

# STATUS OF SPOTTED OWL POPULATIONS AND MANAGEMENT EFFORTS IN CALIFORNIA

PHILLIP J. DETRICH, U.S. Fish and Wildlife Service, Room E-1803, 2800 Cottage Way, Sacramento, CA 95825

GORDON I. GOULD, Jr. California Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814

DAVID M. SOLIS, U.S. Forest Service, 630 Sansome Street, San Francisco, CA 94111

1993 TRANSACTIONS OF THE WESTERN SECTION OF THE WILDLIFE SOCIETY 29: 38-44

*Abstract.* Northern spotted owls (*Strix occidentalis caurina*) have been located at 1628 California sites in recent years, and their populations are believed to be declining. California spotted owls (*S. o. occidentalis*) have been located at 1799 sites, and although their population trends are uncertain, key habitat components are declining. Due to legal challenges and lengthy planning efforts, several important protective management strategies for the northern spotted owl have not been fully implemented. An interim management strategy for the California spotted owl recently was implemented. Significant challenges face agencies attempting to achieve stable management regimes.

Controversy surrounding the biology and management of the spotted owl (*Strix occidentalis*) has resulted in unprecedented public attention on endangered wildlife and the U.S. Endangered Species Act. Over the last decade, attention primarily has focused on one subspecies, the northern spotted owl (*S. o. caurina*) (Thomas et al. 1990, Turner 1990, Lujan et al. 1992a). More recently, the spotlight has expanded to include the two other subspecies, the California spotted owl (*S. o. occidentalis*) (Verner et al. 1992) and the Mexican spotted owl (*S. o. lucida*) (Turner 1993). This paper reports the most recent available data on the population status of the two subspecies that occur in California, summarizes related events in the management and political arenas over the past several years, and briefly discusses problems and opportunities expected to arise in the near future.

The northern spotted owl (NSO) ranges from British Columbia southward through the Coast and Cascade ranges into California. In California, the range of the NSO extends south in the Coast Range into Marin County, and across the Cascade Mountains in Siskiyou and Shasta Counties into western Modoc County (Thomas et al. 1990). The range of the California spotted owl (CSO) extends from the Mt. Lassen region in southeastern Shasta County southward through the Sierra Nevada mountains and into the mountains of southern California in San Diego County. Populations are also found scattered in the central Coast Ranges (Verner et al. 1992).

The two subspecies' ranges meet in eastern Shasta County. Range maps in Grinnell and Miller (1944:204) showed a gap between the two subspecies in the region between Mt. Shasta and Mt. Lassen in Siskiyou and Shasta Counties. In the 1980s, the U.S. Forest Service (USFS) found several breeding pairs scattered within this area.

The U.S. Fish and Wildlife Service (USFWS) established the Pit River as the regulatory boundary of the range of the NSO (Turner 1990). The California Board of Forestry then established Highway 299 (a few miles south of the Pit River) and Highway 139 (which runs northward from 299 across the Modoc Plateau) as their regulatory boundary (Anon. 1990, 1991a). Only a few breeding sites were known in this area, but the substantial extent of apparently-suitable dispersal habitat raised questions as to the actual degree of separation between the two subspecies. However, in August, 1992, the 70,000-acre Fountain Fire burned across the entire zone of contact straddling Highway 299, leaving a strip of unsuitable habitat several miles wide that may inhibit contact between the two subspecies for several decades to come.

## STATUS OF POPULATIONS

Since the 1970s, the California Department of Fish and Game (CDFG) has maintained a data base on spotted owl locations, soliciting data from various cooperating agencies, companies, and individuals. By 1986, the data base contained records of approximately 800 NSO sites and 700 CSO sites. Pairs had been confirmed at less than 40 percent of these sites, and less than 15 percent of the total were on private lands. Following the 1989 USFWS proposal to list the NSO as threatened (Lamson 1989), the number of known spotted owl sites increased dramatically, especially on private lands. In recent years, the data base has been upgraded to keep pace with the burgeoning information on both subspecies (Tables 1, 2, and 3).

