

**OFFICIAL RESPONSE TO SIGNIFICANT ENVIRONMENTAL  
POINTS RAISED DURING THE TIMBER HARVESTING PLAN  
EVALUATION PROCESS**

**FROM THE DIRECTOR OF THE CALIFORNIA DEPARTMENT OF  
FORESTRY AND FIRE PROTECTION**

TIMBER HARVESTING PLAN (THP) No.:	1-04-302 HUM
SUBMITTER:	Scotia Pacific Company LLC
COUNTY:	Humboldt
END OF PUBLIC COMMENT PERIOD:	May 10, 2005
DATE OF RESPONSE AND APPROVAL:	June 17, 2005

The California Department of Forestry and Fire Protection (CDF) serves as the lead agency in the review of Timber Harvesting Plans. These Plans are submitted to CDF, which directs a multidisciplinary review team of specialists from other governmental agencies to ensure compliance with environmental laws and regulations. As a part of this review process, CDF accepted and responded to comments which addressed significant environmental points raised during the evaluation of the plan referenced above. This document is the Director's official response to those significant environmental points which specifically address this timber harvesting plan. Comments which were made on like topics may have been grouped together and addressed in a single response. Remarks concerning the validity of the review process for timber operations, questions of law, or topics and concerns so remote or speculative that they could not be reasonably assessed or related to the outcome of a timber harvesting operation, have not been addressed.

Sincerely,

Ronald M. Pape  
Division Chief, Forest Practice  
RPF #1701

cc: Unit  
County Planning  
Fish and Game  
Parks and Recreation  
Water Quality

## COMMON FOREST PRACTICE ABBREVIATIONS

CDF	Calif. Department of Forestry & Fire Protection	LTO	Licensed Timber Operator
CEQA	Calif. Environmental Quality Act	LWD	Large Woody Debris
CGS	Calif. Geological Survey	MSP	Maximum Sustained Production
CMZ	Channel Migration Zone	MWAC	Mass Wasting Area of Concern
DFG	Calif. Department of Fish & Game	NMFS	National Marine Fisheries Service
DMG	Calif. Division of Mines & Geology	NTMP	Non-Industrial Timber Management Plan
EEZ	Equipment Exclusion Zone	PHI	Pre-Harvest Inspection
EHR	Erosion Hazard Rating	RMZ	Riparian Management Zone
ELZ	Equipment Limitation Zone	RPF	Registered Professional Forester
FEIS/EIR	Final Environmental Impact Statement/ Environmental Impact Report and Habitat Conservation Plan/Sustained Yield Plan for the Headwaters Forest Project	SYP	Sustained Yield Plan
FPA	Forest Practice Act	THP	Timber Harvesting Plan
FPR	Forest Practice Rules	TPZ	Timber Production Zone
HCP	Habitat Conservation Plan	USFWS	United States Fish and Wildlife Service
HU	Hydrologic Unit	WAA	Watershed Assessment Area
		WLPZ	Watercourse/Lake Protection Zone
		WQ	Regional Water Quality Control Board

## PUBLIC NOTIFICATION

To inform the public of this proposed Timber Harvesting Plan (THP) and determine if there were any concerns with the plan the following actions were taken:

- Notice of the receipt of a THP was sent to the adjacent landowner(s).
- Notice of the receipt of the plan was submitted to the county clerk for posting with other environmental notices.
- Notice of the plan was posted at the Department's local office and also at the regional office in Santa Rosa.
- Notice of the receipt of the THP was sent to those organizations and individuals on the Department's list for notification of plans in the county.
- Notice of the Intent to Harvest Timber was posted near the plan site if the plan is within 300 feet from other ownerships.

In addition, the Department determined that a pre-harvest inspection (PHI) was required to take place on the site of the proposed operation before a decision could be made on the proposed plan. The review of this plan resulted in site-specific measures being incorporated into the THP. With the addition of these protective measures, CDF determined there would be no significant adverse or cumulative impacts resulting from this plan.

## THP REVIEW PROCESS

The laws and regulations that govern the Timber Harvesting Plan review process are found in statute law in the form of the Forest Practice Act which is contained in the Public Resources Code (PRC), and administrative law in the rules of the Board of Forestry and Fire Protection (the Forest Practice Rules) which are contained in the California Code of Regulations (CCR).

The Forest Practice Rules are lengthy in scope and detail and provide explicit instructions for permissible and prohibited actions that govern the conduct of timber operations in the field. The major categories covered by the rules include the following:

- Timber Harvesting Plan contents and the Timber Harvesting Plan review process
- Silvicultural methods
- Harvesting practices and erosion control
- Site preparation
- Watercourse and lake protection
- Hazard reduction
- Fire protection
- Forest insect and disease protection practices
- Coastal Commission Special Treatment Areas
- Use, construction, and maintenance of logging roads and landings
- County-specific rules

When a THP is submitted to the California Department of Forestry and Fire Protection (CDF), a multidisciplinary review team conducts the first review team meeting to assess the THP. The review team normally consists of, but is not necessarily limited to, representatives of CDF, the Department of Fish and Game, and the Regional Water Quality Control Board. The Division of Mines and Geology also reviews each Timber Harvesting Plan for indications of potential slope instability. The purpose of the first review team meeting is to assess the proposed logging plan and determine on a preliminary basis whether it conforms to the rules of the Board of Forestry and Fire Protections. If it is found in conformance on this preliminary basis, questions are formulated which are to be answered by a field inspection (PHI) team.

Next, a PHI is normally conducted to examine the THP area and the logging plan. All review team members may attend, as well as other experts and agency personnel whom the Department may request. As a result of the PHI, additional recommendations may be formulated for site-specific conditions to ensure environmental protection.

After a PHI, a Second Review Team meeting is conducted to examine the field inspection reports and to finalize any additional recommendations or changes in the THP. The review team transmits these recommendations to the Registered Professional Forester (RPF) who developed the harvest plan. The RPF must address and respond to each recommendation. To reach a decision on acceptance or denial of a proposed THP, the Director's representative considers public comment, the adequacy of the RPF's response, and the recommendations of the review team chairperson before reaching a decision to approve or deny a THP. If a THP is approved, logging may commence.

The THP is valid for up to three years, and may be extended under special circumstances for a maximum of two years more, for a total of five years.

Before commencing operations, the plan submitter must notify CDF. During operations, CDF periodically inspects the logging area for compliance with the specifications of the THP and for compliance with the Forest Practice Rules (FPRs). The number of the inspections will depend upon the plan size, duration, complexity, regeneration method, and the potential for impacts. The contents of the THP and the FPRs provide the criteria CDF inspectors use to determine if violations exist. While CDF cannot guarantee that a violation will not occur, it is CDF's policy to pursue vigorously the prompt and positive enforcement of the Forest Practice Act, the FPRs, related laws and regulations, and environmental protection measures applying to timber operations on the non-federally owned lands in California. This enforcement policy is directed primarily at preventing and deterring forest practice violations, and secondarily a prompt and adequate

correction of violations when they occur. The mitigation measures required or incorporated in this THP will be monitored during the inspections conducted by CDF as authorized or required by the Forest Practice Act. The inspections include but are not limited to inspections during operations pursuant to section 4604, inspections of completed work pursuant to section 4586, stocking inspections pursuant to section 4588, and erosion control structure maintenance inspections pursuant to 14 CCR 1050.

Most forest practice violations are correctable and the Department's enforcement program assures correction. Where non-correctable violations occur, criminal action is usually taken against the offender. Depending on the outcome of the case and the court in which the case is heard some sort of environmental corrective work is usually done. This is intended to offset non-correctable adverse impacts. Once harvesting operations are finished, a completion report must be submitted certifying that the area meets the requirements of the rules. CDF inspects the area to verify that all aspects of the applicable rules and regulations have been followed, including erosion control work.

Depending on the silvicultural system used, the stocking standards of the rules must be met immediately or in certain cases within five years. A stocking report must be filed to certify that the requirements have been met.

## **PALCO FEIS/EIR AND HCP BACKGROUND**

The Pacific Lumber Company and its subsidiaries, Scotia Pacific Holding Company LLC and Salmon Creek Corporation, together referred to as PALCO, manage forest lands in Humboldt County, California. Because PALCO's timber harvesting would likely result in take of listed species, PALCO obtained an Incidental Take Permit (ITP) under Section 10 of the Endangered Species Act from the U. S. Fish and Wildlife Service (USFWS) for marbled murrelet and other wildlife and resident fish, and one from the NOAA Fisheries (formerly known as the National Marine Fisheries Service) for salmon and steelhead trout. To obtain an ITP, PALCO prepared a Habitat Conservation Plan (HCP) that, among other things, minimizes and mitigates take and avoids jeopardy to the covered species.

The HCP application and the Headwaters acquisition were the Proposed Action/Proposed Project, which was analyzed in the Final Environmental Impact Statement and Environmental Impact Report (FEIS/EIR). The FEIS/EIR was prepared by USFWS and CDF as lead agencies for the Headwaters Forest Acquisition and the PALCO HCP. Because the issuance of an ITP is a federal action, it must be reviewed under the National Environmental Policy Act (NEPA). The PALCO FEIS followed the Environmental Impact Statement format under NEPA. The HCP provides protection to both listed and unlisted fish and wildlife.

Implementation of the PALCO HCP began on March 1, 1999. PALCO THPs on "covered lands" are "tiered" to the environmental analysis within the HCP. Such THPs must also comply with the Forest Practice Rules and must incorporate the mitigation measures in the HCP. For each resource discussed in the FEIS, either the proposed activity is not expected to significantly impact the resource or additional mitigations have been added by the wildlife agencies to fully mitigate the impacts of take and to further reduce potential adverse effects. The wildlife agencies (DFG, NOAA Fisheries, and USFWS) thoroughly reviewed this plan and required a considerable number of changes and mitigation measures to reduce impacts to less than significant.

The mitigations set forth in the HCP were thoroughly analyzed in the FEIS, and this information is referenced where applicable in the proposed THP. The FEIS is referenced in the THP for its analysis of environmental effects. The complete package of minimization and mitigation measures of the HCP may be found in Appendix P of the FEIS. Environmental effects were addressed in the THP using the format of 14 CCR § 912.9 and Technical Rule Addendum No. 2. The FEIS is available on compact disc which, along

with paper copies of an FEIS summary, can be obtained from the USFWS, 1655 Heindon Road, Arcata, CA 95521, (707) 822-7201.

On August 29, 2002 the Superior Court of California, County of Humboldt, issued a stay on PALCO SYP #96-002, which was approved on March 1, 1999. This SYP was invalidated on October 31, 2003, by the Humboldt County Superior Court (Case #s CV990445 and CV 990452) in Judgments and Writs of Mandate entered by assigned judge John Golden. Those Judgments and Writs are not yet final and are subject to appeal. The Orders also invalidated (1) CDF's CEQA Findings for the SYP/HCP; (2) DFG's approval of Incidental Take Permit No. 2081- 1998-62-1 which authorized the incidental take of various state listed species; (3) DFG's approval of Streambed Alteration Agreement No. 99-0075; and (4) DFG's CEQA Findings for the SYP/HCP. The State Court decision had no effect upon the Headwaters FEIS, Federal ITPs, or HCP.

This THP is not subject to the court action outlined above, because the THP does not rely on the PALCO/SCOPAC SYP, or the State EIR. In response to the initial stay and Judge Golden's ruling, the landowner submitted THP 1-02-223 HUM as an 'Option A' plan for HCP covered lands as per 14 CCR § 913.11(a), which was filed on September 19, 2002. The PALCO HCP-Lands Option A Plan identified how MSP would be achieved, and provided the basis for a determination that the THPs that use the document are, in fact, in compliance with 14 CCR § 913.11(a). The Option A plan covers a 100-year period and projects inventory, growth, and harvest levels in 10-year (or larger if harvest is proposed in periods that exceed ten years) increments. The Option A considered all activities related to growth, management, and harvest of timber, including site preparation, slash control, tree planting, vegetation management, thinning, fertilization, fire prevention, and use, construction, and maintenance of roads and landings. The Department first approved the PALCO HCP-Lands Option A in association with the approval of THP 1-02-223 HUM on April 18, 2005.

