

**United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513**

AESO/SE
02-21-02-M-0103

March 31, 2004

Ms. Jenine Derby, Forest Supervisor
Coronado National Forest
300 West Congress Street, 6th Floor
Tucson, Arizona 85701

Dear Ms. Derby:

Thank you for your March 5, 2002 request for emergency consultation with the U.S. Fish and Wildlife Service regarding impacts resulting from your suppression and fire rehabilitation activities for the Oversight Emergency Fire on the Coronado National Forest (CNF), Sierra Vista Ranger District (SVRD), Cochise County, Arizona. This consultation concerns effects on the threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO), pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act).

You requested our concurrence that suppression actions may have affected, but were not likely to have adversely affected, the endangered Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*), the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), the endangered Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. *recurva*) and its critical habitat, and the threatened Chiricahua leopard frog (*Rana chiricahuensis*). Our concurrences for these species are provided in Appendix A.

This biological opinion (BO) is based on information provided in your February 20, 2003 biological assessment (BA) and communications between our staffs. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, the effects of fire and fire suppression in semi-arid grassland habitats, or other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office in Phoenix.

Consultation History

- March 5, 2002: We received your telephone call requesting initiation of emergency consultation.
- March 11, 2002: We received your telephone call with a preliminary report on fire effects.

Ms. Jenine Derby, Forest Supervisor

- February 21, 2003: We received your biological assessment and written request for consultation.

BIOLOGICAL OPINION

DESCRIPTION OF THE ACTION

The action area for the Oversight Emergency Fire includes those lands in the Huachuca Mountains enclosed by the fire perimeter and the lands within one mile that surround the fire perimeter. These are the areas affected by the suppression and rehabilitation activities, including adjacent areas and stream courses downstream of the fire. Refer to the BA and map for topographic locations and further fire delineation information. Fire suppression and rehabilitation operations come from the BA unless noted otherwise.

Initial attack began on the morning of March 1, 2002. Erratic winds, steep terrain, and hazardous fuels pushed the fire quickly east up into Oversight Canyon, located on the western side of the Huachuca Mountains in the Miller Peak Wilderness. Winds reaching 44 miles per hour were recorded in Sierra Vista. By March 3rd, the fire had topped the crest of the Huachucas and dropped into Miller and a small portion of Carr and Ida canyons. By March 4th, a Type II Incident Team and about 200 personnel were assigned to the fire. Fire personnel assigned to the fire during peak suppression activities included three hotshot crews, five Type II crews, and 105 additional people. This totaled between 300 and 400 personnel. Equipment included five water tenders, two air tankers, four helicopters, and 10 engines. On March 5th, about 300 acres had burned, and several canyons were closed to public entry. By March 8th, the fire perimeter encompassed about 1,200 acres.

Suppression actions included retardant and water drops, burnout operations, and handline construction. Bulldozers were not used. About 4.75 miles of handlines were built in Miller, Oversight, Bear, and Ramsey canyons. Constructed by fire crews, handlines were wide (about 30 feet) trails with all vegetation cleared to mineral soil. Portions of existing Forest hiking trails (about 2.25 miles) were incorporated into and used as handline in various locations. Canopy removal during handline construction varied from complete to partial degrees of opening, and included thinning and removal of limbs that were overhanging the lines and the cutting of all shrub-height plants. Burnout operations were conducted along selected portions of the fire perimeter.

Five helispots and one sling load site were established within the Miller Peak Wilderness. Vegetation above ground level at these sites was cleared in a 150-foot diameter area. At the sling load site near Hamburg Meadow, the cleared area was much smaller and restricted to a 100-foot diameter area on an existing disturbed site (mine dump). Outside the wilderness area, two crew safety zones were established for firefighter protection. The safety zone in Miller Canyon was about 150 feet by 100 feet. Vegetation above ground level was cut at this site, and the site served as one of the five helispots. In Ida Canyon, oaks and pines less than 12 inches

Ms. Jenine Derby, Forest Supervisor

diameter breast height (dbh) and shrub-height plants were cleared from a 100-foot diameter area. The existing canopy formed by the larger, taller trees remained unaltered.

Three dip sites with portable water tanks were set up after the initial attack period. At each site, a 1,000 to 2,000 gallon portable tank was set up and water was trucked in; this water came from off-Forest potable water wells. Portable tank sites were on or immediately adjacent to existing roads near Cave Canyon, Hereford Post Office, and Brown Canyon Ranch.

Three drop sites were established on existing roads in Ramsey and Miller canyons and at the road junction of Oversight and Ida canyons. The fire base camp was established at the Carr Administrative Site, also on a main road. A location on privately owned land near the Hereford Post Office served as the air operations helibase, with both locations being three miles or more from the fire.

Vegetation burned by the fire and by burnout operations included Madroan oak woodland/savanna, mixed encinal, Mexican pine-oak woodland, deciduous and evergreen riparian, ponderosa pine forest, and mixed conifer. The elevations ranged from 6,300 to nearly 9,300 feet, and all slope aspects burned in varying degrees.

Acreage numbers by fire intensity for either wildfire or burnout operations are not available, but the Burned Area Emergency Rehabilitation (BAER) Team analysis estimated that 77 percent of the fire burned with low severity and 13 percent burned with high severity (U.S. Forest Service 2002). The team projected that overall vegetative recovery was expected in three to 10 years. Chaparral should recover in three years or less; mixed conifer (which burned in patches and at low intensity) should recover in three years or less; and oak woodlands should recover in three to five years with leaf litter reaching pre-burn conditions in 10 years.

