Humboldt Redwood™

Northern Spotted Owl Annual Report

2013

February 1, 2014

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FIFTEENTH ANNUAL REPORT

Submitted to the United States Fish and Wildlife Service, the California Department of Fish and Wildlife, the NOAA Fisheries, and the California Department of Forestry and Fire Protection

By

Humboldt Redwood Company, LLC

To fulfill the requirements of the Habitat Conservation Plan, 6.2, Northern Spotted Owl Conservation Plan

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Reviewed:

Director, Forest Science

Original signed by:

Mike Miles

Project Managers/ Primary Authors

Brad S. Mauney

Brad Mauney

Sal Chinnici

Project Description

Title: Northern Spotted Owl Annual Report 2013

Purpose: Northern spotted owl HCP monitoring

Date Initiated: March 1999

Projected End Date: Ongoing

Manager: Sal Chinnici, Forest Science Manager, and Brad Mauney, Lead Wildlife Biologist

Report Summary:

During the 2013 northern spotted owl survey season a total of 808 calling stations were used to conduct nighttime surveys of the sample quadrats and Timber Harvesting Plan surveys. A total of 914 daytime status and follow-up visits were conducted. All core sites and all activity sites within the sample quadrats were visited to determine occupancy, reproductive status, and reproductive success (if applicable).

Management objective 1 of the HCP, which requires the maintenance of a minimum of 108 activity sites in the HCP area, was met in 2013 with 208 total activity sites including the 108 core sites. Management objective 2, which calls for maintenance of spotted owl pairs on a five-year running average of 80% at core activity sites, was met in 2013 with a running average of 81%. The pair occupancy rate for 2013 was also 81% (87 of the 108 cores sites were occupied by a pair of spotted owls). Management objective 3 requires the maintenance of a five-year running average reproductive rate of at least 0.61 fledged young per pair for the core sites (for those pairs monitored to determine reproductive output). Nesting activity was verified for 18 of the 87 pairs (of the 108 core sites), and a total of 24 young were fledged, resulting in a reproductive rate of 0.28 in 2013. The five-year running average of the reproductive rate for the fifteenth year of the HCP is 0.52, below the requirements of management objective 3.

HRC continues to have concerns about various threats to our spotted owl population, represented primarily by barred owls. The continuing invasion of barred owls has the potential to reduce or eliminate the HRC spotted owl population regardless of other effects. We currently recommend

continuing the same monitoring strategies for the 2014 season, and to discuss potential barred owl management strategies with the Wildlife Agencies.

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PROJECT REPORT DISTRIBUTION LIST

Ms. Susan Sniado
California Department of Fish & Wildlife
Northern California - North Coast Region
610 2nd Street
Eureka, CA 95501

Mr. James Bond
U.S. Fish and Wildlife Service
Arcata Fish and Wildlife Office
1655 Heindon Rd.
Arcata, CA 95521

Dr. Alan Franklin
USDA/APHIS
National Wildlife Research Center
4101 LaPorte Ave
Fort Collins, CO 80521-2154

Dr. Barry Noon
Colorado State University
Department of Fisheries & Wildlife Biology
Fort Collins, CO 80523

Dr. Steven Courtney
WEST, Inc.
830 S. Lincoln St.
Arlington, VA 22204

Mr. Matt Goldsworthy
NOAA Fisheries
1655 Heindon Road
Arcata, 95521

Ms. Leslie Markham
Cal Fire
135 Ridgeway Avenue
Santa Rosa, 95401

EXECUTIVE SUMMARY

The year 2013 was the fifteenth year of surveys and monitoring under the Northern Spotted Owl Conservation Plan (Habitat Conservation Plan or HCP §6.2) of the former Pacific Lumber Company (PALCO), now Humboldt Redwood Company (HRC) HCP. The intent of this report is to briefly summarize the methods, results, and management objectives of this conservation plan. As with previous reports, relevant appendices have been copied to a CD along with this report.

During the 2013 survey season we continued to rely upon the changes in survey methods resulting from the HCP minor modifications of 2002. Monitoring surveys were accomplished using 476 calling stations to cover all potential spotted owl habitat within the 2013 sample quadrats. Overall, a total of 808 calling stations were used to conduct nighttime surveys of the quadrats and Timber Harvesting Plan (THP) surveys. Follow-up visits were conducted to the locale of night contacts to determine the status and location of the owls contacted. A total of 912 daytime status and follow-up visits were conducted. All core sites, and all activity sites within the sample quadrats, were visited to determine occupancy, reproductive status, and reproductive success (if applicable).

Management objective 1 of the HCP requires the maintenance of a minimum of 108 activity sites[1] in the HCP area over the life of the permit. There were 208 total activity sites in 2013, including the 108 core sites. Therefore management objective 1 was met in 2013. Management objective 2 calls for maintenance of spotted owl pairs on a five-year running average of 80% of the core activity sites in the HCP area. In 2013, 87 of the 108 cores sites were occupied by a pair of spotted owls, for a pair occupancy rate of 81% (0.806).The five-year running average for the occupancy rate by pairs is now 81% (0.814). Management objective 3 requires the maintenance of a five-year running average reproductive rate of at least 0.61 fledged young per pair for the core sites (for those pairs monitored to determine reproductive output). During the 2013 breeding season, 87 pairs (of the 108 core sites) were monitored for nesting activity and reproductive output. Nesting activity was verified for 18 of the 87 pairs. A total of 24 young were fledged, resulting in a reproductive rate of 0.28. The five-year running average of the reproductive rate

[1] **Activity site** (or activity center) is the area surrounding and including the nest tree or primary roost tree of a pair of spotted owls or single spotted owl, and where they are consistently located.

for the fifteenth year of the HCP was 0.52; therefore it does not meet the requirements of management objective 3.

HRC continues to have concerns about various threats to our spotted owl population, represented primarily by barred owls, but also including West Nile Virus, potential poisoning threats from illegal marijuana grows, and sudden oak death. Individually or in concert these stressors have the potential to reduce or eliminate the HRC spotted owl population or habitat regardless of HCP effects. At present, the actual effect of these threats on our population is unknown. We currently recommend continuing the same monitoring strategies for the 2014 season, and to discuss potential barred owl management strategies with the Wildlife Agencies.

INTRODUCTION

The purpose of this Northern Spotted Owl (spotted owl or NSO) fifteenth Annual Report is to present the results of surveys and analyses of management objectives for the northern spotted owl (*Strix occidentalis caurina*) on lands of the Humboldt Redwood Company, LLC (HRC) covered by the HRC Habitat Conservation Plan (HCP), U.S. Fish and Wildlife Service (USFWS, the Service) Permit TE828950-0.

The reporting period is from 1 January 2013 to 1 January 2014, and covers surveys conducted from March to August 2013. The year 2013 was the fifteenth year of surveys and monitoring under the Northern Spotted Owl Conservation Plan (HCP §6.2). Regarding annual surveys, or censuses, HCP §6.2.2 # 2 states:

> *Monitoring data shall be provided annually to the NSOSRP (Northern Spotted Owl Scientific Review Panel), the USFWS, and CDFW (California Department of Fish and Wildlife, the Department).*

As stated in HCP §6.2, the overall conservation strategy for spotted owls is a habitat-based approach that includes the harvest, retention, and recruitment of habitat and essential habitat elements at both the landscape and activity site levels. The strategy also includes measures for disturbance minimization, population monitoring, and adaptive management techniques.

During the fifteenth year of HCP implementation, the northern spotted owl program continues to follow the "quadrat" sampling approach and minor modifications approved in 2002 to monitor the "core" owl sites for occupancy and reproduction.

These minor modifications approved in 2002 consisted of three primary components: 1) clarification that the HCP's spotted owl management objectives apply to the "core" (i.e., Level 1 and Level 2) owl sites, 2) modification of the census techniques to concentrate on sampling "quadrats" made up of watershed units on the covered lands, and 3) modification of survey methods for site preparation activities, recognizing that these activities are different in nature from timber harvesting relative to breeding season disturbance. These minor modifications to the HCP have been appended to previous reports, and are incorporated here by reference.