The RPF initially submitted THP 1-04-302 HUM as an Option "C" (14 CCR § 913.11 (c)) method of achieving MSP. As such, this THP was not subject to the court action outlined above, because the THP did not rely on the PALCO/SCOPAC SYP, or the State EIR. THP 1-04-302 HUM was subsequently revised to an Option "A" (14 CCR § 913.11 (a)) method of achieving MSP.

The Department was informed in two separate letters in late December 2003 and early January 2004 that the Level II Watershed Analysis had resulted in established, site-specific prescriptions for the Van Duzen River watershed, pursuant to the process and requirements set forth in PALCO's HCP and the associated Implementation Agreement. A December 19, 2003 letter from Mr. Michael M. Long (USFWS) to Mr. Robert Manne (PALCO) and a January 14, 2004 letter from Mr. Joseph Blum (NOAA Fisheries) to Mr. Manne state with minor cosmetic differences,

"These prescriptions were unanimously agreed to by and among the Pacific Lumber Company [PALCO], NOAA Fisheries and the [FWS] Service. They are the result of a successful watershed analysis process that involved input from the public, and several State [advisory] agencies (California Department of Fish and Game [(CDFG)], North Coast Regional Water Quality Control Board, and California Geological Survey).

PALCO may immediately commence preparation of timber harvesting plans (THPs) or amend already approved THPs using the new prescriptions. However, there remain[s] two additional tasks that must be completed before timber operations may proceed using the new prescriptions. First, PALCO must develop a detailed set of monitoring procedures outlined in Section 6.3.5 of the Van Duzen River Prescriptions that [,which] must be approved by the Wildlife Agencies [NOAA Fisheries and FWS]. Second, PALCO must present to the public a final Van Duzen Watershed Analysis Report and a justification of the methods and prescriptions. The final monitoring plan will

require individual written approval from each of the Wildlife Agencies and will specify the monitoring which must be in place and operational prior to any timber operations conducted under the new prescriptions.”

The Department received notice on June 18, 2004, that the Van Duzen site-specific monitoring study and the Disturbance Index calculation methodology was approved. A June 18, 2004 letter from Mr. Michael M. Long (USFWS) to Mr. Robert Manne (PALCO) and a letter from Ms. Irma Lagomarsino (NOAA Fisheries) to Mr. Manne received the same day state with minor cosmetic differences,

“The National Marine Fisheries Service (NOAA Fisheries) [U. S. Fish and Wildlife Service (Service)] approves the enclosed Van Duzen site-specific monitoring study and Disturbance Index calculation methodology (enclosures 1 and 2) developed during the Van Duzen watershed analysis for the purpose of modifying the interim prescriptions within this watershed, pursuant to the requirements set forth in the Habitat Conservation Plan for the Properties of the Pacific Lumber Company, Scotia Pacific Holding Company, and Salmon Creek Corporation (PALCO HCP). With this approval, NOAA Fisheries Jan 14, 2004, [previous Service] approval of the Van Duzen site-specific prescriptions (enclosure 3), and concurrence of the U.S. Fish and Wildlife Service [NOAA Fisheries], PALCO may harvest within the Van Duzen watershed utilizing these new site-specific watershed prescriptions.”

The Van Duzen Watershed Analysis prescriptions generally provide for a slight moderation of the HCP’s interim measures. Some areas that formerly provided protection to riparian areas or unstable areas through no-harvest interim measures were found to be adequately protected with limited-harvest under the established prescriptions. The prescriptions are subject to re-visitation, owing to the dynamic nature of the timber resource and the scientific process.

## **OVERVIEW OF THP-SPECIFIC INFORMATION**

The “Grizzly 05” Timber Harvesting Plan, THP 1-04-302 HUM, was filed on January 17, 2005. The plan includes a total of approximately 201.7 acres within the Grizzly Creek and Swains Flat Planning Watersheds (PW), located within the Van Duzen WAA Hydrologic Unit. The THP is focused on the Grizzly Creek PW, as only one percent (2.2 acres) are located on a ridge-top setting in the Swains Flat PW. The THP consists of nine harvesting units. The operating area of this THP prescribes approximately 120.5 acres of Commercial Thinning silviculture, 35.2 acres of Shelterwood Removal Step, 2.6 acres of road Right of Way, 24.5 acres of HCP Class I and II Outer Band (most similar to Selection), and 18.9 acres of no-harvest areas associated with riparian buffers or existing roads and landings. New roads and landings construction and reconstruction are prescribed. One temporary crossing is proposed on a seasonal road on adjacent landowner Green Diamond Resource Company to provide access for yarding operations.

For this THP there is an estimated 45 cubic yards of sediment (45 cubic yards in the Grizzly Creek PW, and 0 yards in the Swains Flat PW) that may be delivered to watercourses as a result of timber operations. Three road mitigation sites were selected that were calculated to result in a reduction of sediment delivery of approximately 205 cubic yards, for a net reduction of approximately 160 cubic yards in the Grizzly Creek PW.

A preharvest inspection (PHI) was conducted on the THP site on February 2, 2005. Members present included CDF Forest Practice Inspector Ernie Rohl; Mitch Hunt (RPF); Tim Walcott (WQ); Gary Simpson (SHN Consultants); and Andy Klein and Geronimo Zuniga (SCOPAC). A PHI report was prepared by each of the agencies represented, with a number of recommendations made between the two agencies. The RPF

addressed the recommendations in a letter of response dated February 18, 2005. At the request of the Department, a focused geologic PHI was conducted on March 11, 2005, including Messrs. Simpson and Zuniga, Don Braun (CGS), and Patrick Vaughan (California State Parks). A focused PHI report, including recommendations for revisions to the THP, was supplied by CGS. No PHI report was provided by State Parks. The RPF responded to the CGS recommendations in a letter of response dated March 28, 2005.

The plan proceeded to Second Review on April 1, 2005, with Second Review Team Chairperson Michael Risso presiding. The Review Team Chairperson recommended the plan be found in conformance with the rules of the Board of Forestry and Fire Protection if the concerns and suggestions (two recommendations) of the Chairperson or the intent of them, were addressed by the plan submitter before the close of the comment period. The two recommendations were addressed by the RPF in a letter dated April 4, 2005, and revisions were made to the THP. The RPF responses to the Second Review Team recommendations were determined to be sufficient.

The agency reports and other correspondence which have been included in the THP file indicate that serious consideration was given to the potential for impacts related to the concerns expressed by the public, as well as to concerns expressed by the reviewing agencies. After the conclusion of the Second Review Team Meeting, SCOPAC submitted substantial new information that required the Department to re-open the public comment period. This new information consisted of converting the THP from an Option "C" document to an Option "A" since the PALCO/SCOPAC HCP document was approved by CDF on April 18, 2005. Other changes included the changing of several silvicultural prescriptions to conform with the Option "A" document and the posting of a revised Notice of Intent to Harvest Timber. The public comment period ultimately close on May 10, 2005. During the period allowed for public comment on THP 1-04-302 HUM, the Department received five letters of concern. In general, the letters pertain to concerns regarding helicopter noise during harvesting operations. Those concerns are addressed below.

## **PUBLIC COMMENT LETTERS RECEIVED BY CDF**

1. Sal Steinberg, March 21, 2005 (1 page electronic letter, with attached 2 page letter addressed to three Van Duzen River THPs (# 1-04-298 HUM, 1-04-302 HUM, and 1-05-001 HUM) and one off-site THP (1-04-274 HUM) that is approximately 35 miles north of the Van Duzen River drainage); re: helicopter noise
2. Sal Steinberg, April 11, 2005 (1 page electronic letter, with attached 7 page letter addressed to one Van Duzen River THPs (# 1-04-302 HUM) and one off-site THP (1-04-304 HUM) that is approximately 16 miles southwest of the Grizzly Creek drainage); re: cumulative impacts, impacts to anadromous salmonids, geologic impacts, and the need for aquatic monitoring
3. Sal Steinberg, April 11, 2005 (1 page electronic letter, with attached 2 page letter addressed to one Van Duzen River THPs (# 1-04-302 HUM) and one off-site THP (1-04-304 HUM) that is approximately 16 miles southwest of the Grizzly Creek drainage); re: cumulative impacts, and the addition of information into the administrative record of the plan
4. Lindsey Holm, April 11, 2005 (4 page letter of attachment to a 3 page electronic letter addressed to one Van Duzen River THPs (# 1-04-302 HUM) and one off-site THP (1-04-304 HUM) that is approximately 16 miles southwest of the Grizzly Creek drainage); re: cumulative impacts, impacts to water quality, helicopter noise, geologic impacts, and marbled murrelets

5. Lindsey Holm, April 11, 2005 (3 page electronic letter with a 4 page letter of attachment, addressed to one Van Duzen River THPs (# 1-04-302 HUM) and one off-site THP (1-04-304 HUM) that is approximately 16 miles southwest of the Grizzly Creek drainage); re: cumulative impacts, impacts to water quality, helicopter noise, geologic impacts, and marbled murrelets

## PUBLIC CONCERNS AND RESPONSES

**1. Concern:** (typed as received, in part) *Helicopter operations in the Grizzly Creek and Stevens Creek Planning Sheds [sic], and in the other planning sheds [sic] in the Van Duzen River Basin, are having a negative impact on rural residents, state, and county parks. CDF's approval of 5000 acres of timber harvest plans in the Van Duzen in 2004 has accelerated the use of helicopters in the area and have had additional negative impact [to] rural residential citizens and to tourism in the Van Duzen valley.*

*Dual propeller Columbia helicopter operations have been occurring for 7 days a week with no rest for residents. This is having a negative impact on residents health' (loss of hearing, shattering of ear drums of residents in Larabee, and residents having to wear ear plugs while outside on their property), loss of sleep (helicopters now wake residents at 7:30 in the morning), loss of business revenue, (citizens being unable to use the phone to conduct business due to too much helicopter noise), loss of quality of life )residents are forced to leave their homes during the day to avoid helicopter noise, loss of property values (public disclosure requires sellers to reveal any unusual circumstances/activities around their houses), and ultimately, people are moving out of Carlotta due to the accelerated use of helicopters.*

*Therefore additional mitigations must be established to protect citizens and tourists in the Van Duzen river basin. These should include but not be limited to:*

1. *No helicopter logging on weekends near rural residential neighborhoods.*
2. *No helicopter logging on weekends near county and state parks.*
3. *No helicopters flying over peoples' houses.*
4. *Establishing different flying patterns to have less impact on rural residential neighborhoods and parks.*
5. *No flying during holidays including Veterans Day, Presidents Day, and Martin Luther King Day.*
6. *A community liaison person from Green Diamond should be established regarding helicopter logging.*
7. *Helicopter hours should be modified to 9:00 – 5:00.*
8. *Helicopter areas should have a maximum 3-4 hour work continual work operation, then move to another site so as to not impact residents for 11-12 straight hours. Present hours are 7-6.*
9. *Public meetings should be held for public input to helicopter logging. There are many residents in the Van Duzen River Basin who are being negatively impacted by helicopter logging.*
10. *No helicopters near the MMCA during murrelet nesting season. (Concern Letter # 1)*

**Response:** The Concern Writer appears to be primarily concerned for the impacts of helicopter noise on beneficial values of the Van Duzen River area. As indicated on THP page 15 in THP Item 16, helicopter yarding is proposed. The *Grizzly 05 Yarding Systems Map* on THP page 73 shows that helicopter-only yarding is proposed in Units 2, 6, and 8, and is optional on the balance of this plan. THP Section II, Item 16 (l) includes helicopter restrictions and mitigation for this yarding method. Furthermore, the plan-preparing RPF provided a *Helicopter Noise Assessment* on THP pages 217 through 220 as a part of his *Cumulative Impacts Assessment*.

