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U.S. Fish and Wildlife Service
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AESO/SE
02-21-02-F-0225-R1

July 30, 2004

Ms. Elaine J. Zieroth
Forest Supervisor
Apache-Sitgreaves National Forest
P.O. Box 640
Springerville, Arizona 85938-0640

RE: Burn Area Emergency Rehabilitation Consultation for the Rodeo-Chediski Fire
(Your File 2670)

Dear Ms. Zieroth:

Thank you for your request for reinitiation of consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated December 8, 2003, and received by us on December 11, 2003. At issue are impacts that may have resulted or may yet result from the proposed emergency rehabilitation of areas burned by the Rodeo-Chediski fire in portions of Coconino, Gila, and Navajo counties, Arizona. Your office concluded that the proposed action may affect, but is not likely to adversely affect, the bald eagle (*Haliaeetus leucocephalus*), Little Colorado spinedace (*Lepidomeda vittata*), or Chiricahua leopard frog (*Rana chiricahuensis*). Concurrences for these species are included in Appendix A. Your office similarly concluded that the proposed action may affect, but is not likely to adversely affect, Mexican spotted owls (*Strix occidentalis lucida*). We notified your staff that we are not able to concur with this conclusion, and they have requested that we continue with formal consultation for the Mexican spotted owl. Finally, your office concluded that the proposed action may affect, but is not likely to adversely affect, proposed critical habitat for Mexican spotted owls. A conference report for proposed critical habitat is included within Appendix B of this biological opinion.

This biological opinion is based on information provided in the November 21, 2002, biological assessment and evaluation (BAE), the July 29, 2002, Burned Area Emergency Rehabilitation (BAER) Team Executive Summary and Specialists Reports, the undated Interagency BAER Rodeo-Chediski Fire Complex Wildlife Resource Assessment, your December 8, 2003, letter updating the BAE, your April 5, 2004, letter on proposed critical habitat, and various e-mails and telephone conversations with your staff, maps provided by your office, and field investigations conducted on September 12 and 13, 2002. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, wildfire suppression and rehabilitation and their effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

- We received your initial request for consultation on July 7, 2003, and determined that the resulting due date for the biological opinion was November 19, 2003. Following your request to expedite the consultation, we provided a biological opinion to your office on September 24, 2003.
- After discovering an error in the opinion, we contacted the Forest Service on September 26, 2003, for clarification. During that conversation, we learned that the Forest Service had altered the implementation schedule for the project, completing portions of the proposed action prior to receipt of the biological opinion. We recommended that the Forest Service reinitiate consultation for the project. We received your request for reinitiation on December 11, 2003.
- On April 5, 2004, your office submitted an evaluation of the effects of the action on proposed critical habitat for the Mexican spotted owl. We have included our concurrence within a conference report in Appendix B.
- We requested a 60-day extension of the consultation on April 21, 2004, which was granted by your office.
- A draft biological opinion was sent to the Forest Service on May 27, 2004.
- We received your July 1, 2004, letter on July 7, 2004, noting that your review of the draft opinion had been delayed, and that you were granting an additional (unspecified) extension of the timeframe for the consultation.
- Your July 19, 2004, comment letter on the draft biological opinion was received in this office on July 22, 2004.

The original opinion includes additional information on project history, and is incorporated herein by reference. We addressed the effects of emergency portions of the BAER activities under the first opinion. Because we have received additional information, this opinion addresses both completed emergency actions and those actions yet to be completed. As dictated by emergency consultation procedures, we provide a take statement for those actions completed as part of the emergency where needed, but do not provide reasonable and prudent measures or terms and conditions (see the incidental take statement for further details). For purposes of section 7 consultation, we consider those actions yet to be completed as related to the emergency, but not part of the emergency work. We evaluate these non-emergency BAER actions for incidental take and provide reasonable and prudent measures with terms and conditions as appropriate.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Forest Service describes the Rodeo-Chediski fire as a plume, fuel, and topographically driven fire. Plume dominated fires are extremely rare in the Southwest. Towering plumes developed in part due to the availability of fuel resulting from low live fuel mixtures. The fire moved more rapidly once these plumes collapsed. The fire spread at rates of 45 to 65 acres a minute, and included 400 foot flame lengths, group torching, dependent crown fire development, and spotting up to one mile from the fire's perimeter. Spot fires quickly gained size as they spread (USFS 2002). The Rodeo-Chediski Fire burned a total of approximately 462,384 acres between June 18 and July 8, 2002, and was the largest and most intense post-settlement fire in Arizona history. Of the total acreage, 10,783 acres are on the Tonto National Forest, and 164,644 acres are on the Apache-Sitgreaves National Forest. The remaining acreage is on the White Mountain Apache Reservation (278,183 acres) or private lands (8,774 acres). The action area for this consultation includes only those portions of the Rodeo-Chediski Fire that occur on Forest Service lands (see Figure 1 in Appendix C).

The proposed action includes aerial seeding, hand seeding, aerial hydro mulching, ground mulching with straw or wood chips, directional tree felling, channel clearing, wet meadow protection, and culvert removal. Appendix A of the BAE includes a breakdown of treatments occurring within Mexican spotted owl Protected Activity Centers (PACs) and is incorporated herein by reference.

Aerial Seeding – The Forest Service completed aerial seeding with fixed-wing airplanes and helicopters at a rate of approximately 30 pounds to the acre over approximately 50,000 acres. Planes applied seed cover in strips of approximately 70 feet per pass and flew at an altitude of approximately 400 feet above ground level. The seed mix consisted of annual rye, annual barley, mountain brome, and slender wheatgrass. Aerial seeding occurred only in areas that were severely burned.

Hand Seeding – The Forest Service used native seeds in hand seeding activities, and completed hand seeding only in areas of moderate- and high-burn severity where crews could work safely. Twenty-person crews applied seed at a rate of approximately 160 acres per day. Appendix B of the BAE includes a breakdown of hand seeding acres by PAC and is incorporated herein by reference.

Aerial Straw Application - The BAE notes that aerial application of straw mulch occurred throughout the burned area. Your staff have indicated that no additional aerial mulching is anticipated.

Ground Mulching - Ground mulching involved the spreading of mulch materials by hand. Volunteers completed this work along the Highway 260 corridor.

Tree Felling – The Forest Service intends to use tree felling to replace downed large woody debris consumed by the fire, reduce soil erosion, and help re-establish small mammal habitat. Where crews can work safely, they have or will fell three to five trees per acre in high- and moderate-burn severity areas. All planned tree felling activities are within Mexican spotted owl PACs.

Channel Clearing – Channel clearing involves the removal of debris to prevent the formation of debris dams near residential areas. Debris has accumulated as a result of the fire, and includes downed trees or portions of trees, brush, or other materials.

Wet Meadow Fencing and Stabilization - The Forest Service will construct fencing for the Baca Meadow near Black Canyon Lake. The purpose of the fencing is to facilitate plant regeneration by keeping elk out of areas that were burned. The project should begin to prevent or minimize additional erosion as plants mature. Forest Service staff anticipate increased water flows and habitat for voles and other small mammals important to spotted owls.

Culvert Removal – The Forest Service removed culverts and replaced them with rolling grade dips in order to decrease the chance of road damage following blockage of culverts from debris transported during high flow events following the fire. At this time, your staff do not anticipate replacing many of these culverts, but would instead leave the rolling grade dips already in place. Your staff have initiated disposal of the removed culverts.

Emergency Actions

We include within emergency actions aerial seeding, aerial application of straw, hand seeding, and channel clearing that occurred immediately following the fire. As of October 2, 2002, the Forest Service completed aerial seeding of 48,796 acres, of which 4,342 acres were within Mexican spotted owl PACs (according to the BAE). The Forest Service completed aerial seeding using both airplanes and helicopters. Crews hand-seeded an additional 1,491 acres in PACs in 2002. Emergency work also involved the aerial application of straw, which was applied to approximately 10,962 acres by October of 2002. The Forest Service cleared approximately 2.2 miles of channels immediately following the fire. In addition, the Forest Service removed approximately 200 culverts to ensure that debris flows in channels would not block culverts and cause subsequent road erosion.

Future Actions

Proposed future actions include dead tree felling, hand seeding, meadow fencing and stabilization, and channel clearing. Your office notes that these activities should be completed by December of 2004, and that you do not anticipate any additional aerial seeding or straw application at this time. Crews completed all hand mulching as well. The Forest Service anticipates completing approximately 975 acres of dead-tree felling before December 2004. Crews will fell three to five trees per acre in high- and moderate-burn severity areas where they can work safely on both the Tonto and Apache-Sitgreaves National Forests. The Forest Service has analyzed tree felling activities within Mexican spotted owl PACs, with approximately 575 acres in PACs 502, 508, 509, and 511 on the Tonto, and 400 acres in PACs 201, 205, 206, 208, and 209 on the Apache-Sitgreaves.

Crews will hand seed 323 acres within Mexican spotted owl PACs (502, 508, 509, 511, and 512) on the Tonto National Forest. Twenty-person crews will apply native seed at a rate of 160 acres per day in areas of moderate- and high-burn severity. Crews will only work where it is safe to do so (i.e., not on steeper cliff areas). At the anticipated rate of 160 acres per day, crews should complete this work in approximately two days.