During a September 2003 meeting we also continued discussions with the USFWS and the CDFW regarding the evaluation for retention or removal of activity sites. These discussions eventually led to the development of a mutually agreed-upon survey methodology for removal of unoccupied sites from the list of activity sites.

In 2009 the Habitat Retention Area (HRA) strategy was fully implemented. The HRAs are intended to provide long-term nesting and roosting habitat around the *most productive* NSO activity centers. The USFWS, CDFW, and HRC reviewed habitat and other maps, aerial photography, and known NSO locations to identify HRAs for 80 Level 1 NSO activity centers. The HRAs were developed for activity centers that have a history of occupancy and reproduction. Because a proportion of these sites may be unoccupied in some years, the HRAs are intended to continue to provide nesting and roosting habitat during these unoccupied years given the reasonably likely event they will be reoccupied over time. If a Level 1 HRA is unoccupied, a replacement Level 1 activity center is selected from other available sites meeting required criteria. There are currently fifteen unoccupied HRAs; consequently we are currently maintaining 95 Level One sites.

This brief introduction of the 2013 spotted owl program is expanded below. In particular, this report discusses: 1) the study area and methods used in the assessment of spotted owls within that study area, 2) results of the survey efforts, 3) the meaning of the results both biologically

and with respect to the management objectives of the HCP, and 4) HRC's year 2014 action plan for the spotted owl conservation plan.

STUDY AREA AND METHODS

The HRC HCP covered lands currently encompass approximately 209,000 acres and are located in coastal Humboldt County in northern California (Map 1). The HCP area is characterized by mountainous terrain, a maritime climate, and dense coniferous forests, primarily dominated by the coast redwood (*Sequoia sempervirens*) and Douglas-fir (*Pseudotsuga menziesii*) forest-types.

In general, field survey methods for spotted owls are conducted following guidelines in the U.S. Fish and Wildlife Service protocol, "Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls" (USFWS 1992). During the 2011 survey season we began to incorporate changes proposed by the USFWS for northern spotted owl surveys in a revised protocol (2011 Northern Spotted Owl Survey Protocol, USFWS 2011a). For example, we used digitally recorded and amplified owl calls, and followed the typical 10 minutes of spotted owl calls with five minutes of barred owl (*Strix varia*) calls for a subset of surveys. Spotted owl and barred owl calls consisted of a mix of standard territorial calls (e.g. 4 and 5 note calls), contact hoots and whistles, and agitated calls digitally recorded and broadcast through Big Horn remote speakers using MP3 players, Wildlife Technologies MA-15 electronic callers, or Fox Pro "Fury" or "Firestorm" electronic callers.

For all survey methods, when a spotted owl response is evoked during the nighttime surveys, presence, and if possible, status is determined with a follow-up daytime visit. Follow-up visits were conducted using daytime walk-ins of the habitat to attempt to locate nesting or roosting owls. Owl sites were checked to determine occupancy and nesting status. The surveyor walks in to a known site, or returns to the site of a survey contact, and uses voice calling and/or amplified calls to contact the spotted owls which may be nesting or roosting at the site. The suitable habitat in an area roughly 0.5 mile around the previous contact is used as a search area. When a single owl or pair of spotted owls is contacted on the follow-up visit, the surveyor offers prey items (domestic mice) in an attempt to establish breeding status.

MONITORING, TIMBER HARVESTING PLAN (THP), AND SITE PREPARATION SURVEYS

As discussed above, minor modifications to the HCP that were approved by the CDFW and USFWS in 2002 affected the survey methodology for monitoring, THP, and site preparation activities. For monitoring, or census purposes, a quadrat sampling design was implemented to replace a complete census. THP survey methods were refined as a result of experience from the first three years of HCP implementation. In addition, surveys for site preparation activities were modified in recognition of the characteristics and duration of activities that are involved, and also of the potential for disturbance to spotted owls during the breeding season.

Monitoring Surveys

The Northern Spotted Owl Conservation Plan, HCP §6.2.2, # 2 reads:

> *PALCO shall conduct complete annual censuses to monitor all activity sites on the ownership and to determine numbers of pairs, nesting pairs, and reproductive rates. PALCO may use a sampling methodology, rather than a complete census, provided that the sampling proposal has been reviewed by the NSOSRP and approved by the USFWS and CDFW. Monitoring data shall be provided annually to the NSOSRP, the USFWS, and CDFW.*

The USFWS, CDFW, NSOSRP, and PALCO had agreed that using a sampling methodology, rather than a complete census is likely to have several benefits for the population of spotted owls on HRC's covered lands as well as for HRC staff. Following agreement between PALCO, the USFWS, and the CDFW that the HCP management objectives (HCP §6.2.1) for pair occupancy and reproduction apply to the core sites as in HCP §6.2, Table 7, the objectives of a sampling methodology were therefore clarified. Thus, the objectives of sampling a subset of the covered lands each year via night surveys include:

- Tracking known sites within the quadrats surveyed,
- Finding new sites that may be used as part of the minimum level (core) sites,
- Inventorying sites related to management activities, and
- Tracking the number and location of sites within a given geographical area over time, to help provide information on the effects of management activities.

The quadrat approach relies on large hydrologic areas containing multiple owl territories as the basic sampling units (Map 1). The hydrologic units are based on significant watershed areas (e.g. Freshwater Creek, Elk River), using the dividing ridgelines as the boundaries between units. Where necessary to maximize sampling efficiency, hydrologic units were combined into logical units, resulting in a total of 20 quadrats. In other words, if a hydrologic unit on the periphery of the covered lands contained a relatively small portion of HRC covered property, then it was incorporated into an adjoining, logical unit. During the 2013 season, quadrats 2, 7, 9, and 11 were sampled (Elk River, Stitz Creek, Root Creek, and Chadd Creek to Jordan Creek).

The basic methods and reporting requirements of the quadrat sampling approach are as follows:

1. Using USFWS night survey protocol techniques, conduct three survey visits of all suitable habitat in the four quadrats for that sample year.

2. Use daytime follow-up visits (again using USFWS techniques) to check occupancy and reproductive status of all known sites in the quadrat (including any core sites).

3. In addition to the visits in item # 2, use daytime follow-up visits to check occupancy and status of any sites contacted on the night surveys.

4. In addition to calculating the values of pair occupancy and reproductive rate for the management objectives of HCP §6.2.1 for the core sites, also calculate the results of the same values for all sites monitored in the quadrats. These combined data will be used to track pair occupancy and reproductive trends over time, and will be compared to information gathered on spotted owls at other study sites in northern California.

5. Prior to 1 June each year HRC shall report to the USFWS and the CDFW on the quantity and distribution of suitable spotted owl habitat in the quadrats and on the covered lands as a whole. This information will be used to help understand potential reasons why management objectives may not be met, and potential means of correction (e.g., HCP §6.2.3 # 6).

6. All survey and status visit results, as well as habitat information from item # 5, will be reported annually in the HCP Annual Report, due each year on 1 February.

Timber Harvesting Plan (THP) Surveys

The methods for surveying THPs in HCP §6.2.2 # 3 also underwent minor modification in 2002, as a result of discussions and agreement between the CDFW, USFWS and PALCO. Refinements in the THP surveys were primarily in the areas of timing of surveys, and clarification in procedural language. The modifications have been included in previous reports and correspondence, and are incorporated here by reference.

Additions were made to the THP survey language in 2009, and again in 2012, to clarify the meaning of "continuous operations", as follows:

(a) Note: HRC and the Wildlife Agencies agree that in this context, "maintained continuously" means that:
- *i) Operations can only be shut down for a maximum of 5 consecutive days, including weekends,*
- *ii) Only 3 of the 5 shut down days can be non-weather related,*
- *iii) Operations must occur for 3 consecutive days between any consecutive 5 day shut down period, and*
- *iv) During any consecutive fixed 10 day period beginning February 21 there must be at least 5 days of operations.*
- *v) If item iii) is applied, there must be 5 consecutive days of operations following the 5-day shutdown, 3-day operations, 5-day shutdown event.*

(b) In this context hauling of logs or equipment does not constitute "continuing operations".