The Concern Writer states that helicopter operations have been occurring 7 days per week with no rest for the residents. THP 1-04-302 HUM provides specific restrictions to such a practice. As stated on THP page 17,

“As feasible and excluding emergencies, helicopters shall not fly directly up or down the “Van Duzen River corridor” when flying to or from the overnight staging area at the beginning or end of the day. Helicopters shall cross perpendicular through the corridor once while in route to or from the daily work site. The “Van Duzen River corridor” specifically for this restriction is defined as follows: Along the south side of the Van Duzen River this restriction shall extend 500 horizontal feet away from the river bank. Along the north side of the Van Duzen River this restriction shall extend 500 horizontal feet away from the residences that border the north side of Highway 36. Given this restriction it should be noted that helicopters flying at a height of 500 to 1000 feet will appear to be closer than they actually are. (i.e. A helicopter flying 500 to 1000 feet south of the Van Duzen River, at a height of 500 to 1000 feet above the ground will appear to be directly over the river when observed from residences along the north side of the river).

Helicopter logging operations shall not occur on Saturdays, Sundays, Presidents Day, or Holidays Widely Observed (<http://pe.usps.gov/text/dmm/g011.htm>) (New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day). Hours of logging operations shall occur only between the hours of 7:00 am and 6:00 pm, or daylight hours during winter months if shorter.

Pilots shall select direct flight paths between the logging unit and the log landings illustrated in the THP that are least impactful to populated areas.”

The restriction on helicopter logging on Saturdays and Sundays, as well as on the hours of operations, have been standard language in the PALCO THPs for a number of years, should helicopter yarding be proposed within relative close proximity to a significant number of people. Other timberland owners who also utilize Columbia Helicopters for harvesting may not provide these same restrictions, and may allow weekend and extended hours of use.

On THP pages 48 and 142, the RPF refers to the HCP 6.1.2.3.2 Disturbance Minimization restrictions to all timber operations on PALCO covered-lands when located within 0.25 miles of Marbled Murrelet Conservation Areas (MMCA), within 0.25 miles of old-growth habitat in parks and acquired reserves, and within 0.25 miles of other occupied stands to ensure that disturbance of murrelets has been minimized to the greatest extent feasible. These seasonal restrictions from March 24 through September 15 limit the operating period for the plan to such an extent that ground based yarding may not be completed prior to the winter period or prior to the onset of saturated soil conditions. The helicopter yarding option may be implemented to yard the logs during the winter period when ground based yarding or hauling is not feasible. The RPF examined the feasibility of helicopter yarding as a part of his Alternatives discussion on THP page 109, stating,

“Helicopter. This method is feasible because there are no topographical, physical, or safety reasons that would preclude the use of helicopters on this project. Helicopter yarding minimizes impacts to the environment to an extent greater than other yarding methods considered in this analysis. However, the increased costs associated with helicopter yarding must be weighed against many operational variables, such as log supply shortages, availability of equipment, seasonal restrictions/timing of operations, and road use restrictions. Based upon feasibility and flexibility, this method has therefore been considered as a viable option proposed in this THP.”

The Concern Writer states that helicopter noise is having a negative impact on residents health, suggesting that such noise has caused “...loss of hearing, shattering of ear drums of residents in Larabee, and residents having to wear ear plugs while outside on their property.” The Concern Writer does not provide any significant

documentation to support these claims. The rural community of Larabee is not located within the Van Duzen River drainage, and does not appear to have any bearing on THP 1-04-302 HUM. Larabee is approximately 6 air miles south-southwest of the proposed operations of THP 1-04-302 HUM.

The Concern Writer provides additional, unsubstantiated claims of harm, including the loss of property values, noting that sellers are required to provide public disclosure. Humboldt County Zoning Regulations (HCZR) Section 313-43.2 provides for *Allowed Agricultural Activities Not a Nuisance* (“*Right to Farm Ordinance*”). As per HCZR 313 § 43.2.2, Findings and Policy,

“43.2.2.1 It is the declared policy of this County to enhance and encourage agricultural operations within the County. It is the intent of this County to provide to its residents notification of this County policy through adoption of this ordinance setting forth persons’ and/or entities’ right to farm.”

“43.2.2.2 Where non-agricultural land uses extend into agricultural areas, or exist side by side, agricultural operations can be the subject of nuisance complaints by which the complainants seek to cease or curtail agricultural operations. Such actions discourage investments in farm improvements and act to the detriment of such adjacent agricultural uses, and the economic viability of the County’s agricultural industry as a whole.”

“43.2.2.3 It is the purpose and intent of this section to reduce the loss to the County of its agricultural resources by limiting the circumstances under which existing and planned agricultural operations may be considered as a nuisance. This ordinance is not to be construed as in any way modifying or abridging State law as set out in the California Civil Code, Health and Safety Code, Fish and Game Code, Food and Agriculture Code, Division 7 of the Water Code, or any other applicable provision of State Law relative to nuisances. Rather, it is intended to be utilized in the interpretation and enforcement of the provisions of this Code and other County regulations.”

“43.2.2.4 An additional purpose of this ordinance is to promote a good neighbor policy between agricultural and non-agricultural property uses by advising purchasers and users of property adjacent to or near agricultural operations of the inherent potential problems associated with such agricultural uses, including but not limited to the noises, odors, dust, chemicals, smoke and hours of operation that may accompany agricultural operations.”

As per HCZR 313 § 43.2.4, Disclosure,

“43.2.4.1 Humboldt County is an agricultural county with many areas planned and zoned for agricultural operations. The presence of farms, ranches and timberland yields significant aesthetic and economic benefits to the health and welfare of the residents of the County. In accordance with the findings in subsection 43.2.2, this County’s agriculture must be protected, including in areas where it is near residential development. This is accomplished in part by the adoption of subsection 43.2.3, which provides that properly conducted agricultural operations will not be deemed a nuisance.”

“43.2.4.2 This section further requires sellers of real property to give notice of this ordinance and its provisions to buyers of real property located in Humboldt County. The notice shall be in substantially the following form:

“You are hereby notified that if the property you are purchasing is located close to agricultural lands or operations, you may be subject to inconvenience or discomfort from the following agricultural operations: cultivation and tillage of the soil; burning of agricultural waste products; lawful and proper use of agricultural chemicals including, but not limited to, the application of pesticides and fertilizers; and production, irrigation, pruning, growing,

harvesting and processing of any agricultural commodity, including horticulture, timber, apiculture, the raising of livestock, fish, poultry, and commercial practices performed as incident to or in conjunction with such agricultural operations, including preparation for market, delivery to storage or market, or to carriers or transportation to market. These operations may generate, among other things, dust, smoke, noise and odor. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in a county with a strong rural character and a healthy agricultural sector. For information concerning where agricultural operations are located in relation to your property, you may contact the Planning Division of Humboldt County Community Development Services. For questions concerning specific kinds of agricultural operations in your area, including their use of fertilizers and pesticides, you should contact the Humboldt County Agricultural Commissioner. This Notice is given for informational purposes only and nothing in the Ordinance or this Notice should be deemed to prevent you from complaining to any appropriate agency or taking any other available action to remedy any unlawful or improper agricultural practice.”

The Concern Writer concludes with a list of mitigations intended to minimize impacts from helicopter operations. As previously discussed, THP 1-04-302 HUM already provides restrictions on weekend operations. As stated on THP page 17, “Where wildlife restrictions do not affect the helicopter flight path from the timber harvesting area to the HAS, the helicopter shall fly at a height greater than 500 feet above the forest canopy top.” To provide wildlife protection where needed, helicopter flight is limited to a minimum of 1,000 feet over the canopy for Northern Spotted Owls and 1,320 feet for Marbled Murrelets. THP 1-04-302 HUM proposes no helicopter operations on Presidents Day or other Holidays Widely Observed (New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. The property on which THP 1-04-302 HUM is located is owned and operated by PALCO, with the exception of the use of a seasonal road on Green Diamond Resource Company lands (see THP page 230.1). There is no additional protection to be gained from operations on this plan by having liaisons from other landowners (e.g., Green Diamond) available to discuss helicopter logging. As previously discussed, THP 1-04-302 HUM provides time of day restrictions from 7:00 am until 6:00 pm, or daylight hours during winter months, if shorter. These hours of operation have considered the relative proximity to residential or recreational areas, and are far shorter hours than those proposed for ground-based or cable operations. The Concern Writer suggests “a maximum 3-4 hour work continual work operation,” which is not feasible. Heavy equipment (e.g., loaders, tenders, fuel wagons, etc.) must either be moved to accommodate the helicopter operation, or a complete duplication of equipment must be maintained. Movement of heavy equipment requires the use of special equipment trailers, which move one piece of equipment at a time. Each move adds expense. The Concern Writer requests public meetings to allow for input regarding helicopter logging. The RPF has provided adequate notification as per 14 CCR § 1032.7, posted a Notice of Intent to harvest timber, and provided public notice in a newspaper in soliciting information on downstream water supplies (THP page 249). The THP review process includes an open comment period for the public, which this Concern Writer has exercised. The Second Review Team meeting is another venue for discussion of impacts from timber harvesting activities. As previously discussed, the last recommendation by the Concern Writer is, again, already being achieved in this THP. No operations, to include helicopter yarding, will occur on this plan within 0.25 miles of an MMCA or old-growth habitat in parks and acquired reserves during the marbled murrelet breeding season.

The growing and harvesting of timber is an agricultural operation that is a mainstay of the economy of Humboldt County. As stated on THP page 168, this landowner has been continuously involved in timber harvesting in Humboldt County for over 130 years. The parcel where operations are proposed on THP 1-04-302 HUM is zoned for timber production (TPZ), and such lands are exclusively dedicated to the growing and harvesting of timber for commercial purposes (THP page 106). The Department recognizes that this landowner has increased its use of helicopter yarding since the signing of its HCP in 1999. The added restrictions to operations in the HCP to provide maximum protection to species has increased winter logging and curtailed

seasonal road use, resulting in greater reliance on helicopters for harvesting of timber. The landowner has provided restrictions specifically to minimize impacts to neighbors and tourists. The Department finds significant information available in the record of THP 1-04-302 HUM to reasonably conclude that restrictions and mitigations for helicopter noise will minimize the impacts of these sounds to a less-than-significant level.

**2. Concern:** (typed as received, in part) *Regarding 04-098, there are ten landholders within 1000 feet downstream of the THP boundary. Cable yarding should be the preferred silvacultural [sic] method rather than Helicopter Logging which will have a negative impact on the parks and the rural residential landowners.* (Concern Letter # 1)

**Response:** The Concern Writer appears to be primarily concerned for the harvesting method in THP 1-04-098 HUM. This is THP 1-04-302 HUM. The Concern Writer may find Responses to Concerns to THP 1-04-098 HUM in its respective Official Response. Furthermore, yarding methods (i.e., ground-based, cable, or helicopter) are not silvacultural prescriptions (e.g., Clearcutting, Selection, Variable Retention, etcetera). Please see the Response to Concern # 1. The Department found that restrictions and mitigations for helicopter noise in THP 1-04-302 HUM will minimize these sounds to a less-than-significant level.

**3. Concern:** (typed as received, in part) *THP 04-304 must not be approved as it will contribute to significant adverse cumulative effects. The mitigation as proposed in the THP are not sufficient to evaluate or meaningfully mitigate these cumulative impacts.* (Concern Letters # 2, # 3, # 4, and # 5)

**Response:** The Concern Writer appears to be concerned for cumulative impacts to THP 1-04-304 HUM. This is THP 1-04-302 HUM. The Concern Writer will find Responses to Concerns for THP 1-04-304 HUM in its respective Official Response. Furthermore, THP 1-04-304 HUM is in the Mattole River drainage, which is approximately 16 air miles southwest of Grizzly Creek in the Van Duzen River drainage.

