

United States Department of the Interior

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In Reply Refer To:

AESO/SE

2-21-01-F-409

September 25, 2001

Mr. Ken Anderson
District Ranger
Beaver Creek/Sedona Ranger Districts
P.O. Box 300
Sedona, Arizona 86339

Dear Mr. Anderson:

This letter constitutes the U.S. Fish and Wildlife Service's biological opinion, based on our review of the wildfire suppression actions associated with the Sycamore Canyon Wildfire located on the Coconino National Forest, Coconino County, Arizona. This biological opinion analyzes the project's effects on the threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

We received your September 16, 1998, request for consultation on September 21, 1998. The Forest Service had made a determination that the suppression activities associated with the Sycamore Canyon Wildfire, "may have affected, but did not likely adversely affect" the MSO. The Fish and Wildlife Service cannot concur with the Forest Service's determination. However, the action did not likely jeopardize the continued existence of the MSO.

This biological opinion is based on information provided in the September 16, 1998, Biological Assessment and Evaluation, and electronic mail responses to our questions dated August 21 and August 31, 2001. A complete administrative record of this consultation is on file in the Arizona Ecological Services Field Office.

CONSULTATION HISTORY

Informal consultation on the Sycamore Canyon Wildfire began on August 3, 1998, when the Forest Service notified us of the incident and requested informal emergency consultation. The telephone message included specific information regarding the fire and the Taylor Cabin MSO protected activity center (PAC) (#040606) threatened by the wildfire. The Forest Service faxed a map of the PAC and the Sycamore Canyon Wildfire to us on August 5, 1998.

Although formal consultation was initiated in September of 1998, this opinion was not completed until now due to higher priority opinions for the Forest Service and other agencies.

After reviewing the BAE for the emergency action, we were unable to concur with the Forest Service's determination that suppression actions associated with the fire may have affected, but did not likely adversely affect, the MSO. On August 30, 2001, after we advised you that formal consultation is appropriate for this action, you agreed that we would formally consult with the Forest Service on the affects of the suppression actions associated with the fire.

BIOLOGICAL OPINION

DESCRIPTION OF THE EMERGENCY ACTION

A lightning strike on July 30, 1998, caused the wildfire in Sycamore Canyon within the Taylor Cabin PAC. On August 2, 1998, Forest Service personnel conducted a reconnaissance of the wildfire and decided to allow the wildfire to burn without intervention. On August 3, 1998, the Sycamore Canyon wildfire was still small (approximately 2 acres) and the Forest Service determined that the fire did not threaten a 260 kV powerline within 0.5 mile of the fire, nor was there a threat to the public's safety. At that time the fire was burning slowly and moving downhill into the chaparral and farther into the MSO PAC.

On August 3, the district wildlife biologist was informed that the wildfire was burning in the Taylor Cabin PAC and that the winds had shifted, temperatures had increased, and relative humidities had decreased resulting in a hotter, more active fire. The fire was no longer moving downhill, but towards the powerline to the south and east. It was at this time that the incident commander and the acting District Ranger assigned a Type III Team to the fire to attempt to contain the fire in order to protect the powerline. The incident commander chose to set a backfire to protect the powerline based on the direction the fire was moving. The backfire burned approximately 25-30 acres outside the MSO PAC (primarily chaparral habitat). By August 4, the fire had grown to approximately 100 acres, and was burning in chaparral and ponderosa pine/Douglas-fir vegetation within the PAC. The burned area contained possible nesting and roosting habitat as well as habitat unsuitable for nesting and roosting.

Minimum impact suppression tactics (MIST) were enforced to minimize the effects of suppression activities in MSO habitat and the Sycamore Wilderness. The fire was declared contained at 100 acres on August 5. Fire suppression tactics continued until approximately noon on August 6, when thundershowers assisted suppression efforts.

Due to the rugged terrain and concern for firefighter safety, few suppression tactics other than water drops were employed. According to the BAE, damage to vegetation from water drops depends on the amount of water, the speed at which it was dropped, and the elevation from which it was dropped. The Forest Service believes that water drops may have resulted in broken tree tops, broken tree limbs, and toppled snags.

The majority of interior work was conducted on slopes <40% just outside the PAC boundary. Less than 10 Gambel oak trees >5 inches diameter at root collar were cut because most of the Gambel oak had already ignited. Approximately 0.25 mile of fireline was constructed outside the PAC. These handlines were approximately 24 inches wide and were routed around trees. Approximately 25-30 acres were backfired in order to protect the powerline. This occurred outside the PAC on slopes <40%. Mop-up procedures were conducted approximately 130 feet inward from the perimeter of the fire and entailed using hand tools to scrape burning downed logs and to dig out burning roots, and using pumps and dirt to suppress flames. A bulldozer graded approximately three miles of the existing Forest road 438B outside of the Taylor Cabin PAC. No suppression activities were conducted after dark. According to the incident commander, approximately 60% of all downed logs and snags within the fire perimeter, not just the intentionally backfired area, were lost (BAE and August 21, 2001 electronic mail correspondence).