Site Preparation Surveys

Site preparation activities, e.g. those activities undertaken following timber harvest and in preparation for reforestation of a site, typically have little potential for disturbance of breeding, and are of relatively short duration (the methods of surveying for spotted owls for these kinds of activities also were subject to minor modification during 2002). Again, the surveys as described in the modified HCP §6.2.2 # 3 have been appended to previous reports. There were no site preparation-specific surveys conducted in 2013.

ACTIVITY SITE DETERMINATION

As in past years under the HCP, occupancy and reproductive criteria used were consistent with those outlined by the USFWS protocol, along with guidance received from the USFWS and the CDFW. Further, in 2002 the CDFW, USFWS and PALCO discussed and agreed upon a method

for determining the establishment and also possibly the location of activity centers based on audio contacts only, and in 2003 agreed upon standards for removal of unoccupied sites. These methods have been discussed and appended in previous reports.

Following a resolution meeting and discussion with CDFW, USFWS and the HCP monitors in the fall of 2013, we have modified Appendix D to address those concerns. Based on those discussions and using the guidance of the "Decision Tree", the following sites have been identified and HRC and the agencies may need to meet and review the following activity centers:

Site 20 (North Fork Elk River), Site 21 (North Fork Elk River), Site 45 (Fox Creek), Site 86 (Substation North), Site 134 (Hely Creek), Site 160 (Upper North Fork Elk River), Site 234 (North Fork Elk River), Site 235 (Stitz Creek), Site 302 (Tom Gulch), Site 306 (North Fork Elk River), Site 307 (Pog Shed, South Fork Elk), Site 338 (Lower Railroad Gulch), Site 355 (Lake Creek), Site 358 (Lower North Fork Elk River).

RESULTS AND DISCUSSION

Monitoring surveys were accomplished using 476 calling stations to cover all potential spotted owl habitat within the 2013 sample quadrats. In comparison, during the 2012 season we used 409 calling stations to cover the habitat within the sample quadrats on HCP covered lands. Overall, a total of 808 calling stations were used to conduct nighttime surveys of the quadrats and THP surveys.

Surveys in 2013 resulted in the equivalent of 2,524 nighttime survey visits, in comparison to 2,506 survey visits in 2012.

BARRED OWLS

HRC has continued tracking detections of barred owls (*Strix varia*), as did the previous landowner, since the species began responding to spotted owl calls on surveys starting in about 1991 (Map 2). Given the evidence from Washington, Oregon, and other regions of California that barred owls can have a very significant impact on occupancy and breeding of spotted owls (Anthony et al. 2004, Courtney et al. 2004, USFWS 2008, USFWS 2011b), HRC remains concerned about the potential for barred owls to disrupt the management goals of the HCP for

spotted owls. In fact, the Service has recognized that barred owls appear to be a greater threat to the recovery of spotted owls than was envisioned at the time of the spotted owl listing in 1990, and as a result has recommended immediate and coordinated action (USFWS 2008, USFWS 2011b).

Barred owl activity in the study area continues to indicate that there are established barred owl territories that are reproductively active. In 2013, there was an increase in the total number of barred owl detections with 47 total detections in 2013 vs. 36 total detections in 2012 (Figure 1). One barred owl nesting attempt was confirmed in 2013. Barred owls were detected during the 2013 survey season in areas that were not previously known to be occupied by barred owls.

Similar to the 2010-2012 seasons, we utilized electronic calling devices with recordings of both spotted owl and barred owl calls for approximately 862 of the 2,524 surveys (~34%). Very preliminary indications are that results of these integrated surveys may be promising in terms of eliciting both spotted and barred owl response when either or both species is present.

Since we began tracking the barred owl invasion, there have been 22 Level 1 sites that have been displaced by barred owls, including at (site #, location): 154, 321, and 540 (Van Duzen), 234 (North Fork Elk River), 130 (Corner Creek), 147 (Bear Creek), 28 (Strongs Creek), 30 (Newburg – although the spotted owl pair was still able to produce one fledgling), 4 (Graham Gulch – this spotted owl pair produced 2 fledglings in 2012), 13 (Lake Creek), 272 (South Fork Elk River), 163 and 332 (Yager Creek), 254 (Blue Slide Creek), 88 (Greenlaw Creek), 3 (Little South Fork Elk River), 9 (Lower North Fork Elk River) and, 99 (Chadd Creek), 260 (Little Salmon Creek), 319 (Greenlaw Creek), 11 (Doe Creek, Elk River) and 5 (Upper Freshwater Creek).

The increase over time in the number of barred owl detections within 0.5 mile of spotted owl activity centers is shown in Figure 1.

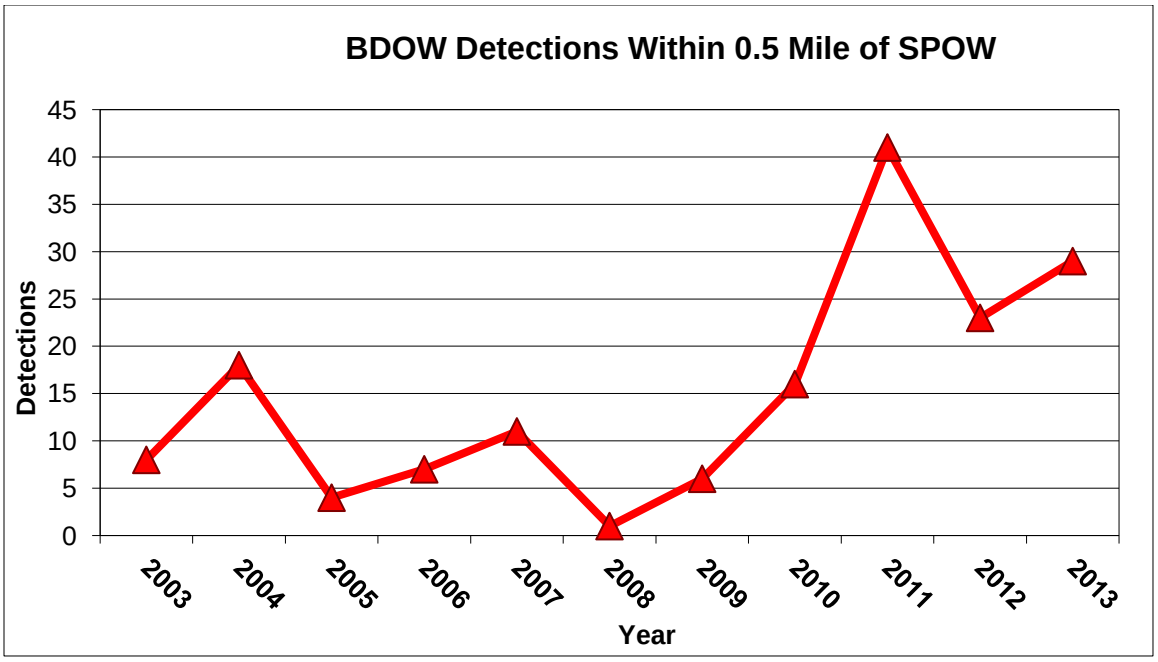


Figure 1. Barred owl detections within 0.5 mile of spotted owl activity sites.

In addition, there were several more detections of barred owls on night and daytime surveys at Level Two and Level Three spotted owl sites including:

- 152 (Little Freshwater Creek),
- 45 (Fox Creek)
- 90 (Bear Creek-Eel River)
- 221 (Big Bend, SF Elk River)
- 231 (North Fork Elk River)
- 236 (Palmer Creek-Tomkins Hill)
- 355 (Lake Creek-North Fork Elk River)
- 358 (Lower North Fork Elk River)

In contrast, over the last several years there have also been five activity sites that have been re-occupied by spotted owls after the apparent disappearance of barred owls: 260 (Gas Wells), 99 (Chadd Creek), 296 (Brown's Gulch/Elk River), 287 (McCready Gulch/Freshwater), and 574 (Mt. Bemis-Grizzly Creek). See Map 2 for a map of barred owl detections and nest sites located on HRC property.