**4. Concern:** (typed as received, in part) *Chinook salmon is an endangered species. Its decline in the Van Duzen River Basin and especially in Grizzly Creek is dramatic. The Grizzly creek Chinook run has been seriously diminished due to aggradation at the mouth of Grizzly Creek. The California Dept. of Fish and Game, as well as the US Fish and Wildlife Service, and NOAA fisheries have been negligent in their analysis and protection of endangered salmon species in the Van Duzen River Basin. By failing to adequately investigate, comment, and intervene on behalf of the salmon, these agencies have failed to uphold their public trust, and their commitment to endangered species.*

*The Chinook population has seen a steady decline over the past two decades. Coho has also traditionally inhabited Grizzly Creek. In a 3 year study conducted by the California Dept. of Fish and Game 2000-2003 found that the only coho still existing in the Van Duzen River Basin were found in small numbers in the mid-upper reaches of Grizzly Creek and in Copper Mill Gulch in the Yager system. No other coho were not found by the California Dept. of Fish and Game in the Van Duzen river proper due to high temperatures and high fines [sic].* (Concern Letter # 2)

**Response:** The Concern Writer appears to be primarily concerned for adverse impact on anadromous salmonids in the lower reaches of Grizzly Creek. The plan-preparing RPF addressed the status of salmonid species on pages 198 and 199 of the THP, and also addressed the protections to the species by stating:

“Avoidance of direct impacts to fish bearing streams through adoption of RMZ prescriptions of the HCP are the primary method of protection of fish species incorporated in this THP. A significant

quantity of acres within a variety of seral types will be retained within the assessment area RMZs following the proposed logging operations... as required by the HCP.”

“Mitigation for the listed fish species, as well as other fish and aquatic species, will focus on reducing the potential for fine sediment to reach the Class I watercourses, and thereby avoid impacts to habitat. The use of haul roads as outlined in THP Section II, Item 24 will mitigate sediment inputs from road use. The surface erosion mitigation calculations in Section V illustrate a sediment budget for offsetting THP related sediment as per HCP 6.3.3.3.2.1. Other protection measures have been incorporated into this THP that will not produce any significant adverse impacts to these species. Appropriate watercourse protection is proposed within the project boundary. The proposed protection measures contained in this THP will mitigate any potential negative effects to these species by avoiding or reducing the potential for siltation, and maintain shade cover over the watercourses to avoid water temperature increases.”

The Concern Writer expresses concern that the DFG, USFWS, and NOAA Fisheries have been negligent in protection of salmonids in the Van Duzen River basin. These same three agencies were involved in the FEIS/EIR that investigated the Van Duzen as part of the Headwaters Forest acquisition, and received public comment. The FEIS/EIR prepared for the Headwaters Forest acquisition and the PALCO HCP analyzed the criteria for determining potential effects of the proposed alternatives on priority fish species and aquatic habitat beginning of FEIS/EIR page 3.8-29. On page 3.8-59, the report examines the thresholds of significance, stating:

“It is impossible to precisely predict specific salmon population numbers for any particular alternative, particularly if those predictions are for a period that will encompass 50 years. It is also impossible to precisely predict other factors (e.g., ocean conditions, predation, disease, harvest, or competition) that may affect these populations. Therefore, the environmental assessment of potential effects has been focused on habitat requirements. If habitat is properly functioning, then other factors need to be assessed to determine why coho salmon and other salmonid species are either depressed or in need of listing.

To achieve a properly functioning aquatic system and to safeguard priority fish species or populations, unlimited or complete protection across a landscape is not needed to maintain conditions below the threshold of significance. Indeed, this level of protection would minimize potential take to such a level that an ITP and HCP would not be necessary.”

In the *Biological and Conference Opinions Regarding Issuance of an Incidental Take Permit to the Pacific Lumber Company, Scotia Pacific Company LLC and Salmon Creek Corporation* (Biological Opinion), the NOAA Fisheries (formerly known as the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) analyzed impacts to wildlife, including anadromous fish species, associated with the proposed Incidental Take Permit (ITP). References to the ITPs may be found in this THP on page 148.

The Biological Opinion describes the assessment approach to the analysis as follows, beginning on page 256 of the document:

“In recent years, the decline and extinction of Pacific salmon populations most commonly results from habitat loss and degradation in their spawning and rearing streams (Nihlsen et al. 1991). As a result this assessment of the effects of action associated with the proposed ITP for PALCO on four salmonids and proposed critical habitat is habitat-based. To conduct our assessment, we used the best scientific and commercial data available to estimate changes to water quality conditions, channel condition and dynamics, flow, hydrology, physical barriers to migration, and the general

condition of watersheds that support the biological and ecological requirements of -populations of these salmonids. An underlying assumption of this analytical approach is that these species will experience demographic changes (that is, changes in vital rates, population size, and distribution) commensurate with the changes in these habitat-related variables. As a result, these habitat-related variables are used as surrogates or indices of population trends for the purposes of this assessment. This approach is consistent with the approach used in the EIS.

The relationship between changes in habitat quantity, quality, and connectivity and the status and trends of fish and wildlife populations has been the subject of extensive scientific research and publication, and the assumptions underlying our assessment are consistent with this extensive scientific base of knowledge. For more extensive discussion of and data supporting the relationship between changes in habitat variables and the status and trends of fish and wildlife populations, readers should refer to the work of Fiedler and Jain (1992), Gentry (1986), Gilpin and Soule (1986), Nicholson (1954), Odum (1971, 1989), and Soule (1986, 1987). For detailed discussions of the relationship between habitat variables and the status and trends of salmon populations, readers should refer to the work of FEMAT (USDA Forest Service et al. 1993), Gregory and Bisson (1997), Hicks et al. (1991), Murphy (1995), National Research Council (1996), Nehlsen et al. (1991), Spence et al. (1996), Thomas et al. (1993), The Wilderness Society (1993), and any of the numerous references contained in this rich body of literature.

The relationship between habitat and populations is embodied in the concept of carrying capacity. The concept of carrying capacity recognizes that a specific area of land or water can support a finite population of a particular species because food and other resources in that area are finite (Odum 1971). By extension, increasing the carrying capacity of an area (that is, increasing the quality or quantity of resources available to a population within that area) increases the number of individuals the area can sustain over time. By the same reasoning, decreasing the carrying capacity of an area (that is, decreasing the quality or quantity of resources available to a population) decreases the number of individuals the area can support over time. Restoring habitat that had been previously destroyed or degraded can increase the size of a population the habitat can support; conversely, habitat destruction and alteration can reduce the size of a population the habitat can support. In either case, there is a corresponding, but non-linear relationship between changes in the quality and quantity of resources available to a species in an area and the number of individuals that area can support.

The approach used in this assessment is intended to determine if the proposed action is likely to destroy or degrade the quantity and quality of natural resources necessary to support populations of the four salmonid species in the action area. Finally, the assessment approach is intended to determine if any changes are likely to decrease the size, number, dynamics, or distribution of listed salmonid populations in the action area in ways that appreciably reduce the likelihood of both the survival and recovery of listed species in the wild.”

After a lengthy discussion of salmonids and potential impacts, the Biological Opinion was able to draw the following conclusions:

“The NMFS [NOAA Fisheries] concludes that implementation of the aquatic conservation plan and its interrelated strategies will maintain or achieve, over time, properly functioning aquatic habitat conditions, thereby resulting in the long term survival of chinook salmon in the SOCC ESU.” (page 374)

“The NMFS [NOAA Fisheries] concludes that implementation of the Aquatic Conservation Plan and its interrelated strategies will maintain or achieve, over time, properly functioning aquatic

habitat conditions, thereby resulting in the long term survival of steelhead in the ESU.” (page 391)

“The NMFS [NOAA Fisheries] concludes that implementation of the Aquatic Conservation Plan and its interrelated strategies will maintain or achieve, over time, properly functioning aquatic habitat conditions, thereby resulting in the long term survival of coastal cutthroat trout in the SOCC ESU.” (pages 391 and 392)

“After reviewing the current status of each covered species, the environmental baseline for the action area, the effects of the proposed action (i.e., Headwaters Forest Acquisition and the PALCO SYP/HCP), and the cumulative effects, it is the Services’ biological and conference opinion that the action as proposed, is not likely to jeopardize the continued existence of any covered species...” (page 398)

The conclusions of the NOAA Fisheries and USFWS in the Biological Opinion are clear that implementation of the Aquatic Conservation Plan is not likely to jeopardize the continued existence of anadromous fish. No *significant* adverse impacts are expected. No *significant* behavioral impairment or mortality to salmonids is expected. There can never be total assurance that no additional mortality, harm, or behavioral impairments will occur to any life stage or individual member of anadromous fish species, since mortality and harm are inherent in any living environment.

The Van Duzen River Watershed Analysis was particularly concerned with land management practices that could impact aquatic resources, and, therefore anadromous salmonids. The eight major assessments involved in the Van Duzen Watershed Analysis included cumulative watershed effects, mass wasting, surface erosion, hydrologic change, riparian function, stream channels, fish habitat, and amphibians and reptiles. The PALCO-agency team assembled a “sediment budget” that showed the sources and amounts of sediment entering streams from both natural and manmade sources, and they studied the distance from which trees and sediment enter streams, which in turn informs how wide stream buffers need to be. With these and other results in hand, the PALCO-agency team then developed site specific prescriptions that were designed to insure that the environmental goals of the HCP would still be achieved over time. The Environmental Protection Agency concluded in the Van Duzen River TMDL report that the watershed analysis process would provide a scientifically-based mechanism to aggregate all existing data, assess unstable areas, prioritize areas for restoration and pool resources for implementation actions, and that successful and timely implementation of these provisions on PL’s land is critical to the achievement of sediment allocations in the lower basin.

The Concern Writer states that, “No other coho were not found by the California Dept. of Fish and Game in the Van Duzen river proper due to high temperatures and high fines.” The Department is confused by the statement, as it is not clear. The Concern Writer appears to be stating that Coho Salmon are no longer found in the Van Duzen River due to high water temperatures and presence of fine particulates. The Department has a copy of *The Pacific Lumber Company’s 2002 Aquatic & Amphibian/Reptile Annual Report*, which shows the results of salmonid electrofishing collection results for Station 111 in Grizzly Creek in Table 25. Collections made at Station 111 on September 26, 2002, showed the presence of Coho Salmon, along with Steelhead. Station 112 in Hely Creek, surveyed on September 6, 2002, also showed the presence of Coho Salmon and Steelhead, along with Cutthroat Trout. Measurements provided at Station 003 in Root Creek and Station 108 in Cummings Creek did not show presence of Coho Salmon, but did include Steelhead and Chinook Salmon. The *2002 Aquatic & Amphibian/Reptile Annual Report* describes species utilization on page 38 of the Aquatic Trend Monitoring report by stating,

“Electrofishing surveys provide information on which species exist at different locations across the covered lands. Knowing fish distributions and community diversity, allows us to better assess the habitat needs in that particular area. They also serve as indicators of disturbance as well as habitat

improvement. Thus, despite the absence of a PFC target for species presence and diversity, this variable has great value in indicating how covered species that are targets of the Aquatics Conservation Strategy are actually responding to beneficial management prescriptions.”

The *2002 Aquatic & Amphibian/Reptile Annual Report* provides the trends of bulk sediment percent fines less than 0.85 mm between 1998 and 2002. At Station 111 (Grizzly Creek), average percent fines dropped from 16.60% in 1998 to 6.77% in 2002. Similarly, Station 112 (Hely Creek) dropped from 15.77% to 8.75%, Station 003 (Root Creek) from 28.08 to 6.83%, and Station 108 (Cummings Creek) from 24.87% to 3.30%. The *2002 Aquatic & Amphibian/Reptile Annual Report* provides the maximum weekly average temperature (MWAT) for each recording station. At Station 111 (Grizzly Creek), MWAT rose from 17.53 degrees Celsius (C) (6/29/00) to 17.81 C (7/12/02). Conversely, the temperature dropped at each of the other three survey stations in the Van Duzen River basin as follows: Station 112 (Hely Creek) from 14.73 C (8/3/00) to 14.02 C (7/24/02), Station 003 (Root Creek) from 15.23 C (8/29/99) to 14.29 C (7/24/02), and Station 108 (Cummings Creek) from 15.51 C (8/10/01) to 14.29 C (7/24/02). It is notable that the temperature decreased in each of the three drainages primarily managed under the PALCO HCP, and increased in the drainage with the headwaters and majority of land area on other ownership. The size and density of riparian buffer zones assist in reducing sediment input and provide shade to reduce the MWAT. The watershed-specific prescriptions from the Van Duzen Watershed Analysis resulted in increased buffer widths and Special Hillslope Prescriptions for steep streamside areas. These restrictions are found in the THP in Section II, Item 26 (page 34) and Item 29.1 (page 43), and represent protection to the riparian area in excess of that found in the standard FPRs.

