State of California

M e m o r a n d u m

To: Mr. Ken McLean, Chief
Northern Coast Region
California Department of Forestry
and Fire Protection
135 Ridgway Avenue
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SantaRosaReviewTeam@fire.ca.gov

Date: January 9, 2007

Original Signed by Cindy Catalano for

From: Charles Armor, Acting Regional Manager
Department of Fish and Game – Bay Delta Region, Post Office Box 47, Yountville, California 94599

Subject: Department of Fish and Game Pre-Harvest Inspection Report for Timber Harvesting Plan 1-06-163 MEN (Sage THP)

PROJECT DESCRIPTION

Plan number:	1-06-163 MEN
Timberland Owner:	Gualala Redwoods, Inc.
County:	Mendocino
Quadrangle:	Gualala McGuire Ridge
Calwater:	1113.810003 (Doty Creek) 1113. 810002 (Robinson Creek) 1113.850201 (Big Pepperwood Creek)
Streambed Alteration Agreement:	Notification required for water diversion and three watercourse crossings.
Legal Description:	MDB&M, T 11N, R 14W, Sections 7, 18, 19, 30 MDB&M, T 11N, R 15W, Sections 12, 13, 14
Total Acreage:	169
Silviculture:	Clearcutting (124 acres) Selection (45 acres)
Winter Operations:	Yes, per winter operating plan
Erosion Hazard Rating:	Moderate, High, Extreme

Proposed In-Lieu Practices:	No
Yarding Method:	Tractor, rubber tired skidder, feller buncher Cable, ground, high lead, and skyline
PHI Attendees:	<u>November 13, 2006</u> Henry Alden, GRI John Bennet, GRI Art Haschack, RPF Troy Leopardo, Consulting Wildlife Biologist Ken Margiott, CDF Michael Huyette, CGS James Burke, NCRWQCB Richard Fitzgerald, DFG <u>December 11, 2006</u> Henry Alden, GRI John Bennet, GRI Art Haschack, RPF Troy Leopardo, Consulting Wildlife Biologist Ken Margiott, CDF Richard Fitzgerald, DFG

This report includes Department of Fish and Game (DFG) recommendations based on the review of the THP and participation in the Pre-harvest Inspection (PHI). These recommendations are focused on avoiding or minimizing the proposed project's effects on fish, wildlife, and botanical resources. DFG recommendations do not necessarily reflect the opinion of other government agencies. DFG participation in the PHI was a reconnaissance level survey without quantitative sampling of fish, wildlife, aquatic invertebrates, rare and endangered plants, sediment, large woody debris (LWD), snags, canopy, vegetation composition, or stream flow. DFG recommendations provide the basis for adequate short- and long-term fish, wildlife, native plants, and habitat protection, conservation, and management. DFG requests that these recommendations be included as enforceable conditions in the approved THP. Findings and recommendations made in this report should be applied to the review of all other documents related to this project prepared and reviewed pursuant to the California Environmental Quality Act (CEQA).

The plan includes eight harvest units located approximately 2.5 to 4.25 miles northeast and east of the town of Gualala. Harvest units are discontinuous and separated by as much as two miles. Unit 1 is located within the Doty Creek Calwater 2.2 planning watershed. Units 2, 3, 4, 5 and 6 drain to the North Fork Gualala River and are located within the Robinson Creek planning watershed. Units 7 and 8 are located within the Big

Pepperwood Creek planning watershed. Elevations of harvest units range from 80 to 920 feet above mean sea level. Silvicultural method proposed for Units 1, 2, 3, 4, 5, 7 and 8 is predominantly clearcutting with some selection and no-harvest within these units. Selection is proposed for all of Unit 6. Proposed harvest methods include ground-based and cable methods. The proposed harvest method for Unit 6 includes areas where cable method is optional. Products to be harvested include sawlogs, chiplogs, fuelwood, firewood, split products and burls. Proposed activities also include watercourse crossing construction or reconstruction, and water drafting.

The THP describes the habitat types on or near the harvest units as Upland Redwood and Douglas-fir Forest, Mixed Evergreen and Tanoak Forest. Based on observations made during the PHI, the habitat types on the harvest units is consistent with redwood and montane hardwood-conifer as described in "A Guide to Wildlife Habitats of California" (Mayer and Laudenslayer 1988). Small openings are present. Adjacent areas exhibit similar habitat types, but have been subject to recent even-aged management.

Coho salmon and steelhead are present in the Gualala River drainage downstream of the plan area. Currently, coho distribution is thought to be limited to the North Fork Gualala River. The Gualala River watershed is within the Central California Coast Evolutionarily Significant Units for steelhead and coho salmon within which both species are listed as "Threatened" under the Federal Endangered Species Act (FESA). Coho salmon in waters south of Punta Gorda are listed as "Endangered" under the California Endangered Species Act (CESA). As such, Title 14 California Code of Regulations (14 CCR) § 916.9 et. seq. applies to this THP and operations in this plan should be consistent with the State's recovery goals for coho salmon. Fish and Game Code § 2055 establishes that it is the policy of the State that all State agencies, boards and commissions shall seek to conserve endangered and threatened species and shall utilize their authority for such purposes.

Northern spotted owl

The northern spotted owl ("NSO") is listed as "Threatened" under the Federal Endangered Species Act (FESA) and is a California species of special concern. As such, NSO qualifies as a "rare" species under 14 CCR § 15380 ("CEQA Guidelines").

The THP describes six NSO activity centers within 1.3 miles of the THP boundaries or within 0.25-mile of an appurtenant road: MEN0152, MEN0179, MEN0371, MEN0412, SON0017 and SON0045. The THP includes pre- and post-harvest habitat maps for these activity centers. The THP specifies take-avoidance measures for NSO which are similar to those specified by 14 CCR 919.9(g). The THP states that no timber operations shall occur until a valid technical assistance (stating that proposed operations will not result in take) has been obtained from the U. S. Fish and Wildlife Service and amended into the THP.

DFG NSO spatial data (Gould 2006b) contains records of eight NSO activity centers within 1.3 miles of plan area: SON0017, SON0045, MEN0153, MEN0179, MEN0371, MEN0412, MEN0510, MEN0587. Of these, MEN0153, MEN0510 and MEN0587 are not discussed in the THP.

SON0017

DFG NSO data (Gould 2006a) records nesting activity and other detections associated with SON0017 at a number of locations within or near the lower Big Pepperwood Creek drainage (see Figure 1). In 1990, a pair and two juveniles were observed approximately 0.25-mile east of Unit 8. The same year, an active nest was observed approximately 0.1-mile south of Unit 7. In 1997, an active nest was observed approximately 275 feet southeast of Unit 7. Nesting was observed at the same location in 1995 and 2001, approximately 475 feet southwest of Unit 7. This nesting site was observed during the December 11 PHI. Other detections, including pairs and single owls have been made in a variety of locations. This includes a 2002 pair detection within Unit 7.

