



# United States Department of the Interior



## Fish and Wildlife Service Arizona Ecological Services Field Office

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In Reply Refer to:  
AESO/SE  
22410-2009-F-0205  
22410-2006-I-0340  
2-21-00-I-043

July 21, 2009

### Memorandum

To: Superintendent, Chiricahua National Monument, Willcox, Arizona

From: Field Supervisor

Subject: Biological Opinion on the Proposed Echo Canyon Trail Rehabilitation Project  
(File Code N1621)

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated February 13, 2009, and was received by us on February 17, 2009. At issue are impacts that may result from the proposed implementation of the remaining portions of the Echo Canyon trail rehabilitation project at Chiricahua National Monument, Cochise County, Arizona. Your memorandum concluded that the proposed action may adversely affect the threatened Mexican spotted owl (*Strix occidentalis lucida*) but is not likely to adversely affect its critical habitat.

This biological opinion is based on information provided in: (1) the February 2009 Biological Assessment transmitted with your February 13, 2009, memorandum; (2) the 2005 Mexican Spotted Owl Recovery Plan; (3) other published and unpublished sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Also note that this biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete our analysis with respect to critical habitat.

## **Consultation History**

*March 8, 2000:* We transmitted our concurrence (File number 2-21-00-I-043) with your determination that the Echo Canyon Trail rehabilitation project was not likely to adversely affect any threatened or endangered species.

*April 7, 2006:* We transmitted a second concurrence memorandum (File number 22410-2006-I-0340) on the Echo Canyon Trail rehabilitation project, as the March 8, 2000, review had included a narrative stating that our findings would expire in 5 years.

*January 12, 2009:* Your staff contacted my staff via telephone to have initial discussions regarding the currently proposed action.

*February 17, 2009:* We received your February 13, 2009, request for formal consultation and your February 2009 Biological Assessment on the subject action.

*April 15, 2009:* We transmitted a memorandum (File number 22410-2009-F-0205) to you indicating we had received all information required in order to initiate formal consultation on the proposed action and stating that we would deliver a final biological opinion by July 2, 2009.

*May 29, 2009:* We received electronic mail communication from your staff containing updated information regarding the description of the proposed action and presence of Mexican spotted owls in the action area. This information was in response to a May 28, 2009, query from my staff.

*June 11, 2009:* We transmitted a draft biological opinion on the subject action to you.

*July 9, 2009:* Your staff contacted my staff via electronic mail to provide initial feedback on the June 11, 2009, draft biological opinion as well as to discuss the results of recent Mexican spotted owl survey work within the action area.

*July 14, 2009:* We received your July 9, 2009, memorandum stating that your staff had reviewed the July 11, draft biological opinion and that you found no errors or omissions in information.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

A complete description of the proposed action - a continuing trail rehabilitation project - is found in the Biological Assessment transmitted with your memorandum. The current action remains similar in scope to those reviewed in our prior correspondence but with two substantive changes: (1) mechanized equipment will be employed in addition to hand tools; and (2) work is proposed to occur within the Echo Primary Activity Center (PAC) year round, including during the Mexican spotted owl breeding season.

The proposed action is the continuation of emergency repairs to a segment of the Echo Canyon trail (Figure 3 in the Biological Assessment). A trail crew (eight to 20 people) will rebuild damaged

water bars and stone structures, add additional water bars where necessary, and replace lost tread surface (finer gradations of rock and gravel). Crew members will be housed in the Chiricahua National Monument housing site or outside the monument. Base or spike camps will not be created. Using wheelbarrows (and, on occasion, pack animals), materials will be taken from trailside areas (formed by flood and storm events and devoid of vegetation), dry creek beds, and broken rocks and gravel washed downslope from the trails during storm events. In areas where insufficient loose rock is available, hand tools (grip hoists, rock hammers, and chisels) and powered equipment (poinjars and rock drills) will be used to harvest larger rocks and break them into useable sizes. Mechanized work would occur for no more than 60 days in any one breeding season, and may occur for three more years, depending on the availability of funds.

