

Appendix A: Workshop Summary

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Appendix A1: Workshop Overview

Day 1

Day one of the Workshop: *Managing Northern Spotted Owl Habitat in Dry Forest Ecosystems* was set up into two sessions. The morning session was devoted to scientists providing presentations on the current science on the where, why and how to manage dry forest ecosystems to benefit spotted owl habitat, reduce fire risk, and to return forest habitat to its range of historic variability. The afternoon session focused on presentations of case-examples. The case examples were based on the application of on-the-ground habitat treatment projects in the dry forest provinces. It was envisioned that the structure of day one would set the foundation for the discussions and group exercises conducted in day two of the Workshop.

The morning-science session provided an overall context of why resource managers and decision-makers should be concerned about the current fire-risk and forest-health situation in the dry provinces within the spotted owl's range. Speakers talked about the timeliness of having the Workshop, the state of knowledge about historic variability, considerations for fuels treatments at the stand and landscape level, and NWFP implications. These topic areas also included habitat management considerations for the spotted owl. The speakers suggested that the impacts of thinning and burning can be predicted (to some degree), and may have some negative environmental consequences. These impacts need to be evaluated against the option of "no action", recognizing that "no action" is not a risk-free option. Speakers also indicated that the landscape challenge is to define how much of a landscape needs to be treated, and where strategic fuels treatment will be most effective at reducing wildfire damage.

The afternoon-case example session provide the realities of planning and implementing treatment projects. Many of the presenters indicated that at a stand scale, they felt confident regarding what they should do and believed they could successfully implement treatments. However, to date, it is too early to tell how successful the projects have been at meeting their objectives. According to the presenters, they have a concern whether or not they are meeting larger, landscape scale objectives. Currently, there is no framework at a landscape scale suggesting where priority areas should be for projects, from a forest health and spotted owl habitat perspective. Overall, Workshop speakers indicated that a primary challenge is to develop socially acceptable treatments to sustain these dry forest landscapes into succeeding centuries.

Day 2

An interagency team of note takers comprised of representatives from the Forest Service, Bureau of Land Management, Oregon Department of Forestry, and the Fish and Wildlife Service took notes during Day 1 of the Workshop on what they heard from an agency and individual perspective and presented these ideas as an opening presentation on Day 2. Ideas recorded indicate the group's willingness to apply vegetation treatments not previously considered, and to remain adaptable when working in spotted owl habitat. An equal concern was expressed for treatments in nesting, roosting, and foraging areas at the

site level, and at a landscape level, realizing that site treatments will vary depending on which east side geographic area the work is being proposed. The group stated that treatment assessment is a combination of communication, collaboration, calibrations, site specific information, informed implementation, recalibration, and flexibility. It is recognized that uncertainties exist (e.g. West Nile virus, climate change, barred owl) which are out of the land managers control, and that reality checks must be included in assessments. In order to be successful with treatments, agencies must commit to long-term funding, utilize multi-agency planning, enact multi-year treatments, and monitor for adaptive management in and around owl habitat. The note takers summary set the stage for Day 2 exercises, demonstrating agency collaboration and providing encouragement for audience participation. Collated notes from the interagency group are available in Appendix B on website <http://www.fws.gov/oregonfwo/>.

Summary of Workshop Themes

The following text represents themes that emerged from the Workshop. The themes were arrived at by evaluating the repetition of answers to questionnaires, along with flip chart notes, and common discussion threads encountered during the presentations and group discussions. We have chosen to record the themes into the following categories; biological, land management, policy, and research. For a complete accounting of the working group discussions and responses to the questionnaires, please see Appendix B on website <http://www.fws.gov/oregonfwo/>.

Biological

1. Need an owl recovery plan
2. Develop provincial plans – provincial teams establish restoration, maintenance and at-risk areas. Forest and watershed plans would be tiered off of the provincial plans. Provide context for prioritizing management objectives. Provinces would serve as recovery unit for spotted owl.
3. Need to define nesting, roosting and foraging habitat and owl habitat needs at a local level and in silvicultural terms. Provide justification for definitions, and “calibrate” (i.e. develop a common understanding of those definitions).
4. Need information on owl and prey habitat needs and silvicultural prescriptions that promote it.
5. Spotted owl survey information is necessary pre and post treatment. Spotted owl surveys should be conducted in unsurveyed suitable habitat to facilitate prioritization of treatment projects.
6. Identify data gaps including current status and distribution of owls and at risk habitats across Forests and Districts.

