

insurance/pension specialists and Defense Contract Audit Agency (DCAA) auditors assist ACOs in making these determinations, conduct CIPRs when needed, and perform other routine audits as authorized under FAR 42.705 and 52.215-2. A CIPR is a DCMA/DCAA joint review that—

(1) Provides an in-depth evaluation of a contractor's—

- (i) Insurance programs;
- (ii) Pension plans;
- (iii) Other deferred compensation plans; and
- (iv) Related policies, procedures, practices, and costs; or

(2) Concentrates on specific areas of the contractor's insurance programs, pension plans, or other deferred compensation plans.

(b) DCMA is the DoD Executive Agency for the performance of all CIPRs.

(c) DCAA is the DoD agency designated for the performance of contract audit responsibilities related to Cost Accounting Standards administration as described in FAR Subparts 30.2 and 30.6 as they relate to a contractor's insurance program, pension plans, and other deferred compensation plans.

242.7302 Requirements.

Follow the procedures at PGI 242.7302 to determine if a CIPR is needed.

242.7303 Responsibilities.

Follow the procedures at PGI 242.7303 when conducting a CIPR.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants: 90-Day Finding on a Petition To List the California Spotted Owl as Threatened or Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 90-day petition finding and initiation of status review.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 90-day finding on a petition to list the California spotted owl (*Strix occidentalis occidentalis*) as threatened or endangered, under the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). We find that the petition presents substantial scientific

or commercial information indicating that listing the species may be warranted. Therefore, we are initiating a status review of the species to determine if listing the species is warranted. To ensure that the review is comprehensive, we are soliciting scientific and commercial information regarding this species.

DATES: The finding announced in this document was made on June 21, 2005. To be considered in the 12-month finding for this petition, comments and information must be submitted to the Service by August 22, 2005.

ADDRESSES: Submit new information, materials, comments, or questions concerning this species to Field Supervisor, Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, Room W-2605, Sacramento, California 95825, or by facsimile to 916-414-6710. See also the "Public Information Solicited" section for more information on submitting comments. The complete file for this finding is available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Arnold Roessler at the Sacramento Fish and Wildlife Office (see **ADDRESSES** section above), or at (916) 414-6600.

SUPPLEMENTARY INFORMATION:

Public Information Solicited

When we make a finding that substantial information is presented to indicate that listing a species may be warranted, we are required to promptly commence a review of the status of the species. Based on results of the status review, we will make a 12-month finding as required by section 4(b)(3)(B) of the Act. To ensure that the status review is complete and based on the best available scientific and commercial data, we are soliciting information on the California spotted owl. We request any additional data, comments, and suggestions from the public, other concerned governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning the status of the California spotted owl. Of particular interest is information pertaining to the factors the Service uses to determine if a species is threatened or endangered: (1) Present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or

human-caused factors affecting its continued existence. In addition, we request data and information regarding the changes identified in the "Summary of Threats Analysis" section. Finally, if we determine that listing the owl is warranted, it is our intent to propose critical habitat to the maximum extent prudent and determinable at the time we would propose to list the species. Therefore, we request data and information on what may constitute physical or biological features essential to the conservation of the species, where these features are currently found and whether any of these areas are in need of special management, and whether there are areas not containing these features which might of themselves be essential to the conservation of the species. Please provide specific comments as to what, if any critical habitat should be proposed for designation, if the species is proposed for listing and why that proposed habitat meets the requirements of the Act.

If you wish to comment, you may submit your comments and materials concerning this finding to the Field Supervisor, Sacramento Fish and Wildlife Office (see **ADDRESSES** section). Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Respondents may request that we withhold their home address, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this request prominently at the beginning of your comment. We will not consider anonymous comments. To the extent consistent with applicable law, we will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

Background

Section 4(b)(3)(A) of the Act requires that the Service make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. This finding is based on information contained in the petition, supporting information

submitted with the petition, and information otherwise available in our files at the time we make the finding. To the maximum extent practicable, we are to make this finding within 90 days of our receipt of the petition, and publish our notice of the finding promptly in the **Federal Register**.

Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is "that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted" (50 CFR 424.14(b)). If we find that substantial scientific or commercial information was presented, we are required to promptly commence a review of the status of the species.

In making this finding, we relied on information provided by the petitioners and otherwise available in our files at the time of the petition review, and evaluated that information in accordance with 50 CFR 424.14(b). Our process of coming to a 90-day finding under section 4(b)(3)(A) of the Act and section 424.14(b) of our regulations is limited to a determination of whether the information in the petition meets the "substantial scientific or commercial information" threshold.

Our 90-day finding considers whether the petitioners have stated a reasonable case that listing may be warranted. Thus, our finding expresses no view as to the ultimate issue of whether the species should be listed. We reach a conclusion on that issue only after a thorough review of the taxon's status. In that review, which will take approximately 9 more months, we will perform a rigorous, critical analysis of the best available commercial and scientific information. We will ensure that the data used to make our determination as to the status of the species (*i.e.*, our 12-month finding) is consistent with the Act and Information Quality Act (44 U.S.C. 3504(d)(1) and 3516). Upon completion, our 12-month finding will be published promptly in the **Federal Register**.

