

**United States Department of the Interior
U.S. Fish and Wildlife Service
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AESO/SE
2-21-01-F-235

April 12, 2001

Mr. Steve Gunzel, District Ranger
Coronado National Forest
Sierra Vista Ranger District
5990 South Highway 92
Hereford, Arizona 85615

Dear Mr. Gunzel:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the proposed Reef Campground Pit in-fill project located in Carr Canyon, Cochise County, Arizona, and its effects on the threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your April 2, 2001, request for formal consultation was received on April 5, 2001.

This biological opinion is based on information provided in the April 2, 2001, biological assessment (BA), the April 2, 2001, project proposal and map, electronic communications of March 27, 2001, with U. S. Forest Service (Forest Service) wildlife biologist Tom Deecken, telephone conversations in March and April 2001 with Tom Deecken, field investigations, and other sources of information. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office in Phoenix.

Consultation History

The Service (Thetis Gamberg) received an electronic query from the Forest Service (Tom Deecken) regarding the Forest Service's need to fill in a newly-opened pit, on March 27, 2001. It was a mining trash pit in a campground that had opened up in a camping site and was a human safety hazard; urgent, but not an emergency. The Service advised that an expedited formal consultation would be appropriate. The Service received the Forest Service April 2, 2001, BA and map on April 5, 2001. A site visit was conducted by the Service April 9, 2001.

BIOLOGICAL OPINION

Description of Proposed Action

In spring of 2001, a 10-foot wide by eight-foot deep pit opened up in the Reef Campground in Carr Canyon. The Reef Campground lies within the boundaries of the designated MSO Protected Activity Center (PAC) (# 050304) for the Carr Canyon birds. The pit site was flagged for public safety and that portion of the campground closed to public use. One large (greater than nine inches diameter breast height or dbh) Arizona/Ponderosa pine located about 20 feet from the hole was cut down at that time because it was a public safety hazard.

The Forest Service proposes to use heavy equipment for two days to fill and stabilize the pit. Operators will move equipment on the Carr Canyon Road (Forest Road number 368) from State Highway 92 South, to about 4.50 miles uphill to the site. Equipment includes a D6 Caterpillar bulldozer, Case 942 front-end loader (or a smaller backhoe), and vehicles for personnel transport. One four-yard dump truck carrying fill material would also make an estimated 10 trips up and down the Carr Canyon Road over the estimated four-day work period. Chainsaws would also be used to remove vegetation from around the pit. The heavy equipment would remain on-site (parked in the campground) until the hole is filled. The project is estimated to take four days to complete, including two days for equipment movement.

Work would start in late April or early May of 2001, but could be delayed until later into the summer months when weather and road conditions are satisfactory; springtime rains make Carr Canyon Road unsuitable for heavy equipment to travel on it without road damage. If the hole continues to subside, additional cat work may need to be conducted during the summer months, but is not expected to take more than two additional days. These estimated work times are within the annual MSO breeding season, and the location of the project site is within a designated MSO PAC.

The ground surrounding the pit (within 30 feet) will be excavated, re-filled, and tamped to ensure site stability. This subsurface stability is especially critical 30 feet north of the current opening where an access road (to campsites) exists. Brush immediately around the pit will be removed. Up to 10 small (less than 9 inches dbh) trees will be cut and removed. Three larger (9 inches or greater dbh) trees within 30 feet of the pit might be cut and removed if they are found to be safety hazards. The decision to remove these larger trees would be made while work progresses at the pit, but for this consultation, the Service assumes these three large trees will be cut and removed.

The Forest Service describes the project area as the pit location in the Reef Campground; the Service describes the action area to include the Carr Canyon MSO PAC (about 600 acres) that surrounds the project area.

Status of the Species/Critical Habitat

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the final rule listing the MSO as a threatened species (USDI 1993) and in the final MSO

Recovery Plan (USDI 1995). The information provided in these documents is included herein by reference. Although the MSO's entire range covers a broad area of the southwestern United States and Mexico, much remains unknown about the species' distribution and ecology. This is especially true in Mexico where much of the MSO's range has not been surveyed. The MSO currently occupies a broad geographic area but does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to forested isolated mountain systems, canyons, and in some cases, steep, rocky canyon lands. The primary administrator of lands supporting MSO in the United States is the U.S. Forest Service. Most owls have been found within Forest Service Region 3 (including 11 National Forests in Arizona and New Mexico). Forest Service Regions 2 and 4 (including two National Forests in Colorado and three in Utah) support fewer owls. According to the Recovery Plan, 91 percent of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

