



United States Department of the Interior



In Reply Refer To:
AFWO-11B0075-11TA0069

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MAR 15 2011

Mr. Bill Snyder
Deputy Director for Resource Management
CAL FIRE
1416 9th Street
Sacramento, California 94244-2460

Subject: 2011 Revision of the Northern Spotted Owl Take Avoidance Analysis and Guidance for California Coast Forest District.

Dear Mr. Snyder:

This letter transmits the Arcata Fish and Wildlife Office's 2011 revision of the Northern Spotted Owl Take Avoidance Analysis and Guidance for California Coast Forest District, also referred to as "Attachment A." This revision provides an overview of recommended post-habitat retentions, survey protocol recommendations (when they differ from the Fish and Wildlife Service 2011 NSO Survey Protocols), and other operational guidance for the redwood ecotype of the Coast Forest District. The enclosed guidance document outlines Northern Spotted Owl take avoidance measures for activities associated with California timber management.

If you have any questions regarding this correspondence, please contact Bill McIver or Steve Kramer of my staff at the above letterhead address or at (707) 822-7201.

Sincerely,

Nancy J. Finley
Field Supervisor

enclosure:

"Northern Spotted Owl Take Avoidance Analysis and Guidance for California Coast Forest District"

cc:

Region 8, FWS, Sacramento, CA (Attn: Darrin Thome)
YFWO, Yreka (Attn: Erin Williams)

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Northern Spotted Owl Take Avoidance Analysis and Guidance For California Coast Forest District ("Attachment A")

March 15, 2011

Through this document, the Fish and Wildlife Service's (Service) Arcata Office (AFWO) establishes guidelines to avoid the incidental take¹ of the federally listed as threatened northern spotted owl (*Strix occidentalis caurina*, NSO), that may result from timber operations occurring within the range of the coast redwood (*Sequoia sempervirens*) ecotype, in the Coast Forest District (Coast District) of the California Department of Forestry and Fire Protection (CAL FIRE). This document will be referred to hereafter as "Attachment A." The eastern portion of the Coast District is outside of the range of the coast redwood. In these eastern areas, the Revised USFWS Attachment B: Take Avoidance Analysis-Interior ("Attachment B") applies to proposed timber operations where no redwoods are present in the timber harvest plan area.

This document (Attachment A) applies to Timber Harvest Plans (THPs) and to Non-industrial Timber Management Plans (NTMPs). This Northern Spotted Owl Take Avoidance Analysis and Guidance (Attachment A), dated March 14, 2011, replaces, in full, all prior versions of this guidance, and remains in effect until replaced or voided.

I. Background

On February 7, 2011, the Service released the *2011 Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls* (hereafter referred to as the 2011 NSO Survey Protocol), its associated transmittal memorandum (2011 transmittal memo) from Region 8 of the Service, and the transition matrix entitled *NSO Protocol Transition Guidance* for surveys initiated in 2009 through 2011. The 2011 transmittal memo and associated transition matrix provide additional details and clarification for surveys conducted within California (a similar memorandum has been prepared for distribution in Oregon and Washington). The transition matrix clarifies how past surveys would be appropriately credited toward meeting current protocol needs. Those documents are included herein by reference; the reader should consult those documents for details regarding survey methods and interpretation of survey data.

This document provides guidance on the application of survey results to evaluation of specific projects that may impact NSO and provides NSO habitat protection measures and operational procedures specifically recommended for the coast redwood ecotype. In addition, this revision of Attachment A crosswalks the pertinent issues addressed in previous AFWO Technical Assistance, previous versions of Attachment A, and the 2011 NSO Survey Protocol.

¹ **incidental take** - take that is incidental to, but not the purpose of, carrying out an otherwise lawful activity.

II. Definitions

This section defines several terms used in the analysis of take avoidance of the NSO within the coast redwood ecotype of the Coast District (additional terms are defined within the protocol guidance documents, referenced above):

Activity Center (AC): Area of concentrated activity of either a pair of NSO or a single territorial NSO, represented by a mapped location (e.g., usually a nest tree) that occurs within, but not necessarily in the exact center of, the “Core Area,” defined below.²

Core Area: 100 acres of the 200 acres of Nesting/Roosting habitat retained within a 0.7 mile radius contiguous with the Activity Center. If 100 acres of contiguous Nesting/Roosting is not available, then the highest quality habitat available shall be included.