Proposed conservation measures include the following:

- All work will occur during daylight hours.
- A Resource Advisor with knowledge of Mexican spotted owl ecology will be available and will participate in the day-to-day decisions that may affect the species or its habitat.
- Surveys per the Mexican Spotted Owl Recovery Plan protocol will be conducted to monitor for the species' presence and reproductive status. Additional daylight monitoring will be conducted if the owls can be located. If nesting owls are observed to be reacting to construction noise, work activities will cease and/or be confined to areas in which the work will not affect the owls. Surveys during the non-breeding season will be conducted if trail work is occurring.
- No vegetation will be removed.
- Trail crew members and the project foreperson will be briefed on threatened and endangered species concerns and mitigative measures.

### **Status of the Species**

The Mexican spotted owl was listed as a threatened species in 1993 (FWS 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 Mexican spotted owl population. The Fish and Wildlife Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (FWS 1995). Critical habitat was designated for the Mexican spotted owl in 2004 (FWS 2004).

A detailed account of the taxonomy, biology, and reproductive characteristics of the Mexican spotted owl is found in the Final Rule listing the Mexican spotted owl as a threatened species (FWS 1993) and in the Recovery Plan (FWS 1995). The information provided in those documents is included herein by reference. Although the Mexican spotted owl's entire range covers a broad area of the southwestern United States and Mexico, the Mexican spotted owl 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 United States and Mexico.

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

Historical and current anthropogenic uses of Mexican spotted owl 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 Mexican spotted owl 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 owls 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 Mexican spotted owl 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 Mexican spotted owl by further fragmenting habitat and increasing disturbance during the breeding season. West Nile Virus also has the potential to adversely impact the Mexican spotted owl. The virus has been documented in Arizona, New Mexico, and Colorado, and preliminary information suggests that owls may be highly vulnerable to this disease (Courtney *et al.* 2004). Unfortunately, due to the secretive nature of owls and the lack of intensive monitoring of banded birds, we will most likely not know when owls contract the disease or the extent of its impact to Mexican spotted owl range-wide.

Currently, high-intensity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. Uncharacteristic, severe, stand-replacing wildfire is probably the greatest threat to Mexican spotted owl within the action area. As throughout the West, fire severity and size have been increasing within this geographic area.

A reliable estimate of the numbers of owls throughout its entire range is not currently available (FWS 1995) and the quality and quantity of information regarding numbers of Mexican spotted owl vary by source. FWS (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico. However, Ganey *et al.* (2000) estimated approximately  $2,950 \pm 1,067$  (SE) Mexican spotted owls 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 System (NFS) lands in Arizona and New Mexico (B. Barrera, pers. comm. June 18, 2007). The FS Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than NFS lands have resulted in additional sites being located in all Recovery Units.

Researchers studied Mexican spotted owl 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 ( $\Lambda$ =Lambda) indicated that the Arizona population was stable (mean  $\Lambda$  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  $\Lambda$  from 1993 to 2000 = 0.937; 95 percent Confidence Interval = 0.895, 0.979). The study concludes that spotted owl 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 Mexican spotted owl is then likely very vulnerable to actions that impact adult survival (e.g., habitat alteration, drought, etc.) during years of low recruitment.

Since the owl was listed, we have completed or have in draft form a total of 208 formal consultations for the Mexican spotted owl. These formal consultations have identified incidences of anticipated incidental take of Mexican spotted owl in 413 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, 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 owl location information and existing forest plans) have resulted in biological opinions that the proposed action would likely jeopardize the continued existence of the Mexican spotted owl. 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 Mexican spotted owls. 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 Mexican spotted owl 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 anticipated incidental take in the form of harm and/or harassment of owls associated with 243 PACs on Region 3 NFS lands. FS Region 3 reinitiated consultation on the LRMPs on April 8, 2004. On June 10, 2005, the FWS 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 NFS 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 owls associated with 40 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 owls associated with 15 PACs.