On April 3, 2000, we received a petition to list the California spotted owl as a threatened or endangered species submitted by the Center for Biological Diversity and the Sierra Nevada Forest Protection Campaign (Center for Biological Diversity 2000), on the behalf of themselves and 14 other organizations. Along with listing, the petition also requested the concurrent designation of critical habitat, emergency listing, and emergency designation of critical habitat. On October 12, 2000, we published a 90-day finding on that petition in the

Federal Register (65 FR 60605). In that notice, we found that the petition presented substantial scientific or commercial information to indicate that listing the California spotted owl may be warranted, and we initiated a status review of the taxon. On February 14, 2003, we published a 12-month finding on the petition in the **Federal Register** (68 FR 7580). In that notice, we found that the petitioned action was not warranted because the overall magnitude of threats to the species did not rise to the level requiring protection under the Act.

On May 11, 2004, the Center for Biological Diversity and five other groups filed a lawsuit in Federal District Court for the Northern District of California (*Center for Biological Diversity, et al. v. Norton et al.*, No. C-04-1861) alleging that our 12-month finding violated the Act and the Administrative Procedure Act (5 U.S.C. 706). On September 1, 2004, we received an updated petition dated September 2004 to list the California spotted owl as a threatened or endangered species and to designate critical habitat concurrent with listing based, in part, on information that was not available to us at the time we made our 12-month finding (Center for Biological Diversity 2004). The updated petition was submitted by the Center for Biological Diversity and the Sierra Nevada Forest Protection Campaign, acting on behalf of themselves and six other organizations. The submission clearly identified itself as a petition, and included the requisite identification information of the petitioners, as required in 50 CFR 424.14(a).

In view of the new petition, on March 8, 2005, the District Court in *Center for Biological Diversity v. Norton* issued an Order to Show Cause why it should not stay the litigation pending the Service's action on the new petition. In response to that Order, on March 14, 2005, we submitted a declaration to the Court stating that we could submit for publication in the **Federal Register** a 90-day finding on this petition by June 13, 2005, and, if we found that the information presented in the petition was substantial, submit for publication in the **Federal Register** a 12-month finding by March 14, 2006. On March 17, 2005, the Court stayed the case for 90 days, directed us to report to the Court and the parties concerning the status of our review of the petition by June 13, 2005, and continued the hearing on pending cross-motions for summary judgment to June 23, 2005. On March 25, 2005, the Court concurred with the parties' requests to continue the hearing date until June 30, 2005, and

to allow the Plaintiffs and Intervenor-Defendants (American Forest and Paper Association, California Forestry Association, and Sierra Pacific Industries) until June 23, 2005, to file any responses to our June 13, 2005, filing. This notice constitutes the 90-day finding for the September 1, 2004, petition.

Species Information

Description and Taxonomy

Spotted owls (*Strix occidentalis*) are medium-sized, brown owls with brown eyes, round heads without ear tufts, white spots on the head, neck, back, and underparts, and white and light brown bars on the wings and tail. Individuals range from 41 to 48 centimeters (cm) (16 to 19 inches (in)) in length, and have wingspans of 107 to 114 cm (42 to 45 in) (Center for Biological Diversity 2000). Sexes cannot be distinguished by plumage, but can be readily identified by size and vocalization. Females are usually larger than males, with females weighing 535 to 775 grams (g) (19 to 27 ounces (oz)) and males weighing 470 to 685 g (17 to 24 oz) (Gutiérrez *et al.* 1995).

The California spotted owl is one of three recognized subspecies of spotted owls. The California spotted owl is intermediate in color between the darker northern spotted owl (*Strix occidentalis caurina*) and lighter Mexican spotted owl (*S. o. lucida*). The size of the spots of the California spotted owl is also intermediate between the larger spots of the Mexican subspecies and the smaller spots of the northern subspecies. The other subspecies are listed by the Service as threatened. The final rule to list the northern spotted owl was published in the **Federal Register** on June 26, 1990 (55 FR 26114) and the final rule to list the Mexican spotted owl was published in the **Federal Register** on March 16, 1993 (58 FR 14248).

Range and Distribution

The California spotted owl still occurs throughout its historic range in California, extending along the west side of the Sierra Nevada from Shasta County south to Tehachapi Pass, and in all major mountains of southern California, including the San Bernardino, San Gabriel, Tehachapi, north and south Santa Lucia, Santa Ana, Liebre/Sawmill, San Diego, San Jacinto, and Los Padres ranges (Beck and Gould 1992). In addition, a few sites have been found on the eastern side of the Sierra Nevada and in the central Coast Ranges at least as far north as Monterey County (Service 2002). For regulatory purposes,

we established the Pit River as the boundary between the northern spotted owl and the California spotted owl (55 FR 26114). The northern spotted owl ranges from southwestern British Columbia, Canada, through western Washington, western Oregon, and northern California south along the coast to San Francisco Bay (Service 1990). The range of the Mexican spotted owl is from southern Utah and Colorado south through Arizona and New Mexico, and is disjunct from the ranges of the other subspecies. The range is discontinuous through the Sierra Madre Occidental and Oriental of Mexico to the mountains at the southern end of the Mexican Plateau (Service 1993).