Comparisons among the pre-1987 and recent data show a great increase in the percentage of sites with confirmed pairs (now 64 percent for NSO and 61 percent for CSO) and the percentage of the total NSO sites found



Table 2. California spotted owl sites (*S. o. occidentalis*) in the Southern Cascades and Sierra Nevada Mountains, California<sup>1</sup>, by ownership.

Ownership	Confirmed Pairs	Resident Singles <sup>2</sup>	Other Sites <sup>3</sup>	Total Sites
US Forest Service	713	308	174	1195
US BLM	3	0	0	3
National Parks	61	27	33	121
Sub-total Federal	777	335	207	1319
State	2	2	1	5
County	0	0	0	0
Municipal	0	0	0	0
Sub-total Other Govt.	2	2	1	5
Conservation Org.	0	0	0	0
Other Private	67	29	24	120
Sub-total Private	67	29	24	120
Totals	846	366	232	1444

<sup>1</sup> Owls and sites recorded 1987-1992 on all ownerships.

<sup>2</sup> Single owls found repeatedly at same site with no mate located.

<sup>3</sup> Other discrete sites where owls have been located without resolution of status.

recreation, and water development. Mean reproductive output by CSO from five National Forests ranged from 0.48 to 1.02 young per pair (Verner et al. 1992).

#### STATUS OF MANAGEMENT EFFORTS

Throughout the 1980's, concern for the spotted owl's biological status increased, along with political pressure supporting protection for the species. The evolution of protective strategies employed by land management agencies for the NSO and CSO was well described by Thomas et al. (1990) and Verner et al. (1992), respectively. Recent efforts to protect and manage the species at the ground level have been heavily influenced by political decisions and litigation.

#### NSO Management

In 1987, the environmental group Greenworld petitioned the USFWS to list the NSO as endangered. Following a status review, the USFWS declined to list the subspecies (Recce 1987). The U.S. District Court found this decision to be arbitrary and capricious and ordered the Service to review its decision [*Northern Spotted Owl v. Hodel*, No. C88-573Z, W.D. Wash. 1988]. A

Table 3. California spotted owl sites (*S. o. occidentalis*) in southern California and central Coast Ranges, California<sup>1</sup>, by ownership.

Ownership	Confirmed Pairs	Resident Singles <sup>2</sup>	Other Sites <sup>3</sup>	Total Sites
US Forest Service	228	67	10	305
US BLM	0	1	0	1
National Parks	0	0	0	0
Sub-total Federal	228	68	10	306
State	1	6	0	7
County	0	0	0	0
Municipal	0	0	0	0
Sub-total Other Govt.	1	6	0	7
Conservation Org.	0	0	0	0
Other Private	30	7	5	42
Sub-total Private	30	7	5	42
Totals	259	81	15	355

<sup>1</sup> Owls and sites recorded 1987-1992 on all ownerships.

<sup>2</sup> Single owls found repeatedly at same site with no mate located.

<sup>3</sup> Other discrete sites where owls have been located without resolution of status.

subsequent investigation by the General Accounting Office determined that USFWS management officials had altered the scientific evidence and improperly used non-biological factors in the decision not to list (Anon. 1989). As a result, protection under ESA was delayed for several years.

In June, 1989, the USFWS proposed to list the NSO as threatened (Lamson 1989). In October, 1989, Congress directed the USFS, the USFWS, the U.S. Bureau of Land Management (BLM), and the National Park Service to prepare a strategy for conservation of the northern spotted owl. In response to that mandate, the agencies prepared the ISC's Conservation Strategy (Thomas et al. 1990) in April, 1990. This document stated that the existing USFS management system was "a prescription for extinction", and recommended a system of large reserves (Habitat Conservation Areas, or HCAs) located in a matrix of habitat suitable for dispersal.

In 1989, several large California timber companies began surveying their property for NSO. Their initial surveys found an unexpected number of owls in managed timber stands. Though these early results were greeted with some skepticism, the companies' continued work

eventually changed the wide-spread notion that the NSO was confined to old-growth timber throughout its range.