*Mexican spotted owl critical habitat*

The final Mexican spotted owl critical habitat rule (FWS 2004) designated approximately 8.6 million acres of critical habitat in Arizona, Colorado, New Mexico, and Utah, mostly on Federal lands (FWS 2004). Within this larger area, critical habitat is limited to areas that meet the definition of protected and restricted habitat, as described in the Recovery Plan. Protected habitat includes all known owl sites and all areas within mixed conifer or pine-oak habitat with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years. Restricted habitat includes mixed conifer forest, pine-oak forest, and riparian areas outside of protected habitat.

The primary constituent elements for proposed Mexican spotted owl critical habitat were determined from studies of their habitat requirements and information provided in the Recovery Plan (FWS 1995). Since owl habitat can include both canyon and forested areas, primary constituent elements were identified in both areas. The primary constituent elements which occur for the Mexican spotted owl within mixed-conifer, pine-oak, and riparian forest types that provide for one or more of the Mexican spotted owl's habitat needs for nesting, roosting, foraging, and dispersing are in areas defined by the following features for forest structure and prey species habitat:

Primary constituent elements related to forest structure include:

- A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 to 45 percent of which are large trees with diameter-at-breast height (dbh) of 12 inches or more;
- A shade canopy created by the tree branches covering 40 percent or more of the ground; and,
- Large, dead trees (snags) with a dbh of at least 12 inches.

Primary constituent elements related to the maintenance of adequate prey species include:

- High volumes of fallen trees and other woody debris;
- A wide range of tree and plant species, including hardwoods; and
- Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration.

Primary constituent elements related to canyon habitat include one or more of the following:

- Presence of water (often providing cooler and often higher humidity than the surrounding areas)
- Clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, and/or riparian vegetation
- Canyon wall containing crevices ledges, or caves; and
- High percent of ground litter and woody debris.

The forest habitat attributes listed above usually are present with increasing forest age, but their occurrence may vary by location, past forest management practices or natural disturbance events, forest-type productivity, and plant succession. These characteristics may also be observed in younger stands, especially when the stands contain remnant large trees or patches of large trees. Certain forest management practices may also enhance tree growth and mature stand characteristics where the older, larger trees are allowed to persist.

### **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.

### **Description of the Action Area**

The action area is within the Basin and Range-West Recovery Unit as described in the Mexican Spotted Owl Recovery Plan, and includes the area encompassed by the Echo and Shake Spring PACs. The action will occur only within the Echo PAC, but there is a potential for dispersal of Mexican spotted owls between the two PACs.

### **Status of the Species and Critical Habitat within the Action Area**

Accessible forest (primarily foraging habitat) in many areas have had the mature stand component partially or completely harvested. In general, however, much of the habitat is forested steep-slope canyons and drainages, and it is mostly in suitable condition. Within the Sky Islands, habitat is characterized by a greater amount of woodland habitat, and territories occur in both heavily forested terrain and in areas with hardwood and conifer stringers dominated by Madrean Evergreen woodland. The primary threats to the spotted owl within this recovery unit are catastrophic wildfire, recreation, and grazing (FWS 1995).

Critical habitat within the Basin and Range-West Recovery Unit is disjunct, a function of its presence in the Sky Islands of southeastern Arizona and southwestern New Mexico. Moreover, the Madrean Evergreen Woodland component of the critical habitat is unique. Thus, while the fraction of critical habitat within the action area is small relative to the Recovery Unit and the total amount of critical habitat available, the unique habitat associations render it crucial to the recovery of the Mexican spotted owl. The critical habitat present within the action area is functioning for the recovery of the species though, like the recovery unit, it exists under threat of catastrophic wildfire, recreation, and grazing. The focus of Mexican spotted owl management is at the scale of a PAC, not a critical habitat unit.

