United States Department of the Interior

FISH AND WILDLIFE SERVICE
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December 1, 2008

Cons. # 22420-2008-FE-0117

Richard E. Markley, Forest Supervisor
Gila National Forest
3005 E. Camino del Bosque
Silver City, New Mexico 88061

Dear Mr. Markley:

This responds to your October 16, 2008, letter requesting formal emergency consultation for the management of the lightning-caused Gallita Fire on the Quemado District, Gila National Forest (Forest). The Biological Assessment (BA), received in the US Fish and Wildlife Service (Service) office on October 20, 2008, evaluates the impacts of actions implemented during the management of the fire on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and its critical habitat. You determined that the completed action "may affect, is likely to adversely affect" the MSO and "may affect, is not likely to adversely affect" its designated critical habitat. This document represents our BO for the MSO in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

Concurrence

Based on information provided in your BA, we concur with your "may affect, is not likely to adversely affect" determination on MSO critical habitat for the following reasons:

The primary constituent elements of MSO critical habitat were minimally impacted during the suppression actions. Only a few small diameter (9 inches or less) ponderosa pine and oak trees were removed from the understory. Canopy closure and stand structure is still maintained within critical habitat. Only two large snags were felled during suppression actions. The remaining snags were left standing. Down wood and other fallen trees were moved away from the fireline but left in place in the stand and continue to function as prey species habitat. Herbaceous and shrub species were removed for fireline construction along 0.7 mile and 16 inches wide fireline. Understory species were burned during the fire but a diversity of grass and forbs remain in the stand.

Consultation History

Consultation began on June 19, 2008, when the Forest contacted the Service to initiate emergency consultation on the Gallita Fire. This BO is based on information provided in the October 16, 2008 BA, other information available to the Service, email and telephone conversations with your staff, data in our files; data presented in the Recovery Plan (USDI Fish and Wildlife Service 1995); 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 the final rule to designate critical habitat (USDI Fish and Wildlife Service 2004; 69 FR 53182). References cited in this BO are not a complete bibliography of all literature available on the MSO or on other subjects considered in this BO. A complete administrative record of this consultation is on file at this office.

BIOLOGICAL OPINION

I. Description of the emergency action

The Forest activities are a result of the management of the Gallita Fire that burned from June 18, 2008 to about June 27, 2008. The managed fire burned through about 23 acres. Vegetation types within the burned area were ponderosa pine, and a scattered oak understory. The Gallita Fire burned primarily with a low-intensity ground fire. Within the perimeter about 22 acres were in one MSO protected activity center (PAC) and all 23 acres were in MSO critical habitat. The fire was managed to achieve the resource objectives of reducing dead and downed fuels and ladder fuels, assist in restoring a fire-adapted ecosystem, and to reduce the risk of catastrophic wildfire (i.e., a large-scale stand replacing wildfire).

The Gallita Fire burned within the Bull #1 PAC prior to any actions being taken by the Forest. Suppression actions included the use of hand crews, construction of fire lines, felling of 2 snags and small diameter ponderosa pine and oak trees, and the application of 2,778 gallons of retardant from air tankers.

STATUS OF THE SPECIES (range-wide)

Mexican spotted owl

Listing/threats to survival

The MSO was listed as a threatened species in 1993 (USDI Fish and Wildlife Service 1993). The primary threats to the species were cited as even-aged timber harvest and stand-replacing wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The Fish and Wildlife Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan in 1995 (USDI Fish and Wildlife Service 1995). Another factor that contributed to declines included the lack of adequate existing regulatory mechanisms. The Recovery Plan (USDI Fish and Wildlife Service 1995) also notes that forest management has created habitats favored by great horned owls,

increasing the likelihood of predation. Other threats include the potential for increasing malicious and accidental anthropogenic harm (e.g., shooting and vehicle collisions), and for the barred owl to expand its range, resulting in competition or hybridization with the MSO.

