



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
ARIZONA ECOLOGICAL SERVICES FIELD OFFICE  
2321 W. Royal Palm Road, Suite 103  
Phoenix, AZ 85021-4951



Telephone: (602) 640-2720 FAX: (602) 640-2730

October 16, 1995

In Reply Refer To:  
AESO/SE  
2-21-92-F-445

Mr. Charles R. Bazan  
Forest Supervisor  
Tonto National Forest  
2324 E. McDowell Road  
Phoenix, AZ 85006

Dear Mr. Bazan:

The U.S. Fish and Wildlife Service (Service) received the request from the Tonto National Forest (Forest) for formal consultation on the Ashmo and Salt timber sales for critical habitat for Mexican spotted owl (*Strix occidentalis lucida*) (MSO). This request was dated August 16, 1995, and received in this office on August 22, 1995. The Service and Forest discussed the Ashmo and Salt timber sales in a meeting on August 16, 1995, where the Forest explained their "no effect" determination for MSO critical habitat. Since the Service did not agree with this "no effect" determination, the Forest decided to request formal consultation, even though this is not required under regulation when the action agency determines a "no effect." Because reanalysis of the Ashmo timber sale was completed prior to reanalysis of the Salt timber sale, this opinion will only address the Ashmo timber sale. This document represents the Service's biological opinion on the effect of the Ashmo timber sale on MSO critical habitat in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The MSO is listed as a threatened species under the Act. The final rule to designate critical habitat for MSO was published on June 6, 1995 (60 FR 29914-29951) and became effective on July 6, 1995. Pursuant to regulation (50 CFR 402.16 (d)), the action agency must initiate/reinitiate formal consultation when a proposed action may affect designated critical habitat. Many Forest Service actions which have previously completed formal consultation for effects on MSO are within recently designated critical habitat. These projects must now also be evaluated by the action agency for any adverse affects to MSO critical habitat. This biological opinion concerns only critical habitat for MSO.

According to the Service's April 14, 1995, Regional Interim Policy on Section 7 Consultation, any actions that comply with the recommendations in the Draft Mexican Spotted Owl Recovery Plan (U.S. Fish and Wildlife Service 1995a), hereafter referred to as the Plan, are not likely to adversely affect MSO or its critical habitat. Conversely, actions not in compliance with the Plan may be likely to adversely affect the species, critical habitat, or both.

Upon reinitiation of consultation, each project is reviewed to determine whether the action is likely to jeopardize the continued existence of the owl and/or adversely modify or destroy its critical habitat. To expedite this evaluation, the Service developed an interim data form to be completed by the Forest Service for each action within critical habitat. This interim data form was completed for the Ashmo timber sale project and submitted to the Service. The Service reviewed the data and assessed the effects of the project on the species and critical habitat. The additive effects of this action was also evaluated as it relates to the affected critical habitat unit and recovery unit as delineated in the Plan. To this end, the Service evaluated whether the action is likely to jeopardize the continued existence of the species or adversely modify its critical habitat.

## CONSULTATION HISTORY

The Forest Service submitted a request for formal consultation on the MSO for the Ashmo timber sale on April 14, 1993. This consultation was completed August 23, 1993. In the biological opinion the Service anticipated that take of MSOs could result from the Ashmo timber sale. Take was expected to be in the form of harassment and harm due to disruption of normal reproductive behavior and habitat modification or degradation.

Because the Service had not received requests for conferencing from the Tonto National Forest, Apache-Sitgreaves National Forests, and the Coronado National Forest, the Service sent a letter on April 25, 1995, recommending conferencing on any project that "may affect" proposed MSO critical habitat. In late July, the Forest reanalyzed the Ashmo timber sale for effects to MSO critical habitat. During a telephone discussion on August 1, 1995, the Service was informed that the Forest Service had made a "no effect" determination for MSO critical habitat. In a letter to the Forest Service dated August 11, 1995, the Service recommended, based on the information available from past consultation on this project, that consultation on MSO critical habitat be initiated on the Ashmo timber sale. A letter requesting formal consultation was received on August 22, 1995. As a result of a field review conducted by the Forest Service, a new interim data form was completed and was received in this office by FAX on October 11, 1995.