The Department finds sufficient information available in the file of THP 1-04-302 HUM to reasonably conclude that wildlife agencies have adequately upheld the public trust in protection of salmonids. Protection measures provided by the FPRs and the landowner’s HCP are resulting in improved aquatic conditions, and specifically result in lowered water temperatures and reduced fine particulates.

**5. Concern:** (typed as received, in part) *Please explain how the Erosion Hazard Rating (EHR) is calculated to “moderate” when there are numerous observations by the consulting geologist of slopes between 70% and 120%? This timber harvest plan covers areas with unstable slopes greater than 70% and should be designated as extreme and not moderate slopes. Historically this timber harvest plan covers areas that have had dramatic landslides over the past 5 years. Specifically areas designated as G9, G10, Gi4, G18, and G19. These sections warrant a more serious consideration, and a more serious analysis.*

*The consulting geologist ...does not explain or adequately describe how the logging will affect the geologic conditions. G7 and G9 do not describe how the single “leave” tree at the head of the scarp will prevent reactivation or perpetuation of the slide. G9 if the slope was so steep that the geologist could not safely approach it for evaluation, HOW can he possibly justify harvesting or not around the feature? G14 describes a very steep recent slide but fails to describe or justify what kind of harvest was proposed in the area and how his recommendations in the field changed it. G10 describes a slide but makes no reference or discussion as to how it will be harvested and how that will affect the current conditions. G18 and 19 make no justification, discussion, scientific basis or even professional opinion as to why the proposed operations “should not have any impact” on the two slides. CGS made no additional discussion about the geologic problems left half-evaluated and without recommendation in the consulting geologists report.*

*Historically, timber harvesting and storms have caused extreme aggradation at the mouth of Grizzly Creek. Grizzly 04-032 proposes to harvest timber at exactly the sensitive geographic area that caused the release of over 4ft of sediment to the mouth of Grizzly Creek in December 2002. The section at the convergence of Stevens Creek has historically created problems depositing large amounts of sediment into Grizzly Creek. This area was of such concern that the geologist insisted on being on site during road and bridge*

*construction work prior to signing off on the timber harvest plan. This is an unstable area which deposited 4 feet of sediment into Grizzly creek in December 2002.*

*The watershed is obviously not geologically stable since it is littered with slides, some quite major. There are many areas of unstable geology. Parts of Grizzly 04-302 are so steep as to be dangerous to evaluate because of safety factors. Due to unstable geology in this area and insufficient analysis by CGS, a 2<sup>nd</sup> analysis should be done... to get a 2<sup>nd</sup> opinion weather [sic] this area is stable enough to timber harvesting activity. Without a 2<sup>nd</sup> opinion, CDF will be liable for damages resulting from tons of sediment being deposited to the Grizzly Creek system. It is safe to say that any harvest should be done VERY carefully and the ground's reaction or harvest be monitored, and the results be applied to future harvest. This plan does not fully discuss how other ...areas in the watershed have reacted to logging and road building or why the exiting [sic] landslides are there. (Concern Letters # 2, # 4, and # 5)*

**Response:** The Concern Writer appears to be primarily concerned for harvest-related activation of landslides. The Erosion Hazard Rating (EHR) methodology is provided in 14 CCR § 912.5:

**“Procedure for Estimating Surface Soil Erosion Hazard Rating [Coast]**

A proposed plan shall show the estimated erosion hazard ratings of the plan area, by areas, down to 20 acres (8.1 ha) if such a breakdown will change the estimated erosion hazard of individual areas. The plan shall show high and extreme erosion hazard ratings, by areas, down to 10 acres if such a breakdown will change the erosion hazard of the individual areas. Specific erosion hazard areas not fitting the above minimum will be considered independently and protective measures commensurate with the problem applied. These measures are covered in Chapter 4, Subchapter 4 of Title 14, CCR.

To estimate the erosion hazard rating of any plan or portion thereof, the RPF or supervised designee shall follow the procedures and requirements contained in Board Technical Rule Addendum #1, dated February 1, 1990. Appropriate weights for the factors in the Estimated Surface Soil Erosion Hazard, Form I, in the Addendum, shall be calculated and the factors shall be summed to give the rating. A copy of the calculations from Form I shall be attached to the timber harvesting plan. A copy of the Board Technical Rule Addendum #1 can be obtained from the State Board of Forestry [and Fire Protection] at the Resources Building, 1416 9th Street, Room 1506-14, [P.O. Box 944246,] Sacramento, CA [94244-2460].”

In conformance with Technical Rule Addendum # 1, the plan-preparing RPF has provided a reasonable facsimile of Form I on THP page 243. The EHR protocol includes soil factors (e.g., texture, detachability, permeability, depth to restrictive layer or bedrock, and percent surface coarse fragments greater than 2 mm in size), slope factors, protective vegetative cover remaining after the disturbance, and two-year, one-hour rainfall intensity data. The RPF obtains the information regarding soils from the Soil Vegetation Maps, as referenced on THP page 174. The soils maps will inform the RPF as to the soil types in the THP area. As noted at the top of THP page 243, THP 1-04-302 HUM contains the Larabee and Hugo soil types. The soil type coupled with field examination and comparison with other THPs in the area determines the soil and slope factors. The vegetative cover remaining after disturbance is a reflection of the silvicultural prescription, yarding method, existing ground cover, and the experience of the RPF. Rainfall intensity is determined from rainfall records, prepared tables, and local experience. The Concern Writer states that the EHR should be raised to the level of Extreme due to the slope. As described above, slope is only one criterion used in the calculation of the EHR. The Department's on-the-ground Inspector noted in his PHI report that, “The ratings appear appropriate.” The EHR rating is not used to prohibit approval of a THP, but rather to characterize an area and to trigger protections, such as spacing of waterbreaks for erosion control. The Department finds the application of the EHR in THP 1-04-302 HUM in conformance with Board

Technical Rule Addendum #1, and with 14 CCR § 912.5. There is no justification for increasing the EHR from Moderate to Extreme.

The Concern Writer states that more analysis is required for areas designated as G9, G10, G14, G18, and G19. A registered geologist (Certified Engineering Geologist (CEG)) evaluated the area of proposed operations, with the *Geologic Evaluation of the Grizzly 05 Timber Harvesting Plan, Humboldt County, California* report found in the THP beginning on page 274. The geologic investigation was conducted in accordance with DMG Note 45, "Guidelines for Engineering Geologic Reports for Timber Harvesting Plans" and Note 50, "Factors Affecting Landslides in Forested Terrain." As such, the study focused on documenting existing slope failures within and adjacent to the proposed harvesting areas, evaluating slope stability conditions, and assessing the potential for sediment delivery to watercourses. The geologist described areas G9, G10, G14, G18 and G19 in the discussion of slope stability in THP Unit 2, stating:

"G9: A recent debris slide is present at this site. The failure extends 100 feet from the watercourse (based on the WLPZ flag line), and is about 40 feet wide. The failure is raw and largely unvegetated, and appears to have delivered directly into the adjacent Class II watercourse. Slopes in this area are very steep; it was not possible to safely approach this failure to more carefully document it. A large fir tree was marked for retention at the head of this failure." (THP page 281)

"G10: A mid-slope debris slide at this site occurred on 90% to 100% slopes. The failure is about 150 feet high and 75 feet wide, and appears relatively shallow (2 to 3 feet). The failure is raw, and appears recent. Debris was deposited on the moderate gradient slope below the slide, and did not reach a watercourse. The slide exposes shaly bedrock." (THP page 281)

"G14: A recent debris slide is present at this site. The failure is estimated at 250 to 300 feet long, and 50 feet wide, and occurred on 120+% slopes. The slide is associated with 2 to 6-foot high head and lateral scarps. The project geologist assessed individual trees in the vicinity of this slide for harvest or retention." (THP page 281)

"G18 and G19: These landslides were described in an adjacent THP (slides G18 and G19 in SHN, 2002). Both are described as dormant-historic rotational slumps, and both appear to be above the boundary of Unit 2. The proposed operations should not have any impact on these features." (THP page 282)

The CEG continued with a discussion of these unstable areas in THP Unit 2 by stating,

"Most of Unit 2 is proposed to undergo harvesting activities under a Shelterwood Removal Step silviculture. Under the California Forest Practice Rules, no more than 100 square feet of basal area of predominant trees can be removed from slopes designated for Shelterwood Removal Step. During logging operations, regeneration timber cannot be harvested unless they are dead, dying, diseased, or are substantially damaged during logging. It is also required under this silviculture method that stocking be met immediately upon completion of operations.

Portions of Unit 2 abut a previous harvest unit that underwent a relatively recent Shelterwood Removal Step. We reviewed that unit to evaluate the impacts associated with the recent harvest. We observed no active mass wasting features in the area, which suggests that the slope has accommodated the loss of overstory canopy without significant impacts.

In general, removal of limited numbers of overstory trees from a stand dominated by understory is associated with relatively minor impacts. In the areas we visited, the numbers of overstory trees and their contribution to overall canopy coverage were relatively minor relative to the thick understory

canopy. Target harvest trees were typically scattered across the slope, thus diminishing their significance in terms of root strength and canopy coverage. Removal of limited numbers of trees should not significantly modify slope conditions in these areas because:

- The reduction in canopy will be minor, therefore transpiration and interception will not be substantially reduced;
- Most of the target trees are redwood, which is a regenerative species that should re-sprout from the stump. As such, reductions in root strength should be minor. Regardless, the remaining understory canopy provides the majority of root strength on these slopes.

We therefore made site-specific determinations in Unit 2 regarding the appropriateness of removal of individual overstory trees based on species (i.e., fir was more likely to be retained in a sensitive location because it does not re-sprout from the stump), location on the slope, and relation to adjacent trees and / or mass wasting features. Where appropriate, retention trees were marked in the field.”

The Concern Writer asks questions about the intent of the consulting geologist. From the consulting geologist’s report, it is reasonable to conclude that the leave tree at the head of G9 was retained to maintain root strength to the soil. The fact that the tree was retained shows that protection was afforded to the feature. The geologist’s maps, coupled with the *Silviculture Map* on THP page 68, show the silviculture prescribed for the area will retain a fully-stocked stand of timber immediately following harvest. Similarly, G14 is in an area of no-harvest associated with a riparian band, and proposes HCP-required single tree harvest similar to Selection, and Shelterwood Removal Step, all of which will provide a fully stocked stand of trees immediately following harvest. G10 proposes Shelterwood Removal Step, and will be fully stocked. The geologist explains that G18 and 19 are dormant slides, and above the area of timber harvest. Therefore, no impact is expected.

As noted by the Concern Writer, the area was further examined by a registered geologist (also a CEG) from the State’s California Geologic Survey during the focused pre-harvest inspection. The CGS geologist did not provide specific address of the areas designated as G9, G10, G14, G18, and G19. As stated on page 4 of the CGS report, “CGS reviewed the information presented by the applicant about slope stability and erosion in the vicinity of the proposed THP harvest units, including the geologic report attached to this plan (SHN 2004).” The CGS PHI report of March 15, 2005 states on page 6,

“A description of the regional and site geology is provided as a section of the geological report by SHN (2004) and included as pages 274 through 296 of the THP. This geological description appears reasonable and generally corresponds to our review of regional geologic maps (McLaughlin and others, 2000; Spittler, 1983a, b; and Kelsey and Allwardt, 1974 and 1987), unpublished geologic reports (GeoEngineers, 2000; SHN, 2002a, b), aerial photographic evaluation, and on-site observations.”

