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In Reply Refer To:
AESO/SE
02-21-05-F-0705

February 10, 2006

Ms. Nora B. Rasure
Forest Supervisor
Coconino National Forest
1824 South Thompson Street
Flagstaff, Arizona 86001-2529

RE: Victorine Wildland Urban Interface Fuels Reduction Project Biological Opinion

Dear Ms. Rasure:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated August 15, 2005, and received by us on August 17, 2005. This consultation concerns the possible effects of the Victorine Wildland Urban Interface (WUI) Fuels Reduction Project, Coconino County, Arizona, on the threatened Mexican spotted owl (*Strix occidentalis lucida*) and its critical habitat. In addition, the Forest Service has determined that the proposed action "may affect, but will not likely adversely affect" the threatened bald eagle (*Haliaeetus leucocephalus*), threatened Chiricahua leopard frog (*Rana chiricahuensis*), threatened Little Colorado spinedace (*Lepidomeda vittata*) and its critical habitat, and the endangered southwestern willow flycatcher (*Empidonax traillii extimus*). We concur with your determinations. The basis for our concurrence is found in Appendix A.

This biological opinion is based on information provided in the original August 17, 2005, Biological Assessment and Evaluation (BAE), conversations and electronic correspondence with your staff, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the MSO or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

Details of the consultation history are summarized in Table 1.

Table 1. Summary of Consultation History

<i>Date</i>	<i>Event</i>
August 1, 2005	We received a copy of the Environmental Assessment for the Victorine WUI Project.
August 17, 2005	The BAE was delivered to our Flagstaff Suboffice.
August 18, 2005	We received your request for formal consultation.
August 19, 2005	The Forest Service provided us with the 2005 MSO protected activity center (PAC) monitoring data for the project.
August 19, 2005	We acknowledged your request for formal consultation with a 30-day letter.

BIOLOGICAL OPINION

DESCRIPTION OF THE ACTION

The Coconino National Forest is proposing to conduct the Victorine WUI Fuels Reduction Project. The project will be implemented to reduce the risk of severe wildland fire, protect private in-holdings, and improve forest conditions. The Victorine WUI analysis area encompasses 19,915 acres within the East Clear Creek watershed, and includes 17,759 acres of Coconino National Forest land and 2,156 acres of private land in Coconino County, Arizona. The Victorine project area is located in the southeast corner of the Coconino National Forest (Townships 13 and 14 North, Ranges 12 and 13 East). The project area is bounded by East Clear Creek to the north, Leonard Canyon to the east, Yeager Canyon to the west, and Forest Road 298 to Dines Tank on the south (see BAE, Appendix 1). The project will be implemented over approximately the next 12 to 15 years.

Proposed project activities include the following six treatments (see BAE, Appendix 1-A):

Maintenance Thin/Burn: This treatment consists of an understory thinning of ponderosa pines (*Pinus ponderosa*) up to 12 inches diameter-at-breast height (dbh) across 805 acres. The prescription targets spacing tree boles at least 15 feet apart or tree crowns three feet apart. Slash will be lopped and bucked and/or removed with low intensity prescribed burning. This area received understory thinning and/or burning within the last 20 years, so crown fire hazard is expected to be reduced from moderate to low following implementation.

Maintenance Burn 1: This treatment consists of low intensity prescribed burning on 839 acres. This treatment will be applied to previously treated areas to maintain the existing low fire hazard.

Prescribed Burn: This treatment consists of low intensity, prescribed broadcast burning on 6,083 previously untreated acres. These stands currently are characterized by low to moderate canopy closure and low to moderate surface fuel loading. Thick clumps of small trees (“doghair” thickets) occur within most of the area, but are not the dominant stand component. In these areas, selective felling of trees less than 9 inches dbh will occur. These felled trees will be

left intact and in place to create fuel ladders, resulting in torching and/or high crown scorch within the immediate vicinity. This “pretreatment of fuels” will result in 0.1 to 0.5 acre mortality patches and will occur on approximately 10 to 20% of the 6,083 burn treatment acres.

Burn/Thin/Burn: This is a three-stage process to reduce fuels across 468 acres with high to moderate fire hazard due to existing fuel loading, high stand density, and low average crown base heights. The three stages will consist of a low intensity prescribed burn followed by thinning. Slash from the thinning operation will be lopped and scattered. The slash will then be burned with a second low/moderate intensity prescribed burn to reduce the ground fuels and the associated fire hazard.