**DESCRIPTION OF PROPOSED ACTION**Ashmo Timber Sale

The Decision Notice for the Ashmo timber sale was signed on April 12, 1990. A contract for the timber sale was awarded on September 14, 1992. The original proposal, as described in the environmental assessment, called for the harvest of approximately 2,474 thousand board feet (MBF) and 4,950 cords of timber, and 3,551 cords of fuelwood. This removal was to occur on 1,730 acres within the 22,378 acre Ashmo Analysis Area. Tree species to be harvested consisted primarily of ponderosa pine (Pinus ponderosa) with some Douglas-fir (Pseudotsuga menziesii) as timber and pulpwood, and alligator juniper (Juniperus deppeana) as fuelwood. Treatments included 52 acres of final removal, 129 acres of preparatory cuts, 30 acres of shelterwood cuts, 593 acres of thinning from above, and 895 acres of fuelwood harvest.

The Ashmo project was originally broken out into two projects; the Ashmo timber sale and the Crouch timber sale. A biological evaluation (BE) was completed for the Crouch Sale on November 29, 1989, and the original Ashmo BE was completed on March 6, 1990. On September 23, 1991, the project area was modified and the two timber sales combined. The discovery and delineation of a new Mexican spotted owl management territory resulted in the elimination of three stands from the sale, and a reduction of the acreage to be cut in an additional six stands. In all, the sale area was reduced by 222 acres. A revised BE was written for the project (now the Ashmo Sale) on February 19, 1992. At that time, the Service concurred with the Forest's "no effect" determination.

The Ashmo timber sale was also included in the BE for Activities Proposed in Suitable Mexican Spotted Owl Habitat on National Forests in the Southwestern Region (1992). Prior to the listing of the MSO on April 15, 1993, the Ashmo BE was amended to include an analysis of the potential effects to the owl. That document reached a determination of "may affect, not likely to adversely affect" for selected stands within the sale. The Service did not concur with this determination. Formal consultation on the Ashmo timber sale for the MSO was completed on August 23, 1993. The Service anticipated that implementation of the Ashmo timber sale could result in take of the MSO. The reasonable and prudent measures in the biological opinion included provisions for the implementation of project modifications to reduce potential impacts to the owl. An additional 25 acres, represented in six separate cutting units, were removed from the sale. The volume that was lost in this acreage was replaced within stands that were in "unsuitable" owl habitat. The timber sale contract for the Ashmo project is scheduled to terminate on December 31, 1995.

On July 6, 1995, the date critical habitat became effective for MSO, the majority of the Ashmo timber sale had already been cut and removed. Six cutting units remain to be harvested and the prescribed treatment for the majority of the remaining acreage is for a sanitation/salvage cut for dwarf mistletoe and diseased trees. Intermediate thinning will occur in two of the smaller cutting units, and a removal cut is scheduled for one cutting unit adjacent to Highway 260.

Ten percent of the original sale acreage, or 172 acres, remains to be cut. All of the remaining cutting units are located in the vicinity of the Arizona Department of Transportation's maintenance yard. After the first interim data form was completed, a field visit was conducted by Forest Service biologists and a silviculturist. They determined that the remaining threshold stand, as well as some of the stands that were considered restricted, did not actually meet the criteria for restricted habitat on the ground. The silviculturist explained that the stand data tends to err conservatively toward Gambel oak and is based on potential, rather than actual vegetative composition. Because the stand data had proven to be inaccurate, the interim data form completed for consultation was also inaccurate. The Forest decided to conduct additional field visits in order to provide a more accurate habitat type description for the sale. The results of the field visits were summarized in a letter dated October 2, 1995. Only one of remaining stands (Stand 11-53 acres) is considered restricted habitat. The Service requested that the Forest submit a new interim data form incorporating this new information. The new interim data form was received by FAX on October 11, 1995.

