Region 3 Step-by-Step Mexican Spotted Owl Habitat Treatment and Implementation Guidance

Follow this guide prior to implementing or conducting an environmental analysis for forest vegetation treatments within Mexican spotted owl (MSO) protected activity centers (PACs), recovery nest/roost habitat, recovery foraging/dispersal habitat, and critical habitat.

The purpose of this guidance is to address MSO management prior to and during implementation of any vegetation treatments that occur within MSO habitat, especially PACs and recovery nest/roost habitat. This includes all forest and fuels activities completed by mechanical thinning and/or prescribed fire.

Follow this guide and provide documentation (*e.g.,* MSO Habitat Environmental Analysis Project Checklist) during the analysis phases of any vegetation treatment in MSO habitat as directed below. At the time of analysis if site specific data does not exist, then follow these steps prior to treatment implementation to confirm if the proposed action will result in desired conditions as required per the MSO Recovery Plan and the project's Section 7 consultation with U.S. Fish and Wildlife Service (USFWS).

In situations during NEPA planning where stand data is lacking in MSO PACs and recovery nest/roost habitat, **include this document as a design feature appendix in the project record and in the Decision**. This will ensure that recovery nest/roost habitat is being identified and managed correctly on the ground.

All new projects should follow the 2012 MSO Recovery Plan. For projects implementing Decisions under the 1995 MSO Recovery Plan see additional direction on pages 4-5 of this document.

PACs

- Review Project NEPA decision and Section 7 consultation regarding proposed mechanical and/or burning treatments, and supporting actions such as, but not limited to, road construction in PAC(s).
- Conduct an interdisciplinary meeting and/or field review to discuss desired conditions for PAC based on existing conditions (See Table C.2 [USFWS 2012]).
    - The interdisciplinary team (IDT) should consist of the USFS wildlife biologist, silviculturist, fuels, and timber staff and the FWS species lead and/or geographic lead. Consult with range staff to determine how range actions and vegetation restoration projects affect the overall desired conditions.
    - Would mechanical treatments in the PAC improve habitat and/or protect key habitat components during prescribed fire or wildfire?
    - Would hand-thinning in the PAC assist with improving habitat and/or protecting key habitat components during prescribed fire or wildfire?
    - Is prescribed burning going to occur before mechanical thinning?
    - Identify and document specific habitat components, desired conditions, and expected results from proposed treatment.
- If the PAC is part of a **management experiment**, follow the established plan in the Biological Opinion for type, timing, and methodology for monitoring owls and vegetation (this includes timing, data collection, data storage, data analysis, and reporting) in close coordination with the USFWS. Collect the following vegetation data, at a minimum, USFS Common Stand Exam (CSE) protocol for extensive plots. If there is a **management experiment** for the site, the FWS species lead will be engaged in the process.
    - If the PAC is not part of a management experiment, then refer to the **GUIDELINES FOR FOREST VEGETATION DATA COLLECTION WITHIN MEXICAN SPOTTED OWL HABITAT** on pages 6-8 of this document and determine as an IDT if stand data is needed for monitoring of the activity being implemented. Follow monitoring plan established in Section 7 consultation.
- Document discussion and path forward for the project record and implementation plan.

- Collect pre-treatment data on owl occupancy and vegetation conditions relevant to owl habitat. Re-delineate new stands as appropriate per established protocol. Enter data into appropriate reporting and spatial databases (e.g., FSVEG and Wildlife).
- Prior to implementation, fill out the MSO Pre-implementation Compliance Review Checklist, as appropriate.
- Conduct proposed vegetation treatments in coordination with the IDT (including FWS).
- Collect post-treatment data on vegetation conditions and conduct owl monitoring (as determined with the IDT and FWS). Enter data into appropriate databases. Document all post-implementation measures completed (*e.g.*, temporary road closures, rehabilitation, etc.).
- Project lead and project biologist will provide appropriate documents to the Forest NEPA Coordinator to post under the associated project in the Planning, Appeals and Litigation System (PALS).

