



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

SUMMARY

FINAL BIOLOGICAL OPINION ON THE EFFECTS TO THE MEXICAN SPOTTED OWL FROM THE PEÑASCO WILDFIRE SUPPRESSION ACTIVITIES, SACRAMENTO RANGER DISTRICT, OTERO COUNTY, NEW MEXICO

Cons. #2-22-02-F-662

Date of the final opinion: May 5, 2003

Action agency: Sacramento Ranger District, Lincoln National Forest

Project: This formal emergency consultation addresses the suppression of the Peñasco Wildfire and immediate rehabilitation efforts on the Sacramento Ranger District, Lincoln National Forest.

Species affected: Mexican spotted owl (*Strix occidentalis lucida*).

Emergency Biological Opinion: The emergency action of suppressing the Peñasco Wildfire did not likely jeopardize the Mexican spotted owl.

Incidental take statement: There is one Mexican spotted owl PAC that is anticipated to be taken in the form of harassment as a result of this emergency action.

Conservation Recommendations: Implementation of the conservation recommendation is discretionary. **One** conservation recommendation is provided.



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May 5, 2003

Cons. #2-22-02-F-662

Jose M. Martinez, Forest Supervisor
Lincoln National Forest
Federal Building
1101 New York Avenue
Alamogordo, New Mexico 88310-6992

Dear Mr. Martinez:

This responds to your August 6, 2002, letter (letter) requesting formal emergency consultation for the suppression of the Peñasco Wildfire and immediate rehabilitation efforts on the Sacramento Ranger District, Lincoln National Forest. The Biological Assessment (BA) evaluates the response to and the impacts of the emergency wildfire suppression efforts on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO). You have determined that the action "may affect, is likely to adversely affect" the Mexican spotted owl. This document represents our emergency biological opinion for the MSO in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

In your letter, you requested that we adjust the environmental baseline of the MSO to remove the anticipated take due to harm and harassment of two MSOs (one breeding pair) associated with issuing a special use permit to White Sands Forest Products (consultation number 2-22-96-F-081), because the permit was never issued. We appreciate the notification that the previously proposed action was not implemented. We have removed the anticipated take of these MSOs from the environmental baseline.

Consultation History

Informal emergency consultation was initiated on May 1, 2002, when the Forest Service notified us of the incident, requested emergency consultation, and identified MSO protected activity centers (PACs) that were threatened by the wildfire. During suppression activities, we recommended lessening the overall impacts to MSO habitat and PACs, if possible, without affecting wildfire suppression activities. Suppression activities discussed included constructing hand lines, lighting unburned areas between the handlines and the wildfire, and felling of burning trees and snags near the fire line. We also recommended that an evaluation of PACs potentially affected by the wildfire be completed if possible. On July 3, 2002, we recommended

that you complete the consultation for the Peñasco Wildfire and any related rehabilitation activities.

This emergency biological opinion is based on information provided in the BA; email and telephone conversations between our staffs; data in our files; data presented in the Recovery Plan for the MSO (USDI Fish and Wildlife Service 1995a); Forest Service regional MSO data; literature review; and other sources of information including the final rules to list the MSO as threatened (USDI Fish and Wildlife Service 1993; 58 FR 14248) and final rule to designate critical habitat (USDI Fish and Wildlife Service 2001; 66 FR 8530). References cited in this emergency biological opinion are not a complete bibliography of all literature available on the MSO. A complete administrative record of this consultation is on file at this office. We received all the information necessary to begin formal consultation on August 9, 2002, when you submitted an amended BA and requested formal emergency consultation.

DESCRIPTION OF THE EMERGENCY ACTION

The suppression activities are a result of the Peñasco wildfire started on May 1, and contained on May 8, 2002. The wildfire burned about 15,000 acres in 39 sections within T16S/R13E, T16S/R14E, T17S/R13E, and T17S/R14E. The wildfire burned about 9,600 acres of land administered by the Lincoln National Forest and 5,400 acres of non-Federal land within Otero County, New Mexico. The wildfire burned in an areas that includes five PACs: Greasy, Bear Lake, Cox Point, A-frame, and Seville. A detailed description of the Peñasco Wildfire and the immediate suppression activities are described in the BA (USDA Forest Service 2002b), and are hereby incorporated by reference.

The activities related to suppressing the Peñasco wildfire that may have affected the MSO or its habitat are:

1. 500 acres burned between the handlines and the fire;
2. retardant drops within PACs and nest stands;
3. the location of the heliport in the Aspen PAC and noise-related impacts; and
4. the construction of hand and dozer lines through the Seville PAC.

Additionally, immediate rehabilitation activities to protect property, watershed, and wildlife habitat resources included hand seeding and the construction of water bars using hand tools. Additionally, the immediate rehabilitation activities within and adjacent to PACs included contour felling of logs between 9 and 14 inches diameter at breast height (dbh), aerial seeding, and mulching.

