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AESO/SE  
2-21-01-F-267

April 19, 2002

Memorandum

To: Superintendent, Grand Canyon National Park, Grand Canyon, Arizona

From: Field Supervisor

Subject: Biological Opinion for the Outlet Fire

This biological opinion responds to your request for formal consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated March 8, 2002, and received by us on March 12, 2002. This biological opinion addresses impacts on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) that resulted from emergency fire suppression activities associated with the Outlet Fire located in Grand Canyon National Park, Coconino County, Arizona. Although the fire also included lands administered by the Kaibab National Forest, no suppression actions affected MSO habitat on those lands.

This biological opinion is based on information provided in a biological assessment and evaluation of the Outlet Fire, additional requested information, telephone calls, email messages, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, wildfire, or wildfire suppression actions and their effects. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office.

CONSULTATION HISTORY

Details of the consultation history are summarized in Table 1.

Table 1. Summary of Consultation History

<i>Date</i>	<i>Event</i>
May 11, 2000	Informal consultation on the Outlet Wildfire began when we received an email message from the Kaibab National Forest regarding the fire and listed species.
May 15-19, 2000	We received several email messages and faxes from the Forest Service regarding the status of the wildfire.
May 29, 2000	We received a letter from Grand Canyon National Park regarding the wildfire, suppression actions that occurred, and listed species.
February 23, 2001	We sent an email message to Grand Canyon National Park regarding the Outlet Fire outlining our understanding that the Park would conduct the consultation for suppression actions for both the Park and Forest portions of the wildfire.
April 26, 2001	We received an April 23, 2001, letter from Grand Canyon National Park which included a biological evaluation of the suppression actions of the Outlet Fire, and a request for our concurrence with the Park's determination that the actions did not adversely affect the Mexican spotted owl.
May 22-September 17, 2001	Various discussions and information exchange occurred between us and Grand Canyon National Park and the Forest Service.
March 12, 2002	We received a March 8, 2002, letter from Grand Canyon National Park requesting formal consultation.

## **BIOLOGICAL OPINION**

### DESCRIPTION OF THE ACTION

The Outlet Fire began as a prescribed fire in Grand Canyon National Park on April 25, 2000 (Grand Canyon National Park undated). Due to changing weather conditions, managers decided to designate the burn as a wildland fire on May 9. A Type III organization began suppression actions early on May 10. Unusually strong winds and low humidity resulted in the fire spreading through 7,000 acres of mixed conifer forest on May 10 and 11. A Type II incident management team assumed control of suppression actions on May 11. It was replaced by a Type I team on May 13. Due to continued strong winds and low humidity, the fire crossed the Park boundary into the Kaibab National Forest and the Saddle Mountain Wilderness on May 14-16. This last

major run of the wildfire resulted in an increase in size to over 13,000 acres. The fire was declared contained on June 15 at a size of 13,885 acres (8,540 acres of Park Service land and 5,345 acres of Forest Service land). The action area analyzed for this project includes the entire 13,885 acres.

Suppression actions were extensive and involved over 1,200 personnel. Thirty-two miles of handline were constructed. Trees were removed in the construction of the handline. The handline was of standard construction (18-24 inches wide; depth to mineral soil). All handline was rehabilitated after the fire by pulling organic material back onto the line. No bulldozer line was constructed. Fifteen drop points were designated to support crews on the line.

Ten miles of fire perimeter were contained by aerial suppression supplied by a variety of aircraft. Three dip sites and three helispots were used to support the aircraft. Two of the dip sites and one of the helispots were located in meadows outside of previously developed areas. No vegetation was removed to create the sites.

Up to seven helicopters, two air tankers, and a lead airplane were used on the fire. Air traffic over the fire was heavy for much of the active burning period of the fire during May 10-21. Much of the air traffic was concentrated at the north end of the fire where suppression consisted of water and retardant drops.

## STATUS OF THE SPECIES

The MSO was listed as threatened on March 16, 1993 (USDI 1993). Critical habitat was designated for this species on June 6, 1995 but was later withdrawn. Although the project occurs in the area currently designated as critical habitat, it was not designated at the time of this project and is therefore not analyzed.

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 U.S. 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 U.S. 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 that time, the greatest concentration of known owl sites in the United States occurred in the Upper Gila Mountains RU (55.9%). 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 2001).

The Outlet Fire occurred in the Colorado Plateau Recovery Unit which, according to the Recovery Plan, contained 62 (8%) known U.S. owl sites from 1990-1993. The Colorado Plateau RU includes most of southern and south-central Utah, plus portions of northern Arizona, northwestern New Mexico, and southwestern Colorado.

MSO habitat appears to be naturally fragmented in this RU, with most owls found in disjunct canyon systems or isolated mountain ranges. In northern Arizona, MSO have been reported in both canyon and montane situations. Recent records of MSO exist for the Grand Canyon and Kaibab Plateau in Arizona, as well as for the Chuska Mountains, Black Mesa, Fort Defiance Plateau, and the Rainbow/Skeleton Plateau on the Navajo Reservation. In addition, records exist for the Zuni Mountains and Mount Taylor in New Mexico. Federal lands account for 44 percent of this RU. Tribal lands collectively total 30 percent, with the largest single entity being the Navajo Nation. Threats in this RU, according to the MSO Recovery Plan, include timber harvest; overgrazing; catastrophic fire; oil, gas, and mining development; and recreation.

## 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 in the action area to provide a platform to assess the effects of the action now under consultation.