The Concern Writer refers to aggradation at the mouth of Grizzly Creek that occurred in December 2002. The Department presumes that the Concern Writer intended to refer to THP 1-04-302 HUM, rather than THP “04-032.” The plan-preparing RPF included a discussion of peak flows in his *Cumulative Impacts Assessment* on pages 188 through 190. As stated on page 189,

“Large watersheds, such as the Eel, Mad, and Klamath Rivers, usually have flooding related to large, continuous rainfall, or rain on snow events. Smaller watersheds, such as Freshwater Creek, Elk River, Grizzly Creek, or even the Van Duzen River, are much more susceptible to storm pulses, with unusually high amounts of rainfall in a relatively small area, for durations capable of causing substantial increases in downstream flows. For example, The Department of Water Resources at Woodley Island in Eureka recorded 5.25 inches of rain in 24 hours on November 22, 1998, an all-

time record for rain intensity at this site up until that date. This storm produced 6.88 inches of rain over a 4-day period. More recently, 6.85 inches were recorded within 24 hours on December 27-28, 2002. This storm produced 10.49 inches of rainfall over a 4 Calendar Day period. As expected with all-time record rainfall, flooding was reported on many local small creeks and rivers, including Elk River (Conroy 1999) and Freshwater Creek. Noticeable increases in winter peak flows in this region are directly correlated to periods of heavy rainfall events.”

The December 2002 rainfall event was an all-time record breaking storm. The CGS referred to this storm on page 7 of his PHI report in discussing site CGS-1, stating, “This location refers to the recently reconstructed bridge and approaches to the bridge on the L83 Road across a Class I watercourse immediately west of Stevens Creek (informally referred to as Bemis Creek.” “Based on previous preharvest inspections in this area by CGS, we understand that the original log stringer bridge failed during the heavy rains of December 2002.”

The Department relies upon the findings of the practicing, registered geologists who have provided reports based on actual field examination. The Department finds sufficient information available to reasonably conclude that potential impacts of landslides resulting from timber harvesting on this plan have been adequately examined, and mitigated to a level of insignificance.

**6. Concern:** (typed as received, in part) *Friends of the Van Duzen is in the 5<sup>th</sup> year of a 50 year monitoring study. The Harkins report was published outlining the 1<sup>st</sup> 3 years of the study. Data from Grizzly creek shows high turbidity readings affecting the growth and development of salmonids. The data collected by field volunteers includes measurements of turbidity, stage, and velocity at the various monitoring locations. A lack of consistency between recording both stage and velocity, as opposed to one or the other, for each water sample collection, rendered the calculation of site specific flow impossible. Instead, hourly flow volume data was used as collected by the USGS monitoring station at Bridgeville, CA.*

*Turbidity levels were counted and grouped according to their possible effects on salmon health. Turbidity levels of 25 NTU and above reduce the reactive distance ... for juvenile salmonids. Grizzly Creek [in year 2001] had 55% of sample days with over 25 NTU with a maximum recorded sample of 465 NTU. Year 02 had much higher overall channel flow volume than 01 and 03, though 03 had some higher peak flows. The turbidity levels are much higher in 02 than the other two years. Grizzly Creek had 48% of sample days with turbidity over 25 NTU with a maximum recorded sample of 355NTU. Year 03 had much higher overall channel flow volume than 01, and some higher peak flows than year 02. There were fewer sample days in 03 than the other two sample years. Grizzly Creek had 100% of sample days with turbidity over 25 NTU with a maximum recorded sample of 608 NTU.*

*Change in turbidity level shows a general influence from fluctuations in flow volume. This indicates that turbidity data is consistent with precipitation effects. Turbidity values remain at very dangerous levels. Many of these values are 6 to 10 times above the highest exceedence threshold. Sediment load could be controlled by decreasing the impact from management related input, which has been shown in the previous Pacific Watershed and tetra-Tech reports to account from 36% to 29% respectively. Waste discharges are significantly causing and or contributing to the impairment of water quality and beneficial use. Streamside landslides accounted for 20% of the management related input. It is most important to focus on reducing.*

***It is recommended that a monitoring station be placed at the site of the confluence of Stevens Creek and Grizzly creek to measure turbidity and sediment delivery to the system. THP 04-302 has the potential for increased sediment delivered to the Grizzly Creek system and significant negative impacts to salmon. This Timber Harvest Plan should not be approved by the Director until further Geological [sic] studies take place in this sensitive area.*** (Concern Letter # 2)

**Response:** The Concern Writer appears to be primarily concerned for actions taken in Grizzly Creek having an adverse impact on anadromous salmonids in the watercourse. Please see the Response to Concern # 4. The conclusions of the NOAA Fisheries and USFWS in the Biological Opinion are clear that implementation of the Aquatic Conservation Plan is not likely to jeopardize the continued existence of anadromous fish. The Van Duzen River Watershed Analysis was particularly concerned with land management practices that could impact aquatic resources. Aquatic trend monitoring in Grizzly Creek and in the lower Van Duzen is showing improvement.

The Concern Writer refers to his collection and testing as part of a 50-year Van Duzen Water Quality Monitoring Project conducted by the Friends of the Van Duzen River. The Department acknowledges Attachments # 2 and # 3 showing turbidity readings and a summary of the first three years of the 50-year Project. The Department is not aware of peer review or validation of the methodology used by the Friends of the Van Duzen River. The Concern Writer notes that 55% of sample days in 2001 exceeded a turbidity reading of 25 NTU, but does not describe the consistency with which samples were taken. The Concern Writer notes that fewer samples were collected in 2003 than other years, yet every sample exceeded 25 NTU. The collection of one or few turbidity samples is not adequate to provide impact. Rather, a series of collections over time and relatively similar rainfall and flow levels are required before drawing conclusions of impact.

The Concern Writer states that sediment load from management-related inputs could be controlled. Please see the "Overview of THP-Specific Information" section, above. THP 1-04-302 HUM provides three sediment savings sites that will result in a net reduction of approximately 160 cubic yards of sediment from ultimately entering the Van Duzen River drainage. The watershed-specific prescriptions from the Van Duzen Watershed Analysis resulted in increased buffer widths and Special Hillslope Prescriptions for steep streamside areas. These restrictions are found in the THP in Section II, Item 26 (page 34) and Item 29.1 (page 43), and provide protection to the riparian area in excess of that found in the standard FPRs.

Please see the Response to Concern # 4. The Department found sufficient information available in the file of THP 1-04-302 HUM to reasonably conclude that protection measures provided by the FPRs and the landowner's HCP are resulting in improved aquatic conditions, and specifically resulted in lowered water temperatures and reduced fine particulates. The Department does not agree with the Concern Writer that approval of THP 1-04-302 HUM be upheld pending further geologic studies. Please see the Response to Concern # 5. The Department found that potential impacts of landslides resulting from timber harvesting on this plan have been adequately examined, and mitigated to a level of insignificance.

**7. Concern:** (typed as received, in part) *Please add these graphs of data collected at Grizzly Creek over 3 hydrological years. The complete report is available through the Friends of the Van Duzen Office. (Concern Letter # 3)*

**Response:** The Concern Writer does not express concern for any new, significant, adverse impact to the environment. Rather, the Concern Writer requests that three graphs of turbidity and flow be included in the administrative record of THP 1-04-302 HUM. The letter, which includes the three graphs, has been inserted into the administrative record of THP 1-04-302 HUM.

**8. Concern:** (typed as received, in part) *Cumulative Impacts. The Grizzly Creek watershed is severely impacted by previous harvest operations and is subsequently listed by the EPA as an impaired river. The previously harvested plans adjacent to the proposed THP area will hinder the recovery of the adjacent harvest areas and add to the significant cumulative effects that continue to exist in the watershed. It appears that the THP does not address this issue.* (Concern Letter # 4 and # 5)

**Response:** The Concern Writer appears to be primarily concerned for the potential cumulative impacts from this harvesting on beneficial uses of the Grizzly Creek Planning Watershed. The plan-preparing RPF provided a Cumulative Impacts Assessment on THP pages 156 through 229. Included in this assessment is an acknowledgement on THP page 165 that the Van Duzen River is listed under Section 303(d) of the Clean Water Act as being impaired by sediment. Further, the RPF notes that the Van Duzen River is tributary to the Eel River, which is similarly listed for sediment and temperature. The RPF also provided a *Cumulative Logging Activities Report* on THP page 229 showing the timber harvesting history by all landowners in the Grizzly Creek Planning Watershed for the past ten years, and visual information in the *Cumulative Impacts Assessment Past and Future Activities* maps on THP pages 228.1 through 228.23.

As per Division 4, Chapter 8 PRC Article 1 §§ 4512 (a) through (d) and 4513 (a) and (b):

**“4512. Findings and declarations.**

- (a) The Legislature hereby finds and declares that the forest resources and timberlands of the state are among the most valuable of the natural resources of the state and that there is great concern throughout the state relating to their utilization, restoration, and protection.
- (b) The Legislature further finds and declares that the forest resources and timberlands of the state furnish high-quality timber, recreational opportunities, and aesthetic enjoyment while providing watershed protection and maintaining fisheries and wildlife.
- (c) The Legislature thus declares that it is the policy of this state to encourage prudent and responsible forest resource management calculated to serve the public's need for timber and other forest products, while giving consideration to the public's need for watershed protection, fisheries and wildlife, and recreational opportunities alike in this and future generations.
- (d) It is not the intent of the Legislature by the enactment of this chapter to take private property for public use without payment of just compensation in violation of the California and United States Constitutions.

**4513. Intent of Legislature.** It is the intent of the Legislature to create and maintain an effective and comprehensive system of regulation and use of all timberlands so as to assure that:

- (a) Where feasible, the productivity of timberlands is restored, enhanced, and maintained.
- (b) The goal of maximum sustained production of high-quality timber products is achieved while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment, and aesthetic enjoyment.”

The Department strives to satisfy the mandate from the legislature, which includes the protection of timberlands and watersheds from adverse cumulative effects.

The landowner’s Habitat Conservation Plan exceeds the requirements of the Forest Practice Rules, providing even greater protection to resource values. The goals of the Habitat Conservation Plan are stated on page 3 of the document:

“Consistent with the objectives of the FESA and California Fish and Game Code (FGC), the Plan is a long-term comprehensive program to ensure the continued health of the biological communities on PALCO’s property and to minimize and mitigate impacts of PALCO activities on individual species.

In this regard, the Plan has both a multi-species and habitat focus; it also has a specific legal purpose with regard to impacts to species and habitats.

Similar to other habitat-based multi-species HCPs (e.g., Plum Creek and plans approved in southern California under the Natural Community Conservation Planning [NCCP] Act), this Plan was developed by focusing on the requirements of selected species (focus species) while also addressing the needs of other species in the same habitat. This tiered approach is an essential feature of the Plan's terrestrial and aquatic conservation strategies. ... The Plan's aquatic habitat conservation strategy functions in a similar way. In this case, the focus species are four fish (coho salmon in the southern Oregon/northern California coastal evolutionary significant unit [ESU], *Oncorhynchus kisutch*; chinook salmon in the southern Oregon/California coastal ESU, *Oncorhynchus tshawytscha*; cutthroat trout in the southern Oregon/California coast ESU, *Oncorhynchus clarki*; and steelhead trout in the northern California ESU, *Oncorhynchus mykiss*). Measures for these species focus on habitat conditions in fish-bearing streams and extend outward to encompass riparian zones and entire watersheds."

Please see the Responses to other Concerns. This HCP was evaluated by many agencies including the U.S. Fish and Wildlife (USFWS), NOAA Fisheries (formerly known as the National Marine Fisheries Service) and the California Department of Fish and Game (DFG). The opinions of these agencies support the Department's conclusion that the HCP provides adequate protection of the beneficial uses of the land and water for habitat, and likely an acceleration in improvement of conditions in the Van Duzen River system.