During the 2013 season HRC continued its participation in an ongoing spotted owl and barred owl telemetry study involving the National Council for Air and Stream Improvement, Inc.

(NCASI), the Bureau of Land Management (BLM), Redwood National and State Parks, Green Diamond Resource Company, and Mendocino Redwood Company, among others. The goals of the study include:

- Development of resource selection function models for spotted owl and barred owl habitat in relation to silvicultural applications.
- Promote integrated conservation or recovery of spotted owls across commercial and non-commercial forestlands.
- Clarify spotted owl and barred owl habitat relationships.
- Evaluate spotted owl responses to commercial thinning and partial harvesting in different parts of the owl's range.

Since spring 2010, four male and three female spotted owls, and one male and two female barred owls have been captured, banded, and fitted with radio transmitters on HRC lands. Additional spotted and barred owls were captured, banded, and fitted with radio transmitters on adjacent BLM Headwaters Reserve lands.

Throughout the study area, beginning in 2012 and finishing in 2013, field crews conducted variable-radius plots to inventory habitat within home ranges of the radio-tagged owls. By comparing habitat use with availability the study hopes to identify specific influences on habitat selection behavior, such as vegetation structures, landforms, and tree and understory vegetation composition. This information will be useful in designing silvicultural applications that might improve the quality and overall quantity of spotted owl habitat (Adaptive Management Monitoring of Spotted Owls and Barred Owls, 2011 Progress Report, NCASI). Now that vegetative plot data collection is complete, the publication of results is expected in 2014 or 2015.

WEST NILE VIRUS (WNV)

There is no new information on WNV to report for 2013; however, West Nile Virus (WNV) continues to have the potential to be a very serious threat to the northern spotted owl range-wide, and specifically to the Klamath region population (Courtney et al. 2004). It is unclear what effect WNV will have on population viability of spotted owls, and so the scientists involved in the recent 5-year status review of the species discussed two scenarios: 1) an unlikely range-wide reduction, and 2) a likely range-wide reduction in population viability (Courtney et al. 2004).

WNV has been documented in other species in Humboldt County. Mosquitoes, the vector organism for WNV, are very prevalent in the area. WNV has the potential to disrupt HCP objectives regardless of the covered activities of the HCP; however, at the present time no avian diseases appear to be significantly affecting spotted owl populations (USFWS 2008).

Blakesley *et al*. (2004) *In* USFWS (2010) offered two different scenarios for the possible outcomes of an infection by WNV of spotted owl populations:

- Spotted owls could tolerate severe, short-term population reductions caused by the virus because populations are widely distributed and number in the several thousands (see above also), and
- The virus will cause unsustainable mortality because of the frequency and/or magnitude of infection, thereby resulting in long-term population declines and extirpation from parts of the current range.

SUDDEN OAK DEATH (SOD)

The infection of hardwood species by the fungus *Phytophthora ramorum* and subsequent deterioration of spotted owl habitat has been raised as a threat (Courtney et al. 2004, Courtney et al. 2008, USFWS 2008). This could be especially harmful to spotted owl habitat in the Bear and Mattole watersheds on HRC lands where the hardwood component of habitat is most prevalent. However, the most recent evaluations of the extent of SOD in southern Humboldt County show only sporadic incidence, subject to continued monitoring (Courtney et al. 2008). In 2012, SOD monitoring noted evidence of the fungus in the McCann Creek watershed on HRC land.

Regarding WNV and SOD, the Final Recovery Plan for the Northern Spotted Owl (USFWS 2008) recommended a recovery action (Recovery Action 20) to monitor these diseases and their potential effect and to develop specific responses if necessary.

FOLLOW-UP VISITS

Timely follow-up visits were conducted to the locale of night contacts to determine the status and location of the owls contacted. All core spotted owl sites, and all activity sites within the sample quadrats ("quadrat sites") were visited to determine occupancy, reproductive status, and reproductive success (if applicable). Other sites were visited to determine occupancy prior to the

August designation of Level 1 sites. A total of 912 daytime status and follow up visits were conducted in 2013, compared to 817 in 2012.

Surveys and daytime status visits were conducted in order to collect data to determine the HCP management objectives (HCP §6.2.1) for the core sites, as discussed above in the Study Area and Methods section.

MANAGEMENT OBJECTIVES 1 AND 4

Management objectives 1 and 4 of the HCP require the maintenance of a minimum of 108 activity sites in the HCP area over the life of the permit, and at least 108 total activity sites in the fifteenth year of the permit (2013). As noted above, the HCP management objectives apply to the 108 core sites, consisting of 80 Level 1 sites, and 28 Level 2 sites. Therefore, with the 108 core activity sites, management objectives 1 and 4 have been met for 2013 (Table 1). In 2013 one activity center met the criteria for removal from the active GIS layer according to the Decision Tree for Removal of Activity Centers (Appendix F).

Table 1. HCP northern spotted owl sites and occupancy status for 2013.

Parameter Description	All Sites	Core Sites	Quadrat Sites
A) HCP Occupied Sites	132	108	35
B) Occupied by Pairs	91	87	22
C) Occupied by Male	16	6	3
D) Occupied by Female	17	11	7
E) Occupied by Bird of unknown sex	8	4	3
F) Unoccupied (sites retained)	76	15	19
G) Unoccupied (sites removed)	1	0	0
H) Total HCP Property Sites	209	123	54
Occupancy rate by pairs* (HCP §6.2.1.2 target = 80%)	N/A	81%	63%

*Occupancy rate by pairs is determined by taking the number of sites occupied by pairs (B), and dividing it by the number of occupied sites: (A).

Core Sites include all Level 1 and Level 2 Sites.

Although tracking of total numbers of activity sites beyond the 108 core Level 1 and Level 2 sites is not a requirement of the HCP it is interesting to note that the total number of activity sites, including Level 3 sites, has remained relatively constant over the HCP years (Range 149-

208, mean 186) (Figure 2). Only 149 activity sites were reported in the first year of HCP implementation (1999) when not all of the lands were surveyed. In 2000, several activity sites were included that were not occupied, were the result of take avoidance management prior to the HCP, and were subsequently removed from the inventory for 2001. It should be noted that not all Level 3 sites are surveyed for occupancy or non-occupancy every year, depending on which quadrats are being surveyed.

In 2013 there were 3 new activity centers located compared to 2012, when there were 6 new activity centers located by THP surveys, quadrat surveys or incidental contacts. In addition to these three new 2013 activity centers, two formerly active spotted owl territories (Sites 62 and 283) that had been previously removed from our GIS layers were re-established ('reoccupied') by a single and pair of spotted owls..

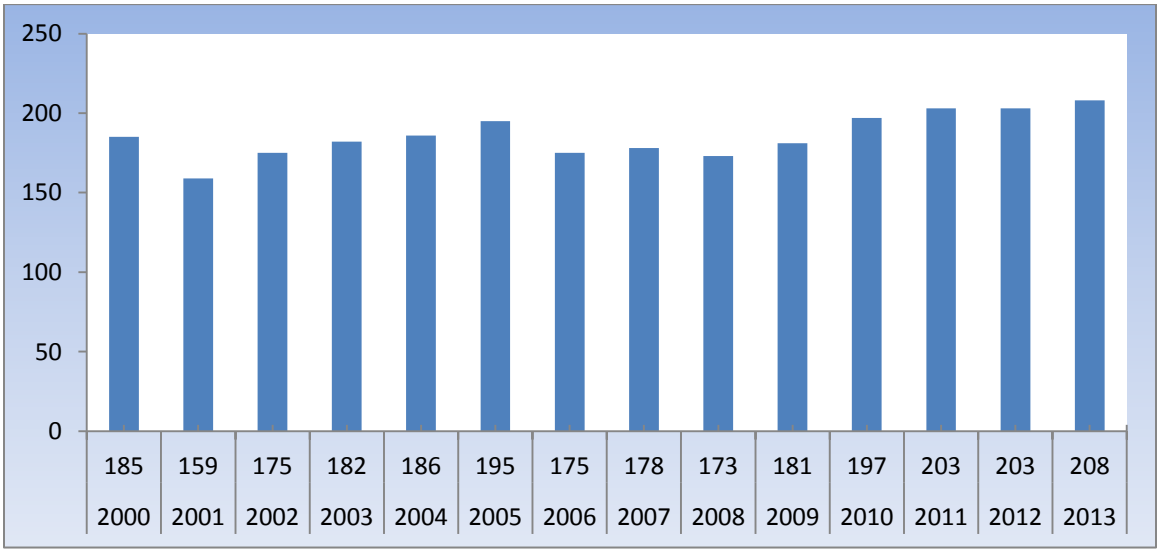


Figure 2. Total NSO Activity Sites by HCP Year.