STATUS OF THE SPECIES (range-wide)

Mexican spotted owl

The MSO was listed as threatened on March 16, 1993 (USDI Fish and Wildlife Service 1993; 58 FR 14248). Critical habitat for the MSO was designated on June 6, 1995 (USDI Fish and

Wildlife Service 1995; 60 FR 29914), but was subsequently withdrawn on March 25, 1998 (USDI Fish and Wildlife Service 1998; 63 FR 14378). Critical habitat was proposed again on July 21, 2000 (USDI Fish and Wildlife Service 2000; 65 FR 45336) and finalized on February 1, 2001 (USDI Fish and Wildlife Service 2001; 66 FR 8530). There is no critical habitat designated on Forest Service lands in New Mexico. Background and status information on the MSO is found in the Final Rule listing the MSO as a federally-threatened species (USDI Fish and Wildlife Service 1993; 58 FR 14248), previous biological opinions provided by us to the Forest Service, and the Recovery Plan (USDI Fish and Wildlife Service 1995a). The information on species description, life history, population dynamics, status, distribution, and range-wide trends provided in those documents is included herein by reference and is summarized below.

The American Ornithologist's Union currently recognizes three spotted owl subspecies, including the California spotted owl (*Strix occidentalis occidentalis*); Mexican spotted owl (*S. o. lucida*); and northern spotted owl (*S. o. caurina*). Unlike most owls, spotted owl have dark eyes. The MSO is distinguished from the California and northern subspecies chiefly by geographic distribution and plumage. The MSO is mottled in appearance with irregular white and brown spots on its abdomen, back and head. The spots of the MSO are larger and more numerous than in the other two subspecies giving it a lighter appearance. Several thin white bands mark an otherwise brown tail.

The *lucida* subspecies is a distinguishable taxon based on allozyme electrophoresis (Barrowclough and Gutiérrez 1990). Analysis of mitochondrial DNA shows further evidence that the three designated subspecies are valid. Despite the demonstrated phylogenetic relatedness, there is evidence of reduced gene flow between the subspecies, indicating the three subspecies should be treated as separate conservation units (Barrowclough *et al.* 1999).

The MSO has the largest geographic range of the three subspecies. The range extends north from Aguascalientes, Mexico, through the mountains of Arizona, New Mexico, and western Texas, to the canyons of southern Utah, and southwestern Colorado, and the Front Range of central Colorado. Because this is a broad area of the southwestern United States and Mexico, much remains unknown about the species' distribution within this range. This is especially true in Mexico where much of the MSOs range has not been surveyed. The MSO occupies a fragmented distribution throughout its United States range corresponding to the availability of forested mountains and canyons, and in some cases, rocky canyon lands. Although there are no estimates of the MSOs historic population size, its historic range and present distribution are thought to be similar.

According to the Recovery Plan (USDI Fish and Wildlife Service 1995a), 91 percent of MSOs known to exist in the United States between 1990 and 1993 occurred on land administered by the Forest Service; therefore the primary administrator of lands supporting MSOs in the United States is the Forest Service. Most MSOs have been found within Region 3, which includes 11 National Forests in New Mexico and Arizona. Forest Service Regions 2 and 4, including two National Forests in Colorado and three in Utah, support fewer MSOs. The range of the MSO is

divided into 11 Recovery Units, five in Mexico and six in the United States, as identified in the Recovery Plan (USDI Fish and Wildlife Service 1995a). The Recovery Plan also identifies recovery criteria and provides distribution, abundance, and density estimates by Recovery Unit. The Upper Gila Mountain Recovery Unit has the greatest known concentration of MSO sites (55.9 percent), followed by the Basin and Range-East (16.0 percent), Basin and Range-West, (13.6 percent), Colorado Plateau (8.2 percent), Southern Rocky Mountain-New Mexico (4.5 percent), and Southern Rocky Mountain-Colorado (1.8 percent) Recovery Units.

A reliable estimate of the number of MSOs throughout its entire range is not currently available due to limited information. Fletcher (1990) calculated that 2,074 MSOs existed in Arizona and New Mexico in 1990 using information gathered by Region 3 of the Forest Service. Fletcher's calculations were subsequently modified by us (USDI Fish and Wildlife Service 1991), who estimated a total of 2,160 MSOs throughout the United States. However, these numbers are not considered reliable estimates of current population size for a variety of statistical reasons, and a pilot study (Ganey *et al.* 1999) conducted in 1999, estimated the number of MSOs for the upper Gila Mountains Recovery Unit (exclusive of tribal lands) as 2,950 (95 percent confidence interval 717-5,183). While the number of MSOs throughout the range is currently not available, the Recovery Plan reports an estimate of MSO sites based on 1990-1993 data. An MSO "site" is defined as a visual sighting of at least one adult MSO or a minimum of two auditory detections in the same vicinity in the same year. Surveys from 1990 through 1993 indicate one or more MSOs have been observed at a minimum of 758 sites in the United States and 19 sites in Mexico. In addition, these surveys indicate that the species persists in most locations reported prior to 1989, with the exception of riparian habitats in the lowlands of Arizona and New Mexico, and all previously occupied areas in the southern States of Mexico.

In a summary of all territory and monitoring data for the 1995 field season, a total of 869 management territories (MT) were reported to us (U.S. Forest Service, *in litt.* January 22, 1996). Based on this number of MSO sites, total numbers in the United States may range from 869 individuals, assuming each known site was occupied by a single MSO, to 1,738 individuals, assuming each known site was occupied by a pair of MSOs. The 1996 data are the most current compiled information available to us; however, more recent surveys efforts have likely resulted in additional sites being located in all Recovery Units.

