United States Department of the Interior
Fish and Wildlife Service
Arizona Ecological Services Field Office
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In Reply Refer To:
AESO/SE
2-21-98-F-344

September 22, 1998

Mr. Charles Bazan
Forest Supervisor
Tonto National Forest
2324 East McDonald Road
Phoenix, Arizona 85006

Dear Mr. Bazan:

This document transmits the Fish and Wildlife Service's biological opinion based on the Service's review of the Madera wildfire suppression actions located in Gila County, Arizona, and the emergency consultation on the effects of those actions on the Mexican spotted owl (*Strix occidentalis lucida*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). Your July 17, 1998, telephone request for formal consultation was received by Tom Gatz, Arizona Ecological Services Field Office, Phoenix, Arizona, and assigned Service emergency consultation number 2-21-98-F-344.

The Mexican spotted owl was listed as Threatened on March 16, 1993 (1993a). Critical habitat for MSO was designated by the Service on June 6, 1995, then revoked effective March 25, 1998 (1998). Currently, critical habitat is not designated for MSO.

This biological opinion is based on information provided in the August 4, 1998, biological assessment, the July 27, 1998, draft biological assessment, the telephone conversations of Tom Gatz, Thetis Gamberg (Service) and Mike Shirley (Globe Ranger District, Tonto National Forest), and other sources of information. A complete administrative record of this consultation is on file in this office. The Service has determined the Madera wildfire suppression actions "may affect, not likely to adversely affect" the Mexican spotted owl.

Consultation History

The Madera wildfire was detected burning on the northeastern side of Madera Peak after dry thunderstorms passed through the area the evening of July 16, 1998. Mike Shirley telephoned Tom Gatz July 17, 1998, with the information that the wildfire was burning within the boundaries of Mexican spotted owl (MSO) Protected Activity Center (PAC) number 120205, named Madera Peak North. Tom Gatz advised Mike Shirley to minimize impacts to the PAC if feasible, but not to compromise safety to life or property. Mike Shirley called Thetis Gamberg with wildfire updates, and on July 27, 1998, he sent a facsimile draft biological

assessment to the Service. The final biological assessment and evaluation, dated August 4, 1998, was received by the Service on August 6, 1998.

BIOLOGICAL OPINION

Project Description - Wildfire and Suppression Actions

The Madera Peak wildfire occurred approximately eight air miles southwest from Globe, in the southeastern part of Arizona. A relatively dry thunderstorm passed over the Pinal Mountains the evening of July 16, 1998. A fire lookout detected smoke on the northeast side of Madera Peak and an initial attack crew of six people hiked into the wildfire from Forest Road 580. After a two hour-plus hike into the site, located just inside the northeastern Madera Peak North MSO PAC boundary, the crew began handline construction. Located in T1S, R14 1/2E, Section 13, the SW 1/4 of the NE 1/4, the wildfire was burning in chaparral vegetation just below the ponderosa pine canopy on slopes ranging from 45% to 55% in grade. After reaching the fire at 0300 July 17, 1998, the crew constructed approximately 0.25 miles of handline around the wildfire perimeter while humidity levels rose during the night.

By 0700 July 17, 1998, the Incident Commander (IC) called in additional crews for firefighter safety because the wildfire showed strong potential for hot, uphill runs on the steep slopes. Two Type I air tankers, one Type III helicopter, one 20-person Type I crew, and one 20-person Type II crew were ordered. Air tankers arrived at 0730 and a total of four retardant drops between the two tankers were carried out on the five-acre fire. Standard safety flight levels (150 to 200 feet) and retardant drop practices were followed, and by 1100, the fire was 50% contained. Two crews and the helicopter (for water drops) were retained and assigned mop-up operations, aiming at total containment. Full control was achieved by 1800, July 18, 1998.

Conservation Measures

Best management practices with personnel safety emphasis was used to suppress the Madera wildfire. Natural topographic barriers (ridges, rock outcrops) and trails and roads were used as fireline anchor points during suppression actions and handline construction. Crews did their best to avoid cutting large (greater than 9 inch dbh) trees during suppression actions without compromising crew safety. Overflights of the PAC were kept to a minimum needed to aid suppression actions without compromise of life or property.