There are no reliable total population estimates for the California spotted owl. The number of California spotted owl territories has been used as an index to illustrate the range of the species and jurisdictions in which it occurs. This number is actually a cumulative total of all sites known to be historically or currently occupied by at least one spotted owl. This total increases over time as spotted owls move to new territories and as researchers survey new areas, even though many territories with sufficient suitable habitat are not occupied at the present and some territories no longer have sufficient suitable habitat to support spotted owls due to logging or fires. For example, in the Sequoia and Kings Canyon National Parks study area, only 34 of 44 territories (77 percent) with a history of spotted owl occupancy were occupied by either spotted owl pairs ($n = 32$) or resident singles ($n = 2$) in 2004 (Munton *in litt.* 2005). And in the Eldorado study area, only 26 of 49 territories (53 percent) were occupied by spotted owl pairs ($n = 25$) or a single spotted owl ($n = 1$) in 2004 (Seamans *in litt.* 2005a). Thus, the number of territories should not be viewed as a population estimate for the taxon.

The total number of California spotted owl territories known in the Sierra Nevada is 1,865 (Service 2002). Of these, 1,399 territories are in Lassen, Plumas, Tahoe, Eldorado, Stanislaus, Sierra, and Sequoia National Forests, and 129 territories are in Lassen, Kings Canyon, Sequoia, and Yosemite National Parks. Fourteen territories are on BLM land in the Sierra Nevada, 3 are on State parks, 1 is on California Department of Forestry and Fire Protection land, 4 are on California State Lands Commission Land, 1 is on Native American land, and 314 are on private lands (Service 2002).

In southern California, the spotted owl occupies "islands" of high-elevation forests isolated by lowlands

covered by chaparral, desert scrub, and, increasingly, human development (Noon and McKelvey 1992, LaHaye *et al.* 1994). California spotted owls have been found on 440 territories in southern California, in 15 to 20 populations comprised of 3 to 270 individuals and separated from each other by 10 to 72 kilometers (km) (6 to 45 miles (mi)) (Verner *et al.* 1992a, Gutiérrez 1994, LaHaye *et al.* 1994, Service 2002). There are 329 territories in the Angeles, Cleveland, Los Padres, and San Bernardino National Forests, 2 on BLM land, 8 on State parks, 6 on Native American lands, and 95 on private lands. In addition, 1 territory is in Mexico (Service 2002).

Life History

Spotted owls usually reach reproductive maturity at 2 years of age, although there are rare accounts of nesting first-year birds (Verner *et al.* 1992b). Spotted owls are monogamous, and usually pair with the same mate from year to year (Verner *et al.* 1992b). Mate constancy, however, may be more of an attachment to a specific home range than to a specific mate (Forsman *et al.* 1984). The breeding season of California spotted owls extends from mid-February to mid-September or early October (Verner *et al.* 1992b).

Among the variety of taxa on which they prey, California spotted owls tend to select a few key species (Verner *et al.* 1992b). In the upper elevations of the Sierra Nevada (about 1,200 to 1,525 meters (m) (4,000 to 5,000 feet (ft))), the primary prey is the northern flying squirrel (*Glaucomys sabrinus*), which is most common in larger stands of mature forests (Verner *et al.* 1992b). In lower elevations of the Sierra Nevada and in southern California, the primary prey is the dusky-footed woodrat (*Neotoma fuscipes*) (Thraillkill and Bias 1989), which is most abundant in shrubby habitats and uncommon in pure conifer forests or forests with little shrub understory (Williams *et al.* 1992). Both flying squirrels and woodrats occur in the diets of owls in the central Sierra Nevada (Verner *et al.* 1992b). Other prey items include gophers (*Thomomys* spp.), mice (*Peromyscus* spp.), diurnal squirrels (*Tamiasciurus douglasii*, *Sciurus griseus*), ground squirrels, (*Spermophilus beecheyi*), and chipmunks (*Eutamias* spp.) and a variety of other rodents, shrews (*Sorex* spp.), moles (*Scapanus* spp.), bats (*Myotis* spp.), birds, frogs, lizards, and insects (Verner *et al.* 1992b, Gutiérrez *et al.* 1995, Tibstra 1999). Predators and closest competitors to spotted owls are great horned owls (*Bubo virginianus*) (Forsman *et al.* 1984) and barred owls

(*Strix varia*) (Leskiw and Gutiérrez 1998, Hamer *et al.* 2001, Kelly *et al.* 2003).

The elevation of known nest sites of California spotted owls ranges from about 305 to 2,348 m (1,000 to 7,700 ft), with approximately 86 percent of sites occurring between 915 and 2,135 m (3,000 and 7,000 ft) (USFS 2001). In conifer forests, mean elevation of nest sites was 1,160 m (5,300 ft) in the northern Sierra Nevada and 1,830 m (6,000 ft) in southern California (Gutiérrez *et al.* 1992).

Spotted owls are mostly nonmigratory, remaining within their home ranges year round. However, in the Sierra Nevada, some individuals migrate downslope from early October to mid-December and return to their breeding territories in late February to late March, thereby establishing disjunct winter home ranges below the level of heavy, persistent snow (Verner *et al.* 1992b, Laymon 1989). These seasonal migrations range from 15 to 58 km (9 to 36 mi) with altitudinal changes from approximately 500 to 1,500 m (1,640 to 4,921 ft) (Verner *et al.* 1992b, Laymon 1989, Gutiérrez *et al.* 1995).

