

June 24, 2008

Department of Fish and Game

Subject: DFG comments on the California Forest Practice Rules, specific to the definition of the Watercourse or Lake Transition Line (WLTL):

Purpose: The following are comments on the current WLTL definition in California Forest Practice Rules (FPR) Title 14, California Code of Regulations (14 CCR), 895.1. The following WLTL comments include a brief history of its definition, revisions since 2000 and its application in the field which, in many cases, has contradicted FPR intent pertaining to watercourse or lake protection and beneficial uses of water. The current WLTL definition and its application in the field separates watercourses from their floodplains, which is not consistent with available literature on the subject of watercourse protection and specific FPRs pertaining to watercourse or lake protection and beneficial uses of water.

The intent of the 14 CCR 916(a) states: "During and following timber operations, the beneficial uses of water, native aquatic and riparian-associated species, and the beneficial functions of riparian zones shall be maintained where they are in good condition, protected where they are threatened, and insofar as feasible, restored where they are impaired."

Replete in the available literature is the finding that the minimum, landward extent of a riparian zone is defined by the landward extent of the frequently flood prone area and typically inundated at less than or equal to every 20 years, on average, also known as the frequent floodplain. In its summary comments, the Riparian Protection Committee's Flood Prone Area Considerations in the Coast Redwood Zone (RPC) (Cafferata et al. 2005) stated, "Based on coho salmon life cycle requirements in the North and Central Coast regions, the most biologically critical flood prone area is inundated at less than or equal to every 20 years, on average."

The Department of Fish and Game's California Salmonid Stream Habitat Restoration Manual (Flosi and others 1998) states, "For most practical purposes the riparian zone can be considered the terrestrial component of the stream environment. Riparian zones are typically subject to partial or complete flooding and riparian vegetation is adapted to the particular climatic and topographic attributes of the zone. Riparian zones are the links between the terrestrial and aquatic ecosystems. An extremely close relationship exists between the riparian zone, the fluvial processes of the channel, and fish habitat. Management of streams for fisheries resources must include the riparian zone as a vital part of the stream ecosystem."

Aside from requirements to disclose the presence of and assess potential impacts to flood prone areas (e.g. 14 CCR 916.4(a)(1)), the FPRs do not provide specific protection measures or restoration guidelines for flood prone (and riparian) areas that extend landward beyond a 50-150 foot wide watercourse and lake protection zone (WLPZ). This is problematic in some cases because state and federally listed endangered coho (e.g. in Mendocino and Sonoma Counties) and federally listed threatened steelhead may be

seasonably present during floods on flood prone areas although these areas do not receive full Class I WLPZ watercourse protection.

Redefining the WLTl definition to include the floodplain (see below) would provide restoration of riparian zones and insure DFG involvement in proposing measures to reduce potentially significant impacts to coho and other riparian associated species to a level less than significant:

Proposed, 14 CCR 895.1 definition of the **Watercourse or Lake Transition Line (WLTl)**:

The watercourse transition line is the outer boundary of a watercourse's 20-year return interval flood event floodplain as defined by the following: (1) the upper limit of sand and/or silt deposition such as mudlines on trees; and, (2) evidence of recent channel migration and/or flood debris. The first line of permanent woody vegetation must not be used to determine this transition line.

With this proposed WLTl definition it would follow that the FPRs would not prohibit harvest on floodplains but would limit harvest via 14 CCR 916.9(e) "Channel zone requirements", for example:

"(1) There shall be no timber operations within the channel zone with the following exceptions:

(A) timber harvesting that is directed to improve salmonid habitat through the limited use of the selection or commercial thinning silvicultural methods with review and comment by DFG."

In addition, this proposed definition would remove the reliance on watercourse confinement criteria, i.e. "unconfined" versus "confined" channels in the current WLTl definition. In the RPC report, the committee recommended "...the FPRs no longer include separate definitions for confined and unconfined channels. While the physical distinction exists, in practice the definitions have led to confusion and proven difficult to use in the field."

WLTl and Channel Zone History in the FPRs: A Scientific Review Panel (SRP) was created in 1998 by an agreement between the National Marine Fisheries Service (NMFS) and The Resources Agency of California. Under the agreement the state agreed to organize an independent panel of scientists to undertake a comprehensive review of the FPRs, with regard to their adequacy for the protection of salmonid species. The agreement required the SRP to conduct a review of "California's forest practices regulations, their implementation and enforcement in order to determine their adequacy".

The SRP (Ligon, et al. 1999) concluded that the FPRs, including their implementation (the "THP process") did not ensure protection of anadromous salmonid populations. Among other THP processes scrutinized by the SRP such as cumulative effects assessment, the SRP focused on rule sections and definitions pertaining to watercourse protection measures.

For example, the SRP found the WLTL, as defined prior to 2000, would occur at or below bankfull stage (see Figure 1) on the inside watercourse bend where permanent woody riparian vegetation is established. The WLTL would therefore generally separate the active stream channel from its floodplain.

