

# Memorandum

**To:** Mr. William Hoehman, Region Chief  
Northern Region  
135 Ridgway Ave.  
Santa Rosa, California 95401

**Attention:** Ms. Leslie Markham, Resource Manager  
Forest Practice, Coast Area Office

**From:** Department of Forestry and Fire Protection  
Sacramento Headquarters

**Subject:** THP No. 1-04-115 SCR  
Hydrologic Review

**Date:** July 29, 2004

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This memorandum reports the findings of a focused Pre-Harvest Inspection (PHI) on THP No. 1-04-115 SCR held on July 27, 2004. My comments are limited to a discussion of watercourse protection required for the Class II channel located on the Filice property in Santa Cruz County. Field inspection participants included the following individuals:

Gary Paul, RPF  
John Filice, Landowner  
Anthony Filice, Landowner's son  
Richard Fitzgerald, DFG  
Angela Petersen, CDF, San Mateo-Santa Cruz Unit  
Pete Cafferata, CDF, Sacramento Headquarters

## Background Information and Field Observations

I was asked to: 1) review the portion of a Class II watercourse from watercourse crossing "i" down to the property boundary, a distance of approximately 800 feet, 2) determine if the area adjacent to the channel should be considered part of the channel zone, as defined by the Forest Practice Rules (FPRs), and 3) help determine appropriate protection measures for this Class II watercourse to meet the requirements of the FPRs (Figure 1).

Below the watercourse crossing, the Class II watercourse channel gradient is relatively flat for approximately the first 500-600 feet and the channel is unconfined. There is a relatively wide area (roughly 150 to 175 feet—total width on both sides of the channel) that exhibits flat topography and abundant coverage by wetland plants, including horsetail (*Eqisetum arvense*) and stinging nettle (*Urtica dioica*) (Figure 2). Areas slightly elevated have coast redwood trees that are of merchantable size in many locations.

None of the coast redwood trees present showed evidence of a silt line indicating that water rose high enough during flood events to significantly inundate this entire wet area (Figure 3). One area was observed where wild pigs had recently disturbed the soil to sufficient depth that the shallow water table was reached. Mr. Filice stated that he has lived on this 320 acre parcel since the early 1950's and that this flat area becomes seasonally wet virtually every winter, but no flooding has been observed.

The lower 200 feet of the Class II channel area near the property boundary is much more incised than the upper 600 feet and can be considered to have a confined channel (Figure 4). This area does not have dense wetland plants on the area adjacent to the channel and is considerably different than the zone upstream. In confined channels, floodplains are not present and secondary indicators, such as vegetation or other evidence of flood flows is used to determine bankfull width and depth (WDNR 2001). The FPRs state the channel zone extends to the edge of the watercourse transition line (WTL). For confined channels, the WTL is defined as *"that line that is the outer boundary of a watercourse's 20-year return interval flood event floodplain. This outer boundary corresponds to an elevation equivalent to twice the maximum depth of the adjacent riffle at bankfull stage. The bankfull stage elevation shall be determined by field indicators and may be verified by drainage area/bankfull discharge relationships"* (14 § CCR 895). While quantitative measurements were not made, it is clear that for the lower 200 feet, the WTL would not extend upslope for any significant distance and the channel zone between the WTL would be very narrow.

Mr. Paul has marked the entire area for harvest (i.e., 100% mark) and stated that approximately 25 to 30% of the timber volume greater than 18 inches has been marked for harvest (Figure 5). A previous logging operation in 1991 constructed skid trails throughout the flatter areas.

### Discussion

There was considerable discussion regarding whether the upper portion of this area (i.e., the first 600 feet below crossing "i" that is 150 to 175 feet wide) should be classified as a channel zone, as defined in the Forest Practice Rules. This issue has been raised several times in the recent past on other Timber Harvesting Plans in the Coast Forest Practice District and my perspective on the FPRs regarding the channel zone definition is partially based on discussions held during review of those THPs.