In June, 1990, the USFWS announced that the NSO would be listed as threatened (Turner 1990), and immediately limited authorization of take on public lands to areas outside of the HCAs described by the Conservation Strategy. The California Board of Forestry quickly implemented new regulations requiring that all private timber harvest plans be reviewed by the CDFG to ensure protection of nest sites and maintenance of over 1300 acres of foraging habitat surrounding each pair site, thus avoiding taking of NSO (Anon. 1990, 1991a). Since that time, the concepts embodied in the Conservation Strategy and the Board of Forestry rules, combined with a USFWS-endorsed survey protocol (Anon. 1992a), have formed the basis for ESA protection of NSO in California.

In October, 1990, the USFS announced that it would manage its lands in a manner "not inconsistent" with the ISC's Conservation Strategy (Evans 1990). In May, 1991, the U.S. District Court ruled that the USFS had violated the National Forest Management Act (NFMA) by adopting the Conservation Strategy without completing an Environmental Impact Statement (EIS) [*Seattle Audubon v. Evans*, No. C89-160WD, W.D. Wash. 1991]. This ruling included Judge Dwyer's remarkable statement that "The most recent violation of NFMA exemplifies a deliberate and systematic refusal by the Forest Service and the Fish and Wildlife Service to comply with the laws protecting wildlife. This is not the doing of the scientists, foresters, rangers, and others at the working levels of these agencies. It reflects decisions made by higher authorities in the executive branch of government."

In late 1991, the USFWS determined that USFS's implementation of the Conservation Strategy complied with the Endangered Species Act (Plenert 1991), and in January, 1992, the USFS issued an EIS on the adoption of the Conservation Strategy (Anon. 1992b). But in July, 1992, Judge Dwyer found the EIS inadequate because it did not incorporate more recent demographic information on NSO and did not consider effects on other wildlife species [*Seattle Audubon v. Moseley*, No. C92-479WD, W.D. Wash., 1992]. As a result of Judge Dwyer's rulings, no timber has been sold in USFS NSO habitat inside or outside the HCAs since early 1991. All USFS NSO habitat remains under the protection of the judicial system pending development of an acceptable management strategy.

Section 4 of the Endangered Species Act specifies that the USFWS shall designate critical habitat for listed species. In February, 1991, the U.S. District Court found the USFWS in violation of this provision [*Northern Spotted Owl v. Lujan*, No. C88-573Z, W.D. Wash.

1991]. In January, 1992, critical habitat was designated on 2.8 million ha (6.9 million acres) of public land, of which 0.56 million ha (1.4 million acres) are in California (Turner 1992). Although early proposals included private lands, no private lands were included in the final designation. Most of the lands designated were within the HCAs proposed by the Conservation Strategy. Designation of critical habitat gives the USFWS considerable authority in the protection of those lands for the benefit of the subspecies. However, in December, 1992, the U.S. District Court found that the designation of critical habitat must be accompanied by analysis pursuant to the National Environmental Policy Act [*Douglas County v. Lujan*, No. 91-6423-HO, D. Oregon], casting doubt on the standing of designated critical habitat. This case remains unresolved.

Section 10 of the Endangered Species Act directs the USFWS to issue take permits to private individuals and state and local governments when listed species will be taken incidentally to otherwise legal actions, when that taking will not appreciably reduce the likelihood of the survival and recovery of the species. To receive such a permit, the applicant must prepare a conservation plan (the so-called "HCP" or habitat conservation plan). Following the listing of the NSO, the California Board of Forestry directed the California Department of Forestry and Fire Protection (CDF) to prepare an HCP that would cover all private timber harvest permitted by the Board. This HCP is the largest ever attempted, covering over 4 million ha (10 million acres) of private lands owned by over 30,000 owners. In June, 1993, a review draft (Anon. 1993) was submitted to the Board by the Steering Committee (comprised of representatives of various Federal, State, and County agencies, as well as environmental and industry groups). Despite significant progress, substantial issues remain to be resolved by the Board, most notably the funding mechanism. The draft plan incorporates a strategy based on the concepts of the ISC Conservation Strategy. If accepted by the USFWS, the plan would diminish harvest restrictions on a large portion of the landscape, and also would allow some timber management inside the reserve areas.

In September, 1992, the Simpson Timber Company completed the first HCP for the NSO and received an incidental take permit covering activities on their 383,000-acre property in the north coastal region of California (O'Dell et al. 1992). This plan is described elsewhere in these proceedings.