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 Recovery Plan for the Mexican Spotted Owl (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, well-structured forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico.

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 Recovery Unit (RU) alone.

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 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.

The range of the MSO has been divided into six RUs, as discussed in the Recovery Plan. 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. At this time, the greatest concentration of known owl sites in the United States occurred in the Upper Gila Mountains RU (55.9%), in which this project is located. Similarly, the Forest Service reported a total of approximately 935 PACs established on National Forest lands in the Southwestern Region, with 542 PACs (58%) in the Upper Gila Mountain RU (USDA Forest Service, Southwestern Region, February 28, 2001).

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 east 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). Most habitat within this RU is administered by the Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila national forests. The north half of the Fort Apache and northeast corner of the San Carlos Indian Reservations are located in the center of this RU and also support MSOs.

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).

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.

In 1996, the Fish and Wildlife Service 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 92 of those PACs located in the Upper Gila Mountains RU. To date, consultation on individual actions under the amended Forest Plans have resulted in 89 PACs adversely affected, with 50 of those in the Upper Gila Mountains RU.

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 one of these projects (release of site-specific owl location information) has resulted in a biological opinion that the proposed action would likely jeopardize the continued existence of the MSO.

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

The Taylor Cabin PAC was first surveyed in 1990, and a pair of MSO, nesting status unknown, was located. The Forest Service delineated a management territory which they later modified into a PAC comprised of 728 acres of mixed conifer, pine/oak woodland, and chaparral cover types. The site was informally monitored in 1992, and no owls were detected. There are no known nest or roost locations for the site, which has not been monitored since 1992. Approximately 75 acres within the PAC were burned during the Sycamore Canyon fire.

Possible Effects of the Wildfire

Wildfires within owl habitat during the breeding season may result in the direct death of adult and young MSOs. Death of MSOs may also occur due to loss of nest/roost trees caused by crown fires. If a wildfire occurs in such habitat during the breeding season, the fire may result in the loss of owl nests as well as young owls which may not be able to fly to safety. In addition, the effects of smoke on adult and young owls is largely unknown and may directly affect the health of owls or the ability of owls to forage successfully, and therefore may affect the ability of adults to survive and/or successfully fledge young. The result of a stand-replacement wildfire in large areas of nest/roost habitat would include the loss of the use of that habitat by MSOs for the year of the action and well into the future.

Effects of wildfires include the loss of MSO prey habitat components such as herbaceous cover, down logs, and snags. The effects of fire on the prey base of the MSO are complex and are likely dependent on the prey species involved, the variations in fire characteristics, and in the prey habitat involved. Fire intensity, size, and behavior are influenced by numerous factors such as vegetation type, moisture, fuel loads, weather, season, and topography. Fire can effectively alter vegetation structure and composition thereby affecting small-mammal habitat. The initial effects of fire are likely to be detrimental to rodent populations both through direct mortality and as cover and plant forage species are reduced.

EFFECTS OF THE ACTION

This section includes an analysis of the direct and indirect effects of the actions taken to suppress the fire, together with the effects of other activities that are interrelated and interdependent with this action, that will be added to the environmental baseline.

In addition to the direct loss of MSO nesting and roosting habitat caused by a wildfire, effects to owls may also result from the actions taken to suppress the fire. In most cases it is difficult to differentiate effects caused by wildfire and those caused by suppression actions. In addition, while it is probable that additional habitat damage may have resulted had suppression actions not been taken, it is impossible to assess what may have happened in absence of suppression activities. Thus, the discussion that follows describes the effects that may have resulted from the emergency action. We acknowledge that some of these possible effects may also have occurred in absence of suppression activities.

Suppression actions included back-burning to contain the wildfire and prevent its further growth, mop-up procedures, and the use of helicopters to drop water. Noise from all air operations, especially low-flying aircraft dropping water or retardant, can contribute to the disturbance of MSO. MSO could also be impacted through death or injury by water or retardant drops if nests or roosts receive direct hits. Additional general effects can include microhabitat alteration and increased edge effects along fire lines.

Taylor Cabin PAC

There are no known nest or roost site locations for the Taylor Cabin PAC. Therefore, it is possible that water drops, which occurred over 10% of the PAC and which resulted in broken tree tops and limbs and fallen snags, may have resulted in disturbance or injury to MSO. No backfiring or handline construction occurred within the PAC; however, mop-up procedures were conducted inwards approximately 130 feet from the perimeter of the fire. It is unlikely that handline construction, backfiring, and mop-up activities significantly affected the MSO.