MANAGEMENT OBJECTIVE 2

Management objective 2 calls for maintenance of spotted owl pairs on an average of 80% of the core sites in the HCP area. During HCP development, 80% was selected as a target by taking the average number of occupied sites that contained pairs during the period of 1991 to 1998. As per HCP §6.2.3 # 6, the values pertaining to management objectives 2 and 3 are to be averaged over running five-year periods (see below). Site occupancy surveys verified pairs at 87 of the core 108

sites during the 2013 season (Tables 1 and 2), giving an occupancy rate by pairs of 81% (0.814). The five-year running average for the pair occupancy rate is 81% (Table 3).

To address the agreed-upon reporting components of the quadrat sampling approach, we also calculated the pair occupancy rate for all sites monitored in the quadrats. The pair occupancy rate for the 35 (occupied) activity sites within quadrats was 63%. For the quadrat sites, the five-year running average for the pair occupancy rate is 64% (Tables 1 and 4).

MANAGEMENT OBJECTIVE 3

Management objective 3 requires the maintenance of a five-year running average reproductive rate of at least 0.61 fledged young per pair for the core sites (for those pairs monitored to determine reproductive output). For development of the target reproductive rate during HCP development, 0.61 was selected as a target by taking the average number of young fledged per pair during the period of 1994 to 1998. However, only pairs that were determined to be nesting, or confirmed by protocol visits to be non-nesting, were used in the calculation. Owl pairs with "status unknown" are now used in the equation.

During the 2013 breeding season, 87 pairs (of the 108 core sites) were monitored for nesting activity and reproductive output. Nesting activity was verified for 18 of the 87 pairs. A total of 24 young were fledged, resulting in a reproductive rate of 0.28 for the year (Table 2). This brought the running average for the reproductive rate for the fifteenth year of the HCP to 0.52 (Table 3), below the target for management objective 3. Since the rolling five-year average target for reproductive rate was not met in 2013, the adaptive management measures of HCP § 6.2.3, #6 apply, and a discussion between HRC, USFWS, CDFW, and the NSOSRP shall occur to review potential reasons why the objective is not being met, and potential corrective measures to implement.

Table 2. Reproductive activity of northern spotted owls for 2013.

Parameter Description	Core Sites	Quadrat Sites
A) No. of sites monitored for reproduction*	87	35
B) No. of monitored sites that nested	18	1
C) No. of young fledged at monitored sites	24	0
D) Nesting rate (=B/A)	20%	3%
Reproductive rate (=C/A) (HCP §6.2.1.3 target = 0.61 averaged over 5 years)	0.28	0.00

*For quadrat sites includes all occupied sites (n = 35).

Table 3. Northern Spotted Owl Yearly Summary.

Owl Status	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Single Unk Sex	4	8	8	1	1	3	3	2	7	3	6	1	4	4	4
Single Male	29	31	14	4	11	6	9	7	11	9	10	7	9	9	6
Single Female	6	3	4	8	11	5	5	9	12	10	5	7	6	13	11
Pair Status Unknown	66	43	39	38	42	38	38	45	47	21	30	44	51	49	52
Non-nesting Pairs	11	14	12	18	20	13	7	7	14	6	3	5	8	6	17
Nesting Pair (failed)	0	5	8	2	9	5	5	3	2	9	2	1	9	6	3
Nesting Pair (PN)	2	0	1	5	1	0	1	3	0	6	3	6	0	1	1
Nesting Pair (PN1J)	10	10	22	16	7	16	21	16	6	5	13	21	7	9	4
Nesting Pair (PN2J)	21	46	47	22	6	22	19	16	9	38	36	16	14	11	10
Nesting Pair (PN3J)	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Total Nesting Pairs	33	56	71	43	14	38	41	35	15	50	52	43	21	21	15
Number of ACs monitored*	149	160	156	114	**108**	**108**	**108**	**108**	**108**	**108**	**108**	**108**	**108**	**108**	**108**
Total Owls	311	380	405	275	212	262	258	246	210	278	280	254	232	221	219
Pairs	110	118	130	101	85	94	91	90	78	86	87	93	89	82	87
Juveniles	52	102	119	60	19	60	59	48	24	84	85	53	35	31	24
Pair Occupancy Rate	73.8%	73.8%	83.3%	88.6%	78.7%	87.0%	84.3%	83.3%	72.2%	79.6%	80.6%	86.1%	82.4%	75.9%	80.6%
Reproductive Rate	0.61	0.86	0.92	0.59	0.22	0.64	0.65	0.53	0.31	0.98	0.98	0.57	0.39	0.38	0.28
Rolling Average Occupancy Rate (5 Yr)	73.8%	73.8%	83.3%	88.6%	79.6%	82.3%	84.4%	84.4%	81.1%	81.3%	80.0%	80.4%	80.2%	80.9%	81.1%
Rolling Average Reproductive Rate (5 Yr)	0.61	0.86	0.92	0.59	0.64	0.65	0.60	0.53	0.47	0.62	0.69	0.67	0.64	0.66	0.52

* After 2003 only **108 "core sites"** are monitored for reproductive and pair rate.

Table 4. Northern Spotted Owl Yearly Quadrat Summary 2013.

Owl Status	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Single Unk Sex	1	2	2	1	2	3	0	0	2	2	6	0	2	1	3
Single Male	7	4	4	3	4	4	3	5	4	3	5	9	5	3	3
Single Female	1	0	2	1	3	1	0	3	1	3	1	2	4	7	7
Pair Status Unknown	12	12	8	6	13	13	7	15	11	3	9	4	22	9	18
Non-nesting Pairs	1	3	2	1	6	3	0	1	2	3	1	0	3	1	3
Nesting Pair (failed)	0	0	0	0	2	2	1	0	0	2	1	0	1	1	1
Nesting Pairs	12	10	18	10	7	12	9	4	2	17	19	9	3	5	0
Total Number of Activity Sites	34	31	36	22	37	38	20	28	22	33	42	24	40	27	35
Total Number of Owls	76	75	91	55	74	87	49	51	40	89	106	47	75	43	57
Total Number of Pairs	25	25	28	17	28	30	17	20	15	25	30	13	29	16	22
Total Number of Juveniles	17	19	27	16	9	19	12	3	3	31	34	10	6	9	0
Pair Occupancy Rate	73.5%	80.6%	77.8%	77.3%	75.7%	78.9%	85.0%	71.4%	68.2%	75.8%	71.4%	54.2%	72.5%	59.3%	62.9%
Reproductive Rate	0.68	0.76	0.96	0.94	0.32	0.63	0.71	0.15	0.20	1.24	1.13	0.77	0.21	0.56	0.00
Rolling Occupancy Rate (5 YR)	73.5%	80.6%	77.8%	77.3%	77.0%	78.1%	78.9%	77.7%	75.8%	75.9%	74.4%	68.2%	68.4%	66.6%	64.0%
Rolling Reproductive Rate (5YR)	0.68	0.76	0.96	0.94	0.73	0.72	0.71	0.55	0.40	0.59	0.69	0.70	0.71	0.78	0.53

In 2004 the Service clarified that the rolling averages, or running means, for pair occupancy and reproductive rates should be calculated by calculating a mean for each individual year, then calculating a mean of means, where n = 5 (Long 2004). This is the method used for Tables 3 and 4. We apologize for any errors in the running means in previous reports due to the use of grand means, or due to table formatting. Please note, however, that the rolling average reported for each report year has been correct in all reports.