Your staff anticipate clearing a total of up to 9.0 miles of channels within the burned area. The work completed on the first 2.2 miles may need to be redone, depending on flow events. If not, then only 6.8 miles of channel clearing remain to be done. Your staff have found no need to re-work previously cleared channels, and note that it is possible that no additional clearing work will be required. At this time, this mileage is an estimate, and the Forest Service does not know the exact location of clearing activities. Crews could rely on heavy equipment for channel clearing if deemed appropriate for a particular task.

STATUS OF THE SPECIES (range wide and/or recovery unit)

Information normally contained within this portion of a biological opinion can be found under the original opinion for this project (02-21-02-F-225), dated September 24, 2003.

Since the owl was listed, we have completed, or have in draft form, a total of 135 formal consultations for the Mexican spotted owl. These formal consultations have identified incidences of anticipated incidental take of Mexican spotted owl in 304 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 concluded the proposed action would likely jeopardize the continued existence of the Mexican spotted owl.

In 1996, we 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 Mexican spotted owls, 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 additional incidental take within five Mexican spotted owl PACs in Region 3 due to the rate of implementation of the grazing standards and guidelines, for a total of 156 PACs. To date, consultation on individual actions under the amended Forest Plans have resulted in 212 PACs adversely affected, with 106 of those in the Upper Gila Mountains RU. Critical habitat was proposed on November 18, 2003. A description of the constituent elements can be found in the 2000 proposed rule (65 FR 45336).

ENVIRONMENTAL BASELINE [in the action area]

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

Elevation within the proposed project area ranges from 6,400 to 7,700 feet. The Sitgreaves National Forest, including the proposed action area, lies on a portion of the Colorado Plateau on and to the north of the Mogollon Rim. From the rim crest, drainages flow north into the Little Colorado River Watershed. The terrain in the area is flat, with a gradient of one to five percent, and is bisected by wide, shallow drainages (USFS 2002). The climate in the area is dry, with precipitation occurring primarily during summer monsoons and winter snows. This area has experienced lower than average amounts of rainfall since 1997, and is considered to be experiencing drought conditions.

Prior to the Rodeo-Chediski fire, a ponderosa pine overstory dominated the vegetative composition on the Sitgreaves National Forest where the fire occurred. Isolated pockets of mixed conifer occur at the higher elevations along the Mogollon Rim and at the upper reaches of drainages along the rim. The ponderosa pine and mixed conifer communities transition to a pinyon-juniper forest generally north of Highway 260 at the northern perimeter of the fire, with ponderosa pine stringers occurring primarily within the drainages flowing to the north. Lower-elevation sites within the fire are pinyon-juniper dominated (USFS 2002).

The Forest Service describes surface fuel composition prior to the fire 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 (USFS 2002). Fuel moisture percentages prior to the fire were at an unprecedented low due to prevailing drought conditions in the area for the 24 months prior to the fire. Pine densities exceeding 1500 stems per acre with a 100 percent understory crown closure were commonly found throughout the area prior the Rodeo-Chediski wildfire.

A. Status of the species within the action area

There are 20 Mexican spotted owl PACs within the proposed action area: 11 on the Black Mesa Ranger District of the Apache-Sitgreaves National Forest, and nine 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 Forest Service's southwest region. In addition, prior to the fire there were approximately 6,000 acres of mixed conifer and oak stands designated as restricted habitat for the Mexican spotted owl.

All 20 of the PACs in the action area were impacted by the fire to some level due to its intensity and duration. Within the action area, habitat for Mexican spotted owls has been substantially modified by the Rodeo-Chediski fire. Your staff provided a breakdown of burned areas within the PACs, as noted in Table 1 below.

Table 1. Acres and percentages of areas within PACs that were moderately or severely burned, based on 8/24/02 satellite imagery (USFS 2002).				
PAC #	Moderately Burned Acres	Severely Burned Acres	Percent Moderate or Severe Burn	Nest Tree Burned
201	158.6	148.4	50.87	Unknown
202	168.3	240.2	67.65	Yes

203	199.9	198.5	66.09	Yes
204	161.4	429.1	96.47	Yes
205	214.3	155.9	61.54	Unknown
206	164.4	139.6	50.71	Yes
207	83	143.7	37.34	Unknown
208	116.5	212.8	54.24	Yes
209	138.4	152.3	46.83	Yes
210	39.4	146.2	31	Yes
214	114.9	243.7	59.29	Unknown
502	243.2	98.6	56.88	Yes
503	49.1	387.1	96.36	Yes
504	66.6	417.9	92.96	Yes
508	114.7	19.3	20.15	Unknown
509	129.3	291.8	68.9	Yes
510	151	303.9	82.33	Yes
511	142.7	113.7	43.76	Unknown
512	45.8	0	6.86	Unknown
513	105.2	0	16.45	Unknown

Past occupancy and reproductive history is summarized in Table MSO-1 in Appendix A of the BAE; and is incorporated herein by reference. That table verifies occupancy in five of the PACs in 2002 prior to the fire. Data provided by your staff indicates that, for many of the PACs within the burned area, either monitoring was informal, or no data were collected for most of 2002. Similar data are shown for most PACs in 1999, 2000, and 2001. However, several of these PACs have had owls for multiple years, and have had successful reproduction. Occupancy has been confirmed for all PACs at some time, and often repetitively, between 1989 and 1997. Young were confirmed for 13 PACs during this time period. Pairs were confirmed for 18 PACs at some time during this time period, and repetitively for many of them.

We recommended that surveys not be completed in 2002 following the fire as we did not want to cause additional stress to the owls when we believed that it was too late in the survey season to obtain useful results. Monitoring was completed in 2003, and located owls in 11 of the 20 PACs following the fire (Table 2). Two of the 11 PACs were successful in producing eggs; however, the majority of the eggs did not hatch, and one young owl was killed by a predator. Monitoring completed at this point for 2004 located one male owl each in PACs 202 and 209. Table 2 summarizes occupancy status for Mexican spotted owls within the Rodeo-Chediski burn area. We consider all of the PACs as occupied pending completion of formal monitoring in 2004.

Spotted owls are known to exhibit site tenacity, with individual adults occupying the same home ranges for long periods of time, and probably for life. One study found that, of 25 nests of Northern spotted owls that were checked in two or more years, 17 nests (or 68%) were used more than once (Forsmann *et al.* 1984). Biologists on the Coconino and Lincoln National Forests observed that Mexican spotted owls often return to home ranges and nests following disturbances such as wildfire. Bond *et al.* (2002) determined that, at least in the short-term, Mexican spotted owls return to or remain within their territories following wildfires. For the Rodeo-Chediski fire, this statement proved true as owls remained associated with 11 of the 20 PACs in the burn area during 2003.

Within the proposed action area, suitable habitat remains following the fire. As noted in Table 1 above, 90% or higher of PACs 204, 503, and 504 were moderately or severely burned. In addition, 50% or higher of PACs 201, 202, 203, 205, 206, 208, 214, 502, and 509 were moderately or severely burned. Your staff reports that burn severity was high on approximately 43,983 acres, moderate on 51,681 acres, and low on 69,218 acres. An additional 12,496 acres were classified as “unburned”. Habitat for Mexican spotted owls remains in those areas that were not moderately or severely burned. There were approximately 6,000 acres of mixed conifer and oak stands classified as restricted habitat prior to the fire. According to information provided by your staff, there are 4,306 acres of mixed conifer habitat that qualifies as restricted habitat under the definition within the Recovery Plan. Of that acreage, 789.45 acres are identified as meeting target conditions for restricted mixed conifer habitat, meaning they would become nesting/roosting habitat in the future with proper management. An additional 1.83 acres are defined as meeting threshold conditions, meaning they meet minimal levels of conditions that should be maintained. An additional 15,266 acres consist of pine-oak restricted habitat, with 1,313 acres meeting target conditions.

Table 2. Mexican spotted owl PAC and occupancy status in 2003.	
PAC	Occupancy Status
201	Male confirmed
202	Single Owl - non-nesting confirmed
203	Single owl - nesting undetermined
204	Informal Monitoring - No response
205	Male confirmed
206	Informal Monitoring - No response
207	Informal Monitoring - No response
208	Male confirmed
209	Single Owl inferred or confirmed - 1 young dead
210	Single owl inferred or confirmed - 3 eggs

214	Informal Monitoring - No response
502	Informal Monitoring - No response
503	Informal Monitoring - No response
504	Single owl - nesting undetermined
508	Informal Monitoring - No response
509	Informal Monitoring - No response
510	Informal Monitoring - No response
511	Informal Monitoring - No response
512	Informal Monitoring - No response
513	Informal Monitoring - No response

We have proposed critical habitat for Mexican spotted owls (USFWS 2000, 2003), and the proposed action does occur, at least in part, within the proposed critical habitat area. Hand seeding, tree felling, and meadow fencing projects would occur within critical habitat. It should be noted that tree felling will occur in areas that were burned at moderate- or high-burn severity, and that only dead trees will be felled. Approximately 1,298 acres would be affected by tree felling and hand seeding activities. An additional nine miles of channel clearing would likely be in critical habitat, should channel clearing become necessary.