Global climate change may also be a threat to the MSO (e.g., see GAO 2007). The global average temperature has risen by approximately 0.6 degrees Celsius during the 20th Century (Intergovernmental Panel on Climate Change 2001). Warming temperatures have been documented in recent decades in the southwestern United States. In New Mexico, mean annual temperature has increased by 0.6 degree per decade beginning in 1970, and warming is greatest in spring (Lenart 2005). High elevation environments influenced by snow, such as the Sacramento Mountains, and the uppermost limits of vegetation and other complex life forms, are among the most sensitive to climate changes occurring on a global scale (Thompson 2000). Studies have shown that since 1950, the snowmelt season in some watersheds of the western United States has advanced by about 10 days (Dettinger and Cayan 1995, Dettinger and Diaz 2000, Stewart et al. 2004). Such changes in the timing and amount of snowmelt are thought to be signals of climate-related change in high elevations (Smith et al. 2000, Reiners et al. 2003). The impact of climate change is the intensification of natural drought cycles and the ensuing stress placed upon high elevation montane habitats (Intergovernmental Panel on Climate Change 2001, Cook et al. 2004, Breshears et al. 2005, Mueller et al. 2005).

Life history

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 Fish and Wildlife Service 1993) and in the Recovery Plan (USDI Fish and Wildlife Service 1995). The information provided in those documents is included herein by reference. Although the MSOs 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, uneven-aged forest, and the species is known to inhabit a physically diverse landscape in the southwestern U.S. and Mexico.

The U.S. range of the MSO has been divided into six Recovery Units (RU), as discussed in the Recovery Plan (USDI Fish and Wildlife Service 1995). The primary administrator of lands supporting the MSO in the U.S. is the Forest Service. Most MSOs have been found within Forest Service Region 3 (including 11 National Forests in Arizona and New Mexico). Forest Service Regions 2 and 4 (including two National Forests in Colorado and three in Utah) support fewer MSOs. According to the Recovery Plan (USDI Fish and Wildlife Service 1995), 91 percent of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

Habitat impacts

Historical and current anthropogenic uses of MSO habitat include both domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction (e.g., timber, oil, gas), and development. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season. Livestock and wild ungulate grazing is prevalent throughout Region 3 National Forest lands and is thought to have a negative effect on the availability of grass cover for prey species. Recreation impacts are increasing on all forests, especially in meadow and riparian areas. There is anecdotal information and research that indicates that MSOs in heavily used recreation areas are much more erratic in their movement patterns and behavior. Fuels reduction treatments, though critical to reducing the risk of severe wildfire, can have short-term adverse effects to MSO through habitat modification and disturbance. As the population grows, especially in Arizona, small communities within and adjacent to National Forest System lands are being developed. This trend may have detrimental effects to MSO by further fragmenting habitat and increasing disturbance during the breeding season. West Nile Virus also has the potential to adversely impact the MSO. The virus has been documented in Arizona, New Mexico, and Colorado, and preliminary information suggests that MSOs may be highly vulnerable to this disease (Courtney et al. 2004). Unfortunately, due to the secretive nature of MSOs and the lack of intensive monitoring of banded birds, we will most likely not know when MSOs contract the disease or the extent of its impact to MSO range-wide.

Currently, high severity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. Uncharacteristic, severe, stand-replacing wildfire is one of the greatest threats to MSO within the action area. As throughout the West, fire severity and size have been increasing within this geographic area. Bond et al. (2002) described short-term effects of wildfires on MSOs throughout the species' range. The authors reported that relatively large wildfires that burned nest and roost areas appeared to have little short-term (1-year) effect on survival, site fidelity, mate fidelity, and reproductive success of MSOs, as rates were similar to estimates independent of fire. However, Elliot (1995), MacCracken et al. (1996), and Gaines et al. (1997) reported in some cases, large stand-replacing wildfires appeared to have a negative effect on MSOs. Jenness (2000) reported low- to moderate-severity fires did not adversely affect MSOs. Bond et al. (2002) hypothesized that MSOs may withstand the immediate, short-term effects of fire occurring at primarily low- to moderate-severities within their territory. The Forest Service reported similar results following the 2002 Lakes Fire in the Jemez Mountains of north-central New Mexico (USDA Forest Service 2003). Danney Salas (USDA Forest Service, pers. comm., 2003) reported that of the 10 PACs that are monitored within the footprint of the Scott Able Fire, MSOs were detected in 9 of them. He also reported that the same number of MSO pairs before and after the Bridge Fire were detected and reproduced within the burn area. He also indicated that there were two MSO nest areas found in areas where fire retardant (slurry) was used during suppression activities. Given historical fire

regimes within its range, the MSO may be adapted to survive wildfires of various size and severities. Therefore, prescribed burning and other forest management activities could be an effective tool to reduce fire risk and restore forests to natural conditions with short-term impacts to MSOs. For example, prescribed fire may prove useful in the creation or maintenance of habitat for MSOs or their prey (Gutierrez et al. 2003). Bond et al. (2002) cautioned that programmatic prescribed burning in MSO territories could not be justified solely on their observations. Manipulative experiments are needed to evaluate effects of fire (or other forest management activities) on MSOs (Bond et al. 2002).