Suppression and Rehabilitation Strategy

Fire objectives included fire containment and control, as well as firefighter and public safety. Other objectives included keeping fire out of the Miller Canyon urban interface; keeping fire above Hamburg Meadow in Ramsey Canyon; keeping fire east of Wakefield Camp; and minimizing the impacts of suppression actions within the wilderness area. Other points were the avoidance of caves and wet canyon bottomlands; minimal removal of large (greater than 12 inches dbh) trees within MSO Protected Activity Centers (PACs); maximized use of portable water tanks with potable water brought in by trucks; and limited construction of firelines in wet canyon bottomlands. Resource advisors for the fire briefed morning crews and evening planning sessions and spent most of their time on the fireline with crews.

Rehabilitation actions focused mostly on falling dead trees along trails for public safety and reducing future maintenance needs. Water bars were constructed on handlines and trails to deflect future rain runoff, and post-fire monitoring guidelines will be established by the Forest.

Ms. Jenine Derby, Forest Supervisor

Conservation Measures

Conservation measures implemented for the fire included immediate use of resource advisors during fire operations; portable water tanks with trucked-in, potable well water; maximized use of existing trails and roads; and placement of handlines, water, equipment, and fire base camps in previously disturbed areas.

STATUS OF THE SPECIES

Mexican spotted owl (*Strix occidentalis lucida*)

We listed the MSO as threatened without critical habitat in a Federal Register notice (58 FR 14248) dated March 16, 1993 (U.S. Fish and Wildlife Service 1993). Primary threats to the species identified at listing were even-aged timber harvest and catastrophic wildfire, although grazing, recreation, and other land uses were also noted as possible factors influencing the MSO population. We appointed the Mexican Spotted Owl Recovery Team in 1993; they produced the Recovery Plan for the Mexican Spotted Owl (MSO RP) in 1995 (U.S. Fish and Wildlife 1995b). MSO critical habitat was designated in a Federal Register notice (66 FR 8530) dated February 1, 2001 (U.S. Fish and Wildlife Service 2001). We were court-ordered to re-propose MSO critical habitat; we did so in a Federal Register notice (68 FR 65020) dated November 18, 2003. The public comment period for this latest proposal of MSO critical habitat will close on December 18, 2003.

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 (U.S. Fish and Wildlife Service 1993) and in the 1995 MSO RP (U.S. Fish and Wildlife Service 1995b). Information from these documents is included herein by reference. Although the MSO's entire range covers a broad area of the southwestern United States (U.S.) 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 canyonlands. Surveys reveal that MSO have an affinity for older, well-structured forests and are known to inhabit a topographically diverse landscape in the southwestern U.S. and Mexico.

The MSO's U.S. range is divided into six Recovery Units (RUs) as discussed in the MSO RP. The U.S. Forest Service (USFS) is the primary administrator of U.S. lands supporting the MSO. Most known MSO were found within USFS Region 3 (which encompasses 11 National Forests in Arizona and New Mexico). USFS Regions 2 and 4 (which include two National Forests in Colorado and three in Utah) appear to support fewer numbers of MSO. Data detailed in the MSO RP show that in 1995, 91 percent of known MSO in the U.S. between 1990 and 1993 occurred on lands administered by the USFS. A reliable estimate of MSO numbers throughout its range is not available, and quality and quantity of information regarding MSO numbers vary by source.

Ms. Jenine Derby, Forest Supervisor

MSO PACs are designated to include 600 acres of the highest-quality MSO nesting and roosting habitat surrounding an owl site, as defined in the MSO RP. Using PACs to monitor and assess the MSO status and population, we estimate a likelihood of 12 PACs existing in Colorado (not all currently designated as such) and 105 PACs in Utah. USFS's Region 3 reported about 980 PACs on National Forest lands in Arizona and New Mexico (U.S. Forest Service 2001). Based on this, we estimate U.S. MSO numbers may range from 980 individual owls (assuming each known site was occupied by a single MSO) to 1,960 individual owls (assuming each known site was occupied by a pair of MSOs).

Since its listing, we have completed or have in draft form a total of 124 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 350 PACs. The form of this incidental take is almost entirely harm or harassment. These consultations have primarily dealt with actions proposed by the USFS, 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, the Fish and Wildlife Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other activities. Only one of these projects (release of site-specific owl location information) has resulted in a biological opinion that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, we issued a biological opinion on USFS Region 3's adoption of the MSO Recovery Plan recommendations through an amendment of their Forest Plans. In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with approximately 26 of those PACs located in the Basin and Range West RU. In addition, 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. To date, consultation on individual actions under the amended Forest Plans have resulted in 265 PACs adversely affected, with 68 of those in the Basin and Range West RU.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, Tribal, 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.

Ms. Jenine Derby, Forest Supervisor

A. Status of the species within the action area

Fifteen MSO PACs are designated on USFS lands in the Huachuca Mountains. Suppression activities (including burnout and handlines) affected seven PACs: Miller Canyon (#030503001), Ramsey Canyon (#030503002), Wakefield Canyon (#030503010), Upper Bear Canyon (#030503011), Ida Canyon (#030503013), Blind (aka Oversight) Canyon (#030503014), and Upper Carr Canyon (#030503015). Survey history for these seven PACs is listed in Appendix B. These PACs have been consistently occupied for at least 10 years.