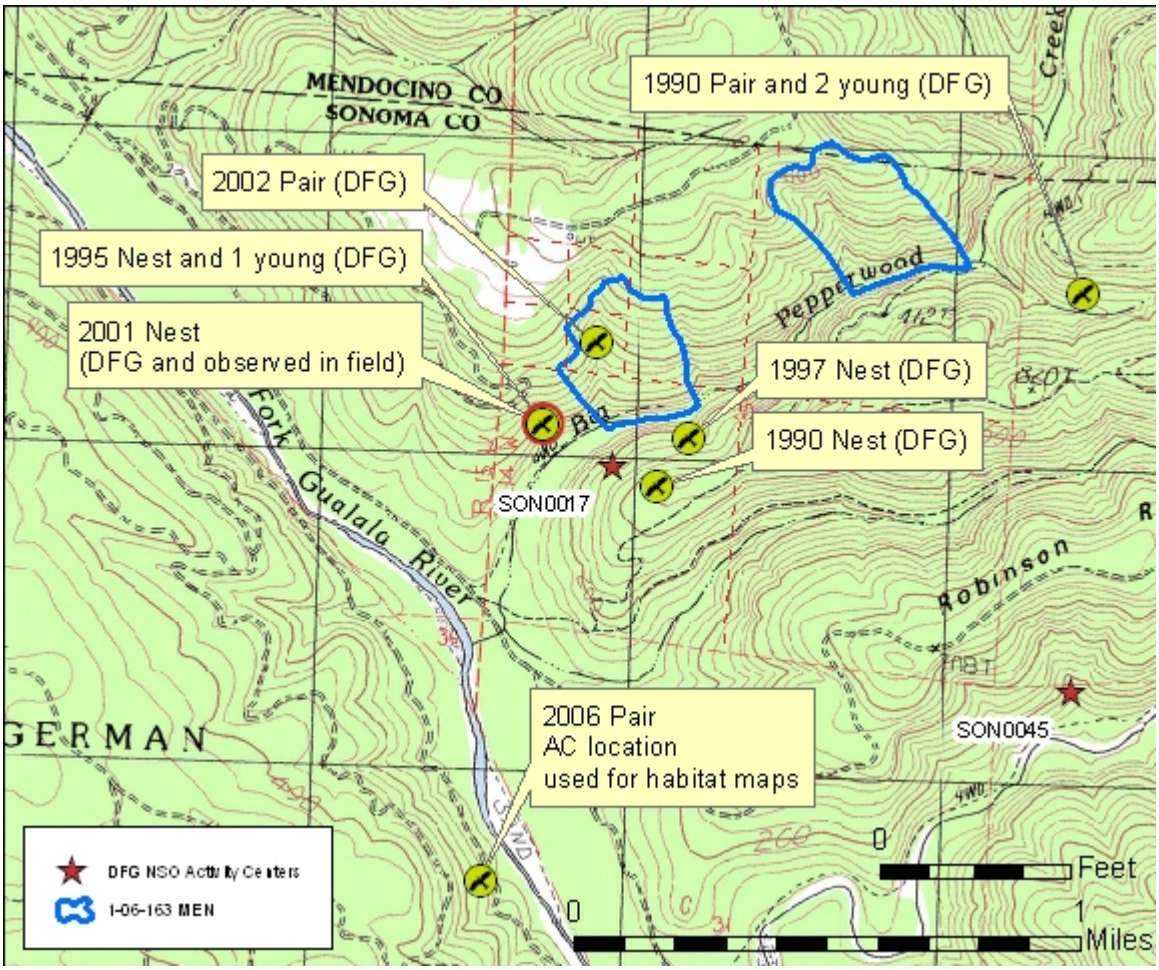

Figure 1. Selected recorded detections of NSO activity center SON0017. Location information source shown in parentheses.

The 2001 nesting site is the most recent recorded nesting activity detection for SON0017. In addition, this site is the only nest site associated with SON0017 which has supported successful nesting in more than one year. The nest tree remains structurally intact and the immediately surrounding habitat continues to provide suitable functional nesting habitat. Unit 7 falls within 1000 feet of the 2001 nest site (see Figure 2). DFG recommends that the THP show the 2001 nest site as the activity center location for

SON0017 and specify that the functional characteristics of nesting habitat shall be maintained within 1000 feet of this site (**Recommendation 1**).

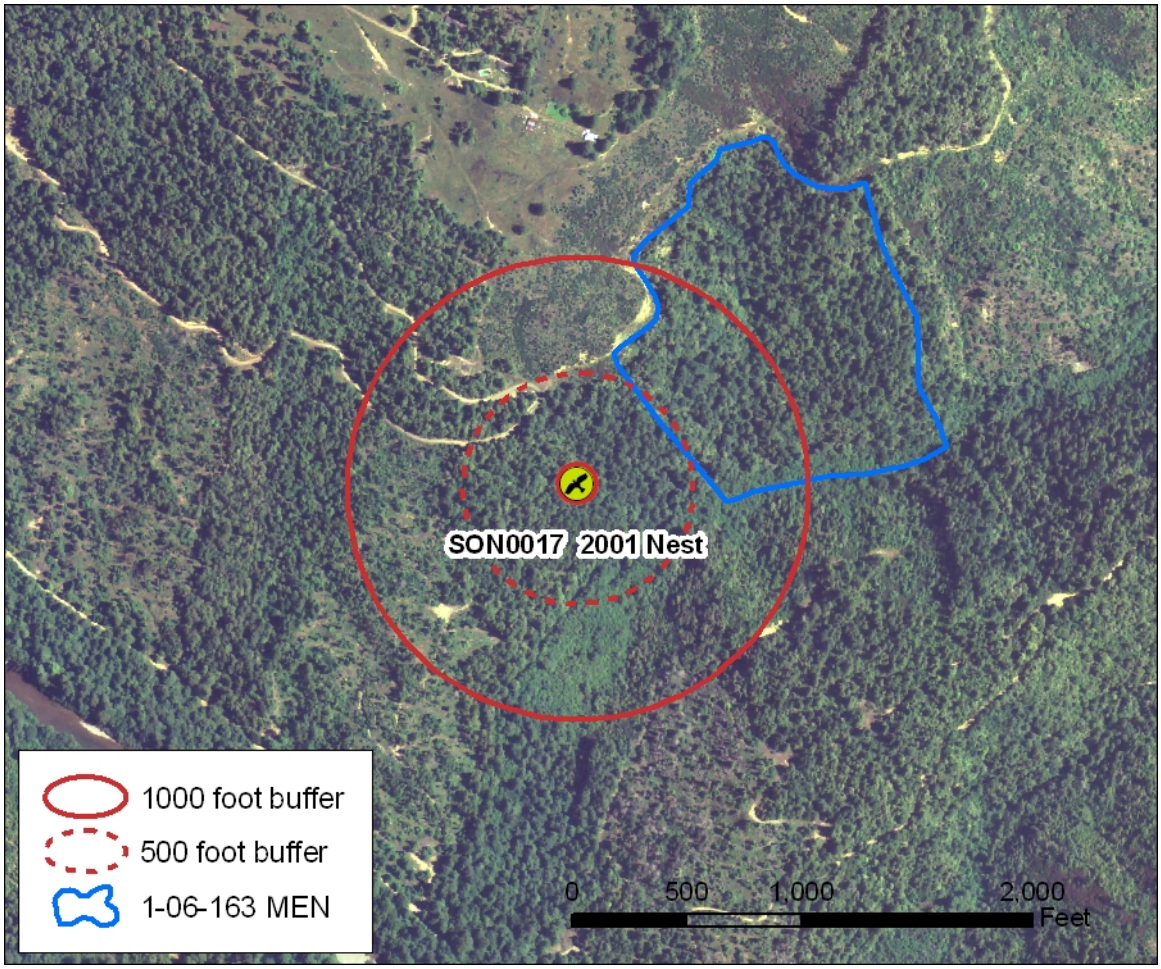

Figure 2. 2001 nest site for NSO activity center SON0017 and proximity to THP harvest unit. The 2005 National Agriculture Imagery Program (NAIP) natural color digital ortho image mosaic is shown in background.