B. Factors affecting species environment within the action area

Within the proposed action area, there are several State, Tribal, local, and private actions which may have already affected Mexican spotted owls, or that will occur contemporaneously with the proposed action. As previously noted, the Rodeo-Chediski Fire burned approximately 462,384 acres in 2002, resulting in the need for the proposed action. The BAE notes that, of the total fire acreage, approximately 147,500 acres (or 32 percent) were impacted by very intense fire resulting in high-burn severity; 99,600 acres (22 percent) experienced moderate-burn severity, and 215,200 acres (46 percent) experienced low-burn severity or remained unburned. “High severity” was used to define those areas where no needles remain on the trees, while moderate severity includes those areas having as much as 60 to 100 percent mortality, but with brown needles remaining attached to the tree. Low severity areas are those where the canopy was scorched, but most of the trees were not killed. Unburned areas include those where there was little or no canopy damage, but where surface fire did move through the area (USFS 2002). While the fire was not a management action of any agency or entity, its impacts in the area need to be considered when reviewing the environment within the action area.

Historical fuels management (in the last 15 years) has occurred in this area. The Forest Service provides maps on the Internet that detail these areas within the Rodeo-Chediski burn for previous fuels treatments, pre-commercial thinning, commercial timber sales, prescribed fire treatments, and livestock grazing. These figures can be found at http://www.fs.fed.us/r3/asnf/bboard/rc_fire_effects.htm.

The Rodeo-Chediski Fire was not the first fire in this area. Previous fires include the Elk Fire, Day Fire, Black Fire, and Bruno Fire. The dates and acreages of these fires are summarized in Table 3.

Table 3. Fire history in the Rodeo-Chediski burn area (B. Dykstra, Forest Service, pers. comm. 2003).		
Fire	Date	Acreage Consumed
Day Fire	1974	3,618
Elk Fire	1987	800
Bruno Fire	1989	328
Black Fire	1995	199

State actions in the proposed action area are primarily limited to work along State Route 260 through the northern edge of the burn area. Consultations for projects completed by both the State and Federal Highways have included road improvements between Payson and Heber and near Heber-Overgaard, creation of turnouts, improvement of Forest Road 512 (Young Road), installation of guardrails, repair of slide areas, vegetation thinning projects, and shoulder reconstruction and tree removal.

Private inholdings within the burn area are substantial and include the towns of Forest Lakes, Heber-Overgaard, and Linden in addition to the parcels scattered throughout Forest Service lands. At Forest Lakes, private lands are still being developed. Additionally, there is a large parcel of approximately 100 acres of private lands at the junction of Forest Roads 86 and 87. Landowners are subdividing this larger parcel into smaller 10-acre parcels, which are being developed for private residences. Currently, there are approximately four new homes under construction in this area. Private land further south on Forest Road 87 was also developed as a private residence and llama farm. In the Heber-Overgaard area, particularly on the border with Forest Service lands, private homes that were lost during the fire are being rebuilt, and additional private properties continue to be developed as permanent or summer residences.

Local actions include those taken by the towns of Forest Lakes, Heber, and Overgaard, but Forest Lakes is the only one of these towns located near Mexican spotted owl PACs or suitable habitat. Work on reducing fuel loads has been completed by the Forest Service in order to protect towns like Forest Lakes. City limits are adjoining Forest Service land boundaries, and any construction projects for homes, businesses, or infrastructure could have effects to Forest Service lands. However, none of the Mexican spotted owl PACs were within this joint boundary area.

The Bureau of Indian Affairs (BIA) hauled logs salvaged on Tribal lands across Forest Service roads throughout the proposed action area. The BIA hauling action involved the use of Forest Service roads from December 2002 through mid-summer 2003. No new roads were created. The BIA resurfaced some of the existing roads with gravel to accommodate heavier log traffic. In addition, since completion of the original opinion for the BAER activities, an opinion was issued for salvage logging within the Rodeo-Chediski burn area (02-21-03-F-0064). The

proposed action involves the salvage harvest of dead standing trees with merchantable value on approximately 34,156 acres of Forest Lands that experienced moderate- to high-burn severity during the Rodeo-Chediski wildfire. The salvage logging operation would involve road construction, landing area construction, tree felling, and log hauling.

During and following the Rodeo-Chediski fire, additional management actions related to the fire itself occurred. During the fire, suppression efforts included construction of bulldozer lines for fire breaks, aerial ignition of fires to reduce fuel loading, ignition of fires on the ground to reduce fuel loading, and aerial application of liquid chemical fire-retardant to slow the advance of the wildfire. The Biological Opinion for suppression of the Rodeo-Chediski Fire (file number 02-21-02-F-0224) includes additional detail regarding the actions and their effects on Mexican spotted owls, and is incorporated herein by reference. Cumulatively, some PACs were impacted by more suppression actions than others. This is particularly true for PACs 503, 504, 508, and 510, which each experienced more than one suppression action. Table 4 provides additional detail on suppression efforts within PAC boundaries, as well as a summary of subsequent management actions in the 20 PACs located within the Rodeo-Chediski burn area.

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.

Emergency Actions

As previously stated, owls are known to return to or remain within their territories following wildfires, at least for the short-term (Bond *et al.* 2002). Data collected by the Forest Service in 2003 indicate that this is the case for PACs 201, 202, 203, 205, 208, 209, 210, and 504. Owls in PAC 209 on the Sitgreaves National Forest are continuing to use an old nest site within a drainage that burned at a low intensity. The nest tree itself shows some scorching at the base. Both the male and female owls were present within the PAC in 2003, and produced one chick which was subsequently eaten by a predator. The male was subsequently relocated in 2004. The status of the female is not yet known and will require further follow-up. Owls in PAC 210 produced eggs, which never hatched. Males were confirmed for PACs 201, 205, and 208, while presence of a single owl was confirmed for PACs 202, 203, and 504. The male from PAC 202 was located in 2004 as well. Because owls were present before the fire, and were also present during the 2003 and 2004 survey season in several of the PACs, we believe it is reasonable to conclude that much of the habitat in and around these PACs was occupied at the time that BAER work was completed, immediately following the fire in 2002.

Table 4. Impacts of management actions on PACS within the Rodeo-Chediski burn area.					
PAC	Suppression (Acres)	BIA Salvage Actions	USFS Salvage	Emergency BAER Activities (Acres)	Completed Non-Emergency BAER Activities (Acres)
201	Burnout (175)	Noise disturbance-road construction and use	Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (139), aerial straw application (285)	Aerial seeding
202		Noise disturbance-road construction and use	Road construction/use, salvage logging; habitat loss and short-term noise disturbance; owl-vehicle collision ¹	Aerial seeding (286)	Aerial seeding
203		Noise disturbance-road construction and use	Road construction/use, salvage logging; habitat loss and short-term noise disturbance; owl-vehicle collision ¹	Aerial seeding (217)	Aerial seeding
204		Noise disturbance-road construction and use		Aerial seeding (592)	Aerial seeding
205		Noise disturbance-road construction and use	Road construction/use, salvage logging; habitat loss and short-term noise disturbance; owl-vehicle collision ¹	Aerial seeding (286), aerial straw application (189)	Aerial seeding
206		Noise disturbance-road construction and use	Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial straw application (80)	Aerial seeding
207		Noise disturbance-road construction and use	Road construction/use, salvage logging; habitat loss and short-term noise disturbance; owl-vehicle collision ¹	Aerial seeding (207)	Aerial seeding

208	Burnout (175)		Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (310), aerial straw application (178)	Aerial seeding
209			Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (173), aerial straw application (25)	Aerial seeding
210	Burnout (86)		Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (133), aerial straw application (131)	Aerial seeding
214		Noise disturbance-road construction and use	Road construction/use, salvage logging; habitat loss and short-term noise disturbance; owl-vehicle collision ¹	Aerial seeding (293), aerial straw application (145)	Aerial seeding
502				Aerial seeding (32)	Aerial seeding, hand seeding (138)
503	Aerial retardant (7)		Road construction/use, salvage logging;	Aerial seeding (450)	Aerial seeding
504	Aerial ignition (159), aerial retardant (134), burnout (292)		Road construction/use, salvage logging;	Aerial seeding (459)	
508	Bulldozer line (1.1), burnout (538)			Aerial seeding (56)	Aerial seeding, hand seeding (100)
509	Burnout (607)		Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (180)	Aerial seeding
510	Aerial ignition (139), aerial retardant (514), burnout (575 acres)		Road construction/use, salvage logging; owl-vehicle collision ¹	Aerial seeding (408)	Aerial seeding
511	Burnout (265)			Aerial seeding (113)	Aerial seeding, hand seeding (106)

512	Bulldozer line (2.0), burnout (564)			Aerial seeding (7)	Aerial seeding, hand seeding (1)
513	Burnout (536)				Aerial seeding, hand seeding (43)
¹ The FWS provided a take statement for vehicle-owl collisions of one owl every year for three years. We do not anticipate that take of owls by vehicle collisions will occur within each of these PACs.					

Aerial Seeding

The Forest Service conducted aerial seeding operations at an approximate altitude of 400 feet above ground level, seeding approximately 53,784 acres in 70 foot-wide swaths per pass. Of the total acreage, approximately 4,342 acres were within Mexican spotted owl PACs in 2002 (Table 5 below). Your staff estimate that aerial seeding involved 30 to 40 overflights for nine PACs. Aerial seeding operations occurred at the end of or just after the Mexican spotted owl breeding season. Aerial seeding operations can adversely affect Mexican spotted owls because of the direct effects of: 1) noise disturbance due to planes passing at low altitudes overhead and 2) dropping of seed materials.

- Studies have been completed on the effects of noise disturbance on owls similar to the noise disturbance caused by the proposed action. Wildlife responses to noise disturbance are considered complex, being neither uniform nor consistent. Delaney *et al.* (1997) reviewed literature on the response of owls and other birds to noise and concluded the following: 1) raptors are more susceptible to disturbance-caused nest abandonment early in the nesting season; 2) birds generally flush in response to disturbance when distances to the source are less than approximately 200 feet and when sound levels are in excess of 95 dBA; and 3) the tendency to flush from a nest declines with experience or habituation to the noise, although the alert response (i.e., head movements or agitated behavior) cannot be completely eliminated by habituation.

