Appendix A: Response to Comments

This appendix includes all comments received in response to the Environmental Assessment Notice of Opportunity to Comment published in the *Arizona Daily Sun* on January 26, 2005. The 30-day comment period ended on February 25, 2005.

Comments received have been numbered sequentially by responder. Comments and responses are numbered for tracking purposes only. All comments are typed verbatim into this report and responses are in **bold font**.

The following is a list of responders with name, organization, and date received.

Name	Organization	Date Received
Sharon Anderson		1/27/2005
Ruth Musgrave		2/11/2005
Steven Spangle	US Fish and Wildlife Service	3/9/2005

Ruth Musgrave

I certainly agree that action does need to be taken to reduce wildfire risk in this area. I appreciate all the precaution that will be taken before the project begins. I think the greatest risk will be the turkeys. They must have ground cover & tree that produce lower limbs or you will drive them to other areas. I would appreciate being kept updated on the project.

Sharon Anderson

"I just have a couple of questions to ask you about non-designated roads up behind the lodge going into the area there. I used to ride for Joe Lockett and Orm Ranch and such like that. I think there are nine cut-through roads, little trails for quads up behind there. We have continual problems with the gate there and the fence cutting. I was wondering if there was any way that while you were up there doing that burn you could eliminate some of those roads for us. I don't know how your stand is on it, but I'd like to talk to you about it."

A return phone call was made to Sharon at 12:32 p.m. on 2/2/05. She expressed concern over the number of gates in the fence between the 90H and 219 roads. The public constantly leaves these open and cattle gets on to private property. Nine gates are too many to monitor on a daily basis. She felt that if we could get the number of gates down to three, these could be monitored on a daily basis. She is in favor of the project as it relates to the number of roads left open and the conversion of road to trail. She is hoping that by obliterating some of the non-system roads, we can eliminate the gates that go with them.

Eliminating gates on roads is outside the scope of this project. The number of gates can be addressed during later road obliteration work undertaken by the District.

Steven Spangle, US Fish and Wildlife Service

We have a few specific comments related to the proposed action, which are organized according to the sections of the EA.

Chapter 1 - Purpose and Need

FWS1. Proposed Action (page 3): The first bullet in this section states that the "Forest Service and contract crews will thin-from-below much of the project area **outside** (our emphasis) of the

Mexican spotted owl (MSO) activity center." This is also stated in the cover letter. However, in Chapter 2, Alternative B, Proposed Action (page 8) the fifth complete sentence from the top of the page states "No trees greater than 9 inches dbh will be thinned within MSO protect or target threshold habitat." This statement is made in other sections of the document as well. We recommend that the Forest Service consistently state what actions are proposed for the MSO protected activity center (PAC) in the Record of Decision (ROD).

The two occurrences of the statement to which you refer are meant to only briefly summarize what is proposed with this action and are not inconsistent with other portions of the Environmental Analysis that describe the alternatives in greater detail.

A Record of Decision (ROD) documents the decision made for actions analyzed under an Environmental Impact Statement (EIS). However, this project was analyzed under an Environmental Assessment. The decision and rationale will be documented in a Decision Notice (DN) and Finding of No Significant Impact (FONSI).

FWS2. Public Involvement (page 4): This section documents several meetings that occurred with the public and agency personnel to discuss the proposed project. The Fish and Wildlife Service met with you staff on several occasions during the summer of 2003 to discuss the proposed action and the April 10, 2001, Wildland Urban Interface (WUI) Batch-Programmatic Biological Opinion (BO). Ultimately, these discussions resulted in the Forest Service withdrawing the project form the WUI BO in a letter dated September 29, 2004. We recommend that you update this section to reflect these changes and Chapter 4 – Consultation and Coordination (page 87) is update to reflect the removal of this project from the 2001 WUI BO. Currently this section states that consultation is complete for the project, per the WUI BO.

The Forest Service did withdraw this project from the April 10, 2001 Wildland Urban Interface Batch Programmatic Biological Opinion on September 29, 2004. This correction will be clearly stated in the errata.