The pre- and post-harvest habitat maps included in the THP for SON0017 utilize the 2006 pair detection location as the activity center location. Due to the spatial separation between the 2006 pair detection and the prior recorded detections, it is uncertain whether the 2006 pair detection should be associated with SON0017. Because of this and the absence of known successful nesting activity at this location, we recommend using the 2001 nest site as the activity center location for purposes of habitat evaluation. We have briefly reviewed the pre- and post-harvest habitat maps for SON0017 and have observed the following:

- The map is centered on 2006 pair detection location rather than 2001 nest site.
- The map aligns poorly with other geographic data (e.g., geo-referenced USGS 7.5-minute quadrangles, NAIP digital ortho image mosaics, CDF Forest Practice GIS data).
- The map shows harvest units from 1-06-010 SON (Orchid) as foraging habitat.

These are selection harvest units, but 1-06-010 SON does not specify that functional characteristics of foraging habitat will be retained on all portions of all units (see August 1, 2006 RPF response to DFG recommendations for 1-06-010 SON).

- Selection units from other recent THPs shown as suitable foraging and nesting habitat. Selection units may or may not provide functional characteristics of suitable habitat.
- Clearcut units from recent THPs (1-03-020 SON, 1-01-391 SON,) shown as suitable foraging and nesting habitat. Clearcut units are unlikely to provide functional characteristics of suitable habitat.

The spatial registration of the habitat maps is poor. As a result, verifying the accuracy of habitat typing is not possible and tabulation of habitat acreages from these maps is unlikely to be accurate. DFG recommends revising the pre- and post-harvest habitat maps for SON0017 (**Recommendation 1**). DFG may make further recommendations upon review of revised materials.

SON0045

NSO activity center SON0045 is approximately 0.8-mile from the nearest harvest unit.

We have briefly reviewed the pre- and post-harvest habitat maps for SON0045 and have observed the following:

- The map shows harvest units from 1-06-010 SON (Orchid) as foraging habitat. These are selection harvest units, but 1-06-010 SON does not specify that functional characteristics of foraging habitat will be retained on all portions of all units (see August 1, 2006 RPF response to DFG recommendations for 1-06-010 SON).
- Clearcut units from a recent THP (1-01-392 SON) shown as suitable foraging habitat. Recent clearcut units are unlikely to provide functional characteristics of suitable habitat. Review of aerial imagery (2005 National Agriculture Imagery Program), indicates that this area is unlikely to qualify as suitable habitat.

DFG recommends revising the pre- and post-harvest habitat maps for SON0045 (**Recommendation 2**). DFG may make further recommendations upon review of revised materials.

MEN0153

DFG NSO data shows the location of activity center MEN0153 as approximately 2,000 feet from the nearest harvest unit boundary. This location is consistent with the most recent (1994) record of nesting activity. According to the RPF, a historic nest site associated with this activity center was located along the western boundary of Unit 4. This location roughly matches the location of two 1998 pair detections recorded in the DFG database. This location may have been within an adjacent clearcut unit from a recent THP.

The THP does not include assessment of impacts of proposed operations to owls at activity center MEN0153. As a male owl was detected near this activity center in 2004, this activity center is unlikely to meet the criteria for an abandoned activity center at this time. DFG recommends that the THP include an assessment of impacts to owls at activity center MEN0153 including pre- and post-harvest habitat assessment maps (**Recommendation 3**).

MEN0179

DFG NSO data shows the location of activity center MEN0179 as approximately 0.9-mile from the nearest harvest unit boundary.

We have briefly reviewed the pre- and post-harvest habitat maps for MEN0179 and have observed the following:

- The map aligns poorly with other geographic data (e.g., geo-referenced USGS 7.5-minute quadrangles, NAIP digital ortho image mosaics, CDF Forest Practice GIS data).
- Selection units from recent THP (1-04-032 MEN) shown as suitable nesting or roosting habitat. Selection units may or may not provide functional characteristics of suitable habitat.

The spatial registration of the habitat maps is poor. As such, verifying the accuracy of habitat typing is not possible and tabulation of habitat acreages from these maps is unlikely to be accurate. DFG recommends revising the pre- and post-harvest habitat maps for MEN0179 (**Recommendation 4**). DFG may make further recommendations upon review of revised materials.

MEN0371

DFG NSO data shows the location of activity center MEN0371 as approximately 0.9-mile from the nearest harvest unit boundary.

We have briefly reviewed the pre- and post-harvest habitat maps for MEN0371 and have observed the following:

- The map aligns poorly with other geographic data (e.g., geo-referenced USGS 7.5-minute quadrangles, NAIP digital ortho image mosaics, CDF Forest Practice GIS data).
- Selection units from recent THP (1-04-032 MEN) shown as suitable nesting or roosting habitat. Selection units may or may not provide functional characteristics of suitable habitat.

The spatial registration of the habitat maps is poor. As such, verifying the accuracy of habitat typing is not possible and tabulation of habitat acreages from these maps is unlikely to be accurate. DFG recommends revising the pre- and post-harvest habitat maps for MEN0371 (**Recommendation 5**). DFG may make further recommendations upon review of revised materials.

MEN0412

DFG NSO data (Gould 2006a) records nesting activity and other detections associated with MEN0412 at a number of locations within or near the upper Big Pepperwood Creek drainage (see Figure 3). Of these, a 2001 and a 2004 nest site are located within 1000 feet of the plan area (see Figure 4).