Surveys have revealed that MSO has an affinity for older, well-structured forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico. The range of the MSO has been divided into six Recovery Units (RUs), as discussed in the MSO Recovery Plan (USDI 1995). The Recovery Plan reports an estimate of owl sites for 1990 through 1993. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. The greatest known concentration of known owl sites in the United States occurs in the Upper Gila Mountains RU (55.9 percent), followed by the Basin and Range-East RU (16.0 percent), Basin and Range-West RU (13.6 percent), the Colorado Plateau RU (8.2 percent), the Southern Rocky Mountain-New Mexico RU (4.5 percent), and Southern Rocky Mountain-Colorado RU (1.8 percent). MSO surveys conducted from 1990 through 1993 indicate that the species persists in most locations reported prior to 1989.

A reliable estimate of the numbers of owls throughout its entire range is not currently available (USDI 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 MSO existed in Arizona and New Mexico.

The Forest Service reported approximately 935 PACs have been established on National Forest lands in the Southwestern Region (USDA 2001). The information provided from the Forest Service also included a summary of acres of protected habitat, acres of restricted habitat, and PACs in the Region by MSO Recovery Unit

From 1991 through 1997, Gutierrez *et al.* (1997, 1998) studied the demographic characteristics of two Mexican spotted owl populations in the Upper Gila Mountains Recovery Unit. The owl populations studied were located on the Coconino and Gila National Forests. Results of this several-year study have shown a decline in the population trend of MSOs within these areas. The reason for the reported decline is unknown. Such a trend could be a result of: 1) density dependent responses to an increase over carrying capacities; 2) a response to some environmental factor; or 3) senescence. The latter (i.e. senescence) seems unlikely because there was also a

negative linear trend in survival estimates for owls younger than three years of age. Regarding carrying capacities, responses to density dependence are difficult to prove in the absence of removal or addition experiments. Environmental factors undoubtedly play a role in owl survival, either through weather events causing direct mortality or indirectly through lack of habitat or prey availability. The study indicated that the ability of adult birds to survive successive years of poor environmental conditions may be low.

Critical habitat has been designed for the MSO (USDI 2001) in various location in and around Arizona, but none occurs in either the project or the action area. The proposed Carr Canyon Pit in-fill project is located within the Basin and Range-West Recovery Unit as defined by the MSO Recovery Plan, Volume I, Part II, page 46 (USDI 1995).

Environmental Baseline

The environmental baseline includes past and present impacts of all Federal, state, or private actions in the action area; the anticipated impacts of all proposed federal actions in the action area that have undergone formal or early section 7 consultation; and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

The pit and about three miles of the access route to the pit site is just inside the boundary that designates the Carr Canyon MSO PAC. Converted directly from a Management Territory (established when the MSO was listed), about 200 acres in the upper reaches of Carr Canyon support conifer or riparian-forested drainages (two). In order to fulfill the MSO Recovery Plan (1995) requirements for minimum acreage for a designated PAC (600 of the best available acres), the remaining acres around the nesting/roosting 100-acre cores in these two areas include lands currently unsuitable for MSO in any life stage; nest, roost, forage, or movement. The lower elevations contain shrub and manzanita vegetation; the upper elevations are burned over from the 1977 Carr wildfire, a stand-altering fire that denuded the top of Carr Peak and surrounding mountains around Carr Canyon. It will likely take 200 to 300 years before the Carr wildfire lands grow back into suitable MSO habitat, but these acres are still included in the MSO PAC boundaries.

The designated 100-acre core areas are the highest-quality MSO nesting/roosting habitat in the canyon. These areas are where the district biologist and MSO researchers have consistently located MSO for the last 11 years. The pit is about 0.25 air-mile from the boundary of the roost/nest (100-acre) core for the Carr Canyon MSO PAC (# 050304).

MSO have been documented in the core area every year since 1990. Young were seen in four of these 11 years. Although the exact nesting location has not been confirmed, it is suspected to be either in a large white fir at the base of the prominent Reef cliffs or in the lower 100-foot area of the cliffs themselves. This historic nesting location and the single bird observed during the

breeding season in 2000 are about 0.50 air-mile from the pit. The suspected nest location is about 700 feet lower in elevation than the pit location, with the last 100 yards at the nest site being a 500-foot vertical bluff.

The access route varies in distance from the core area, from just over 0.50 mile to greater than 1.0 mile. Portions of the access route are behind a major (several thousand feet in elevation) ridge that separates Carr Canyon from adjacent Black Springs and Miller Canyons.