Table 5. Acreage affected by aerial seeding within PAC boundaries during 2002. (PACs not listed did not receive this treatment).	
PAC Number	Approximate Acreage of Aerial Seeding in PACs in 2002
201	139.4
202	285.54
203	217.18
204	591.99
205	286.15
207	206.93
208	310.05

209	172.58
210	132.75
214	292.76
502	32.34
503	449.97
504	458.73
508	56.03
509	180.3
510	407.91
511	113.87
512	7.12
TOTAL ACREAGE	4341.6

Owls have more sensitive hearing than other birds, and noise disturbance can have a variety of adverse effects because it can:

- increase the bird's metabolic rate (the rate at which all chemical reactions occur within a living organism, including the digestion of foods) by making it more active. Increased activity can, in turn, deplete the animal's energy reserves (Bowles 1995).
- cause the bird to expand its home range. Birds usually return to normal use patterns when humans are not present (Bowles 1995); however, energy expended on increased home ranges can decrease the bird's ability to successfully reproduce and raise young.
- displace the bird permanently, if the species is sensitive to the presence of people. If animals are denied access to areas that are essential for reproduction and survival, then 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).

We anticipate that these effects could occur for this action, and we believe it is likely that the above information demonstrates that birds may respond to disturbance during the breeding season by:

- abandoning their nests or young;
- altering their behavior such that they are less attentive to the young, which increases the risk of the young being preyed upon;
- disrupting feeding patterns;

- exposing young to adverse environmental stress (Knight and Cole 1995).

It should also be noted that disturbance during years of diminished prey base, such as those during a drought like the one we are currently in, can result in lost foraging time which, in turn, may cause some raptors to leave an area or to not breed at all (Knight and Cole 1995).

The Recovery Plan notes that the physical structure of canyons can tend to magnify disturbances and limit escape/avoidance routes for owls. Additionally, the fire consumed vegetation which may previously have served as a buffer for overhead flights, so that noise from overhead flights was likely more disturbing during the aerial seeding operations. Generally, we recommend limiting potentially disturbing activities to areas ≥ 0.25 miles from Mexican spotted owl nest sites during the breeding season (March 1 through August 31). This corresponds well with Delaney *et al.*'s (1997) 0.25 threshold for alert responses to helicopter flights.

Your staff indicate that, for work completed in 2002, aerial seeding took place over all of the PACs except for 206 and 513. Additional aerial seeding occurred adjacent to the boundaries of PACs 201, 202, 203, 204, 205, 207, 208, 209, 210, 214, 504, 508, 511, and 512. As a result, PACs were likely disturbed by noise associated with adjacent seeding as well. This noise disturbance was likely minimal compared to that which occurred with repeated flights directly overhead.

The Forest Service also applied seed aerially in restricted habitat. The Forest Service conducted aerial seeding operations in small pockets of restricted habitat around PACs 210, 214, 502, and 508. We expect effects to restricted but unoccupied habitat (i.e., restricted habitat outside PAC boundaries) to be beneficial in the long-term because they will promote or accelerate growth of new plants, which in turn increases the amount of food and cover available for the small mammals that provide a prey base to the Mexican spotted owl. Your staff have indicated that aerial seeding operations were designed to deliver seed at 30 seeds per square foot. Observers determined that no branch breakage occurred during seeding operations, and that even dead needles were not dislodged from trees during seeding operations.

We believe the effects of aerial seeding were greatest directly over PACs. We believe the adverse effects of the aerially sprayed seeding material are minimal due to the fact that it was applied in areas of severe and moderate burn. Owls are not as likely to be in the areas that were aerially seeded, although they may continue to use them for foraging. We believe that the effects of aerially seeding are due almost entirely to noise disturbance. Overflights took place 56 feet higher than the elevation at which Delaney *et al.* (1997) found owls to flush; however, it is important to note that noise from overflights in this instance would not have been buffered by remaining vegetation in many areas. As a result, noise from the overflights would have traveled farther. Additionally, low-level flights have the greatest potential to disturb owls because they move slowly and are relatively noisy (Delaney *et al.* 1997). In the long-term, aerial seeding will benefit the species by facilitating restoration and reducing erosion.

Aerial Application of Straw

GIS layers provided by your staff indicate that straw was applied aerially to approximately 10,960 acres in 2002, with 1,034 acres of the application in Mexican spotted owl PACs. Aerial straw application occurred at the end of, and just after, the Mexican spotted owl breeding season.

Although critical for habitat restoration, aerial straw application can adversely affect Mexican spotted owls because of: 1) noise disturbance due to planes passing at low altitudes overhead; and 2) dropping of straw, either as light debris, in small clumps, or in portions of large bales. The adverse effects of noise disturbance on Mexican spotted owls is detailed above under aerial seeding. Straw “bale bombing” involves the dropping of whole straw bales, which then break up in the air or upon impact. Mexican spotted owls can be impacted by the drop of bales through death or injury if nests or roosts receive direct hits. We observed large, intact portions of straw bales on the ground during site visits. PACs affected by aerial straw application are as listed in Table 6.

The Forest Service applied straw aerially adjacent to PACs 202, 205, 208, 209, 210, and 214, and in restricted habitat. A few small pockets of remaining restricted habitat around PACs 209 and 214 also received this treatment, as did a few small pockets of restricted habitat on the eastern half of the burn area. Effects to restricted but unoccupied habitat (i.e., restricted habitat outside PAC boundaries) are expected to be beneficial in the long-term because they will reduce erosion and promote or accelerate growth of new plants, which in turn increases the amount of food and cover available for the small mammals that provide a prey base to the Mexican spotted owl. Aerial straw applications may result in short-term adverse effects due to the breakage of tree branches; however, this breakage would have occurred in areas that were severely or moderately burned and where standing trees are dead.

Table 6. PACs affected by aerial straw application completed as part of the BAER, per GIS layers (PACS not shown did not receive this treatment).	
PAC	Acreage Affected in 2002
202	285.55
205	189.29
206	79.7
208	177.8
209	24.9
210	131.59
214	145.2
TOTAL ACREAGE	1034.03

Ground Mulching

Volunteers, machine, and hand crews completed approximately 4,666 acres of ground mulching according to the BAE and GIS layers. This work was completed in 2002 well to the east of existing PACs. We believe Mexican spotted owls were not affected by this portion of the proposed action.

Tree Felling

No tree felling was completed as part of emergency BAER actions.

Channel Clearing

Your staff indicate that 2.2 miles of channels have been cleared along Forest Road 136 near Linden as part of the initial emergency BAER actions. Channel clearing involves the removal of debris that has built up as a result of the fire. Debris can include downed trees or portions of trees, brush, or other materials. Crews completed channel clearing using hand tools and mechanized equipment. This area is well away from occupied and suitable Mexican spotted owl habitat, and we therefore do not anticipate that the work resulted in disturbance to Mexican spotted owls.

Meadow Protection

The Forest Service completed no meadow protection actions as part of the emergency BAER work.

Culvert Removal

The Forest Service removed approximately 200 culverts and replaced them with rolling grade dips in order to decrease the chance of road damage following blockage of culverts from debris transported during high flow events following the fire. At this time, your staff does not anticipate replacing many of these culverts, but would instead leave the rolling grade dips in place. Culverts were located throughout the burn area on existing Forest Service roads. Roads that are inside of, or in close proximity to, PACs include Forest Roads 86, 87, 162, 168, 181, 300, 512. Culvert removal occurred at the end of, and just after, the Mexican spotted owl breeding season. We believe it is possible that owls could have been impacted by noise disturbance during culvert removal on these roads. Heavy equipment, removal activities, and the presence of crews in close proximity to nesting or roosting owls all could have caused disturbance to owls. We anticipate that disturbance of an individual owl or pair of owls would have been a one-time disturbance, and of relatively short duration. However, without specific information on the location of culverts removed, we can not narrow down the scope of the adverse effects for this portion of the action.

Future Actions

Your staff anticipate no additional aerial seeding, aerial straw application, hand mulching, or culvert removal at this time. However, your staff anticipate completing additional tree felling, hand seeding, meadow protection, and channel clearing.

Tree Felling

The proposed action involves 975 acres of dead tree felling in PACs, with 575 acres on the Tonto National Forest, and 400 acres on the Apache-Sitgreaves National Forest. Trees would be felled using chainsaws, and would take place in PACs 201, 205, 206, 208, and 209 on the Apache-Sitgreaves, and PACs 502, 508, 509, and 511 on the Tonto National Forest. Your staff have indicated that this work will occur outside of the breeding season (B. Dykstra, U.S. Forest

Service, pers. comm. 2003). The BAE notes that no trees will be felled within 400 feet of intact nesting areas.

Owls occupied PACs 201, 205, 208, and 209 in 2003 following the fire. The proposed action includes tree felling within less than 0.10 of a mile of the 2003 detection in PAC 201, immediately adjacent to the 2003 owl detection in PAC 205, within approximately 0.25 of a mile of the 2003 detection in PAC 208, and within 0.20 of a mile of one 2003 owl detection in PAC 209, as well as within approximately 0.25 miles of three additional 2003 detections in that PAC.