The SRP also stated, "A watercourse is composed of an active channel and a floodplain, although the floodplain may be subtle." The SRP recommended the FPR redefine its WLTL definition as follows: "The watercourse transition line is the outer boundary of a watercourse's floodplain as defined by the following: (1) the upper limit of sand deposition; and, (2) evidence of recent channel migration and/or flood debris. The first line of permanent woody vegetation must not be used to determine this transition line."

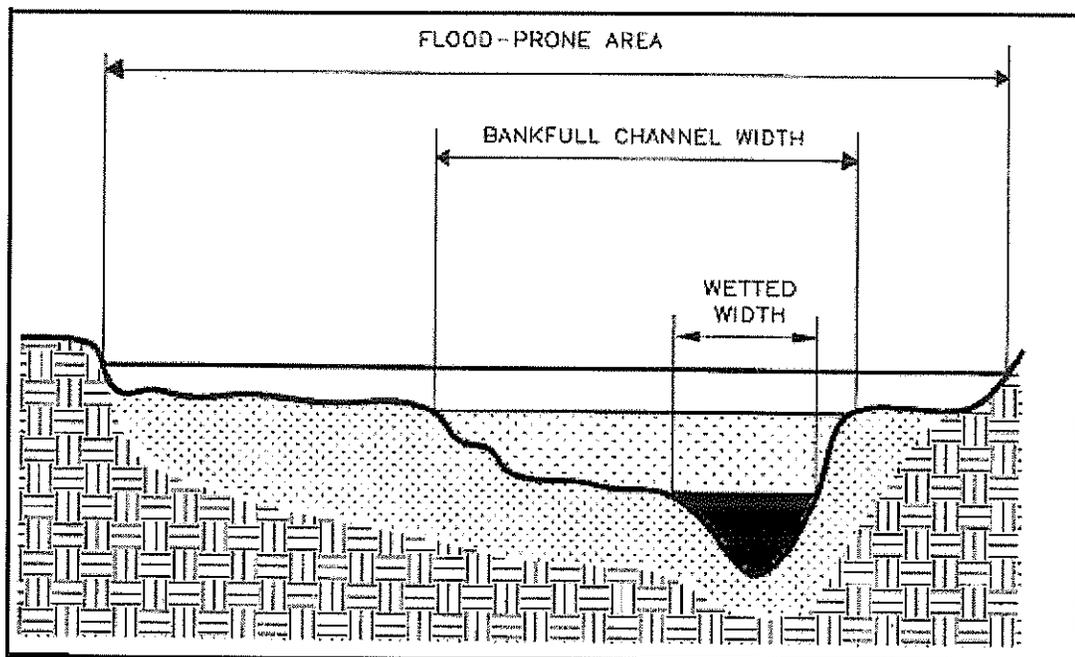


Figure 1. Diagram of stream and flood prone area channel cross-section from the California Stream Habitat Restoration Manual, Figure III-1 (Flosi and others 1998).

In addition, the SRP recommended the inclusion of the new definition, the **Channel Zone**, defined as: "A watercourse's channel zone includes its bankfull channel and floodplain, encompassing the area between the watercourse transition lines."

The FPRs were revised in 2000 to include, among other new definitions and rules, the new Channel Zone and WLTL definitions which resembled the recommendations in the SRP:

"(a) for a watercourse with an unconfined channel (a channel with a valley to width ratio at bankfull stage of 4 or greater) means that line defined by the landward margin of the most active portion of the channel zone area readily identified in the field by:

- (1) no soil development, and
- (2) riparian vegetation dominated by riverine hardwoods and occasional conifers.

If field identification is ambiguous, identification of the 20-year flood stage would delimit this portion of the channel zone” [emphasis added].

However, in 2002 the WLTL was redefined, again, for unconfined channels as follows:

“(a) for a watercourse with an unconfined channel (a channel with a valley to width ratio at bankfull stage of 4 or greater) means that line defined by the landward margin of the most active portion of the channel zone area readily identified in the field by riverine hardwood and conifer trees at least twenty-five (25) years in age at breast height.”

The reference to the 20-year flood stage for delimiting the outer boundary of the channel zone was removed and replaced by delimiting the outer boundary of the channel zone with riverine hardwood and conifer trees at least twenty-five (25) years in age at breast height. The SRP specifically advised against using permanent woody vegetation as the indicator because it would lead to establishing the WLTL at or below bankfull stage and thus separate the active channel from the floodplain. Apparently the WLTL was redefined in 2002 to simplify the definition for Registered Professional Foresters (RPF) to make easier the identification of watercourse transitions in unconfined channels where floodplains can be subtle but also extensive in many areas.