Recovery Nest/Roost Habitat (2012 Recovery Plan, USFWS 2012)

- Review NEPA decision and information in Section 7 consultation regarding recovery nest/roost (N/R) habitat proposed for mechanical and burning treatments.
- Conduct an interdisciplinary meeting and/or field review to stands identified in NEPA as potential N/R habitat. Visit stands to determine if they currently meet desired conditions, have the potential to meet the desired conditions, or have no potential to meet those conditions (for desired conditions see Table C.3 and Table C.2 in USFWS 2012 or updates to tables from Recovery Team [*e.g.*, Ganey et al. 2016 for BRE EMU]).
    - The interdisciplinary team (IDT) should consist of the USFS wildlife biologist, silviculturist, fuels, and timber staff and the FWS species lead and/or geographic lead. Consult range staff to determine how range actions and vegetation restoration projects affect the overall desired conditions.
- The IDT should use the best available science, which may be quantitative (*e.g.*, at minimum the quick plot stand exam protocol required if quantitative) or qualitative (*e.g.*, stand entirely on south-facing slope, open ponderosa pine, etc.) data to determine if N/R candidate stand is meeting conditions, has potential, or has no N/R potential. Refer to the **GUIDELINES FOR FOREST VEGETATION DATA COLLECTION WITHIN MEXICAN SPOTTED OWL HABITAT** on pages 6-8 of this document and determine as an IDT if stand data is needed for monitoring of the activity being implemented.
- If the stand is at N/R conditions or has potential to be N/R habitat (per Table C.3 [USFWS 2012]), then determine the following:
    - If not already a stand, then re-delineate the N/R area as a distinct stand and document per established protocols.
    - Would mechanical thinning in the N/R stand improve habitat and/or protect key habitat components during prescribed fire or wildfire?
    - Would hand-thinning in the N/R stand assist with improving habitat and/or protecting key habitat components (*e.g.*, large trees) during prescribed fire or wildfire?
    - Identify and document specific habitat components, desired conditions, and expected results from proposed treatment.
    - Would treatment in potential N/R habitat reduce conditions below minimums in Table C.3? If so, document the reasoning for this.
        - Scenario 1: If stand is at or above desired conditions, the prescription may be thin from below to a minimum or higher BA, per the forest type shown in Table C.3. Trees >18 in dbh will be retained at or above the minimum TPA shown in Table C.3. Alternatively, no treatment may be necessary if the desired conditions are present.
        - Scenario 2: This describes stands managed to develop the characteristics shown in Table C.3. This situation typically applies where the required minimum acreages for N/R habitat do not currently exist in the project landscape. Select stands based on the ability to develop into the desired conditions (Table C3) within the shortest timeframe possible (typically 20-30 years). Base prescriptions upon actions that will achieve the desired characteristics during these time frames as demonstrated by FVS modeling. Alternately, no treatment may be necessary if the current condition is developing towards desired conditions without vegetation treatment.

- If the stand does not have potential to be N/R habitat, then drop it from the candidate list of N/R habitat and find additional candidate stands if the planning area (*e.g*., project area, Ranger District, Forest, etc.) is deficient. If the planning area is not deficient, remove the stand from the list of candidate stands and track this information in the Forest database and update N/R habitat map and spatial layer.
- Document discussion and path forward for Administrative Record and Implementation Plan.
- Collect pre-treatment data, as agreed by IDT (vegetation plots and owl occupancy surveys). Enter data into appropriate databases (e.g., FSVEG and Wildlife).
- Prior to implementation, fill out the MSO Pre-implementation Compliance Review Checklist, as appropriate.
- Conduct proposed vegetation treatments in coordination with IDT (including FWS).
- Collect post-treatment data (as determined by the IDT and FWS). Enter data into appropriate databases. Document all post-implementation measures completed (*e.g*., temporary road closures, rehabilitation, etc.)
- Project lead and project biologist will provide appropriate documents to the Forest NEPA Coordinator to post under the associated project in the Planning, Appeals and Litigation System (PALS).