Chapter 2 – Alternatives
Alternative B, Proposed Action

FWS3. Thin-from-below (page 8): The second full sentence on this page states "Virtually all large Ponderosa pine trees would be removed from stand 488-08 to reduce the spread of dwarf mistletoe to a manageable level." Garnett et al. (2004) recommended that brooms found in ponderosa pine trees greater than 15.5 inches and greater than 29 feet in height be maintained. This recommendation is based on research conducted on the Coconino National Forest. In addition, dwarf mistletoe management literature emphasizes the removal of the most heavily infected trees first, followed by removal of the infected overstory. It may be that a smaller (e.g., 16 inches dbh) infected tree provide better broom habitat that another larger tree (e.g., 18 inches dbh) or conversely that a large dbh tree has a low Dwarf Mistletoe Rating (DMR) and a smaller tree a greater DMR. How is the Forest Service using the tree DMR; the number, placement, and size of witches' brooms; and, the presence of nests or other wildlife sign in witches' brooms to determine which trees will be removed? Though the discussion on page 27 touches on the use of dwarf mistletoe by wildlife, it is unclear how this information is being used. We recommend that the Forest Service use the information generated by the aforementioned study and others to better inform the management of these stands for wildlife.

Stand 488/08, which is 31 acres in size, is the only stand within the project area considered to be severely infected with dwarf mistletoe (DM). Approximately 115 trees per acre are currently infected, with an average DMI rating of 3.4. According to the Forest Vegetation Simulator (FVS), the average DMI rating for infected trees will reach 4.4 within 40 years if left untreated. In order to treat the widespread level of infection in this stand, the proposed action calls for a shelterwood cut to 40 sq ft basal area to remove the infected understory trees and any infected overstory trees. In a shelterwood cut, the best and largest uninfected trees are left on site as a seed source for regeneration. All other pine trees would be removed. According to FVS, the largest tree in stand 488/08 is 15 inches dbh. Simulations show that 108 trees per acre less than 13 inches dbh will need to be removed to reach 40 sq ft basal area and reduce mistletoe infection to manageable levels. According to Conklin (2000, p. 24), "Shelterwood cuts are still a good option for management of some heavily infected stands in the Southwest. These treatments retain the best trees in the stands, and are implemented before infection becomes so severe that other management options are lost."

If possible, all trees showing evidence of infection will be removed. However, it may not be possible to remove all infected trees due to management recommendations for the Northern goshawk. According to the Coconino National Forest Plan, openings over one acre in size should retain 3 – 5 reserve trees per acre. Ideally, reserve trees and seed trees will contain no signs of DM infection. Because of the mechanism in which DM spreads, leaving infected trees in the overstory would result in infection of any regeneration in the understory. Left untreated, DM infection would continue to spread throughout the stand. According to Conklin (2000), DM infection spreads at an average rate of 1-2 feet per decade. Increased DM infection results in reduced tree growth, reduced tree vigor, branch deformations, and shortened life span of the infected host (Conklin 2000). Trees infected with DM are more susceptible to insect attack, such as bark beetles, and diseases. Reduced tree growth and shortened life span of the infected host result in stagnation of VSS classes. Additionally, in comparison to uninfected trees, trees infected with DM are more flammable due to the accumulation of resin and branch deformations (Conklin 2000). Conklin (2000) also states that areas infected with DM often have higher fuel levels, compared to uninfected areas, resulting in more intense fires. Due to the damaging effects of DM on tree growth, the Coconino National Forest Land and Resource Management Plan states, "Silvicultural prescriptions emphasize treating dwarf mistletoe infections to bring them down to acceptable levels…" (USDA Forest Service 1996, p. 122-1).

Because this is a fuels reduction project, the severe DM infection in stand 488/08 will be treated to reduce the level of infection as much as possible to decrease fire hazard. In other light to moderately infected stands throughout the project area, complete elimination of DM is neither practical nor desirable. Although DM increases fire hazard and has many damaging effects on tree growth, the Forest Service recognizes that it is a natural occurrence in ponderosa pine ecosystems and has many beneficial effects on wildlife.