Land Management

1. Owl habitat is at risk and declining due to high fuel loads and fire risk, and treatments should be employed to conserve the owl and to achieve overall forest health objectives. There was consensus that “no action” threatens the long-term owl and habitat sustainability.
2. Fuel objectives need to state how forest health will be promoted and the ecological reasons for treating (Historic Range of Variability, Fire Regime Condition Class, or desired future conditions). Determine where fuel management and owl habitat objectives intersect to prioritize projects and maximize limited resources.
3. Need to develop a long range plan to prioritize fuels treatment across the landscape in and adjacent to owl habitat, at multiple scales. Landscape strategies should be developed at multiple scales (i.e. Provincial, Forest, District, fire regime, and watershed). Design and implementation of these treatments should occur at the 5th and 6th field HUCs. The plans should be based on science, and be strategic, situational and flexible.
4. Manage the most productive sites with the highest sustainability for spotted owl habitat (e.g., mixed wet conifer Plant Association Group (PAG)) and manage surrounding areas to allow low severity fire regardless of the land use allocation boundary. Be open, adaptive, and flexible.
5. Need interagency interdisciplinary teams that include Fish and Wildlife Service in early project development. Collaboration should occur at all levels and across agency and non-governmental boundaries (including State and Tribal).
6. Need a strategy for maintaining large trees on the landscape

Policy

1. Need momentum out of this Workshop to plan and implement appropriate treatments. Involve Fish and Wildlife Service in prioritization of treatment in owl habitat.
2. Need Provincial plans
3. Plan across allocation boundaries and use entire landscape to achieve ecological goals. Treatment and management across land use allocations should use the flexibility of the NWFP in development of treatments. (e.g., cite NWFP treatments in fire prone habitat)
4. Reallocate funds beyond WUI to provide treatment to conserve owl habitat

5. Successful fuels and fire risk reduction to protect and maintain owl habitat will require significant commitment of funding for project planning and implementation, monitoring, and adaptive management. For example, repeated treatments will be needed over multiple years to achieve long term objectives for reducing fire risk to owl habitat.
6. Adopt a recovery plan.

Research

1. Focus on issues with uncertainty – barred owl, West Nile virus, population trends, etc.
2. Need a synthesis of information on the existing body of knowledge of prey habitat associations.
3. Need to understand how to develop and manage for owl and prey habitat.
4. Test various treatments, and owl, vegetation, and prey response to those treatments.
5. Adaptive management needs to be implemented (not just talked about).
6. Work with new Prineville PNW Research Station to address forest fuels and owl issues.
7. Continue workshops as information becomes available.

Appendix A2: Exercise 1 – Specialist Groups answer questions related to owl habitat management and fuels treatment at the stand and landscape level.

Objective: Compare and contrast approaches to owl habitat management in the dry forest by specialist group (i.e., biologists, silviculturists, fuels planners and managers).

The first group exercise organized Workshop participants into four specialist groups: biologists, silviculturists, fuels planners and managers to gather ideas and approaches by each discipline on how to manage NSO habitat in the dry forests within the owl's range. The exercise identified where there were common ideas and areas of disagreement among the specialists.

Participants from each specialist group answered three questions, listed below. Answers to these questions are summarized below for each specialist group. Appendix B2 on the website provides a table that summarizes the answers provided by each specialist group for each question.

- 1) *List prescriptive activities that would meet objectives of managing for spotted owl habitat (NRF & dispersal) while reducing the risk of habitat loss.*

Biologists emphasized the need to treat areas surrounding suitable owl habitat for protection from fire. They suggested breaking up the landscape with fuels treatments to hinder large scale stand-replacement fire; maintaining patches of NRF within dispersal habitat; and implementing treatments that promote prey for owls. All agreed that treatments should be applied across a large landscape but priorities for these treatments need to be identified to promote owl conservation.