Spotted owls primarily disperse as juveniles (natal dispersal), but may also disperse as adults (breeding dispersal) if habitat within their home range has been degraded or if they have separated from a mate (Verner *et al.* 1992b). Natal dispersal occurs in September and October. Mean natal-dispersal distance of 26 owls in the Sierra National Forest and Sequoia National Park estimated using radio telemetry was 15.9 km (9.9 mi) (Tibstra 1999) and median distance of 42 owls on the Lassen National Forest estimated using recapture data was 25 km (16 mi) for females and 23 km (14 mi) for males (Blakesley *in litt.* 2002). Mean natal-dispersal distances of 129 owls in southern California estimated using recapture data were 10.1 km (6.3 mi) for males and 11.7 km (7.3 mi) for females (LaHaye *et al.* 2001).

Habitat Use and Home Range

California spotted owls, like the other two subspecies of spotted owls, use or select habitats for nesting, roosting, or foraging that have structural components of old forests, including large-diameter trees that are typically greater than 61 cm (24 in) diameter at breast height (dbh; breast height has been standardized at 137 cm (4.5 ft) above the ground) (Call 1990, Gutiérrez *et al.* 1992, Zabel *et al.* 1992, Moen and Gutiérrez 1997, USFS 2001), decadent trees (trees with cavities, broken tops, etc.); high tree density (Laymon 1988, Call 1990, Bias and Gutiérrez 1992, Gutiérrez *et al.* 1992, LaHaye *et al.* 1997,

Moen and Gutiérrez 1997); multi-layered canopy/complex structure (Call 1990, Gutiérrez *et al.* 1992, LaHaye *et al.* 1997, Moen and Gutiérrez 1997); high canopy cover (greater than 40 percent and mostly greater than 70 percent; Laymon 1988, Bias and Gutiérrez 1992, LaHaye *et al.* 1992, Gutiérrez *et al.* 1992, Zabel *et al.* 1992, Moen and Gutiérrez 1997, North *et al.* 2000); snags (Laymon 1988, Call 1990, Bias and Gutiérrez 1992, Gutiérrez *et al.* 1992, LaHaye *et al.* 1997); and downed logs (Call 1990). The mixed-conifer forest type (sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*), white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), giant sequoia (*Sequoiadendron giganteum*), incense-cedar (*Calocedrus decurrens*), California black oak (*Quercus kelloggii*), and red fir (*Abies magnifica*)) is the predominant type used by spotted owls in the Sierra Nevada. About 80 percent of known sites are found in mixed-conifer forest, 10 percent are in red fir forest (red and white fir, lodgepole pine (*Pinus contorta*), quaking aspen (*Populus tremuloides*)), 7 percent are in ponderosa pine/hardwood forest (ponderosa pine, interior live oak (*Quercus wislizenii*), canyon live oak (*Quercus chrysolepis*), black oak, incense-cedar, white fir, tanoak (*Lithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*)), and the remaining 3 percent are in foothill riparian/hardwood forest (cottonwood (*Populus* spp.), California sycamore (*Platanus racemosa*), interior live oak, Oregon ash (*Fraxinus latifolia*), California buckeye (*Aesculus californica*), ponderosa pine, Jeffrey pine (*Pinus jeffreyi*)) (Verner *et al.* 1992a, USFS 2001).

Six major studies, summarized in Gutiérrez *et al.* (1992), described habitat relations of California spotted owls in four study areas (Lassen, Tahoe, Eldorado, and Sierra) spanning the length of the Sierra Nevada. These studies examined spotted owl habitat use at three scales: landscape; home range; and nest, roost, or foraging stand. Spotted owls preferentially use areas with at least 70 percent canopy cover, use habitats with 40 to 69 percent canopy cover in proportion to their availability, and spend less time in areas with less than 40 percent canopy cover than expected if habitat were selected randomly. California spotted owls in the Sierra Nevada prefer stands with significantly greater canopy cover, total live-tree basal area, basal area of hardwoods and conifers, and snag basal area for nesting and roosting. Stands suitable for nesting and roosting have:

(1) Two or more canopy layers; (2) dominant and codominant trees in the canopy averaging at least 61 cm (24 in) in dbh; (3) at least 70 percent total canopy cover (including the hardwood component); (4) higher than average levels of very large, old trees; and (5) higher-than-average levels of snags and downed woody material (Gutiérrez *et al.* 1992, USFS 2001).

In the coast range, California spotted owls occupy redwood/California-laurel forests, which consist of a mix of coast redwood (*Sequoia sempervirens*), California laurel (*Umbellularia californica*), tanoak, Pacific madrone, red alder (*Alnus rubra*), white alder (*A. rhombifolia*), coast live oak, Santa Lucia fir (*Abies bracteata*), and bigleaf maple (*Acer macrophyllum*) (Verner *et al.* 1992a). Spotted owls can be found at elevations below 305 m (1,000 ft) along the Monterey coast to approximately 2,590 m (8,500 ft) in the inland mountains (Stephenson and Calcarone 1999). Lower-elevation (below 915 m (3,000 ft)) spotted owls can be found in pure oak stands and higher-elevation (above 1,981 m (6,500 ft)) spotted owls can be found in pure conifer stands.