Thin and Pile: This treatment will be applied to 483 acres immediately adjacent to developed private land, in or adjacent to sensitive wildlife habitat, and in areas with very high existing surface fuel loading. The treatment goal is to minimize effects and better control fire effects to private land and residual stand structure. Trees up to 12 inches dbh will be thinned and the slash piled and burned. Sites adjacent to private property will be hand piled, but sites with heavy pre-existing fuel loading that are not adjacent to private property may be hand or machine piled. Pre-existing coarse woody material may be incorporated into the burn piles.

Maintenance Burn 2: The treatment will broadcast burn 7,939 acres. Approximately 271 acres of thin and pile treatments located within old growth and goshawk habitat will be excluded. The treatment is intended to mimic the historic fire regime (occurrence, severity, and intensity). The maintenance burns will be conducted within three to 12 years after completion of the initial treatments and then as needed to keep surface fuel loading low; sustain a low crown fire hazard; and achieve desired live crown base heights, stand density, and dead fuel loading.

Microhabitat monitoring will be conducted in MSO habitat prior to treatments and within two years following the completion of all treatments. In addition, established Little Colorado spinedace monitoring sites will be annually surveyed.

Conservation Actions

- Project thinning in the Weimer MSO PAC will take place outside the MSO breeding season (September 1 to February 28)
- No project activities will occur within the Weimer PAC nest core buffer area (though this area does not include the most recent nest location)
- Thinning treatments in the PAC will follow the recommendations in the Recovery Plan
- Within the Weimer PAC, large snags greater than or equal to 18 inches dbh and large trees that are suitable for nesting will be lined to minimize loss to fire. If snags are deficient within the PAC (as determined by the District Wildlife Biologist), and sufficient trees greater than 14 inches dbh are available, up to 20 snags may be created by girdling trees

- Implementation of treatments within 0.5 mile of a PAC will not occur during the breeding season (March 1 to August 31)
- No burning or thinning treatments will occur within riparian buffer zones
- No re-fueling of equipment or drip fuel will occur within 50 feet of stream courses or water bodies
- No channel-spanning wood will be bucked or removed from the stream channel
- No vegetation that overhangs live streams or waters potentially containing Little Colorado spinedace will be removed
- Prescribed burning will occur when the risk of escape and uncontrolled wildfire is low

STATUS OF THE SPECIES

The MSO was listed as a threatened species in 1993 (USDI 1993) and critical habitat was most recently designated in 2004 (USDI 2004). The primary threats to the species were cited as even-aged timber harvest and catastrophic wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The Fish and Wildlife Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (USDI 1995).

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the Final Rule listing the MSO as a threatened species (USDI 1993) and in the Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference. Although the MSO's entire range covers a broad area of the southwestern United States and Mexico, the MSO does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to isolated forested mountain systems, canyons, and in some cases steep, rocky canyon lands. Surveys have revealed that the species has an affinity for older, uneven-aged forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico.

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

The Upper Gila Mountains RU, in which the Victorine WUI Fuels Reduction project is located, is a relatively narrow band bounded on the north by the Colorado Plateau RU and to the south by the Basin and Range-West RU. The southern boundary of this RU includes the drainages below the Mogollon Rim in central and eastern Arizona. The eastern boundary extends to the Black, Mimbres, San Mateo, and Magdalena mountain ranges of New Mexico. The northern and

western boundaries extend to the San Francisco Peaks and Bill Williams Mountain north and west of Flagstaff, Arizona. This is a topographically complex area consisting of steep foothills and high plateaus dissected by deep, forested drainages. This RU can be considered a "transition zone" because it is an interface between two major biotic regions: the Colorado Plateau and Basin and Range Provinces (Wilson 1969). The Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila National Forests administer most habitats within this RU. The north half of the Fort Apache and northeastern corner of the San Carlos Indian reservations are located in the center of this RU and also support MSO.

Historical and current anthropogenic uses of MSO habitat include both domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction (e.g., timber, oil, gas), and development. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season.

Currently, high-intensity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. Uncharacteristic, severe, stand-replacing wildfire is probably the greatest threat to MSO within the Upper Gila Mountains. As throughout the West, fire severity and size have been increasing within this geographic area. Table 2 shows several stand-replacing fires that have had a large influence on MSO habitat in this RU in the last decade. Obviously the information in Table 2 is not a comprehensive analysis of fires in the Upper Gila Mountains RU or the effects to MSO. However, the information does illustrate the influence that stand-replacing fire has on current and future MSO habitat in this RU. This list of fires alone estimates that approximately 11% of the PAC habitat within the RU suffered high-to-moderate-intensity, stand-replacing fire in the last seven years.