MSOs breed sporadically and do not nest every year. This MSOs' reproductive chronology varies somewhat across its range. In Arizona, courtship apparently begins in March with pairs roosting together during the day and calling to each other at dusk (Ganey 1988). Eggs are laid in late March or typically early April. Incubation begins shortly after the first egg is laid, and is performed entirely by the female (Ganey 1988). The incubation period for the MSO is assumed to be 30 days (Ganey 1988). During incubation and the first half of the brooding period, the female leaves the nest only to defecate, regurgitate pellets, or receive prey from the male, who does all or most of the foraging (Forsman *et al.* 1984, Ganey 1988). Eggs usually hatch in early May, with nestling MSOs fledging four to five weeks later, and then dispersing in mid-September to early October (Ganey 1988).

Little is known about the reproductive output for the MSO. It varies both spatially and temporally (White *et al.* 1995), but the subspecies demonstrates an average annual rate of 1.001 young per pair. Current demographic research in Arizona and New Mexico has documented populations that are declining at "greater than" 10 percent a year (Seamans *et al.* 1999). Possible reasons for the population declines are declines in habitat quality and regional trends in climate (Seamans *et al.* 1999). Based on short-term population and radio-tracking studies, and longer-term monitoring studies, the probability of an adult MSO surviving from one year to the next is 0.8 to 0.9. Juvenile survival is considerably lower, at 0.06 to 0.29, although it is believed these estimates may be artificially low due to the high likelihood of permanent dispersal from the study area, and the lag of several years before marked juveniles reappear as territory holders and are detected as survivors through recapture efforts (White *et al.* 1995). Little research has been conducted on the causes of mortality, but predation by great horned owls, northern goshawks, red-tailed hawks, and golden eagles, as well as starvation, and accidents or collisions, may all be contributing factors.

MSOs nest, roost, forage, and disperse in a diverse array of biotic communities. Nesting habitat is typically in areas with complex forest structure or rocky canyons, and contain mature or old-growth stands that are uneven-aged, multi-storied, and have high canopy closure (Ganey and Balda 1989a, USDI Fish and Wildlife Service 1991). In the northern portion of the range (southern Utah and Colorado), most nests are in caves or on cliff ledges in steep-walled canyons. Elsewhere, the majority of nests appear to be in Douglas fir trees (Fletcher and Hollis 1994, Seamans and Gutierrez 1995). A wider variety of tree species is used for roosting; however, Douglas fir is the most commonly used species (Ganey 1988, Fletcher and Hollis 1994, Young *et al.* 1998). MSOs generally use a wider variety of forest conditions (mixed conifer, pine-oak, ponderosa pine, piñon-juniper) for foraging than they use for nesting/roosting.

Seasonal movement patterns of MSOs are variable. Some individuals are year-round residents within an area, some remain in the same general area but show shifts in habitat use patterns, and some migrate considerable distances 12-31 miles during the winter, generally migrating to more open habitat at lower elevations (Ganey and Balda 1989b, Willey 1993, Ganey *et al.* 1998). Home-range size of MSOs appears to vary considerably among habitats and/or geographic areas (USDI Fish and Wildlife Service 1995a), ranging in size from 647 - 3,688 ac for individuals birds, and 945 - 3,846 ac for pairs (Ganey and Balda 1989b, Ganey *et al.* 1999). Little is known about habitat use of juveniles during natal dispersal. Ganey *et al.* (1998) found dispersing juveniles in a variety of habitats ranging from high-elevation forests to piñon-juniper woodlands and riparian areas surrounded by desert grasslands.

MSOs consume a variety of prey throughout their range but commonly eat small and medium sized rodents such as woodrats, peromyscid mice, and microtine voles. They may also consume bats, birds, reptiles, and arthropods (Ward and Block 1995, Ward 2001). Habitat correlates of the MSOs common prey emphasizes that each prey species uses a unique habitat. Deer mice (*P. maniculatus*) are ubiquitous in distribution in comparison to brush mice (*P. boyleyi*), which are restricted to drier, rockier substrates, with sparse tree cover. Mexican woodrats are typically found in areas with considerable shrub or understory tree cover and high log volumes or rocky

outcrops. Mexican voles (*Microtus mexicanus*) are associated with high herbaceous cover, primarily grasses; whereas, long-tailed voles (*M. longicaudus*) are found in dense herbaceous cover, primarily forbs, with many shrubs, and limited tree cover. A diverse prey base is dependant on the availability and quality of diverse habitats.

Past, current, and future timber harvest practices in Region 3 of the Forest Service, in addition to catastrophic wildfire, were cited as primary factors leading to the listing of the MSO as a federally threatened species. Other factors that have or may lead to the decline of this species include a lack of adequate regulatory mechanisms. In addition, the Recovery Plan notes that forest management has created ecotones favored by great horned owls, increasing the likelihood of predation on the MSO. Increases in scientific research, birding, educational field trips, and agency trips are also likely to increase. Finally, there is a potential for increasing malicious and accidental anthropogenic harm, and the potential for the barred owl to expand its range, resulting in competition and/or hybridization with the MSO.

Since the MSO was listed, we have completed a total of 91 formal consultations for the MSO. These formal consultations have resulted in a total anticipated incidental take of 251 MSO PACs plus an additional unknown number of MSOs. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3. However, 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 1996, the U.S. Fish and Wildlife Service (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 approximately 26 of those PACs located in the Basin and Range-West Recovery Unit (RU). To date, consultation on individual actions under the amended Forest Plans has resulted in 183 PACs adversely affected, with 58 of those in the Basin and Range-West RU.

ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the effects of the action on federally listed species, we are required to take into consideration the environmental baseline. Regulations implementing the Act (50 FR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the

consultation in progress. 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. We have defined the action area for this fire suppression activity to include the Basin and Range East Recovery Unit (USDI Fish and Wildlife Service 1995).

On the Lincoln National Forest, past and present Federal, State, private, and other human activities that may affect the MSO and its habitat include vegetation manipulations (various small sales, fuelwood gathering activities, salvage sales, and prescribed burns), livestock grazing, recreational activities, development of recreation sites (campgrounds) and scenic vistas, road construction and maintenance activities, land exchanges, issuance of rights-of way, off-road motorcycle events, and powerline construction. Forest management activities (timber sales, etc.) on adjacent Tribal and private lands, urban development in and around the Village of Cloudcroft, and fire suppression also affect the environmental baseline.

Other past and present Forest Service projects that may contribute to the environmental baseline are: the Wildland Urban Interface (WUI) programmatic biological opinion (2001), Sacramento grazing Allotment, Scott Able, and North Bluewater Allotment grazing permits (2000), Sacramento Allotment Management Plan and Environmental Impact Statement (2002), Bridge fire fuelwood salvage (1995), Fresno Canyon water pipeline (1993), and programmatic biological opinions for the Forest Service's Land and Resource Management Plans and existing forest plans and the MSO (USDI Fish and Wildlife Service 1996; 2003).

In addition, the risk of catastrophic habitat loss due to wildfire is extremely high. Past wildfires such as the Burgett, Bridge, and Scott Able wildfires, have modified thousands of acres of habitat and impacted multiple MSO territories. The Scott Able wildfire burned 16,034 acres, of which 14,551 were administered by the Lincoln National Forest and 1,483 acres were private land.

STATUS OF THE SPECIES (within the Action Area)

The entire Lincoln National Forest is within the Basin and Range East Recovery Unit. The Basin and Range East Recovery Unit contains the second highest concentration of known MSO sites (16 percent) in the United States. Because of the high concentration of MSOs, the Basin and Range East Recovery Unit has been referred to as an important MSO distribution center in the Recovery Plan. This subspecies occur in isolated mountain ranges scattered across the Basin and Range East Recovery Unit, but the largest portion of the MSO subpopulation occurs in the Sacramento Mountains. They are most common in mixed-conifer forest, but have been located in ponderosa pine forest and piñon/juniper woodland on a few occasions (Skaggs and Raitt 1988). This subspecies has been reported on National Forest lands in the Sandia, Manzano, Sacramento, and Guadalupe Mountains, as well as the Guadalupe National Park and on Mescalero Apache Tribal lands.

The range-wide population of the MSO is naturally fragmented into geographically distinct subpopulations. Because of its size and location, the Basin and Range East Recovery Unit likely

plays a very important role in the metapopulation dynamics of the MSO in the southwest (Stacey 2000). However, other authors believe that the MSO population in the Sacramento Mountains likely contributes very little to other subpopulations (e.g., see Ward 2001). Nevertheless, dispersal is the mechanism that connects subpopulations and the larger metapopulation (e.g., see Gutierrez *et al.* 1996; Ganey *et al.* 1998). Adult and subadult MSOs are relatively sedentary; however, juveniles almost always disperse from their natal sites (USDI Fish and Wildlife Service 1995a and references therein). Consequently, the key to maintaining connectivity between distinct subpopulations appears to be reproduction (i.e., the production of juveniles that are likely to disperse). It is likely that weather, habitat condition, the MSOs population structure, and prey availability all interact to influence variation in the MSOs reproductive performance (Ward 2001).

MSOs occurring in the Sacramento Mountains have been exposed to various disturbances for more than a century. Disturbances include forest fires and human disturbances, including timber and fuelwood harvest, grazing, land development, and recreation. Coniferous forests, especially the mixed-conifer, were extensively logged during an era of railroad logging from 1890 to 1945 (Glover 1984). After the railroad logging era, trees grew rapidly and attained merchantable sizes in about 40 to 50 years on favorable sites. Consequently, much of the habitat currently used by MSOs in the Sacramento Mountains is regrowth forest that has attained a high density of moderately sized trees, poles, and saplings, together forming multiple layers. According to the Recovery Plan, the greatest threats in the Basin and Range East Recovery Unit, in order of potential effects, are catastrophic fire, timber harvest, fuelwood harvest, grazing, human developments, and forest insects and disease. Other activities that are considered potential threats to the MSO include certain military operations, other habitat alterations (such as powerlines and roads), mining, and recreation. Recovery in this unit will require management and maintenance of existing and future populations by managing and conserving habitats in areas not only inhabited by MSOs, but also in unoccupied suitable or potentially suitable habitats.