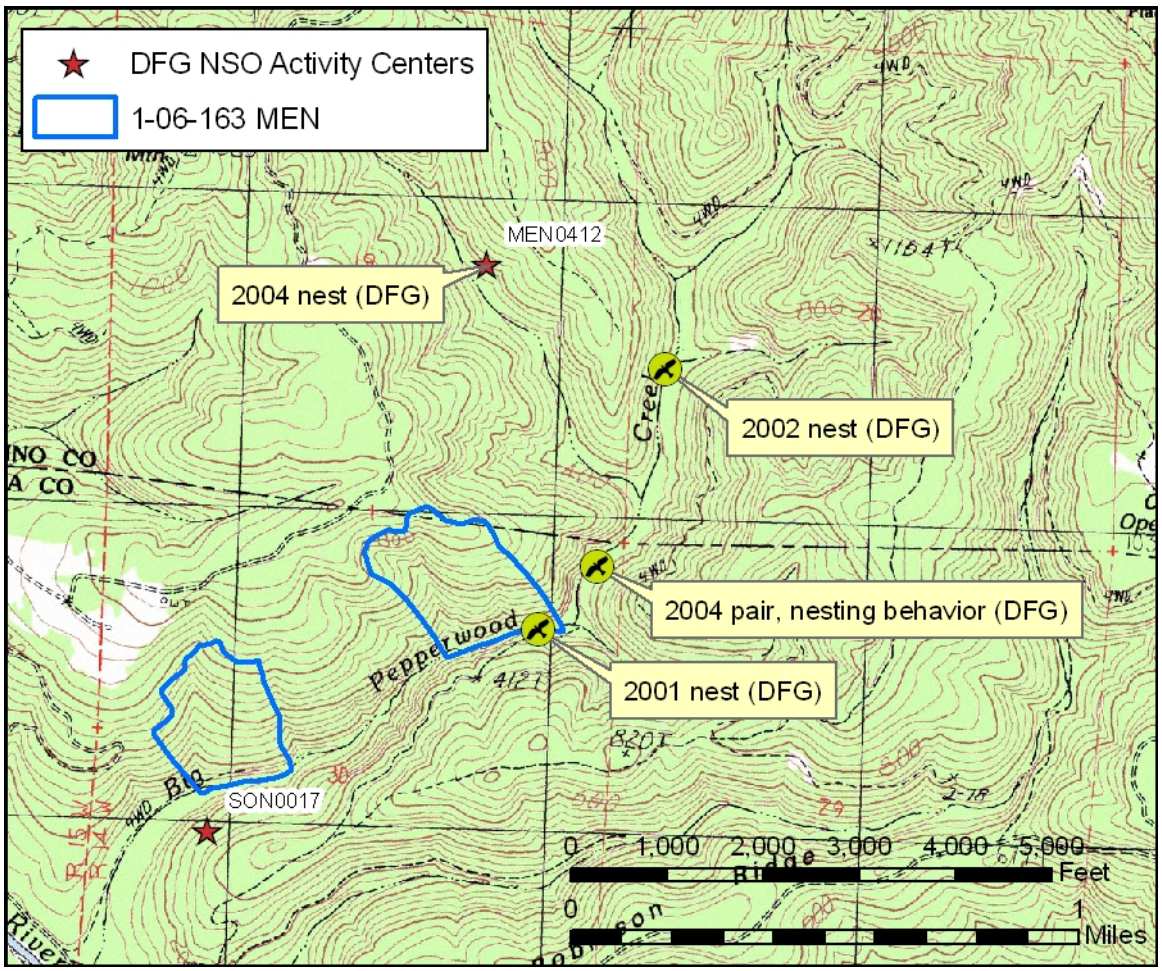

Figure 3. Selected recorded detections of NSO activity center MEN0412. Location information source shown in parentheses.

The 2001 nest site is adjacent to or within the boundaries of Unit 8. DFG NSO data describes detections at two locations in 2004. The April 30, 2004 record of a pair exhibiting nesting behavior matches the date of a GRI record (Gualala Redwoods, Inc. "Walk-In Visit Information") of a female on a nest. According to the DFG NSO data, it is likely that the location of this record is within 1000 feet of Unit 8. The activity center location shown in DFG NSO spatial data (Gould 2006b) is based on a May 14, 2004 record of a pair exhibiting nesting behavior.

The THP includes records (Gualala Redwoods, Inc. “Walk-In Visit Information”) of owl activity at or around the 2002 nest site including: a pair and a fledgling in 2003, a female exhibiting nesting behavior in 2004, and of a pair exhibiting nesting behavior in 2006. The THP does not identify the presence of the 2001 nest site for MEN0412.

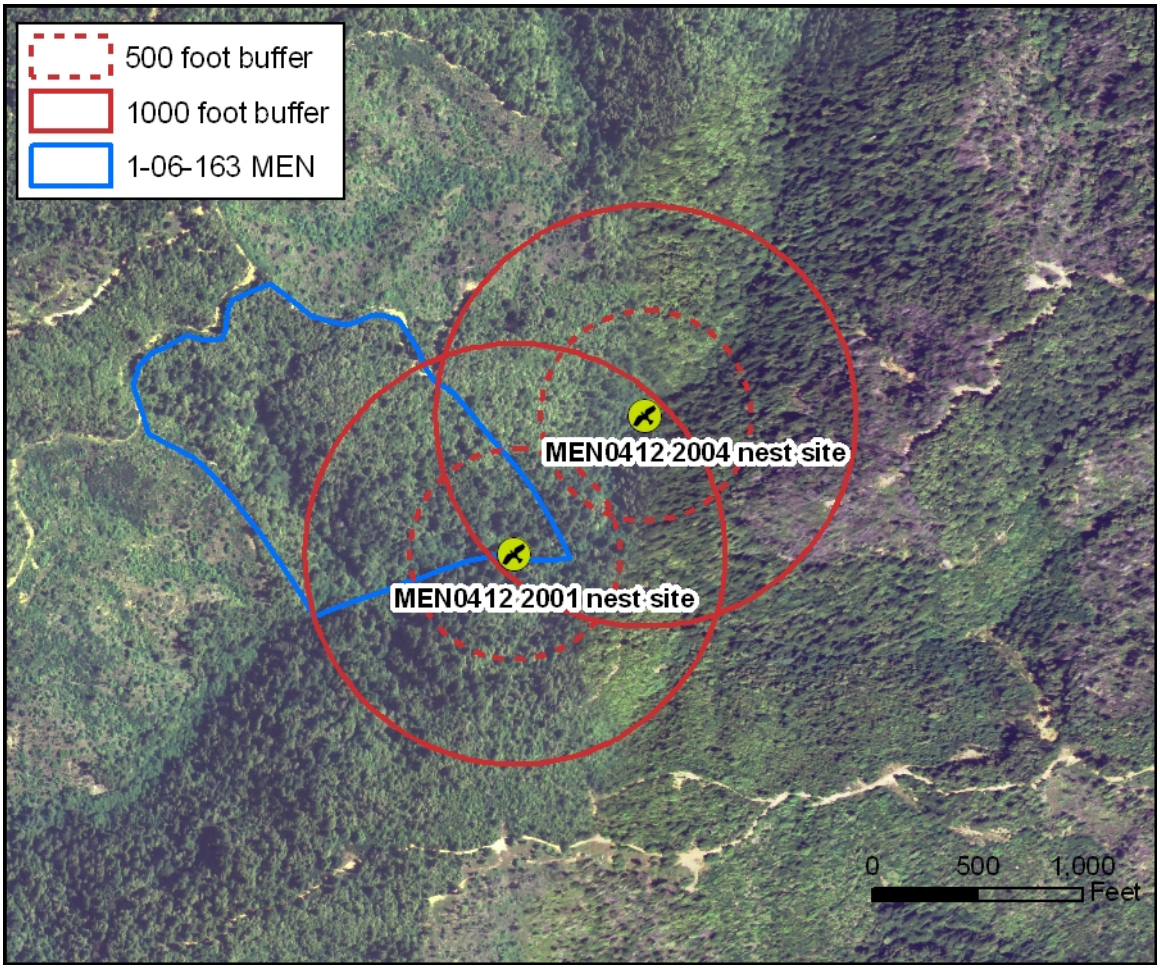

Figure 4. Estimated locations of 2001 and 2004 nest sites for MEN0412 and proximity to THP harvest unit. The 2005 National Agriculture Imagery Program (NAIP) natural color digital ortho image mosaic is shown in background.