The Echo Canyon and Shake Spring PACs encompass 1,200 acres of mixed conifer and hardwood vegetation, riparian ecosystems, and mixed oak communities. Roost locations have been located within the Monument's rock spires, but nest locations have not been confirmed to date. Nest sites are presumed to be situated in the upper reaches of steep-walled canyons, possibly in cliffs, present within the PACs. These PACs are largely intact and have not been subject to recent intensive management.

The first systematic Mexican spotted owl surveys of the Monument were conducted in 1994, and detailed results appear in the BA. Several years' survey results were negative. In other years, only a single female bird was located, and it was surmised that she may have been transiting between the Shake Spring and Echo PACs in order to locate a mate. A pair of Mexican spotted owls were located in the Echo Park area in 2003, but breeding could not be confirmed. In 2004, the same or another pair was located near Echo Park and were surmised to be nesting in an area of steep canyon topography. Informal and infrequent surveys and mousing efforts have been conducted within the Shake Spring and Echo PACs since 2005. A pair of Mexican spotted owls, including several roost sites, were found in the southwestern portion of the Echo PAC in April 2009, but neither the Echo nor Shake Spring PAC owls responded in June. These surveys, as well as anecdotal reports, suggests that a pair of Mexican spotted owls remains in the vicinity of Shake Spring, that they nest intermittently due to environmental conditions, and that they may be utilizing both PACs.

The nest core area for the Echo PAC is bisected by the Echo Canyon Trail but the proposed trail work is located approximately 300 meters from the core area's nominal boundary. Examination of aerial photos contained in the BA illustrate steep topography to each side of the Echo Canyon Trail. Most of the Mexican spotted owl detections within the Echo PAC occurred in side canyons oriented perpendicular to the main trail, with most at least 500 meters away from the proposed work area.

### **Factors affecting species environment and critical habitat within the action area**

We have conducted two formal consultations on projects adversely affecting Mexican spotted owls in the vicinity of the proposed action.

Our July 23, 2004, biological and conference plan opinion on the Chiricahua National Monument Fire Management Plan (File number 02-21-03-F-0265) anticipated that the Echo, Shake Spring, Wood Canyon, or Indian Spring PACs (the latter two are on adjoining Coronado National Forest lands) would be affected to the extent that take in the form of death, injury, harm, or harassment of up to two adults and associated eggs or juveniles could occur. This level of anticipated incidental take was determined to be exceeded if fire management or suppression actions affect more than one PAC in any of the following manners: (1) over 10 percent of the PAC experiences a high-intensity burn as defined in the Fire Management Plan and supporting documents; or (2) fire, smoke, heat, noise, or other disturbances associated with fire management and suppression affects a 100-acre core area during the Mexican spotted owl breeding season (March 1-August 31) if reproductive activities are known or suspected. We are not aware of any instance where these levels of incidental take were met or exceeded to date.



On May 3, 2001, we transmitted to you a biological opinion on the Chiricahua National Monument Utility Line Upgrade and Road Rehabilitation (File number 2-21-01-F-236). In that document, we anticipated the incidental take of no more than two adult owls (or one pair of owls) in the form of harassment due to construction noise for about 60 days during the breeding season and within the boundaries of the Shake Spring PAC.

Other consultations within the action area included our concurrence with actions that were not likely to adversely affect Mexican spotted owls.

### **Effects of the Proposed Action**

The proposed action will result in entry of the Echo PAC by trail crews and pack animals as well as noise disturbance from powered equipment such as rock drills. The effects associated with the presence of trail crews and stock animals are unlikely to exceed background levels; the Echo Trail is an existing recreational trail already accessed on foot and horseback by recreationists, which penetrate much further into the Echo PAC than will the trail crews (see Figure 3 in the Biological Assessment). However, the noise generated by power tools to break and reposition rocks is expected to be novel and could be of sufficient volume to disturb Mexican spotted owls.