Two other large California timber companies, Sierra Pacific Industries and Pacific Lumber Company, have submitted timber management plans to the USFWS that are based on their stated intention to completely avoid take of NSO during timber harvest activities (Nelson et



the CSO will require active research and management; whether agencies will be able to respond to these challenges remains to be seen.

#### ACKNOWLEDGEMENTS

We gratefully acknowledge constructive comments on the manuscript by Martin Berbach, Lowell Diller, Colleen Pelles, and Brad Valentine.

#### LITERATURE CITED

- Anon. 1989. Endangered species: spotted owl petition evaluation beset by problems. U.S. Gen. Acct. Off. Feb. 21, 1989. RCED 89-79. Washington, D.C.
- Anon. 1990. Emergency provisions adopted in Calif. Forest Practice Rules at 14 CCR §895.1, 898.2, 919.6, 919.9, 919.10, 939.6, 939.9, and 939.10. July 11, 1990. Calif. Dep. For. Fire Prot. Sacramento, Calif.
- Anon. 1991a. Provisions adopted in Calif. Forest Practice Rules at 14 CCR §895.1, 898.2, 919.6, 919.9, 919.10, 939.6, 939.9, and 939.10. January 8, 1991. Cal. Dep. For. Fire Prot. Sacramento, Calif.
- Anon. 1992a. Protocol for surveying proposed management activities that may impact northern spotted owls. U.S. Dep. Int., Fish Wildl. Serv. Mar. 17, 1992. Portland, Ore.
- Anon. 1992b. Final environmental impact statement on management of the northern spotted owl on the National Forests. 2 volumes. U.S. Dep. Ag., For. Serv. Portland, Ore.
- Anon. 1992c. The Pacific Lumber Company spotted owl management plan. Unpub. Rep. submitted to the USFWS. Pacific Lumber Co. Scotia, CA. 30pp.
- Anon. 1993a. Northern spotted owl habitat conservation plan for private forestlands in California. Unpub. draft rep. Calif. Dep. For. Fire Prot. Sacramento, Calif. 51pp. plus app.
- Anon. 1993b. Draft supplemental environmental impact statement on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. July 1993. U.S. Dep. Agric., For. Serv., and U.S. Dep. Int., Bur. Land Manage.
- Benjamin, R. O. 1993. Decision notice and finding of no significant impact for the California spotted owl interim guidelines environmental assessment. U.S. Dep. Agric., For. Serv. 58 Federal Register 5353.
- Evans, J.L. 1990. Northern spotted owl management. U.S. Dep. Agric., For. Serv. 55 Federal Register 40412.
- Forsman, E. D., K. Maurice, I. Otto, R. Lowell, M. Nixon, R. Forson, and J. Zisa. 1992. Demography of spotted owls on the Olympic Peninsula, Washington. USFS For. Sci. Lab., Olympia, Wash. Paper presented to Spotted Owl Symp., Ann. Mtg. Cooper Ornith. Soc. June 24, 1992. Seattle, Wash.
- Franklin, A. B., J. A. Blakesley, and R. J. Gutierrez. 1990. Population ecology of the northern spotted owl (*Strix occidentalis caurina*) in northwestern California: preliminary results, 1989. Calif. Dep. Fish Game Nongame Bird Mamm. Tech. Rep. 1990-9. Sacramento, Calif. 35 pp.
- \_\_\_\_\_, J. P. Ward, R. J. Gutierrez, and B. R. Noon. 1992. Demography of spotted owls in northwestern California. Dep. Wildl., Humboldt St. Univ., Arcata, Calif. Paper presented to Spotted Owl Symp., Ann. Mtg. Cooper Ornith. Soc. June 24, 1992. Seattle, Wash.
- Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna No. 27. Cooper Ornith. Club. Berkeley, Calif. Reprint, Artemisia Press. Lee Vining, Calif. 1986.
- Lamson, S. R. 1989. Proposed threatened status for the northern spotted owl; proposed rule. U.S. Dep. Int., Fish Wildl. Serv. 54 Federal Register 26666.
- Lujan, Manuel, Jr. 1992. Decision. Endangered Species Committee. 57 Federal Register 23405.
- \_\_\_\_\_, J. H. Beuter, E. Cassidy, J.M. Hayden, D.C. O'Neal, and J. E. Schrote. 1992a. Draft preservation plan for the northern spotted owl. U.S. Department of Interior. Washington, D.C.: U.S. Govt. Printing Off. 44pp. plus app.
- \_\_\_\_\_, D.R. Knowles, J. Turner, and M. Plenert. 1992b. Final draft recovery plan for the northern spotted owl. U.S. Dep. Int. Washington, D.C.: U.S. Govt. Printing Off. 662pp.
- Miller, G. S., S. Destafano, M. T. Brown, K. Swindle, and E. C. Meslow. 1992. Demography of spotted owls in the central Cascades, Oregon. U.S. Fish Wildl. Serv., Portland, Ore. Paper presented to Spotted Owl Symp., Ann. Mtg. Cooper Ornith. Soc. June 24, 1992. Seattle, Wash.
- Nelson, T.C., E.C. Murphy, and S. Self. 1991. Spotted owl management plan. Unpub. rep. Sierra Pacific Industries. Redding, CA. 30pp plus 11 App.
- O'Dell, T.E., L.V. Diller, C.J. Hibbard, L.B. Folliard, D. Opalach, W.R. Huston, G. Warinner, J.K. Carr, and P.S. Fromer. 1992. Habitat conservation plan for the northern spotted owl on the California timberlands of the Simpson Timber Company. Unpub. rep. Simpson Timber Co. Arcata, CA. 229pp. plus 5 app.
- Plenert, M. 1991. Biological opinion on USFS preferred alternative of draft environmental impact statement on management of the northern spotted owl on the