Population dynamics

A reliable estimate of the numbers of MSOs throughout its entire range is not currently available (USDI Fish and Wildlife Service 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI Fish and Wildlife Service (1991) reported a total of 2,160 MSOs throughout the United States. Fletcher (1990) calculated that 2,074 MSOs existed in Arizona and New Mexico. However, Ganey *et al.* (2000) estimates approximately 2,950 ± 1,067 (SE) MSOs in the Upper Gila Mountains RU alone. The Forest Service Region 3 most recently reported a total of approximately 1,025 PACs established on National Forest lands in Arizona and New Mexico (B. Barrera, pers. comm. June 18, 2007). The Forest Service Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than National Forest lands have resulted in additional sites being located in all RUs.

Researchers studied MSO population dynamics on one study site in Arizona (n = 63 territories) and one study site in New Mexico (n = 47 territories) from 1991 through 2002. The Final Report, titled "Temporal and Spatial Variation in the Demographic Rates of Two Mexican Spotted Owl Populations," (*in press*) found that reproduction varied greatly over time, while survival varied little. The estimates of the population rate of change (Λ=Lamda) indicated that the Arizona population was stable (mean Λ from 1993 to 2000 = 0.995; 95 percent Confidence Interval = 0.836, 1.155) while the New Mexico population declined at an annual rate of about 6 percent (mean Λ from 1993 to 2000 = 0.937; 95 percent Confidence Interval = 0.895, 0.979). The study concludes that spotted MSO populations could experience great (>20 percent) fluctuations in numbers from year to year due to the high annual variation in recruitment. However, due to the high annual variation in recruitment, the MSO is then likely very vulnerable to actions that impact adult survival (e.g., habitat alteration, drought, etc.) during years of low recruitment.

Prey species and habitat

MSO foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, tops of canyon rims, and riparian areas (Gutierrez and Rinkevich 1991, Willey 1993). Ganey and Balda (1994) reported that MSOs foraged more frequently in unlogged forests containing

uneven-aged stands of Douglas-fir and white fir, with a strong component of ponderosa pine, than in managed forests.

The primary MSO prey species are woodrats (*Neotoma* spp.), peromyscid mice (*Peromyscus* spp.), and microtine voles (*Microtus* spp.) (USDI Fish and Wildlife Service 1995, Young et al. 1997, Delaney et al. 1999, Seamans and Gutierrez 1999). Mexican woodrats (*N. mexicana*) are typically found in areas with considerable shrub or understory tree cover and high log volumes, or rocky outcrops associated with pinon-juniper woodlands (Sureda and Morrison 1998 Ward 2001). Sureda and Morrison (1998) and Ward (2001) found deer mice (*P. maniculatus*) to be more abundant and widespread in the 60 to 100 year old stands of mixed-conifer forests. Mexican voles (*M. mexicanus*) are associated with mountain meadows and high herbaceous cover, primarily grasses whereas, long-tailed voles (*M. longicaudus*) are found in dry forest habitats with dense herbaceous cover, primarily forbs, many shrubs, and limited tree cover (Ward 2001). High levels of MSO reproductive success and production may be due to prey abundance (Delaney et al. 1999). Ward and Block (1995) documented an increase in MSO production when moderate to high levels of woodrats, peromyscid mice, and voles, were consumed. A diverse prey base is dependant on availability and quality of diverse habitats. MSO prey species need adequate levels of residual plant cover, understory cover, and high log volume. Therefore, a wide variety of forest and vegetative conditions are important to the MSO and its prey.

Consultations

Since the MSO was listed, we have completed or have in draft form a total of 196 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 406 PACs. The form of this incidental take is almost entirely harm or harassment, rather than direct mortality. These consultations have primarily dealt with actions proposed by Forest Service Region 3. However, in addition to actions proposed by 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 two of these projects (release of site-specific MSO location information and existing forest plans) have resulted in biological opinions that the proposed action would likely jeopardize the continued existence of the MSO. The jeopardy opinion issued for existing Forest Plans on November 25, 1997 was rendered moot as a non-jeopardy/no adverse modification BO was issued the same day.