The biologists recognized that it may be necessary to treat within nesting, roosting and foraging habitat for the owl. All treatments should maintain and promote development of large trees; fuels reduction should include thinning from below, and reduction of ladder fuels and litter accumulation.

Silviculturists had very similar suggestions such as intensifying efforts to promote the development of large trees across the landscape, and prioritizing treatment versus non- treatment areas on the landscape.

Fuels planners suggested assembling interdisciplinary groups to visit sites to clarify objectives; utilizing modeling tools and Fire Regime Condition Class; working in concentric circles while varying types and intensities of treatments and implementing a variety of prescriptions. They indicated a need to include non-governmental organizations in the process.

Managers discussed the need for interagency collaborations early in the planning stages of fuels treatments projects in and adjacent to owl habitat, and deferred this question to the specialists.

- 2) *Given the existing threats to owl habitat and distribution of Land Use Allocations, what are your recommendations for managing owl habitat across the landscape?*

Biologists suggested using the flexibility within the NWFP to manage for owls at a landscape scale; managing for owl habitat where it can be grown and maintained for longer time periods (e.g. mixed wet conifer PAGs); identifying core habitat or most functional remnant habitat; prioritizing habitat most at risk to fire; and identifying the short and long-term potential for maintaining owl habitat across the landscape. Biologists also recommended the development of clear priorities for habitat treatment at all spatial scales (i.e., regional, Forest level and by LSR).

Silviculturists emphasized the need to treat the dry forest landscape throughout land allocations and according to the range in vegetation conditions that provide wildlife habitat. They suggested that the majority of the landscape be managed for large trees that are fire resilient.

Fuels planners suggested working across administrative boundaries and implementing fuels projects at a landscape or fireshed scale. Fuels planners also suggested maintaining owl habitat where it is most likely to persist. They emphasized a need for the development of good risk assessments and a long term plan (50 to 100 years) for habitat management.

Managers questioned treatment of the LUAs as intended, suggested simplifying the LUAs and recommended that treatments better align with the goals and intentions of LUAs.

- 3) *What do you believe are information needs at both the stand and landscape level in managing owl habitat?*

Biologists expressed a need for recent owl survey information, including long-term surveys of pre and post-treatment; information for local habitat use patterns; and better local definitions of what constitutes habitat in the dry forests, including a definition for dispersal habitat. Biologists also emphasized a need for pre and post treatment studies that focus on spotted owls and their prey; a landscape plan that determines priorities for protection, restoration and fuels treatments both spatially and temporally, and information on barred owls.

Silviculturists articulated a need to qualify and quantify what biologists consider owl habitat (including dispersal habitat), in silvicultural terms (i.e., stand basal area, trees per acre, species composition, canopy closure, and snag and downed wood descriptions). Silviculturists also expressed a need for information on treatments that promote prey habitat for spotted owls and on-site review of successful treatments with an interagency interdisciplinary team.

Fuels planners expressed a need for consistency in mapping vegetation layers; long term monitoring and clearly articulated Desired Future Conditions for habitat across the landscape. They also suggested that biologists need fire training to better understand fire behavior and effects.

Managers suggested that they need to communicate with upper management about the needs (dollars, skill, people, and time) for accomplishing fuels treatments that promote a healthy forest that supports spotted owls. They emphasized that the education of the public on this issue is critical.

Appendix A3: Exercise 2: Interdisciplinary teams work with hypothetical habitat maps to develop treatments to protect a productive owl nest site.

Objective: To develop and share treatment concepts, approaches, techniques and tools that implement fuels reduction to reduce fire risk to an active nest site while maintaining adequate amounts of spotted owl suitable habitat across the landscape both temporally and spatially.

Eight interdisciplinary teams (ID Team) were developed by randomly dividing the four specialist groups (biologists, silviculturists, fuels planners and managers) from Exercise 1. Each group was presented with the following Problem Statement prior to the exercise: We recognize that dry forest ecosystems have declining spotted owl populations and increasing fuels accumulations. The trend in forest succession will continue to increase the risk of habitat loss. How can we minimize these risks while maintaining adequate amounts of suitable habitat for the spotted owl across the landscape?