#### **STATUS OF THE MEXICAN SPOTTED OWL (rangewide)**

The MSO range within the United States has been divided into six recovery units, as discussed in the Plan (see Part II.B.). Although a reliable estimate of the number of MSOs throughout its entire range is currently not available, the Plan reports an estimate of MSO sites. The greatest concentration of known MSO sites in the United States occurs in the Upper Gila Mountains (55.9%), followed by the Basin and Range-East (16%), Basin and Range-West (13.6%), Colorado Plateau (8.2%), Southern Rocky Mountain-New Mexico (4.5%), and Southern Rocky Mountain-Colorado (1.8%) recovery units. MSO surveys conducted from 1990 through 1993 indicate that the species persists in most locations reported prior to 1989.

MSO density estimates are only available for portions of its range. Based on comparisons among forest types in the Sacramento Mountains in New Mexico, and two areas in the Upper Gila Mountains Recovery Unit, the data suggest that mixed-conifer supports more MSOs compared to pine-oak, pine, and pinon/juniper forest types (See Plan Part II). The current state of knowledge on MSO habitat association is documented in the Plan (Part II.G.).

#### **ENVIRONMENTAL BASELINE**

Regulations implementing the Act (50 CFR 402.2) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress.

The Forest Service has formally consulted on 161 timber sales and other projects in Arizona and New Mexico since August 1993. These projects have resulted in the anticipated incidental take of 36 MSOs. In addition, the Bureau of Indian Affairs has consulted on one timber sale on the Navajo Reservation that resulted in an anticipated take of four MSOs. The Federal Highway Administration in Arizona has consulted on one highway construction project that resulted in an undetermined amount of incidental take until further consultation could be conducted.

The Service has identified 107 critical habitat units totaling 4,734,874 acres in Arizona, Colorado, New Mexico, and Utah. Thirty-eight critical habitat units have been designated for Arizona totaling 1,991,611 acres. A portion of the Ashmo timber sale (8,360 acres) is within Critical Habitat Unit AZ-TONF-1.

This timber sale also falls within the Upper Gila Mountain Recovery Unit, as identified in the Plan. The Upper Gila Recovery Unit extends from the Mogollon Rim in central Arizona into southcentral New Mexico. This recovery unit contains the greatest concentration of known sites in the United States with approximately 55% of the known MSO territories (Plan). The Plan considers this recovery unit to support one of the "core" owl populations. Site characteristics within this recovery unit in Arizona include pinyon/juniper woodland, ponderosa pine/mixed conifer forest, some spruce/fir forest, and deciduous riparian forest in the lower-elevation canyon habitat. The critical habitat unit consists of steep, south-draining, forested canyons below the lip of the Mogollon Rim, and some forested terrain downslope of the Rim. Much of the habitat is inaccessible to timber harvest and in suitable condition.

Projects which may adversely affect recovery units and critical habitat include timber harvesting as well as localized projects including, but not limited to, road construction projects, mining and other construction projects. For Critical Habitat Unit AZ-TONF-1, the Service recently completed consultation on two road construction projects. The upgrade of State Route 260 from Payson to Heber will adversely affect 74 acres of AZ-TONF-1 and the Gordon Canyon Slide Repair will adversely affect an additional 5 acres. Other timber sales that have occurred in AZ-TONF-1 include the following: Colcord, Valentine, and Rose. The Cherry, Red Lake, and Red Cherry timber sales fell partially within AZ-TONF-1.

A series of prescribed fires, arson caused fires, and wildfires have occurred over the years within Critical Habitat Unit AZ-TONF-1. The fires have varied in size and intensity and the effects of these fires on owl habitat is not known. Some of the fires occurred prior to the listing of the MSO and others more recently. A small portion of the Dude fire occurred in the extreme west end of the critical habitat unit. Other fires have occurred in the Horton Creek drainage and Parallel Canyon, on Robert's Mesa and Christopher Mountain, along the Young Road and near the Hole-in-the-ground area.

Additional projects which may have an affect on Critical Habitat Unit AZ-TONF-1 include a personal-use fuelwood sale (along FDR 102) and grazing. Portions of seven grazing allotments occur within the critical habitat unit.

### Effects of the Actions

Activities that disturb or remove the primary constituent elements within designated critical habitat units may adversely affect the owl's critical habitat. These activities may include actions that reduce the canopy closure of a forest stand, reduce the density of the average diameter of trees in a stand, modify the multi-layered structure of a stand, reduce the availability of nesting structures and sites, reduce the regeneration or modify the structure of riparian habitat, and reduce the suitability of the landscape to provide adequate cover or reduce the abundance or availability of prey species (U.S. Fish and Wildlife Service 1995b). For an action to result in the destruction or adverse modification of critical habitat, the action must appreciably reduce the value of critical habitat for survival and recovery over a significant portion of the species' range. Altering major portions of a recovery unit may preclude recovery of the species.