Table 2. Some recent influential fires within the Upper Gila Mountains Recovery Unit, approximate acres burned, number of PACs affected, and PAC acres burned.

Fire Name	Year	Total Acres Burned	# PACs Burned	# PAC Acres Burned
Rhett Prescribed Natural Fire	1995	20,938	7	3,698
Pot	1996	5,834	4	1,225
Hochderffer	1996	16,580	1	190
BS Canyon	1998	7,000	13	4,046
Pumpkin	2000	13,158	4	1,486
Rodeo-Chediski	2002	462,384	55	~33,000
TOTAL		525,894	84	~43,645

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

(2000) estimates approximately $2,950 \pm 1,067$ (SE) MSOs in the Upper Gila Mountains RU alone. The Forest Service Region 3 most recently reported a total of approximately 989 PACs established on National Forest lands in Arizona and New Mexico (USDI 2005). Based on this number of MSO sites, total numbers in the United States may range from 989 individuals, assuming each known site was occupied by a single MSO, to 1,978 individuals, assuming each known site was occupied by a pair of MSOs. The Forest Service Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than National Forest System lands have resulted in additional sites being located in all Recovery Units.

Researchers studied MSO population dynamics on one study site in Arizona ($n = 63$ territories) and one study site in New Mexico ($n = 47$ territories) from 1991 through 2002. The Final Report, titled "Temporal and Spatial Variation in the Demographic Rates of Two Mexican Spotted Owl Populations," (*in press*) found that reproduction varied greatly over time, while survival varied little. The estimates of the population rate of change ($\Lambda = \text{Lamda}$) indicated that the Arizona population was stable (mean Λ from 1993 to 2000 = 0.995; 95% Confidence Interval = 0.836, 1.155) while the New Mexico population declined at an annual rate of about 6% (mean Λ from 1993 to 2000 = 0.937; 95% Confidence Interval = 0.895, 0.979). The study concludes that spotted owl populations could experience great (>20%) fluctuations in numbers from year to year due to the high annual variation in recruitment. However, due to the high annual variation in recruitment, the MSO is then likely very vulnerable to actions that impact adult survival (e.g., habitat alteration, drought, etc.) during years of low recruitment.

Since the owl was listed, we have completed or have in draft form a total of 162 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 360 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 two of these projects (release of site-specific owl location information and existing forest plans) have resulted in biological opinions that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, we issued a biological opinion on Region 3 of the Forest Service adoption of the Recovery Plan recommendations through an amendment to their Land and Resource Management Plans (LRMPs). In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with approximately 91 of those PACs located in the Upper Gila Mountains RU. In addition, on January 17, 2003, we completed a reinitiation of the 1996 Forest Plan Amendments biological opinion, which anticipated the additional incidental take of five MSO PACs in Region 3 due to the rate of implementation of the grazing standards and guidelines, for a total of 156 PACs. Consultation on individual actions under these biological opinions resulted in the harm and harassment of approximately 243 PACs on Region 3 National Forest System Lands. Region

3 of the Forest Service reinitiated consultation on the LRMPs on April 8, 2004. On June 10, 2005, the FWS issued a revised biological opinion on the amended LRMPs. We anticipated that while the Region 3 Forests continue to operate under the existing LRMPs, take is reasonably certain to occur to an additional 10 percent of the known PACs on Forest Service lands. We expect that continued operation under the plans will result in harm to 49 PACs and harassment to another 49 PACs. To date, consultation on individual actions under the amended Forest Plans, as accounted for under the June 10, 2005, biological opinion has resulted in 14 PACs adversely affected (11 PACs harmed, 3 PACs harassed), with 9 of those PACs in the Basin and Range West RU and 5 in the Upper Gila Mountains RU.

Mexican spotted owl Critical Habitat

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

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

Primary constituent elements related to forest structure include:

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

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

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

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

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

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

There are 13 critical habitat units located in the Upper Gila Mountains RU that contain 3.1 million acres of designated critical habitat.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions within 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.

