

**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-F-0224

September 9, 2003

Ms. Elaine Zieroth, Forest Supervisor  
Apache-Sitgreaves National Forest  
P.O. Box 640  
Springerville, Arizona 85930-0464

Dear Ms. Zieroth,

Thank you for your November 4, 2002, request for emergency consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544) as amended (Act). At issue are impacts to the threatened Mexican spotted owl (MSO) (*Strix occidentalis lucida*) that may have resulted from the wildfire suppression actions associated with the Rodeo-Chediski fire located in the Apache-Sitgreaves and Tonto National Forests in Apache and Navajo counties, Arizona, excluding those portions contained within the Indian Reservation boundaries. There is no critical habitat designated for this species in the action area; therefore, none was affected by the emergency actions.

The Forest Service requested our concurrence with their determinations that the emergency action did not likely adversely affect the bald eagle (*Haliaeetus leucocephalus*), Little Colorado spinedace (*Lepidomeda vittata*), Colorado pikeminnow (*Ptychochelilus lucius*), and razorback sucker (*Xyrauchen texanus*). In addition, you provided information on the effects of the suppression activities on the Chiricahua leopard frog (*Rana chiricahuensis*). Our discussion of these species is contained in appendix B of this biological opinion.

This biological opinion is based on information provided in the Biological Assessment (BA) (Myers 2002), information provided during informal consultation, and other sources of information. Literature cited in the biological opinion does not represent a complete bibliography of literature available on the species involved, the effect of fire on these species, or other subjects that may have been considered in this opinion. A complete administrative record of this consultation is on file in the Arizona Ecological Services Office.

After considering all of the information provided and the best available science, we have concluded that the emergency suppression actions undertaken in response to the Rodeo-Chediski wildfire did not result in jeopardy to MSO.

### **Consultation History**

- June 26, 2002: The Apache-Sitgreaves National Forest requested emergency consultation via a telephone call to this office. The consultation was assigned reference number 02-21-02-I-0224 and we sent letter initiating emergency consultation.
- July 9, 2002: By telephone the Forest Service requested that the Rodeo-Chediski Suppression Activities be dealt with as a separate consultation from the Rodeo-Chediski Burned Area Emergency Rehabilitation (BAER) efforts. The BAER efforts were given a different consultation reference number at that time.
- November 4, 2002: We received a final BA from the Forest Service and an email request for formal consultation on the Mexican Spotted Owl and the Chiricahua leopard frog (*Rana chiricahuensis*). The Chiricahua leopard frog was not a listed species at the time of the Rodeo-Chediski fire so effects of suppression activities will not be considered in this consultation (see Appendix B).
- November 14, 2002: We sent a letter confirming receipt of required materials and initiation of formal consultation.
- May 14, 2003: We sent a draft BO to the Forest Service and requested an extension to the consultation period.
- July 30, 2003: We received a response letter from the Forest Service stating that the draft document did not contain any substantive errors that would warrant further clarification or correction in the final Biological Opinion.

### **Description of the emergency action**

Only the effects of the emergency suppression activities which occurred on the National Forest Land in response to the Rodeo-Chediski wildfire are addressed in this Biological Opinion. The Rodeo-Chediski wildfire began as the Rodeo fire on June 18, 2002. The Rodeo fire began on the Fort Apache Indian Reservation, resisted initial air and ground suppression activities, and burned 1,104 acres that day. A second fire was reported on the morning of June 20, within the Tonto National Forest, near the "OW" ranch. This fire, named Chediski, also resisted initial suppression efforts and burned 10,852 acres on the first day. These two human-caused fires, driven by record drought conditions, heavy fuel loading, and prevailing winds, burned together by June 23, 2002 and from that point forward were managed as one fire complex called Rodeo-Chediski. The Rodeo-Chediski fire burned for 19 days and was declared contained on July 7, 2002, but not before consuming 462,614 acres, 177,439 of which were on Tonto (10,782 acres),

and the Apache-Sitgreaves (166,657 acres) national forests. The remaining acreage burned included a combination of Tribal (276,512) and privately owned (8,662) land (Rodeo-Chediski BAER report).

During the Rodeo-Chediski wildfire, suppression activities consisted of bulldozer line construction to create fire breaks, the intentional ignition of fires by aerial application of incendiary devices to reduce fuel loading, aerial application of liquid chemical fire-retardant to slow the advance of the wildfire, and the intentional ignition of fires by hand to create burned-out zones ahead of the active wildfire.