STATUS OF THE SPECIES

Species Description - Mexican spotted owl (MSO)

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 1993a) and in the Final MSO 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, 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 corresponding 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 MSO have been found within Forest Service Region 3 (including 11 National Forest in Arizona and New Mexico). Forest Service Regions 2 and 4 (including 2 National Forests in Colorado and 3 in Utah) support fewer owls. Per the MSO 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 the species has an affinity for older, well-structured forest, and MSO are 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 (RU), 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 absolute numbers of MSO throughout its entire range is not 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 (MT) 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. Table 1 displays the number of MTs and percentage of the total number of each Forest (U.S. Forest Service, *in litt.*, January 22, 1996).

Table 1. Number of management territories (MTs) as reported by the Forest Service (U.S. Forest Service, *in litt.*, January 22, 1996), percent of MTs as a proportion of the MTs in Forest Service Region 3, and the percent of suitable habitat surveyed in each Forest by National Forest (Fletcher and Hollis 1994).

National Forest	Number of MTs	Percent of MTs	Percent Suitable Habitat Surveyed
Apache-Sitgreaves	122	14.0	99
Carson	3	0.3	62
Cibola	43	5.0	41
Coconino	155	17.8	87
Coronado	108	12.4	49
Gila	197	22.7	50
Kaibab	6	0.7	96
Lincoln	126	14.5	90
Prescott	10	1.2	42
Santa Fe	33	3.8	44
Tonto	66	7.6	55
TOTAL	869	100	

The Forest Service has converted some MTs into PACs following the recommendations of the Draft MSO Recovery Plan released in March 1995. The completion of these conversions has typically been driven by project-level consultations with the Service and varies by National Forest.

The Madera wildfire occurred in the Basin and Range-West Recovery Unit. This RU is dominated by Madrean elements in vegetation and climate. It is bounded on its east side by the Continental Divide, by the U.S./Mexico border along the south, by the Colorado River along the west, and by the southern boundary of the Upper Gila Mountain RU along the north. Vegetation ranges from desert scrubland and semi-desert grassland in the valleys upwards to montane forests. Montane vegetation include interior chaparral, encinal woodlands, and Madrean pine-oak woodlands at low and middle elevations; with ponderosa pine, mixed conifer, and spruce-fir forests at higher elevations (MSO Recovery Plan, 1995).

MSO occupy a wide range of habitat types in this RU. Most owls occur in isolated mountain ranges where they inhabit encinal oak woodlands, mixed conifer and pine-oak forests, and rocky canyons. MSO are found primarily on Forest Service lands, with the majority of them located on the Coronado National Forest in southeastern Arizona.

ENVIRONMENTAL BASELINE
Rangewide

The Forest Service has formally consulted on 197 timber sales and other projects in Arizona and New Mexico since August 1993. These projects have resulted in the anticipated incidental take of 104 owls.

The Bureau of Indian Affairs has consulted on one timber sale on the Navajo Reservation which resulted in an anticipated take of five MSO, and a highway reconstruction which resulted in the anticipated incidental take of two MSO. The Federal Highway Administration has consulted on one highway project that resulted in an undetermined amount of incidental take. The take associated with this action will be determined following further consultation. The Department of the Navy consulted on an observatory project with an anticipated take of one MSO.

The biological opinion for the Kachina Peaks Wilderness Prescribed Natural Fire (PNF) Plan (#2-21-94-F-220) determined thresholds for incidental take and direct take as follows: 1) one spotted owl or one pair of spotted owl adults and/or associated eggs/juveniles; 2) harm and harassment of spotted owls located in up to two PACs per year; 3) disturbance to spotted owls and habitat modification of a total of seven PACs during the life of the Kachina Burn Plan related to management ignited fire occurring in PACs for which the nest site information is three or more years old; 4) harm and harassment of spotted owls and habitat caused by PNF for which adequate surveys have not been conducted, and; 5) harm and harassment of spotted owls and habitat modification of up to one PAC and 500 acres of potential nest/roost habitat caused by wildfire as an indirect result of PNF during the life of the Kachina Burn Plan.