A. Status of the species and critical habitat within the action area

The entire analysis area has been surveyed for MSO according to protocol. All or portions of six inventory units overlie the analysis area and have been surveyed one to four times since 1990 (see Table 2 in the BAE, page 7). Twelve PACs are designated wholly or partially within the analysis area, for a total of 5,000 acres (23% of analysis area). Eleven of the PACs were established prior to 1994, with the remaining PAC designated in 2000. PACs are monitored periodically for occupancy and productivity, and owls were re-located within 10 of the 12 PACs between 2000 and 2005 (see Table 3 in the BAE, page 8). The entire survey history for all 12 PACs is presented in Tables 4 through 15 in the BAE (pages 8-12).

The Weimer PAC (#040708) is the only PAC that will be treated as a part of the proposed action. Owls in the Weimer PAC nested in 2004 and produced two young. The most recent nest location is located on private property. The Forest Service has designated a nest core buffer area on Forest Service land, but it does not include the most recent nest. Though owls have been

present at the PAC since 1984, the only other known nesting location besides the 2004 site was located in 1984. Two other PACs, Kinder (#040736) and Limestone (#010421), will have treatments implemented adjacent to them, but at least 0.5 mile from the historic nest/roost locations. The other nine PACs within the analysis area are located 0.5 mile or greater from treatment areas.

The Victorine WUI analysis area is within MSO critical habitat unit Upper Gila Mountains 10 (UGM-10). There are approximately 562,988 acres within the UGM-10 critical habitat unit. The unit contains forested habitats and steep, forested canyon habitats. MSO nesting habitat is mostly restricted to steeper terrain and steep canyons within this critical habitat unit. There are approximately 7,987 acres of protected and restricted habitat within the analysis area. These acres are also designated critical habitat (USDI 2004). Of the 6,146 acres of protected habitat in the analysis area, 4,998 acres are currently designated as PACs. The remaining protected habitat (1,148 acres) is on slopes greater than 40%, outside of PACs. There are 1,841 acres of restricted habitat within the analysis area (approximately 1,583 acres of pine-oak and 258 acres of mixed-conifer restricted habitat). One hundred and fifty-eight acres of pine-oak and 65 acres of mixed conifer have been identified as target-threshold habitat, per the Recovery Plan (USDI 1995).

B. Factors affecting the species and its critical habitat within the action area

In the early 1990s there were two large timber sales within the analysis area. The Buckhorn Timber Sale (1993) was 4,764 acres and the Lockwood Timber Sale (1995) was 1,664 acres. These were both commercial timber sales and most likely impacted some amount of MSO habitat within the analysis area. However, there is no information regarding how much MSO habitat may have been modified in these timber sales or how these sales may have modified how MSO currently use the area. Planned actions that will or are occurring within the analysis area include the Buck Springs and Bar-T-Bar Range Allotment livestock management improvements and the East Clear Creek Watershed Health Project. The East Clear Creek Watershed Health Project will conduct thinning and burning treatments on approximately 9,400 acres of mixed-conifer and ponderosa pine habitat adjacent to the Victorine WUI analysis area. Both of the range improvement projects associated with the Buck Springs and Bar-T-Bar allotments and the East Clear Creek Watershed Health project will predominately result in long-term positive effects to MSO and other species habitat within the area. These projects include actions to improve forest and watershed health, remove/obliterate roads, remove livestock from sensitive areas, and will improve long-term management within the East Clear Creek Watershed.

Additionally, the project analysis area is used for both motorized and non-motorized recreation. Most recreation within the area is fairly dispersed, but areas such as Kinder and Mack's Crossings do receive higher visitation than most areas within the analysis area. Planned road closures and obliterations resulting from the East Clear Creek Watershed Health Project will help to reduce recreational impacts within the watershed.

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.

Project activities are planned to reduce the risk of severe, stand-replacing wildfire to MSO PACs, protected steep-slope, and restricted habitat as recommended in the Recovery Plan (USDI 1995). However, even projects with projected long-term benefits may reduce habitat quality for wildlife in the short-term. The project will be implemented over the next 12 to 15 years, and then it will take some period of time for longer-term project benefits to be realized. In the short-term, direct and indirect effects to the MSO and its habitat may include disturbance, the loss of key habitat components, and reduced severe wildfire risk. Direct and indirect effects to critical habitat may include the loss or modification of the primary constituent elements and reduced severe wildfire risk. This section will describe the potential effects of the fuels reduction projects to MSO and how actions implemented under the Victorine WUI Fuels Reduction Project may result in short-term adverse effects to the species and its habitat; however, we also expect that the proposed action will reduce the potential for severe wildfire and provide increased protection to existing and future MSO habitat.