In 1996, we issued a biological opinion on FS Region 3 adoption of the Recovery Plan recommendations through an amendment to their Land and Resource Management Plans (LRMPs). 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. In addition, on

January 17, 2003, we completed a reinitiation of the 1996 Forest Plan Amendments biological opinion, which anticipated the additional incidental take of five MSO PACs in Region 3 due to the rate of implementation of the grazing standards and guidelines, for a total of 156 PACs. Consultation on individual actions under these biological opinions resulted in the harm and harassment of approximately 243 PACs on Region 3 National Forest lands. Forest Service Region 3 reinitiated consultation on the LRMPs on April 8, 2004. On June 10, 2005, the Fish and Wildlife Service issued a revised biological opinion on the amended LRMPs. We anticipated that while the Region 3 Forests continue to operate under the existing LRMPs, take is reasonably certain to occur to an additional 10 percent of the known PACs on National Forest lands. We expect that continued operation under the plans will result in harm to 49 PACs and harassment to another 49 PACs. To date, consultation on individual actions under the amended Forest Plans, as accounted for under the June 10, 2005, biological opinion has resulted in the incidental take of MSOs associated with 39 PACs. Incidental take associated with Forest Service fire suppression actions, which was not included in the LRMP proposed action, has resulted in the incidental take of MSOs associated with 12 PACs.

I. 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.

a. Status of species within the action area

Mexican spotted owl

The Gila National Forest is within the Upper Gila Mountains RU and within the 2004 designated critical habitat for the MSO (69 FR 51382). The RU lies within the area known as the Mogollon Rim, from north-central Arizona to west-central New Mexico. The RU contains 42 percent private lands, 44 percent Federal lands, 3 percent State lands, and 11 percent Tribal lands.

Currently, catastrophic wildfire is probably the greatest threat to MSO within the Upper Gila Mountains RU. Fuel reduction treatments have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season. Fuels reduction treatments, though critical to reducing the risk of catastrophic wildfire, can have short-term adverse effects to MSO through habitat modification and disturbance.

The dominant land uses within the RU include timber management and livestock grazing. Recreational activities such as off-road driving, skiing, hiking, camping, and hunting are locally common within the RU (USDI Fish and Wildlife Service 1995).

b. Factors affecting species environment within the action area

Mexican spotted owl

The Upper Gila Mountains RU is a topographically complex area consisting of steep foothills and high plateaus dissected by deep, forested drainages. MSO habitat associated with this RU consists of pinyon/juniper woodland, ponderosa pine/mixed-conifer forest, some spruce/fir forest, and deciduous riparian forest in mid- and lower-elevation canyon habitat. The Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila National Forests administer most of the habitat within this RU.

Throughout the West, fire intensity and size have been increasing within this geographic area. Several high-intensity fires have had a large influence on MSO habitat in this RU in the last decade including the Rodeo-Chediski, BS Canyon, and the Rhett Prescribed Natural Fire. At least 11 percent of the PAC habitat within the RU has been affected by high-to moderate-intensity, stand-replacing fire in the last ten years. Heavy fuel loads contributed to these large-scale fires, which likely caused relatively short-term (3 to 5 years) adverse impacts on soils and water resources from fire-induced erosion and increased sediment delivery to streams.

The likelihood of MSOs occurring within the action area is very high. Informal and formal monitoring has confirmed MSO presence and one PAC was designated in 1993.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. Direct effects are the direct and immediate effects of the project on the species or its habitat. Direct effects result from the agency action including the effects of interrelated actions and interdependent actions. 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.

The Gallita Fire burned 23 acres of designated MSO protected and critical habitat. Included in this estimate is MSO habitat within one PAC. During the management of this fire, possible sources of effects to MSO included noise and human activity, exposure to fire retardant and modification of habitat.