- National Forests. Case No. 1-7-91-F-501, Dec. 18, 1991. U.S. Fish and Wildlife Service. Portland, Ore. 12 pp.
- Recce, S. 1987. Finding on northern spotted owl petition. U.S. Dep. Int., Fish Wildl. Serv. 52 Federal Register 48552.
- Reid, J. A., E. D. Forsman, and J. B. Lint. 1992. Demography of spotted owls in west central Oregon. USFS Pac. NW Res. Sta., Roseburg, Ore. Paper presented to Spotted Owl Symp., Ann. Mtg. Cooper Ornith. Soc. June 24, 1992. Seattle, Wash.
- Thomas, J. W., E. D. Forsman, J. B. Lint, E. C. Meslow, B. R. Noon, and J. Verner. 1990. A conservation strategy for the northern spotted owl. Washington, D.C.: U.S. Govt. Printing Off. 427pp.
- Turner, J. F. 1990. Determination of threatened status for the northern spotted owl; final rule. U.S. Dep. Int., Fish Wildl. Serv. 55 Federal Register 26114.
- \_\_\_\_\_. 1992. Determination of critical habitat for the northern spotted owl; final rule. U.S. Dep. Int., Fish Wildl. Serv. 57 Federal Register 1796.
- \_\_\_\_\_. 1993. Final rule to list the Mexican spotted owl as a threatened species. U.S. Dep. Int., Fish Wildl. Serv. 58 Federal Register 14248.
- Verner, J., K. S. McKelvey, B. R. Noon, R. J. Gutierrez, G. I. Gould, Jr., and T. W. Beck. 1992. The California spotted owl; a technical assessment of its current status. Gen. Tech. Rep. PSW-GTR-133. Pac. SW Res. Sta., U.S. For. Serv., Albany, Calif. 285pp.
- Wagner, F. F., E. C. Meslow, G. M. Bennett, and S. Small. 1992. Demography of spotted owls in the southern Cascades and Siskiyou Mtns., Oregon. Ore. Coop. Wildl. Res. Unit, Ore. St. Univ., Corvallis, Ore. Paper presented to Spotted Owl Symp., Ann. Mtg. Cooper Ornith. Soc. June 24, 1992. Seattle, Wash.
- Zabel, C. J., H. F. Sakai, and J. R. Waters. 1992. Associations between prey abundance, forest structure, and habitat use patterns of spotted owls in California. USFS, Pac. SW For. Range Exp. Sta., Arcata, Calif. Paper presented to Spotted Owl Symp., Ann. Mtg. Raptor Res. Found. Nov. 12, 1992. Seattle, Wash. 1992.