As stated above, the Victorine WUI Fuels Reduction analysis area encompasses 19,915 acres within the East Clear Creek watershed, and includes 17,759 acres of Coconino National Forest land and 2,156 acres of private land. Within this analysis area, there are approximately 7,987 acres of MSO habitat (PACs, protected steep-slope, restricted, critical habitat). Of the 7,987 acres of MSO habitat, approximately 1,185 acres will be treated. Table 3 summarizes the proposed actions that will occur in MSO protected, restricted, and critical habitat.

Table 3. Mexican spotted owl habitat within project treatment areas (acres).

MSO Habitat	Broadcast & Maintenance Burn	Thinning & Burning	Thinning & Piling	Total Acres Treated
PACs	0	20	5	25
Protected Steep-slope	0	0	0	0
Restricted	1,000	60	100	1,160
Total Acres	1,000	80	105	1,185

Protected Habitat (PACs)

There are 12 MSO PACs that occur within the project area. Eleven of the 12 PACs are located within 0.5 mile of proposed treatment areas. Project treatments will occur adjacent to two of the PACs within the analysis area (Kinder and Limestone PACs) and within the Weimer PAC. Treatments proposed within the PAC will consist of approximately 20 acres of thinning and maintenance burning and five acres of thinning and piling (see Table 3). All trees thinned in the PAC will be equal to or less than 9 inches dbh. The PAC acres planned for treatment are located adjacent to private property and located on the western edge of the PAC boundary, outside of the Forest Service designated nest core area (which does not contain the most recent nest location). Project activities within the PAC are approximately 0.13 mile from the 2004 nest location.

Direct and indirect effects from the thinning and burning actions within the PAC will be minimal. The PAC will be thinned per recommendations in the Recovery Plan, which will result in retention of all trees greater than nine inches. Though this prescription will maintain larger trees through the thinning process, it is possible that removing only these smaller trees may create a more even-aged stand within the PAC, reduce the number of canopy layers, and not significantly reduce mortality of remaining trees following prescribed burning. The BAE states “variable tree spacing and small clumps of trees interspersed with small openings” will be the thinning prescription in the PAC. It may be difficult to create openings and variable tree spacing through removal of trees less than nine inches dbh. However, removal of these smaller trees that can serve as ladder fuels may help to protect other key habitat components, especially larger trees, when the PAC acres are burned.

The Forest Service plans to conduct burning within the Weimer PAC so as to retain 90% of snags greater than 14 inches dbh, 75% of large dead and down logs/acre, 95% of ponderosa pine trees greater than 18 inches dbh and Gambel oaks greater than 14 inches diameter-at-root collar (drc), 80% of smaller oaks, and 95% of the total basal area and canopy closure. Because the proposed action only calls for broadcast burning 20 acres within the PAC, it is likely that the Forest Service may be able to meet these objectives by implementing the proposed conservation measures (large snags will be lined, if there are trees available up to 20 additional snags ≥ 14 inches dbh may be created). In addition, “test burning” would occur prior to burning in the PAC to ensure that conditions are adequate to meet the retention goals for snags and logs. However, snags and downed wood are already rare in this area, so any loss of snags (minimum 10% loss) and downed logs (minimum 25% loss) may result in adverse effects to the potential nesting and prey habitat for the MSO.

Disturbance to nesting MSO will not occur as the prescriptions in the Weimer PAC and those treatments adjacent to the Kinder and Limestone PACs will all be implemented outside the breeding season. In addition, no treatments will occur within 0.5 mile of the other nine PACs during the breeding season (March 1 through August 31).

Restricted Habitat

Approximately 1,160 acres of MSO restricted pine-oak habitat will be treated under the proposed action. One thousand acres will be broadcast/maintenance burned, 60 acres will be thinned and burned, and 100 acres will be thinned and the slash piled and burned.

Efforts will be made to avoid large trees, snags, and logs during all burning treatments, but snags and logs are vulnerable to prescribed burning and research indicates we may lose up to a third of snags and almost half of all logs following broadcast burns (Randal Parker and Miller 2002). In addition, the Forest Service predicts that they will lose 5 to 25% of large, live ponderosa pine and Gambel oak trees (see BAE, page 33). Forest Service goals for burning within restricted habitat are to retain 80% of snags greater than 14 inches dbh, 60% of large dead and down logs/acre, 95% of ponderosa pine trees greater than 18 inches dbh and Gambel oaks greater than 14 inches drc, 75% of smaller oaks, and 90% of the total basal area and canopy closure. Therefore, by prescription, we are expecting a potential loss of 20% of large snags and 40% of the large dead and down logs in MSO restricted habitat. Longer-term beneficial effects will be a

reduction in excessive fuels that put MSO habitat at risk for severe wildfire and an increase in vegetative ground cover that provides prey habitat. Maintenance burning will occur on a 3 to 12 year interval and would result in maintaining snag densities below two snags per acre and log densities below two logs per acre in restricted habitat (see BAE page 26).