Noise and Disturbance

Disturbance of MSO by noise and activity in the management of the Gallita Fire likely occurred. The Forest assumed that MSOs were present within the Bull #1 PAC, and were directly affected during suppression actions for nine days. Activities associated with managing this fire included the presence of personnel and the use of vehicles, chainsaws, and air tankers. Noise and activity can disturb the normal breeding, feeding, and sheltering behavior of MSO. Disturbance can result in reduced time at nests and caring for young, which could lead to lowered reproductive success. Disturbance can result in individuals feeding less efficiently in foraging areas, which could reduce survival. Disturbance can also result in individuals avoiding areas that would otherwise provide an appropriate microclimate and protection from predators. Alternatively, many of these impacts may be short-term (e.g., see Bond et al. 2002).

Retardant Drops

Retardant was dropped during suppression actions in the Bull #1 PAC. Forest staff surveyed the area after drops occurred and found no raptor sign. The area did not contain suitable MSO habitat where drops occurred in the PAC. Because the retardant used was water soluble and 2.3 inched of rain fell during the fire, its unlikely impacts occurred to MSO.

Habitat modification

Hand-line construction can result in modification of MSO habitat. Use of chainsaws, and other equipment to remove fuels can also result in significant losses of key habitat components (Delaney et al. 1999). Trees removed in the 23 acre perimeter and as a result of fire line construction during suppression actions were nine inches diameter or smaller and shrub species. Additionally, two large snags were felled for safety reasons. No other large trees or snags were removed. Following low-severity fire, vegetation structure remains unchanged and overstory vegetation is unburned. Unburned patches remain in the burn area. Following low-to-moderate-severity fire, foliage is partially scorched, but most overstory vegetation remains and there is limited overstory tree mortality. MSO habitat components are altered for the short term. Snags and downed logs are partially burned, and most ground cover is burned. There may be some loss of trees, particularly in the smaller size classes, and reduced canopy closure. Species diversity may also be reduced, at least on a temporary basis.

Cumulative effects

Cumulative effects include the effects of future State, tribal, local, or private actions on endangered species that are reasonably certain to occur in the fire suppression action area considered in this BO. Future Federal actions that are unrelated to the actions are not considered

because they require separate consultation pursuant to section 7 of the Act.

The area is surrounded by National Forest lands with a parcel of private land to the southeast. No known State, tribal, local, or private actions are reasonably certain to occur, therefore, cumulative effects are not anticipated.

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.

The implementation of the actions are not expected to impede the ability of the survival or recovery of the MSO within the Upper Gila Mountain Recovery Unit or range-wide.

We provide the following reason:

1. The Bull #1 PAC that was impacted by suppression activities represents less than 0.5 percent of the 618 PACs identified in the Upper Gila Mountains RU, and less than 0.5 percent of the 1,025 PACs located on National Forest lands in Arizona and New Mexico.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit take of endangered and threatened species, respectively, without special exemption. Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm means an act that actually kills or injures listed species. Such acts may include significant impairing essential behavior patterns including breeding, feeding, or sheltering. Harass means an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior that includes, but not limited to, breeding, feeding or sheltering. Incidental take is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. In section 7(b)(4)(iv) and section 7(o)(2), of the Act, incidental take not intended as part of agency action is not considered to be prohibited taking if taking meets the terms and conditions of this Incidental Take Statement.

For the purpose of evaluating incidental take of MSO from the action under consultation, incidental take can be anticipated as either the direct mortality of individual birds, or the alteration of habitat that affects behavior (i.e. breeding or foraging) of birds to such a degree that the birds are considered lost as viable members of the population and thus "taken." They may fail to breed, fail to successfully rear young, raise less fit young, or desert the area because of disturbance or because habitat no longer meets the MSO's needs. In past Biological Opinions,

we used the management territory to quantify incidental take thresholds for the MSO (see Biological Opinions provided to the Forest Service from August 23, 1993 through 1995). The current section 7 consultation policy provides for incidental take if an activity comprises the integrity of a PAC. Actions outside PACs will generally not be considered incidental take. We find that the MSO potentially occupying the Bull #1 PAC were adversely affected by the emergency actions due to disturbance from vehicles, fire crews and air tankers during the breeding season. The vegetation structure likely did not change, with overstory vegetation essentially unburned.

Amount or extent of take

The following forms and amount of take may have resulted from the emergency action:

1. One pair of MSO and/or associated juveniles in the form of harassment from vehicles, fire crews and air tankers during the breeding season.