The fire perimeter burned to within 0.50 mile of two additional PACs: Carr Canyon (#305004) and Bond Spring (#0305005), making a total of nine affected MSO PACs. Your BA also noted informal MSO reproductive monitoring results for two unaffected PACs: Hunter Canyon (#030503017) and Lower Ash Canyon (#030503019).

Critical habitat was not designated or proposed in the action area when the fire occurred; the nearest critical habitat was northeast on lands administered by Fort Huachuca.

B. Factors affecting species' environment within the action area

Existing management factors affecting MSO habitat within the action area include livestock grazing and associated activities, recreational uses, travel through the area by undocumented migrants and drug smugglers, law enforcement activities by the U.S. Border Patrol, and fire management activities (including fuel-reduction projects). Evidence of mining is common in the action area, but we are not aware of any ongoing mining activities. These activities may reduce the quality of MSO nesting, roosting, and foraging habitat and may result in disturbance to MSO. This can be of greater concern during the MSO nesting season (March 1 through August 31, annually).

Existing natural factors include at least six consecutive years of dwindling rainfall and drought conditions accompanied by summers that have been hotter and longer-lasting than typical (U.S. Forest Service 2002). MSO prey species are quickly responsive to changes in their habitats (food, shelter, water, territories, successful reproduction), with resulting changes in prey availability or distribution (U.S. Fish and Wildlife Service 1995b).

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the action and are later in time, but are still reasonably certain to occur.

Ms. Jenine Derby, Forest Supervisor

The net effect of the fire suppression and rehabilitation activities on MSO and its habitat was positive. Suppression limited the extent and intensity of the fire, preventing it from spreading into and perhaps destroying habitat within PACs. Rehabilitation has and will speed recovery and prevent further deterioration of habitats; however, suppression activities themselves had adverse effects on MSO habitat. It is also possible that individual MSOs were affected. MSOs may have been disturbed or flushed from nests or roosts. Adults and/or young could have suffered injury or death by water and/or retardant drops due to direct or near-direct hits on nests, roosts, or owls during firefighting operations. While dropping loads, aircraft fly low and slow; their water and retardant payloads are large in quantity and heavy due to the aircraft's momentum and the gravitational pull

Suppression and rehabilitation activities can produce noise of varying intensity, duration, and frequency as well as habitat disturbance from equipment and personnel (crews using hand tools and chainsaws to cut handline). Selected cutting of large (greater than 12 inches dbh) hazard trees and snags within some PACs may have altered some small amounts of MSO habitat. We discuss the effects of fire suppression and rehabilitation in each PAC below.

Miller and Ramsey PACs: These PACs experienced the most suppression impacts from handline construction, burnout, and air operations within their boundaries. Overstory tree removal in PACs in these canyons was limited to cutting trees less than 12 inches dbh; canopies were not opened significantly with the exception of the overhanging canopy edges around an old disturbed mine site in Hamburg Meadow of Ramsey Canyon. Used for helicopter sling loads, this site was less than 100 feet in diameter.

Ida and Blind PACs: These PACs experienced handline and burnout operations to a lesser degree than Miller and Ramsey. Firefighter safety-zone creation and burnout operations occurred about 0.25 mile from any known, suspected, or historical MSO nest/roost sites and did not reach them; existing roads and trails were used to a great extent in these areas, and very little new clearing for handlines occurred.

Wakefield, Upper Bear, Upper Carr, and Bond Springs PACs: These PACs experienced considerable noise from low-and-slow fixed-wing aircraft overflights on their way to deliver water and retardant to the head of the fire. Handline construction occurred at distances farther than 0.25 mile from any known, suspected, or historical nest and/or roost locations.

Rehabilitation work was mostly limited to trail stabilization; tread was redefined and waterbars were installed. Hazard trees along the trails were felled for public safety. The majority of large (greater than 12 inches dbh) tree cutting was conducted in Miller Canyon and occurred outside the designated PAC boundaries. Hand crews used chainsaws during the fire and hand tools all other times to minimize noise to MSO during the breeding season.

Mechanical noise and human presence may be disruptive to MSO, particularly during the breeding season. Owls have more sensitive hearing than other birds (Bowles 1995). If noise arouses an animal, it has the potential to affect its metabolic rate by making it more active.

Ms. Jenine Derby, Forest Supervisor

Increased activity can, in turn, deplete energy reserves (Bowles 1995). Noisy human activity can cause raptors to expand their home ranges, but often birds return to normal use patterns when the humans are not present (Bowles 1995). Such expansions in home ranges could affect the fitness of the birds, and thus affect their ability to successfully reproduce and raise young. Species that are sensitive to the presence of people may be displaced permanently, which may be more detrimental to wildlife than recreation-induced habitat changes (Hammit and Cole 1987, Gutzwiller 1995, Knight and Cole 1995). If animals are denied access to areas that are essential for reproduction and survival, that population will decline. Likewise, if animals are disturbed while performing behaviors such as foraging or breeding, that population will also likely decline (Knight and Cole 1995).