Current DM populations in the southwest are thought to have increased since Euro-American settlement due to increased forest densities resulting from fire suppression. A more open, patchy forest structure would have limited the spread of DM infection (Conklin 2000). Additionally, DM infection occurs more abundantly in the lower crown due to its mechanism of spread. The historic fire regime may have decreased the severity of infection through partial crown scorch and a "sanitizing" effect on lightly to moderately infected trees (Conklin 2000). In an attempt to decrease DM infection to acceptable levels that more closely resemble pre-settlement conditions, stands with light to moderate infection will have marking guidelines that show a preference toward the removal of trees with DM, especially overstory trees, trees with a DMR of 3 or greater, and trees with infection in the lower portion of the crown, unless the tree shows obvious signs of wildlife use. No old, "yellow" pine trees or black-barked pines greater than 24" dbh will be

thinned, regardless of dwarf mistletoe infection. Rather, a 30-foot buffer will be cut around individuals or groups to prevent the spread of infection. The Forest Service does not expect to remove all infected trees within the project area.

FWS4. This paragraph also states that "No trees greater than 9 inches dbh will be thinned within Mexican spotted owl (MSO) protected or target threshold habitat. The canopy within the protected, restricted, and target threshold habitat will re-close (56-76%) over 20 years on those acres." We understand how in the restricted habitat, where trees greater than 9 inches dbh may be removed, there may be a reduction in canopy cover that may take 20 years to re-close. However, with a thin-from-below of trees ≤9 inches in protected and target threshold habitat, there should not be a significant reduction in canopy cover. We recommend that the Forest Service clearly differentiate between the effects resulting from the proposed thinning in protected and target threshold habitat versus the effects of the proposed action in restricted MSO habitat.

Protected Habitat: One stand will be thinned up to 9 inches dbh within the PAC. Within this stand, canopy cover will decrease by approximately 10% post-treatment. Basal area will decrease by approximately 20 sq ft post-treatment. Both basal area and canopy cover will return to current levels in approximately 20 to 30 years. The other 2 stands within the PAC are "burn only". The Forest Service does not expect a significant decrease in canopy cover or basal area within the "burn only" stands.

Target Threshold: No thinning will occur within target threshold habitat. These stands are "burn only". The Forest Service does not expect a significant decrease in canopy cover or basal area within the "burn only" stands.

Restricted Habitat: Within restricted habitat, stands will be thinned to 40 to 50% canopy closure. The canopy cover within restricted habitat will decrease, on average, by 15% post-treatment and will return to current levels in approximately 30 years. Basal area will decrease, on average, by 40 sq ft and will also return to current levels in approximately 30 years.

FWS5. Alternative C, Modification of the Proposed Action, Thin Eagle Roost, More Turkey Cover. This alternative includes thinning within 300 feet of bald eagle winter roosts after April 15 and before October 15 in order to further reduce the fire hazard to roost trees and nearby private property. We strongly support this action. The Proposed Action (Alternative B) and this alternative both propose to conduct prescribed burning within the winter roost areas. However, if this burning occurs without some thinning within those roosts, many large trees and snags may be lost due to torching from adjacent ladder fuels. Mitigation measures proposed for both alternatives (page 13) state that all snags that are at least 12 inches dbh and 12 feet tall shall be lined. However, in the bald eagle roost areas, there are many ponderosa pine trees and snags that would require lining in order to ensure that that the prescribed fire did not adversely affect the roost. Though it is an admirable goal to state that all of these trees will be lined, it may not feasible. By conducting a thin-from-below within these roost areas, the risk of losing large trees and snags may be minimized. However, these areas may also require that clumps of large trees and snags, or the entire roost, may need to be lined to protect the roost from the effects of prescribed burning. We recommend thinning within the roost sites and lining of clumps and/or the entire roost area.