Effect of the take

In this emergency BO, the Service determined that this level of anticipated take did not 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 actions related to the emergency (U.S. Fish and Wildlife Service 1998). The Forest Service has not advised us of any ongoing actions related to the emergency.

The Fish and Wildlife Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. Sections 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. Sections 668-668d).

Disposition of dead or injured listed animals

Upon finding dead, injured, or sick individual endangered or threatened species, 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 date, time, and location, 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, remains of intact specimens of listed species will be submitted to educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, information noted above will be obtained and the carcass left in place.

Arrangements regarding proper disposition of potential museum specimens will be made with the institution before carrying out of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any listed species survive treatment, we should be contacted regarding final disposition of the animal.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use 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, 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. We recommend the following conservation recommendations be implemented:

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

2. The Forest Service should increase survey efforts for the MSO in previously unsurveyed areas on Forest Service Lands.

3. We recommend the Bull #1 PAC previously designated within the perimeter of the Gallita Fire be monitored annually for at least the next five.

4. We recommend that the Forest Service pursue monitoring and/or research opportunities to determine actual effect to, and recovery of, MSO habitat from the wildfire, and particularly in relation to future occupancy by MSO.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal emergency consultation on the Gallita Fire, Quemado Ranger District, Gila National Forest. 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 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.

In future communications regarding this project, please refer to consultation #22420-2008-FE-0117. Please contact Lynn Gemlo at the letterhead address or at (505) 761-4726 if you have any questions.

Sincerely,

FOR Wally Murphy
Field Supervisor

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

LITERATURE CITED

Bond, M.L., R.J. Guteirrez, A.B. Franklin, W.S. LaHaye, C.A. May, and M.E. Seamans. 2002. Short-term effects of wildlfires on spotted owl survival, site fidelity, mate fidelity, and reproductive success. Wildlife Bulletin 30(4):1022-1028.

Breshears, D.D., N.S. Cobb, P.M. Rich, K.P. Price, C.D. Allen, R.G. Balice, W.H. Romme, J.H. Kastens, M.L. Floyd, J. Belnap, J.J. Anderson, O.B. Myers, and C.W. Meyer. 2005. Regional vegetation die-off in response to global-change-type drought. Proceedings of the National Academy of Sciences 102(42):15144-15148.

Cook, E.R., C.A. Woodhouse, C.M. Eakin, D.M. Meko, and D.W. Stahle. 2004. Long-term aridity changes in the western United States. Science 306:1015-1018.

Courtney, S.J., J.A. Blakesley, R.E. Bigley, M.L. Cody, J.P. Dumbacher, R.C. Fleischer, A.B. Franklin, J.F. Franklin, R.J. Guitierrez, J.M. Marzluff, and L. Sztukowski. 2004. Scientific Evaluation of the Status of the Northern Spotted Owl. Sustainable Ecosystems Institute, Portland, Oregon. 508pp.

Delaney, D.K., T.G. Grubb, P. Beier, L.L. Pater, and Reiser. 1999. Effects of helicopter noise on Mexican spotted owls. Journal of Wildlife Management 63(1):60-76.

Dettinger, M.D. and D.R. Cayan. 1995. Large scale atmospheric forcing of recent trends toward early snowmelt runoff in California. Journal of Climate 8:606-623.

Dettinger, M.D. and H.F. Diaz. 2000. Global characteristics of streamflow seasonality and variability. Journal of Hydrometeorology 1:289-310.

Elliot, B. 1985. Changes in distribution of owl species subsequent to habitat alteration by fire. Western Birds 16:25-28.

Fletcher, K. 1990. Habitats used, abundance, and distribution of the Mexican spotted owl, *Strix occidentalis lucida*, on National Forest system lands. USDA Forest Service, Southwestern Region, Albuquerque, New Mexico. 86pp.

Gaines, W. L., R. A. Strand, and S. D. Piper. 1997. Effects of the Hatchery complex fires on Northern spotted owls in the Eastern Washington Cascades. Pages 123-129 in J. N. Greenlee, editor. Proceedings of the Fire Effects on Rare and Endangered Species and Habitats Conference, International Association of Wildfire and Forestry, Coeur D'Alene, Idaho.

Ganey, J.L. and R.P. Balda. 1994. Habitat selection by Mexican spotted owls in northern

Arizona. The Auk 111(1):162-169.