The landowner's HCP puts a limit on the rate of harvest through exclusion of many areas and severe limitations on the volume that can be removed in others. The HCP provides for increased stream buffers, wider protection zones, greater basal area and canopy retention, and retention of habitat components. The HCP requires greater protection of unstable areas, more geologic review, sediment site identification and remediation, and zero net discharge of sediment. As previously described, harvesting operation associated with THP 1-04-302 HUM are calculated to result in a net savings of 160 cubic yards of sediment prevented from reaching the waters of the Van Duzen River drainage. The HCP-required Disturbance Index (DI) assesses relative level of watershed disturbance. The current DI calculation (showing the 2004 reporting year) is found on THP pages 239 and 240. The current DI for the Grizzly sub-basin is 29%, well above the 10% threshold. Being above the threshold requires action sufficient to reduce level in future calculations. The sediment savings associated with this current plan will assist in that goal, along with HCP-required road upgrading, wet weather road use restrictions, prolonged winter period restrictions, and channel migration zone protection.

The Department finds ample information provided in the file of THP 1-04-302 HUM that demonstrates address of the cumulative impacts in the Grizzly Creek watershed. The Department finds THP 1-04-302 HUM in conformance with the FPRs and the landowner's HCP. Please see the Responses to other Concerns.

**9. Concern:** (typed as received, in part) *Water Quality. Harvesting large areas within close proximity of riparian areas is inappropriate. The sediment generated from such a plan will have a negative effect [on] water quality in general and will commit trespass, (of sediment) damaging property of downstream landowners. The sediment problems in the grizzly Creek watershed is not showing signs of improvement and are perpetuated by incompatible and excessive harvest practices like the ones proposed in this THP. The beneficial uses of water and the watershed as a whole are threatened.* (Concern Letter # 4 and # 5)

**Response:** The Concern Writer appears to be primarily concerned for harvesting in close proximity to waters, and for impacts to the waters from delivered sediment. THP 1-04-302 HUM provides substantial protection to watercourses through the use of HCP-required Riparian Management Zones (RMZs), as shown

on THP pages 33 through 40. The RMZs for THP 1-04-302 HUM were developed through an extensive Watershed Analysis with the specific intention of providing protection to waters. The *Silviculture Expanded Maps* on THP pages 69 through 72 graphically show the protection to the Class I and II watercourses, with an inner no-harvest band coupled with an outer band of partial harvest most similar to single-tree selection. Please see the Response to Concern # 6. THP 1-04-302 HUM provides three sediment savings sites that will result in a net reduction of approximately 160 cubic yards of sediment from ultimately entering the Van Duzen River drainage. The watershed-specific prescriptions from the Van Duzen Watershed Analysis resulted in increased buffer widths and Special Hillslope Prescriptions for steep streamside areas. Please see the Response to Concern # 4. The trends of bulk sediment percent fines measured at survey stations in the lower Van Duzen have dropped, as have maximum weekly average temperatures over years of surveying. The Department found protection measures provided by the FPRs and the landowner's HCP are resulting in improved aquatic conditions, which include the beneficial uses of water, and the watershed as a whole.

**10. Concern:** (typed as received, in part) *Helicopters. How will the ongoing complaints of the helicopter noise from watershed residents be addressed? What are the current helicopter operating timeframes (days per week, times of day) as they may have changed from what was proposed in that thp [sic] after PL's meeting with the residents to address the issue?* (Concern Letter # 4 and # 5)

**Response:** The Concern Writer continues expressing concern for impacts from helicopter noise. The Department is aware that PALCO engaged in a meeting with residents of the lower Van Duzen River area on April 6, 2005, to address concerns from those neighbors regarding helicopter noise. Please see the Response to Concern # 1. The *Grizzly 05 Yarding Systems Map* on THP page 73 shows that helicopter-only yarding is proposed in Units 2, 6, and 8, and is optional on the balance of this plan. Helicopter operations will not occur on Saturdays, Sundays, Presidents Day, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Hours of logging operations will occur only between the hours of 7:00 am and 6:00 pm, or daylight hours during winter months if shorter. Further restrictions are included limiting flights in the "Van Duzen River corridor," and in close proximity to residences. Humboldt County encourages agricultural operations within the County, and maintains an ordinance of the right to farm. It is recognized that agricultural operations may generate, among other things, dust, smoke, noise and odor. People who choose to live near such agricultural areas should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in an agricultural area. The landowner has provided restrictions specifically to minimize impacts to neighbors and tourists. The Department found significant information available in the record of the plan to reasonably conclude that restrictions and mitigations for helicopter noise will minimize the impacts of these sounds to a less-than-significant level.

**11. Concern:** (typed as received, in part) *Murrelets. Very little analysis of the potential impacts resulting from this logging plan appears to have been conducted. We are very concerned that these operations will negatively impact the viability of murrelets utilizing the THP stands and the nearby park. There has been a lack of disclosure of the forest types and conditions, especially in relation to the existence, status, location, population size, health, "take" history and the proposed "take" of murrelets or their habitat.*

*There... needs to be disclosure of the harvest history of the prioritized murrelet stands. It makes it impossible for the public to evaluate the potential proposed by the THP when information of this kind is not clear. Palco' [sic] definition of old-growth is unclear. The late seral/oldgrowth maps are not showing old growth when they do not show the "occupied" murrelet stands as oldgrowth.*

*This plan proposes to log an unspecified amount of "occupied marbled murrelet habitat" in the Grizzly Creek watershed. How much murrelet habitat will remain in the watershed ... on PL land post-harvest? How and when will the habitat to be taken in the plan be replaced? Please quantify how much "take[" is*

*expected to occur as a result of this plan, how will the public or the agencies/services know if this amount is exceeded, and by how much of the murrelet population decline will be contributed to the “take” proposed in this plan?*

*PL appears to have failed to continue the HCP required murrelets surveys as their 2004 annual report on the murrelets is four months late. Why has this report not been completed? Why are Plans (including 04-302) that fail to fulfill the requirements of the HCP being recommended for approval. We request that detailed information be incorporated into the plan regarding the current status of the 04-302 murrelets and their habitat (stands E 699, 691, 701, 663, 649, and D498, 459, 510, 453) and public comment be extended so the effects of the plan can be accurately evaluated and reviewed.*

*This Plan ... fails to adequately address ...claims that disturbance and “take” of Marbled Murrelets resulting from this harvest plan in the above mentioned stands and to nearby State Park murrelet habitat has been minimized and mitigated to the maximum extent practicable. This plan cannot be approved pursuant to 14 CCR § 898.2 & §912.9. (Concern Letter # 4 and # 5)*

**Response:** The Concern Writer appears to be primarily concerned for the protection of marbled murrelets and maintenance of habitat to support the species. Please see the Response to Concern # 4. The Biological Opinion was prepared by the NOAA Fisheries and USFWS in association with federal acquisition of Headwaters Forest. The main thrust of the Headwaters Forest was to maintain habitat for species associated with late seral forests, with particular attention to the marbled murrelet. A conservative approach to managing murrelet habitat had been adopted by the Federal agencies. The Forest Plan was designed to enable Federal lands to bear most of the burden for recovering and maintaining late-successional species such as the murrelet. The Plan protected approximately 90 percent of the suitable murrelet habitat on Federal lands (USDI Fish and Wildlife Service 1997), and it placed a total prohibition on the loss of occupied marbled murrelet habitat on Federal lands. This prohibition included a restriction on harvest of occupied sites in so-called “matrix” lands where timber harvest was otherwise allowed.

The Forest Plan and the Marbled Murrelet Recovery Plan (USDI Fish and Wildlife Service 1997) also identified the need for some non-Federal lands to contribute to murrelet recovery where distributional gaps occurred, including the general area of PALCO ownership. It was recognized that some removal of occupied habitat is likely - and potentially permissible - on non-Federal lands assuming enough high quality habitat is protected to maintain well distributed, viable subpopulations throughout the listed range. In cooperating with non-Federal landowners who are developing murrelet HCPs in these important conservation areas, the FWS followed this recommendation of the Marbled Murrelet Recovery Plan: minimize the loss of occupied murrelet habitat by evaluating and ranking various types of occupied habitat, and balance short-term risks with long term tradeoffs (USDI Fish and Wildlife Service 1997, page 139).

The Biological Opinion, and its Recovery Plan, identified PALCO lands as supporting essential nesting habitat under non-Federal management. It recognized these areas as representing a significant portion of the then currently available nesting habitat for the southern part of Zone 4. This area had known nest sites and was situated in a key area, close to the coast, with no Federal lands in the immediate area that were able to provide similar recovery contributions. The Recovery Plan recommended that actions in Zone 4 should focus on preventing the loss of occupied nesting habitat, minimizing the loss of unoccupied but suitable habitat, and decreasing the time for development of new suitable habitat. Guidance in the Recovery Plan suggested that maintenance of marbled murrelet populations on private lands was critical in arresting the decline of the species in the next 50 to 100 years. This was especially true where additional nesting habitat was not expected to be available on nearby Federal lands. The demographic bottleneck that the murrelet population may experience during the next 50-100 years made the maintenance of populations found on non-Federal lands an important component to improve viability and the likelihood for eventual recovery. On non-Federal lands the maintenance of all occupied sites should be the goal where possible. However, the

Recovery Plan (page 139) recognized that through the HCP process there may be some loss of occupied sites or un-surveyed suitable habitat, and that HCPs offered the best means for conservation of the species on non-Federal lands if take was minimized and mitigated and long term maintenance or creation of habitat was achieved (page 133).

The USFWS found that, in Zone 4, the public acquisition of the Headwaters area and protection of the PALCO MMCAs for the permit period would protect the majority of the most important occupied forest stands on PALCO ownership (91 percent of un-entered old growth redwood, and 50 percent of the higher quality residual redwood), while allowing mostly lower or medium quality habitat to be removed. Although the loss of the harvested habitat is a potentially serious adverse affect that may impact 3.6 percent of the occupied habitat in Zone 4, these reserve areas were nevertheless expected to function with other important habitat in the Zone, such as Humboldt Redwoods State Park, the Redwood National Park/State Park complex, the Six Rivers National Forest, the Siskiyou National Forest, and Coos Bay BLM lands to maintain a viable and well distributed marbled murrelet population in this Zone. This combination of multiple protected areas with good quality habitat that is well distributed should protect the Zone 4 population from stochastic or catastrophic events such as localized oil spills, shifting marine prey distribution, and forest fires. However, the FWS also recognized that all species, whether healthy or declining, are always at some risk due to chance events. This risk can never be entirely eliminated even under the most favorable conditions - it can only be minimized to some acceptable level. The FWS believed this proposed action adequately minimized the risk and would allow for the persistence of a viable murrelet population in Zone 4 and in the listed range.

The FEIS/EIR associated with this landowner's HCP examined marbled murrelet habitat fragmentation and connectivity extensively, and stated on page 3.10-43,

“The availability of interior forest habitat in particular is considered an important habitat feature for the marbled murrelet to minimize the potential for predation. Although there is substantial evidence that reproductive success of some species of birds is negatively affected by proximity to edge habitats and timber management activities (Rudnický and Hunter, 1993; Paton, 1994), specific studies on the effects of fragmentation on marbled murrelet nesting success are limited. However, because the marbled murrelet's primary nest defenses appear to include secretive behavior and the hidden location of its nest (Nelson and Hamer, 1995b), it is generally assumed that habitat fragmentation can substantially increase the risk of predation on these nests through increased access and exposure to predators generally associated with edge. Corvid bird species, particularly the Steller's jay and common raven, are of primary concern with respect to predation on murrelets in the interior coast ranges of northwestern California (Ralph et al., 1995; Hunter and Ralph., 1996; Hunter et al., 1997). Nelson and Hamer (1995b) found that successful marbled murrelet nests were located significantly further from edge habitat (defined as human-caused openings) than unsuccessful nests, and that vegetative cover directly around the nest was significantly greater at successful nests. This information suggests that activities that reduce connectivity and increase edge habitat by reducing patch size and interior forest may negatively affect marbled murrelet reproduction. Conversely, increases in forest interior habitat and LSH would be expected to reduce nest predation on murrelets, thereby potentially increasing their reproductive success.”