Delaney *et al.* (1997) noted that owls may exhibit alert responses to chainsaws at 400 feet, but that flushing occurred at approximately 200 feet. It should be noted that Delaney *et al.* (1997) conducted their testing by hiding the chainsaw operator behind vegetation, and that no trees were actually cut. This varies from the proposed action in that owls would likely be exposed to the human presence of the chainsaw operators, greater than one person would likely be present, and trees would actually be cut down, which would increase the level of the noise and overall disturbance.

Because Delaney *et al.* (1997) noted that owls exhibit both alert and flushing responses to chainsaw noise, and because that chainsaw noise would occur in PACs known to be occupied by owls, we believe that this portion of the proposed action will adversely affect Mexican spotted owls in the PACs identified above. Because your staff would complete this work outside of the breeding season, it is less likely that young birds would be disturbed, or that the breeding cycle would be disrupted. We previously described the detrimental effects of flushing in the discussion about overhead flights for aerial seed and straw application.

Hand Seeding

As proposed, crews would hand seed 323 acres within Mexican spotted owl PACs on the Tonto National Forest. Twenty-person crews would hand seed in PACs 502, 508, 509, 511, and 512, applying native seed at a rate of 160 acres per day in areas of moderate- and high-burn severity. At the anticipated rate of 160 acres per day, crews would complete this work in approximately two days.

Hand seeding would involve no mechanized equipment. Human presence and noise disturbance associated with hand tools are therefore the only disturbances anticipated with this portion of the proposed action. We describe the effects of human presence on Mexican spotted owls above under Emergency Actions. Crews would complete hand seeding in approximately 48 hours, with work completed in areas of moderate- and high-burn severity which are not likely to be used by Mexican spotted owls. However, these pockets of moderate- and high-burn severity are still within PACs, and may lie immediately adjacent to areas currently being used by owls. We believe it is reasonable to conclude that crews of up to 20 individuals working within PAC boundaries will cause some disturbance to Mexican spotted owls. We anticipate that this disturbance would create a short-term (48 hours total) adverse effect to Mexican spotted owls in PACs 502, 508, 509, 511, and/or 512.

Meadow Protection

Your office will also complete meadow protection measures that would involve the installation of fencing of Baca Meadow. The meadow to be fenced is surrounded by ponderosa pine (B. Dykstra, pers. comm. 2003, Apache-Sitgreaves National Forest). The meadow is located adjacent to PACs 209 and 214. Because of this, it is anticipated that it would be used only for foraging, and not for nesting or roosting, by spotted owls. The meadow fencing project would encompass approximately 30 total acres.

We do not know the foraging patterns or behaviors of the pair of owls in PAC 209, or if PAC 214 is currently occupied. Preliminary data from 2003 surveys were informal, and did not locate owls in PAC 214. We can not conclude that PAC 214 is unoccupied without additional survey work. The Recovery Plan indicates that the median size of an area enclosing 75 percent of the foraging locations for 14 pairs of radio-marked owls was 595 acres and, therefore, a 600 acre PAC "...should provide a reasonable amount of protected habitat and should provide for the nest site, several roost sites, and the most proximal and highly used foraging areas (USDI 1995)." Because only 75% of the foraging occurs within this area, it is reasonable to expect that foraging will take place outside of the 600-acre delineation. The area immediately surrounding PAC 209 consists of low and unburned areas to the north and east, and to the south. The severity of the burn in other areas will likely funnel Mexican spotted owls into the remaining low or unburned forested areas. Baca Meadow is one of these low or unburned areas, and is located approximately 0.25 to 0.50 miles to the south of the PAC. Because fence construction would occur during daylight, and owls forage primarily at night, and because the construction activities would take place approximately 0.25 miles away from PAC boundaries, we believe the impacts of this portion of the action will not significantly affect the species.

Channel Clearing

Your office anticipates that additional channel clearing may be necessary. Channel clearing would involve removal of debris that built up following the fire (e.g., downed logs or branches). Removal may be completed by hand or with mechanized equipment. These actions would generally be short-term in nature. Your staff anticipates clearing up to an additional 6.8 miles of channel, as dictated by on-the-ground conditions. In addition, the original 2.2 miles which have already been cleared may need to be cleared again. All nine miles are likely to fall within proposed critical habitat for Mexican spotted owls.

At this time, your staff are not able to define exactly where channel clearing may be needed, as it will be dictated by on-the-ground conditions over time. PACs 201, 202, 203, 205, 206, 208, 209, 210, 503, 504, 508, 509, 510, 511, 512, and 513 all have some type of watercourses in them, per geographic information provided by ALRIS (2002). Mule Creek, Canyon Creek, and Black Canyon represent three of the more substantial drainages in the proposed action area. Canyon Creek runs through PACs 510, 512, and 513, while Mule Creek runs through PAC 504. Black Canyon runs through PACs 209 and 214. Again, it should be noted that no channel blockages have occurred in the last two years, so it is possible that no additional channel clearing will be required. We would anticipate that any channel clearing that occurs within 0.25 miles of a known nest site during the breeding season and that uses mechanized equipment or results in substantial noise could disturb breeding owls. Your office may be able to refine this analysis, and consequently reduce any described effects to owls, once needed work sites have been identified.

COMBINED EFFECTS

It is important to consider the combined effects of the fire, its suppression, rehabilitation efforts, BIA road use, and salvage logging activities on Mexican spotted owls. Essentially, the majority of the spotted owls in PACS 201, 202, 205, 206, 207, 208, 209, 210, 214, 502, 508, 509, 511, 512, and 513 have been or will be disturbed by a combination of multiple rehabilitation efforts. While we believe the rehabilitation efforts are in the best long-term interests of the species, we also believe that there were likely short-term adverse effects and cumulative effects of these multiple disturbances. These effects were compounded by the fire and suppression efforts discussed in the environmental baseline.

CUMULATIVE EFFECTS

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

We are not aware of any specific future private, State, or Tribal actions; although activities on private inholdings will likely continue. We anticipate that future local and private actions include rebuilding of structures damaged or lost during the Rodeo-Chediski fire in the communities of Forest Lakes, Pinedale, Linden, and Heber-Overgaard. We believe it is likely that the number of private residences in the area will continue to expand as well. Additionally, private landowners may take various steps to reduce fuel loads and fire hazards surrounding their properties, which could include vegetation removal.

CONCLUSION

After reviewing the current status of the Mexican spotted owl, the environmental baseline for the action area, the effects of the emergency rehabilitation efforts (both completed and pending), and the cumulative effects, it is our biological opinion that the BAER emergency actions as completed did not jeopardize the continued existence of the Mexican spotted owl. Similarly, it is our opinion that the proposed on-going BAER actions are not likely to jeopardize the continued existence of the Mexican spotted owl.

We present these conclusions for the following reasons:

- 1) The effects of the fire form, in part, the environmental baseline against which the management action occurred. Because of fuel loading and drought conditions in this area, the fire did not behave like, or result in conditions similar to, a natural fire, and the resulting effects on the Mexican spotted owl are therefore likely variable. In some areas, owls may have been killed, in other areas they may have left, and in other areas, they have remained. Owls are known to return to their PACs following fires (Bond *et al.* 2002) as they did in 11 out of 20 PACs within the burned area of the Rodeo-Chediski fire.
- 2) In the long-term, the rehabilitation efforts will likely benefit Mexican spotted owl through rehabilitation of habitat that will lead to an enhanced prey base for the species.

- 3) 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. This is a relatively small percentage of the total number of remaining PACs.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibits 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 (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 as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

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

AMOUNT OR EXTENT OF TAKE

Because of the nature of the disturbance in this area from the fire, and the resulting multiple management actions that have taken or will take place, it is important to assess the overall effects that will result from this and past actions. Table 7 summarizes take previously assessed for road use by the BIA, and for salvage logging by the Forest Service. Take can be attributed to this proposed action under two categories: 1) those actions covered as part of the emergency consultation and 2) those actions taken as part of the long-term BAER action and covered by this biological opinion.

Table 7. Take previously assessed for PACs in the Rodeo-Chediski burn area.		
PAC #	BIA Opinion (2-23-03-F-07) 11/02 – 06/03	Salvage Opinion (02-21-03-F-0064) 02/04 – 02/14
201	Harassment	Harm and Harassment*
202	Harassment	Harm and Harassment*
203	Harassment	Harm and Harassment*
204	Harassment	
205	Harassment	Harm and Harassment*
206	Harassment	Harm and Harassment*
207	Harassment	Harm and Harassment*
208		Harm and Harassment*
209		Harm and Harassment*
210		Harm and Harassment*
214	Harassment	Harm and Harassment*
502		
503		Harassment
504		Harassment
508		
509		Harm and Harassment*
510		Harm and Harassment*
511		
512		
513		
*Harm was assessed for these PACs based on the potential for vehicle – owl collisions due to road use in and around these PACs.		

We anticipate that this proposed action, when coupled with the previous actions described in Table 7 below, will effectively render the area less suitable for nesting Mexican spotted owls due to noise disturbance to foraging, roosting, and nesting owls over the next two years. We recognize that the proposed seeding efforts and other BAER activities will ultimately benefit spotted owls by improving on-the-ground conditions. However, we believe there will be short-term disturbance due to human presence and increased noise. Based on the information available at this time, this take statement represents our best approximation of effects.

