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California Department of Fish and Game
Job Progress Report

Project Number: W-65-R-3 Project Title: Nongame Wildlife Investigations

Job Number: II-3 Job Title: Owl Nest Territory Monitoring Program

Period Covered: July 1, 1985 - June 30, 1986

Summary:

During the 1985-86 fiscal year 105 new Spotted Owl territories were reported to the Department and entered into files which now contain records of 1,488 territories in 41 counties. These new territories fill out parts of the known range. Re-checks of 268 different territories were reported. Some, in north-coastal California, were combined with other territories according to information supplied by field workers. The annual listing of Spotted Owl territories was distributed again and reflected the changes due to combining territories.

The Department was involved in two contracts for field work on Spotted Owls. Both studies are investigating the density, composition, turnover, and occupancy rates of local Spotted Owl populations. Now in its second year, one study is being conducted on a 108 square mile study area in eastern Humboldt County. Twenty-eight pairs and seven single Spotted Owls were found. Ninety-five and one-half percent (21) of 22 banded adult and subadults survived from 1984 to 1985. An area-wide, reproductive rate averaged 0.55 young fledged per female despite fledged young being produced by only 37% of the pairs checked over the last three seasons. The second study, on a 124 square mile study area in southern Placer County, is still in its first year and data won't be available until the next report period.

The Nongame Wildlife Section has become very involved with the U.S. Forest Service's land management planning effort as it affects Spotted Owls. Despite strong reservations about Forest Service guidelines, individual forest implementation of the guidelines and the consistency of implementation from forest to forest was monitored. Plans to maintain Spotted Owls on all 11 northwestern and Sierra Nevada forests were reviewed by the Department and in conjunction with the Region 5 office, U.S. Forest Service, problems were identified, and a report on guideline compliance was written.

The draft land management plans/environment impact statements prepared by eight national forests were reviewed as to how they pertain to Spotted Owls and comments were prepared. Meetings and workshops concerning Spotted Owl management, conflicts with timber harvesting, demographic parameters, and future old-growth forest research were attended.

Testimony on the current and future status of Spotted Owls in California was presented to a special panel convened by the National Audubon Society to determine the current situation throughout the range of the Spotted Owl and to determine the best management strategies for its conservation. In the testimony, it was estimated that Spotted Owls now occupy about 2,100 sites in California, that about 80% of these contain pairs, that about 88% occur on national forest lands, and that in 50 years these owls will probably exist at only about 850 sites. This same basic paper also was presented to the annual Raptor Research Foundation Symposium, a regional conference of the National Audubon Society, and to the California State Board of Forestry.

One new Barred Owl site was found, the first in Siskiyou County and the fourth general location in California.

A Memorandum of Understanding was prepared with the National Park Service for the study of Great Gray Owls in Yosemite National Park. No results from the first year of this study are available yet.

The Department did not support any monitoring of Elf Owls this fiscal year.

Background:

The understudied nature of owls in California was best demonstrated at the 1979 National Audubon Symposium "Owls of the West" and in the Department's "Bird Species of Special Concern in California." At the symposium the only recent studies of owls in California consisted of single studies each on Barn Owls, Burrowing Owls, Flammulated Owls, and Elf Owls and a small number of studies on Spotted Owls. The purpose of the Department's special concern list was to draw attention to those species whose status was unknown and whose populations may be in trouble. Of the 14 species of owls found in California, 6 species are on this list. Additionally, two species, the Elf Owl and the Great Gray Owl, are listed as Endangered by the state; of the eight remaining species, one is an irregular winter visitor, one a recent colonizer, the status of three is virtually unknown, and the status of another in part of the state is in doubt. Since 1979 the only research on owls in California has been on the two Endangered species and the politically and economically important Spotted Owl and its ecological rival, the Barred Owl. The survival of the first three species is closely associated with the preservation of old-growth and mature forest habitats.

Because of the concern for the future of Spotted, Great Gray, and Elf owls, monitoring of the breeding territories of these species and the Barred Owl is to be done on an annual basis after baseline studies have established the species' general range and abundance. This has been done for the Spotted Owl since 1974 and sporadically for the Elf, Great Gray, and Barred owls. In the future the status of other species, whose current status is unknown, will be monitored if necessary in this job.