For the quadrat sites, including all the Level 1-3 sites in the quadrat monitoring units, and using the number of pairs monitored for reproduction (n = 35), the 2013 reproductive rate was 0.00 (Table 4). The five-year running average for reproductive rate among quadrat sites is 0.53 (Table 4).

The NSOSRP recommended monitoring both the core sites and quadrat sites for occupancy and reproduction, and comparing the results to other study sites within the region. Because the HRC core sites and quadrat sites are managed in ways that are specific to the HCP, a comparison of trends in occupancy and reproduction with other study sites that are managed under different strategies (e.g., intensive timber harvest, moderate harvest, little to no harvest) can provide insight as to how the HCP is working and possibly what other factors may be affecting the spotted owl population (e.g., barred owls, climate). The available information indicates that trends for both the core and quadrat sites continue to track the results of other study areas over time (Figure 4).

Per HCP § 6.2.3, #3, management objectives may be modified if new information becomes available following review of the NSOSRP recommendations and approval by the USFWS and CDFW.

ACTIVITY SITE LEVELS OF PROTECTION

HCP §6.2.2 # 4, Conservation Measures, requires that owl activity sites on the covered lands be assigned to one of three protection levels. Accordingly, in September of 2013, 80 activity sites were designated as Level 1 sites. HRC requested an extension of the 1 June requirement for Level 1 selection due to the continuing difficulty of surveying all of the available sites by that date. The difficulty has increased in recent years due to the presence of barred owls in the study

area. USFWS and CDFW again granted HRC's request to extend the selection to 31 August to allow more time to visit the owl sites and provide greater flexibility in selection.

Selection of Level 1 sites was guided by the parameters described in HCP §6.2.2.4: 1) having the requisite habitat levels within a 0.7 and 1.3 mile radius of the activity center; and 2) having supported spotted owls in the previous year (2012), and also in the year selected (2013).

In addition, as part of the minor modifications approved in 2002, further language regarding Level 1 sites was added to management objective 2:

> *Maintain spotted owl pairs on an average of 80 percent (over a five-year period) of the minimum of 108 activity sites on the ownership (as shown in Table 7, for 2002 this minimum number shall be 115 activity sites, then 108 for 2003 and all subsequent years).* ***At least 80 of these sites shall be Level One sites, and the balance shall be Level Two sites. PALCO intends to maintain these selected Level One and Level Two sites as the core sites for a period of from three to five years, or as long as possible, given other circumstances that may arise, and may preclude their maintenance as such. PALCO intends to select core sites that are historically stable, reproductively successful, and that have minimal disturbance, given that they occur in a managed landscape.*** *(Emphasis added).*

In keeping with the requirements of HCP §6.2.2 # 4 and # 5, if less than 500 acres of suitable habitat exists within 0.7 miles, or less than 1,336 acres of suitable habitat exists within 1.3 miles, the acreage of habitat cannot be reduced.

See the appendices for details and information on habitat acreage relative to Level 1 sites, THP activity, and quadrats (Appendices A-C).

Level 2 protection measures were afforded to 28 sites in 2013 (HCP §6.2.2.5). Level 2 sites receive 1,000-foot buffers during the breeding season. After the breeding season, or if a non-nesting status is determined, harvest may occur around a Level 2 activity site, as long as an 18-acre core area (the equivalent area of a 500-foot radius circle), with at least a 400-foot radius consisting of the best available habitat, is retained.

As with the Level 1 sites, as part of the minor modifications approved in 2002, further language regarding Level 2 sites was added to HCP §6.2.2 # 5, bullet # 4:

> *By 1 September of each year, PALCO shall designate the necessary number of Level Two sites, to make up the minimum number of activity sites as shown in Table 7.*

Accordingly, in late August we designated 28 Level 2 sites, which combined with the 80 Level One sites already designated made up the 108 core sites for 2013.

Level 3 protection was afforded the balance of the activity sites on the HCP covered lands in 2013 (HCP §6.2.2 # 6). Level 3 sites are those sites not needed to meet management objectives 1 or 4 (108 minimum activity sites). As with Level 2 sites, Level 3 sites receive 1,000-foot buffers during the breeding season.

Language was also added (in 2002) to HCP §6.2.2 # 6 regarding Level 3 sites:

> *During the breeding season, for activity sites which have been determined to be occupied by a non-nesting pair or single NSO, 18 acres around the activity site shall be maintained as suitable nesting habitat, if present. The protected 18 acres may conform to natural landscape features, as designated by PALCO's wildlife biologist or a designee, and the buffer protecting the activity site must have at least a 400 foot radius. At PALCO's discretion harvesting may occur during the breeding season, in the area adjoining the 18-acre habitat retention area.*

Thus, if a non-nesting status is determined, harvest may occur around a Level 3 activity site, so long as an 18-acre core area (the equivalent area of a 500-foot radius circle), with at least a 400-foot radius is retained. After the breeding season, harvest of the Level 3 sites may occur. If the activity site is harvested, any known nest trees are to be retained.

Habitat Conditions

The amount and type of spotted owl habitat as per HCP §6.2, Table 6 is reported annually (Table 5). Habitat information from the HRC Geographic Information System (GIS) is a "snapshot in time" of habitat conditions. For consistency and coordination with other forest inventory requirements the snapshot is currently taken on or around 1 January each year (see Map 3). Thus, the information contained in this section of the report represents habitat conditions from approximately 1 January 2013 to 1 January 2014.

Ownership changes in and quantity of the HCP lands have occurred over the last 13 years. For example, certain lands have been sold to Federal or State entities or have been "swapped" out of

the HCP (following HCP agency review) for real estate sales and have been replaced with parcels similar in size and habitat value from our non-HCP ownership. Thus, further changes in overall acreage and patch size has occurred during the past several years, although there have been no recent changes of this type.

As discussed in previous NSO annual reports, annual reports from 1999-2009 utilized forest stand information from 1999 and previous years to generate Wildlife Habitat Relationship (WHR) types and thus nesting, roosting and foraging (NRF) types based on HCP Table 6. Beginning in 2010 HRC embarked on a three-year re-inventory project of the entire 209,000 acres of HRC lands. For the 2010 through 2012 habitat reports, those reports included the most current forest inventory information resulting from 2002-2006 cruise information, harvest updates for each year from 2000 forward, and cruise information available to date from the re-inventory work. This information was the most current and reliable "stand" information and best reflected conditions on the ground, although field evaluations were occasionally needed to verify stand types.

Also noted in previous year's reports, HRC has revised procedures for assigning and tracking WHR and NRF types. Under the new procedures, WHR types are generated directly from tree data collected in HRC's current forest resource inventory; whereas under PALCO, WHR was a static property-wide GIS layer that was usually, but not always, updated for harvests and had not been grown forward since its creation in 1999.

The re-inventory project is now complete for all HRC lands. HRC uses FORSEE software – developed by the California Growth and Yield Modeling cooperative of private and agency organizations – to process field inventory data. To generate WHR habitat types HRC uses output from FORSEE (modeled crown widths and WHR habitat species calls) together with methodology consistent with procedures used for PALCO's 1999 HCP to develop WHR size classes. In future years these procedures will continue to be implemented on the current field inventory data set, which will be updated annually with new/replacement field plots, growth of trees in existing plot data via ForSee, and changes in timber types resulting from harvest and growth.