In southern California, spotted owls also use riparian hardwood/hardwood forests (coast and canyon live oak, cottonwood, California sycamore, white alder, and California laurel), live oak/bigcone Douglas-fir forests (coast and canyon live oak, bigcone Douglas-fir (*Pseudotsuga macrocarpa*)), and mixed-conifer forests (Verner *et al.* 1992a). Spotted owl nests at 103 sites were in areas with higher canopy closure (mean = 79 percent) than were 296 random sites (mean = 52 percent), and they were in areas with more conifers at least 75 cm (29 in) dbh, more hardwoods at least 45 cm (18 in) dbh, more broken-topped trees, and more snags than were random sites (LaHaye *et al.* 1997).

Based on all of the above-cited studies, nesting habitat for California spotted owls throughout their range generally is described as stands with an average dominant and codominant trees greater than 61 cm (24 in) dbh and canopy cover of greater than 70 percent. Foraging habitat is generally described as stands of trees of 30 cm (12 in) in diameter or greater, with canopy cover of 40 percent or greater.

Spotted owl pairs have large home ranges that may overlap those of other spotted owls (Verner *et al.* 1992b). Estimates of California spotted owl home-range size are extremely variable. All available data indicate that they are smallest in habitats at relatively low elevations that are dominated by hardwoods, intermediate in size in conifer forests in the central Sierra

Nevada, and largest in the true fir forests in the northern Sierra Nevada (Zabel *et al.* 1992, USFS 2001). Based on an analysis of data from radiotelemetry studies of California spotted owls, mean home-range sizes of breeding-season pairs were estimated as 3,642 hectares (ha) (9,000 acres (ac)) in true fir forests on the Lassen National Forest, 1,902 ha (4,700 ac) in mixed conifer forests on the Tahoe and Eldorado National Forests, and 1,012 ha (2,500 ac) in mixed conifer forests on the Sierra National Forest (USFS 2001). The home ranges of two pairs of radio-tagged California spotted owls in the San Bernardino Mountains of southern California were smaller than those reported for the Sierra Nevada and varied widely between pairs (325 to 816 ha (803 to 2,016 ac)) (Zimmerman *et al.* 2001).

Changes to Habitat

The habitat used by California spotted owls today is comprised of forests that have been shaped by numerous interacting natural impacts such as fires and precipitation, and human impacts including fire suppression, timber harvest, livestock grazing, and urbanization. Fire intervals are estimated to have been 5 to 30 years in the mixed-conifer forests of the Sierra before European arrival (Weatherspoon *et al.* 1992), and moderate-intensity fires (fires that were hot enough to scar but not kill most mature trees) historically occurred every 15 to 30 years in the forests of southern California (Stephenson and Calcarone 1999). Suppression of wildland fires, established in California as State and Federal policy by the early 20th century, virtually eliminated forest fires. For example, it is estimated that only 269 ha (664 acres) burn annually in the 237,146-ha (586,000-acre) Eldorado National Forest, whereas approximately 11,736 ha (29,000 acres) burned annually there before European arrival (Weatherspoon *et al.* 1992). Due to the lack of frequent fires, many forested areas have grown dense layers of understory trees and have accumulated large amounts of woody debris on the forest floor, thereby increasing the chances of high-intensity, stand-replacing crown fires in the Sierras and in the mountains of southern California (Kilgore and Taylor 1979, McKelvey and Weatherspoon 1992, Weatherspoon *et al.* 1992, Stephenson and Calcarone 1999). In addition, in areas throughout the range of the California spotted owl, trees that are dead or dying due to disease add to the already dense accumulations of woody debris. This abundance of fuels led to the recent

large-scale fires in spotted owl habitat in southern California. One of the challenges in assessing the effects of fire management of California spotted owl habitat is the need to weigh the long-term benefits of the reduction of risk of catastrophic fires against any potential short-term effects on the quality or quantity of spotted owl habitat.

Timber harvest is another obvious impact to California spotted owl habitat (Gutiérrez 1994, Verner *et al.* 1992a). In the Sierra Nevada, timber harvest steadily intensified from the railroad building and mining eras of the 1800s until the 1950s, then remained at relatively high levels through the 1980s (McKelvey and Johnston 1992). Since the late 1980s, the volume of timber harvested in the Sierra Nevada has declined substantially. Verner *et al.* (1992a) discussed five major factors of concern for California spotted owl habitat that have resulted from historical timber-harvest strategies: (1) Decline in the abundance of very large, old trees; (2) decline in snag density; (3) decline in large-diameter logs; (4) disturbance or removal of duff and topsoil layers; and (5) change in the composition of tree species. Of these concerns, they believed significant changes in diameter distributions of trees in the Sierra Nevada and rapid reductions in the distribution and abundance of large, old, and decadent trees posed the greatest threats to the California spotted owl. Thus, extensive commercial harvest in the past of large old trees in late-successional forests directly affected the key structural components of California spotted owl habitat. Changes in California's Forest Practices Act, as well as changes in the management of Federal forest lands have largely eliminated past practices. The difficulty is that it will take many decades for these forests to regain these late-successional components and, in the interim, forests must be managed without modifying remaining suitable habitat to the degree that we negatively affect spotted owl numbers or distribution.