Birds may respond to disturbance during the breeding season by abandoning their nests or young; by altering their behavior such that they are less attentive to the young, which increases the risk of young being preyed upon; by disrupting feeding patterns; or by exposing young to adverse environmental stress (Knight and Cole 1995). There is also evidence that disturbance during years of diminished prey base can result in increased foraging time which, in turn, may cause some raptors to leave an area or not to breed at all (Knight and Cole 1995). At National Parks in Utah, Swarthout and Steidl (2003) examined behavioral responses of nesting MSO to individual hikers that passed within 36 to 210 feet of active nests every 15 minutes. Among various behavioral changes observed during treatments, female and male MSO increased the frequency of contact vocalizations by 58 and 534 percent, respectively. Female owls decreased the amount of time they handled prey by 57 percent and decreased the amount of time they performed daytime maintenance behaviors by 30 percent. Swarthout and Steidl (2003) examined flush response of MSOs in canyon situations to recreationists, and found that if hikers are excluded from a 79-foot radius around roost sites that 95 percent of owl flush responses would be eliminated. This indicates that handline construction, firefighter safety zone creation, and burnout operations, which were no closer than 0.25 mile from known, suspected, or historical nest and/or roost locations, probably avoided direct impacts to owls. Topographic screening between the area of disturbance and the birds' location creates a noise buffer, and may assist in the reduction of noise disturbance (Knight and Cole 1995); however, the physical structure of canyons can also tend to magnify disturbances and limit escape/avoidance routes for owls (U.S. Fish and Wildlife Service 1995b).

Handline construction may modify MSO habitat by significantly changing the key habitat components for the species, depending on the amount, type, location, and number of large trees and mid to low-story vegetation cut. Removal of large trees during handline construction may result in loss of nest and/or roost trees, active or inactive. Other effects can include increased nest vulnerability and discovery by MSO predators, microhabitat alteration, and increased edge effects (such as tree blowdown) along handlines (USFS 2003).

Burnout operations can include in backfiring from a control point or line, felling hazardous trees and/or snags with potential to spread flames up slopes, clearing or piling brush and down fuel near the control feature, and limbing and thinning trees to reduce ladder fuels. In many situations, pre-burn preparation (foaming, wetting actions) is not possible to implement and the

Ms. Jenine Derby, Forest Supervisor

line is set on fire downslope to burn fuels in the path of an approaching wildfire, resulting in the consumption and removal of fuels. Burnout operations conducted in MSO habitat can result in the loss of key habitat components, contribute to general disturbance and smoke inhalation, and possibly result in owl mortality.

Air operation noise, especially from low-and-slow flying aircraft and helicopters, either during overflights, moving to and from sling loads and crew drops, or while dropping water or retardant, can disturb MSO. Low-level flights have the greatest potential to disturb owls because the planes are closer and slower, expanding the time and increasing the decibel levels to which MSO are exposed (Delaney *et al* 1997).

You provided 10 or more years of data on MSO reproductive status (Appendix B) for the seven PACs affected by suppression activities. These data show these PACs are occupied almost every year, but not always by a pair, and that nesting is irregular among the PACs. MSO reproductive status data were unavailable for the 2000, 2001, and 2002 breeding seasons for these seven PACs. Informal monitoring in 2002 of three MSO PACs (Carr, Hunter, and Lower Ash) indicated non-nesting in all three.

Based on the data you provided, we conservatively assume that at least one PAC out of the nine supported nesting owls, and that they were strongly affected by aircraft and chainsaw noise; water and retardant drops; the presence of many people in and around them; and/or smoke, heat, and flames from burnout operations at low intensities. These effects are reasonably certain to have resulted in harm of MSO, and possibly direct mortality.

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 are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future, non-Federal actions are expected to be from unauthorized users. Effects from illegal border crossings and drug smuggling operations are expected to continue, resulting in many unauthorized trails (particularly in riparian drainages); escaped camp and warming fires; and trash deposition. The most important threat to MSO from these effects would be escaped camp and warming fires that become catastrophic, stand-replacing wildfires. Because the Forest Service is a Federal agency and the lands it administers are federally protected, all actions authorized by the Forest affecting listed or proposed species will undergo section 7 consultation.

CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the emergency fire suppression and rehabilitation activities, and the cumulative effects, it is our biological opinion that the actions, as implemented, did not jeopardize the continued

Ms. Jenine Derby, Forest Supervisor

existence of the MSO. No critical habitat is designated in the action area; thus, critical habitat for this species was not affected. We base our conclusion on the following:

1. Conservation measures taken during the emergency fire suppression acted to minimize effects to MSOs and PACs to the greatest extent possible while allowing safe and aggressive fire suppression.
2. Suppression and rehabilitation activities had a net positive effect on the MSO and its habitat by limiting the extent and severity of the wildfire. Suppression decisions and actions taken kept the emergency fire from burning many more acres, and likely from burning them at a higher intensity, than a decision of non-suppression would have allowed.
3. A minimum amount of handline was built, and most large (greater than 12 inches dbh) trees were cut outside MSO PAC boundaries.
4. Pre-disturbed areas were used as much as possible for firefighting sites and handlines.
5. Resource advisors were on scene and on duty throughout the emergency suppression, mop-up, and rehabilitation operations.
6. Rehabilitation efforts on trails and handlines involved re-configuring the trail tread and installing waterbars with crews using hand tools to minimize noise disturbance to MSOs.

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 defined (50 CFR 17.3) 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 as (50 CFR 17.3) 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.