Recovery Foraging/Non-breeding Habitat

- The Recovery Plan intent is to manage Recovery Foraging/Non-breeding Habitat (also known as foraging/dispersal habitat) so that we conserve important but difficult-to-replace habitat elements while allowing management flexibility. There may be less need for an Interdisciplinary Team (IDT) to review all sites identified for treatment in Recovery Foraging/Non-breeding Habitat in the field (as with PACs and N/R habitat above), but there should still be discussion between members of the IDT regarding the vegetation and prescribed burn prescriptions, the proximity of these areas to PACs and N/R habitat, and the landscape context of the proposed treatments. Consult with range staff to determine how range actions and vegetation restoration projects affect the overall desired conditions.
- Management should strive to maintain conditions where multiple components occur in proximity to one another. For example, if a stand contains large trees, logs, and snags, design prescriptions to keep as many of these components as possible while achieving management objectives such as fuels reduction and ecosystem restoration.
- Such prescriptions can result in the short-term reductions of key habitat components, but they should strive to maintain some of these components within the stand. Base management on the best judgment of the professionals involved to balance our intent with the objective(s) of the prescription. Summary recommendations from the 2012 Recovery Plan are below (see Recovery Plan for additional details):
    - ***Emphasize Large Hardwoods.*** Within pine-oak and other forest types where hardwoods are a component of owl habitat, emphasis management that retains, and promotes the growth of additional, large hardwoods.
    - ***Retain Large Trees.*** Strive to retain (do not cut) all trees >24 in dbh, the average diameter of nest trees, unless overriding management situations require their removal to protect human safety and/or property (e.g., the removal of hazard trees along roads, in campgrounds, and along power lines), or in situations where leaving large trees precludes reducing threats to owl habitat (e.g., creating a fuel break). To the extent practical, design fuel breaks to avoid the removal of larger trees (trees over 18 in dbh). We recognize that prescribed fire is an inexact tool and that applying prescribed fire may result in the loss of large trees. However, we strongly recommend that action agencies take reasonable steps to minimize the loss of trees >24 in dbh.
    - ***Retain Key Owl Habitat Elements.*** Design and implement management treatments within Forested Recovery Foraging/Non-breeding habitat so that most hardwoods, large snags (>18 in dbh), large downed logs (>18 in diameter at any point), trees (>18 in dbh) are retained, unless this conflicts with forest restoration and/or owl habitat enhancement goals…..When implementing this guideline, managers should strive to achieve a balance between retaining a sufficient density and distribution of important features that spotted owls may require and reducing the risk of losing existing roosting and nesting habitat from insect epidemics and stand-replacing fires.
- Document discussion and path forward for Administrative Record and Implementation Plan.

Critical Habitat

Critical Habitat is defined in the Endangered Species Act, and consists of specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. USFWS designated critical habitat for the owl in 2004 (69 FR 53182; USFWS 2004). Primary constituent elements (PCEs) are found within these specific geographic areas, are essential to the conservation of the owl, and include those physical and biological features that support nesting, roosting, and foraging. If your project occurs in critical habitat, a summary of PCEs are below.

PCEs related to forest structure:

- Manage for 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 percent to 45 percent of which are large trees with a trunk diameter of 12 inches (0.3 meters) or more when measured at 4.5 feet (1.4 meters) from the ground.
- Manage for a shade canopy created by the tree branches covering 40 percent or more of the ground.
- Manage for large dead trees (snags) with a trunk diameter of at least 12 inches (0.3 meters) when measured at 4.5 feet (1.4 meters) from the ground.

PCEs related to maintenance of adequate prey:

- Manage for high volumes of fallen trees and other woody debris.
- Manage for wide range of tree and plant species and including hardwoods.
- Manage for adequate levels of residual plant over to maintain fruits, seeds, and allow plant regeneration.