The action area is under Federal jurisdiction; the Service knows of no other State, tribal, or private actions that would affect the MSO in this area. Other unrelated Federal actions (in the action area) include the Huachucas Recreation Strategy (trail construction in Carr and Miller Canyons) (2-21-98-I-285), the Carr Canyon Fuels Reduction BO (2-21-99-F-084), the Carr Canyon Emergency Fire Concurrence (2-21-00-I-002), and the Carr House Parking Lot restroom (2-21-00-I-018).

Effects of the Action

The project will result in the removal of 13 trees within the designated MSO PAC (outside of the 100-acre nesting/roosting habitat core), three of which will be greater than nine inches dbh. Other effects from this four-day project are anticipated to be localized dust and equipment noise in the campground which will be short term (four days) and cease after the project is finished.

The upper portion of Carr Canyon contains the only nesting/roosting MSO habitat in the canyon, with the upper head of the canyon splitting into two smaller, densely-forested drainages. The best nesting/roosting habitat is designated into two, 100-acre MSO core areas. The upper part of Carr Canyon bends to the southwest, protecting the upper reaches by topographic arrangement and the buffering qualities of the densely-packed trees in these two habitat areas. While distance from the pit site to the nesting areas is about 0.50 air-mile, physical locations of the cores (located behind projecting volcanic rock cliffs and lower in elevation than the pit site) render noise effects to a level undetectable by human hearing. While MSO hearing abilities are more acute than human abilities, noise from the operation may not be at significant levels at the nest locations because of the topography and buffering vegetation.

As a comparison, at another MSO nest site (Copper Canyon PAC #0305016), noise from a similar-sized front-end loader was metered in February 2001. That loader was working on a road 0.25 mile away from a previously-known nest tree and did not produce measurable decibels on a calibrated metering instrument (Tom Deecken, pers. comm.). Helicopter noise monitored from the same distance did result in a 40 to 45-decibel range meter reading. The Copper Canyon site is uphill from the (one) roadway in the canyon, and noise is well-buffered by a canyon constriction and a dense stand of silverleaf oak. These circumstances are similar to the current situation at Carr Canyon, with conifer taking the place of densely-packed canyon tree species.

While noise produced by equipment is very dependent on the topography of an area, a more elaborate study (by Delany et al 1997), evaluated potential disturbance from helicopter overflights of MSO in the Lincoln National Forest. The authors noted that birds did not flush from roosts when noise levels were less than 92 decibels. Additionally, no owls in their study flushed during the incubation and nestling phase or when a helicopter was farther than 345 feet away. There was also no difference detected in reproductive success between treated and untreated territories. Noise levels in the study by Delany et al were much higher than those expected to be produced by the equipment for the Reef Campground Pit in-fill project.

MSO are known to exhibit a variety of responses to various noise levels and types. Some MSO appear to adapt to certain levels of noise (such as a certain level of highway traffic). Some MSO appear to ignore noises, some may leave an area, others may fly towards noise (T. Newman, pers. comm.). MSO reactions depend on duration, severity, timing and decibel of the noise in regard to the stage of MSO breeding season.

Compared to the approximately 400 acres of high-quality MSO habitat available and used by the birds farther upcanyon, the loss of a possible maximum of 13 trees within an already-opened canopy of a well-used campground, and site noise and dust located greater than 0.50 mile from the suspected nesting/roosting site, the proposed project is not anticipated to disrupt MSO activity in the PAC.

Cumulative Effects

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

No future State, tribal, local or private actions are anticipated to affect the MSO or its habitat because the project and action areas are under Federal jurisdiction.

Conclusion

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Reef Campground Pit in-fill project, as proposed, is not likely to jeopardize the continued existence of the MSO. Critical habitat for this species has been designated in other locations of the state, but this action does not affect it.

These conclusions are based on the record of this consultation including the BA, project description, site visits, and the following:

1. Distance between the action (noise and dust) and the nest, supplemented by the topographic buffering of vegetation and canyon constriction,
2. The short duration (four days) of the work, and
3. The small number (13) of trees to be removed from the campground, which is outside the 100 acre core of nesting/roosting habitat for the PAC. Three of the 13 trees are nine inches or greater dbh. The Reef Campground supports less than one acre of isolated, open-canopy conifer trees which might be used by MSO for foraging. The regular use of the campground by visitors and the open canopy would argue against this small area being used by MSO for nesting.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by FWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, 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 to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by the Forest Service so that they become binding conditions of any grant or permit issued to the Forest Service or its applicant(s), as appropriate, for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest Service (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant(s) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Forest Service must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

Amount or Extent of Take Anticipated

The Service anticipates two adult (or one pair) of MSO could be taken as a result of this proposed action. The incidental take is expected to be in the form of harassment through localized noise and dust for four days. In this circumstance, the removal of three large (nine

inches or greater dbh) trees in a regularly-used, open-canopy campground, within a 600-acre PAC, outside a designated 100-acre nesting/roosting core, is considered insignificant.

