

production. More mature habitat features a high degree of foliage volume and canopy cover that begins high above the ground and is not as vulnerable to fire. Thus, the primary technique of fuels reduction, thinning understory trees with mechanical equipment and/or prescribed fire, may have detrimental effects on owl habitat in the short term (10 to 20 years), but may favor development of habitat in the longer term, and may reduce the likelihood of catastrophic fire that could substantially degrade or eliminate habitat.

Tradeoffs between owl habitat lost through treatments versus projected losses to wildfire events are complex and difficult to assess. The effects of vegetation treatments upon owl habitat are mostly immediate and relatively easy to quantify, but reductions in the acreage and intensity of future wildfires due to vegetation treatments will be realized over much longer periods. In addition, due to the random nature of wildfire events, projections regarding future wildfire have greater amounts of uncertainty and are heavily dependent upon assumptions that are difficult to quantify.

In the Record of Decision for the SNFPA, the Regional Forester stated "Two factors of greatest concern to me are: (1) Ensuring the long term protection and recovery of old forest conditions and the spotted owl and other species (2) being able to ensure that the risk of wildfires within the Sierra Nevada can be managed to protect ecosystems, property and communities' (USFS 2001b). The objective of the SNFPA's conservation strategy for California spotted owls was to provide the environmental conditions needed to establish a high likelihood of maintaining viable populations of the California spotted owl, well distributed across the national forests within the Sierra Nevada planning area. This strategy sought to maintain habitat capable of supporting existing owl populations, stabilize current population declines, and provide increases in owl habitat over time. It was based on providing and improving fundamental components of spotted owl habitat such as: a high foliage volume and complex vegetation structure at nest sites; a high percentage of home ranges in forests with moderate to high cover that are concentrated near nest sites; and habitat for primary prey species, especially the northern flying squirrel.

This objective is to be accomplished through a multi-scale landscape strategy to: (1) Protect and manage allocations called "Old Forest Emphasis Areas" to provide large area reserves of high quality spotted owl habitat; (2) conduct

surveys for owls where vegetation treatments would occur; (3) establish PACs comprising known and suspected nest stands and the best available 121 ha (300 ac) of habitat around owl activity centers; (4) establish limited operating periods within approximately 0.4 km (0.25 mi) of California spotted owl nest sites during the breeding season (March 1 through August 31); (5) protect and manage individual spotted owl home range core areas (972 ha (2,400 ac) on the Hat Creek and Eagle Lake Ranger Districts of the Lassen National Forest; 405 ha (1,000 ac) on the Almanor Ranger District of the Lassen National Forest, Modoc, Inyo, Plumas, Tahoe, Eldorado, Lake Tahoe Basin Management Unit, and portions of the Humboldt-Toiyabe and Stanislaus National Forests; and 243 ha (600 ac) on the Sequoia and Sierra National Forests) in the "general forest" forested areas outside of Old Forest Emphasis Areas; (6) manage the general forest outside of owl core areas to maintain and increase the amount of suitable spotted owl habitat; and (7) address fire hazard and risk by reducing surface and ladder fuels within strategically placed area treatments focusing on the urban wildland intermix zone and Old Forest Emphasis Areas of high hazard and risk (USFS 2001a and b).

Based on the explicit assumption that the California spotted owl was in some degree of population decline, the SNFPA incorporated numerous Land Allocations and Standards and Guidelines (S and Gs) that protect existing owl habitat across the landscape and in the course of implementation of fuels treatments. In general, these measures apply to four landscape level designations. In order of increasing intensity of potential fuels treatment, these designations are old forest emphasis areas, general forest, the urban threat zone, and the urban Defense zone. The most important features of the S and Gs that relate to conservation of California spotted owls are summarized below, based on discussion in the SNFPA Record of Decision (USFS 2001b). More detail is given in the FEIS (USFS 2001a).

Important aspects of the SNFPA allocations and S and Gs include the following:

(1) In forests west of the Sierra crest (westside), all live conifer trees with a dbh of 76 cm (30 in) or greater will be retained. East of the crest, where trees generally do not grow as large or as rapidly, all trees 61 cm (24 in) or greater in the eastside pine forest type will be retained. Montane hardwoods with a dbh of 30 cm (12 in) or greater within westside forest types will be retained.

Prescribed burn prescriptions and techniques will be designed to minimize the loss of large trees and down material. The largest down logs will be retained for coarse woody debris outside of the Defense zone of the urban wildland intermix. Forested stands over 2 ha (5 ac) with the largest trees will be maintained to perpetuate their current conditions. Generally, in these stands no trees greater than 30 cm (12 in) dbh will be removed and canopy cover will not be reduced more than 10 percent below current conditions when applying necessary fuels reduction treatments.

(2) Spotted owl PACs will be applied in all designations except the Defense zone of the urban wildland intermix. PACs are to include at least 121 ha (300 ac) of the best available habitat. Total acreage in spotted owls PACs (including non-habitat acreage within the PACs as presently designated) is currently estimated at 243,258 ha (601,116 acres) (K. Barber, USFS, pers. comm. 2003), which is about 12 percent of the forested acreage on national forest lands in the Sierras. Stand-altering activities in spotted owl PACs will be limited to reduction of surface and ladder fuels through prescribed fire treatments. Prior to prescribed burning, known nest trees and trees in the immediate vicinity will be protected by hand line construction, tree pruning, and cutting of small trees within a surrounding 0.4 to 0.8 ha (one to two ac) area. Activities that could disturb nesting would be prohibited within 402 meters (0.25 mi) of nests within the breeding season unless it is demonstrated that nesting is not occurring. Vegetation treatments will occur in no more than 5 percent per year and no more than 10 percent per decade of the California spotted owl PACs.

(3) Spotted owl home range core areas will be applied around all PACs, except in the Threat zone as described below. Generally, fuel treatments in home range core areas will be limited to prescribed fire or low intensity mechanical treatments for the removal of material necessary to reduce surface and ladder fuels sufficient to achieve an average flame length of 2 m (6 ft) or less if the stand were to burn under 90th percentile fire weather conditions. Fuels treatment measures will be similar to those described in the following discussion of Old Forest Emphasis Areas (USFS 2001a and b).

(4) Old Forest Emphasis Areas will be established, totaling over 1,618,712 ha (4,000,000 ac). Currently, about 70 percent of the acreage in these areas is suitable owl habitat (USFS 2001a and b); thus, about 65 percent of the