The effects of timber harvest on MSO have been described in the Plan (Part III). In addition, these effects have also been stated in the final rule listing the owl as a threatened species (58 FR 14248-14271; March 16, 1993) and in previous biological opinions provided by the Service to the Forest Service on August 23, 1993, and October 8, 1993.

Evaluation of the effect of the Ashmo timber sale on critical habitat was conducted at various levels: analysis area, critical habitat unit, and recovery unit. Information on the total extent of harvest, impacts on restricted habitat (threshold and non-threshold), location within the critical habitat unit, harvest method, current condition within the critical habitat unit to the extent known, and any other impacts relative to the intended function of the critical habitat unit was critical to the development of this biological opinion.

The Service considers the Plan as the best scientific and commercial data available on MSO. The Plan is undergoing major revisions at this time, but until a final plan is adopted, agency direction is to apply the draft Plan in the analysis of projects currently under consultation. The Service's analysis of the Ashmo timber sale is based on the current Plan. The Plan recommends that there be no harvesting activities within protected areas; stands meeting threshold habitat conditions are maintained to preserve those conditions; no more than 20% of restricted habitat should be subject to harvest; and no trees  $\geq$  24 inches should be removed.

A brief description of the on-going project and affected acres is summarized in Table 1. The information provided in the table was taken from the most current Interim Data Form for Projects Within Mexican Spotted Owl Critical Habitat provided for the Ashmo timber sale.

**Table 1.** Summary of harvest scheduled for the Ashmo timber sale within Critical Habitat Unit AZ-TONF-1.

Timber sale	Analysis area acreage w/in critical habitat	Restricted habitat acres w/in critical habitat (not threshold)	Acres treated in restricted habitat	Percent treated in restricted habitat	Harvest of trees $\geq$ 24" dbh
Ashmo	8,360	4,663	995	21.3%	no upper limits

Table 1 does not represent the effects to restricted habitat within the entire critical habitat unit, but only the effect to the analysis area acres within the critical habitat unit. Critical Habitat Unit AZ-TONF-1 totals 67,990 acres, of which 67,192 acres are managed by the Forest Service. Thus, the analysis area acres in this critical habitat unit encompass 12% of the entire critical habitat unit acreage managed by the Forest Service.

In the Service's initial analysis of the Ashmo timber sale, we assessed the acreage figures as submitted on the original Interim Data Forms. Of the 4,999 acres of restricted habitat (threshold and not threshold), a total of 1,136 acres, or 23%, were scheduled for harvest, including 76 acres meeting threshold conditions. Harvest of threshold habitat that brings it below threshold habitat conditions, and harvest within restricted habitat in excess of 20%, is contrary to the limits established in the Plan. However, based on the site review conducted by the Forest, and explained during a meeting between the Forest and Service on August 16, 1995, these figures were inaccurate. Using existing stand data and forest classification, those stands included as restricted habitat on the interim data form were classified as pine/oak. Field verification of these preliminary stand data established that much of the remaining area reported as restricted habitat within pine/oak actually provided marginal to no functional current or potential MSO habitat. Even areas presumed to meet threshold conditions were determined by the Forest, as a result of the site visit, to not even meet restricted habitat criteria. These sites are at lower elevations and moisture regimes; ponderosa pine occurs with mixed species of oak, alligator juniper, and manzanita. The Service agrees with the Forest in their determination that the majority of acres within the pine/oak type reported as restricted and threshold habitat should not be considered in the evaluation of effects on MSO critical habitat. Within critical habitat no harvest was or is scheduled for protected areas. The actual number of acres of restricted habitat (not including threshold) within the analysis area is 4,663 and of which 995 acres of restricted habitat are being treated within the sale area. Using this new data, 21.3% of the restricted habitat within the analysis area has been scheduled for harvest.