PCEs related to canyon habitat include one or more of the following:

- Manage for retaining the presence of water (often providing cooler and often higher humidity than the surround areas).
- Manage for clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, and/or riparian vegetation.
- Manage the retention of canyon walls containing crevices, ledges, or caves.
- Manage for high percent of ground litter and woody debris

MSO 1995 Recovery Plan (USDI Fish and Wildlife Service 1995)

All new projects should follow the 2012 MSO Recovery Plan. However, for projects implementing Decisions under the 1995 MSO Recovery Plan see below for additional direction.

Protected Habitats:

- Protected Activity Center (PAC)
    - Within each selected PAC, the designated 100-acre nest/roost core will be deferred from all treatments.
    - The remaining acres outside the 100-acre nest/roost core within a PAC may have a combination of thinning up to 9 inches dbh, and/or prescribed fire to reduce fire hazard and to improve habitat conditions for owl prey. Light burning of ground fuels may be allowed. Habitat components such as large logs (12-inch dbh or greater) and snags (16-inch dbh or greater) and hardwoods will be maintained or enhanced.
    - Treatments can only occur during the nonbreeding season (1 September-28 February) in a PAC unless MSO surveys indicate non-breeding can be determined for that particular season. All surveys must be done according to USFWS MSO survey protocol.
- Steep Slopes (mixed conifer and pine-oak on slopes greater than 40% outside of PACs)
    - Within mixed-conifer and pin-oak types, allow no harvest of trees greater than 9 inches dbh on any slopes greater than 40% where timber harvest has not occurred in the past 20 years.
    - The use of prescribed fire with or without mechanical thinning is allowed in this habitat. Light burning of the understory will be emphasized during implementation.
    - Retain or enhance hardwoods, large down logs, and snags.

Restricted Habitats (mixed-conifer and pine-oak outside of PAC on slopes less than 40%):

- Restricted Target/Threshold Habitat:
    - Manage target habitat (mixed conifer and pine-oak) in a such a way to meet threshold conditions as soon as possible in the future.

    - No stand that currently meets threshold conditions can be treated in such a way as to lower that stand below conditions specified in Table III.B.1 of the 1995 MSO Recovery Plan.
    - All trees greater than 24-inch dbh will be retained unless overriding management situations require their removal to protect human safety and/or property.
    - Retain or enhance hardwoods, large down logs, and snags.
    - Emphasize the retention of trees greater than 18-inch dbh.
    - Treatments should incorporate natural variation, such as irregular tree spacing and various stand patch sizes to mimic natural disturbance patterns.
- Restricted Non-Target/Threshold Habitat:
    - Manage non target/threshold habitat (mixed conifer and pine-oak) to provide habitat needs for the MSO. These needs predominately consist of foraging, dispersing or overwintering.
    - All trees greater than 24-inch dbh will be retained unless overriding management situations require their removal to protect human safety and/or property.
    - Retain or enhance hardwoods, large down logs, and snags.
    - Treatments should incorporate natural variation, such as irregular tree spacing and various stand patch sizes to mimic natural disturbance patterns.
    - All habitat specifications such as e.g., basal area, canopy cover, tree spacing and trees per acre will be determined by forest specialists. These specifications will be designed in a way to meet the foraging needs of the MSO.
    - Emphasize the retention of trees greater than 18-inch dbh as much as possible.

GUIDELINES FOR FOREST VEGETATION DATA COLLECTION WITHIN MEXICAN SPOTTED OWL HABITAT

The purpose of this document is to inform vegetation management project leads, line officers, silviculturists, and other project interdisciplinary team members when, why, and how to collect common stand exam data when conducting vegetation management projects in Mexican spotted owl habitat.