Each ID Team worked through a hypothetical map exercise where they were to describe actions that they would implement to protect a productive spotted owl nest site while maintaining adequate amounts of spotted owl suitable habitat across the landscape both temporally and spatially. Each ID Team reported their approaches and rationale for treatment to the larger group.

Each ID Team was provided with the same two maps. The first map (Figure 2) showed Plant Association Groups including mixed conifer dry, mixed conifer wet, and Ponderosa pine dry, spotted owl nest sites and the 1.2 mile radius, nesting, roosting, and foraging habitat, and roads and drainages. The second map (Figure 3) was a Digital Ortho Quad with 200' topographical lines. The instructions were to: 1) assume typical eastside dry forest structure; 2) assume all areas are at high risk of fire due to dense understory and ladder fuels; and 3) build on the information we heard during day one of the Workshop and in the previous exercise.

The following is a summation of the treatments proposed by the ID Teams to reduce fire risk while maintaining adequate amounts of spotted owl suitable habitat across the landscape both temporally and spatially. Notes are taken from their group presentations, flipcharts and maps and are available on website <http://www.fws.gov/oregonfwo/>.

The hypothetical habitat map exercise demonstrated that there are a number of techniques and methodologies that interagency interdisciplinary teams have been employing to address owl habitat management in dry forests. Most of the teams agreed to treat owl reserves and buffers, but to minimize or avoid adverse impacts to NRF within these areas. Objectives included maintaining 40 percent suitable habitat within the 1.2 mile circle and 60 percent suitable habitat in the 100 acre core. The ID teams targeted treatments that would leave desired tree species and sizes. Most teams proposed to treat NRF outside of the 1.2 mile circle, adjacent to core areas first to try to drop the fire to the ground before it reaches the core area; than treat mid-seral habitat adjacent to the NRF. The ID teams proposed using ground fuel treatment first within the NRF habitat, using hand cut, hand pile and than prescribed burn. Proposals included removal of the small material to 9"

dbh. Aggressive canopy removal was proposed in mid-seral to reduce the potential for crown fire in the adjacent NRF habitat.

Some ID teams proposed using growth prescriptions in early seral to favor fire climax species; Manage in the mid-seral habitat to reduce fire hazard and promote development of late seral stages. Almost all of the teams proposed aggressive fuel reduction within lodgepole pine. Fuel treatments concentrated on mixed conifer dry, to manage for historic open pine habitat, and to develop late seral mixed conifer dry PAG. Treatments in Ponderosa pine types were proposed to break up fuel connectivity and restore historic range of variability. Wet mixed conifer was considered to be overstocked and treatments focused on developing NRF characteristics and saving legacy trees both within and outside of the 1.2 mile radius area. Pre-commercial and prescribed fire treatments and variable density thinning from below were proposed, as well as thinning and underburning the 40-50 year old plantations. Most ID teams used typographical features and fire behavior, as well as vegetation characteristics to determine where to treat. For example, teams proposed to thin a swath of mixed conifer dry on the ridgeline to hold the ridge south of the owl center, utilize strategically placed fire breaks, and focused treatment on south facing slopes.

Figure 2. Plant Association Group map with roads, drainages, Northern spotted owl location, and nesting, roosting, and foraging habitat.