Threats Analysis

Section 4 of the Act and its implementing regulations (50 CFR 424) set forth the procedures for adding species to the Federal list of endangered and threatened species. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act: (A) Present or threatened destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational

purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. In making this finding, we evaluated whether threats to the California spotted owl as presented in the petition and other information available to us may pose a concern with respect to the taxon's survival such that listing under the Act may be warranted. Our evaluation of these threats, based on information provided in the petition and available in our files, is presented below.

A. Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range

The petition states that more than 100 years of logging in the Sierra Nevada Mountains resulted in loss of spotted owl habitat, which negatively affects spotted owl numbers and distribution, and in fragmentation of habitat, which negatively affects spotted owl dispersal. The petition cites the 10 areas of concern (AOCs) in the Sierra Nevada described in Beck and Gould (1992), and then explicitly modifies them into nine AOCs. These AOCs, which comprise less than one-half of the taxon's range, are of concern because they are bottlenecks or gaps in spotted owl distributions, support locally isolated populations, contain highly fragmented habitat, or have low spotted owl density. The petition contends that logging as prescribed in the Sierra Nevada Forest Plan Amendment (SNFPA) (USFS 2004a), the Herger Feinstein Quincy Library Group Forest Recovery Act Pilot Project (HFQLG Pilot Project), and on private lands threatens to further degrade and destroy spotted owl habitat, resulting in continued declines in numbers of spotted owls.

The petition cites the recently published meta-analysis of population dynamics of California spotted owls (Franklin *et al.* 2004) as evidence that spotted owl populations are declining and that management of forests may be a cause of these declines. This meta-analysis analyzed demographic data of spotted owls on the Lassen (1990 to 2000), Eldorado (1986 to 2000), Sierra (1990 to 2000), and San Bernardino (1987 to 1998) National Forests and in Sequoia and Kings Canyon National Parks (1990 to 2000). The petition reports that the pooled estimate for adult apparent survival for the four National Forests (0.819) was lower than that from Sequoia and Kings Canyon National Parks (0.877) and that from 15 northern spotted owl studies (0.850). The petition states that estimates for λ (lambda, the finite rate of population

change, where $\lambda < 1.0$ indicates a declining population and $\lambda > 1.0$ an increasing population) for four of the five study areas (the exception was Eldorado) were less than 1.0, but that none of the estimates for λ was different from $\lambda = 1.0$ given the 95-percent statistical confidence intervals. In addition to citing the meta-analysis, the petition references site-specific studies (e.g., Blakesley *et al.* 2001, Seamans *et al.* 2001) that indicate negative population trends. The petition claims that we did not adequately address these reported declines in our 12-month finding (68 FR 7580) due to our heavy reliance on λ , 95-percent confidence intervals, and scientific uncertainty.

The petition also notes that recent fires, as well as human activities including urban development, livestock grazing, mining, recreation, and road construction, have contributed to past and present loss and degradation of spotted owl habitat.

Evaluation of Information in the Petition and Other Information in our Files

As described above in "Historic Habitat Loss," spotted owl habitat has been degraded or removed due to many human activities over approximately the past 150 years. Beck and Gould (1992), Verner *et al.* (1992a), USFS (2001), USFS (2004a), and the petitioners agree that the risk associated with management within the AOCs in the Sierra Nevada is higher than that in other areas. USFS (2004a) explicitly states that the revised SNFPA increases the risk of continued declines in spotted owl density within the AOCs. In our 2003 12-month finding (68 FR 7580), we analyzed the effects to spotted owl habitat from timber harvest on Federal, State, and private lands relative to the Federal and State regulations in effect at that time. After publication of our 12-month finding, the Forest Service issued a revised SNFPA (USFS 2004a) that allows for full implementation of the HFQLG Pilot Project, and for more flexibility in locating and implementing effective fire-fuels treatments than did the 2001 SNFPA (USFS 2001). We have not yet completed a detailed analysis of how these differences will affect the California spotted owl. Although not mentioned in the petition, we are aware that recent changes in the Fuel Hazard Reduction Emergency Rule and Variable Retention Rule of the California State Forest Practices Code will influence the management of California spotted owl habitat, but we have not yet analyzed exactly how they will do so. As noted above, issues raised by the petitioners regarding changes in the SNFPA from

2001 to 2004 and information in our files concerning changes to the California State Forest Practices Code justify further analysis in a status review and 12-month finding due to the certainties related to the relative risks associated with fire management or lack thereof and spotted owl habitat.

When we published our 2003 12-month finding (68 FR 7580), the meta-analysis (Franklin *et al.* 2004) was in draft form. At that time, the final, published version was not available. A detailed analysis of any changes made by the authors, including how such changes may alter our 2003 analysis, is appropriately conducted as part of a status review and 12-month finding process.

We agree with the petition that recent fires, urban development, livestock grazing, mining, recreation, and road construction have contributed to past and, to a lesser extent, present loss and degradation of California spotted owl habitat. Of these impacts, fire and its effects are of particular concern. For example, information in our files indicates that five spotted owl territories in the San Diego Ranges were completely burned in 2003, and nine territories in the San Gabriel Mountains were burned so heavily in 2002 and 2003 that it is doubtful that they can support spotted owls at this time (USFS 2004a, Loe *in litt.* 2005). The impacts of these recent fires and anticipated future fires in spotted owl habitat justify further analysis. Based on the information presented in the petition and information available in our files, we find that substantial information indicates that there is a threat of destruction, modification, or curtailment of the species' habitat or range due to fires.