When proposing vegetation management projects in MSO recovery habitats, it is necessary to disclose, document, and demonstrate that proposed vegetation treatments are consistent with the respective Recovery Plan requirements and desired conditions for habitat components; and post-treatment outcomes are consistent with planned objectives. The intensity of data collection to inform treatment prescriptions and monitor outcomes will vary based upon the specific habitat components, and proposed actions. Ideally, forest vegetation stand exams and fuels data would be collected in all areas prior to development of treatment prescriptions and sampled again post-treatment to monitor treatment outcomes. However, data collection is not always practical, feasible, or necessary for every project area or habitat component. The following outline identifies a list of common examples of approaches and considerations for data collection for forest vegetation management projects. This is a comprehensive, but not an exhaustive list; project vegetation managers should always discuss these approaches with the project biologist and USFWS conservation biologist before proceeding, along with coordinating on owl-specific monitoring plans appropriate for the particular project.

Stand exams (purpose):

Pre-treatment stand exams are used in project planning to understand and document the existing condition of forest vegetation and fuels. Stand exams (including fuels data) are collected under USFS agency protocols at 3 levels of data intensity, based on data needs, and data is archived in the agency FSVEG database. Pre-treatment exams can be conducted for the purposes of:

1. **Developing vegetation stratums** – like forest conditions that can be grouped for common treatments. Typically, a percentage of stands in a stratum are sampled with stand exams, while the remainder of similar stands are observed with walk-through reconnaissance to verify these areas are similar enough to be included in the stratum. The percentage of the area inventoried with data vs. walk-through observations should vary by project area to reflect the diversity (or lack thereof) of vegetation conditions and habitat component importance.

2. **Developing treatment prescriptions** – Representative stand data is used for modeling vegetation treatment alternatives and development of the proposed treatment prescriptions.

3. **Documentation of pre-treatment conditions** – when this is necessary and/or desired.

Post-treatment stand exams are used less frequently, but may be desired or necessary for the purposes of:

1. Documentation of the treatment outcome, and that implementation occurred as planned.
2. As a baseline for monitoring and/or modeling forest vegetation development over time.

Considerations for forest vegetation data collection in MSO habitats:

Project Planning – Data collection should be commensurate with habitat priority and/or need to know.

1. ***Pre-treatment data collection may only be efficient and prudent on a limited percentage of the area for general MSO recovery habitat.*** Data collection should be supplemented with field reconnaissance.

2. ***Pre-treatment data collection should be more intensive within areas that are candidates for replacement nest/roost recovery (RNR) or protected activity center (PAC) habitats (based on current vegetation conditions).***

All potential RNR areas proposed for silvicultural cutting treatments should be sampled to determine if these stands meet or are suitable for development into desired RNR habitat (modeling treatment alternatives to develop treatment prescriptions). All PAC areas proposed for vegetation management experiments should be sampled to develop treatment alternatives and document existing conditions. Areas designated for RNR habitat allocation, but not proposed for treatment should receive walk-through reconnaissance to determine suitability for allocation as RNR habitat.

3. ***It may not be efficient or prudent to collect pre-treatment data on areas where the proposed treatments will minimally or not effect overall forest density, structure, or overstory trees.*** *(e.g., thinning from below to 9 in dbh).* This will need to be assessed by the project interdisciplinary team on a case-by-case basis.

4. ***It may not be efficient or prudent to collect pre-treatment data within some project areas when a NEPA decision was already signed***. In this case, if RNR allocations have been identified in the project decision, focus on post-treatment data collection in treated RNR and PAC habitat areas to demonstrate that the treatments were implemented consistent with the NEPA decision and Biological Opinion requirements. Where specific RNR habitat area allocations were not identified in the project decision, it may be necessary to collect data or do reconnaissance to identify areas for habitat allocation.

5. ***It may not be feasible to collect pre-treatment data on some areas of landscape scale projects proposed for planned fire ignitions only.*** In these circumstances, it will be necessary to include mitigation measures as described in the Recovery Plan, and implementation instructions into the burn plan to strive for achievement of outcomes that protect and/or enhance MSO habitat components.