We note your recommendation that roost sites be thinned. Thinning from below does reduce the risk of losing large trees and snags from both prescribed burning and wildfire.

In analyzing your recommendation to line clumps of trees or the entire roost area we determined that lining trees and snags does not ensure their survival. Fire may cause a tree to die by damaging too much of its cambium layer, by scorching too much of its crown, or by overheating too many of its fine root hairs. Lining trees only reduces the chance of excessive cambium layer damage. Snags may be ignited and lost from flame contact, flying firebrands, or radiant heat. Lining snags only reduces the chance of direct flame contact. Snags of habitable size are lined prior to prescribed burning according to forest plan direction. The Coconino N.F. LRMP requires that prescribed burn crews minimize the loss of snags, logs and roost trees during broadcast burning activities.

Individually lining all large trees is not feasible given budget limitations. Lining clumps or the entire roost area actually maintains a higher risk of fire-induced mortality to those clumps and roost trees from wildfire. By not burning off the fuel load underneath those trees and allowing further accumulation, the risk of wildfire-induced mortality (crown scorch and root damage) remains and increases over time.

Prescribed burning under controlled conditions has a small probability of causing tree mortality. However, a wildfire that occurs prior to or without prescribed burning under the desired trees has a greater risk of mortality. Prescribed burning under these trees actually increases their chance of survival. That said, the burn boss preparing any given burn block often elects to line certain old-growth trees after balancing a matrix of threats to its survival. Groups and clumps of trees may require lining.

The following in addition to the analysis above has been added to the effects analysis for bald eagles in the EA (see Errata Sheet):

This project proposes broadcast burning every 5 to 10 years. Burning will not occur within 1/4 mile of known bald eagle winter roost areas between October 15 and April 15. Burning may result in smoke lingering for approximately two days after ignition activities have ended. Eagles are unlikely to be roosting in this area after April 15 and before October 15. When any are present there may be short-term, low intensity effects to roosting bald eagles, which may result in eagles flushing from roosts during periods of heavy smoke. Foraging eagles may avoid areas of heavy smoke. 4.9 acres within eagle roosts are proposed for burn only treatments. There is a low probability of roost trees being burned during prescribed fires. Fire managers will take appropriate actions to minimize damage to roost trees, snags and large trees during broadcast burning.

FWS6. Mitigation measures/Design Features Common to Alternatives B and C, Wildlife Protection (page 15): The last paragraph in this section states “Road construction, thinning, hauling, and burning within location 486, site 002 will only occur during the period between July 16 (this is correct, it refers to a stand outside PAC but within hearing distance of a nest) and February 28 to minimize disturbance of feeding hatchlings in the nearby MSO next.” We recommend including a discussion regarding how it was determined that using the July 16 date, which is still during the MSO breeding season (March 1 through August 31), is sufficient to protect breeding MSO within this PAC from noise disturbance (e.g., the disturbance is greater than 0.25 mile from the PAC, etc.). Unless the Forest Service can establish non-nesting status for the PAC during project implementation, this statement is not consistent with MSO management. Typically, we recommend at least a 0.25 mile buffer during the entire breeding season (depending upon the activity) between the PAC and the disturbance to reduce the potential for adverse affects.

MSO may be disturbed during mechanical and prescribed burning activities by noise created during the implementation of project activities. In addition to the timing

restrictions within the Nestor PAC, project activities in stand 486-02 are restricted from February 28 through July 16. The restrictions on this stand were imposed because it was thought that by mid July if the owls using the Nestor PAC were successful at fledging young, the young would be old enough that noise created from project activities would be less of an impact then if the fledglings were less than a month old.

The closest roost location to stand 486-02 is approximately .31 miles. The closest point of stand 486-02 to the Nestor nest center is .15 miles. Timber hauling for stand 486-02 will be on a temporary road, which runs along the stand boundary for 486-02 and 486-01. This road is approximately .28 miles from its closest point to the nest center and .44 miles from the closest roost. Treatments in 486-06 are closer to the nest center than those in 486-02. Treatments in stand 486-06 are within .20 miles of the nest center, but noise created in this stand is largely blocked from the known roosting area by topography. Roosting or nesting owls may be disturbed by noise created during logging activities, despite the timing restrictions, although these effects are of low intensity and are unlikely to result in negative effects to MSO.