For the purpose of evaluating MSO incidental take from fire suppression activities, incidental take could have occurred from direct mortality of individual birds, as well as harm caused by alteration/modification of MSO habitat such that MSO behavior (i.e. breeding or foraging) was adversely affected to such a degree that the birds are considered "lost" as viable reproductive

Ms. Jenine Derby, Forest Supervisor

members of the MSO population and are therefore “taken” through injury. MSOs may fail to select a nest site or a mate; may fail to breed, or fail to successfully rear young; raise young that are less fit to survive; or desert the nest and/or young and/or the area due to disturbance or because the habitat no longer meets the owl’s needs (U.S. Fish and Wildlife 1995b).

Incidental take is considered to have occurred if an activity compromises the integrity of a PAC. Actions outside the boundaries of a designated PAC are generally not considered to cause incidental take, except in those cases where geographic areas that might support MSOs have not been surveyed.

Based on the best available information about the MSO, its habitat needs, the description of the fire suppression decisions and activities, and information furnished by you, we anticipate that take was reasonably certain to have occurred from the following actions:

1. Direct mortality or injury resulting from ten days (no night flights) of water and retardant drops directly on five PACs (Miller, Ramsey, Ida, Oversight, and Bear Springs). It is possible that a direct drop could injure or kill a MSO if it were a direct or near-direct hit; drops are strong enough to break out the tops of trees, shatter and shear off limbs, and topple snags.
2. Harm resulting from ten days (no night flights) of noise disturbance by frequent and loud aircraft passes over five known MSO nest/roost sites (Miller, Ramsey, Ida, Oversight, and Bear Springs).
3. Harm resulting from daytime and nighttime construction of about 4.75 miles of handline and daytime construction of five helispots, three drop sites, and one sling load site in six PACs (other sites, such as helibase, safety zones, and fire base camp, were established outside any PACs and would not have resulted in take). Pre-disturbed sites, roads, and trails were used as much as possible, but loss of large (greater than 12 inches dbh) trees and snags, large woody debris, and understory vegetation (a loss of MSO prey species food and cover) from handline and site construction occurred within four MSO PACs (Miller, Ramsey, Ida, and Oversight).
4. Harm resulting from burnout operations, which caused low-intensity ground fire burning patchily through two known MSO roost sites (Miller and Ramsey). Ground cover, small-sized woody debris (twigs, small limbs, and branches), and duff were consumed, but large-sized dead and down trees and snags did not burn, nor did the fire open the forest canopy in these operations (T. Deecken, pers. comm.).

AMOUNT OR EXTENT OF TAKE

Based on the extensive MSO reproductive status data provided for the nine affected PACs, the details of suppression actions taken, and our analysis, we estimate that the following amount and extent of take resulted from the fire suppression actions for the Oversight Emergency Fire:

Ms. Jenine Derby, Forest Supervisor

One pair of MSO and/or associated juveniles in the form of direct mortality, or harm associated with one PAC during the 2002 MSO breeding season (short-term); most likely in the Miller Canyon PAC.

EFFECT OF THE TAKE

We determine that this level of anticipated take is not likely to result in jeopardy to the species for the reasons given above under the Conclusion section.

Incidental take statements in emergency consultations do not include reasonable and prudent measures or terms and condition to minimize take unless the action agency has an ongoing action related to the emergency (U.S. Fish and Wildlife Service 1989). The USFS has not advised us of any such action.

We 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 Species

Upon locating a dead, injured, or sick listed species, initial notification must be made to our Law Enforcement Office, 2450 West Broadway Road, Suite 113, Mesa, Arizona 85202 (telephone: 480/835-8289) 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 if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

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 affects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that you monitor (at least MSO presence) in the Miller and Ramsey PACs for at least five years and include your results in an annual report to us.
2. We recommend that you pursue opportunities to research actual effects to and recovery of MSO and nest/roost sites in regard to fire suppression actions, especially direct drops from aircraft and particularly in relation to future site occupancy by MSO.

3. We recommend that you continue to assist us in the implementation of the MSO recovery plan.

In order for us to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the fire suppression decisions and 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 your action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) your 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 appreciate your efforts to identify and minimize effects to listed species during this emergency fire suppression effort. Please contact Thetis Gamberg (520) 670-6150 (x231) or Jim Rorabaugh (602) 242-0210 (x 238) with further information or questions. Please refer to consultation number 02-21-02-M-0103 in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ (Attn: S. Hedwall)

District Ranger, Sierra Vista Ranger District, AZ
Bob Broscheid, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ

REFERENCES CITED

- Bowles, A.L. 1995. Responses of wildlife to noise *In* R.L. Knight and K.J. Gutzwiller (editors), *Wildlife and recreationists, coexistence through management and research*. Island Press, Washington, D.C.
- Delaney, D.K., T.G. Grubb, and L.L. Pater. 1997. Effects of helicopter noise on nesting Mexican spotted owls. A report to the U.S. Air Force 49 CES/CEV, Holloman Air Force Base. Project Order No. CE P.O. 95-4. 49pp.
- Delaney, D.K., T.G. Grubb, P. Beier, L.L. Pater, and M. Hildegard Reiser. 1999. Effects of helicopter noise on Mexican spotted owls. *Journal of Wildlife Management* 63(1):60-76.
- Gutzwiller, K.J. 1995. Recreational disturbance and wildlife communities. Chapter 10 *In* R.L. Knight and K.J. Gutzwiller (editores), *Wildlife and Recreationists*. Island Press, Washington, D.C.
- Hammitt, W.E., and D.N. Cole. 1987. *Wildland recreation: ecology and management*. John Wiley and Sons, New York, N.Y.
- Knight, R.L., and D.N. Cole. 1995. Wildlife responses to recreationists. Chapter 4 *In* R.L. Knight and K.J. Gutzwiller (editors), *Wildlife and Recreationists*. Island Press, Washington, D.C.
- Swarthout, E.C.H., and R.J. Steidl. 2003. Experimental effects of hiking on breeding Mexican spotted owls. *Conservation Biology* 17(1):307-315.
- U.S. Forest Service. 2001. Biological assessment and evaluation; urban interface fuel treatment, February 28, 2001. Southwest Region. Albuquerque NM. 271 pp.
- 2003. Biological assessment for the Oversight Emergency Fire, Coronado National Forest, Sierra Vista Ranger District. 7pp+maps.
- 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(49):14248.
- 1995a. Endangered and threatened wildlife and plants; determination of critical habitat for the Mexican spotted owl. *Federal Register* 60(108): 29913.
- 1995b. Recovery plan for the Mexican spotted owl. U.S. Fish and Wildlife Service, Region 2, Albuquerque, NM. Vol. I; 172pp.

- 1998. Endangered and threatened wildlife and plants; revocation of critical habitat for the Mexican spotted owl, loach minnow, and spikedace. Federal Register 63 (57):14378.
- 2000. Endangered and threatened wildlife and plants; proposed designation of critical habitat for the Mexican spotted owl. Federal Register 65 9141):45336.
- 2001. Endangered and threatened wildlife and plants; final designation of critical habitat for the Mexican spotted owl. Federal Register 66(22):8530.

APPENDIX A

CONCURRENCES

In your February 20, 2003, request for formal consultation, you concluded that fire suppression actions taken to control the Oversight Emergency Fire did not likely adversely affect the Sonora tiger salamander, lesser long-nosed bat, Huachuca water umbel, and Chiricahua leopard frog. You concluded these actions did not adversely affect critical habitat for Huachuca water umbel. We concur with these findings as described below for each species.

Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*)

We listed the Sonora tiger salamander as endangered without critical habitat in a Federal Register notice (62 FR 665) dated January 6, 1997 (U.S. Fish and Wildlife Service 1997). We completed the recovery plan in September 2002 (U.S. Fish and Wildlife Service 2002).

No Sonora tiger salamanders have been found in the action area. The closest known locations are in Copper and Cave canyons and the upper San Pedro watershed, but these were not affected by fire-suppression or rehabilitation actions during or after the Oversight Emergency Fire.

Because of the proximity of the fire to known localities and the suitability of habitat, particularly downstream of the areas burned, Sonora tiger salamanders could have potentially been present in areas affected. Guidelines for use of stock ponds during fire suppression were incorporated after initial attack. Potable water was trucked in from off-Forest wells, and portable water tanks were used; thus, ponds potentially occupied by the salamander were not affected by water drops.

Fire retardant can negatively affect amphibians, and research shows these effects to be related to direct application of retardant to streams and ponds (U.S. Geological Survey 2000). Indirect impacts could occur from mixture filtration into water tables and standing cave waters. It is possible that toxic compounds are buffered during filtration, but indirect impacts such as these are not yet well researched and documented. Retardant was not dropped directly on ponds outside the action area. Some drops were made in canyon bottoms that contained water; however, there are no records of Sonora tiger salamanders in these waters. These possible effects are considered insignificant.

The Arizona State Parks Department and the U.S. Geological Survey will monitor water quality in Oversight and Ida canyons. The results will be used to determine if chemical components of fire retardant entered water runoff and if it may pose a greater indirect impact on this species than anticipated.

After reviewing the current status of the Sonora tiger salamander, the environmental baseline for the action area, and the effects of the fire suppression and rehabilitation, we concur with your

determination that the action may have affected, but did not likely adversely affect, the Sonora tiger salamander. We base our conclusion on the following:

1. There are no confirmed locations of this species within the action area.
2. No direct retardant drops occurred on salamander habitat.
3. Guidelines for use of stock ponds during fire suppression were incorporated after initial attack. Potable water was trucked in from off-Forest wells and portable water tanks were used.

REFERENCES CITED

- U.S. Fish and Wildlife Service. 1997. Endangered and threatened wildlife and plants; determination of endangered status for three wetland species found in southern Arizona and northern Sonora, Mexico. Federal Register 62(3):665-689.
- . 2002. Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*) recovery plan. U.S. Fish and Wildlife Service, Region 2, Albuquerque, NM.
- U.S. Geological Survey. 2000. The effects of UVB radiation on the toxicity of fire-fighting chemicals. U.S. Geological Survey, Columbia Environmental Research Center. Columbia, Missouri. 43pp.

Huachuca water umbel (*Lilaeopsis schaffneriana* spp. *recurva*)

We listed the Huachuca water umbel (*Lilaeopsis schaffneriana* spp. *recurva*) as endangered without critical habitat in a Federal Register notice (62 FR 665) on January 6, 1997 (U.S. Fish and Wildlife Service 1997). We designated critical habitat for this species in a Federal Register notice (64 FR 37441) dated July 12, 1999 (U.S. Fish and Wildlife Service 1999).