Foraging Habitat: Habitat that contains $\geq 40\%$ canopy cover of trees that are ≥ 11 " DBH (diameter at breast height), and have a basal area ≥ 75 square feet per acre of trees ≥ 11 " DBH. Trees may be conifer or hardwood.

Nesting/Roosting Habitat: Forested habitat that supports successful nesting and associated roosting behavior by NSO. Habitat with $\geq 60\%$ canopy cover of trees that are ≥ 11 " DBH, and have a basal area ≥ 100 square feet per acre of trees ≥ 11 " DBH. Trees may be conifer or hardwood.

Nesting/Roosting Polygon: All Nesting/Roosting habitat which is contiguous with an NSO Activity Center.

NSO Breeding Season: Defined as February 1 to July 31 within the coast redwood ecotype found in the Coast District of California.

NSO Home Range: Defined as a 0.7 mile radius circle centered on the Activity Center for the coast redwood ecotype found in the Coast District.

Suitable or Functional Habitat: Habitat that meets either Nesting/Roosting or Foraging definitions, or a combination of Nesting/Roosting and Foraging habitat.

Survey Area: All Suitable/Functional NSO habitat within 0.7 mile from the project boundaries; or for disturbance only activities, a 0.25 mile area outside the edge of the project should be surveyed.

Survey-Start Date: In the coast redwood ecotype, Coast District, NSO Surveys should start on or after March 1.

² NSOs have been characterized as central-place foragers, where individuals forage over a wide area and subsequently return to a nest or roost location that is often centrally-located within the home range (Rosenberg and McKelvey 1999).

Survey-Last Survey Dates: For years 1 and 2 of the 2011 NSO Survey Protocol, the last survey visit should occur on or after May 15. For “Activity Center Searches” and Spot Check Surveys no fixed date is set, but the 2011 NSO Survey Protocols should be followed.

III. Accuracy of NSO Activity Center Location, Status and Mapping

The initial step in determining if the proposed timber operations may avoid take of NSO is to determine if the proposed operations would likely occur within the home range of a NSO (new or historical). A combination of survey data conducted to current protocol and current NSO California Department of Fish and Game (CDFG) database reports, covering all suitable NSO habitat located within the 0.7 mile radius of the proposed harvest operations, will be necessary to support a conclusion that a proposed timber harvest is not within the home range of a NSO.

Accurately mapping the location of the Activity Center is critical to the protection of Core Area habitat. Because NSOs can move from year to year, Activity Center locations are more accurate when plotted as a result of surveys rather than using the locations found in the CDFG NSO Database. Multiple Activity Centers for a NSO pair are possible. If one Core Area does not encompass all known Activity Centers, multiple Core Areas for a NSO pair, or territorial single NSO may need to be mapped and protected to avoid the likelihood of incidental take.

If some, or all, of the habitat in the survey area cannot be surveyed due to lack of access, the most recent update of the CDFG NSO Database should be consulted for Activity Center information within the 0.7 mile survey area. In addition, landowners that are adjacent to the proposed timber operations should be contacted so that all the known current NSO locations can be identified and mapped. All detections reported to the CDFG NSO Database are assigned to a known site or given a new site number. *CDFG NSO Database Report Number 2* identifies the most important detection locations for each site, and those sites should be included as “known” Activity Centers. The guidance contained herein applies to all sites listed in *CDFG NSO Database Report Number 2*, until such detections are determined by the Service not to qualify for protection (e.g., site abandonment or non-site determination). *CDFG NSO Database Report Number 3* may include more than one nest site location for a pair of NSO.