### A. Past consultations on MSO

A total of 530 projects have undergone formal consultation for the owl. Of that aggregate, 260 projects resulted in a total anticipated take of 506 MSO plus an 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 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.

#### B. Status of the species within the action area

In 1998 and 1999, surveys for Mexican spotted owls, which included all of Grand Canyon National Park lands affected by the Outlet Fire, were conducted (Grand Canyon National Park undated). No MSO were detected during those surveys. Grasslands and shrub-steppes dominate the Colorado Plateau at lower elevations, but woodlands and forest dominate the higher elevations. Forest types in the woodland zone include ponderosa pine, mixed conifer, and spruce-fir. Conifers may extend to lower elevations in canyons. Deciduous woody species dominate riparian communities, and are most common along major streams.

#### C. Factors affecting species' environment within the action area

The wildfire burned 13,548 acres (Grand Canyon National Park undated). The Park reported that high-severity burn (tree crowns consumed) occurred in 23 percent (3,116 acres), moderate-severity (tree crowns scorched) occurred in 34 percent (4,606 acres), and low-severity (understory burn only) occurred in 39 percent (5,283 acres) of the area within the fire perimeter. Ten percent of the area within the fire perimeter was considered to be unburned. Tree mortality will probably approach 100 percent in the high-severity areas. Moderate-severity areas will probably exhibit patchy loss of large trees and canopy cover. Large-tree mortality and loss of canopy cover should be minimal in low-severity and unburned areas.

The wildfire resulted in approximately 837 acres of protected and 5,370 acres of restricted MSO habitat burned in Grand Canyon National Park. No protected or restricted habitat was burned in the portion of the wildfire on the Kaibab National Forest.

The MSO in the action area are managed by the National Park Service. Some factors affecting the species include recreation, timber management, and wildfire management.

#### EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Suppression actions associated with wildfires, depending on the actual actions and locations, can adversely affect Mexican spotted owl habitat and disturb owls. The Recovery Plan recommends that certain key components of Mexican spotted owl habitat be retained within the habitat. Mexican spotted owl key habitat components include very large trees (greater than 24 inches in diameter a breast height [dbh]), other large trees (18 to 24 inches dbh), large snags, large down logs, and hardwoods.

Effects to Mexican Spotted Owl Habitat

The actions conducted in suppressing the wildfire resulted in loss of key habitat components in MSO habitat (Table 2).

Table 2. Loss of key habitat components in Mexican spotted owl restricted habitat due to construction of handline (adapted from June 23, 2001, email correspondence from Grand Canyon National Park).

<i>Suppression Action Affecting MSO Habitat</i>	<i>Trees &gt; 24" dbh</i>	<i>Trees 12-24" dbh</i>
Loss of MSO key habitat components due to construction of 32 miles of handline	320 lost	960 lost

Handline construction resulted in the loss of 320 trees over 24" dbh, plus 960 trees in the 12-24" dbh size class. This resulted in adverse changes to MSO habitat. Loss of those key habitat components changes the structure, form, and character of MSO habitat. It reduces the value of the habitat to MSO and affects their ability to occur in and use it. Such loss of key habitat components can reduce the habitat below threshold conditions as recommended by the Recovery Plan. Trees removed as a result of line construction could also lead to loss of nest trees and/or roost trees. Death or injury of undocumented owls could have occurred as a result of falling trees. Additional general adverse effects can include microclimate alteration and increased edge effects along fire lines.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future actions within the project area that are reasonably certain to occur include recreational

activities, overflights, 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, most of these actions would occur on Federal land and/or be authorized by a Federal agency. Such actions would be addressed in other section 7 consultations as necessary.

## CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of emergency suppression actions associated with the Outlet Fire, and the cumulative effects, it is our biological opinion that the suppression actions associated with the Outlet Fire did not likely jeopardize the continued existence of the MSO. We present these conclusions for the following reasons:

- A relatively small portion of unoccupied Mexican spotted owl habitat was affected by the suppression actions.
- A relatively small proportion of Mexican spotted owl key habitat components was lost due to the suppression actions.

Critical habitat was designated for the MSO in the action area on February 1, 2001. Because the action occurred before that date, the action did not affect critical habitat.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is defined by regulation at 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 at 50 CFR 17.3 as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2) 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 this Incidental Take Statement.

## AMOUNT OR EXTENT OF TAKE

We do not believe that the action resulted in incidental take of any Mexican spotted owls.

### Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species, initial notification must be made to our 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.

## **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 Grand Canyon National Park continue surveying for the MSO, and that results of the surveys be provided to us and other tribal agency representatives on a regular basis.
2. We recommend that Grand Canyon National Park initiate and continue research to gain a comprehensive understanding of how wildfire affects the MSO, its habitat, and its prey.
3. We recommend that Grand Canyon National Park provide us with fire effects monitoring data, especially that regarding MSO key habitat components, as it becomes available.
4. We recommend that Grand Canyon National Park pursue the completion of a Park-wide consultation on wildfire suppression activities.

In order that we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.



### **REINITIATION - CLOSING STATEMENT**

This concludes formal consultation on the suppression actions associated with the Outlet Fire. 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.

For further information please contact Bill Austin (928) 226-0714 or Steve Spangle (928) 226-0250 of our Flagstaff Suboffice. Please refer to the consultation number, 2-21-01-F-267, in future correspondence concerning this project.

/s/ David L. Harlow

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (ARD-ES)  
Field Supervisor, Fish and Wildlife Service, Albuquerque NM

Forest Supervisor, Kaibab National Forest, Williams AZ  
District Ranger, North Kaibab Ranger District, Fredonia AZ  
John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix AZ

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