Chapter 3 – Environmental Consequences
Threatened and Sensitive Species Assessments

Threatened Bald Eagle

FWS7. Alternative B/Alternative C: Direct and Indirect Effects (pages 47-49): There is no discussion in either of these sections of the potential adverse effects of burning in bald eagle roost areas, with or without thinning. We believe that the potential for loss of large trees and snags will be minimized if the roosts are thinned prior to burning. However, regardless of whether the roosts are thinned or not, there is a potential for prescribed fire to impact these areas. We recommend including an analysis of the effects of the prescribed burning on the winter roost habitat.

The following has been added to the effects analysis for bald eagles in the EA (see Errata Sheet):

Lining trees and snags does not ensure their survival. Fire may cause a tree to die by damaging too much of its cambium layer, by scorching too much of its crown, or by overheating too many of its fine root hairs. Lining trees only reduces the chance of excessive cambium layer damage. Snags may be ignited and lost from flame contact, flying firebrands, or radiant heat. Lining snags only reduces the chance of direct flame contact. Snags of habitable size are lined prior to prescribed burning according to forest plan direction. The Coconino N.F. LRMP requires that prescribed burn crews minimize the loss of snags, logs and roost trees during broadcast burning activities.

Individually lining all large trees is not feasible given budget limitations. Lining clumps or the entire roost area actually maintains a higher risk of fire-induced mortality to those clumps and roost trees from wildfire. By not burning off the fuel load underneath those trees and allowing further accumulation, the risk of wildfire-induced mortality (crown scorch and root damage) remains and increases over time.

Prescribed burning under controlled conditions has a small probability of causing tree mortality. However, a wildfire that occurs prior to or without prescribed burning under the desired trees has a greater risk of mortality. Prescribed burning under these trees actually

increases their chance of survival. That said, the burn boss preparing any given burn block often elects to line certain old-growth trees after balancing a matrix of threats to its survival. Groups and clumps of trees may require lining.

Probability of Ponderosa Pine Mortality from Fire Occurrence (percent)					
Diameter Breast Height	**8”**	**10”**	**12”**	**14”**	**16+”**
Wildfire under Current Condition	**99%**	**95%**	**93%**	**13%**	**4 – 18%**
Wildfire after Thinning W/O Rx Burn	**94%**	**91%**	**90%**	**12%**	**4 – 16%**
Wildfire W/O Thin After Rx Burn	**36%**	**26%**	**19%**	**8%**	**4– 10%**
Wildfire after Thinning & Rx Burn	**29%**	**20%**	**15%**	**6%**	**3 – 8%**
Initial Rx Burn	**10%**	**8%**	**6%**	**4%**	**2 – 4%**
Maintenance Rx Burn	**3%**	**2%**	**1%**	**1%**	**1 – 2%**

As stated in the Environmental Analysis for this project burn crews will minimize loss of snags, logs and roost trees during broadcast burning activities. This is currently required by the Coconino N.F. LRMP.

This project proposes broadcast burning every 5 to 10 years. Burning will not occur within 1/4 mile of known bald eagle winter roost areas between October 15 and April 15. Burning may result in smoke lingering for approximately two days after ignition activities have ended. Eagles are unlikely to be roosting in this area after April 15 and before October 15. When any are present there may be short-term, low intensity effects to roosting bald eagles, which may result in eagles flushing from roosts during periods of heavy smoke. Foraging eagles may avoid areas of heavy smoke. 4.9 acres within eagle roosts are proposed for burn only treatments. There is a low probability of roost trees being burned during prescribed fires. Fire managers will take appropriate actions to minimize damage to roost trees, snags and large trees during broadcast burning.