Reuse of nest sites following long periods of inactivity is known to occur. NSO do not build nests (Gutiérrez and others 1995), so the availability of suitable nest structures is critical to the maintenance of habitat condition. Modification of nest-site core areas during periods of inactivity may avoid direct take of NSO, but may otherwise reduce the suitability of an area for NSO by inhibiting or precluding future nesting activity by decreasing the availability of suitable nest sites.

DFG recommends that the THP show the 2001 and 2004 nest site locations for MEN0412 and specify that the nest site and the functional characteristics of nesting habitat shall be maintained within 1000 feet of these sites (**Recommendation 6**).

We have briefly reviewed the pre- and post-harvest habitat maps for MEN0412 and have observed the following:

- The map appears to be centered on 2002 pair nest location. It is unclear whether this is consistent with the most location of the most recent recorded nesting activity (2006).
- The map aligns poorly with other geographic data (e.g., geo-referenced USGS 7.5-minute quadrangles, NAIP digital ortho image mosaics, CDF Forest Practice GIS data).
- The map shows harvest units from 1-06-010 SON (Orchid) as nesting or roosting habitat. These are selection harvest units, but 1-06-010 SON does not specify that functional characteristics of nesting or roosting habitat will be retained these units. THP 1-06-010 SON specifies retention of foraging habitat on portions of these units (see August 1, 2006 RPF response to DFG recommendations for 1-06-010 SON).

The spatial registration of the habitat maps is poor. As such, verifying the accuracy of habitat typing is not possible and tabulation of habitat acreages from these maps is unlikely to be accurate. DFG recommends revising the pre- and post-harvest habitat maps for MEN0412 (**Recommendation 6**). DFG may make further recommendations upon review of revised materials.

MEN0510

DFG NSO data shows the location of activity center MEN0510 as approximately 2,500 feet from the nearest harvest unit boundary.

The THP does not include assessment of impacts of proposed operations to owls at activity center MEN0510. DFG recommends that the THP include an assessment of impacts to owls at activity center MEN0510 including pre- and post-harvest habitat assessment maps (**Recommendation 7**).

MEN0587

DFG NSO data (Gould 2006b) shows the location of activity center MEN0587 as approximately 1.2 miles from the nearest harvest unit boundary. The THP does not include assessment of impacts of proposed operations to owls at activity center MEN0587. DFG recommends that the THP include an assessment of impacts to owls at activity center MEN0587 including pre- and post-harvest habitat assessment maps (**Recommendation 8**).

Watercourse Classification

During the PHI, our representative observed class II watercourse characteristics (see Lucke 2000; Valentine 1997) in the channel immediately downstream from road point 15. Observed characteristics include the concentrated presence of giant chain fern (*Woodwardia fimbriata*). Giant chain fern is a facultative wetland plant (Reed 1998). This watercourse is outside of the harvest unit boundaries. DFG recommends classifying the

channel downstream of the crossing as a class II watercourse (**Recommendation 9**). Proposed work at this crossing will require notification to DFG for a Lake and Streambed Alteration Agreement (SAA).

Erosion Potential on Roads, Skid Trails, and Landings

Road point 4 is an unarmored rolling dip crossing in the southeast corner of Unit 5. The crossing road surface and outlet are currently unarmored. The channel bed drops immediately downstream of the crossing, indicating a potential for headcutting. The crossing dip is currently shallow and there is a potential for water from the crossing to run down the northeastern approach. DFG recommends armoring the crossing surface and outlet with rock and installing a waterbar on the northern approach to redirect water to the crossing outlet (**Recommendation 10**).

Downstream of road point 2864 is a crossing downstream of a recent debris slide. The crossing and downstream channel have been impacted by the slide. Slide material removed from the road surface is currently stored immediately above the watercourse on the southeastern bank downstream of the crossing. Stored soils should be removed from the streamside area and stored in a stable location where they cannot deliver to a watercourse. DFG recommends that the THP include specification for repairing the crossing and removing stored soils
(**Recommendation 11**).

Road point 14 is a wet ford crossing of a class III watercourse. The fill slope has failed below the crossing. A flimsy downspout has been installed to keep water off of bare soils. The THP proposes reshaping the dip or installing a 24-inch culvert pipe and the optional installation of an energy dissipater. Effective energy dissipation is necessary to prevent further erosion below the crossing. DFG recommends that the THP include specification for stabilized, keyed-in armor at the crossing outlet (**Recommendation 12**).

Road point 23 is a portion of road adjacent to a steep bank failure above a class I watercourse. The scarp of the failure is continuing to erode under current conditions, particularly at the outlet of a waterbar. If erosion continues, the road surface may be sufficiently impacted to preclude passage. The THP proposes to maintain the inslope of the road, remove the waterbar and possibly widen the road by cutting into the hillslope. Widening of the road may encourage erosion of the adjacent hillslope. DFG suggests that the RPF further evaluate this site and propose a solution that minimizes impacts to the watercourse over the long term.

Road point 25 is a proposed temporary crossing of a class I watercourse. The THP specifies the installation of a 24-inch culvert. During the PHI, the RPF proposed to construct the crossing with a ½-pipe that would fully span the wetted channel and utilize clean rock approaches. The crossing would be removed prior to the close of winter operations. DFG recommends that the THP include a description of the temporary ½-pipe crossing as discussed in the field (**Recommendation 13**). These changes will require modification to the SAA materials included in the THP.

Road point 8 is the proposed use of a temporary two-culvert pipe crossing of a class I watercourse. In general, the crossing design is acceptable, however further conditions

may be required to avoid take of listed native anadromous salmonids during installation and removal. This work is described in the SAA notification materials included in the THP. DFG recommendations will be included as agreement conditions.

Road point 9 is the proposed use of a temporary flatcar bridge crossing. Approaches will be constructed of logs and rock from the dry channel bed. Installation will require crossing the channel bed by a tractor. In general, the crossing design is acceptable, however further conditions may be required to avoid take of listed native anadromous salmonids during installation and removal. This work is described in the SAA notification materials included in the THP. DFG recommendations will be included as agreement conditions.