Objectives:

1. Monitor selected Spotted Owl, Barred Owl, Great Gray Owl, and Elf Owl nest territories for occupancy and determine status of breeding populations.
2. Determine the status of all species of owls on the list of bird species of special concern.

Procedures:

The vast majority of the reports of new and re-checked Spotted Owl territories come from U.S. Forest Service personnel. Additional sightings are made by field ornithologists and Department personnel. All sighting reports obtained are checked for validity and catalogued by species. Histories of each territory are maintained on the date and location of the observation, number of owls observed and the name of the observer. Updated lists of Spotted Owl sightings have been provided to agency wildlife and land managers for management purposes on an annual basis. Information on the status of Great Gray Owls is compiled by Jon Winter, a field ornithologist who has studied Great Gray Owls for the Department, U.S. Forest Service and National Park Service. Reports for Great Gray and Elf Owls are filed and histories of each pair are kept.

All sighting reports are maintained in the Section's data base files. Data are maintained on sighting locations and productivity for the four species being monitored. The data on Spotted Owls also describe habitat, land ownership, and extensive information on land management activities at each territory. Additionally, sighting files for Great Gray Owls and Elf Owls are maintained by the Department's California Natural Diversity Data Base (CNDDB) in the Planning Branch. These files are accessed by the Department, other agencies and private companies involved in the environmental impact report and review process.

Results:

SPOTTED OWL

Surveys:

On July 1, 1986 we were aware of 1,488 Spotted Owl territories verified by either the Department or the U.S. Forest Service (Table 1). Of these, 788 are in the range of the Northern Spotted Owl (Strix occidentalis caurina), 586 are in the Sierra Nevada portion of the range of the California Spotted Owl (S. o. occidentalis), and 114 are in the south coastal portion of the range of the California Spotted Owl.

During the 1985-86 year reports of 105 new Spotted Owl territories were accessed into Department files. Fifty-seven of these were found during the 1985-86 year and 50 were found in previous years and not reported until this report period. These new territories were reported from 18 of the 41 counties where Spotted Owls had been found previously. Of the 105 new territories, 78

came from U.S. Forest Service sources, 19 from contract field ornithologists, 2 from other ornithologists and six from Department employees.

The 105 territories first recorded in 1985-86 do not represent a gain of 105 territories from the 1,394 territories reported by mid-1985. Continued work with forest biologists has led to some consolidation of sightings previously reported as separate pairs. This correction process provides for a better understanding of the local distribution of Spotted Owls but results in eliminating some territories each year. The current listing (Table 2) should be consulted as the standard for this year. Ed. note: Table 2 removed; contact Department for more information.

The newly reported territories filled in the distribution within the already known range of Spotted Owls, particularly in Fresno, Humboldt, Plumas, Siskiyou, Trinity, and Tulare counties.

During the report period, new sighting observations or updates through new information or territory consolidation were made at 286 territories in 23 counties. Over 60% of the updates came from four counties, Humboldt, Siskiyou, Tuolumne and Tulare. Once again biologists from the U.S. Forest Service are responsible for most of the updates with contract and Department biologists making most of the remaining updating reports.

During the report period staff biologists surveyed for Spotted Owls on the Shasta-Trinity, Eldorado, Sierra and Sequoia National Forests. Surveys were aimed at verifying the occupancy of the Spotted Owl Management Areas (SOMAs) set aside by each national forest. Six SOMAs were checked on the Shasta-Trinity National Forest in the Mt. Shasta-McCloud area but owls were only found at one site which was not designated as a SOMA. Owls were found at two SOMAs on the Eldorado National Forest but not at three other sites where owls were found previously. On the Sequoia National Forest, five of eight SOMAs checked still had owls as did six of 12 sites which were known previously. Additionally, six new sites were found, including the first documentation (three territories) on Cannell Meadows Ranger District. Both SOMAs checked on the Sierra National Forest were occupied as was one of three other sites where Spotted Owls had been found previously.

In addition to the survey work conducted, ten U.S. Forest Service and Department employees were trained by staff in the methods to locate and identify Spotted Owls.