Huachuca water umbel designated critical habitat includes 83.2 kilometers (51.7 miles) of streams or rivers in Cochise and Santa Cruz counties, Arizona. The following general areas are included in the critical habitat designation: Sonoita Creek, Santa Cruz River, Scotia Canyon, Sunnyside Canyon, Garden Canyon, Lone Mountain Canyon, Rattlesnake Canyon, Bear Canyon, and 54.2 km (33.7 mi) of the Upper San Pedro River.

Huachuca water umbel is known from Bear Creek (which is also critical habitat) in the action area, at about 6,500 feet in elevation. The fire perimeter occurred about one mile upstream of any known water umbel occurrences. No other drainages in the action area are known to support this species.

Handline was constructed east and within 0.25 mile of a location of plants found in lower Bear Creek. Burnout operations occurred upslope of this line and parallel to the slope in varying distances; most of the backfiring occurred within 100 feet of this handline. Trail rehabilitation (tread, waterbars, and hazard trees cut down) likely contributed to the increased sediment load, but this amount is considered insignificant and will be masked by the larger amount of runoff from the (burned) upper portions of Bear Creek Canyon, particularly above Bear Spring. Some sedimentation movement downslope and into the stream will occur; however, it is impossible to completely separate the effects of suppression from those of the wildfire.

After reviewing the current status of the Huachuca water umbel, the environmental baseline for the action area, and the effects of the fire suppression, we concur with your determination that the action may have affected, but did not likely adversely affect, the Huachuca water umbel or its designated critical habitat. We base our conclusion on the following:

1. The nearest known location of this species is 0.25 mile from the nearest suppression activities (handline construction).
2. Increased sediment due to fire suppression and rehabilitation activities within Bear Canyon is insignificant compared to sediment loads carried from burned areas within Bear Canyon.

REFERENCES CITED

U.S. Fish and Wildlife Service. 1997. Endangered and threatened wildlife and plants; determination of endangered status for three wetland species found in southern Arizona and northern Sonora, Mexico. Final rule. Federal Register 62(3):665-689.

----- . 1999. Endangered and threatened wildlife and plants; designation of critical habitat for the Huachuca water umbel, a plant. Final rule. Federal Register 64(132):37441.

Chiricahua leopard frog (*Rana chiricahuensis*)

We listed the Chiricahua leopard frog as threatened, without critical habitat, in a Federal Register notice (65 FR 37343) dated June 13, 2002 (U.S. Fish and Wildlife Service 2002). The Chiricahua leopard frog is an inhabitant of cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations of 3,281 feet to 8,890 feet in central and southeastern Arizona; west-central and southwestern New Mexico; and in Mexico in northern Sonora and the Sierra Madre Occidental of Chihuahua and northern Durango (Platz and Mecham 1984, Degenhardt *et al.* 1996, Sredl *et al.* 1997, Sredl and Jennings *in press*).

In southeastern Arizona, no recent records (1995 to the present) exist for the following mountain ranges or valleys: Pinaleno Mountains, Peloncillo Mountains, Sulphur Springs Valley, and Huachuca Mountains. The species is absent from all but one of the southeastern Arizona valley-bottom cienega complexes. Additional information about the Chiricahua leopard frog can be found in Painter (2000), Sredl *et al.* (1997), Degenhardt *et al.* (1996), Sredl and Saylor (1998), Platz and Mecham (1984), and Sredl and Jennings (*in press*).

A 2002 survey conducted for this species in upper Oversight Canyon and Bear Creek did not locate Chiricahua leopard frogs (Hays 2002). Based on a number of surveys in the area over the last decade or more conducted by this office and others, we believe it is very unlikely that frogs were present in the action area. The nearest extant localities of this species are on the west side of the San Rafael Valley, well outside of the action area.

Historically, leopard frogs (*R. chiricahuensis* or *subaquavocalis*) occurred in Bear and Copper canyons in or near the action area. Portable water tanks were established and water was trucked in from off-Forest wells to fill them. Retardant drops did occur in the action area, but these impacts, similar to those discussed for Sonora tiger salamander, are likely insignificant. Retardant effects should have dissipated during the 2002 monsoon season. Because the rehabilitation work was on handlines and trails located well away from potential habitats, sedimentation is considered insignificant and will be masked by the larger sediment load coming down Bear Canyon from the burned areas above.

After reviewing the status of the Chiricahua leopard frog, the environmental baseline for the action area, and the effects of the fire suppression, we concur that the action may have affected, but did not likely adversely affect, the Chiricahua leopard frog. We base our conclusion on the following:

1. Surveys suggest that Chiricahua leopard frogs no longer remain in the action area.
2. Sedimentation from rehabilitation and suppression activities is anticipated to be insignificant.
3. Retardant drops in the action areas are likely to have dissipated during the monsoon season.