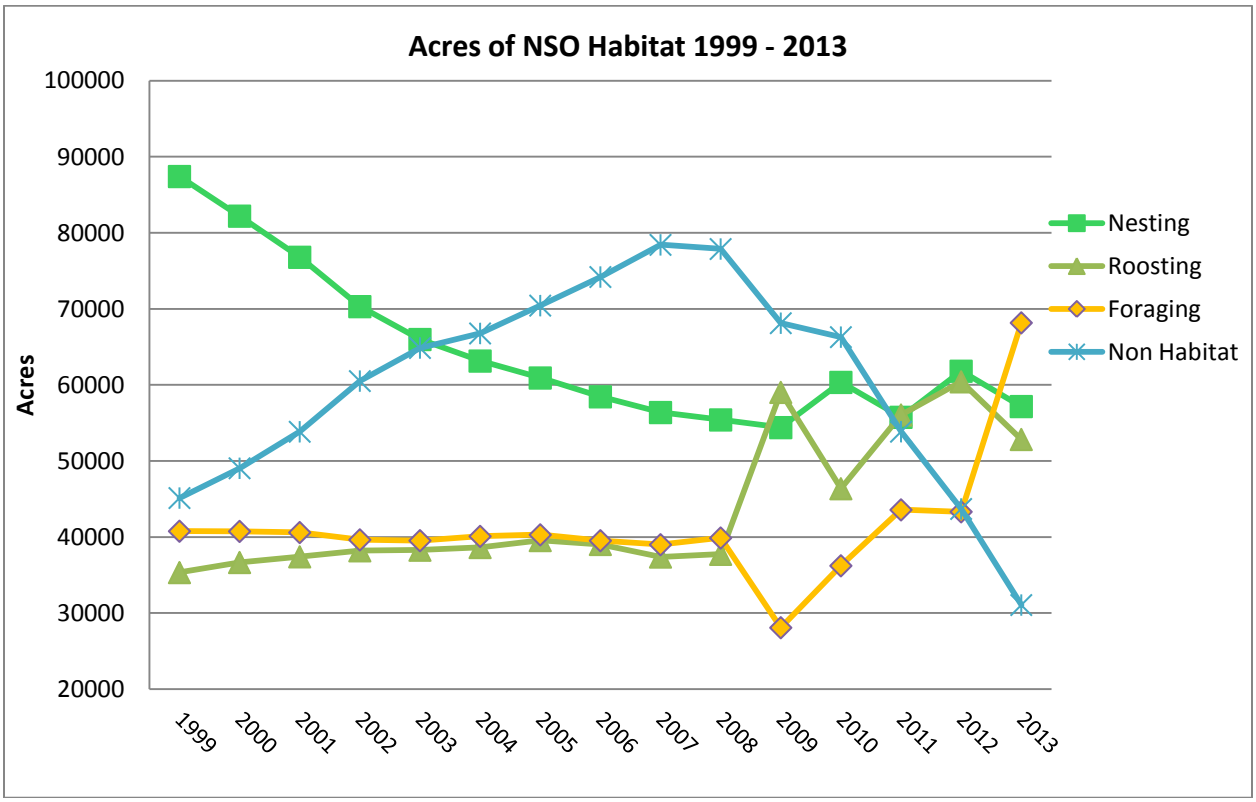
The current inventory information has been applied to both the property-wide analysis of habitat (Table 5, Figure 3) and the 0.7 and 1.3 mile habitat radii pertaining to the Level 1 activity sites (Appendix C). A change in habitat trends corresponding with change in ownership, silviculture, and harvest level can be seen beginning around 2009. The steady, anticipated trend of reduction in nesting habitat, resulting in part the even-age silviculture preferred by the previous landowner, has leveled out in recent years. Similarly, the observed recent decline in the previously growing number of acres of non-habitat is also consistent with the change to uneven-aged management, with a concurrent increase in foraging habitat post-harvest.

Similar to previous annual reports, an analysis of patch sizes of suitable nesting habitat has been conducted on both the 18-acre and 80-acre polygon size, and included with this report (Table 5.0). The inventory changes discussed above also resulted in a change in the number of habitat patches. The acres of habitat in the Grizzly Creek Complex and Owl Creek MMCA are shown separately due to the unique nature of these parcels. No new inventory information has been applied to these parcels, although it is reasonable to assume that young stands in these reserves are growing and potentially increasing in habitat value for spotted owls.

Table 5. Acres of Habitat and Nesting Habitat Patches.

Year	Nesting (Acres)	Roosting (Acres)	Foraging (Acres)	Non Habitat (Acres)	18+ Acre Patches (Nesting)	80+ Acre Patches (Nesting)
1999	87,416	35,343	40,780	45,142	199	64
2000	82,205	36,670	40,753	49,053	204	68
2001	76,799	37,416	40,608	53,858	214	62
2002	70,309	38,209	39,642	60,521	226	72
2003	65,984	38,289	39,538	64,870	231	79
2004	63,153	38,641	40,103	66,784	238	83
2005	60,927	39,557	40,307	70,442	241	93
2006	58,453	39,043	39,533	74,204	244	92
2007	56,386	37,390	39,010	78,431	250	87
2008	55,412	37,747	39,890	77,886	251	88
2009	54,402	59,036	28,094	68,130	348	101
2010	60,348	46,372	36,236	66,300	332	105
2011	55,758	56,063	43,589	53,869	366	118
2012	61,817	60,424	43,330	43,708	311	102
2013	57,171	52,842	68,177	31,073	421	128
Grizzly_Owl	1,700	207	322	343	4	4

Figure 3. Northern spotted owl habitat types over time.



To put habitat growth and harvest on HRC lands in the context of regional habitat conditions within the range of the northern spotted owl, we reviewed the Final and Revised Final Recovery Plans for the Northern Spotted Owl (USFWS 2008, 2011b). The USFWS (2008) reported on the loss of spotted owl habitat range-wide related to timber harvest and natural events. Specifically related to timber harvest, they cautioned readers that harvest estimates can only be used to infer rates of forest removal, and may or may not translate directly to a rate of suitable habitat loss, since not all forest may equate to suitable spotted owl habitat.

Relative to the loss of suitable habitat due to **timber harvest**, USFWS (2008, 2011b) noted that there are only a few available reports on the topic, and summarized them as follows:

Cohen et al. (2002) cited in Bigley and Franklin (2004) reported "a steep decline in harvest rates between the late 1980's and early 1990's on State and Federal and private industrial forestlands." Habitat trends reported by the Service (USFWS 2004) indicated an overall decline of about 2% in the amount of suitable habitat on Federal lands as a result of management activities from 1994 to 2003. This rate is lower than the 2.5% per decade estimate of habitat loss resulting from

management activities that was predicted in the Northwest Forest Plan (USDA and USDI 1994). Cohen et al. (2002) reported that from the early 1970's through the mid-1990's the harvest rates on private industrial forest lands were consistently about twice the average harvest rate on public lands.

Raphael (2006) estimated that since 1994, losses of NSO habitat from non-federal timber harvest have exceeded losses from Federal land, with a range-wide loss of approximately 8.0% (12% in Washington, 10.7% in Oregon, and 2.2% in California). Raphael (2006) also conducted an analysis looking only at regeneration harvest. This analysis estimates that nearly 3,000 acres of higher suitability spotted owl habitat was harvested on Federal reserved lands, and about 26,000 acres on non-reserved lands, between 1994 and 2004. This harvest represents less than 1% of the approximately 10 million acres of high suitability habitat thought to exist on both Federal and non-federal land in 1994.

Davis and Dugger (in press) estimated the amount of spotted owl nesting and roosting habitat lost due to harvest from the start of the Northwest Forest Plan (1994/1996) to 2006/2007 on non-federal lands in California to be about 90,200 acres (5.8% of total). However, Davis and Lint (2005) found that forest fragmentation in California *decreased* from the 1930's and 1940's to the current time, possibly due to fire suppression.

Regarding habitat loss from **natural events** the USFWS (2008) reported that the loss of spotted owl habitat from natural events during the 10-year period from 1994 to 2003 was 224,041 acres, or about a 3% decline in available habitat range-wide (USFWS 2004). The majority of the habitat loss was due to wildfire (75%) with insects and disease making up the remainder (25%). Approximately 7,500 acres (0.4%) in California were estimated to have been lost due to fire, insects and disease from (1994/1996) to 2006/2007 (Davis and Dugger in press).