Threatened Mexican Spotted Owl

FWS8. Alternative B: Direct Effects, Mexican Spotted Owl (pages 53-54): Approximately 160 acres of an MSO PAC occur within the project area: 122 acres will be treated with prescribed fire only and 38 acres will be thinned and then burned. This section states that thinning activities within the PAC will be in compliance with the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) (USDI 1995), but the analysis of effects does not state whether the 100-acre nest buffer area has been delineated for this PAC, nor does it clearly state that the proposed action will not impact the habitat within that core area. We recommend that this information be included in any further documentation regarding the project.

It is clear how the MSO PAC habitat, protected habitat, and target threshold habitat (146 acres) will be treated under the proposed action (thin trees ≤9 inches dbh and/or conduct prescribed burning). However, it is not clear what treatments are planned for the restricted habitat. There is a total of 927 acres of restricted MSO habitat in the project area and approximately 200 acres occur within 0.5 mile of private land. The EA states that this habitat “will not be treated so intensively that it no longer maintains restricted habitat characteristics…proposed habitat characteristics will not change the classification of MSO habitat.” We recommend including more detailed information on how restricted MSO habitat will be thinned and burned to maintain MSO habitat characteristics (e.g., multi-layered canopy, snags and logs, large trees, etc.) and whether it will also comply with the Recovery Plan (USDI 1995).

A 100-acre nest buffer has been delineated for the Nestor PAC and is included in the analysis of effects for the Mexican spotted owl. Treatments for restricted MSO habitats were submitted to your office in the BAE for this project.

Alternative B: Indirect Effect, Mexican Spotted Owl (page 54): The first sentence states that the proposed action may indirectly affect the MSO by changing the habitat structure, which may result in the relocation of owls. The relocation of owls from an area due to actions conducted by a Federal agency would be considered an adverse affect and may even result in harm and/or harassment (anticipated take). We recommend that the Forest Service re-evaluate your "may affect, not likely to adversely affect" determination if it is expected that MSO may be forced to "relocate" due to changes in the habitat from the proposed action.

The Forest Service has re-evaluated the statement that project activities "may result in the relocation of owls" and we do not believe that this will occur. This wording was an oversight by our biologist. Our wildlife report had been modified and the BAE submitted to the USFWS reflects more accurately our analysis of effects to the MSO.

FWS9. General Comments: The August 31, 2004, Final Rule to designate critical habitat for the MSO excluded the WUI project areas as defined in the April 10, 2001, WUI BO. However, there is no statement regarding MSO critical habitat in the EA. If the project area is the same as was consulted on under the 2001 WUI BO, the area is excluded from critical habitat designation. However, this should be stated in the EA. If the project area is different than what was proposed in 2001, the area falling outside the original boundary may be critical habitat and may require consultation Regardless of which situation is correct, we recommend including a discussion of MSO critical habitat in the EA and the ROD.

The following discussion of MSO critical habitat has been added to the EA (see Errata Sheet):

> **Critical habitat refers to specific geographic areas that are essential for the conservation of a threatened or endangered species and that may require special management considerations. Critical habitat is made up of the physical and biological features necessary for the species' survival; these features are found in restricted and protected habitats. The final rule for MSO critical habitat was published in the Federal Register on August 20, 2004. This project is partially within Critical Habitat Unit UGM-11. Not all the areas within the mapped critical habitat unit boundaries contain habitat elements important to the owl. The Service requires consultations only on the activities that affect those areas that contain the primary constituent elements. The primary constituent elements for critical habitat found in the project area are related to forest structure and prey rather than canyon habitat and are synonymous with the protected and part of the restricted habitats of the project.**
>
> **There are 885 acres of critical habitat within the project area that contain the primary constituent elements (see Figure A). Critical habitat within the**