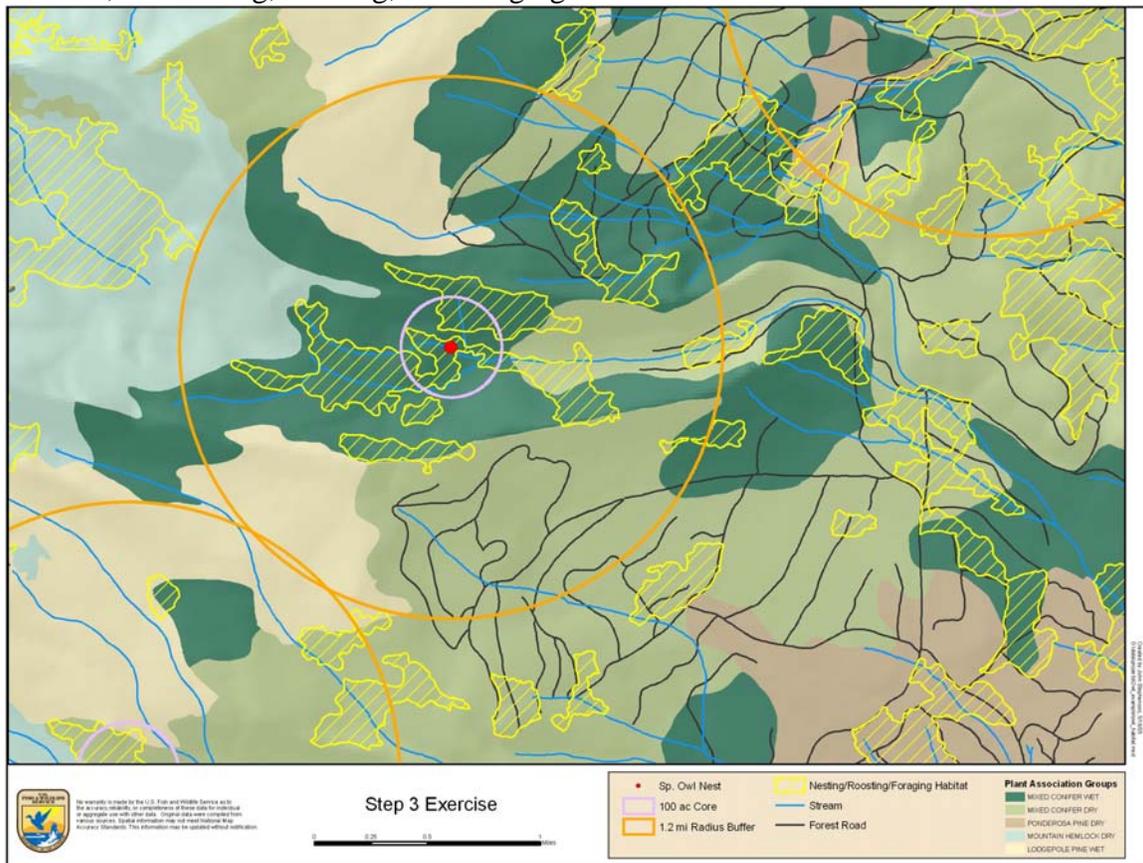
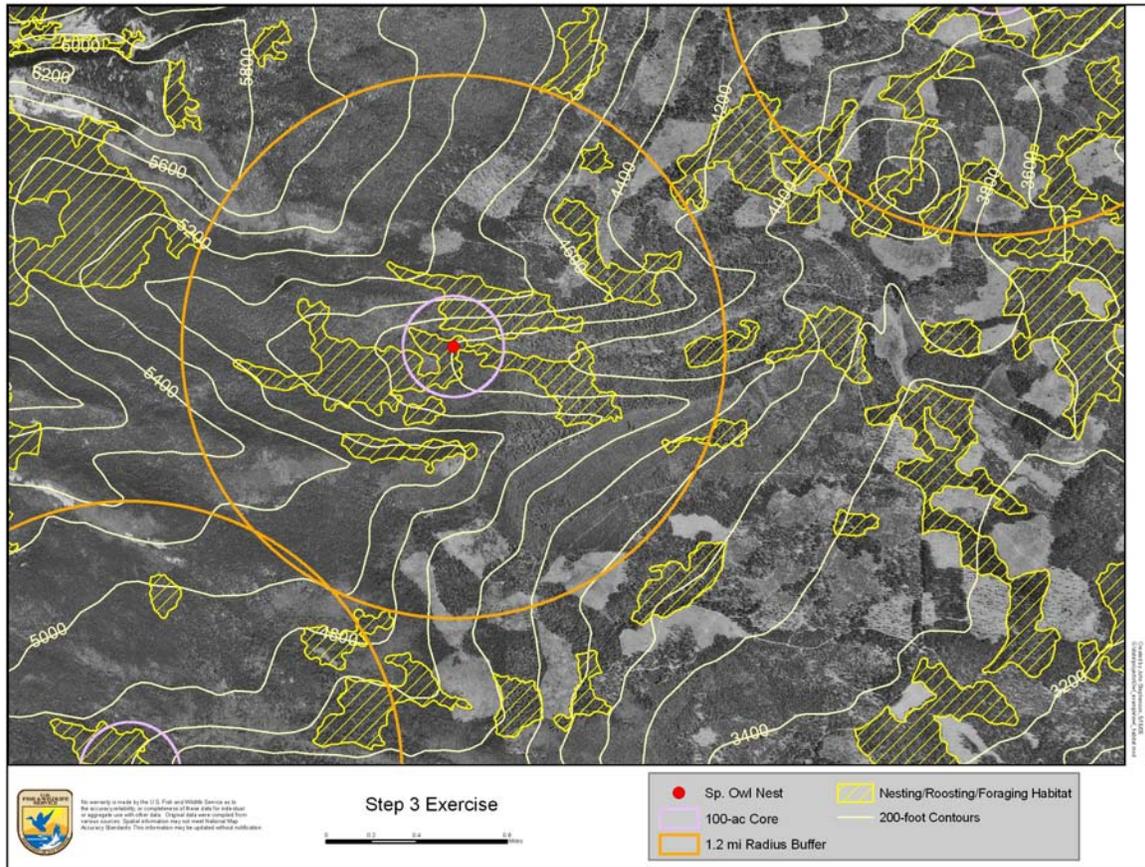


