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**2016-2023 Northern Spotted Owl Surveys' Summary for the Usal Redwood Forest Company
Ownership**

Submitted to

Usal Redwood Forest Company

Introduction

In 2016 The Usal Redwood Forest Company began managing the lands of their ownership without the assistance of Campbell Global, LLC. Campbell Global LLC is a timberland management organization based in Portland, Oregon which managed the Usal Redwood Forest Company lands from 2007-2015. Prior to 2007, Hawthorne Timber owned and Campbell Global managed the Usal property from 1998 to 2007. Prior to 1998 the Usal property was owned and managed by Georgia-Pacific. Northern Spotted Owl (NSO) surveys have been continuously conducted on this property beginning in 1989, which makes this property one of the longest surveyed areas in private ownership within the redwood region. The continuous annual northern spotted owl surveys have provided a large amount of data collected on the species' occupancy status, pair status, nesting attempts, and number of young fledged. In 2016, The Usal Redwood Forest Company decided to conduct property-wide NSO surveys covering their entire ownership. This report summarizes the 2016-2023 NSO survey efforts. 2016 – 2021 NSO surveys were conducted by Mike Stephens Wildlife Consulting. Mike Stephens Wildlife Consulting has conducted NSO surveys for the Usal Forest Company from 2007-2015 as a subcontracting consultant for Campbell Global LLC. From 2016-2021 Mike Stephens Wildlife Consulting has been directly contracted by the Usal Redwood Forest Company. 2022-2023 NSO surveys were managed by Mike Stephens while employed by North Coast Resource Management (NCRM).

Usal Redwood Forest Company Ownership Area

The 20,096 ha (49,636 acres or 79sq.miles) Usal Redwood Forest Company ownership (see figure 1) is located in Mendocino County, California within the Coast Range physiographic province, and the California Coastal Steppe, Mixed Forest and Redwood Forest Province (Bailey 1994) The ownership is located west of the communities of Piercy and Leggett, California, encompassing the majority of Usal Creek and multiple tributaries to the South Fork Eel river. Most of the ownership is within 15km of the Pacific Ocean.

The climate of the Coast Range physiographic province is temperate, characterized by hot, dry summers with frequent early morning fog, and wet winters (Saywer et al. 2000). Annual precipitation along the South Fork Eel River drainage averages 62 cm based on data from the monitoring station in Leggett, California while annual precipitation along the coastal drainages averages approximately 49 cm. (Western Regional Climate Center, Desert Research Institute; <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caftbr+nca>). Most precipitation occurs during the winter months in the form of rain, although snow along the higher elevations (over 300 m) is not uncommon. Fog is also an important contributor to the coast redwood hydrologic budget, contributing 25-50 percent of the total water input annually, especially during dry summer months (Saywer et al. 2000).

Elevations of the study area range from less than 13 m at the junction of the North and South Forks of Usal Creek to over 780 m along the ridge above Low Gap Creek south of Leggett. The topography is characterized by moderate to very steep terrain with slopes ranging from 10% along narrow ridge tops, mid-slope benches and valley bottoms to greater than 80% along local steep streamside slopes and upper headwater areas of the smaller drainages, with aspects facing in all directions. The study area is composed primarily of a mixture of conifer dominated coast redwood (*Sequoia sempervirens*), Douglas-Fir (*Pseudotsuga menziesii*), and conifer-hardwood mixture with native hardwoods, principally Tanoak (*Lithocarpus densiflorus*) and Pacific Madrone (*Arbutus menziesii*) comprising a significant portion of the species composition in many stands, especially at higher elevations and on xeric sites. The forest is primarily second growth, with older, residual conifer and hardwood concentrated along watercourses or located individually or in small clumps across the landscape. Otherwise, no larger contiguous blocks of old growth forests (>150 y.o.) occur on the property.

The property has historically been used for timber production. Lower Usal Creek was first harvested in the late 1800s. However, the majority of the property was first harvested during the post-World War II time period (e.g., around 1950). As a result of management techniques practiced over the past century in addition to poor soils, native hardwoods have become dominant in mid-story canopies at higher elevations and on interior portions of the property.



Figure 1. Study area in the north-central coastal redwood region comprising the Usal Redwood Forest Company ownership, Mendocino County, California.

Methods

Spotted Owl Surveys and Territory Monitoring

Timber Harvest Plan and property-wide NSO Surveys

Since the listing of the northern spotted owl, the ownership has operated under U.S. Fish and Wildlife Service (USFWS 1991, 1992, and 2012 in addition to the Arcata Fish and Wildlife Office's "Attachment A" (2019)) "no take" provisions. All Timber Harvest Plans (THPs) and adjacent suitable habitat within 0.7 mi (1.1 km) require spotted owl surveys under guidelines set forth by the USFWS protocol. When spotted owls are detected during surveys, follow-up monitoring is initiated (USFS 1988) and standard protection measures for the spotted owl territory are applied.