To summarize Factor A, a number of changes have taken place during the past 2 years that may affect California spotted owl habitat and effect corresponding changes in California spotted owl populations. These include: revisions to the 2001 SNFPA (USFS 2001) in the 2004 SNFPA (USFS 2004a); revisions to the California State Forest Practices Code; impacts of recent fires and anticipated future fires in spotted owl habitat; and how these threats affect our interpretation and application of the results of the final report on the meta-analysis of the population dynamics of the California spotted owl (Franklin *et al.* 2004). We find that these changes constitute substantial information that the threatened destruction, modification, or curtailment of the species' habitat or range may be a factor that threatens the continued existence of

the taxon, and thus that the petitioned action may be warranted.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The petition does not present any threats relative to factor B, nor is there any new information available in our files.

C. Disease or Predation

The petition states that West Nile Virus (WNV) presents a serious potential threat to California spotted owls, and recommends that its effects on spotted owls be monitored closely. As stated in the petition, WNV was first detected in the United States in 1999 in New York, and has quickly spread to the western United States. The petition states that WNV has not been detected thus far in a wild spotted owl, but that an infected, captive spotted owl suffered mortality.

The petition cites a personal communication (Peery *in litt.* 1999) in support of its claims that, because great horned owls and red-tailed hawks (*Buteo jamaicensis*) tend to forage in open areas and because great horned owls are known predators of spotted owls (Forsman *et al.* 1984), the reduction of canopy cover and creation of breaks in the canopy due to logging may increase predation of spotted owls.

Evaluation of Information in the Petition and Other Information in our Files

As stated in the petition, WNV has not yet been detected in a wild spotted owl. Although not mentioned in the petition, we are aware that, in 2004, researchers in California took blood samples and oral swabs from captured spotted owls to test for the presence of WNV and WNV antibodies. One team tested for WNV in California spotted owls in the Eldorado study area and in northern spotted owls of northern California in the Willow Creek, Green Diamond Resource Company, and Hoopa Tribal Lands study areas ($n = 119$) (Franklin *in litt.* 2004, 2005, Gutiérrez *in litt.* 2005). Another team took blood samples from California spotted owls in Plumas and Lassen National Forests ($n = 68$) (Keane 2005). None of the spotted owls tested positive for WNV exposure (Keane 2005, Franklin *in litt.* 2005, Gutiérrez *in litt.* 2005). In addition, none of the small mammals (e.g., mice, northern flying squirrels, dusky-footed woodrats) sampled in two study areas (Willow Creek and Eldorado) ($n = 251$) tested positive for WNV (Franklin *in litt.* 2005). Neither the petition nor

information available in our files presents substantial information that WNV may threaten the continued existence of the California spotted owl.

The petition does not present any scientific information that supports the idea that logging increases predation of spotted owls by great horned owls or red-tailed hawks, and we are unaware of any such information. Therefore, neither the petition nor information available in our files presents substantial information that predation may threaten the continued existence of the California spotted owl.

D. Inadequacy of Existing Regulatory Mechanisms

The petition contends that the SNFPA (USFS 2004a) does not adequately protect large trees, high canopy closure, multiple-canopy layers, snags, and downed wood, that it allows for fuels treatment in more Protected Activity Centers (PACs) than the 2001 Sierra Nevada Forest Plan (USFS 2001), and that it does not provide limits on the proportion of areas that can be degraded through logging. The appendices to the petition include letters and declarations from spotted owl biologists (e.g., J. Blakesley, B. Noon, Z. Peery, and J. Verner) in support of this contention. The petition also contends that the California State Forest Practices Code provides almost no specific protections for the spotted owl or its habitat.

Evaluation of Information in the Petition and Other Information in our Files

As stated above in factor A, we analyzed the effects to spotted owl habitat from timber harvest on Federal, State, and private lands in our 2003 12-month finding (68 FR 7580) relative to the Federal and State regulations in effect at that time, and we are aware that recent changes to the 2001 SNFPA (USFS 2001) and to the California State Forest Practices Code (the Fuel Hazard Reduction Emergency Rule and Variable Retention Rule of the Code) may affect California spotted owl habitat. Accordingly, the petition and information available in our files present substantial scientific information that due to the change in regulatory mechanisms since our last status review, existing regulatory mechanisms may be inadequate to ensure the continued existence of the California spotted owl, and thus that the petitioned action may be warranted.

E. Other Natural or Manmade Factors Affecting the Species' Continued Existence

The petition states that short-term fluctuations in climate negatively affect reproduction in spotted owls and may increase the risk of extinction of California spotted owls. It states that logging, historic livestock grazing, and fire suppression have increased the risk of stand-replacing fires. The petition also presents concern that threats from hybridization and site competition with the barred owl have increased in recent years due to the barred owl's recent expansion farther into the range of the California spotted owl.