MSO density within the Basin and Range East Recovery Unit is relatively high, but little is known about the population trend (USDI Fish and Wildlife Service 1995a). Currently, there appears to be fewer occupied PACs on the Sacramento Ranger District compared to the early 1990s (USDA Forest Service 2002a; Stacey 2000). However, the difference may be related to survey methods and corresponding survey efforts (e.g., informal monitoring results in substantially less survey effort than formal monitoring) (USDI Fish and Wildlife Service 1995a). As a complicating factor, PACs that are monitored are not a random sample of all existing PACs within the Basin and Range East Recovery Unit (USDI Fish and Wildlife Service 1995a). The Recovery Plan found that changes in occupancy rates of existing PACs does not provide for a valid inference about changes to the MSO population (USDI Fish and Wildlife Service 1995a). For example, on the Sacramento Ranger District in 2001, 53 of 109 PACs were not surveyed and 21 were informally monitored; but no MSOs were detected, whereas formal monitoring found that 33 PACs were occupied and 1 was unoccupied (USDA Forest Service 2002a). It is important to note that where formal monitoring was conducted, 97 percent of the PACs were found to be occupied. Alternatively, many of the PACs were not surveyed or the survey

procedures varied substantially among PACs. Thus, we came to a similar conclusion as the Recovery Plan, that changes in occupancy rates for PACs over the last decade may not reflect true changes in the MSO population and may only represent different levels of survey effort or other administrative factors. The monitoring program for a recently proposed study on MSO within the Sacramento Ranger District will use consistent survey methods to survey 90 PACs outside the proposed project area to provide additional data to analyze the effect of treatments on the MSOs (USDI Fish and Wildlife Service 2002b). These and other data will be essential to understanding the population trends of MSOs within the Basin and Range East Recovery Unit.

Currently, there are a total of 134 MSO PACs on the Lincoln National Forest. Of these, 109 PACs are on the Sacramento Ranger District, where the Peñasco Wildfire was located. Of these PACs, many have a variety of uses occurring in them including grazing, powerlines, winter recreation (e.g., snowmobile use), and other recreational uses (e.g., hunting, camping, hiking, etc.). On the Lincoln National Forest, mixed conifer habitat is considered either protected or restricted habitat as defined in the MSO Recovery Plan (USDI Fish and Wildlife Service 1995a). PACs and slopes greater than 40 percent (that have not experienced timber harvest in the last 20 years) are considered protected habitat.

There are six PACs that were affected by the Peñasco Wildfire. These PACs include Greasy, Bear Lake, Aspen, Cox Point, A-frame, and Seville. The current status of each PAC is briefly described below.

Greasy PAC #33

MSO were first located in Greasy in 1988. The site was informally monitored from 1988 to 1996, 1998 to 1999, and 2001. Pair occupancy was confirmed every year monitored except 1993, when a single MSO was found, and 1994, 1999, and 2001 when no MSOs were located. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, but no MSOs were located.

Bear Lake PAC #34

MSO were first located in Bear Lake in 1988. The site was informally monitored from 1988 to 1992, 1994, and 2001. Pair occupancy was confirmed in 1988 and 1992. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, but no MSOs were located.

Aspen PAC #39

MSO were first located in Aspen in 1988. The site was informally monitored from 1989 to 1992 and 2001. Pair occupancy has not been confirmed, but single MSOs were located in 1988 and 1989. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, but no MSOs were located.

Cox Point PAC #52

MSO were first located in Cox Point in 1988. The site was informally monitored from 1988 to 1994 and 1998 to 2001. One young MSO was produced in 1989, and pair occupancy was

confirmed in 1989, 1992, and 1993. Single MSOs were located in 1988, 1990, and 1991. No MSOs were located from 1998-2001. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, but no MSOs were located.

A-frame PAC #90

MSO were first located in A-frame in 1993. The site was formally monitored from 1993 to 1995 and informally monitored in 1998 and 1999. Pair occupancy was confirmed every year that it was monitored except 1995 and 1998. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, and a pair of MSOs with one nestling were located.

Seville PAC #103

MSO were first located in Seville in 1989. The site was formally monitored from 1990 to 1994 and informally monitored in 1989, 1995, and 1998. One young MSO was produced in 1991, and pair occupancy was confirmed from 1991 to 1995, and 1998. Single MSOs were located in 1989 and 1990. No MSOs were located from 1998 to 2001. This PAC was surveyed in 2002 after the fire and suppression activities had occurred, but no MSOs were located.

MSO occupancy and reproductive status for the six PACs in 2002 were unknown prior to the wildfire. If MSO were present and reproductively active, they could have had nestlings near the time of the fire initiation.

Approximately 12,291 acres that burned were considered suitable MSO habitat. The Peñasco Wildfire burned 514 acres within 5 PACs, 427 acres of mixed conifer at slopes greater than 40 percent and 2,144 acres of restricted habitat.

PAC	Acres	Acres Suitable roosting Pre-fire	Acres Burned	Acres of High Intensity Burn	Acres of Low Intensity Burn	Acres Suitable Roosting Post-fire
Greasy	614	590	8	4	4	586
Bear Lake	608	494	10	5	5	484
Aspen	625	382	0	0	0	382
Cox Point	605	518	62	7	55	511
A-Frame	602	506	4	0	4	506
Seville	614	573	430	280	150	293

EFFECTS OF THE ACTION

Suppression actions for the Peñasco Wildfire included back-burning 500 acres to contain the fire and prevent its further growth, cutting of trees and snags, the use of retardant drops within PACs and nest stands, the location and use of a heliport in the Aspen PAC, and the construction of hand and dozer lines through the Seville PAC. In addition to the direct loss of MSO nest/roost habitat caused by a wildfire, effects to MSOs may also be caused by 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 would 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. Many of these possible effects may also have resulted in the absence of suppression activities and could, therefore, be attributed to the fire.