   Prescribed fire plan writers and burn bosses should consult with the project biologist early in the process when MSO concerns are identified within planned unit boundaries or adjacent. When writing a prescribed fire unit plan, it is common practice to identify special features or sites that may need additional protection, e.g., such as arch sites or structures. The presence of MSO nests, PACs, and replacement nest/roost habitat components should be no different. If planning a project outside of designated breeding season and periods of no burning, managers should list how they will burn through the area, what particular areas will need to be prepped or excluded, and how the operation will be carried out.

   In the prescribed fire plan template (PMS-484), certain elements should cover the procedures and process in more detail, starting with Element 4 of the plan. In Element 4, section C, the writer should identify and describe all unique features, natural resources, values. Here is where you would list MSO nesting sites, PACs, etc., within the planned unit. In Element 5, section A the writer should develop an objective related to MSO habitat, PACs, and nesting sites. This information can be pulled from the NEPA document or developed with the project biologist. Element 7, section A should have a weather and fuels prescription that will meet the objectives identified in Element 5. If a different prescription, e.g., burning on the cooler end is needed for the MSO objective to be met, it is acceptable to have two different prescriptions listed. Element 8, sections A and C, should discuss scheduling and constraints around MSO concerns. Element 9, section A should detail any on-site prep work needed before ignitions start. MSO concerns related to operations could be listed in Element 10 as a measure to ensure they are talked about on the day of project ignitions. Consider adding a Resource Advisor (READ or REAF) to the organization in Element 11. In Element 15, section A, describe how the area related to MSO would be fired around or through in enough detail that personnel on the ground can follow directions from the plan. Element 16, section B should address any holding concerns related to the MSO area being protected, excluded, or fired through. If no holding concerns are needed, it would be good to mention that here, so the Holding Boss can focus on other locations. If smoke drifting into adjacent MSO areas is of concern, that should

be discussed in Element 19, section B. Consider adding a Fire Effects Monitor (FEMO) to the organization to monitor the project's objectives related to fire. If monitoring is needed before, during, or after ignitions, discuss it in Element 20, section D. List any types and procedures related to monitoring in this section. If maps of MSO locations are needed to operate and burn in MSO areas successfully, they should be added to Appendix A in the plan. Finally, the complexity analysis should measure how the mitigation techniques related to MSO add any complexity or risk to the operation.

Writing a quality prescribed fire plan will help the Agency Administrator, Burn Boss, Forest Biologist, and fireline personnel understand and implement the operation. The intent is not to exclude treatments in areas with MSO but to ensure all partying have a clear picture and carry out the operation to benefit the landscape and MSO.

Project Monitoring – Data collection should be commensurate with habitat sensitivity and/or need to know.

1. ***Post-treatment data collection may only be efficient or prudent on a limited percentage of the area for general MSO recovery habitat.*** Data collection should be supplemented with field reconnaissance.

2. ***Post-treatment data collection should be more intensive within areas that are allocated for replacement nest/roost (RNR) or protected activity center (PAC) habitats.*** All allocated RNR areas and PACs that received silvicultural cutting treatments that substantially affected overall forest density or overstory trees should be sampled to determine if the treatments were implemented as proposed.

3. ***Post-treatment monitoring of landscape scale projects that received planned fire ignitions only.*** Post treatment monitoring should follow procedures outlined in the prescribed fire plan under element 20, section D. Site visits to RNR and/or PAC may be necessary after treatment to monitor first order fire effects (e.g., did the planned treatment burn too hot? Are crown densities still within acceptable ranges? Did you meet your objectives?) If fire effects were not in line with predicted fire behavior additional follow up with the Project Biologist and FWS should take place. Document any adverse fire affects and adjust future prescribed fire prescription parameters. Second order fire effects may be observed and recorded post treatment after one year. Share results with Project Biologist, Fuels Specialist, and FWS.