Figure 3. Orthoquad map with Spotted owl location and nesting, roosting and foraging habitat.



Appendix A4: Exercise 3: Group discussion about how to approach treatment of wildfire threats to spotted owl habitat at the landscape scale

Objective: To address fuels reduction and owl habitat protection at the landscape level.

The culmination of the Workshop rested with this final group exercise. The group exercises up to this point were developed to serve an iterative process of sharing information, to develop a common knowledge base, to apply that knowledge at the stand scale, and then to apply that knowledge to a hypothetical spotted owl situation involving fire risk to habitat. The preceding pages covered these steps. This landscape scale exercise was an attempt not only to incorporate the stand level application of knowledge but also to encourage thinking and treating landscapes at the scales of watersheds, administrative units and provinces. Basically, this exercise was developed to hopefully tie it all together in terms of how to restore and maintain spotted owl habitat at multiple spatial and temporal scales.

The objective of this exercise was to address fuels reduction and spotted owl habitat protection at the landscape level. This discussion occurred in a group setting whereby, over 50 people participated in the 2.5 hour round table discussion focused on the six questions below. To set the stage for the discussion, a series of slides were shown to the audience. The slides provided mostly a range-wide context of the condition of spotted owl populations and habitat, however, specific focus was provided to the status of spotted owls and habitat in the dry forest areas of the species range. After this context was presented, the discussion facilitator read a question (see below), then asked the audience to record their answers on the questionnaire provided to them. After some elapsed time, audience members were then asked to provide their responses and the facilitator initiated a broader audience discussion. This approach was repeated for each question. The discussion was thoughtful, insightful, candid, and nearly all of the audience participated in the discussion.

What follows are the landscape level questions and a summary of the completed questionnaires. Please see Appendix B4 on the website for responses to the questionnaires.

Summary – Landscape Scale Discussion

Step 4 questionnaires turned in: 50

Geographic Area representation: CA = 5, OR = 26, WA = 6, Mix = 6

Agency affiliation: FS = 22, BLM = 7, BIA = 7, FWS = 6 PVT = 1

Specialist: Managers = 4, Silviculturists = 7, Wildlife Biologists = 28, Fire/Fuels = 3, 6 forms w/o above information

Question 1. *Do we need to reduce fuel loads within owl habitat to conserve the owl?*

The majority of respondents (33) said yes to this question. Most of the others said “maybe” and only one said no.