It is difficult to predict construction noise. Power tools would be used in varying areas for differing durations, though they would not be operated at night when Mexican spotted owls are most actively foraging. Noise caused by construction activities occurring within 0.25 mile of suitable Mexican spotted owl nesting habitat during the breeding season could affect breeding through either disruption of the breeding attempt altogether or displacement of a nesting female, causing mortality to eggs and young. The zone of potential sound disturbance is primarily within 0.25 mile of the noise source. Some sounds caused by construction activities could reach 0.50 mile or more, but would be attenuated by vegetation, topography, and wind. Construction noise represents a short-term (about 60 days within the PAC) effect above the ambient noise created by visitors and Monument personnel in the Echo PAC. The amount of noise generated by the project will be mitigated by maintaining functioning equipment muffler systems (where applicable, noise from the forceful fracturing cannot be attenuated), topographic and geologic features in the canyon, and vegetation. Table 1, below, was adapted from a similar table appearing in our May 3, 2001, biological opinion of the Chiricahua National Monument Utility Line Upgrade and Road Rehabilitation (File number 2-21-01-F-236). Here, we have omitted the noise levels associated with heavy equipment, as the currently proposed action does not necessitate heavy equipment use. Table 1 displays noise measured at distance (Federal Transit Administration 2006). Note that the noise levels were obtained at a distance of 50 feet from the source. Noise levels fall off from point sources as the square of the distance, or 6 decibels per doubling of distance (a noise source causing an 88 decibel level at 50 feet would be expected to have a level of 82 decibels at 100 feet and 76 decibels at 200 feet).

While noise effects produced by equipment depends on area topography, a more elaborate study (by Delany *et al.* 1997), evaluated potential disturbance from helicopter overflights of Mexican spotted owl 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.* (1997) were much higher than those expected to be produced by the equipment for the proposed project. Mexican spotted owls are known to exhibit a variety of responses to various noise levels and types. Some Mexican spotted owls appear to adapt to certain levels of noise (such as a regular level and incidence of highway traffic). Some Mexican spotted owl appear to ignore noises, some may leave an area, and others may fly towards noise (T. Newman, pers. comm.). Mexican spotted owl reactions depend on duration, severity, timing and decibel of the noise in regard to the stage of Mexican spotted owl breeding season. The Shake Spring female Mexican spotted owl appears to have a high level of adaptability to highway and visitor noise, as shown by its long-term residence.

Source by type	Typical noise level (dBA) at 50 feet from the source
Air Compressor	81
Generator	81
Jack Hammer	88
Pneumatic Tool	85
Rock Drill	98
Spike Driver	77

### Effects to Critical Habitat

The proposed action will have no effect on the PCEs associated with forest structure, prey availability, or canyon habitat as described above. The proposed action will similarly have no effect on the key habitat components associated with protected habitat. As such, the proposed action will not affect the ability of the critical habitat within the action area to contribute to the recovery of the species.

### 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.

We have no specific data regarding the presence of illegal immigration and cross-border smuggling on Chiricahua National Monument, but we suspect it does occur and may harass Mexican spotted owls. Backcountry fires for warming or to divert law enforcement resources constitute a risk to Mexican spotted owl habitat. Aside from this, we do not anticipate any cumulative effects within the action area, as it is wholly contained within Chiricahua National Monument. Moreover, Mexican spotted owls and the species' critical habitat occur predominantly on Federal lands, and because of the role of the respective Federal agencies in administering Mexican spotted owl habitat

(both nominal and critical), actions implemented in the future by non-Federal entities on non-Federal lands are considered to be of minor impact to the overall Mexican spotted owl population and/or the recovery potential of the species critical habitat. These same non-Federal actions may, however, have appreciable effects to individual Mexican spotted owls, PACs, and/or critical habitat at the site scale.