Critical Habitat

As stated above, approximately 1,160 acres of MSO restricted pine-oak habitat (63% of restricted habitat within the project area) will be treated under the proposed action. One thousand acres will be broadcast/maintenance burned, 60 acres will be thinned and burned, and 100 acres will be thinned and the slash piled and burned. In addition 25 PAC acres will be thinned and burned. The restricted habitat is composed of forested pine-oak habitat and canyon habitat, as defined in the critical habitat rule (USDI 2004), and will not be impacted by the proposed action. Therefore, we will not analyze the effect of this project on the primary constituent elements within canyon habitat.

The Recovery Plan encourages land management agencies to conduct fuels reduction projects within MSO habitat and provides guidelines for these actions that will aid in reducing fuels, but still maintain habitat and minimize effects to MSO. These guidelines were designed to protect MSO habitat over the long-term by reducing the likelihood of severe crown fire; however, short-term effects from fuels reduction treatments can adversely affect the primary constituent elements of MSO critical habitat directly or indirectly by altering their habitat and/or prey. Broadcast burning and mechanical thinning may affect designated critical habitat by reducing snags, downed logs, woody debris, multi-storied canopies, and dense canopy cover. In addition, the proposed activities may change the structure of MSO prey species' habitat, affecting the abundance and composition of prey species. Although these activities may have adverse effects to MSO prey species and habitat in the short-term, the proposed treatments may increase the diversity of vegetative conditions and reduce the risk of severe, stand-replacing wildfire.

The conservation measures identified in this document and the BAE will be fully implemented by the Forest Service as part of their proposed action. These conservation measures will help minimize or avoid adverse impacts to the function and conservation role of MSO critical habitat. Without these conservation measures, the negative effects to the function and conservation role of MSO critical habitat would likely be greater.

Primary constituent elements were identified by the Fish and Wildlife Service in the final rule designating critical habitat (USDI 2004). The importance of each of these components to MSO habitat is described in the final rule (USDI 2004) and the Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference. The expected effects on the primary constituent elements of MSO critical habitat as a result of the Victorine WUI Fuels Reduction Project are summarized below by forest structure and prey species habitat:

Forest Structure

Range of trees species, tree size: In forested critical habitat, a range of tree species, composed of different tree sizes reflecting different ages of trees, 30% to 45% of which are large trees with dbh of 12 inches or more is desired. Diversity in tree-size distributions is typical of MSO habitat

and provides the vertical structure that is thought to be important to owls (Seamans and Gutierrez 1995). The range of tree species should not be impacted by the proposed action. There are no treatments proposed in mixed-conifer habitat and, though pine-oak habitat will be thinned and burned, this treatment should not affect the range of tree species as conservation measures will be implemented to protect and maintain oak within the project area. Regarding size diversity, within MSO habitat, pines greater than 12 inches dbh will not be thinned and Gambel oaks, regardless of size, will be retained to the greatest extent possible during both thinning and burning operations. However, there will be some loss of large trees following the initial broadcast burn and in subsequent maintenance burns. The Forest Service predicts a loss of 5 to 25% loss of large, live trees (pines and oaks). This loss will result in a short-term adverse effect to this primary constituent element. Large, live trees are an important element of MSO habitat, and owl use is often correlated with a medium-to-large tree component (USDI 1995). Large trees and snags take many years to develop and are very difficult to replace, even over the long-term.

A shade canopy created by the tree branches covering 40% or more of the ground: The Forest Service expects that shade canopy will be reduced following thinning and burning treatments. However, they do not expect canopy closure to fall below 40%. Ganey et al. (2003) found that 32 out of 34 MSO roosting stands had canopy cover >40% and 75% of stands used for roosting had canopy cover >60%. Following implementation of the project, MSO restricted habitat, including target-threshold, will be at the lower end of habitat used by MSO for nesting or roosting. However, over time, we would expect canopy cover to increase in areas, particularly in those stands managed as target-threshold habitat.