Human activities in MSO habitat may also cause disturbance to MSOs. Disturbance may be caused by personnel digging fire lines, igniting vegetation, and monitoring fire conditions from the ground or air. Human disturbance of MSOs during the breeding season may result in failed reproduction, such as the abandonment of a nest and/or starvation of young. Back-burning operations may include igniting from a control point or line, falling dangerous trees and/or snags that are potential fuels, clearing brush or downed fuels, and limbing or thinning trees to reduce ladder fuels. In certain situations, pre-burn preparation is not possible, and the fireline set on fire downslope to burn fuels in the path of an approaching wildfire, resulting in the consumption and removal of fuels. Back-burning in MSO habitat can result in loss of key habitat components, contribute to the general disturbance of MSO, and even result in the loss of individual MSOs. Alternatively, many of these impacts may be short-term (e.g., see Bond *et al.* 2002).

Bulldozer and hand-line construction can result in modification of MSO habitat. Use of bulldozers, chainsaws, and other equipment to remove fuels can also result in significant losses of key habitat components. Trees removed as a result of fire line construction could also lead to the loss of nest or roost trees. Additionally, noise from air operations (e.g., helicopters), especially low-flying aircraft dropping water or retardant, can contribute to the disturbance of MSO.

Aspen PAC #39

A helicopter base was initially set up within this PAC. Approximately 32 take-offs and landings over an approximate 5-day period (i.e., May 1 to May 6) occurred within the PAC. No rehabilitation activities took place within this PAC.

Seville PAC #103

A fireline was constructed within this PAC using bulldozers and hand crews. The total amount of habitat affected by fireline construction is unknown because the wildfire burned much of this area. Consequently, the effects from the fireline construction are confounded with and likely overwhelmed by the extensive amount of habitat burned, which included approximately 430 of

the 614 acres (70 percent) of this PAC. We also note that the historic nest site was totally consumed by high severity fire.

It is not possible to determine what would have happened to the MSO or its habitat if suppression efforts had not taken place. It is possible that even more damage to the MSO and its habitat would have occurred if the Forest Service had not suppressed the fire. These activities directly lessen the impacts on the MSO and its habitat. However, we only address and evaluate the effects of suppression and immediate rehabilitation activities that were conducted, not what may have happened in the absence of the actions.

We conclude that the fire suppression activities that were conducted within Greasy, Bear Lake, A-frame, and Cox Point likely had no adverse affects on the MSO or its habitat. The wildfire burned portions of these PACs, but the effects attributable to the wildfire are not subject to consultation (50 CFR 402.05). The MSO within Aspen PAC was likely harassed by the placement of the helicopter base within the PAC. Nevertheless, the harassment of MSO was limited to approximately 32 take-offs and landings. The Seville PAC was severely burned by the wildfire. Consequently, the adverse affects of fire suppression were likely minor in comparison. Therefore, the effects to the Seville PAC are attributed to the wildfire and not to suppression activities.

We also must consider indirect effects and the effects of interdependent and interrelated actions of this emergency action to the MSO. Indirect effects are those that are caused by, or result from, the emergency action, and are later in time, but are reasonably certain to occur. Interrelated actions are actions that are part of a larger action, and are dependent on the larger action for their justification. Interdependent actions are actions that have no independent utility apart from the action under consideration. The rehabilitation activities are considered interrelated and interdependent to the implementation of the emergency action.

Greasy PAC #33

The only rehabilitation work that was conducted within this PAC was hand seeding and construction of water bars. Hand tools were used for both activities.

Bear Lake PAC #34

The only rehabilitation work that was conducted within this PAC was hand seeding and construction of water bars. Hand tools were used for both activities.

Cox Point PAC #52

The only rehabilitation work that was conducted within this PAC was hand seeding and construction of water bars. Hand tools were used for both activities.

A-frame PAC #90

The only rehabilitation work that was conducted within this PAC was hand seeding and construction of water bars. Hand tools were used for both activities.

Seville PAC #103

Rehabilitation work that was conducted within this PAC includes hand seeding, construction of water bars, log trash racks, mulching, aerial seeding, and log erosion barriers.

The potential for effects from these interdependent and interrelated actions from the emergency action are expected to be limited and not likely to result in take (e.g., cause avoidance/abandonment or lead to future unoccupancy of any PACs). Moreover, adjacent unoccupied areas (e.g., restricted habitat), are not expected to be altered or indirectly disturbed to the extent that the MSO will be affected.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions on endangered or threatened species or critical habitat that are reasonably certain to occur in the foreseeable future in the action area considered in this biological opinion. Future Federal actions that are unrelated to the action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Cumulative effects analysis as stated here applies to section 7 of the Act and should not be confused with the broader use of this term in the National Environmental Policy Act or other environmental laws.

In past biological opinions, it has been stated that, "Because of the predominant occurrence of the MSOs on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the MSO, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered of minor impact." However, there has been a recent increase of harvest activities on non-Federal lands (e.g., timber harvest on neighboring Mescalero Apache Nation, private land timber sales on inholdings in and around the Lincoln National Forest). In addition, future actions on non-Federal lands adjacent to the Forest Service lands that are reasonably expected to occur include urban development, road construction, land clearing, logging, fuelwood gathering, and other associated actions.

The area burned by the wildfire is located in the proximity of the Village of Cloudcroft, New Mexico. The area is interspersed by National Forest and non-Federal lands including Highways 82 and 130, existing infrastructure (e.g., powerlines), developed private campgrounds, and the Village of Cloudcroft and surrounding residential areas, where activities occur either seasonally or year-round. These activities reduce the quality and quantity of MSO nesting, roosting and foraging habitat, and cause disturbance to breeding MSOs and contribute as cumulative effects to the emergency action.

CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the emergency action, and the cumulative effects, it is the Service's biological opinion that the emergency action did not likely jeopardize the continued existence of the MSO. No critical habitat is currently designated for this species on Forest Service lands within the action

area; therefore, none will be affected. This conclusion was reached because the emergency action directly lessened the impacts on the MSO and its habitat.

INCIDENTAL TAKE

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 harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. Harass is further defined by us as intentional or negligent actions that creates 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, and sheltering. Harm is further defined by us to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action is not considered a prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Using available information as presented within this document, we have identified probable take for the MSO associated with the Aspen PAC. This anticipated take is based on suppression actions that must be addressed in an emergency consultation. Based upon 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 locating the helicopter base within this PAC.

Amount or extent of take

This emergency biological opinion anticipates the following form and amount of take:

1. Harassment of 1 PAC including 1 pair of MSOs (and associated eggs/young) from the location of the helicopter base and approximately 32 take-offs and landings.

Effect of the take

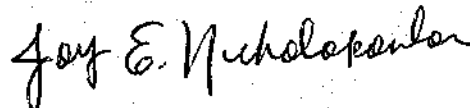
In this emergency biological opinion, the Service determined that this level of anticipated take did not likely jeopardize the continued existence of the MSO.

Incidental take statements in emergency biological opinions do not include reasonable and prudent measures or terms and conditions to minimize take unless the agency has ongoing action related to the emergency (USDI Fish and Wildlife Service 1998). The Forest Service has not advised us of any ongoing actions related to the emergency.

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 impact 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 future communications regarding this project, please refer to consultation #2-22-02-F-662. If you have any questions or would like to discuss any part of this biological opinion, please contact Eric Hein of my staff at (505) 761-4735.

Sincerely,



Joy E. Nicholopoulos
State Supervisor

cc:

Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office,
Phoenix, Arizona

Assistant Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services
Suboffice, Tucson, Arizona

Assistant Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services
Suboffice, Flagstaff, Arizona

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 an action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species. In order for us to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species and their habitats, we request notification of the implementation of the conservation recommendations. We recommend the following conservation recommendations be implemented:

1. We recommend that the Forest Service discuss a Forest-wide programmatic consultation on fire suppression and rehabilitation activities with the New Mexico Ecological Services Field Office.

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.

DISPOSITION OF DEAD OR INJURED LISTED ANIMALS

Upon finding a dead, injured, or sick individual of an endangered or threatened species (e.g., MSO), initial notification must be made to the nearest Service Law Enforcement Office. In New Mexico, contact (505/346-7828) or the New Mexico Ecological Services Field Office (505/346-2525). Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of listed animals shall 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 before implementation of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any treated listed animal survive, we should be contacted regarding the final disposition of the animal.

REINITIATION - CLOSING STATEMENT

This concludes formal emergency consultation on the Peñasco Wildfire, on the Sacramento Ranger District, Lincoln National Forest. As required by 50 FR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the

LITERATURE CITED

- Barrowclough, G.F., R.J. Gutiérrez, and J.G. Groth. 1999. Phylogeography of spotted owl (*Strix occidentalis*) populations based on mitochondrial DNA sequences: gene flow, genetic structure, and a novel biogeographic pattern. *Evolution* 53:919-931.
- Barrowclough, G.F., and R.J. Gutiérrez. 1990. Genetic variation and differentiation in the spotted owl (*Strix occidentalis*). *Auk* 107:737-744.
- Bond, M.L., R.J. Gutiérrez, A.B. Franklin, W.S. LaHaye, C.A. May, and M.E. Seamans. 2002. Short-term effects of wildfire on spotted owl survival, site fidelity, mate fidelity, and reproductive success. *Wildlife Society Bulletin* 30:1022-1028.
- Fletcher, K., and H. Hollis. 1994. Habitats used, abundance, and distribution of the Mexican spotted owl (*Strix occidentalis lucida*) on National Forest System Lands in the Southwestern Region. USDA, Forest Service, Southwestern Region, Albuquerque, New Mexico. 86pp.
- Fletcher, K. 1990. Habitats used, abundance, and distribution of the Mexican spotted owl, *Strix occidentalis lucida*, on National Forest system lands. U.S. Forest Service, Southwestern Region, Albuquerque, New Mexico. 86pp.
- Forsman, E.D., E.C. Meslow, and H.M. Wight. 1984. Distribution and biology of the spotted owl in Oregon. *Wildlife Monographs* 87:1-64.
- Ganey, J.L., W.M. Block, J.S. Jenness, and R.A. Wilson. 1999. Mexican spotted owl home range and habitat use in pine-oak forest: implications for forest management. *Forest Science* 45:127-135.
- Ganey, J.L., W.M. Block, J.K. Dwyer, B.E. Strohmeier, and J.S. Jenness. 1998. Dispersal, movements, and survival rates of juvenile Mexican spotted owls in Northern Arizona. *Wilson Bulletin*, 110:206-217.
- Ganey, J.L. and R.P. Balda. 1989a. Distribution and habitat use of Mexican spotted owls in Arizona. *Condor* 91:355-361.
- Ganey, J.L. and R.P. Balda. 1989b. Home-range characteristics of spotted owls in northern Arizona. *Journal of Wildlife Management* 53:1159-1165.
- Ganey, J.L. 1988. Distribution and habitat ecology of Mexican spotted owls in Arizona. MS Thesis. Northern Arizona University, Flagstaff, Arizona.
- Glover, V. J. 1984. Logging railroads of the Lincoln National Forest, New Mexico. Cultural Resources Management Report No. 4. USDA Forest Service, Southwestern Region Albuquerque, New Mexico. 65 pp.