REFERENCES CITED

- Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. Amphibians and reptiles of New Mexico. University of New Mexico Press, Albuquerque.
- Hays, T. 2002. 2002 leopard frog surveys on the Coronado National Forest. Accipiter Biological Consultants. Portal, Arizona. Contract for the Coronado National Forest. 36pp.
- Painter, C.W. 2000. Status of listed and category herpetofauna. Report to US Fish and Wildlife Service, Region 2, Albuquerque, NM. Completion report for E-31/1-5.
- Platz, J.E., and J.S. Mecham. 1984. *Rana chiricahuensis*. Catalogue of American Amphibians and Reptiles 347.1.
- Sredl, M.J., J.M. Howland, J.E. Wallace, and L.S. Saylor. 1997. Status and distribution of Arizona's native ranid frogs. Pages 45-101 in M.J. Sredl (ed). Ranid frog conservation and management. Arizona Game and Fish Department, Nongame and Endangered Wildlife Program, Technical Report 121.
- Sredl, M.J., and R.D. Jennings. In press. *Rana chiricahuensis*: Platz and Mecham, 1979, Chiricahua leopard frog. In M.J. Lanoo (ed), Status and Conservation of U.S. Amphibians. University of California Press, Berkeley.
- Sredl, M.J., and L.S. Saylor. 1998. Conservation and management zones and the role of earthen cattle tanks in conserving Arizona leopard frogs on large landscapes. Pages 211-225 in Proceedings of Symposium on Environmental, Economic, and Legal Issues Related to Rangeland Water Developments. November 13-15, 1997, Tempe, AZ.
- U.S. Fish and Wildlife Service. 2002. Endangered and threatened wildlife and plants; listing of the Chiricahua leopard frog (*Rana chiricahuensis*). Final rule. Federal Register 67(114):40790-40811.

Lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*)

We listed the lesser long-nosed bat (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered (53 FR 38456), dated September 30, 1988. Critical habitat has not been designated for this species. We completed the recovery plan in 1994 (U.S. Fish and Wildlife Service 1994).

Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. Disturbance of maternity roosts or removal of food plants such as agaves associated with them could lead to loss of the roosts. Limited numbers of maternity roosts may be the critical factor in the survival of this species. Agaves are scattered across the Huachuca Mountains in varying numbers and densities on the watershed. While some may have burned in burnout operations, thousands, maybe hundreds of thousands of agave remain available for current and future food sources for bats. The State of Texas mine is the nearest known roost site to the Oversite Fire; it is located about three miles south of the action area. Bats occupy this site in summer and leave to migrate south in late fall. Lesser long-nosed bats were not present foraging or roosting in the Huachuca Mountains during fire and suppression activities.

Handline, clearing of two safety zones and three helispots, and rehabilitation to trails and handlines after the fire removed some agave plants (*Agave palmeri* and *A. parryi*). Individual plant loss is considered to be very low and much less than one percent of plants in the action area.

The fire and suppression/rehabilitation activities occurred when lesser long-nosed bats were not present in the Huachuca Mountains. As a result, suppression actions and rehabilitation did not directly affect the bats. No known roosts were impacted by suppression or rehabilitation efforts.

After reviewing the status of the lesser long-nosed bat, the environmental baseline for the action area, and the effects of the fire suppression and rehabilitation activities, we concur that the action may have affected, but did not likely adversely affect, the lesser long-nosed bat. We base our conclusion on the following:

1. Suppression and rehabilitation efforts occurred outside the bat's seasonal presence in the action area.
2. Much less than one percent of agave was removed by suppression and rehabilitation actions.
3. The large known roost site was about three miles away. No suppression or rehabilitation activities affected that roost or any other known roost.

REFERENCES CITED

U.S. Fish and Wildlife Service. 1994. Lesser long-nosed bat recovery plan. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. 49pp

APPENDIX B

Occupancy Records for PACs potentially impacted by the Oversight Fire and related suppression activities.
 Shading indicates no data were collected.

Year	Miller Canyon 0503001	Ramsey Canyon 0503002	Wakefield 0503010	Upper Bear Canyon 0503011	Ida Canyon 0503013	Blind Canyon (aka Oversight) 0503014	Upper Carr Canyon 0503015
1989							
1990	Pair, nesting status unknown	Pair, nesting status unknown					
1991	Pair, 1 young	Pair, 2 young	Pair, nesting status unknown	Pair, nesting status unknown	Male present	Pair, 1 young	

1992	Pair, 3 young	Pair, 2 young	Pair, nesting status unknown	Pair, 2 young	Pair, nesting status unknown		Pair, non-nesting
1993	Pair, 1 young	Pair, 1 young			Pair, nesting status unknown		
1994	Single owl, unknown sex	Pair, non-nesting	Informal monitoring, no response	Pair, non-nesting	Pair, non-nesting	Pair, nesting status unknown	Pair, nesting status unknown
1995	Pair, non-nesting	Pair, non-nesting	Unoccupied	Pair, non-nesting	Unoccupied	Pair, non-nesting	Pair, non-nesting
1996	Pair, no young	Pair, nesting status unknown	No information	No information	Unoccupied	Pair, no young	Pair, nesting status unknown

1997	Pair, non-nesting	Pair, non-nesting	Informal monitoring, no response	Pair, non-nesting	Informal monitoring, no response	Pair, non-nesting	Pair, non-nesting
1998	Pair, non-nesting	Pair, non-nesting	Informal monitoring, no response	Pair, 1 young	Informal monitoring, no response	Pair, nest failed	Pair, non-nesting
1999	Pair, 2 young	Pair, 3 young					Female, non-nesting
2000							
2001							

Ms. Jenine Derby, Forest Supervisor

2002							
------	--	--	--	--	--	--	--