Take From Emergency Actions

This biological opinion covers those portions of the proposed action already completed under the BAER as part of the emergency consultation. We deemed these actions an emergency because the rehabilitative measures taken were designed to prevent further harm to human life and property through accelerated erosion and flooding that could have resulted due to losses of vegetation and ground cover during the fire. We believe it likely that take did occur in the process of carrying out the emergency measures; however, we believe that this take was unavoidable given the emergency at the time. Additionally, we believe that the emergency rehabilitation work will be beneficial in the long-term. We anticipate that take of Mexican spotted owls occurred as detailed below by actions already completed. It is important to note that the FWS believes the Forest Service completed actions which, although they resulted in take, were necessary following the wildfire, and which may facilitate recovery of the burned areas for Mexican spotted owls and other species. Take resulting from the emergency action includes harm and harassment through noise and other disturbances resulting from:

- Aerial seeding (4,342 acres) in PACs 201, 202, 203, 204, 205, 207, 208, 209, 210, 214, 502, 503, 504, 508, 509, 510, 511, and 512;
- Aerial straw application (10,960 acres) in PACs 202, 205, 206, 208, 209, 210, and 214;

We therefore anticipate that take is reasonably certain to have occurred in 20 PACs including 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 214, 502, 503, 504, 508, 509, 510, 511, 512, and 513 in the form of direct mortality, harm, or harassment. These are PACs which were known to support owls in the last five years and which were treated in some way under the BAER project. PACs 201, 202, 203, 205, 208, 209, 210, 504, 511, and 512 were occupied in 2003 following the fire.

We believe this level of take was reasonably certain to have occurred because: 1) there is a substantial survey record documenting repeated occupancy and breeding within these PACs; 2) Mexican spotted owls are known to return to activity centers following disturbances like fires; 3) published research has indicated that overhead flights are disturbing to raptors, and to Mexican spotted owls specifically; 4) overhead flights for aerial seeding or aerial application of straw or both occurred within these PACs, which were likely to have been occupied following the fire; and 5) vegetation which would previously have buffered the noise associated with low overhead flights was removed during the wildfire, resulting in noise disturbance carrying for a longer distance. As noted under the Effects of the Action section above, the types of injuries which may occur when owls are disturbed by flights include: 1) predation of young when adults abandon their nests or young; 2) disruption of feeding patterns, resulting in lost foraging time, or foraging over wider areas. This in turn requires an additional expenditure of energy. Lost

foraging opportunities or increased foraging time lowers overall health through depleting the animals energy reserves; and 3) displacing the bird permanently, resulting in denial of access to areas that are essential to reproduction and survival. Knight and Cole (1995) concluded that, when animals are disturbed while performing behaviors such as foraging or breeding, that population is likely to decline.

Take From Future Actions

Tree Felling

For actions yet to be completed, the FWS believes it is not possible to reasonably conclude that tree felling activities will result in injury of Mexican spotted owls. We conclude that there is a possibility of disturbance outside of the breeding season for owls in PACs 201, 205, 206, 208, 209, 502, 508, 509, and 511, for the tree felling activities on 975 acres that will occur in these PACs prior to December 2004. However, we are not able to conclude with reasonable certainty that noise disturbance will lead to likely or actual injury of these owls.

Hand Seeding

For actions yet to be completed, the FWS believes that no take of Mexican spotted owls will result from hand seeding activities, as currently proposed by the Forest Service.

Channel Clearing

At this time, we have insufficient information to determine if take would result from channel clearing operations. If channel clearing would occur in or in close proximity to, Mexican Spotted Owl PACs, and if that work would involve mechanized equipment or prolonged noise, especially during the breeding season, we would recommend that the Forest Service reinitiate consultation prior to implementing these actions.

Meadow Protection

We do not anticipate that meadow protection activities, as described above, will result in take of Mexican spotted owls.

As stated above, because of the extent and severity of the burn in some PACs, we believe that owls have adjusted their foraging, roosting, and nesting areas to include areas that were either unburned, experienced low burn severity, or that support remaining restricted habitat. We have therefore considered areas outside of the PACs in analyzing the effects of the action on owls within the proposed action area.

Noise disturbance studies have shown, as detailed above, that owls have sensitive hearing, respond to noise, and can be disturbed by noise. We anticipate that the noise generated by logging trucks, tree cutting and hauling, road repair, road construction, and road maintenance activities, which will occur within close proximity to either PAC boundaries, habitat likely used by the owls, or known owl sites from 2003, will disturb owls remaining within the proposed action area, as detailed above.

The Fish and Wildlife Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

EFFECT OF THE TAKE

In this biological opinion, we determined that this level of anticipated take from both the pending and completed actions is not likely to result in jeopardy to the Mexican spotted owl. We noted in the salvage logging opinion that, for PACs 201, 202, 203, 205, 206, 207, 210, 214, 503, 504, 509, and 510, we anticipate long-term effects, which could essentially eliminate reproduction for a six-year period. Given that the anticipated reproductive potential of a given owl pair is approximately eight to 10 years, adverse effects for a six-year period to 12 PACs in this area is substantial.

The projects to be completed under this action will serve to increase disturbance in PACs 201, 205, 206, 208, 209, 502, 508, 509, 511, and 512. The disturbance associated with this action will occur simultaneously with those in the salvage logging operation. They will not extend the overall length of disturbance associated with the salvage logging operation; however, they may: 1) increase the amount of disturbance in a given area at a given time; 2) cause disturbance during periods of inactivity for salvage logging; and 3) increase the disturbance over a greater area within the PAC should salvage logging be occurring adjacent to, but not immediately overlaying, tree felling or hand seeding activities associated with this project. In this way, the intensity of disturbance in this area will likely increase as a result of the proposed action. However, we could not reasonably conclude that that disturbance will in fact lead to injury.

In the accompanying biological opinion, the FWS determined that this level of anticipated take is not likely to result in jeopardy to the species. We present these conclusions for the following reasons:

- The effects of the fire form, in part, the environmental baseline against which the management action is proposed. Because of fuel loading and drought conditions in this area, the fire did not behave like or result in conditions similar to a natural fire, and the resulting effects on the Mexican spotted owl are therefore likely variable. In some areas, owls may have been killed, and in other areas they may have left, either temporarily or permanently. Owls are known to return to their PACs following fires (Bond *et al.* 2002) as documented in at least 11 out of 20 PACs after this fire.
- The 20 PACs within the proposed action area 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. This is a relatively small percentage of the total number of remaining PACs.

REASONABLE AND PRUDENT MEASURES

Incidental take statements in emergency consultations do not include reasonable and prudent measures or terms and conditions to minimize take unless the agency has an on-going action related to the emergency (USFWS 1998a). Therefore, we have not developed any reasonable and prudent measures for completed emergency actions. Because we were not able to

reasonably conclude that injury would result from noise disturbance associated with pending actions, no reasonable and prudent measures were developed for the pending BAER activities addressed in this opinion.

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. While there are established recommendations for minimizing disturbance to owls in ideal habitat conditions, similar recommendations have not been developed for owls located in areas that have been greatly disturbed, such as the Rodeo-Chediski fire area. We recommend that the Forest Service consider monitoring effects to owls located in 2003 and 2004 as the proposed action is carried out, in order to gain additional information about the reactions of owls in areas that have been disturbed.
2. Consider completion of an assessment of restricted habitat for Mexican spotted owls.
3. Complete analysis necessary to determine how PAC boundaries should be modified post-fire to protect the best remaining suitable habitat for Mexican spotted owls.
4. Evaluate the effectiveness of the rehabilitation measures to determine if they accomplish the goals of the BAER program.
5. Develop a native seed base to be used in future BAER activities to prevent the spread of non-native species.
6. Develop a process by which BAER activities and funding and section 7 are more closely coordinated to ensure that section 7 can be completed in a timely way prior to expiration of BAER funding opportunities, and to ensure that BAER activities are fully covered by section 7 consultation. This process would then be available for future fire planning efforts.

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

This concludes formal consultation on the actions outlined in the consultation request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a

new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate the Forest Service's efforts to identify and minimize effects to listed species from this project. For further information please contact Mary Richardson (x242) or Debra Bills (x239). Please refer to the consultation number, 02-21-02-F-0225, in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
State Supervisor, New Mexico Ecological Services Office, Albuquerque, NM
Superintendent, Bureau of Indian Affairs, Whiteriver, AZ
Biologist, Arizona Fisheries Resource Office-Pinetop, Pinetop, AZ (Attn: Mary Jo Stegman)
Forest Supervisor, Tonto National Forest, Phoenix, AZ
District Ranger, Black Mesa Ranger District, Overgaard, AZ
District Ranger, Payson Ranger District, Payson, AZ

Bob Broscheid, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Sensitive Species Coordinator, White Mountain Apache Tribe, Whiteriver, AZ

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APPENDIX A – CONCURRENCES

Bald Eagle

As noted within the BAE, resource personnel have conducted mid-winter surveys for bald eagles between January 1992 and January 2002. Breeding bald eagles live year-round in Arizona, while wintering bald eagles arrive in November, with numbers peaking in January and February (Todd 1978), and with birds migrating north in April. Only wintering bald eagles are known to occur within the proposed action area. Wintering birds are typically centered around major river drainages or lakes. Birds are widely scattered and normally seen as solitary individuals or in small groups (Grubb and Kennedy 1982). Within the proposed action area, eagles winter in low densities around lakes above the Mogollon Rim and near the Canyon Creek Fish Hatchery. Birds sighted in other areas are usually feeding on carrion. Year-round habitat exists for bald eagles within and adjacent to the burn area.

