on the species, as required by 50 CFR 402.14(i). An explanation of the causes of the taking will be provided to the Service.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

Reasonable and prudent measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of MSO:

1. The Forest Service shall monitor MSO associated with the Sterling, Banjo Bill and Lost PACs between 2001 and 2016.

Terms and conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

The following terms and condition is necessary to implement the reasonable and prudent measure.

- 1.1 The Forest Service shall monitor the Sterling, Banjo Bill and Lost PACs once every five years between 2001 and 2016 in an attempt to determine reproductive status and location of MSO.
- 1.2 The Forest Service shall provide the results of such monitoring to the Service by the end of the calendar year in which the monitoring took place.

The Service believes that no more than one pair of MSO will be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Forest Service must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

The Service will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended, if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

DISPOSITION OF DEAD, INJURED, OR SICK SPOTTED OWLS

Upon locating a dead, injured, or sick spotted owl, initial notification must be made to the Service's Law Enforcement Office, Federal Building, Room 8, 26 North McDonald, Mesa, Arizona (telephone: 480/835-8289) within three working days of its finding. Written notification must be made within five calendar days and should include the date, time, and location of the animal, a photograph, if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling specimens to preserve the biological material in the set possible state. If possible, the remains of intact owl(s) shall be provided to this office. If the remains of the owl(s) are not intact or are not collected, the information noted above shall be obtained and the carcass left in place. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should the treated owl(s) survive, the Service should be contacted regarding the final disposition of the animal.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA 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. Conduct monitoring of the MSO associated with the Sterling, Banjo Bill, and Lost PACs on a more frequent basis than once every five years, as required by term and condition 1.1.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the this biological opinion. 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 that was 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.

The Service appreciates your efforts to involve the Service early in the planning for this project, and in your willingness to negotiate conservation measures to minimize impacts to the MSO and its habitat. Thank you for your consideration of the threatened MSO. For further information, please contact Michele James in Flagstaff (520-527-3042) or Debra Bills in Phoenix (x239). Please refer to the consultation number 2-21-00-F-398 in future correspondence concerning this project.

Sincerely,

David L. Harlow
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, New Mexico Field Office, Albuquerque, NM
Forest Biologist, Coconino National Forest, Flagstaff, AZ (attn: Cecilia Overby)

John Kennedy, Habitats Branch, Arizona Game and Fish Department, Phoenix, AZ

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BIOLOGICAL OPINION SUMMARY

Oak Creek Powerline Maintenance

Date of opinion: October 20, 2000

Action agency: U.S. Forest Service, Coconino National Forest, Sedona Ranger District

Project: Oak Creek Powerline Maintenance. The powerline is five miles in length and located in Oak Creek Canyon between Sterling Springs Fish Hatchery and Slide Rock State Park. The proposed project includes initial large scale clearing of trees, routine maintenance of the powerline every year from 2001 through 2016, and emergency maintenance of the powerline from 2001 through 2016.

Location: Coconino County

Listed species affected: Mexican spotted owl (*Strix occidentalis lucida*)

Biological Opinion: Non-jeopardy for the Mexican spotted owl.

Incidental take statement:

Level of take anticipated: The Service anticipates incidental take will occur to one pair of Mexican spotted owls and/or their young during the 2001 through 2016 breeding seasons associated with the Sterling, Banjo Bill, or Lost PACs. This incidental take is in the form of harm caused by alteration of potential nesting groves or nesting structures in these three PACs, and harassment as a result of disturbance during the breeding season immediately adjacent to these three PACs in which nest sites have not been located. Exceeding this level may require reinitiation of formal consultation.

Reasonable and prudent measures: One measure is provided. Implementation of this measure through the terms and conditions is mandatory.

Terms and conditions: Terms and conditions implement reasonable and prudent measures and are mandatory requirements. Two terms and conditions are provided.

Conservation recommendations: One conservation recommendation is provided. Implementation of this conservation recommendation is discretionary.