The response to this question suggests that fuel loads need to be reduced within spotted owl habitat in order to conserve it. However, respondents also indicated that not all habitat should be treated, at least not all at once. It is important to be strategic in where and how we treat habitat and to prioritize treatments. It would be helpful to have a larger landscape context (provincial level) to help guide where to conduct treatments. Lastly, caution should be exercised in doing treatments – we don't know all of the ramifications of our treatments.

Question 2. Do we need to reduce fuel loads within owl habitat to achieve overall fuels management objectives?

This question received relatively a more mixed response from Workshop participants. Twenty-nine respondents indicated “yes” to this question, whereas 16 said “maybe”, while 5 stated “no.”

Some of the respondents that answered “no” indicated that treatments are funding dependent and that it may be unrealistic to respond yes to this question. Some in the minority indicated that we may have excess owl habitat in some areas, therefore, there may be no need to conduct treatments.

Those respondents in the majority believed that yes we need to treat owl habitat in order to achieve overall fuel management objectives. However, they also indicated that this work is in the more difficult areas (outside the WUIs) and it may not be accomplished if funding is not provided. A compounding factor is that some believe that fuels reduction objectives are not well defined and that the objectives need to be more ecologically based. The need for treating owl habitat goes beyond spotted owls and includes promoting healthy forests within the historic range of variability. The need for a landscape context to guide treatments was again promoted by respondents.

Question 3. Should landscape strategies be developed to reduce fuel loads in & adjacent to owl habitat?

Nearly all of the respondents (47) said “yes” to this question. At least two people said “no”, with the reasons being that we currently don't know enough from a stand treatment perspective to work in NRF habitat and landscape strategies (SPLATs or Fireshed).

Overwhelmingly, respondents believe a landscape approach should be developed for reducing fuel loads in and adjacent to owl habitat. The landscape approach should include an integration of resource values and interdisciplinary teams (including Fish and Wildlife Service) working cooperatively to develop the landscape strategy. Similar to the above answers, a larger scale context needs to be set to tie a landscape strategy to. For example, either at a Forest or Provincial level, maintenance and restoration priorities should be spatially identified. District or small scale plans can tier to these, with their own complimentary priorities.

Question 4. If you answered yes to #3, at what scale should landscape strategies be developed (watershed, FS Ranger District/BLM Resource Area, FS Forest/BLM District, Province)?

Respondents indicated a need to start with a coarse scale strategies at province scale, moving toward finer scale strategies at watershed scale – however this approach needs to be connected among the Forests. Specific projects should not be designed at the provincial or Forest scale. Restoration and maintenance areas for owl habitat need to be identified at the provincial scale.

Question 5. Outline the next steps that the Forest Service, Fish and Wildlife Service, and BLM need to take to minimize the loss of owl habitat across its range due to fuel build up.

The following steps were provided by respondents on the questionnaires.

- Need to shift resources to be less WUI centric
- Need a provincial to Forest analysis by an interagency team. This analysis should describe fuels and owl current conditions; desired future condition, and priorities for treatments.
- Maintain and protect the suitable owl habitat that we have in short-term and develop spotted owl habitat for the long-term.
- Need to monitor to measure success, and adapt to monitoring results.
- Need a spotted owl recovery plan or an “umbrella strategy” to tier from the province downward.
- Need an Interagency Team to develop a strategy for fuels/owls. Start with a general prioritization rangewide of maintenance and of restoration of spotted owl habitat; then step down to prioritize within administrative units.

Question 6. Do you have specific recommendations at the Forest, BLM District, and/or Provincial level to reduce fuel loads and protect owl habitat?

- Convene Interagency, interdisciplinary team for large scale and mid-scale analysis to assess risks to owl habitat and prioritize areas for treatment.
- Relate how project-scale fits into larger scale, and move toward desired future condition.
- These plans need a temporal and spatial scale.
- Focus on high risk areas of fuel loads.
- Develop guidelines for stand and landscape level treatments using known owl site information.
- Develop guidelines for stand and landscape level treatments in absence of owl site information.