- Gutierrez, R. J., M. E. Seamans, and M. Z. Peery. 1996. Intermountain movement by Mexican spotted owls (*Strix occidentalis lucida*). *Great Basin Naturalist* 56:87-89.
- Seamans, M.E., R.J. Gutiérrez, C.A. May, and M.Z. Peery. 1999. Demography of two Mexican spotted owl populations. *Conservation Biology* 13:744-754.
- Seamans, M.E. and R.J. Gutiérrez. 1995. Breeding habitat of the Mexican spotted owl in the Tularosa Mountains, New Mexico. *Condor* 97:944-952.
- Skaggs, R. W., and R. J. Raitt. 1988. A spotted owl inventory of the Lincoln National Forest, Sacramento Division, 1988. New Mexico Department of Game and Fish, Santa Fe. 12 pp.
- Stacey, P. 2000. The current status of the Mexican spotted owl in the Sacramento Mountains in New Mexico. Declaration in the United States District Court for the District of New Mexico. 10 pp.
- USDA Forest Service. (2002a) 2002. Annual report on the inventory and monitoring of the Sacramento Mountains checkerspot butterfly and Mexican spotted owls, Sacramento Ranger District. Lincoln National Forest, Alamogordo, New Mexico.
- USDA Forest Service. (2002b) April/May 2002. Biological Assessment for the Peñasco Wildfire and immediate rehabilitation efforts. Sacramento Ranger District, Lincoln National Forest. Alamogordo, New Mexico.
- USDI Fish and Wildlife Service. (2003) January 17, 2003. Final biological opinion: proposed rate of implementation of the grazing standards and guidelines in the June 1996 Forest Plan amendments for the National Forests in Arizona and New Mexico and its effects on the Mexican spotted owl, R2/ES-SE, Cons. # 000031RO, 02-02-94-F-0007. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.
- USDI Fish and Wildlife Service. 2001. Endangered and threatened wildlife and plants; final designation of critical habitat for the Mexican spotted Owl; Final rule. Federal Register 66:8530-8553.
- USDI Fish and Wildlife Service. (2001a) April 10, 2001. Biological opinion on the Forest Service's proposed wildland urban interface fuel treatments in New Mexico and Arizona, R2/ES-TE, CL 04-005. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.
- USDI Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants; proposed designation of critical habitat for the Mexican spotted Owl; Proposed rule. Federal Register 65:45336-45353.

- USDI Fish and Wildlife Service. 1998. Endangered and Threatened Wildlife and Plants; revocation of critical habitat for the Mexican spotted owl, loach minnow, and spikedace. Federal Register 63:14378-14379.
- USDI Fish and Wildlife Service. (1996) November 25, 1996. Final biological opinions: Mexican spotted owl and critical habitat and existing forest plans, U.S. Forest Service, Southwestern Region, 000031RO; Mexican spotted owl and critical habitat and forest plan amendments, 000032RO. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.
- USDI Fish and Wildlife Service. 1995. Endangered and threatened wildlife and plants; determination of critical habitat for the Mexican spotted Owl; Final rule. Federal Register 60:29914-29951.
- USDI Fish and Wildlife Service. 1995a. Recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*). Albuquerque, New Mexico. 85pp.
- USDI Fish and Wildlife Service. 1993. Endangered and Threatened Wildlife and Plants; Final rule to list the Mexican spotted owl as threatened. Federal Register 58:14248-14271.
- USDI Fish and Wildlife Service. 1991. Mexican spotted owl status review. Endangered species report 20. Albuquerque, New Mexico.
- USDI Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Act consultation handbook: procedures for conducting section 7 consultations and conferences.
- Ward, J.P., Jr. 2001. Ecological Responses by Mexican spotted owls to environmental variation in the Sacramento Mountains, New Mexico. PhD. Dissertation. Colorado State University, Fort Collins.
- Ward, J.P. Jr., and D. Salas. 2000. Adequacy of roost locations for defining buffers around Mexican spotted owl nests. Wildlife Society Bulletin 28:688-698.
- Ward, J.P. Jr., and W.M. Block. 1995. Mexican spotted owl prey ecology. *In* Mexican Spotted Owl Recovery Plan. U.S. Department of the Interior, Fish and Wildlife Service, Albuquerque, New Mexico.
- White, G.C., A.B. Franklin, and J.P. Ward, Jr. 1995. Population biology. *In* Mexican Spotted Owl Recovery Plan. U.S. Department of the Interior, Fish and Wildlife Service, Albuquerque, New Mexico.
- Willey, D.W. 1993. Home range characteristics and juvenile dispersal ecology of Mexican spotted owls in southern Utah. Unpubl. Rep. Utah Div. Wildl. Resour., Salt Lake City.

Young, K.E., R. Valdez, P.J. Zwank, and W.R. Gould. 1998. Density and roost site characteristics of spotted owls in Sierra Madre Occidental, Chihuahua, Mexico. *Condor* 100:732-736.