Based on the evaluation of thresholds established in the Plan and guidance from the Service's Regional Office, the Service does not concur with the Forest's determination that this project will have "no effect" on MSO critical habitat. The Service believes the Ashmo timber sale will adversely affect critical habitat by harvesting in excess of the limits established by the Plan including treatments in 21.3% of the restricted habitat and removal of trees  $\geq 24$  inches dbh.

Because the definitions of protected and restricted habitat are relatively new, the Forest did not provide the Service with an analysis of the habitat types by critical habitat unit. Consequently, the analysis of effects for these projects at this time is very qualitative. The Service understands that the available data does not permit an adequate analysis of effects if applied in the long term. However, the Service will need detailed information on the habitat condition within each critical habitat unit for the entire recovery unit to conduct an adequate analysis of future projects.

The Service believes that although there will be adverse effects to AZ-TONF-1 at the local level, these impacts will not disrupt the function of this critical habitat unit. We recommend that any future activities planned for this critical habitat unit closely examine all the past activities that have occurred within the critical habitat unit and any new projects should evaluate the appropriateness of any additional adverse effects to this critical habitat unit. Overall, sufficient owl habitat will remain for owls to nest, roost, forage, and disperse. Additionally, we believe that enough habitat remains unaltered within the surrounding critical habitat units to support nesting, roosting and foraging owls. It is the Service's opinion that the Ashmo timber sale, which results in adverse impacts to 1.5% of this critical habitat unit, will not appreciably reduce the ability of AZ-TONF-1 to perform the functions for which it was designated. Therefore, this project will not result in the destruction or adverse modification of this critical habitat unit. This project will not impede dispersal between mountain ranges or appreciably reduce the function of the Upper Gila Mountain Recovery Unit.

Although concurrence on the determination of effect for the owl was not requested, the Service offers the following comments. We assume that recent surveys have been conducted in unoccupied suitable habitat and request that we be informed if this assumption is incorrect. Using the guidance established in our Interim Policy for Conducting Section 7 Consultation on the Mexican Spotted Owl, the potential for additional incidental take of owls needs to be evaluated if adequate surveys have not been conducted. Also, from the information provided it could not be determined if all potentially disturbing activities within 0.25 mile of a PAC are being conducted outside of the breeding season. Because of the Forest's "no effect" determination, we assume the projects to be in compliance with the above statement. Our guidance also states that "In habitats considered "unrestricted" in the recovery plan, projects within 1 mile of a PAC may affect spotted owls, since PACs are drawn to encompass an average of 75 percent of foraging locations, which means that, on average, 25 percent of foraging occurs outside PACs. In unrestricted habitats over 1 mile



from a PAC, a "no effect" determination is appropriate." We also assume the project to be in compliance with the above statement.

### CUMULATIVE EFFECTS

Cumulative effects are those effects of future non-federal (State, local government, or private) activities on endangered or threatened species or critical habitat that are reasonable certain to occur in the foreseeable future. Future Federal actions are subject to consultation requirements established in section 7, and therefore, are not considered cumulative in the proposed action. In past biological opinions it has been stated that "Because of the predominant occurrence of the owls on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the owl, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered a minor impact." However there has been a recent of harvest activities on non-Federal lands. Much of the non-Federal lands being harvested are adjacent to or within National Forests (inholdings). These activities reduce the quality and quantity of owl nesting, roosting, and foraging habitat and cause disturbance to breeding owls. Non-Federal activities on or adjacent to forest, critical habitat units and recovery units throughout the State would contribute to adverse cumulative effects in the future.

Past fire suppression activities have resulted in increased fuel loads on the Forest and have increased the potential for wildfires. As the recreational use of the forest increases, the potential for human-induced wildfires may also increase. Catastrophic wildfires have been identified as one of the primary threats to MSOs and their habitat throughout most of its range.

### CONCLUSION

Based on the best scientific and commercial data available, it is the biological opinion of the Service that the proposed project will not destroy or lead to adverse modification of the critical habitat unit. The Service based this on the fact that although there will be an adverse affect to the critical habitat unit, the proposed project will not appreciably reduce the biological function of the recovery unit. In addition, the amount of habitat modified, relative to the size of the recovery unit, is not significant and therefore, will not destroy or adversely affect the recovery unit.