Water Drafting

At road point 2864, the THP proposes diverting water from a class II watercourse by an unpumped 2-inch intake pipe to water tanks. Flow at the diversion site during the PHI was lower than 2 cubic feet per second (cfs). It is unlikely that this stream flows at or above 2 cfs outside of the winter period. It is likely that the proposed diversion would exceed 10% of the surface flow. As such, 14 CCR 916.9(r) requires the inclusion of a water drafting plan in the THP. DFG recommends that the THP include a water drafting plan as specified by 14 CCR 9196.9(r)(2)(D)(1-5) (**Recommendation 14**). In general, the proposed drafting method is acceptable, however further conditions may be required to avoid impacts. This work is described in the SAA materials included in the THP. DFG recommendations will be included as agreement conditions.

Water Temperature Control

The PHI team examined the proposed harvest mark in the class I WLPZ of Unit 4. Shade canopy in this portion of the North Fork is scarce, principally due to the width of the channel. For Unit 4, the THP proposes a 150-foot WLPZ and a 50-foot special operating zone, within which hardwoods and mid-canopy conifers will be retained. Harvest within the special operating zone may allow increase of direct insolation of the water surface during early- to mid-morning and mid-to late-afternoon during the summer months. DFG recommends that the THP prohibit tree-trading in the WLPZ (**Recommendation 15**) and specify a percentage of canopy retention for the special operating zone (**Recommendation 16**).

WLPZ Harvest

The PHI team examined the proposed mark in the class I WLPZ of Unit 3. In the western portion of the WLPZ, three large diameter dominant redwoods were marked for harvest (see Figure 5). In order to promote LWD recruitment, shade canopy and structural diversity in the WLPZ, DFG recommends marking these trees for retention (**Recommendation 17**). Additional smaller diameter trees may be marked for harvest. DFG recommends that the THP prohibit tree-trading in the WLPZ (**Recommendation 18**).

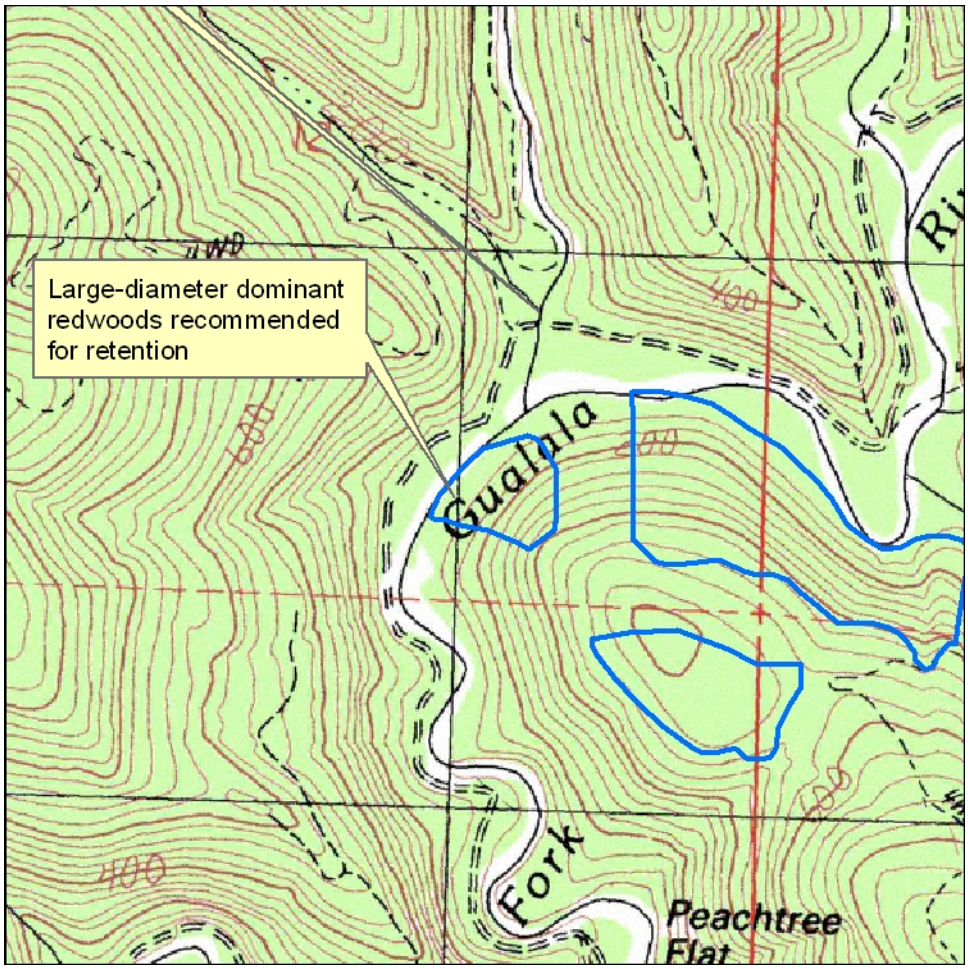

Figure 5. Location of large-diameter redwoods recommended for retention.

Sonoma tree vole

The THP is within the range and appropriate habitat of the Sonoma tree vole (*Arborimus pomo*). The CNDDB contains a record of Sonoma tree voles adjacent to the western boundary of Unit 6. The THP describes local presence, but states that no nests or evidence of nesting was found during THP preparation. No sign of Sonoma tree vole presence was observed during the PHI. In order to conform to 14 CCR 897 (b), DFG recommends that the THP specify that tree vole nest surveys will be conducted in Unit 6 prior to operations and specify measures similar to those of 14 CCR 919.2(b-d) in the event that evidence of tree vole presence is detected following plan approval (**Recommendation 19**). Surveys should be conducted following the "modified line transect method" described in Biswell and others (2002).

Raptors and nesting birds

The THP describes observations of Cooper's and sharp-shinned hawks near the plan area. Cooper's and sharp-shinned hawks are California Species of Special Concern (CDFG 1992). Fish and Game Code § 3503.5 prohibits the destruction of nests or eggs of raptors and owls. DFG recommends that, prior to operations in any year in which

operations occur during the breeding seasons for Cooper's and sharp-shinned hawks (March 1 to August 7), surveys for nesting raptors shall be conducted over the plan area prior to operations.

Survey methods should be described in the THP prior to the review team meeting. In the event that an active nest or a Cooper's hawk, sharp-shinned hawk, or other raptor is found, we recommend the extension of measures of 14 CCR Section § 919.2(b-d) to these species (**Recommendation 20**).

Rare plants

The THP identifies the potential presence of a number of rare, threatened, or endangered plants within the plan area. The THP states that rare plant surveys shall be conducted prior to operations. DFG recommends that botanical surveys be completed according to the Department's "Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities" (CDFG 2000) (**Recommendation 21**). The survey report should be amended to the THP.