The biological opinion for the Sedona Ecosystem Management Forest Plan Amendment (#2-21-98-F-209) anticipated that 1) two spotted owls and/or associated eggs/juveniles could be taken every other year associated with one PAC, and 2) one spotted owl and/or associated eggs/juveniles associated with five PACs, due to harassment.

Consultation with Langley Air Force Base (#2-22-96-F-334) for overflights in both New Mexico and Arizona concerning German Air Force operations at Holloman Air Force Base in New Mexico (for flights over the southern half of New Mexico, southwest Texas, and 40 square miles in eastern Arizona), determined that incidental take of MSO would occur due to harassment. The precise level of the take was impossible to predict due to lack of adequate data. However, incidental take is considered to be exceeded if 5% of monitored PACs are believed to have become nonfunctional through harassment from the overflights.

Action Area Environmental Baseline

The Madera Peak North MSO PAC is located on Madera Peak in the Pinal Mountains, eight air miles southwest of Globe on highway 70 in southeastern Arizona. It is public land, administered by the U.S. Forest Service, Tonto National Forest, Globe Ranger District. Historical uses in and around the PAC include a rest/rotation system of cattle grazing, an old road suitable for hiking or horseback riding (now too poor for vehicle or OHV traffic), and the cement foundation from a dismantled electronics site (Madera Peak). Approximately 50 head of domestic cattle are allotted grazing in the Madera Peak area, from June to when the snow begins, usually November. The allotment is rested one year, then grazed the following year. No recreational uses are known to occur in the PAC, and very little hiking is known to occur in the area.

EFFECTS OF THE ACTION

Effects of the action are effects that result from activities undertaken to suppress the Madera wildfire, which burned inside the boundary of the Madera Peak North MSO PAC. Because the Madera wildfire itself is not a discretionary action by a Federal agency, it is not a part of the action. Only actions taken to suppress the wildfire are addressed.

Approximately five acres of manzanita-dominated chaparral burned just inside the northeastern corner of the Madera Peak North MSO PAC boundary. Fire behavior was considered low to moderate, with small, "cooler" fires generally creeping along the ground or backing downslope. Manzanita chaparral, the dominant brushy vegetation, was cut to facilitate handline. Standard procedure for handline construction is to clear the ground to mineral soil approximately one and one-half lengths the width of the average flame length. Average flame lengths in this situation varied between six inches and two feet, and handline construction width averaged 18 inches. Total handline was estimated to be 0.25 mile around the perimeter of the wildfire.

Two trees greater than 9 inches diameter breast height (dbh) burned in the wildfire. These were confirmed by Mike Shirley to be approximately 16 inches dbh. One pine (probably the original, lightning-struck tree) fell on its own, and the other burned pine was cut down because it represented a hazard to crews working on the steep slopes below. Aircraft overflights of the PAC occurred for two days and included four tanker retardant drops and several water drops on the wildfire. Engines and crew traveled through the PAC on established Forest Service roads, and crews worked in the PAC to secure the wildfire perimeter. Fire suppression actions were contained to building perimeter handline and air tanker drops in the immediate fire area. No other activities, such as spike camps, fire caches, landing or parking zones, occurred in the PAC.

The Madera Peak North MSO PAC lies within the larger boundaries of the Basin and Range - West Recovery Unit designated by the MSO Recovery Plan (1995). This PAC is 606 acres; of

that, approximately five acres of manzanita chaparral that just edged up into pine at the top of the ridge was burned by this wildfire. Loss of two trees (one consumed, one fallen) did not alter the canopy composition. Burnt and partially consumed manzanita chaparral occurred on slopes of approximately 45% to 55%, and while some erosion may be expected, it is anticipated to be slight because fuels were not consumed to mineral soils.