IV. Current 2011 Surveys, Subsequent Years, and Transition from Past Surveys

The 2011 NSO Survey Protocol replaces all prior versions of the NSO survey protocol. Reference to prior protocols should be limited to confirming compliance with earlier protocols during those survey years, for appropriate crediting of earlier, completed surveys, and should not be used as direction for surveys during 2011 and subsequent years. Please refer to the 2011 NSO Survey Protocol and associated NSO Protocol Transition Guidance documents for complete details regarding survey area, timing, design, and documentation of conditions necessitating deviation from the 2011 NSO Survey Protocol, with the exception of the deviation outlined below.

Data and information specific to the coast redwood region show that NSO nest slightly earlier in the year than interior areas within California. Furthermore, additional data from this coast redwood region have shown that the high response rates of NSO begin as early as March 1.

However, the 2011 NSO Survey Protocol states “At least 3 of the complete visits should be conducted before 30 June; this includes at least one visit in April, one in May and one in June.”

To accommodate the earlier breeding season for NSOs in the coast redwood region, survey dates should be moved forward 15 days, as follows:

- At least one survey should occur during the period March 15 to April 14.
- At least one survey should occur during the period April 15 to May 14.
- At least one survey should occur during the period May 15 to June 15.

With the exception of this scheduling of survey visits, all other timing, location, and operability requirements (at least 7 days between complete visits, daytime follow-ups, number of complete visits, etc.) remain consistent with the 2011 NSO Protocol.

V. Survey Area

The 2011 NSO Survey Protocol assumes that the entire survey area (0.7 mile) for the redwood portion of the Coast District will be surveyed prior to management activities that may affect suitable NSO habitat. In some cases, access issues related to private property can prevent surveys from being conducted across the entire survey area. At a minimum, surveys should be conducted on the property within which the proposed timber operations will occur, and on any adjacent accessible private or public land and along appurtenant public roads. Current survey data from adjacent landowners may be used to get information about presence/absence of NSO on portions of the survey area not accessible to the project proponent.

Survey documentation for proposed timber operations should include a description, a map of the 0.7 mile survey boundary and, if less than 0.7 mile, a map of the actual surveyed area, and an explanation of any deviation from complete 2011 NSO Survey Protocol. An explanation is especially important when removal or downgrading of suitable NSO habitat is proposed. It should be noted, however, that surveys not covering the entire survey area may require additional Spot Check Surveys to account for incomplete survey area coverage (see 2011 NSO Survey Protocol).

For operations that are anticipated to result only in disturbance to NSO during the breeding season, all suitable NSO habitat within the proposed timber operation plan area should be surveyed, plus an additional 0.25 mile radius outside the plan area.

VI. Post-Harvest Habitat Retention and Typing

Accurate habitat typing is required to determine if habitat quantities will be retained above the habitat thresholds described below. Note that CAL FIRE will need habitat typing to verify that pre-harvest typing is correct and post-harvest retention is feasible.

Inventory data provides the best support for accurate habitat typing. When inventory data is not available, habitat typing using available satellite or aerial imagery is acceptable, provided harvest histories showing any habitat alterations since the imagery was generated are incorporated into

the analysis. Imagery alone can provide reasonably accurate canopy closure estimations, but since stand age and diameter class can be difficult to determine in redwood forests from imagery alone, it is important to conduct ground truthing as well. CAL FIRE maintains timber harvest histories by watershed and that information is available on-line and should be used in conjunction with imagery for off-property habitat typing.

Narrow strips of habitat (retention areas between clearcuts, etc.) may contain the characteristics of Nesting/Roosting habitat. However, when these narrow strips of habitat are surrounded by unsuitable or low quality habitats, they function as Foraging habitat at best.

Watercourse and Lake Protection Zones (WLPZs), typically, have the highest canopy closure and the largest trees on the landscape. However, WLPZs are not wide enough by themselves to provide functional Nesting/Roosting habitat (i.e., not at least 600 feet wide); therefore, if a WLPZ is bordered on both sides by unsuitable habitat, then the WLPZ cannot be typed as Nesting/Roosting habitat, and is functionally Foraging habitat at best. If one or both slopes on either side of a WLPZ can be accurately typed as at least Foraging habitat, then the WLPZ can be functional as Nesting/Roosting habitat if a minimum of 60% canopy closure of trees at least 11" DBH are present.