Since surveys are likely to be conducted following the close of the review period, it is appropriate for the THP to specify mitigation measures to be implemented in the event rare plants are detected (**Recommendation 22**). DFG suggests the following:

- Flag a 50-foot avoidance buffer(s) around the occurrences of plants.
- Amend the following information to the THP:
    1. A map of the location and a description of the shape and area(s) of each occurrence area.
    2. Count of individual plants in each occurrence area. If occurrence is greater than 100 plants, estimate the number of individuals.
    3. Estimated percentage of plants in reproductive condition and percentage of seedlings in each occurrence area.
    4. Describe the associated species, aspect, topography, and soils of each occurrence area.
    5. Estimate percentage cover of tree layer, shrub layer, and bare mineral soil of each occurrence area.
    6. Current overstory canopy conditions of each occurrence area.
    7. Current conditions controlling the hydrologic regime of each occurrence area.
    8. Past and current land use/ harvest/ disturbance conditions of each occurrence area.
    9. Foreseeable activities and post-harvest stand condition within 50 feet of each occurrence area.
    10. Percent of each occurrence area which will be avoided by operations.
    11. For sites where activity will be proposed within the buffer, propose an

effectiveness monitoring scheme. Early discussions with DFG are recommended.

12. A copy of a completed and submitted CNDDB field form.

Exotic and Invasive Plant Species

The THP proposes grass seeding for soil stabilization and erosion control. Grass species or varieties are not specified. Annual (or "Italian") ryegrass (*Lolium multiflorum*) is commonly used for this purpose, but is considered a persistent and invasive grass by the California Exotic Pest Plant Council and other weed references and experts. DFG recommends avoiding use of annual ryegrass (**Recommendation 23**).

Snag/Nest/Den Trees

Snags (standing dead or mostly dead trees) are important forest habitat features which provide for nesting, foraging and roosting by a variety of bird species and denning for many mammal species. Large-diameter living trees are also important wildlife elements for species which utilize forested habitats. Much of the habitat value of these elements is provided by mast production, dominant canopy position and the presence of structural characteristics including cavities, reiterated crowns, basal fire scars, platforms, dead tops and particularly basal hollows (Mazurek and Zielinski 2004). Due to both increased light availability resulting from dominant canopy position and crown injuries attendant to age, older conifers may develop multiple resprouted trunks arising from other trunks and branches. In older redwoods, the resulting complex crowns promote biological diversity by providing a substrate for organic material and humic development, a substrate for vegetation, habitat for soil and terrestrial fauna and food sources for birds (Sillett and Pelt 2000). In the redwood region, large-old Douglas-fir have particular value as habitat elements due to their susceptibility to cavity decay and tendency to develop large limbs, moss accumulation and complex crown structure at a younger age than redwood.

There is a common misconception that the selection method automatically provides for adequate snag/nest/den tree retention and recruitment. While selection forestry facilitates snag/nest/den tree recruitment by maintaining green trees necessary to replace hard snags, further consideration is necessary to ensure that trees are retained through senescence and mortality. Recruitment may be interrupted through thinning or felling of stems in the upper size classes. The THP estimates the density of snags at about 2 to 4 per acre in the plan area. The plan specifies that trees with characteristics of benefit to wildlife may be marked for retention, but the THP does not provide an estimate of the number or distribution of such marked trees. The THP specifies that all snags and live cull trees will be left standing except where they pose a threat to safety or a fire hazard as determined by the LTO and the RPF has indicated that almost all trees with characteristics beneficial to wildlife (forked tops, loose bark, cavities) and snags will be retained. The THP specifies that wildlife trees may be marked "NO" for retention for wildlife habitat.

During the PHI, our representative observed a number of large trees with characteristics beneficial to wildlife and marked “NO.” Several good candidates for wildlife tree retention were observed in Unit 6 (see Figure 6). DFG recommends that these three trees are marked “NO” (**Recommendation 24**). Based on information in the THP and observations made during the PHI, we believe that the plan will result in the satisfactory retention and recruitment of snag/nest/den trees if DFG recommendations 1, 6, 15, 16, 17, 18, 19 and 20 are incorporated into the THP.

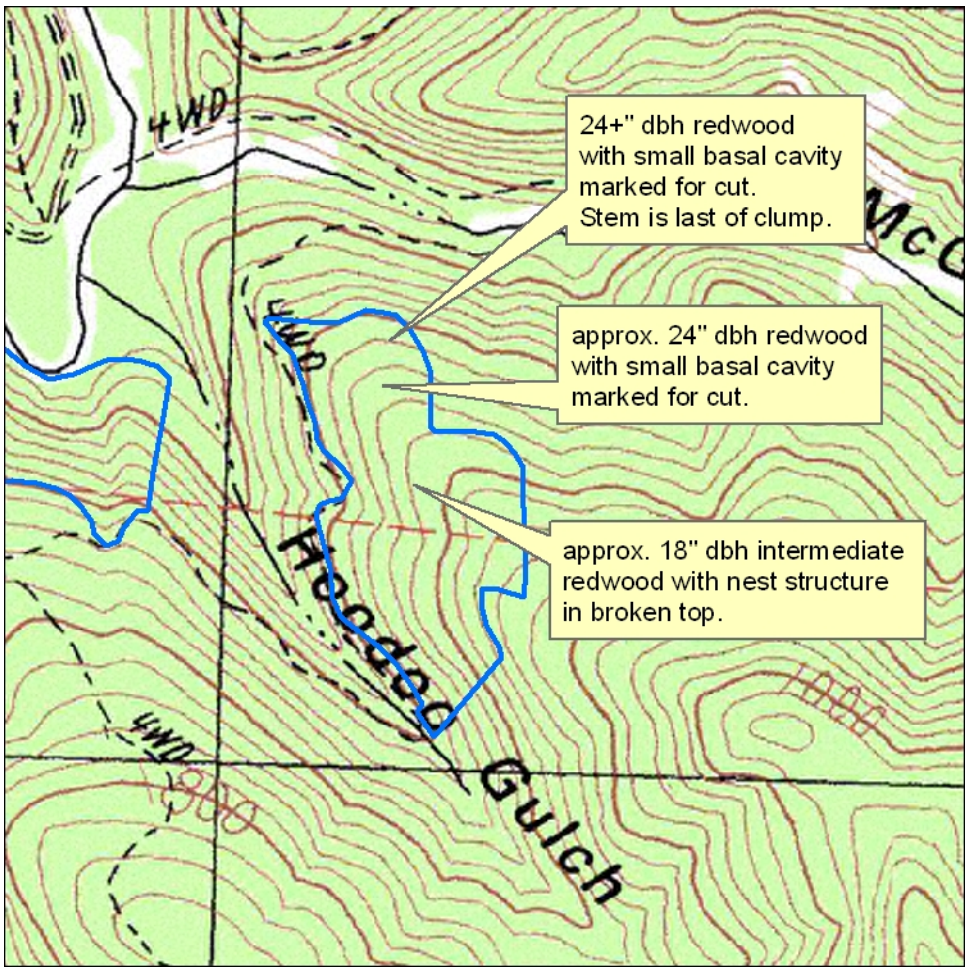

Figure 6. Selected wildlife tree candidates observed in Unit 6.

