Lessons Learned Regarding
Fisher Habitat Maintenance and Development

Cheryl Carrothers & Diane Macfarlane
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The following lessons learned in support of maintenance and development of fisher habitat are derived from the expertise and field observations of agency biologists, including our fisher experts, and is based on the most currently available scientific information on Pacific fisher habitat selection and use. These concepts are intended to help guide your thought processes and do not impose any direction or forest management requirements under NFMA. Lessons learned were developed to aid biologists, planners, and decision makers in designing vegetation management projects within suitable fisher habitat. These considerations may be useful as you attempt to maximize suitable fisher habitat while accomplishing other important management objectives. Key points of consideration may also be useful when framing project level fisher effects analyses.

Process Points

1) Project should clearly and demonstrably respond to your stated purpose and need. Projects have greater potential for implementation and success when the proposed action shows clear ties to the stated purpose and need. For example: if the purpose and need are to reduce the threat of stand replacing wildfire while maintaining fisher habitat suitability, how will removal of large trees contribute to the desired outcome?

2) Collaboration works. There are a wide variety of stakeholders interested in forest management actions. Supporting their early and continued involvement in the planning process can contribute to a more integrated project design as well as facilitate timely implementation.

Canopy Cover

It is most desirable to maintain or enhance existing structural diversity and canopy cover levels to retain fisher habitat suitability. High canopy cover is desired. Although conifers greater than 20" dbh are most commonly selected for resting, canopy provided by smaller size classes and even large shrubs also contribute to total canopy cover for fisher.

When a high level of canopy cover retention is not possible due to conflicting stand objectives or other needs, you may want to consider identifying and retaining individual trees or groups of trees that demonstrate desired structural characteristics as early in the process as possible. In the southern Sierra, the forest is very patchy so groups of large trees can be differentiated from the surrounding stand with careful observation and practice. These groups of large trees typically range in size from about one fifth to half an acre. The greater the group representation retained, the greater future flexibility for stand management should the biological information change.

Forest Structure

Minimize the application of silvicultural prescriptions that produce homogenous residual stands, with attention to maintaining heterogeneity at multiple scales. Heterogeneous habitats expressed at multiple scales are more desirable than homogenous stands/landscapes. Some suspect that available resting/denning structure may be limiting. Prey abundance and distribution can also be limiting due to a lack of vegetative and structural diversity in the understory. Small openings, usually less than a quarter acre, will encourage the development of shrubs which typically contribute to the diversity of potential food items.

Species Diversity
To provide for species and structural diversity to maintain or enhance habitat suitability, you may want to retain large hardwoods, specifically oaks, as available. Two different oak management strategies described below may be applied, depending on overall availability of oaks and site specific objectives:

1) When the objective is to maintain the health and/or extend the overall longevity of a particular oak, smaller, competing conifers may be removed to allow the oak better access to sunlight and other nutrients even though many of these oaks will not "release" (won't have a growth spurt) as a result of the thinning. Maintaining live oaks for as long as possible not only maintains the structure/cavities they provide (dead oaks tend to decompose and lose their structure relatively quickly) but also retains a tremendous source of mast which then contributes to increased and locally available prey populations which feed on the acorns.

2) When the objective is to maintain the dark, closed canopy microclimate around a medium or large oak, retention of the smaller, competing trees may be warranted. Favored rest and den trees are utilized not just for the potential access to cavities they provide, but also by the high density of surrounding, adjacent trees. There may be something about the microsite that any removal of adjacent structure may render that oak less attractive for resting or denning. In addition, there is anecdotal evidence to suggest that female fisher may use these nearby trees to access the den tree so as to avoid leaving a direct scent trail to the den cavity, further reason to give full consideration to which oak management objective is appropriate at your particular site.

Decadence
Forest health prescriptions that selectively remove all trees showing obvious signs of decay or structural deformities may be contrary to development of quality fisher habitat and may actually be degrading suitable habitat. Character and "wolfy" trees (those trees with odd forms and lots of large, lateral branches with or without mistletoe and witches brooms) that are frequently targeted for removal may already be providing rest sites or hiding cover for fisher or their prey. Therefore, to favor fisher, consider retaining as many trees as possible that exhibit disease and decay (especially large trees with cavities) within a stand. Note that suitable den cavities can be very small (2-3" diameter) and may not be obvious with casual review of a tree.

Site Conditions
Mesic conditions, such as those found along riparian corridors, as well as north and northeast-facing slopes, contribute to greater site quality for tree growth and structure development. Mesic sites also tend to have greater biodiversity and greater biomass per area, providing better foraging habitat as well. Because these sites provide greater opportunity for developing the large trees and dense canopy cover components of fisher denning and resting habitat faster, consider proposing treatments that support this type of stand development in the more mesic sites over other drier, less productive sites.

Translating the vision into unit layout
Due to the subjectivity of these lessons learned, scheduling field visits between the project biologist, silviculturist and marking crew foreman (and other stakeholders) may help ensure the project layout will achieve desired expectations for fisher while still accomplishing other project objectives. The review and discussion of sample marked stands may be used to further refine everyone's vision.

Previous sections addressed fisher friendly options to consider while planning projects that may affect fisher habitats. The following section describes small scale agency actions that can be easily and immediately implemented to the benefit of individual fisher.

Fishers are curious and tend to explore small openings. Multiple deaths have been documented of fisher entering cisterns, pipes, tubes, open water tanks and other dead ends from which they cannot escape. These structures have been associated with recreation residences/summer homes, forest in-holdings and a timber operator's staging area. We recommend that for these in-forest facilities, all external pipes, small openings to water tanks and other holding tanks, etc. be somehow capped, or otherwise modified to prevent entry of wildlife, especially fisher, into those places. For the open tanks, pits and similar structures, we recommend that an escape device appropriate to the size of structure and potential size of wildlife trapped be provided. Hardware cloth, boards, piled rocks and even rope can be used by various types of birds and mammals to climb out. These are inexpensive additions which should be installed to reach from the top edge of the structure completely to the bottom for full escape access. More formal designs of escape structures are available for a variety of structure types, please contact Cheryl Carrothers for standards if interested.