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AESO/SE
02-21-02-F-0199

January 19, 2003

Mr. Jim Golden
Forest Supervisor
Coconino National Forest
Supervisor's Office
2323 East Greenlaw Lane
Flagstaff, Arizona 86004-1810

Dear Mr. Golden:

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 Springer Fire 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 November 8, 2002, request for formal consultation on November 15, 2002. In this request, the Forest Service determined that suppression activities associated with the Springer Fire likely adversely affected the MSO.

This biological opinion is based on information provided in the November 8, 2002, Biological Assessment and Evaluation (BAE) and 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, wildfire suppression and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

Informal consultation on the Springer Fire began on May 20, 2002, when the Forest Service notified us of the incident and requested emergency consultation. The fire started on May 14, 2002, but we were not contacted until after the fire was suppressed. The Forest Service contacted us after the fire because due to mapping errors, it was not clear until after the fire was controlled, that it had burned in the Blue MSO protected activity center (PAC) (#040737). Although we did not talk directly during the fire about ways to minimize the effects of

suppression activities on MSO, we have coordinated with this District on similar wildfires, so we believe that the Forest Service was aware of key issues and appropriate minimization measures based on these prior experiences.

BIOLOGICAL OPINION

DESCRIPTION OF THE EMERGENCY ACTION

The Springer Fire was detected on May 14, 2002, and was declared a suspicious start of human origin. The fire started about 100 feet south of Highway 87, north of Little Springs (Township 14 North, Range 11 East, Section 18) and was driven by high winds and fed on drought stressed vegetation. The fire quickly spotted across the highway and burned rapidly to the north and east. Frequent torching and spotting are observed. The fire ran into the Blue Ridge Urban Interface Project Area, which was prescribe-burned in March 2002. This slowed the fire's progress as fuels were very light. Spot fires lit logs left in the prescribed burn area. As the fire was burning towards a subdivision containing 150 homes, fire crews burned the area southwest of Forest Road 211 to slow the fire and improve chances of holding the fire at the road. This strategy was successful. A few spot fires occurred north of Forest Road 211, but were quickly controlled by fire crews. Air tankers dropped many gallons of retardant on the first day of the fire.

Suppression activities began with initial attack efforts by District personnel aided by a small dozer, air-tankers, engines and water tenders, and 20-person fire crews. Driven by high southwest winds, the fire size approached 700 acres by the evening of May 14, 2002. As the night progressed, burnout was conducted along the northeast flank, from Forest Road 211. Concurrently, handline and dozer lines were constructed along the western flank. A type II team was called to manage the fire, including about 200 firefighters and support personnel, engines, water tenders, and helicopters. The Springer Fire was officially declared contained on the evening of, May 16, 2002.

Rehabilitation of the Springer Fire burn area included waterbarring and pulling duff and slash onto dozer and handlines.

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 (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 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 U.S. range of the MSO has been divided into six recovery units (RU), as discussed in the Recovery Plan. The Recovery Plan reports an estimate of owl sites for 1990-1993. At that 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 980 protected activity centers (PACs) established on National Forest lands in the Southwestern Region, with 618 PACs (63%) in the Upper Gila Mountains RU (USDA Forest Service, Southwestern Region, December 19, 2002).

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). 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).

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 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 194 PACs adversely affected, with 83 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. In total, we have anticipated that approximately 264 PACs would be adversely impacted by Federal actions, with 127 of those in the Upper Gila Mountain RU.

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 within the action area

The Blue PAC (#040737) was delineated after an owl was located during the summer of 2000. The site was informally monitored in 2001, and no owls were detected. However, a dead MSO was located on Highway 87 adjacent to the PAC on October 4, 2001. The 2000 roost location is approximately 0.75 mile from the portion of the fire south of the highway and approximately 0.3 mile from the fire on the north side of Highway 87. The roost location was not impacted by the fire or suppression activities associated with the fire. The Springer Fire started within the Blue PAC and burned approximately 80 acres within the PAC. Most of the fire impacts to the Blue PAC occurred during the first eight hours of burning. Suppression activities included building approximately 1.0 mile of dozer line within the PAC, felling burning snags and trees within the PAC, and mopping up smoking stumps and logs for several days afterward.