### **Bulldozer**

Approximately 123 miles of fuel breaks were constructed using bulldozers. The maximum bulldozer line length was 8.06 miles and widths ranged from 28 to 44 feet. Bulldozer activity was most extensive near the communities of Forest Lakes Estates (Canyon Creek and Chevelon Creek watersheds) and Heber-Overgaard (Black Canyon watershed). Most of these lines appear to have been subsequently burned-over by the wildfire, but some of the lines formed a portion of the fire perimeter. Most of the lines were within ponderosa pine and pinyon-juniper stands. Near the communities of Forest Lakes Estates and Heber-Overgaard, bulldozer lines were not created as often because existing roads and trails were utilized as fuel breaks.

Much of the bulldozer activity in the Canyon Creek watershed was used to widen existing roads to enhance fuel break potential. On the Tonto, bulldozer lines were constructed for approximately 2.0 miles in the Rose Protected Activity Center (PAC), and 1.1 miles in the Valentine PAC.

### **Aerial ignition**

Aerial ignition was applied to the upper reaches of three drainages in Canyon Creek watershed and directly impacted approximately 500 acres in the watershed. The aerial ignition suppression activity was utilized to reduce fuels available to the wildfire as it began to move up Canyon Creek, and thus reduce the likelihood of the fire entering the community of Forest Lakes Estates. No dates were provided in the description of the aerial ignition action, but it is assumed that this preceded the arrival of wildfire, and that areas impacted by the ignition were either subsequently burned by the wildfire or, if no treatment had been done, would have been burned over soon thereafter. Most of the aerial ignition activities appear to have been in mixed-conifer forest. According to the BA, portions of two MSO PACs had aerial ignition applied within them totaling approximately 289 acres.

The intent of aerial ignition was to augment burn-out operations in areas too hazardous for ground crews, or to inhibit the rate of spread of crown-fire by consuming fuels in front of the fire. This would then reduce the possibility of a high-intensity fire that might further threaten the community of Forest Lakes Estates.

**Aerial Retardant**

Approximately 10,800 acres were directly impacted by aerial retardant. As with bulldozer-related actions, most of the retardant was applied in the Canyon Creek and Black Canyon watersheds in an effort to protect the communities of Forest Lakes Estates and Heber-Overgaard. Based on the mapped locations of this activity, most of the retardant was likely applied in ponderosa pine forests, with application to mixed-conifer forests mainly occurring in the Canyon Creek area. Presumably, applications of aerial retardant during the Rodeo-Chediski Fire preceded the wildfire in areas where applied. According to the BA, portions of three MSO PACs had aerial retardant applied within them totaling approximately 655 acres. The MSO recovery plan recommends restriction of activities that cause behavioral disturbances within MSO PACs, especially during breeding season, in order to minimize adverse affects to breeding and rearing opportunities.

**Burnout Operations**

Burnout operations were the most extensively applied suppression activity, impacting approximately 23,335 acres. Most of this activity was in the Canyon Creek (14,251 acres) and Black Canyon (6,295 acres) watersheds. In addition, over 2,100 acres were affected in the Show Low Creek watershed from burnout actions. Based on the general location of the burn-out operations, most of the activities appear to have been in ponderosa pine, with mixed-conifer forests also being impacted, especially in Canyon Creek watershed. According to information contained in the BA (Myers 2002), burnout activity occurred within 11 PACs and amounted to 4,404, acres.

**Description of Action Area**

The action area is located in the Black Mesa/Lakeside Pleasant Valley District. The emergency suppression of the Rodeo-Chediski Wildfire encompassed an area of Northeastern Arizona north to Highway 260, south into the Sitgreaves National Forest to the Mogollon Rim, east to Show Low, and west to Forest Road 512.

**Status of the Species****Mexican Spotted Owl**

The Mexican spotted owl was listed as a threatened species in 1993 (USDI 1993). The primary threats to the species were cited as even-aged timber harvest and the threat of catastrophic wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (USDI 1995).