Priority Ranking of Habitat Retention Acres

- 1) Tree species composition:
 - a) Redwood or mixed conifer stands should be selected over hardwood dominated stands.
- 2) Abiotic considerations to help with priority determinations:
 - a) Distance to nest: Nesting/Roosting and Foraging habitat closest to identified nest trees, or roosting trees if no nest trees identified.
 - b) Contiguity: Nesting/Roosting habitat within the 0.7 mile radius should be as contiguous as possible; and minimize fragmentation of Foraging habitat as much as possible.
 - c) Slope position: Habitats located on the lower 1/3 of slopes provide better microclimate conditions and an increased potential for intermittent or year-round water sources.

If the proposed timber operations retain at least 66% of the pre-harvest basal area and meet the functional definition of Nesting/Roosting or Foraging habitat post-harvest as described above, off-property habitat typing is not necessary, unless needed to display Core Area protections.

Core Area Habitat Protection

Once an Activity Center has been accurately mapped, a 100-acre Core Area polygon must be identified that contains the highest quality habitat (typically Nesting/Roosting) located contiguous with the Activity Center.

When an Activity Center is surrounded by sufficient Nesting/Roosting habitat, the Core Area polygon is typically mapped starting with a 1,000-foot radius circle (72 acres) centered on the

Activity Center, and is connected on one side to a WLPZ and expanded until the Core Area includes 100 acres. Limited timber operations are allowed within the Core Area polygon (see VIII. Timber Operations).

When an Activity Center is closer than 500 feet to the outside edge of the Nesting/Roosting polygon, the acres of non-Nesting/Roosting habitat within 500 feet of the activity center are included, but should be augmented with additional Nesting/Roosting habitat elsewhere in the Core Area polygon to make a total of 100 acres of the highest quality habitat.

When the Activity Center is closer than 1,000 feet to, but not within 500 of, the outside edge of the Nesting/Roosting polygon, the protected Core Area should extend to that most distant edge of the Nesting/Roosting habitat but shall not be less than a 500-foot radius.

Operations conducted outside the Core Area, but within 1,000 feet of an Activity Center should retain the functionality of any NSO habitat present pre-harvest within this area, i.e., operations do not downgrade habitat.

Polygons of Nesting/Roosting habitat contiguous with the Activity Center, which are larger than 100 acres provide the most operational flexibility. If the Nesting/Roosting polygon is 200 acres or greater, and operations in the polygon outside the Core Area have retained functional Nesting/Roosting habitat (i.e., no more than 33% of the basal area removed retaining a minimum of 100 sq. ft. of basal area per acre of trees greater than 11" DBH), then the 100-acre core area can be redrawn in subsequent entries. However, the 500-foot radius should remain unchanged, and the redrawn core area should not include any acres harvested within the previous 5 years.

Within the 0.7 mile radius (985 acres) of each Activity Center please use the following:

- 1) Retain habitat to maximize attributes desirable for NSO.
- 2) Retain at least 500 acres of suitable (Nesting/Roosting/Foraging) NSO habitat, post-harvest, as follows:
 - a) Retain 200 acres of Nesting/roosting Habitat within a 0.7 mile radius of the Activity Center consisting of:
 - i) 100 acres of the 200 acres of Nesting/Roosting habitat retained should be contiguous, or contiguous as possible with the Activity Center.
 - ii) An additional 100 acres of Nesting/Roosting with in the 0.7 mile radius:
 - (1) If the second 100 acres of Nesting/Roosting habitat is also contiguous with the Activity Center, or within the same drainage, operations should retain a minimum of 66% of the pre-harvest basal area per acre of trees at least 11" DBH.
 - (2) If the remaining 100 acres of Nesting/Roosting habitat is not contiguous with the Activity Center, retain at least Nesting/Roosting habitat.
 - b) Retain at least 300 acres of Suitable NSO habitat, post-harvest, of at least Foraging quality.

- 3) Remove no more than 1/3 of the remaining suitable habitat in excess of 500 acres within 0.7 mile of an Activity Center during the life of the timber operations.