Emergency Actions

Actions completed as part of the emergency work associated with the BAER were completed between July and September, prior to the arrival of wintering bald eagles. There were, therefore, no direct effects of the completed work on bald eagles. With respect to indirect effects through habitat modification, it should be noted that the burned area encompasses more than 642,000 acres, which burned in a mosaic pattern. Within that burned area, suitable habitat for bald eagles remains. Known concentration areas of bald eagles include O.W. Ranch, the Canyon Creek Fish Hatchery, and Black Canyon Lake. Up to seven bald eagles may use a given concentration area at one time (H. Provencio, USFS, pers. comm. 2003). The Forest Service completed minimal work around O.W. Ranch, including fence construction and removal. At Canyon Creek Fish Hatchery, the Forest Service completed some aerial seeding. At Black Canyon Lake, the Forest Service completed aerial seeding, aerial straw application, and some hand seeding. The BAE notes that some hazard-tree removal also occurred.

The effects of fence removal and construction at O.W. Ranch were minimal. As noted in the BAE, seeding and mulching treatments will improve herbaceous ground cover, and will help reduce the amount of time required for other animals to repopulate the burned area. They will additionally aid in a reduction of soil erosion. Similarly, fencing construction will prevent continued use of areas by grazing ungulates, thereby allowing for soil retention and reducing erosion. Hazard tree removal did result in the removal of some large trees which might have been used at some time by bald eagles. However, tree removal was limited to those trees posing a risk to the lives of forest workers and visitors. There are many remaining trees throughout the burned area, including at concentration areas, which can be used by bald eagles. Therefore, the overall effects to bald eagle habitat from tree removal are insignificant.

We anticipate that activities completed under the BAER may beneficially affect bald eagles in reducing erosion and encouraging vegetation regrowth. The FWS also believes that the effects of tree removal are minimal due to the low number of trees removed and their removal from areas that were moderately or severely burned. Finally, all of the work was completed outside of the time period during which bald eagles are present, so that no direct effects of the action adversely affected bald eagles. For this reason, we concur that the action, as completed, may have affected, but did not adversely affect, bald eagles.

Future Actions

The Forest Service would conduct future tree felling activities following the arrival of wintering birds in November; however, tree felling would not occur in close proximity to O.S. Ranch, Canyon Creek, or Black Canyon Lake. Additionally, as noted previously, while some trees would be removed, they represent a small portion of trees remaining in the area that would be suitable for bald eagle roosting. There is the potential for tree felling activities to occur in an area used by an individual wintering bald eagle. However, we believe that it is unlikely that bald eagles would be present while tree felling activities occur as this work would be restricted to areas of moderate- or high-burn severity. As a result, we do not anticipate any adverse effects to bald eagles from tree felling activities.

Hand seeding activities will involve a 20-person crew applying seed over an approximately two-day period. Hand seeding is not proposed in close proximity to any of the concentration areas. For this reason, we do not anticipate any adverse effects to bald eagles from hand seeding activities.

Meadow protection would involve work in Gentry Meadow and Baca Meadow. The Gentry Meadow fencing project would be located approximately 0.50 miles from Black Canyon Lake, as would the Baca Meadow fencing project. Due to the distance of these projects from the known concentration area round Black Canyon Lake, we do not anticipate any adverse effects to bald eagles from meadow protection.

The location of future channel clearing projects is not known at this time. Canyon Creek and the West Fork of Black Canyon are two drainages that occur in known concentration areas for bald eagles. Should channel clearing be proposed for these areas between November and the end of April, it is possible for adverse effects to occur to bald eagles. However, we are unable to conclude where that take is reasonably certain to occur as the number and location of channel clearing actions relative to bald eagles is not yet known. When your staff have determined at which locations these actions will be taken, we will, if needed, append this biological opinion with a more site-specific take statement, reasonable and prudent measures, and terms and conditions. The Forest Service should complete this additional consultation prior to implementing this portion of the action.

In conclusion, we concur with your “may affect, is not likely to adversely affect” determination for bald eagles from tree-felling, hand seeding, and meadow protection work. We are not able to assess potential effects from channel clearing projects at this time.

Little Colorado Spinedace

As noted in the BAE, the nearest known Little Colorado spinedace habitat is in Chevelon Creek. Surveys conducted in 1996 on those portions of Chevelon Creek within the Apache-Sitgreaves boundary found no fish. Previous surveys for spinedace located them on Chevelon Creek near its confluence with the Little Colorado River, approximately 40 miles away. Spinedace have never been recorded within the proposed action area boundaries, therefore, the only possible effects would be indirect effects to habitat.

With respect to habitat, eight miles of Chevelon Creek, from its confluence with the Little Colorado River upstream to its confluence with Bell Cow Canyon, are designated as critical habitat for Little Colorado spinedace (USFWS 1998b). The entire length of Chevelon Creek is considered to be potential habitat for spinedace, and has been identified as a refuge in the Little Colorado Spinedace Recovery Plan (USFWS 1998b).

The northwestern edge of the Rodeo-Chediski fire is approximately 60 miles from the nearest known population of spinedace. Black Canyon is the main collector drainage in this area, and it flows into Chevelon Creek approximately 15 miles north of the Apache-Sitgreaves National Forest boundary. This drainage is classified as intermittent, typically flowing only during spring runoff and monsoon season with small pools in the upper portion of the drainage at Milford Spring that holds water year round. No permanent pools are known to exist north of Milford Spring. The nearest known population of spinedace to the fire is near the headwaters of the Little Colorado River in the White Mountains. This area is upstream of where those drainages that burned during the fire meet the Little Colorado River, and will not be affected by either the fire or rehabilitation treatments.

As a result of the fire, tens of thousands of burned acres will likely result in increased water flows and turbidity levels. BAER treatments can not be applied to all of this acreage; however, where they are applied, they have been designed to reduce sediment runoff from the burned area. None of the completed work was carried out in occupied spinedace areas. Any indirect effects should therefore be beneficial, in that they will assist in a reduction of excessive flows and increased sedimentation to areas occupied by spinedace outside of the project area. The FWS therefore concurs that the proposed action may affect, but is not likely to adversely affect, Little Colorado spinedace.

Chiricahua Leopard Frog

Historically, Chiricahua leopard frogs were documented in the Little Colorado River system on the Springerville and Lakeside Ranger Districts, and in the headwaters of the San Francisco River on the Alpine Ranger District. They are believed to have occurred in the Eagle Creek system on the Clifton Ranger District as well (Wright and Wright 1949, Platz and Mecham 1979, Frost and Platz 1983). The Arizona Game and Fish Department conducted amphibian surveys in 1992 on the Black Mesa Ranger District, but did not find any Chiricahua leopard frogs (Ingraldi 1995). Chiricahua leopard frogs have not been documented within the Canyon Creek Watershed. A portion of Canyon Creek was surveyed in the early 1990s, with no Chiricahua leopard frogs detected (Sredl and Howland 1994). However, thorough surveys specific to Chiricahua leopard frogs have not been completed for all potential or suitable habitat throughout the proposed project area.

As noted in the BAE, the Forest Service established the Gentry Creek Conservation and Management Zone for Chiricahua leopard frogs in the northern portions of the Pleasant Valley Ranger District. Chiricahua leopard frogs have been documented repeatedly in this area since 1990. The nearest locations of frogs to the proposed project area is 1.0 mile to the southwest of the fire perimeter, and 1.5 miles to the west of the fire perimeter.

Chiricahua leopard frogs are a highly aquatic species, and are considered habitat generalists within aquatic habitats. They are found in drainages, pools, beaver ponds, livestock tanks, lakes, reservoirs, streams, and rivers. Blomquist *et al.* (2002) note that most sites that support populations of Chiricahua leopard frogs hold water year-long in most years. They note that Chiricahua leopard frogs are rarely found in aquatic sites inhabited by nonnative fish, bullfrogs, or crayfish.

According to the BAE, there are two lotic riparian systems within the proposed action area at Canyon Creek and at Mule Creek. Both of these are perennial streams on the Tonto National Forest that have the potential to support populations of Chiricahua leopard frogs; however, the species has not been documented in these drainages. Sredl and Howland (1994) conducted surveys in a portion of Canyon Creek, but found no frogs. Canyon Creek has been managed as a trout fishery for several decades, and the presence of non-native fish there may have prevented the establishment of a leopard frog population. The BAE notes that AGFD has completed frog surveys on Mule Creek, with no Chiricahua leopard frogs reported.

Numerous stock tanks that are potential habitat for this species also exist within the burn area on both the Tonto and Sitgreaves National Forests. Sredl *et al.* (1997) and Apache-Sitgreaves National Forests personnel have conducted surveys for northern leopard frogs, with no evidence of Chiricahua leopard frogs reported. However, no surveys specific to Chiricahua leopard frog have been completed.

As part of the proposed action, the Forest Service breached eight dry stock tanks that were likely to breach naturally and cause downstream flooding. During wet periods, these may have constituted potential Chiricahua leopard frog habitat, but they had been dry during the past several years of drought. As noted in the BAE, hundreds of tanks remain available within the proposed action area as potential habitat for Chiricahua leopard frog.