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the Final Rule listing the MSO as a threatened species (USDI 1993) and in the Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference. Although the MSO's entire range covers a broad area of the southwestern United States and Mexico, the MSO does not occur uniformly throughout its range. Instead, it occurs in

disjunct localities that correspond to isolated forested mountain systems, canyons, and in some cases steep, rocky canyon lands. Surveys have revealed that the species has an affinity for older, well-structured 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 MSO has been divided into six recovery units (RU), as discussed in the Recovery Plan. The primary administrator of lands supporting the MSO 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 2 National Forests in Colorado and 3 in Utah) support fewer owls. According to the Recovery Plan, 91% of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

The Upper Gila Mountains RU is a relatively narrow band bounded on the north by the Colorado Plateau RU and to the south by the Basin and Range-West RU. The southern boundary of this RU includes the drainages below the Mogollon Rim in central and eastern Arizona. The eastern boundary extends to the Black, Mimbres, San Mateo, and Magdalena mountain ranges of New Mexico. The northern and western boundaries extend to the San Francisco Peaks and Bill Williams Mountain north and west of Flagstaff, Arizona. This is a topographically complex area consisting of steep foothills and high plateaus dissected by deep forested drainages. This RU can be considered a "transition zone" because it is an interface between two major biotic regions: the Colorado Plateau and Basin and Range Provinces (Wilson 1969). Most habitat within this RU is administered by the Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila National Forests. The north half of the Fort Apache and northeast corner of the San Carlos Indian reservations are located in the center of this RU and also support MSOs.

The Upper Gila Mountains RU consists of pinyon/juniper woodland, ponderosa pine/mixed conifer forest, some spruce/fir forest, and deciduous riparian forest in mid- and lower-elevation canyon habitat. Climate is characterized by cold winters and over half the precipitation falls during the growing season. Much of the mature stand component on the gentle slopes surrounding the canyons had been partially or completely harvested prior to the species' listing as threatened in 1993, however, MSO nesting habitat remains in steeper areas. MSO are widely distributed and use a variety of habitats within this RU. Owls most commonly nest and roost in mixed-conifer forests dominated by Douglas fir and/or white fir, and canyons with varying degrees of forest cover (Ganey and Balda 1989, USDI 1995). Owls also nest and roost in ponderosa pine-Gambel oak forest, where they are typically found in stands containing well-developed understories of Gambel oak (USDI 1995).

A reliable estimate of the numbers of owls throughout its entire range is not currently available (USDI 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico. However, Ganey *et al.* (2000) estimates approximately  $2,950 \pm 1,067$  (SE) MSOs in the Upper Gila Mountains RU

alone. The Forest Service Region 3 most recently reported a total of approximately 980 protected activity centers (PACs) established on National Forest lands in Arizona and New Mexico (USDA Forest Service, Southwestern Region, December 19, 2002). Based on this number of MSO sites, total numbers in the United States may range from 980 individuals, assuming each known site was occupied by a single MSO, to 1,960 individuals, assuming each known site was occupied by a pair of MSOs. The Forest Service Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than National Forest System lands have likely resulted in additional sites being located in all Recovery Units. Currently, we estimate that there are likely 12 PACs in Colorado (not all currently designated) and 105 PACs in Utah.

Since the owl was listed, we have completed or have in draft form a total of 114 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 289 PACs. The form of this incidental take is almost entirely harm or harassment. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3. However, in addition to actions proposed by the Forest Service, Region 3, we have also reviewed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other activities. Only one of these projects (release of site-specific owl location information) has resulted in a biological opinion that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, the Service issued a biological opinion on Forest Service Region 3's adoption of the Recovery Plan recommendations through an amendment of their Forest Plans. In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with approximately 91 of those PACs located in the Upper Gila Mountains 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 204 PACs adversely affected, with 93 of those in the Upper Gila Mountains RU.

### **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 to provide a platform from which the effects of the action now under consultation are assessed.

Prior to the emergency suppression activity the vegetative composition on the Sitgreaves National Forest where the fire occurred was primarily comprised of ponderosa pine overstory with isolated pockets of mixed conifer at the higher elevations along the Mogollon Rim and at the upper reaches of drainages along the rim. Vegetative transition to a pinyon-juniper forest occurs generally north of Highway 260 at the northern perimeter of the fire with the exception being of ponderosa pine stringers occurring primarily within the drainages flowing to the north. Lower-elevation sites within the fire are pinyon-juniper dominated (Rodeo-Chediski Summary Report, 2002.)

Surface fuel composition prior to the fire is described as naturally occurring needle cast, small limbs, branch wood, downed logs, and snags in addition to untreated activity fuel residue and annual grasses and forbs. Fuel loadings varied but were rated as light to moderate in most areas (Rodeo-Chediski Summary Report, 2002.)