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 are subject to the consultation requirements established under section 7 and, therefore, are not considered cumulative to the proposed action. Future actions within the project area that are reasonably certain to occur include power line maintenance, recreation, and other associated actions. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, 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.

CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is our biological opinion that the suppression action conducted for the Sycamore Canyon Wildfire did not likely jeopardize the continued existence of the MSO. This conclusion is based on the following:

- The incidental take anticipated in this opinion falls within the incidental take level anticipated in the non-jeopardy 1996 biological opinion for the MSO and the Forest Service Region 3 Forest Plan Amendments.

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 under section 3 of the Act 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 regulation (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 under 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 under 50 CFR 402.02 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) of the Act, 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 an Incidental Take Statement.

For the purpose of evaluating incidental take of MSO from the action under consultation, incidental take can be anticipated as either the direct mortality of individual birds, or the alteration of habitat that affects 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, we used the management territory to quantify incidental take thresholds for the MSO (see Biological Opinions provided to the Forest Service from August 23, 1993 through 1995). The current section 7 consultation policy provides for incidental take if an activity comprises the integrity of a PAC. Actions outside PACs will generally not be considered incidental take, except in cases when areas that may support owls have not been adequately surveyed.

Using available information as summarized within this document, we have identified conditions of possible incidental take for the MSO associated with suppression activity in the Taylor Cabin PAC. Although it is possible that some effects to the PAC may have resulted from the wildfire itself, it is the effects of the suppression actions which must be addressed in this emergency consultation. Based on the best available information concerning the MSO, habitat needs of the species, the project description, and information furnished by the Forest Service, take is anticipated for the MSO as a result of the following:

- 1) There are no known nest or roost site locations for the Taylor Cabin PAC. Therefore, it is possible that water drops, which occurred over 10% of the PAC and which resulted in broken tree tops and limbs and fallen snags, may have resulted in disturbance or injury to MSO.
- 2) The Sycamore Canyon wildfire resulted from a lightning strike, and the subsequent suppression action decisions contributed to 75 acres of protected MSO habitat sustaining an unknown loss of key habitat components.
- 3) Although the BAE states that direct effects to MSO from suppression activities were negligible since any juvenile MSO present would have been capable of dispersal, juvenile MSO tend not to disperse until mid-September to early October. In late July and early August, juvenile MSO are not likely to have dispersed and may have been exposed to injury or forced movement resulting in injury, exposure to predators, or other adverse effects.

AMOUNT OR EXTENT OF TAKE

This biological opinion anticipates the following forms and amount of take in regard to the emergency action:

One pair of MSO and/or associated juveniles in the form of direct mortality, harm, or harassment.

EFFECT OF THE TAKE

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

Incidental take statements in emergency consultations do not include reasonable and prudent measures or terms and conditions to minimize take unless the agency has an on-going action related to the emergency (U.S. Fish and Wildlife Service 1998). The Forest Service has not advised us of any on-going actions related to the emergency.

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

DISPOSITION OF DEAD, INJURED, OR SICK MSO

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 best 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 the Act directs Federal agencies to utilize their authorities to further the purposes of 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 Taylor Cabin MSO PAC be monitored annually for at least five years and that the results of the monitoring be provided to us.
2. We recommend that the Forest Service monitor MSO PACs to locate nest and roost locations in PACs, and that 100-acre nest/roost buffers be established according to the methods described by Ward and Salas (2000) as outlined in a June 5, 2000 letter from the Fish and Wildlife Service Regional Director to Recovery Team Leader Dr. William Block (enclosed). These buffers should be considered when evaluating future suppression actions.
3. We recommend that the Forest Service pursue the completion of a forest-wide consultation on wildland fire use for resource benefit and wildfire suppression activities.
4. We recommend that the Forest Service involve the expertise of a resource specialist immediately following the initiation of a wildfire to aid in the protection of listed species and their habitat.

In order to keep us informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitat, we request notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in 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.

We appreciate your consideration of the threatened Mexican spotted owl. For further information, please contact Shaula Hedwall (928) 226-1811 or Steve Spangle (928) 226-0250 of our Flagstaff Suboffice. Please refer to the consultation number 2-21-01-F-409 in future correspondence concerning this project.

Sincerely,

/s/ David L. Harlow
Field Supervisor

Enclosure

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, New Mexico Field Office, Albuquerque, NM
District Ranger, Peaks Ranger District, Flagstaff, AZ (Attn: Connie Moen)
Forest Supervisor, Coconino National Forest, Flagstaff, AZ (Attn: Cecilia Overby)
John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

LITERATURE CITED

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