B. Factors affecting species' environment within the action area

Actions within the project area that affect MSO include both domestic and wild ungulate grazing, development resulting in more people and traffic, 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 Blue PAC is located within the Bar-T-Bar Range Allotment. At this time, we do not have information regarding livestock access and use of protected habitat within the PAC. Most of the PAC is located on relatively steep slopes (approximately 30% slopes), but the PAC is adjacent to, and includes portions of, relatively flat areas that may be used by livestock. Development and urban growth is occurring throughout this area and the Blue PAC is bordered by private property and Highway 87. On October 4, 2001, a dead MSO was located on Highway 87, adjacent to the Blue PAC. It appeared that the owl was killed by a vehicle. The private property adjacent to the PAC was planned for logging, but we have no information regarding any hauling on Forest Service roads through the PAC that may have occurred from this action. Fuels reduction treatments, though critical to reducing the risk of catastrophic wildfire, may also have short-term adverse effects to MSO through habitat modification and disturbance. Currently, the closest fuels reduction project to the Blue PAC is the Blue Ridge Urban Interface Project (Consultation #02-21-00-F-0373). The project included prescribed burning of approximately 481 acres of the Blue Ridge PAC (#040705), immediately adjacent to the Blue PAC. We did not anticipate any incidental take for MSO from this action based on the Forest Service's implementation of the Recovery Plan guidelines for all actions in the Blue Ridge PAC and implementation of conservation measures which included surveying unoccupied potential habitat prior to habitat altering activities.

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 the 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 the absence of suppression activities.

Suppression actions included approximately one mile of dozer line within the PAC, mop-up procedures, and the use of air-tankers to drop water. Noise from all air operations, especially low-flying aircraft dropping water or retardant, can contribute to the disturbance of MSO. Low-level flights have the greatest potential to disturb owls, because they move slowly and are relatively noisy (Delaney *et al.* 1997). 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.

Blue PAC

There is one known roost location in the Blue PAC and although no suppression activities occurred within 0.25 mile of the roost location, it is impossible to tell where owls may have been located during the fire and fire suppression activities. Suppression activities within the PAC included building approximately one mile of dozer line on the first day of the fire, water and retardant drops, felling burning snags and trees within the PAC, and mopping up smoking stumps and logs for several days afterwards.

Possible Effects of the Wildfire

The Springer Fire caused most of the physical impacts to the Blue PAC. Approximately 80 acres of the PAC were burned in a moderate to high intensity fire. Though the fire did not crown out within the PAC, individual trees received up to 100% scorch. Many of the trees that did not die immediately during the fire will die within the next year or two. These dead trees will provide future snags and logs. In addition, all ground vegetation and downed coarse woody debris was consumed by the fire.

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.

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 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, 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 Blue MSO PAC.

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 Springer Fire did not likely jeopardize the continued existence of the MSO. This conclusion is based on the following:

1. As reported in the BAE, suppression actions were restricted to one PAC.
2. Suppression actions likely resulted in short-term disturbance and/or harm to the Blue PAC and did not impact the long-term viability of the site for spotted owls.

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 Blue 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 is one known roost site location for the Blue PAC. Therefore, it is possible that water and retardant drops, which occurred over the PAC and which most likely resulted in broken tree tops and limbs and fallen snags, may have resulted in disturbance or injury to MSO. In addition, tankers flew over the known roost site on multiple occasions, which may have resulted in disturbance to owls at the site.
2. Construction of approximately one mile of dozer line within the PAC may have resulted in disturbance or injury to MSO and most likely removed large trees, snags, and coarse woody debris from the PAC thus reducing its suitability for nesting and/or roosting.

Amount or Extent of Take Anticipated

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 associated with the Blue PAC during the 2002 breeding season.

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, 2450 West Broadway Suite #113, Mesa, Arizona 85202 (telephone: 480/967-7900) 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 Blue 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. 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 of our Flagstaff Suboffice at (928) 226-1811 or Tom Gatz at (602) 242-0210 (x240). Please refer to the consultation number 2-21-02-F-0199 in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
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
District Ranger, Mogollon Rim Ranger District, Happy Jack, AZ (Attn: Larry Sears)
Wildlife Staff, Mogollon Rim Ranger District, Happy Jack, AZ (Attn: Cathy Taylor)
Forest Supervisor, Coconino National Forest, Flagstaff, AZ (Attn: Cecelia Overby)

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

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