Fuel moisture percentages prior to the fire were at unprecedented low moisture content. Drought conditions prevailed over the area in the preceding 24 months prior to the fire. Densities exceeding 1500 stems per acre, with 100% pine understory crown closure was commonly found throughout the area prior the Rodeo-Chediski wildfire event.

The 462,614 acre Rodeo-Chediski Complex was the largest and most intense post-settlement fire in Arizona history. This was an extremely intense plume-dominated, fuel, and wind-driven fire. Plume dominated fires are extremely rare in the Southwest (Rodeo-Chediski Summary Report, 2002.) Fire spread rates of 45 to 65 acres a minute occurred during this wildfire event, along with 400 foot flame lengths, group torching, dependent crown fire development, and spotting up to one mile from the fire's perimeter.

### **Status of the Mexican spotted owl in the action area**

There are 20 MSO PACs, representing approximately 12,000 acres contained within the area burned by the Rodeo-Chediski wildfire. Eleven PACS are located on the Black Mesa Ranger District of the Apache-Sitgreaves National Forest, and 9 are on the Pleasant Valley Ranger District, Tonto National Forest. These 20 PACs represent 3.2% of the 618 PACs identified in the Upper Gila Mountains RU and 2.0% of the 980 PACs located in the southwest region. In addition, prior to the fire there were approximately 6,000 acres of mixed conifer and pine-oak forest designated as restricted habitat for the MSO.

Designation of a PAC is based upon MSO occupancy; therefore, we consider all of these PACs as having been occupied prior to the wildfire and suppression activities. Completion of the 2003 and 2004 breeding season surveys will provide information to help determine the presence or absence of owls in these PACs after the wildfire. However, all 20 PACs in the action area were likely impacted due to the intensity and duration of the Rodeo-Chediski wildfire resulting in significant MSO habitat losses. Several PACs were more than 80% burned by the wildfire (see Appendix A).

Wildfires are a natural part of the ecosystem in the action area. Fires occurring within owl habitat during the breeding season (March to September) may effect the MSO population due to death of adults and young MSO. Death of MSO may also occur due to loss of nesting and roosting trees. Stand-replacement wildfire events in nesting and roosting habitat could result in MSO habitat loss in that year and into the future.

Effects of wildfire on MSO may include possible death by smoke inhalation. This may be particularly true with young owls that cannot fly. Flames and smoke from fire may cause MSO to flush from nests and or roosts, and may impair hunting opportunities by interfering with prey detection strategies.

Effects of wildfires include the loss of MSO prey habitat components such as herbaceous cover, down logs, and snags. The effects of fire on the prey base of the MSO are complex and are dependent on the variations in fire characteristics and prey habitat. Fire can effectively alter vegetation structure and composition thereby affecting MSO foraging opportunities.

### **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, that 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 proposed action and are later in time, but are still reasonably certain to occur.

The general effects of wildfire on MSO are described under the Status of the MSO in the action area section above. Only the effects of the Forest Service suppression actions on this species, in response to the Rodeo-Chediski wildfire, are addressed in this consultation. Because of the magnitude and extraordinary burn rates of the Rodeo-Chediski fire it is difficult to differentiate effects caused by wildfire and those caused by suppression actions. We acknowledge that some of these possible effects may also have occurred in the absence of suppression activities.

### **Bulldozer effects**

The creation of fuel-breaks with bulldozers likely resulted in the direct and /or indirect effects to MSO distribution and reproduction. One aspect of this activity was the removal of some overstory trees. There were a few mature ponderosa pines intentionally left standing in some of the bulldozer lines near Forest Lakes Estates. Although the specific timing of the bulldozer activities is not provided in the BA, it is presumed that bulldozer activities were conducted in advance of significant fire encroachment. Bulldozer activity may have resulted in behavioral disturbance to MSO due to noise, and loss of nests or direct mortality of offspring by tree removal. Indirectly, bulldozer lines may subsequently increase the overland flow of sediments during runoff events by removing or disturbing soils and vegetation. Intense burn-over due to wildfire often occurred within hours of the action and therefore likely combined with the effects of the action making it difficult to assess immediate affects of the suppression activity on MSO.



Indirect effects of the action were likely combined with the wildfire effects and thus rendered largely indistinguishable from the effects of the wildfire.