In 1992, MSO surveys in this PAC found a nest site, located approximately 0.75 miles southwest from the Madera wildfire site. Nest sites were unknown for the 1993 through 1998 MSO breeding seasons. The 1998 surveys located two adult MSO in the PAC and their reproductive status was determined by qualified personnel to be non-nesting in July, 1998. Disturbance to the owls may have occurred despite their non-nesting status, as they may have been in the PAC or the area of the wildfire suppression actions. Noise, smoke, overflights, aircraft drops, vehicle travel and human presence all contributed to overall disturbance. Mike Shirley indicated MSO monitoring for the Pinal Mountains will begin again in 1999, probably under contract. Funding has been assigned to this project and wildfire and fuel reduction projects are to be scheduled.

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.

Actions by such entities are not expected to occur in or adjacent to the action area. Actions may occur on State, tribal or private lands adjacent to Forest Service lands, and thus, in or adjacent to the Recovery Unit. These actions could include urban development, logging, road building, fuelwood cutting, recreational and off-road activities, along with associated actions. These effects become cumulative over the entire MSO range, diminishing the nesting, roosting, and/or foraging habitat, disturbing owls during breeding seasons, and contributing to overall effects on the species.

CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the Madera wildfire suppression actions, and the cumulative effects, it is the Service's biological opinion that the Madera wildfire suppression actions, as implemented, is not likely to jeopardize the continued existence of the MSO.

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, 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 Service advised the Forest Service to minimize impacts within the MSO PAC during suppression efforts, but not to endanger life or property. The Service anticipates incidental take to be in the form of harassment, due to two and one-half days of smoke, vehicle travel, water and retardant drops, aircraft overflights, handline construction, and noise and disturbance from wildfire suppression actions. The roost and/or nest site is unknown for this MSO PAC. For these reasons, the Service anticipates incidental take to extend to two, or a pair of adult MSO associated with the Madera Peak North MSO PAC number 120205.

DISPOSITION OF DEAD OR INJURED LISTED ANIMALS

Upon locating a dead or injured threatened or endangered animal, initial notification must be made to the Service's Division of Law Enforcement, 26 North McDonald, Suite 105, Mesa, Arizona, 85201, phone number 602/835-1957, within three working days of its finding. The Service can advise as to handling of dead or injured listed species. Written notification must be made within five calendar days and include the time, date, and location of the animal, a photograph, and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. Injured animals should be transported to a qualified veterinarian by a qualified biologist. Should any treated listed animal survive, the Service should be contacted regarding the final disposition of the animal.

If feasible, the Service will ensure that the remains of intact specimens of listed animal species to be submitted to educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution prior to implementation of the action.

To the extent this statement concludes take of any threatened or endangered species of migratory bird that will result from the agency action for which consultation is being made, the Service will not refer the incidental take of any such migratory bird for prosecution under the

Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703-712), or the Bald Eagle Protection Act (BEPA) of 1940, as amended (16 U.S.C. 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

CONSERVATION RECOMMENDATIONS

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

The Service recommends:
1) effective monitoring of the Madera Peak North MSO PAC for the next two MSO breeding seasons to evaluate the wildfire and resulting suppression effects to MSO and habitat. MSO monitoring should strive to determine owl pair location and reproductive status. Habitat monitoring should show evidence (including photographs) of vegetative response to the wildfire and suppression actions.

2) conversion of all management territories into PACs, as recommended in the MSO Recovery Plan, should be completed for the Coronado National Forest. A Coronado National Forest map showing all PACs and updated PAC boundaries would greatly assist the Service in future consultations.

3) a Forest or Region-level programmatic consultation on fire suppression actions to efficiently implement future emergency consultations while avoiding, minimizing, or mitigating wildfire suppression actions on listed species.

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.

CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. The Service appreciates the quick and continuing notification from the Forest Service in regards to this and other emergency consultations. Please refer to consultation number 2-21-98-F-344 in future correspondence concerning this project. Please contact Thetis Gamberg or me with any questions or concerns at 602/640-2720.

Sincerely,

Tom Gatz
Acting Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (Attn: Steve Chambers)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
Wildlife Biologist, Fish and Wildlife Service, Flagstaff suboffice (Attention: Michele James)
Director, Arizona Game and Fish Department, Phoenix, AZ

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LITERATURE CITED

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