Department Research:

The Department has two similar contracts with Dr. Ralph Gutierrez of Humboldt State University for research on Spotted Owls. For the second year Alan Franklin and Pat Ward are monitoring the breeding rate of a specified population of Spotted Owls in a designated study area, and determining the density of the study area population, their site fidelity and their rates of mortality, and territory abandonment and re-occupation. The study is based on a 108 square mile area on the Six Rivers National Forest and contains 35 territories of pairs or single individuals. A major effort has been made to capture and band

all adults and as many young as possible in the study area each year and to continue the study for a minimum of five seasons. The results from the 1985 season are contained in the following, appended report:

Franklin, A., Ward, J. P. and R. J. Gutierrez. 1986. Population Ecology of the Northern Spotted Owl (Strix occidentalis caurina) in Northwestern California: Preliminary Results, 1985. Calif. Dept. of Fish and Game, Nongame Wildlife Invest., Job Progress Report, Project W-65-R-3 (554), Job II-3. 37 pp. + appen.

A report on the 1986 field work is not due until the middle of FY 1986-87 and will be included in the progress report for the next report period.

The second contract is for a study of similar biological parameters of the California Spotted Owl on a 124 square mile study on the Eldorado National Forest, Placer County. This study of Spotted Owls in the Sierra Nevada portion of their range is being conducted by Michael Bias and Ben Murphy and is in its first year. The progress report on the 1986 field work also will not be available until the next report period.

A Memorandum of Understanding was written with Dr. Richard Golightly of Humboldt State University to study the relationship between temperature and metabolic rate in Spotted Owls. This study is under way and a report on its findings isn't due until the end of 1986 and will be included in the report for the next report period.

Previous research studies on Spotted Owls conducted by Stephen Laymon, in the Sierra Nevada, and William LaHaye, in northwestern California, are completed. Both are preparing dissertations which should be finished during the next report period.

U.S. Forest Service Guideline Compliance:

In FY 1984-85, we realized that the guidelines for the preservation of a viable population of Spotted Owls, provided by the Region 5 Office, U.S. Forest Service, to the individual forests, didn't encompass all of our concerns. Furthermore, many concerns couldn't be addressed with current information. Also, the Land Management Plan process for Region 5 was at various stages depending on the situation on each forest. Therefore, some forests were moving forward in preserving Spotted Owls according to the guidelines and some forests were just beginning the process to implement the guidelines.

After discussions with the Wildlife Staff of the Region 5 Office, we decided to work toward long-term research to resolve deficiencies in the guidelines. In the short-term we are concentrating on improving the implementation of plans to preserve Spotted Owls at the forest level and assuring compliance with the Regional guidelines. With the assistance of the Region 5 Office, we reviewed Spotted Owl plans on eight of the 11 northern California and Sierra Nevada national forests.

In reviewing the Spotted Owl plans for each forest, we attempted to answer the following questions:

1. Is a Spotted Owl matrix established?
2. Does the matrix spacing follow the guidelines?
3. Is occupancy of matrix territories verified and what does verification mean?
4. Are matrix territories occupied by known breeding pairs?
5. Do matrix territories contain 1000 ac. of suitable habitat?
6. Is the core area known and how is it known and designated?
7. Does the core area contain 300 ac of contiguous habitat?
8. Are other matrix territory habitat quantities and qualities met?
9. What timber strata meet matrix territory guidelines?
10. Does the Spotted Owl have first priority in matrix territories?
11. Are matrix territory plans being written?
12. Have exceptions to the regional guidelines been documented?
13. Are additional acreages in the management prescriptions for each matrix territory identified?

This initial review showed considerable variation existed in the consistency of interpretation and compliance with the regional guidelines from forest to forest. In fact, some inconsistencies were rather large. This caused the Region 5 Office, U.S. Forest Service, to initiate an internal review to answer similar questions, to determine what in the land management process was causing the inconsistencies, and to assess if those inconsistencies invalidated the guidelines. Staff participated on the review board which produced the following report:

Woltering, S. E., M. Smith, J. Mattison, and G. I. Gould, Jr. 1986.
Region 5 Spotted Owl Review of the Plumas, San Bernardino, Sequoia, Shasta-Trinity, Sierra, and Tahoe National Forests. Unpubl. report.
Region 5, U.S. Forest Service, San Francisco, CA. 20 pp.

As a result of this interest by both the Department and the Region 5 Office, U.S. Forest Service, individual forest motivation to implement Spotted Owl management has increased. However, variation in compliance with the regional guidelines still exists (Table 3).