BANDING PROGRAM

Banding of spotted owls as part of our overall program is a long-term research and management tool to help monitor the spotted owl population on the HRC ownership. The primary purposes of the banding and re-sighting project include: defining stable activity sites (site fidelity and displacement); detection of changes in occupancy over time (turnover and replacement);

documentation of movements of sites and nest areas; and assessment of habitat quality based on site occupancy and reproductive history.

We again request that the USFWS consider this report, with associated Map 1, to satisfy their request for information concerning HRC's banding program as discussed in their letter of 14 January 2004.

In 2013, there were 135 total band re-sights (Appendix H). Of the 108 core sites, 39 pairs were positively identified at occupied sites.

Since 2003 a total of 303 spotted owls have been banded, consisting of 255 adults and 48 juveniles. Data from HRC banded northern spotted owls with at least 7 years of data (131 banded adults from 60 sites during the years 2000-2006) showed that spotted owl survival remained stable over that time period (Bigger et al. 2008). Continuing to collect and analyze banding and re-sight information is a key component of this program.

REGIONAL TRENDS

Following both the 2003 and 2007 survey seasons, PALCO, the NSOSRP, and the Agencies convened and discussed the HCP management objectives, potential reasons why they may not be met, and potential corrective measures to implement if necessary. On both occasions the NSOSRP recommended that HCP results be compared to those of other study areas in the region. Figure 4 below illustrates the regional northern spotted owl reproductive rates for several study areas of Northern California (Douglas, Early, Fullerton, Higley, Carlson, pers. comm. 2013).

As demonstrated in the figure, results for both the core and quadrat sites on HRC track the results of other study areas over the HCP period, with the exception of the Willow Creek Study Area (WCSA). As with other studies in the region (Anthony, et al 2004, Franklin 1997, Franklin 2000) data indicates that reproductive results are strongly correlated to regional trends in climate (Franklin, et al. 2000, HRC, unpublished data). Glenn (2009) found that climate accounted for 78-84% of the temporal variation in population change in the Oregon coast range, and climate and barred owls together accounted for approximately 100% of the changes in spotted owl survival. Thus, there are good and bad reproductive years that appear to track precipitation early in the breeding season. Four of five cooperators reported relatively poor reproductive results for

2013, which normally is consistent with the higher than average rainfall events of late spring. However, 2013 did not have a wet spring and other factors including barred owl influence may have contributed to a region-wide low reproductive year.

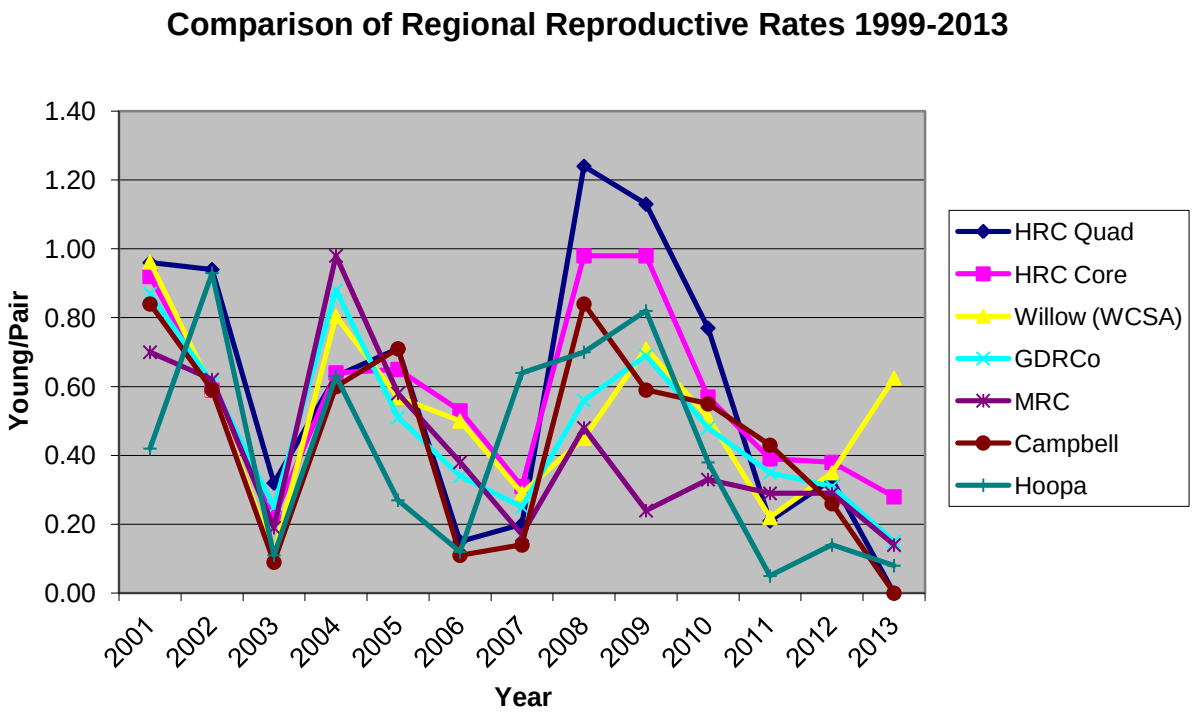


Figure 4. Comparison of Regional Reproductive Rates 1999-2013.

FUTURE ACTION PLAN

SURVEYS

We do not recommend any change in monitoring strategies at this time. Current plans call for continued surveys in 2014 with the quadrat sampling technique. In 2014, quadrats 3, 13, 18, and 20 are scheduled for monitoring (Lower Eel, Long Ridge/Mattole, Lawrence Creek, and Grizzly Creek respectively). These quadrats were initially surveyed in 2004 and again in 2009 and it will be interesting to compare them with the 2014 surveys, distribution of activity centers, reproduction, and location and activity level of barred owls. Timely follow-up visits (i.e., within 72 hours, weather permitting) will be conducted to all nighttime contacts. Following the season,

the data gathered will be used to evaluate the efficacy of the HCP management objectives and conservation measures for the core sites, and also for the quadrat sites.

BANDING

In 2014 we intend to work with the Service, CDFW, and adjacent study areas to make our banding efforts as efficient and effective as possible, keeping in mind the goals of the effort. The overall intent is to utilize the program as a complete mark and re-sight effort and to develop programs similar to other study sites in the region. As always, during any of our capture and banding efforts, we will continue to be cautious in our efforts, keeping the care and safety of the birds first in mind.

BARRED OWLS

HRC continues to have significant concerns that the barred owl invasion will continue southward and cause declines in site occupancy and reproduction of our spotted owl population. In 2013, we continued to utilize barred owl calls (5 minutes of recorded barred owl calls at the end of the 10 minute spotted owl calls) on some of our quadrat monitoring stations. Initial results have indicated an increase in detection rates for barred and spotted owls but more samples are required. We will attempt to utilize any new techniques to monitor barred owl and spotted owls across the ownership. In addition, HRC continues to be very interested in barred owl removal projects as recommended by the Service (USFWS 2008), and will continue to monitor the results of ongoing studies as they are available.

SCIENTIFIC PANEL

The HCP Northern Spotted Owl Conservation Plan §6.2.2, Conservation Measures, Item 1 refers to the NSO Scientific Review Panel (NSOSRP) and discusses the establishment and roles of the NSOSRP. This item also suggests that the Panel be convened at a minimum in years 1, 6, and 11 following issuance of the ITP. With the ITP issued in 1999, essentially 2010 was year 11 of the HCP. The NSOSRP (also the MMSRP) generally met every year for the first 5-6 years of implementation and provided review and recommendations.

Members of the Panel (Alan Franklin, Barry Noon, Steven Courtney) have more recently (2007) been convened to provide recommendations relative to management objectives, resulting in

implementation of the HRA strategy. As discussed above, the rolling five-year average target for reproductive rate was not met in 2013, therefore the adaptive management measures of HCP § 6.2.3, #6 apply, and a discussion between HRC, USFWS, CDFW, and the NSOSRP shall occur to review potential reasons why the objective was not met, and potential measures to implement. Per HCP § 6.2.3, #3, the management objectives are also subject to modification if new information becomes available following review of the NSOSRP recommendations.

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