Effect of the take

The Service determines this level of anticipated take is not likely to result in jeopardy to the threatened MSO.

Reasonable and prudent measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take to MSO.

1. Work will not be conducted at the pit site during crepuscular (dawn and twilight) hours.
2. Noise monitoring will be conducted.

Terms and conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outlines required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. In order to implement reasonable and prudent measure number one:
 - a. The Forest Service shall continue to monitor the MSO status of the Carr Canyon PAC and include that information in their annual report to the Service.
 - b. The Forest Service shall monitor noise levels during work. The monitor (district wildlife biologist) shall decide on-site when noise reaches unacceptable levels and work procedures could be changed if high levels continue.

The Service believes that no more than two adult (or one pair) of MSO will be incidentally taken as a result of the proposed action. The reasonable and prudent measure, with the implementing term and condition, is designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Forest Service must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures. New or additional information or subsequent changes to the project and/or its management, or the numbers of

people using the site, will be reported immediately to the Service and will be cause for the Forest Service to reinstate on this project.

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

Disposition of dead or injured species

Upon locating a dead or injured threatened or endangered species, initial notification must be made to the Service's Division of Law Enforcement, 26 North McDonald, #105, Mesa, Arizona, 85201, at (602) 835-8289 within three working days of its finding. 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 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 above shall be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by a qualified biologist. Should any treated listed animal survive, the Service should be contacted regarding the final disposition of the animal.

Conservation Recommendations

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

1. We recommend that the Forest Service conduct annual district-wide MSO inventories and include this information in their annual report to the Service.

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.

Reinitiation Notice

This concludes formal consultation on the actions outlined in your request. 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.

We have assigned log number 2-21-01-F-235 to this consultation. Please refer to that number in future correspondence on this consultation. If you have any questions or comments, please contact Thetis Gamberg (520) 670-4619 or Sherry Barrett (520) 670-4617.

Sincerely,

/s/ David L. Harlow
Field Supervisor

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

Terry Johnson, Nongame Branch, Arizona Game and Fish Department

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REFERENCES CITED

AGFD. 1997. Special status species of the Sierra Vista Ranger District, Coronado National Forest. Arizona Game and Fish Department, Heritage Data Management System. Phoenix, AZ. Unpubl.

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

Deecken, T. 2001. Personal communication. Sierra Vista Ranger District, Hereford, AZ.

- Fletcher, K. 1990. Habitat used, abundance, and distribution of the Mexican spotted owl, *Strix occidentalis lucida*, on National Forest System Lands. U.S. Forest Service, Southwestern Region, Albuquerque, NM. 78 pp.
- Gutierrez, R.J., M.E. Seamans, C.A. May, and M.Z. Peery. 1997. Demography of two Mexican spotted owl (*Strix occidentalis lucida*) populations in Arizona and New Mexico: 1996 annual report. Unpubl. Humboldt State University, CA. 19 pp.
- 1998. Demography of two Mexican spotted owl (*Strix occidentalis lucida*) populations in Arizona and New Mexico: 1997 final report (contract # 53-82FT-4-07). Unpubl. Humboldt State Univ, CA. 16 pp.
- Newman, T. 2001. Personal communication. Nogales Ranger District, Nogales, AZ.
- USDA. 1999. Sensitive species list. U.S. Department of Agriculture, Forest Service, Southwestern Region. Albuquerque, NM. Unpubl.
- 2001. U.S. Department of Agriculture, Forest Service, Southwestern Region. Biological assessment and evaluation for an urban interface fuel treatment. February 28, 2001. 271 pp.
- USDI. 1991. Mexican spotted owl status review. U.S. Department of the Interior, Fish and Wildlife Service endangered species report 20. Albuquerque, NM.
- 1993. Endangered and threatened wildlife and plants; final rule to list the Mexican spotted owl as threatened. Federal Register. 58:14248-14271. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.
- 1995. Mexican spotted owl recovery plan. U.S. Department of the Interior, Fish and Wildlife Service. Albuquerque, NM.
- 2001. Endangered and threatened wildlife and plants; final designation of critical habitat for the Mexican spotted owl. Federal Register. 66:8530-8553. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.