Large, dead trees (snags) with a dbh of at least 12 inches: Large snags will most likely be reduced following proposed broadcast and maintenance burning. Currently, large snags are rare across the action area and any loss of this habitat component may be significant in terms of maintaining MSO and prey habitat. The Forest Service will attempt to minimize this loss through the proposed conservation measures. However, it is likely that following burning treatments, 10 to 30% of this currently rare habitat component may be lost within treated MSO habitat and that this will result in adverse effects to this primary constituent element.

Maintenance of adequate prey species

High volumes of fallen trees and other woody debris: Fallen trees and woody debris will likely be reduced by the proposed burning treatments (broadcast, piling, and maintenance burning). Logs are expected to be reduced by approximately 25 to 40% on approximately 1,160 acres of restricted habitat. This loss of large logs will result in short-term adverse effects to this primary constituent element.

A wide range of tree and plant species, including hardwoods: We do not expect that this primary constituent element will be adversely affected by the proposed action. Plant species richness will likely increase following thinning and/or burning treatments that result in small, localized canopy gaps. Retention goals for oaks in MSO habitat are 90% for large oaks (>14 inches drc) and 75% for smaller oak trees. Proposed conservation measures and burning techniques should aid in maintaining oaks, but some level of short-term loss is expected.

Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration: Short-term decrease in plant cover will result from fire-related activities and possibly mechanical thinning. We expect long-term increases in residual plant cover because treatments will provide conditions suitable for increased herbaceous plant growth by removing a thick layer of dead plant debris within treated areas. The mosaic effect created by burned and unburned areas and by opening up small patches of forest within protected and restricted habitat is also expected to increase herbaceous plant species diversity and, in turn, assist in the production and maintenance of the MSO prey base. The function and conservation role of this primary constituent element will not be compromised by the proposed action.

In summary, several MSO critical habitat primary constituent elements may be adversely affected by the proposed action. Snags, large coarse woody debris, and large trees will be lost during project implementation. However, we find that the effects to the function and conservation role of critical habitat relative to the Recovery Unit and the entire designation are not significant because the impacts will be temporary and occur in a very small area relative to the Recovery Unit and the overall critical habitat designation. Therefore, we conclude that the primary constituent elements of MSO critical habitat will continue to serve the intended conservation role for the species with the implementation of the Victorine WUI Fuels Reduction Project.

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.

Future actions within the project area that are reasonably certain to occur include the potential development and/or modification (e.g., road construction, land clearing, logging, fuelwood gathering) of private property in-holdings. These activities may reduce the quality and quantity of MSO nesting, roosting, and foraging habitat; result in disturbance to breeding MSOs; and contribute as cumulative effects to the proposed action. The Weimer owls nested on private property in 2004 and modification and/or further development of this habitat may result in negative impacts to the owls associated with this PAC. The Forest Service has attempted to manage the PAC entirely on Federal lands and has even designated the 100-acre nest core area on the Forest. However, the most recent nest location is located on private land, and future actions by the private landowners may adversely affect the most recent nest area.

CONCLUSION

After reviewing the current status of Mexican spotted owl, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is our biological opinion that implementation of the Victorine WUI Fuels Reduction Project will not likely jeopardize the continued existence of the Mexican spotted owl or adversely modify designated critical habitat.

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

We present these conclusions for the following reasons:

1. Treatments within the Weimer MSO PAC are in compliance with the Recovery Plan (USDI 1995);
2. Though treatments in critical habitat may result in the loss of some primary constituent elements, the proposed action will increase the long-term viability of MSO habitat by reducing the threat of severe, stand-replacing wildfire; and
3. The implementation of the proposed action is not expected to impede the survival or recovery of MSO within the Upper Gila Mountains Recovery Unit.

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 regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (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 the 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.

Using available information as summarized within this document, we have identified conditions of possible effects on the MSO associated with implementation of the Victorine WUI Fuels Reduction Project within the Weimer PAC. However, based on the best available information concerning the MSO, habitat needs of the species, the project description, and information furnished by the Forest Service, we do not believe that the predicted loss of snags, downed logs, and other key habitat components within this PAC or in adjacent restricted habitat is reasonably certain to affect spotted owls to the point where incidental take occurs. In addition, though the most recent nest location for the Weimer PAC is on private property and outside the

management control of the Forest Service, we acknowledge your effort to provide for the habitat needs of these owls. We believe that the Forest Service has proposed conservation measures that will minimize adverse effects to MSO within the Weimer PAC and the other 11 PACs that occur within the action area.