Recommendations

DFG recommends the following site-specific and feasible mitigation measures be incorporated as enforceable provisions of the harvesting plan:

1. **At least 14 days prior to the Review Team Meeting**, with respect to NSO activity center SON0017 the THP shall:
    a. show the 2001 nest site as the activity center location,
    b. include a map showing 500- and 1000-foot radius zones around the 2001 nest site and the THP unit boundaries,

c. specify that the functional characteristics of nesting habitat shall be maintained within 1000 feet of the 2001 nest site, and

d. include revised pre- and post-harvest habitat maps.

2. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity centers SON0045 the THP shall include revised pre- and post-harvest habitat maps.
3. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0153 the THP shall include an assessment of impacts of proposed operations including pre- and post-harvest habitat maps.
4. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0179 the THP shall include revised pre- and post-harvest habitat maps.
5. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0371 the THP shall include revised pre- and post-harvest habitat maps.
6. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0412 the THP shall:
    a. show the location of the 2001 nest site,
    b. show the location of the 2004 nest site,
    c. include a map showing 500- and 1000-foot radius zones around the 2001 and 2004 nest sites and the THP unit boundaries,
    d. specify that the 2001 and 2004 nest sites shall be treated as detailed under Section II, Item 32, and
    e. include revised pre- and post-harvest habitat maps.
7. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0510 the THP shall include an assessment of impacts of proposed operations including pre- and post-harvest habitat maps.
8. **At least 14 days prior to the Review Team Meeting,** with respect to NSO activity center MEN0587 the THP shall include an assessment of impacts of proposed operations including pre- and post-harvest habitat maps.
9. **Prior to the Review Team Meeting**, the THP shall designate the watercourse downstream of road point 15 as a class II watercourse.
10. **Prior to the Review Team Meeting**, the THP shall specify the installation of rock armor on the crossing surface and outlet of the dip crossing at road point 4. The THP shall specify the installation of a waterbar, or other drainage control, on the northeastern approach.
11. **Prior to the Review Team Meeting**, the THP shall specify repair of the crossing downstream from road point 2864 and the removal of stored soils.
12. **Prior to the Review Team Meeting**, the THP shall specify details for the installation of energy dissipation material at the outlet of road point 14.

13. **Prior to the Review Team Meeting**, the THP shall describe the installation of a temporary ½-pipe culvert at crossing 25 as proposed during the PHI.
14. **Prior to the Review Team Meeting**, the THP shall include a water drafting plan as specified by 14 CCR 9196.9(r)(2)(D)(1-5) for the proposed drafting activity at road point 2864.
15. **Prior to the Review Team Meeting**, the THP shall prohibit tree-trading in the class I WLPZ in Unit 4.
16. **Prior to the Review Team Meeting**, the THP shall specify a percentage canopy retention for the special operating zone upslope of the class I WLPZ in Unit 4.
17. **Prior to the Review Team Meeting**, the RPF shall mark the three large-diameter dominant redwoods in the class I WLPZ of Unit 3 for retention. Additional smaller diameter trees may be marked for harvest.
18. **Prior to the Review Team Meeting**, following the implementation of the above recommendation, the THP shall prohibit tree-trading in the class I WLPZ of Unit 3.
19. **Prior to the Review Team Meeting**, the THP shall specify that surveys for Sonoma tree vole nests shall be conducted in Unit 6 prior to felling in that Unit. Surveys shall be conducted following the "modified line transect method" described in Biswell and others (2002). For the whole plan area, the THP shall the following in the event that a tree vole nest is detected:
    a. nest, screen, and replacement trees shall be left standing and unharmed
    b. the operator shall immediately notify DFG and CDF
    c. protection measures agreed to between the operator, CDF and DFG shall be amended into the THP
20. **Prior to the Review Team Meeting**, the THP shall specify that, prior to operations in any year in which operations occur during the breeding seasons for Cooper's and sharp-shinned hawks (March 1 to August 7) nest surveys shall be conducted. The THP shall describe methods for survey to be implemented. The THP shall also extend the measures of 14 CCR Section § 919.2 to these species.
21. **Prior to the Review Team Meeting**, the THP shall specify that rare plant surveys shall be conducted following DFG's "Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities" (CDFG 2000). The survey report shall be amended to the THP.
22. **Prior to the Review Team Meeting**, the THP shall specify protection measures to be implemented in the event a rare, threatened, or endangered plant is discovered.
23. **Prior to the Review Team Meeting**, the THP shall include language prohibiting the use of annual ryegrass (*Lolium multiflorum*). The THP shall specify under Section II, Item 18, that where mulching or chipping of native

materials or application of weed-free straw mulch is not feasible or sufficient, areas of unstable soils shall be seeded with native grass species or sterile cereal grasses at appropriate rates.

24. **Prior to Review Team Meeting**, the RPF shall mark for retention the trees shown in Figure 6.

Should you have any questions regarding this memorandum, please contact Mr. Richard Fitzgerald, Environmental Scientist, at (707) 944-5568; or Mr. Richard Macedo, Senior Environmental Scientist, at (707) 928-4369.

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References

Biswell B, Blow M, Finley L, Madsen S, Schmidt K. 2002. Survey Protocol for the Red Tree Vole, *Arborimus longicaudus (=Phenacomys longicaudus* in the Record of Decision of the Northwest Forest Plan), Version 2.0. U.S.D.A. Forest Service and U.S.D.I. Bureau of Land Management. 25 p.

CDFG. 2000. Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities. Sacramento: California Department of Fish and Game, Habitat Conservation and Planning Branch. 2 p. http://www.dfg.ca.gov/whdab/html/plants.html.

Gould G. 2006a. Northern Spotted Owl Database Management System. Sacramento, California: California Department of Fish and Game.

Gould G. 2006b. Spotted Owl Territories. ESRI Shapefile. Sacramento, California: California Department of Fish and Game.

Gutiérrez RJ, Franklin AB, LaHaye WS. 1995. Spotted Owl. In: Poole A, Gill F, editors. The Birds of North America. Washington, D.C.: The Academy of Natural Sciences of Philadelphia and The American Ornithologists' Union.

LeDoux-Bloom CM. 2002. Assessment of Anadromous Salmonids and Stream Habitat Conditions of the Gualala River Basin, California. Fort Bragg, California: California Department of Fish and Game, North Coast Watershed Assessment Program. 110 p. http://ftp.dfg.ca.gov/outgoing/whdab/ncwap/public/watersheds/gualala_river/pdf/appendices/App_5_Gualala_Fisheries.pdf.

Lucke D. 2000. Class II/Class III Watercourse Designation. Memorandum. California Department of Forestry and Fire Protection. p 3.

Mayer KE, Laudenslayer WF, Jr., editors. 1988. A Guide to Wildlife Habitats of California. Sacramento. 166 p.

Reed. 1998. National List of Plant Species that Occur in Wetlands: California (Region 0). USDI, Fish and Wildlife Service. Biological Report 88(26.10).

Valentine B. 1997. Guidance on Identifying Aquatic Habitat for Non-fish Species. California Department of Forestry and Fire Protection.