Evaluation of Information in the Petition and Other Information in Our Files

As stated in the petition, variation in survival of California spotted owls has been shown to be based on habitat variation, whereas variation in reproductive output was based equally on variations in habitat and climate (Franklin *et al.* 2000). Although not stated in the petition, research shows that weather conditions explained all or most of the temporal variations in fecundity observed in California spotted owls (North *et al.* 2000, Franklin *et al.* 2004, LaHaye *et al.* 2004) and northern spotted owls in northwestern California (Franklin *et al.* 2000), and that spotted owls compensate for this highly variable annual reproduction with high annual adult survival (Franklin *et al.* 2000). Researchers also state that the long-term effects of variations in reproductive success of spotted owls in California due to climate are unknown, and will require decades of study (Franklin *et al.* 2000, North *et al.* 2000, Franklin *et al.* 2004, LaHaye *et al.* 2004). Therefore, neither the petition nor our files contain substantial information that indicates that climate is a threat to the continued existence of the California spotted owl at this time.

Various human activities, especially fire suppression, have resulted in more fire-prone forests, as discussed in our 2003 12-month finding (68 FR 7580). Management of this threat is the purpose of the SNFPA (USFS 2004a), and, as described in factors A and D above, changes to the 2001 SNFPA and California State Forest Practices Code will be addressed in our 12-month finding. In addition, as described in factor A above, anticipated effects due to fires will be addressed in our 12-month finding.

As stated in the petition, barred owls hybridize with spotted owls. However, information in our files indicates that,

although barred owls and spotted owls occasionally hybridize (e.g., Hamer *et al.* 1994, Kelly and Forsman 2004), this behavior is an "inconsequential" phenomenon that takes place mostly when barred owls move into new areas, and declines as barred owls become more numerous and have more access to other barred owls (Kelly and Forsman 2004:808). Further, Kelly and Forsman (2004) documented only 47 hybrids out of more than 9,000 banded northern spotted owls and barred owls in Oregon and Washington from 1970 to 1999. Thus, we conclude that there is not substantial scientific information indicating that hybridization with barred owls poses a threat to the continued existence of the California spotted owl.

However, as stated in the petition, barred owls apparently have displaced many northern spotted owls from their territories (Kelly *et al.* 2003, Pearson and Livezey 2003, Gremel 2004), and have expanded their range into that of the California spotted owl (Dark *et al.* 1998) as far south as Sequoia National Park. Information in our files indicates that, during the past 2 years, the known range of barred owls has expanded 200 miles southward in the Sierras, including two hybrid spotted/barrred owls in the Eldorado National Forest (Seamans *et al.* in press 2005, Seamans *in litt.* 2005b) and a male barred owl in Kings Canyon National Park (Steger *et al.* in review). Other information in our files shows that barred owls physically attack (Pearson and Livezey 2003) and possibly kill (Leskiw and Gutiérrez 1998) northern spotted owls as well as negatively affect northern spotted owl site occupancy (Kelly *et al.* 2003, Pearson and Livezey 2003), reproduction (Olson *et al.* 2004, Livezey 2005), and survival (Anthony *et al.* 2004). Thus, we have determined that the petition and our files present substantial scientific information to conclude that barred owls constitute a threat to site occupancy, reproduction, and survival of California spotted owls.

To summarize Factor E, neither the petition nor information in our files present substantial scientific information regarding the threats to California spotted owls from climate or from hybridization with barred owls. However, we find that the petition and information in our files present substantial scientific information regarding the threat of fires to California spotted owl habitat and of barred owls to site occupancy, reproduction, and survival of California spotted owls.

Summary of Threats Analysis

The petitioners have not presented substantial new scientific information on many of the threats to California spotted owls and their habitat (e.g., effects from past logging, livestock grazing, urban development, and recreation) that were addressed in our 12-month finding of February 14, 2003 (68 FR 7580). However, as noted by the petition, the following changes have taken place during the past 2 years that may affect the status and distribution of the California spotted owl or change our understanding of possible declines in California spotted owl populations: (1) Revisions to the 2001 SNFPA (USFS 2001) in the 2004 SNFPA (USFS 2004a); (2) revisions to the California State Forest Practices Code; (3) possible changes to the draft meta-analysis of the population dynamics of the California spotted owl in the final, published meta-analysis (Franklin *et al.* 2004); (4) impacts of recent fires and anticipated future fires in spotted owl habitat; and (5) further range expansion of the barred owl. These changes constitute substantial information and thus justify further detailed analysis in a status review and 12-month finding.

Finding

We have reviewed the petition and other information available in our files. Based on this review, we find that the petition and information in our files present substantial information that listing the California spotted owl as threatened or endangered may be warranted.

The petition also requested that critical habitat be designated for the California spotted owl. If we determine in our 12-month finding that listing the California spotted owl is warranted, we will address the designation of critical habitat in the subsequent proposed listing rule or as funding allows.

References Cited

A complete list of all references cited herein is available, upon request, from the Sacramento Fish and Wildlife Office (see ADDRESSES section).

Author

The primary author of this notice is Kent Livezey, Western Washington Fish and Wildlife Office, U.S. Fish and Wildlife Service, 510 Desmond Drive SE, Lacey, Washington 98503.

Authority: The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: June 13, 2005.

Elizabeth H. Stevens,

*Acting Director, U.S. Fish and Wildlife
Service.*

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