Prior to 2016, NSO surveys were conducted on a timber harvest plan (THP) or restoration project basis and were conducted using 2 survey methods: point calling and walk-in surveys. For THPs and adjacent forestlands with no known spotted owl territories, surveys were typically done by point calling from established stations. The placement of these stations ensured complete coverage of the THP and areas out 0.7 miles from the THP boundary. When established spotted owl territories were located within 0.7 miles of the proposed THP, point calling was conducted in areas topographically separate from the known territory so as not to disturb occupied NSO territories. THP surveys located near the property boundary were coordinated with neighboring landowners to avoid repetitious calling and harassment of known spotted owls. NSO surveys were conducted from 1 March to 31 August. Point calling was initiated after sunset using various spotted owl recordings covering a variety of the species' vocalizations. Each call point was visited for at least 10 minutes to locate potential spotted owls in the area. Depending upon the intensity of the previous year's survey efforts, 3 to 6 surveys were conducted in each THP area.

In 2016, The Usal Redwood Forest Company decided to have extensive property-wide NSO surveys conducted on their ownership. Survey efforts followed the latest USFWS NSO survey protocol (2012 with 2019 "Attachment A"). These survey efforts started by placing NSO survey stations throughout the entire ownership that were accessible to surveyors. A total of 300 NSO survey stations were installed across the ownership however, it should be noted that not all 300 stations were surveyed during the 2016-2023 period. Some NSO survey stations may not have been surveyed due to new road obstructions such as downed trees, landslides, washouts, flooding or other accessibility issues. Below, in table 1, the number of stations surveyed per year is listed. Covering the entire ownership with NSO surveys has provided NSO and Barred Owl detections that would not have been obtained if only THP/project areas were surveyed.

Spotted Owl Territory Surveys

All known active spotted owl territories occurring on the ownership were surveyed to determine occupancy status, nesting/reproductive status, and number of young fledged. We also surveyed inactive territories occurring within 0.7 mi (1.1 km) of proposed THPs to determine continuing inactive status of that territory. Inactive (e.g. historic) territories are defined as those territories where spotted owl(s) have not been detected after 3 years of surveys. We also conducted walk-in surveys to obtain roosting locations, banding resight information, and reproductive status. Walk-in surveys were done in the spotted owl's historic activity center(s) or in areas where spotted owls were detected during nocturnal

station calling surveys. Spotted owl territory surveys occurred from 1 March to 31 August. Walk-in surveys generally begin approximately 2 hours or more before sunset to increase the probability of spotted owl detections. A visit consisted of surveyors playing digitized spotted owl calls and searching the site for evidence of spotted owl presence (e.g. feathers, white-wash and/or pellets). Spotted owls located during walk-in surveys were fed live mice to determine territory status and reproductive activity (e.g. nesting vs. non-nesting). Non-nesting spotted owls typically cache or eat offered prey, whereas nesting spotted owls will normally take the prey to the nest or fledglings. Reproductive output was determined when owls took mice to the young.

Barred Owls

Barred owls were first detected on the URFC ownership in 1996 and then again in 2007 and since then, their numbers have steadily increased. However, NSO surveys are designed to detect Spotted Owls and not necessarily Barred Owls therefore, the Barred Owl detections obtained during the course of surveys are incidental and not representative of the true number and locations of Barred Owls that may be present on the ownership. Actual numbers of Barred owl territories are likely to be much higher. It is apparent that Barred Owls are affecting the responses from Spotted Owls and likely have led to some NSO territories to not respond to our current survey methodologies. We are detecting NSO territories less and less and beginning to find them occupying new areas when their activity centers are occupied or impacted by barred owls. In other cases, we have seen some NSO territories go silent for a few years and then are detected again close to the historic activity centers

Table 1. URFC NSO Survey Results 2016-2021

NSO Survey Results	2016	2017	2018	2019	2020	2021	2022	2023
NSO Stations Surveyed	N/A	255	237	221	243	241	216	232
NSO Station Surveys	1415	1471	1219	1893	1371	1419	1332	1043
NSO Territories Monitored	15	20	17	16	15	16	16	15
Active NSO Territories	16	16	13	12	13	15	10	8
NSO Territories not detected	4	4	7	5	4	5	7	9
New NSO Territories	1	1	1	0	0	1	0	1
Nests Attempted	0	1	3	0	1	2	1	1
Nests Successful	0	0	1	0	1	2	0	1
Young Produced	0	0	1	0	1	2	0	1
Barred Owl Detections	14	17	7	23	33	47	35	47
NSO Territories with Barred Owl Detections	2	6	3	6	5	7	2	2
Barred Owl Nests Confirmed	0	0	1	1	2	1	2	2

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