Emergency Actions

Aerial seeding and application of straw will, in the long-term, be beneficial to frogs in that they will help reduce the amount of sediment entering some of the remaining stock tanks, and will result in a better herbaceous cover around tanks than would have occurred without seeding. Crews completed channel clearing along 2.2 miles of channel. This work involved removal of woody debris that had fallen into side drainages and larger washes. Bulldozers and hand crews removed woody material to prevent accumulation into debris flows that could potentially threaten life and property in downstream areas. Where dozers and skidders were used, they were not used within the drainages themselves. Debris was instead dragged from the channels using long cables and chokers attached to the equipment. The drainages cleared above the Mogollon Rim were not likely to have provided habitat for the frog because they are dry most of the year and carry water only during high flow events.

Because channel clearing occurred in channels that are intermittent, and, therefore, not suitable frog habitat, and because the stock tanks breached had been dry for several years, the FWS does not believe that tank breaching or channel clearing adversely affected Chiricahua leopard frog. Aerial application of seed and straw will, in the long-term, be beneficial to the frog due to the resulting reduction in sedimentation and increase in vegetation.

Future Actions

Tree felling activities planned on 975 acres on both the Tonto and Apache-Sitgreaves National Forests would not occur within any of the major drainages discussed above. All tree felling activities would occur in areas of moderate and high burn severity. Tree felling activities in PAC 209 would encompass a small drainage flowing through that area. The presence of ponds within these areas is not known at this time.

Hand seeding activities would be accomplished over an approximately 48-hour period, with a crew of 20 individuals. No mechanized equipment would be used. We believe that seeding will ultimately be beneficial to frog habitat in this area, in that it will aid in revegetation, and any vegetation that occurs in proximity to water will serve as filters of sediment and ash that may enter water following rains. Because the action is of short duration, and no mechanized equipment would be used, we do not anticipate any adverse effects to frogs from this work.

Additional projects include meadow fencing in the Gentry and Baca meadows. Baca Meadow occurs along the Black Canyon drainage and an unknown number of channel clearings at unknown locations. Because the potential exists for suitable habitat to be present along or within channel clearing, meadow protection, and tree felling areas, and because thorough surveys have not been completed, we concur that the action, as proposed, is not likely to adversely affect Chiricahua leopard frogs provided that, wherever suitable habitat is present, surveys for Chiricahua leopard frogs will be completed prior to beginning activities planned as part of the proposed action. Should frogs be located, additional consultation may be required.

APPENDIX B – CONFERENCE REPORT

CONFERENCE REPORT

Effects of the Proposed Action on Proposed Critical Habitat for Mexican Spotted Owls

On November 18, 2003, the FWS published a proposed rule (USFWS 2003) announcing the reopening of the public comment period on the July 21, 2000, (USFWS 2000) proposed rule for critical habitat for Mexican spotted owls. The 2003 notice reopens the comment period on the proposed rule from 2000, which provides details and maps on the extent and location of proposed critical habitat.

A description of the proposed action, the project location, the environmental baseline, and the species affected can be found in more detail in the accompanying biological opinion. This conference report will address only effects of the proposed action on proposed critical habitat for the Mexican spotted owl.

Emergency Action

All actions completed in the emergency phase of the BAER were completed prior to publication of the proposal to designate Mexican spotted owl critical habitat. For this reason, it is not necessary to analyze the effects of emergency BAER activities on proposed critical habitat.

Future Actions

All of the 975 acres of tree felling activities are within proposed critical habitat for Mexican spotted owls. Crews would conduct all tree felling activities within moderate- and high-burn severity areas, and all trees to be felled are already dead. These areas are included within the larger critical habitat units, but, because of the fire, do not currently have the constituent elements generally found within critical habitat, including high basal area of large diameter trees, moderate to high canopy closure, a wide range of tree sizes suggestive of uneven-age stands, multi-layered canopy with large overstory trees of various species, high volumes of fallen trees and other woody debris, high plant species richness, or adequate levels of residual plant cover. While we anticipate that noise disturbance may occur for the owls themselves, we believe that the constituent elements of critical habitat previously found in these areas was almost entirely removed by the moderate- and high-severity burns, reducing the suitability of these areas for Mexican spotted owls. We anticipate that tree felling activities will not decrease habitat quality further. In fact, by leaving downed logs, the proposed action may be beneficial in that it would reduce soil erosion and improve habitat for prey species of Mexican spotted owls.

Similarly, all 323 acres of hand seeding are within proposed critical habitat for Mexican spotted owls. While we anticipate that noise disturbance may occur for the owls themselves, we believe that habitat quality in these areas has been reduced in some areas for Mexican spotted owls, and that hand seeding may result in beneficial effects by reducing overall soil erosion and providing habitat and food sources for prey species of Mexican spotted owls.

All meadow fencing activities would occur outside of proposed critical habitat for Mexican spotted owls.

Conclusion

We believe that the action, as proposed, is not likely to adversely modify proposed critical habitat for Mexican spotted owls. We believe this conclusion is appropriate because: 1) where tree felling activities fall within proposed critical habitat, burn severity was moderate or high, so that few constituent elements of proposed critical habitat remain and 2) hand seeding will have no adverse effect to the moderate- and high-burn severity areas, and will provide some benefit through rehabilitation of these areas. As a result, the proposed action may actually be helpful to recovery of burned areas within the proposed critical habitat.

After reviewing the current status of the Mexican spotted owl, the environmental baseline for the proposed rehabilitation activities, and the cumulative effects, it is our conference opinion that the action as proposed is not likely to destroy or adversely modify proposed critical habitat. In addition, we conclude that the action as proposed is not likely to adversely affect proposed critical habitat.

APPENDIX C - FIGURES

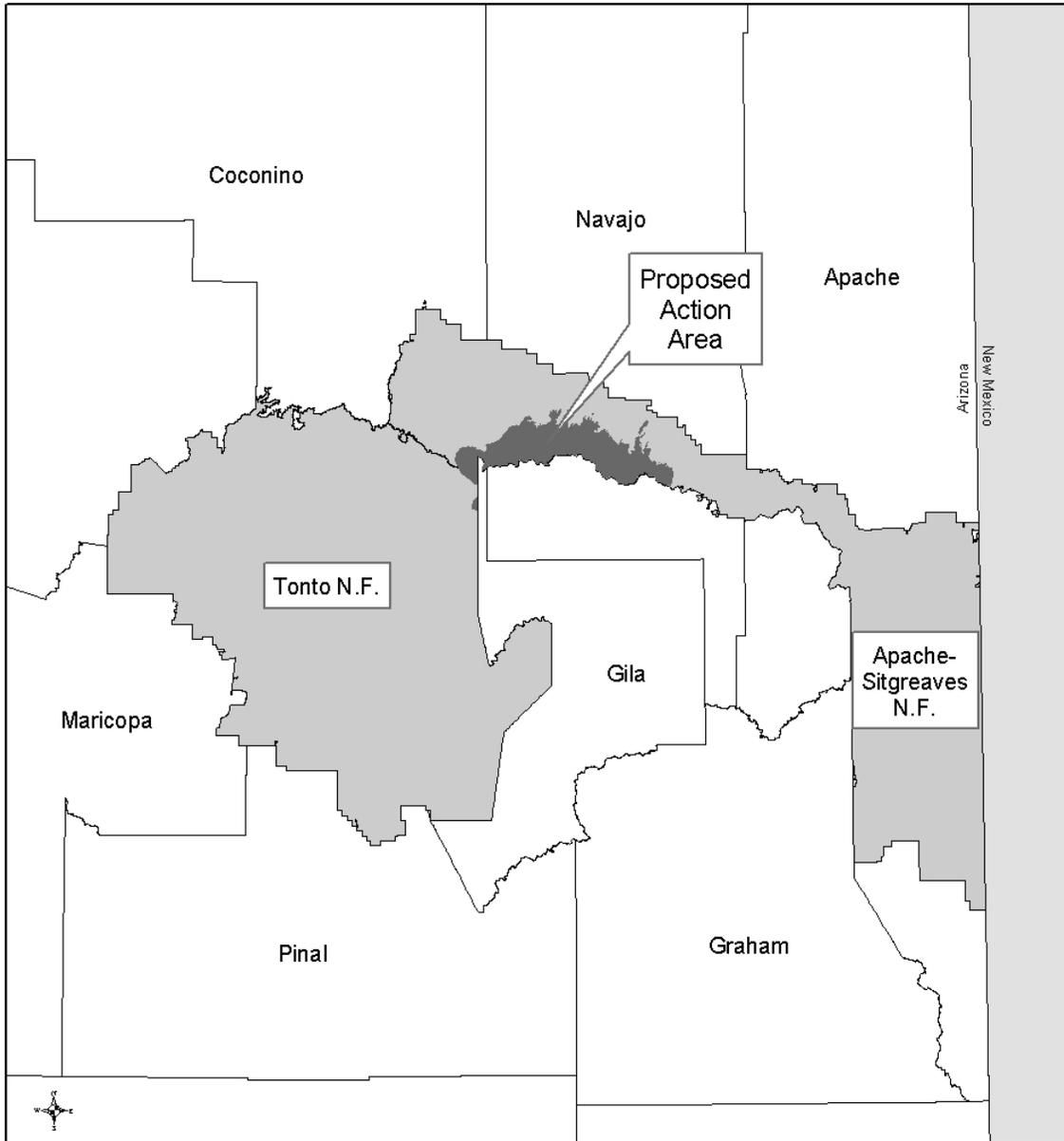


Figure 1. Map of the Proposed Action Area. For purposes of this consultation, the proposed action area is the same area as the Rodeo-Chediski fire.

-  Counties
-  National Forests
-  Proposed Action Area



USFWS/AESO/mer 1/2004