For the upper 600 foot zone, with an unconfined channel, the FPRs specify that the Watercourse Transition Line (WTL) is to be delineated where hardwood and conifer trees are at least 25 years of age (DBH) are located. In this case, trees of this age are located very near the channel edge—in many cases approximately 10 feet from the channel. As per the FPRs, the channel zone is that area located between the watercourse transition lines, and it is this area that cannot be harvested, except for some well defined exceptions [see 14 § CCR 916.9(e)]. Therefore, as defined by the California FPRs, it is my opinion that the 150-175 foot wide zone does not qualify as a channel zone for this Class II watercourse.

The FPRs do allow modification of Watercourse and Lake Protection Zone (WLPZ) requirements, including width, on a site-specific basis where needed, for the protection of beneficial uses. Using this approach requires clearly identifying what beneficial uses

are threatened or impaired and why. Therefore, under the existing Forest Practice Rules, wet areas or floodplains can be adequately protected. If deemed to be appropriate by the reviewing agencies, the Rules allow for some harvest on floodplains and wet areas.

I agree that the current version of the FPRs does not provide a conventional understanding of floodplain areas in association with the channel zone for unconfined channels with defined floodplains (WDNR 2001). However, in the case of this portion of the Filice property, it does not seem appropriate to consider the 150-175 foot wide area that becomes seasonally wet to be called a floodplain. There is no evidence that the water regularly overtops the banks of the very small channel to flood this area to any significant depth, as evidenced by the lack of silt lines on the redwood trees. There are side channels in portions of this wet area that show evidence of flow during heavy runoff periods that do require protection from heavy equipment disturbance.

After walking the entire stretch of this Class II watercourse and inspecting the margins of the seasonally wet area on both sides of the channel, the field team concluded that the following measures would provide acceptable protection for the Class II channel and the seasonally wet area adjacent to the channel:

- Establish a WTL where the first conifer trees at least 25 years of age at breast height are located (approximately 10 feet from the channel edge in many locations) for the unconfined portion of this Class II watercourse.
- Establish a Class II WLPZ for the next 50 feet, as per the FPRs for slopes less than 30 percent. No skid trails will be located in the WLPZ and 50% post-harvest canopy is to remain.
- Establish a Special Treatment Area (STA) for the remainder of the area that is seasonally wet (currently flagged with pink flagging—this area was modified during the field visit).
- The STA will be an Equipment Limitation Zone (ELZ), where skid trail entry is only permitted on a few pre-flagged skid trails, all of which were reviewed in the field and determined to be appropriate (trails are flagged in yellow).
- Skid trail segments within the STA are to be treated to reduce the potential for surface erosion. The trails will either be slash mulched, with a coverage of 90%, or seeded and mulched, with a coverage of at least 90% of the ground surface.
- Other than falling operations and the use of the short preflagged skid segments, vegetative disturbance is not permitted in the STA.

### Conclusions and Recommendations

With these protection measures, adequate protection for the Class II channel and adjacent seasonally wet area will be accomplished. It is appropriate for the RPF to:

- Revise the THP to reflect the current protection measures being provided to this Class II watercourse.
- Ensure that the flagging for this part of the THP reflects what was determined to be appropriate for adequate protection of the beneficial uses of water at this site.
- Provide a detailed map illustrating the protection measures for this part of the THP.

## Reference

Washington Department of Natural Resources (WDNR). 2001. Standard methods for identifying channel migration zones and bankfull channel features. Forest Practices Board Manual, Section 2. 21 p.  
<http://www.dnr.wa.gov/forestpractices/board/manual/>