## Conclusion

After reviewing the current status of the Mexican spotted owl, the environmental baseline for the action area, the effects of the proposed Echo Canyon Trail repair, and the cumulative effects, it is our biological opinion that the action, as proposed, is neither likely to jeopardize the continued existence of the Mexican spotted owl, nor likely to destroy or adversely modify designated critical habitat for the species. We present these conclusions for the following reasons:

- The noise created by most of the motorized and mechanized equipment associated with the proposed action will be at a volume that Delaney *et al.* (1997) found would not cause Mexican spotted owls to flush from their roosts (see the Effects of the Proposed Action section, above).
- The use of a pneumatic drill could create sound of sufficient volume to cause a Mexican spotted owl to flush (Federal Transit Administration 2006; Delaney *et al.* 1997), but the effects of this level of noise disturbance to adult owls and potential offspring will be minimized by: (1) the proposed action's brevity (60 days); (2) topographic isolation (via canyons) between the work site and the majority of detection locations, including the nest core and presumed nest site; (3) generation of work noise at a distance greater than 345 feet from the likely nesting location of the Echo Canyon owls, beyond which Delaney *et al.* (1997) noted no flush response; (4) the performance of trail work only during daylight hours; (5) the maintenance of functioning equipment muffler systems where applicable; and (6) the cessation or shifting of work if and when disturbance to owls is noted.
- The proposed action's overall level of disturbance is small in scale relative to the size of the remainder of the Echo PAC, which will continue to experience only the baseline levels of disturbance. Moreover, the Echo PAC and nearby Shake Spring PACs are situated at varying distances from approximately 14 other PACs located within the Chiricahua Ecosystem Management Area on the Douglas Ranger District of the Coronado National Forest. These Chiricahua Mountain PACs are a further subset of the PACs found throughout the Sky Islands within the Basin and Range West Recovery Unit. The scale of the disturbed area is inconsequential relative to the large number of Mexican spotted owls located both within and without critical habitat throughout the range of the species. No vegetation will be altered, thus avoiding changes in forest structure or prey availability.
- None of the PCEs of Mexican spotted owl critical habitat will be affected, thus retaining the ability for lands within the action area to contribute to the recovery of the species.

## INCIDENTAL TAKE STATEMENT

We expect that the level of noise associated with the Echo Canyon Trail Rehabilitation Project will be largely attenuated through the minimization measures, as described in the Conclusion section, above. We do not anticipate that the residual amount of noise will reach the level where Mexican

spotted owls or their offspring would be disturbed to the extent that they are incidentally taken. We therefore do not anticipate that implementation of the proposed action will result in the incidental take of any Mexican spotted owls.

### **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.

Chiricahua National Monument should study the effects of recreational activity on Mexican spotted owls and their habitat in locations where trails intersect PACs. The study should quantify recreational use, effects on owl behavior, energetics, movements, and reproduction, as well as effects to the habitat resulting from trampling, potential for fire, etc.

For us to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitat, we request notification of the implementation of any conservation recommendations.

### **Reporting Requirements/Disposition of Dead or Injured Listed Animals**

Upon finding a dead or injured threatened or endangered animal, initial notification must be made to the FWS's Division of Law Enforcement, 2450 West Broadway, Mesa, Arizona (480-967-7900) 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 animal species shall be submitted as soon as possible to the nearest FWS or Arizona Game and Fish Department office, educational, or research institutions (e.g., University of Arizona in Tucson) holding appropriate state and Federal permits.

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, the FWS should be contacted regarding the final disposition of the animal.

### **REINITIATION AND CLOSING STATEMENT**

This concludes formal consultation on the Chiricahua National Monument's proposed Echo Canyon trail rehabilitation project. 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 maintained (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 adversely 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 a 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 this action.

We appreciate the Chiricahua National Monument's efforts to identify and minimize effects to listed species from this project. For further information please contact Jason Douglas (520) 670-6150, (x226) or Sherry Barrett (520) 670-6150, (x223). Please refer to the consultation number, 22410-F-2009-0205 in future correspondence concerning this project.

*/ s / Jim Rorabaugh for*  
Steven L. Spangle

cc: Assistant Field Supervisor, Fish and Wildlife Service, Tucson, Arizona  
Chiricahua National Monument (Attn: Danielle Foster), Willcox, Arizona  
Shaula Hedwall, Fish and Wildlife Service, Flagstaff, Arizona

Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, Arizona  
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