U.S. Forest Service Land Management Plan Review:

During the report period staff reviewed the draft LMPs for the Toiyabe, Mendocino, Sierra, Stanislaus, Sequoia, Tahoe, Plumas and Lassen National Forests. Once again the treatment of Spotted Owls varied in these plans. Universally, all plans did not adequately reflect compliance with the regional guidelines.

U.S. Forest Service Coordination:

Because of the importance of U.S. Forest Service lands in supporting Spotted Owls, a number of regional and west coast-wide Forest Service meetings and workshops were attended. These included meetings on: 1) Spotted Owl management with the Department and Forest Service representatives from Washington, D.C., the Region 5 and 6 regional offices, and the Klamath National Forest; 2) with C. J. Ralph, Director of the Redwood Services Laboratory, Pacific Southwest Forest and Range Experimental Station on the future direction of old-growth forest research in both Regions 5 and 6; 3) with Fred Samson and Bruce Marcot, Region 6, U.S. Forest Service, to establish guidelines for measuring, reporting, and interpreting demographic parameters in Spotted Owl populations; and 4) with Zane Smith, Regional Forester, Region 5, U.S. Forest Service, to discuss the resolution of certain timber sale/Spotted Owl management area conflicts in Region 5.

Spotted Owl Status Reports:

A paper on Spotted Owls was prepared and presented at the 1985 Raptor Research Foundation Symposium. The title citation and abstract follow:

Current and future distribution and abundance of Spotted Owls in California.

GORDON I. GOULD, JR. (California Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814. Phone: 916-322-1263).

Currently I know of 1,456 different locations in 41 counties in California which have been occupied by Spotted Owls over the last 12 years. By evaluating the past survey coverage, I estimate that Spotted Owls now occupy 2,100 sites in the state. About 88% of the known sites are on National Forest lands, and about 80% are occupied by a pair of owls. The major land use of Spotted Owl habitat on both public and private lands is the production of saw-timber, an activity which eliminates owl habitat and is expected to continue reducing habitat over the next 50 years. National Forest personnel are now writing and implementing land-use plans to preserve 29-100% (depending on the forest) of the known sites on their lands. Currently no state policy exists to preserve any sites on private forested lands. As a result of habitat loss, 1,200 sites are expected to be occupied 25 years from now; in 50 years Spotted Owls probably will exist at only 850 sites. Whether this population of Spotted Owls is large enough to maintain the species in California is now only a matter of speculation.

This paper formed the basis for three successive presentations. Two of these were oral presentations given before the California Board of Forestry and to the 1986 Western Regional Conference of the National Audubon Society.

The third presentation was testimony offered in front of a panel of scientists jointly appointed by the American Ornithologists Union, the Cooper Ornithological Society and the National Audubon Society. This panel's charge was to: 1) assess the current status of Spotted Owls; 2) specify priorities for future research; and 3) identify management strategies that would assure maintenance of viable Spotted Owl populations over the long-term. The following, appended report is a written summary of the testimony presented:

Gould, G. I., Jr. 1985. The Spotted Owl in California. Calif. Dept. of Fish and Game, Nongame Wildl. Invest., Job Progress Report, Project W-65-R-3 (554), Job II-3. 15 pp.

Miscellaneous Tasks:

During the report period assistance was provided to other biologists. There were three jobs which should be noted. "The Spotted Owl", a manuscript designed to appear in the National Audubon Society's '1986 Audubon Wildlife Report', was reviewed for the authors E. Charles Meslow and Eric Forsman. Likewise, two study proposals to verify the occupancy and breeding of Spotted Owls on the SOMAs on the Shasta-Trinity National Forest were reviewed. Finally, assistance was provided to the Division of Water Rights, California State Water Resources Control Board, to assess the validity of a negative declaration for a small hydroelectric project planned for an area where there is a known Spotted Owl territory.

BARRED OWL

In May, 1986, a single Barred Owl was found and reported from Siskiyou County. This is the first location record for Siskiyou County. It has been reported from three other general areas in neighboring Del Norte, Humboldt and Trinity counties.

GREAT GRAY OWL

During the 1986 breeding season Jon Winter was contracted by the National Park Service to study Great Gray Owls in Yosemite National Park. The study will look at daily and annual activity and movement patterns and at potential, human caused disturbances. A Memorandum of Understanding was entered into with the National Park Service. We haven't received the first progress report yet.

ELF OWL

No field work monitoring the status of Elf Owls was performed by the Department during the 1986 breeding season nor were any reports of Elf Owls received from cooperating biologists.