### INCIDENTAL TAKE

At this time the Service does not anticipate that the Ashmo timber sale will incidentally take any additional MSOs.

## 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. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effect of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

The Service recommends that the following conservation measures be implemented for the Ashmo timber sale. Although the Service does not believe that the project will result in adverse modification of critical habitat, we recommend that the following measures be taken to minimize the adverse effects to critical habitat.

1. Avoid any activities that adversely affect critical habitat through implementation of the Plan recommendations:
  - a. In mixed conifer and pine/oak habitat in restricted habitat and in stands that meet threshold criteria, schedule no more than 20% of an analysis area for timber harvest in a single decade.
  - b. Retain all trees  $\geq$  24 inches dbh in treatments in protected and restricted habitat types. However, if these trees are heavily infected with mistletoe, killing these trees while leaving them standing to prevent further mistletoe infection may be considered as an option.
  - c. Allow only one commercial timber harvest per stand before the MSO is delisted.
  - d. Manage mixed conifer and pine/oak forests so that they become replacement owl habitat over space and time.
  - e. Prescriptions should be guided by the objective of maintaining or creating habitat structure for the MSO where possible.
  - f. Retain hardwoods, large down logs, large trees and snags.
  - g. All prescriptions should emphasize irregular tree spacing and variable patch, group, and/or clump size.

2. An analysis of the existing habitat condition (including field review) should be conducted for this critical habitat unit prior to any further habitat modifying activities.
3. Implement the final MSO recovery plan when available.
4. Plan and implement harvest and other activities in critical habitat consistent with the intent of the final recovery plan and final rule for critical habitat.
5. Provide the Service with detailed information and maps depicting the condition of each critical habitat unit on the Tonto National Forest including maps and information on PACs, acreage of habitat meeting threshold conditions, acreage and condition of restricted habitat, and acreage of unrestricted habitat. Maps of affected PACs should be provided along with any requests for consultation. We request that all PACs that have been delineated to date by this Forest and their accompanying justifications be provided to the Service.

At this point and time we do not believe that additional incidental take should be assigned to the Ashmo timber sale. Although concurrence on the determination of effect for the owl was not requested, the Service recommends that the following measures are used when determining effects of projects on the owl.

1. Areas that may support owls should be adequately surveyed. For the Ashmo timber sale, this means owl surveys should have been conducted in suitable habitat in either 1994 or 1995.
2. Habitat disturbing activities within 0.25 mile of a PAC should not occur during the breeding season.
3. "In habitats considered "unrestricted" in the recovery plan, projects within 1 mile of a PAC may affect spotted owls, since PAC's are drawn to encompass an average of 75 percent of foraging locations, which means that, on average, 25 percent of foraging occurs outside PAC's. In unrestricted habitats over 1 mile from a PAC, a "no effect" determination is appropriate."

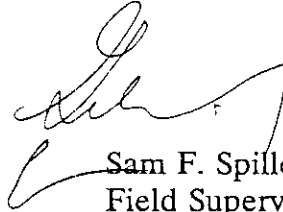
In order for the Service to be kept informed of action that minimize or avoid adverse effects to critical habitat, the Service requests notification of the implementation of any conservation recommendations.

**REINITIATION**

This concludes formal consultation on the Salt and Ashmo timber sales. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of take is exceeded; (2) new information reveals effects of the agency action that may impact 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 future communications regarding these projects, please refer to consultation #2-21-90-F-117 for the Ashmo timber sale. If you have any questions or would like to discuss any part of this biological opinion please contact Bruce Palmer.

Sincerely,



Sam F. Spiller  
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (GM:GSV/LCR)  
Regional Forester, U.S. Forest Service, Albuquerque, NM  
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM  
District Ranger, Payson Ranger District, Payson, AZ  
Supervisor, Pinetop Fisheries Resources Office, Fish and Wildlife Service, Pinetop,  
AZ

LITERATURE CITED

- U.S. Fish and Wildlife Service. 1995a. Draft recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*). 646 pp.
- U.S. Fish and Wildlife Service. 1995b. Endangered and threatened wildlife and plants; final rule to designate critical habitat for the Mexican spotted owl. *Federal Register* 60:29914-29951.