project area is made up of protected and restricted habitat. The treatments proposed in these habitats are prescribed burning and thinning from below. As stated above in the discussion of protected and restricted habitats, none of the habitats will be treated so intensely that they will no longer meet the designations of protected or restricted habitats.
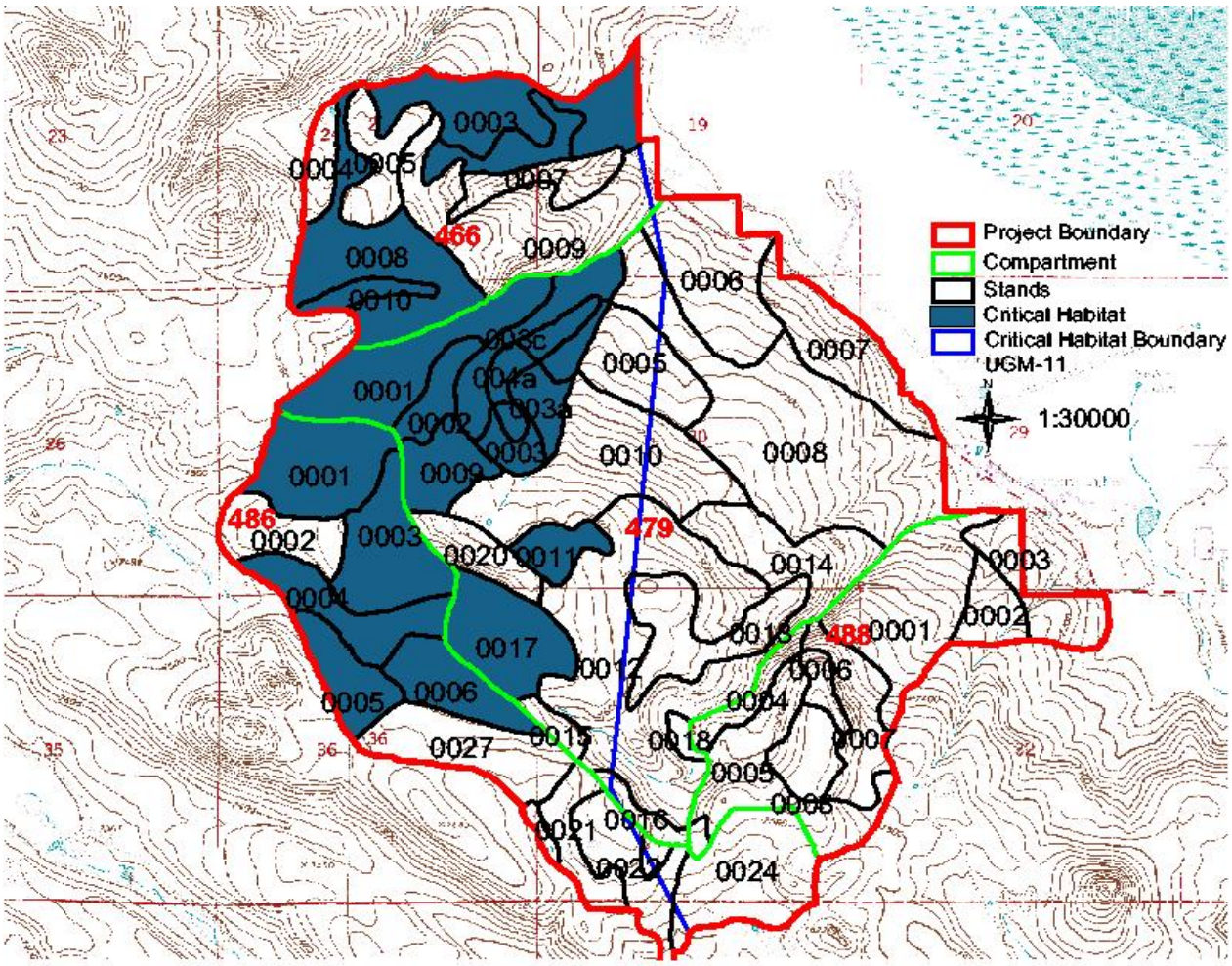
Figure A. Mexican Spotted Owl Critical Habitat