Analysis:

It appears that the Region 5 Office, U.S. Forest Service is as anxious as we are to see that Spotted Owl management is implemented on the 11 northern, timber-harvesting forests before the actual acceptance and implementation of formal Land Management Plans. This willingness already has resulted in greater cooperation with the Department in assessing the degree of implementation of Spotted Owl management on each forest and the consistency with which the regional guidelines are being applied. With the continued involvement of the Regional Office, there will be greater ability to coordinate a more complete and uniform implementation of the guidelines and remove many of the inconsistencies inherent in multiple interpretations of the same document.

Because of the possible deficiencies in the guidelines, future research on Spotted Owls should be directed to correcting these deficiencies. The major need is to assess the species' population dynamics. This implies long-term studies because Spotted Owls appear to be long-lived and inconsistent breeders. The contract studies with Humboldt State University on the Six Rivers and Eldorado National Forests are this type of study. However, our funding is on a year to year basis so our ability to fund these as long-term studies can't be guaranteed.


Because of the current legal and political interest in the Northern Spotted Owl in Oregon and Washington, and the similar problem of conflicts with timber harvest faced by the California Spotted Owl in the Sierra Nevada, almost all agency effort in research and management is being spent on these two populations. The southern California populations of the California Spotted Owl has the lowest known number of territories, by a considerable amount, of the three populations in the state. Also, U.S. Forest Service policy indicates that all known territories will be preserved. However, complete surveys of the species' range or evaluation of the distribution of suitable habitat in southern California hasn't been done. This means that all sites probably are not being maintained and the importance of each individual territory can't be assessed until the area-wide status is better known.

Recommendations:


1. Continue our involvement in the U.S. Forest Service's region-wide land management planning process involving Spotted Owls, particularly with the Land Management Plans and Spotted Owl Plans on each forest, and with the development of SOMA management plans.
2. Continue to work with the Region 5 Office, U.S. Forest Service, to evaluate the compliance of individual forests with the Regional guidelines for Spotted Owl management.

3. Conduct long-term research to determine normal breeding and mortality rates of Spotted Owls, the effects of timber harvest and habitat quality on those rates, and the factors which cause variations in the rates.
4. Determine the degree of genetic variation between and among the three geographically separate populations of Spotted Owls in California.
5. Write a Spotted Owl Management Plan which summarizes the known information on the species and recommend management guidelines which could be used instead of current guidelines. The document also should contain a statement of policy regarding Spotted Owls and the maintenance of old-growth forest habitat.
6. Establish a monitoring program and schedule for Elf, Great Gray, Spotted and Barred Owl populations as part of a management scheme for owls in California.
7. Survey additional areas of suitable habitat for all four species of owls and encourage the U.S. Forest Service to complete basic inventories for Spotted and Great Gray Owls on all forests in California.
8. Preserve the Elf Owl population north of Needles, San Bernardino County, through direct land purchase.
9. Increase Department involvement and expertise in the management of owls through Department conducted surveys and research.


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Date:



October 6, 1986

Table 1. Known distribution of Spotted Owls in California, July 1, 1986.

County	Present Number of Known Territories	Number of Northern Spotted Owl Territories	Number of California Spotted Owl Territories	
			Sierra Nevada	South Coast
Alpine	4		4	
Amador	6		6	
Butte	21		21	
Calaveras	17		17	
Colusa	3	3		
Del Norte	44	44		
El Dorado	79		79	
Fresno	41		41	
Glenn	14	14		
Humboldt	142	142		
Kern	19		16	3
Lake	18	18		
Lassen	11		11	
Los Angeles	13			13
Madera	28		28	
Marin	20	20		
Mariposa	31		31	
Mendocino	41	41		
Modoc	1	1		
Mono	1		1	
Monterey	10			10
Napa	4	4		
Nevada	13		13	
Orange	2			2
Placer	44		44	
Plumas	92		92	
Riverside	4			4
San Bernardino	29			29
San Diego	21			21
San Luis Obispo	9			9
Santa Barbara	17			17
Shasta	43	27	16	
Sierra	28		28	
Siskiyou	256	256		
Sonoma	5	5		
Tehama	54	43	11	
Trinity	171	171		
Tulare	51		51	
Tuolumne	67		67	
Ventura	6			6
Yuba	8		8	
TOTALS	1488	789	585	114

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