### **Aerial Ignition effects**

Effects from aerial ignition activities likely resulted in direct or indirect effects to MSO distribution and reproduction in areas where they may have been present. Direct effects would include loss of nesting and roosting sites, death and/or injury to owls too young to flee the area, and disturbances from the fires created by the ignition of vegetation. Intense burn-over due to wildfire often occurred within hours of the action and therefore likely combined with the direct of the effects of the action making it difficult to discern effects from the action from the effects of the wildfire. Indirect effects of the action include behavioral disturbance of MSO from noise and downdrafts of helicopters used in these operations. Low-level helicopter flights have the greatest potential to disturb owls because they move slowly and are relatively noisy (Delaney et al. 1999). Indirect effects may have included burned vegetation and soils, causing increased soil erosion, reduction of ground cover, and altered hydroponic regime of watershed. With the exception of the helicopter effect, the indirect effects of the aerial ignition likely combined with the effects of the wildfire and were indistinguishable from the subsequent wildfire effects.

### **Aerial Retardant effects**

Direct effects from the retardant may have included the wetting, dislodging, or damaging of nest sites from the force of the retardant as it hit its terrestrial target. Young MSO may have been injured by the force of the falling retardant. Indirect effects include disturbance associated with aviation-related activities. Noise from aircraft may have caused some behavioral disturbance to roosting or young MSO. Low level helicopter flights have the greatest potential to disturb owls because they move slowly and are relatively noisy (Delaney et al. 1999).

### **Effects of Burnout Operations**

The BA states that the objective of the burn-out operations was to create a low-intensity fire that would reduce fuels in front of the advancing wildfire, and this is assumed to have been the case since no exceptions were noted. As with other low-intensity fires, burn-out operations may have impacted MSO habitats through the consumption of vegetative ground cover and fallen debris, increasing the potential for erosion. Burn-out fires, including the smoke generated, may have caused behavioral disturbance or direct mortality to some MSO.

Effects of burn-out operations that occurred contemporarily with the burn-out itself likely included disturbance to understory species of vegetation, creation of ash and smoke, and impacts to MSO from the smoke and heat. Delayed effects from the burn-outs, such as altered composition and structure of flora and soil erosion were combined with the effects of the wildfire. The BA states that almost 90% of the burn-out areas were ultimately burned (Myers 2002), although how much of this acreage was burned by the wildfire is not known.

Although the intent of the burn-outs was to slow the progression or severity of the wildfire, this effect is not consistently apparent. Given numerous other variables, including the intensity of the wildfire, it is difficult to definitively attribute any apparent reduced burn intensities of the

wildfire to the burn-outs. Some areas treated with burn-out suffered less extensive burn over; however others were extensively burned. It is likely that the direct effects of the intense wildfire within most of the burn-out areas were at least as great as the direct effects from the burn-out. Intense burn-over due to wildfire often occurred within hours of the burn-out activities and therefore likely combined with the direct effects of the action making it difficult to discern effects of the action from the overall effects of the wildfire.

### **Effects of the Action on Mexican Spotted Owl**

Loss of MSO nesting and roosting habitat likely occurred as a result of actions taken within PACs in order to suppress the wildfire. Actions such as burnout, use of chainsaws to cut trees, use of aerial retardants, water drops, noise from low flying planes and helicopters, and human presence all potentially created disturbances to MSO and/or its habitat. The effects of these disturbances may have been exacerbated since they occurred during the MSO breeding season. However, due to the extreme intensity, lengthy duration, and overall impact of the Rodeo-Chediski fire, it is difficult to differentiate the effects to MSO resulting from the direct effects of the suppression activities.

### **PACs affected:**

The upper northwest portion of the Canyon Upper PAC (139 acres), and the northwest portion of the Reservation PAC (159 acres) were treated using aerial ignition. Eleven PACs received burn-out operations (eight on the Tonto National Forest and three located in the Sitgreaves National Forest totaling 4,404 acres). Portions of three PACs in the Tonto National Forest, the OW PAC (7 acres), the Canyon Upper PAC, and the Reservation PAC (159 acres), had aerial retardant applied within them. There was no information providing definitive evidence as to the presence or absence of owls in these PACs at the time of the wildfire. Each of the PACs affected either had been informally surveyed in 2002 with no response, or there was no information provided. Bulldozer lines were created through portions of two PACs, of which approximately two miles of Bulldozer line were created within the Rose PAC, and approximately 1.1 miles were created within the Valentine Lower PAC in the Tonto National Forest (see Appendix A).