Amount or Extent of Take Anticipated

We do not anticipate that incidental take is reasonably certain to result from the proposed action.

DISPOSITION OF DEAD, INJURED, OR SICK MSO

Upon locating a dead, injured, or sick spotted owl, initial notification must be made to the Service's Law Enforcement Office, 2450 West Broadway Suite #113, Mesa, Arizona 85202 (telephone: 480/967-7900) within three working days of its finding. Written notification must be made within five calendar days and should include the date, time, and location of the animal, a photograph, if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling specimens to preserve the biological material in the best possible state. If possible, the remains of intact owl(s) shall be provided to this office. If the remains of the owl(s) are not intact or are not collected, the information noted above shall be obtained and the carcass left in place. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should the treated owl(s) survive, the AESO should be contacted regarding the final disposition of the animal.

CONSERVATION RECOMMENDATIONS

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

1. We recommend that the Forest Service attempt to create a more clumpy forest structure following maintenance thinning. Currently, the proposed maintenance thinning bases the remaining forest structure on crown and bole spacing. This can result in a very even-aged, even-spaced forest that does not provide the structure, function, or diversity necessary to maximize wildlife habitat or restore ponderosa pine forests. Ideally, remaining clumps of trees would contain interlocking canopies, surrounded by small openings.
2. We recommend that the Forest Service work with the private landowners on whose land the Weimer owls nested in 2004 to maintain MSO nesting habitat and minimize disturbance during the breeding season.

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

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in this biological opinion. As provided in 50 CFR Section 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 that was 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.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to be reconsidered. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department. In all future correspondence on this project, please refer to consultation number 02-21-05-F-0705. Should you require further assistance or if you have any questions, please contact Shaula Hedwall (x103) or Brenda Smith (x101) of our Flagstaff Suboffice at (928) 226-0614.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
Chief, Habitat Branch, Arizona Game and Fish, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Flagstaff, AZ
District Ranger, Mogollon Rim Ranger District, Happy Jack, AZ
District Wildlife Staff, Mogollon Rim Ranger District, Happy Jack, AZ

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APPENDIX A – CONCURRENCE

This appendix contains our concurrences with your “may affect, not likely to adversely affect” determinations for the bald eagle, Chiricahua leopard frog, Little Colorado spinedace and its critical habitat, and the southwestern willow flycatcher.

Bald eagle (*Haliaeetus leucocephalus*)

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the bald eagle. We base this concurrence on the following:

- There are no known winter roosts within the analysis area, though potential sites are located on canyon slopes within the analysis area. However, potential roost habitat on canyon slopes will not be treated.
- Some snags that serve as potential perch trees may be lost during broadcast burning operations. However, recruitment snags will be created through large tree mortality, and existing snags on over 10,000 non-treatment acres of the analysis area will be maintained.
- Proposed project activities should not affect foraging opportunities for bald eagles.

Chiricahua leopard frog (*Rana chiricahuensis*)

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Chiricahua leopard frog. We base this concurrence on the following:

- Though the analysis area contains perennial and intermittent streams as well as stock tanks that may be potential habitat for this species, no frogs have been detected during ranid frog surveys.
- Best management practices will be followed to limit the input of ash and sediment into creeks and stock tanks following thinning and burning treatments. This will aid in maintaining the integrity of these aquatic habitats and should result in insignificant and discountable effects to these habitats.

Little Colorado spinedace (*Lepidomeda vittata*) and its critical habitat

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Little Colorado spinedace and its critical habitat. We base this concurrence on the following:

- No treatments are proposed for steep slopes (>40%) adjacent to East Clear Creek, Leonard Canyon, or Yeager Canyon, or within riparian buffer zones. This will reduce potential sediment and ash delivery to spinedace habitat and help maintain water quality.

- Best management practices and unburned vegetation buffers to riparian systems will protect critical habitat by reducing ash and sediment inputs into streams.
- No channel-spanning wood will be bucked or removed from the stream channel and no vegetation that overhangs live streams or waters potentially containing Little Colorado spinedace will be removed.

Southwestern willow flycatcher (*Empidonax traillii extimus*)

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the southwestern willow flycatcher. We base this concurrence on the following:

- There is no suitable habitat for the flycatcher within or adjacent to the analysis area and no flycatchers have been detected during surveys of potential habitat.
- There are approximately eight miles of potential flycatcher habitat along East Clear Creek, bordering the project area. This habitat is only marginally suitable. However, potential habitat will not be impacted by the proposed action.