Ganey, J.L., W.M. Block, and R.M. King. 2000. Roost of radio-marked Mexican spotted owls in Arizona and New Mexico: Sources of variability and descriptive characteristics. Journal of Raptor Research.

Government Accounting Office. August 2007. Climate change: Agencies should develop guidance for addressing the effects on Federal land and water resources. GAO-07-863, 179 pp.

Gutierrez, R. J., C. A. May, and M. E. Seamans. 2003. Temporal and Spatial Variation in Demographic Rates of Two Mexican Spotted Owl Populations, Final Report. USDA, Rocky Mountain Station. Flagstaff, Arizona.

Gutierrez, R.J. and Rinkevich, S.E. Final Report Distribution and Abundance of Spotted Owls in Zion National Park, 1991, National Park System Order No. PX-1200-9-C820.

IPCC. 2001. Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, New York. 881pp. Available at http://www.ipcc.ch/.

Jenness, J. S. 2000. The effects of fire on Mexican spotted owls in Arizona and New Mexico. Thesis, Northern Arizona University, Flagstaff, Arizona.

Lenart, M. 2005. Is global warming creeping into Southwest forests? The University of Arizona. Southwest Climate Outlook. pages 2-5.

MacCracken, J. G., W. C. Boyd, and B. S. Rowe. 1996. Forest health and spotted owls in the eastern cascades of Washington. Pages 519-527 in K. G. Wadsworth and R. E . McCabe, editors. Facing realities in resource management. Transactions of the North American Wildlife and Natural Resources Conference, Special Session 7 Number 61.

Mueller, R.C., C.M. Scudder, M.E. Porter, R.T. Trotter III, C.A. Gehring and T.G. Whitham. 2005. Differential tree mortality in response to severe drought: Evidence for long-term vegetation shifts. Journal of Ecology 93(6):085-1093.

Reiners, W.A., W.L. Baker, J.S. Baron, D.M. Debinski, S.A. Elias, D.B. Fagre, J.S. Findlay, L.O. Mearns, D.W. Roberts, T.R. Seastedt, T.J. Stohlgren, T.T. Veblen, and F.H. Wagner. 2003. Natural Ecosystems I: The rocky mountains (pp. 145-184). *In* Wagner, F.H. (Ed.), Preparing for Climate Change: Rocky Mountain/Great Basin Regional

Assessment Team for the U.S. Global Change Research Program. Utah State University. 240pp.

Seamans, M.E. and R.J. Gutierrez. 1999. Diet composition and reproductive success of Mexican spotted owls. Journal of Raptor Research 33(2):143-148.

Smith, S.J., T. Wigley, and J.A. Edmonds. 2000. "A new route toward limiting climate change?" Science 290(5494):1109-1110.

Stewart, I.T., D.R. Cayan, and M.D. Dettinger. 2004. Changes in snowmelt runoff timing in western North America under a "business as usual" climate change scenario. Climate Change 62: 217-232.

Sureda, M. and M.L. Morrison. 1998. Habitat use by small mammals in southeastern Utah, with reference to Mexican spotted owl management. Great Basin Naturalist 58(1):76-81.

Thompson, L.G. 2000. Ice core evidence for climate change in the tropics: Implications for our future. Quaternary Science Reviews 19:19-35.

U.S. 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.

U.S. Fish and Wildlife Service. 1995. Recovery Plan for the Mexican spotted owl *(Strix occidentalis lucida)*. Albuquerque, New Mexico. 85pp.

U.S. Department of Agriculture Forest Service, Southwestern Region. 2003. Biological Assessment for a consultation for the Lakes Fire. Santa Fe National Forest, Jemez Ranger District, Jemez, New Mexico.

Ward, J.P. Jr. 2001. Ecological responses by Mexican spotted owls to environmental variation in the Sacramento Mountains, New Mexico. Rocky Mountain Research Station, Couldcroft, New Mexico. 411pp.

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.

Willey, D.W. 1993. Home range characteristics and juvenile dispersal ecology of Mexican spotted owls in southern Utah. Unpublished. Rep. Utah Div. Wildl. Resour., Salt Lake City.

Young, K.E., P.J. Zwank, R. Valdez, J.L. Dye, and L.A. Tarango. 1997. Diet of Mexican

spotted owls in Chihuahua nd Aguascalientes, Mexico. Journal of Raptor Research 31(4):376-380.

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.