The Rodeo Chediski wildfire, burned through 20 MSO PACs, often within hours of the suppression activities. Eleven PACs on the Black Mesa Ranger District of the Sitgreaves National Forest; and nine on the Pleasant Valley Ranger District, Tonto National Forest, were affected. It is impossible to accurately assess the effects of the suppression activities. This may be attributed to the magnitude and intensity of the Rodeo-Chediski wildfire.

### **Cumulative effects of the action**

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions are subject to the consultation requirements established under section 7 and, therefore, are not considered cumulative to the proposed action. Because of the role of the Forest Service in management of this land, actions to be implemented in the future by non-Federal entities are not likely to occur in the action area.

### **Conclusion**

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is our opinion that the Rodeo-Chediski Wildfire suppression activities did not jeopardize the continued existence of the MSO. We provide the following reasons:

1. The 11 PACs that were impacted by suppression activities represent only 1.8% of the 618 PACs identified in the Upper Gila Mountains RU, and 1.1 % of the 980 PACs located in the Southwest region.
2. In most cases the direct affects of the bulldozer, aerial ignition, and burnout activities were combined with the immediate subsequent effects of the intense wildfire making it difficult to disentangle the impact of the suppression activities from the wildfire effects.
3. The direct effects of the aerial retardant used in 3 PACs would have impacted any nesting MSO possibly resulting in disturbance, but these 3 PACs were ultimately almost entirely burned through by the wildfire.
4. The indirect effects of the bulldozer, aerial ignition, and burnout activities combined with the subsequent wildfire effects and were indistinguishable from the effects of the wildfire.

### **Incidental Take Statement**

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined under section 3 of the Act as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation (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 under 50 CFR 17.3 as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined under 50 CFR 402.02 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) of the Act, 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 an Incidental Take Statement.

For the purpose of evaluating incidental take of MSO from the action under consultation, incidental take can be anticipated as either the direct mortality of individual birds, or the alteration of habitat that affects behavior (i.e. breeding or foraging) of birds to such a degree that the birds are considered lost as viable members of the population and thus "taken." They may fail to breed, fail to successfully rear young, raise less fit young, or desert the area because of

disturbance or because habitat no longer meets the owl's needs. In past Biological Opinions, we used the management territory to quantify incidental take thresholds for the MSO (see Biological Opinions provided to the Forest Service from August 23, 1993 through 1995). The current section 7 consultation policy provides for incidental take if an activity comprises the integrity of a PAC. Actions outside PACs will generally not be considered incidental take.

Based on the best available information concerning the MSO, habitat needs of the species, the project description, and information furnished by the Forest Service, take was possible for the MSO as a result of the following:

1. Construction of approximately 3.1 miles of bulldozer lines in the two PACs (1.1 acres on Valentine Lower and 2.0 acres on Rose) may have resulted in disturbance or injury to MSO and most likely removed large trees, snags, and coarse woody debris from these PACs which may have resulted in reduced nesting and/or roosting suitability.
2. The aerial ignition used to treat two PACs (Reservation and Canyon Upper) may have caused injury or disturbance to MSO as a result of the capsules igniting in trees upon impact with limbs, or possibly nests, and smoke from the low-intensity fire resulting from the combustion of the capsules.
3. The aerial retardant used to treat three PACs (OW, Canyon, Reservation, and Canyon Upper) likely resulted in broken tree limbs, and fallen snags, which may have injured MSO, and may also have caused disturbance of roosting or nesting MSO.

### **Amount or Extent of Take Anticipated**

The Rodeo-Chediski fire impacted 20 MSO PACs. Wildfire suppression activities occurred in 11 of these PACs resulting in 4,404 acres impacted during the breeding season when there was a high likelihood of MSO presence. However, due to the extraordinary speed, intensity, duration, and extent of the wildfire, it is difficult, if not impossible to distinguish possible take that may have resulted from the suppression actions from the devastating effects of the fire itself. Based upon the information provided and the best available knowledge, we have attempted to make an accurate assessment of the effects of the suppression actions on MSO.

The bulldozer activity that occurred in the Valentine-Lower (#120508) and the Rose (#120511) PACs likely occurred before the fire. However, the 3.1 acres of bulldozer line represents a very small percentage of the approximately 1,200 acres available between the two PACs. If there were nesting MSO around or near the bulldozer activity then they would have been affected by the action. However, due to lack of information provided on the possible location of a nest tree, it is difficult to determine with reasonable certainty that take occurred as a result of the bulldozer activity.