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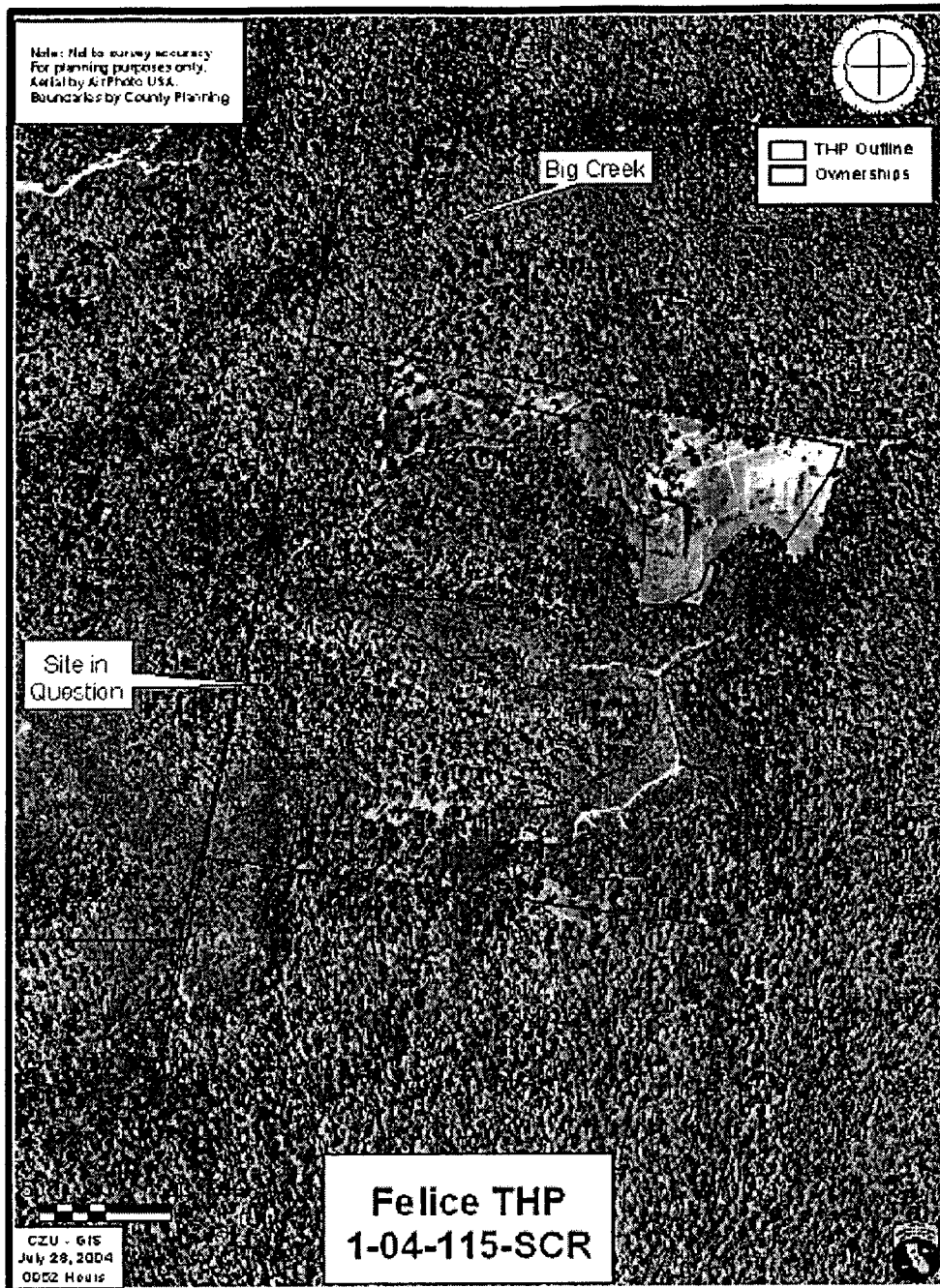


Figure 1. Air photo view of the Felice THP area and the site reviewed in the field on July 27, 2004 (prepared by Mr. Rich Sampson, CDF, San Mateo-Santa Cruz Unit).



Figures 2 and 3. Representative area of Class II WLPZ/special treatment area, and Mr. Filice standing beside a coast redwood tree that does not exhibit a silt line.



Figure 4. Mr. Fitzgerald and Ms. Petersen inspecting the lower part of the Class II watercourse, where the channel is considerably more incised.



Figure 5. Upper part of Class II WLPZ/special treatment area with marked coast redwood trees.