The FEIS/EIR continued with Table 3.10-9, *Thresholds of Significance and Comparison of Effects of the Alternatives on Wildlife Resources* on FEIS/EIR page 3.10-73, which provided a comparison of the four major plan alternatives with respect to fragmentation and connectivity. The FEIS/EIR found that Alternative 2 (the selected alternative) provided,

“Less-than-significant effect. Short-term decreases in acreage of interior LSH and in amount of LSH in patches >80 acres in size and <1 mile apart are minimized and mitigated in the long term by

the OG [old growth] protected and/or buffered in MMCAs and noharvest portions of RMZs on Class I and II streams. In addition, protection and development of additional LSH in the extended long term due to permanent establishment of the Headwaters Reserve. Also, effects would be minimized by the need for 10% of PALCO's ownership to be maintained as late-seral forest and habitat for spotted owls."

Therefore, the wildlife agencies that signed the HCP considered the impacts of corvids to marbled murrelets due to habitat fragmentation, and found that risks were reduced to a level of insignificance.

The Concern Writer expresses concern for the lack of analysis of potential impacts from harvesting on murrelets. The plan-preparing RPF provided a *Marbled Murrelet Stand Prioritization* map on THP page 82, which identifies the location of stands of differing levels of marbled murrelet habitat. The RPF also provided HCP-required Disturbance Minimization and Prioritization and Phasing of Harvest restrictions on THP pages 48 through 52.1, and pages 141 and 142. As previously discussed, the USFWS considered the loss of residual murrelet habitat from limited harvesting, and found that a viable murrelet population would persist. Again, the Headwaters agreement protected over 90 percent of un-entered old growth redwood, and 50 percent of the higher quality residual redwood on PALCO lands. In exchange, the agreement allowed for harvesting portions of residual stands, including those identified in THP 1-04-302 HUM.

As stated in the executive summary of the *PALCO Habitat Conservation Plan: Marbled Murrelet Inland Monitoring Annual Report 2004* (2004 MAMU Report),

"An objective of the PALCO Habitat Conservation Plan (HCP) inland effectiveness monitoring program is to determine the continued occupancy of the Marbled Murrelet Conservation Areas (MMCAs). In pursuit of this objective, PALCO monitors for marbled murrelets in select MMCAs and the neighboring Headwaters Forest Reserve and Humboldt Redwood State Park (Reserves). Areas within the Reserves serve as controls to gauge any changes in the MMCAs."

In 2004, audio-visual surveyors occupied behaviors (marbled murrelets flying below canopy or circling) in all monitored Reserves and MMCAs, with the exception of the Cooper Mill MMCA. Although no occupied behaviors were observed in Cooper Mill, audio-visual surveyors did hear calling murrelets and saw one murrelet flying above canopy. Further, radar tracked murrelets flying over Cooper Mill during all four surveys in 2004.

More marbled murrelets were counted during radar and audio-visual surveys in the Reserve stands than in the MMCA stands. The mean annual audio-visual counts in MMCAs remained the same over the past five years, and there was no evidence of audio-visual detections declining in the MMCAs and the Reserves from the year 2000 baseline, as would be expected if the HCP strategy was ineffective in protecting murrelet breeding habitat."

The radar measurements are used to detect flying murrelets in accordance with methodology agreed to by the wildlife agencies. The result of five years of using this methodology shows a stable population.

Appendix N of the PALCO THP specifically focused on the effects of Alternative 2 (the selected alternative in the Headwaters Agreement) on marbled murrelets. As described in the summary on page 1 of Appendix N,

"As proposed in the PALCO HCP, harvest in uncut old growth would occur in stands of small size and lower apparent quality. Harvest of residual stands would remove a larger quantity of acres, but would primarily affect widely scattered stands that are not associated with high quality old growth. The loss of habitat proposed under the Draft HCP would be minor when viewed within larger

contexts such as Marbled Murrelet Conservation Zone 4 (MMCZ4) or the 3-state listed range. Importantly, factors related to habitat quality and analysis of detection rates of murrelet occupancy suggest that the impact will be less than that reflected in the simple numeric comparison of occupied habitat acres harvested versus acres preserved.

The protected reserves would include the largest stands of high quality habitat available, and provide for improvement within the reserves during the 50-year period of the incidental take permit. Habitat in reserves would improve as second growth trees within residual stands reach heights that provide surrounding protection for nesting substrate in the residual trees. By the end of the permit period, there will be more closed canopy forest with old growth nesting substrate in the HCP area than exists today, and that habitat will be aggregated near high quality uncut old growth. The amount of MMCA reserve habitat improved would be less than the amount of occupied habitat harvested in strictly numeric terms, but the added value provided in the reserves by aggregating and improving residual habitat in association with high quality habitat would mitigate for the loss of larger amounts of scattered lower quality habitat.”

Appendix N concluded with the following finding on page 22:

“The agencies believe that the proposed action, which includes acquisition of the Headwaters Reserve and implementation of the PALCO Draft HCP, is consistent with recommendations in the Recovery Plan. On PALCO lands, a key area identified by the Recovery Plan, the Federal and State governments are acquiring the largest, most important habitat, the Headwaters Forest. The proposed HCP would protect most of the remaining high-quality habitat on the ownership. While some occupied habitat would be harvested, the harvest would be confined to the smaller, most fragmented stands of uncut old growth and to scattered residual stands whose physical characteristics suggest they are lower quality habitat, and where rates of detection of occupied behaviors are low. The degree of short-term impact would be relatively low because the harvest is confined to lower quality habitat.

The reserve design would create large blocks of habitat that are based around the best available habitat remaining on the property, and would provide for a substantial increase in habitat quality within the reserves. The reserve areas are buffered with second-growth wherever ownership patterns allow. The reserve design would also maintain the current distribution of the species in the MMCZ 4 and not exacerbate the gap between the Humboldt population and the central California population. The proposed action is consistent with recommendations of the Recovery Plan and should contribute to the long term viability of the marbled murrelet. If fully implemented, the measures prescribed by Assembly Bill 1986 (i.e., the purchase of the Owl Creek and Grizzly Creek MMCAS by the State of California) would further increase protection for the marbled murrelet under the HCP.”

The measures prescribed by AB 1986, including the Owl Creek and Grizzly Creek public purchases did come to fruition, thereby providing the maximum protection for the marbled murrelet. There is no evidence that the regional murrelet population is declining; there are data from multiple murrelet monitoring programs covering the HCP area to support an observation of no detected decline. Less potential nesting habitat has been harvested under the HCP than were envisioned, therefore, less “take” has, or will occur than was anticipated. The stands available for harvest under the HCP are relatively unimportant to marbled murrelets; those stands of greatest importance to the long-term success of marbled murrelets have been set aside.

The Concern Writer appears to not understand the definitions used to describe older age classes of trees and forest stands. The plan-preparing RPF has included a list of the definitions in the Plan Addendum to Item

34, on THP pages 146 and 147. The definitions are presented to provide clarity and understanding of the differences and similarities between FPR definitions and HCP or FEIS/EIR definitions.

The Concern Writer states that, “The late seral/oldgrowth maps are not showing old growth when they do not show the “occupied” murrelet stands as oldgrowth.” The Concern Writer appears to be drawing a distinction between the *Late Seral Condition and Oldgrowth* (LSC) map on THP page 155 with the *Marbled Murrelet Stand Prioritization* (MAMU) map on page 82. The LSC map provides information on forest stands that meet or exceed the definition of Late Seral Habitat, as defined on THP page 147:

“[A]reas with trees that average over 24 inches diameter breast height (dbh) that have begun to develop a multi-storied structure (California Wildlife Habitat Relationships categories 5M, 5D, and 6). Late-seral/old-growth habitat (LSH) includes both redwood- and Douglas-fir-dominated forest stands.”

The MAMU map on page 82 is focused on showing areas with large, old trees that provide habitat for marbled murrelets. This may include stands of timber dominated by smaller, younger trees with some large, older residual trees retained from the original harvesting. The overall stand average may not meet the definition of HCP-defined Late Seral Habitat, yet it contains some individual trees with features preferred for used by marbled murrelets. The Concern Writer will note, then, that the LSC map on page 155 is generally aligned with the MAMU map on page 82, but does not encompass as many acres.

The Concern Writer questions how much murrelet habitat will remain in the watershed on PL land post-harvest. No specific acreage is available, and no such accounting is required. As previously stated, but worth repeating, the Headwaters agreement protected over 90 percent of un-entered old growth redwood, and 50 percent of the higher quality residual redwood on PALCO lands. HCP 6.11.2.1 requires the retention of a minimum 10% late seral type within the Van Duzen River WAA. The *WHR Seral Stage Summary* chart on THP page 149 shows a current retention of 12.2 percent, based on the assumption that all acres proposed for harvest on all plans in the Van Duzen River WAA are actually harvested. The Wildlife Agencies have found the retention of these stands will provide habitat to species dependent upon late seral, if the existing stands meet that definition, or will promote the habitat as it ages to become that type over time.

The Concern Writer states that PALCO has failed to continue the HCP-required murrelet surveys. The Department received a copy of the PALCO 2005 Annual HCP Report with a cover letter dated January 30, 2005. The document includes a report on the Marbled Murrelet Conservation Plan. There is no requirement for an individual survey of the status of murrelets in THP 1-04-302 HUM. It should be noted that the harvesting associated with THP 1-04-302 HUM will not remove all of the trees or habitat shown to exist in the listed Prioritization and Phasing stands.

The Concern Writer appears to express concern that protection has not been afforded to nearby State Parks ownership. As previously discussed, a portion of former PALCO timberlands was sold to the State specifically for protection of marbled murrelet habitat. Protection measures are provided in THP 1-04-302 HUM, and are found on THP pages 48 through 52.1. Most notably, “No timber operations (other than hauling), including but not limited to helicopter operations, road construction, and reconstruction, shall occur within the 0.25 mile disturbance minimization buffer during the marbled murrelet breeding season.” The marbled murrelet breeding season is March 24 through September 15 of each year.

The Department finds no justification for denial of THP 1-04-302 HUM pursuant to 14 CCR §§ 898.2 or 912.9. The Department finds THP 1-04-302 HUM in conformance with the FPRs and the landowner’s HCP. The Department finds substantial information available in the file of THP 1-04-302 HUM to reasonably conclude that potential impacts to marbled murrelets have been reduced to the level of insignificance.

## REFERENCES

California Code of Regulations, Title 14, Division 1.5. Forest Practice Regulation.

Habitat Conservation Plan and Associated Documents for PALCO Lands. March 1999.

Humboldt County, Community Development Services Department, Planning Division, Zoning Section 313-43.2 (Allowed Agricultural Activities Not A Nuisance (“Right to Farm Ordinance”), public posting on internet site, March 2005:

[http://www.co.humboldt.ca.us/planning/zoning/zoning/ch\\_3/b\\_pt1.pdf#search='Humboldt%20County%20california%20right%20to%20farm%20zoning'](http://www.co.humboldt.ca.us/planning/zoning/zoning/ch_3/b_pt1.pdf#search='Humboldt%20County%20california%20right%20to%20farm%20zoning')

PALCO Science Team. 2003. Habitat Conservation Plan 2002 Aquatic & Amphibian/Reptile Annual Monitoring Report. The Pacific Lumber Company, Scotia, CA. June 1, 2003.

PALCO Science Team. 2005. Habitat Conservation Plan 2005 Annual Report. The Pacific Lumber Company, Scotia, CA. January 30, 2005.

Public Resources Code, Division 4, Chapter 8, Forest Practice Act.

Tetra Tech, Inc. 2002. Van Duzen River Watershed Analysis Cumulative Watershed Effects, Public Review Draft. 430 pages.

USDI Bureau of Land Management, consultation with US Dept. of Commerce, NOAA, National Marine Fisheries, February 24, 1999. Endangered Species Act- Section 7 Consultation, *Biological and Conference Opinions Regarding Issuance of an Incidental Take Permit to the Pacific Lumber Company, Scotia Pacific Company LLC and Salmon Creek Corporation*, 537 pages.