The aerial ignition treatments that occurred in the Reservation (#120504) PAC and in the Canyon Upper (#120510) PAC might have caused disturbance or mortality to MSO as a result of the noise from the aircraft, or the effects of the fire or smoke created by the ignition of the capsules. It is not clear whether the aerial ignition treatments occurred concurrently with wildfire presence, but it is possible that they did. Each of these PACs were ultimately almost totally consumed by the wildfire (Appendix A). Since it is not known whether the aerial ignition treatments occurred prior to fire being present in the PACs, it is difficult to definitively assign take as a result of the aerial ignition activities in these two PACs.

The aerial retardant treatments that occurred in the OW, Canyon, Reservation, and Canyon Upper PACs may have caused disturbance to MSO as a result of aircraft noise due to the force of liquid impact. It is not clear whether aerial retardant treatments occurred concurrent with the wildfire's presence, although it is possible, especially since retardant is usually applied in an effort to extinguish existing or encroaching flames. In spite of suppression treatments, each of these PACs were ultimately consumed by the wildfire (Appendix A). Since it is not clear, but likely, that the aerial retardant treatments occurred at the time that wildfire was present or encroaching into these PACs, it is difficult to definitively assign take as a result of the aerial retardant activities.

The burnout treatments applied to varying degrees within each of the 11 PACs (Appendix A) may also have resulted in disturbance to MSO since the treatments occurred during the breeding season where there is a higher likelihood of MSO presence within the PACs. Burnout treatments were used to create a fire break in advance of the wildfire. Due to the extraordinary speed and intensity of the wildfire—burn rates reported in excess of 40 acres per minute—it is likely that burnover from the wildfire occurred within hours or minutes of the burnout activity making it difficult to definitively assign take as a direct result of the burnout activity.

Since suppression activity occurred within established PACs at a time when breeding MSO may have been present, it is possible that incidental take could have occurred within each of the 11 PACs. However, because of the conditions identified in the statements above, it is our view that take cannot be definitively assigned to the suppression actions.

### **Reasonable and Prudent Measures and Terms and Conditions**

Incidental take statements in emergency consultations do not include reasonable and prudent measures or terms and conditions to minimize take unless the agency has on-going action related to the emergency (USFWS 1998). The Forest Service requested that the ongoing activities related to this emergency consultation be dealt with in a separate consultation (Burned Area Emergency Rehabilitation 02-21-02-I-0225).

### **Conservation Recommendations**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to

minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that each of the MSO PACs previously designated within the perimeter of the Rodeo-Chediski fire be monitored, beginning in 2003 and continuing annually for at least the next five years if MSO habitat remains in the PACs.
2. We recommend that the Forest Service continue surveying restricted and protected MSO habitat on the Apache-Sitgreaves and Tonto national forests.
3. We recommend that the Forest Service pursue monitoring and/or research opportunities to determine actual effect to, and recovery of, MSO habitat from the wildfire, and particularly in relation to future occupancy by MSO.

In order for the FWS 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 Notice–Closing Statement**

This concludes formal consultation on the action outlined in the BA. 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 affect listed species or critical habitat in a manner or to an extent not considered in the opinion; (3) the agency action is subsequently notified in a manner that causes an effect to the listed species or critical habitat that was not considered in the opinion; (4) a new species is added 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.

Thank you for your coordination. If you need of further information please contact Stuart Wells (602) 841-5082 or Debra Bills (602) 242-0210 (x239). In future correspondence please refer to consultation number 02-21-02-F-0224.

Sincerely,

/s/ Steven L. Spangle  
Field Supervisor

Ms. Elaine Zieroth, Forest Supervisor

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cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (ARD-ES)  
John Kennedy, Habitat Branch, Game and Fish Department, Phoenix, AZ  
Field Supervisor, Fish and Wildlife Service, Albuquerque NM  
Forest Supervisor, Tonto National Forest, Phoenix AZ  
District Ranger, Black Mesa, Overgaard, AZ

District Ranger, Pleasant Valley District, Young, AZ  
Shaula Hedwall, Fish and Wildlife Service, Flagstaff AZ  
Stephen Robertson, Fish and Wildlife Service, Albuquerque NM