VII. Road Use

To avoid take of NSO from noise disturbance (see U.S. Fish and Wildlife Service 2006) road use within 0.25 mile (1,320 feet) of a NSO Activity Center during the breeding season is prohibited until July 10, unless:

- 1) Non-nesting, or nesting failure at the Activity Center has been determined by a Activity Center Search (2011 NSO Protocol) conducted on or after May 15th, or;
- 2) The Activity Center is within 165 feet of major highway that typically has continuous traffic year around (Hwy 1, 36, 101,128, 299, etc.) and the appurtenant road is not within 165 feet of the Activity Center.
- 3) After July 9th until the end of the breeding season road use within the 100-acre core is restricted to existing road use, maintenance and map point work.

VIII. Timber Harvest Operations

A 0.25 mile seasonal restriction on timber operations (except for road use after July 9th) applies to every known NSO Activity Center during the breeding season, unless it is determined via a site monitoring visit, "Activity Center Search" (2011 NSO Protocol), that NSO are not nesting, or nesting failure has occurred. If it cannot be determined whether NSO are nesting, or nesting failure cannot be determined, the 0.25 mile seasonal restriction stays in effect for timber operations until after July 31st.

For all known Activity Centers, timber operations should adhere to the following recommendations:

- 1) Within the 100-acre Core Area polygon of an NSO Activity Center:
 - a) Outside the breeding season, limited timber operations (i.e., road use and maintenance, map point work, tail-hold placements, use of existing skid roads, and loading) may be conducted, provided no trees >11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.
 - b) During the NSO breeding season, timber operations (including use of roads before July 9th), are not allowed within the 100-acre Core Area polygon, except as allowed in subsections 4 and 5, below.
- 2) Timber Operations outside the 100-acre Core Area polygon, but within 0.25 mile of an NSO Activity Center:
 - a) Outside the breeding season, timber operations may be conducted.

- b) During the breeding season, no timber operations should proceed unless protocol surveys do not detect nesting NSOs.
- 3) For all NSO Activity Centers, prior to May 15th (until the required May 15 or later survey is completed):
- a) Timber operations (except helicopter yarding or staging) may be conducted only on those THP areas >0.25 mile from the Activity Center.
 - b) Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the Activity Center.
- 4) For NSO Activity Centers where reproductive status has been determined to be non-nesting or failed nesting:
- a) Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre Core Area polygon of the Activity Center provided no trees >11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.
 - b) Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center. Helicopter fly-overs shall not occur within 1000 ft. of the Activity Center
- 5) For NSO Activity Centers, where reproductive status has been determined to be nesting:
- a) For Activity Centers where fledging status has not been determined, timber operations may be conducted only on those THP areas that are >0.25 mile from the Activity Center until the end of the breeding season.
 - b) Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the Activity Center.
- 6) For NSO Activity Centers, where fledging status has been determined (either nest failure or fledglings have left the Core Area):
- a) Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center. Helicopter fly-overs shall not occur within 1000 feet of the Activity Center.
 - b) Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre core polygon of the Activity Center, provided no trees >11 inches DBH are removed by the operations, and no logs are yarded through the Core Area.

7) For any NSO Activity Center, regardless of reproductive status:

- a) If NSO move to a new location (>1000 feet from the historical Activity Center) and reproductive behavior is confirmed at the new site, request technical assistance to evaluate the status of the historical Activity Center.

IX. February Extensions for Timber Operations:

There is no allowance for extending on-going timber operations into the breeding season except, as stipulated in the most current USFWS Survey Protocol Spot Survey procedures.

X. CAL FIRE Review

When reviewing information related to NSO Activity Centers, the following outline should be used to check for adequacy and accuracy:

- 1) Location
 - a) Confirm plotted Activity Center location accuracy.
 - i) Review recent surveys.
 - ii) Review CDFG Reports 1, 2, 3.
 - iii) Review data from adjacent landowners.
 - b) Evaluate deviations from CDFG locations.
 - c) Determine if habitat maps and tables have been updated.
- 2) Activity Center and Project Area Habitat Typing.
- 3) Verify pre-harvest habitat typing of project area, survey area and 0.7 mile radius from each Activity Center using aerial photos, equivalent imagery, or field visits.
- 4) Determine if any habitat alterations have occurred which should be reflected in current NSO habitat tables and habitat analysis maps.
- 5) Verify post-harvest habitat typing reflects the silvicultural prescriptions.
- 6) Determine Activity Center status.
- 7) Is it a valid site?
 - i) Review most current protocol to determine if the location is consistent with definition of a site.
 - ii) Report both new sites and non-valid sites (need USFWS approval) to CDFG for next database update.
- 8) Determine current occupancy status.
- 9) Determine current reproductive status, if it was determined.
- 10) Activity Center Habitat and Disturbance Protection Measures.
- 11) Confirm consistency with Attachment A.

XI. Determination

CAL FIRE should use the following list to help with their take avoidance determinations:

- 1) If surveys are inadequate or do not meet the intent of the NSO protocol in effect during the year(s) of survey, take avoidance determination may not be possible.

- 2) If habitat typing is inadequate, incidental take determination may not be possible.
- 3) If NSO home range habitat acres are below desired conditions (Section III. 2, 3, and 4), additional loss of suitable habitat can lead to take.
- 4) If NSO are nesting, use seasonal restriction for all timber operations within 0.25 mile of a nest (February 1 through July 31).
- 5) If effects are limited to noise disturbance (e.g., no suitable habitat in timber harvest units, but suitable habitat within 0.25 mile of units), a modified seasonal restriction may be used from February 1 through July 9, as follows:
 - a. Seasonal restriction applies to unsurveyed suitable habitat within 0.25 mile of unit boundary.
 - b. If protocol surveys were conducted and did not detect reproductive NSO, or barred owls seasonal restrictions may not warranted.
- 6) When multiple THPs are located within a given NSO territory, all habitat conditions should be considered collectively a take avoidance determination may not be possible.

XI. Contents of Technical Assistance Requests

Technical assistance (or “TA”) requests need to be submitted to AFWO by CAL FIRE. Open “Habitat Retention Agreements,” NTMPs, “Spotted Owl Management Plans,” Spotted Owl Recovery Plans,” and THPs that have received previous technical assistance from the AFWO (i.e., have an AFWO TA correspondence number) will continue to receive additional technical assistance from AFWO. Technical assistance will be provided on a case-by-case basis to CAL FIRE, by AFWO, on complex determinations or on points of clarification.

Information to be submitted to CAL FIRE should include:

1. Date of written TA request.
2. Date request received.
3. Assigned TA number (only if previous technical assistance has been provided by AFWO in the past for this project).
4. Number of acres within the THP boundary.
5. Maps indicating types and locations of units with silviculture prescriptions.
6. Map of any know NSO sites within the survey area.
7. Location of THP, including County(s); Meridian(s); and, Townships, Ranges, and Sections.
8. Identify NSO Activity Centers returned by CDFG reports.
9. Results of all surveys conducted and Activity Center status for any known Activity Center.
10. Logic behind the take determination.
 - a. Habitat considerations:
 - i. Acres, quality, and location of suitable habitat pre- and post-harvest,
 - ii. Effects of timber operations on suitable habitat;

1. Degrade: suitable habitat is harvested but still functions in the capacity it did pre-harvest (i.e. Foraging habitat before harvest functions as Foraging habitat post-harvest, Nesting/Roosting habitat pre-harvest functions as Nesting/Roosting habitat post-harvest);
 2. Downgrade: pre-harvest Nesting/Roosting habitat becomes Foraging habitat post-harvest;
 3. Remove: Nesting/Roosting or Foraging habitat is harvested, such that it no longer functions as habitat post-harvest;
- b. Proximity of Activity Center to operations, and;
 - c. Survey data.
11. Sunset date and seasonal restrictions:
- a. If operations are not complete before February 1, surveys are required to determine location and status of NSO prior to operations during each breeding season that operations are ongoing.
 - b. Additional technical assistance may not be required if NSO are not found within 0.7 mile of THP (CDFG reports), if suitable habitat within units are not found within the project area, or if suitable habitat is not identified within 0.25 mile of units.
12. Name of agency person to contact if there questions regarding the technical assistance.

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