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**Appendix A**

**Summary of suppression activities and acres burned within PACs**

PAC	Location	MSO survey results: MRA= Most Recent Activity			BD Acres	AI Acres	AR Acres	BurO Acres	Percentage burned by wildfire
		MRA	2001	2002					
O.W. Canyon 120503	Tonto	2000 O	IM/ NI	NI			7	407	94.4% / 459.6 ac
Reservation 120504	Tonto	2000 M	NI	IM/ NR		159	134	292	92.9% / 521.2 ac
Valentine-Lower 120508	Tonto	1998 O-NU	NI	IM/ NR	~1.1			538	20% / 644.9 ac
Valentine Upper 120509	Tonto	2000 F	IM/ NR	IM/ NR				607	69.7% / 607.8 ac
Canyon Upper 120510	Tonto	2000 F	NR	NI		139	514	575	80% / 574.5 ac
Canyon Lower 120511	Tonto	1990 O-NU	NI	IM NR				265	7.9% / 381.2 ac
Rose 120512	Tonto	1990 O-NU	NI	IM/ NR	~2.0			564	41.9% / 568.2 ac
Lion	Tonto	1990 O-NU	NI	IM/ NR				536	28.7% / 540.2 ac
Eubank Tank	A-S	1998 O-2Y	NI	NI				175	50.9%/ 603.481 ac
Jersey Canyon	A-S	2000 MF-NN	NI	NI				86	31.2%/ 598.814 ac
Horse Tank	A-S	1999 O-1Y	NI	NI				359	54.6%/ 607.084 ac
<b>Totals</b>	<b>11 PACs</b>	<b>NA</b>			<b>3.1</b>	<b>292</b>	<b>655</b>	<b>4,404</b>	

A-S=Apache Sitgreaves, BD=Bulldozer, AI=Aerial ignition, AR=Aerial retardant, Burn=Burn out, ac=acres  
 IM-NR=Informal monitoring-No response, NI=No information, O=Occupancy inferred or confirmed, M=Male Inferred or confirmed, F=Female  
 inferred or confirmed, #Y=Number of young fledged, NN=Non-nesting/Non-reproduction confirmed.

## Appendix B

### **Chiricahua leopard frog (*Rana chiricahuensis*)**

The Chiricahua leopard frog listing as a threatened species was effective July 15, 2002, (USFWS 2002, 50 CFR Part 17) after the conclusion of the Rodeo-Chediski wildfire suppression activities. However, information regarding potential impact on the Chiricahua leopard frog and potential habitat was included in the BA. Section 7 regulations do not provide for emergency consultations on proposed species.

### **Other effects determinations**

#### **Bald Eagle (*Haliaeetus leucocephalus*)**

Suppression activities may have affected habitat components used by migrant bald eagles such as roost and perch sites, and possibly prey species. However, suppression activities occurred four to five months prior to the potential arrival of migrant bald eagles within the suppression area (USFWS 1995b). Therefore, we concur with the Forest Service finding that any effects were likely insignificant and did not likely adversely affect bald eagles.

#### **Little Colorado spinedace (*Lepidomeda vittata*)**

At the time of the fire the spinedace was known to inhabit Chevelon Creek and Silver Creek, both areas approximately 30 miles downstream from the nearest suppression activity. A portion of Chevelon Creek is designated as critical habitat. The BA states (Myers 2002) there is no connection to these areas by perennially flowing water and that the suppression activities had no direct effect to spinedace or their critical habitat. Indirect effects from suppression activities such as altered hydroponic regime, input of sediments, ash, and retardant chemicals during runoff events were likely combined with the ensuing effects of the wildfire. Toxicity of retardant chemicals was likely neutralized either by combustion or decomposition in soils before reaching spinedace habitat. Therefore we concur with the Forest Service determination that the suppression activities did not likely adversely affect the Little Colorado spinedace

#### **Colorado pikeminnow (*Ptychocheilus lucius*)**

Based upon current information provided regarding the status of the pikeminnow within the action area, we concur with the Forest service determination that it is not likely that the effects of any of the components of the wildfire suppression jeopardized the continued existence of the experimental, non-essential pikeminnow population.

#### **Razorback sucker (*Xyrauchen texanus*)**

Indirect effects from suppression activities could have potentially involved a few relict individuals remaining in Salt River and lower Canyon Creek. However, these indirect effects are

discountable, given the likely absence of the species in the area, the distance between upper Canyon Creek activities and its confluence with Salt River, and the fact that the wildfire effects were likely combined with indirect effects of the suppression activities. Therefore we concur with the Forest Service findings that the suppression action did not likely adversely affect the Razorback sucker.

**Appendix C**

See Attached PACs Affected Maps