Moreover, the current application of the WLTL at the outer margin of the active channel negates FPR 14 CCR 916.9(e), “Channel zone requirements”. Active stream channels on the California north coast generally do not exhibit merchantable conifers because they are typically scoured annually by bankfull flows and are, therefore, barren of conifers or dominated by hardwoods. FPR 14 CCR 916.9(e) limits timber operations in the channel zone (“...includes its bankfull channel and floodplain, encompassing the area between the watercourse transition lines”). For there to be limits set upon timber harvest in channel zones, FPR 14 CCR 916.9(e) would have to apply to areas where floodplains and conifers are present and outside of an active channel, such as on flood prone areas in order to validate harvest in a channel zone. If the WLTL is established at the outer margin of the 20-year flood prone area, then the limits set upon timber harvests in FPR 14 CCR 916.9(e) would comport with the channel zone definition.

The WLTL definition for a confined channel remained unchanged from the FPRs in 2000:

“(b) for a watercourse with a confined channel means 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.”

Why is the floodplain important to anadromous salmonids? The SRP answered with the following: “First, the floodplain is extremely important as habitat to other riparian-dependent species (e.g., FEMAT 1993). Their protection is sanctioned in CCR 916.2(a)(3): ‘The measures used to protect the beneficial uses of water for each watercourse and lake shall be determined by the following: ... (3) The biological needs of the fish and wildlife

species by the riparian habitat.' Second, floodplains provide winter refuge habitat for juvenile anadromous salmonids during high flows. Backwaters, old scour channels, and the vegetated floodplain surface greatly reduce water velocities during even the highest floods. Third, floodplains supply¹ and store LWD [large woody debris]. In Prairie Creek, Humboldt County, the channel can migrate over individual LWD pieces, and back again, given the low decomposition rate of submerged redwood. Finally, the floodplain provides hydraulic roughness that buffers potentially radical changes in channel morphology."

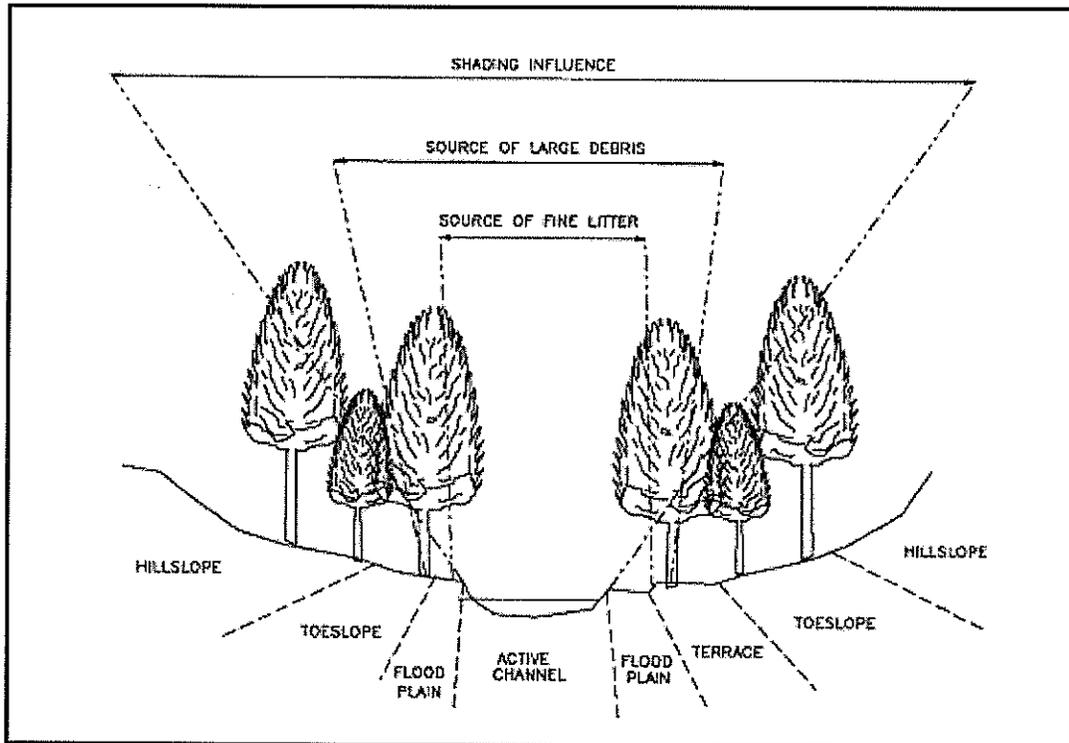


Figure 2. Diagram (from Lamberti and Gregory, 1989) of functional roles of the riparian zones, Figure III-1 in the California Stream Habitat Restoration Manual, (Flosi and others 1998).

Since the 2002 WLTL revision, DFG staff have recommended relocation of the WLTL landward to the watercourse's 20-year return interval flood event floodplain in 2002 and subsequent THPs and NTMPs in the following watersheds: Wages Creek, Big River and Gualala River. In most cases, RPFs have not agreed to relocate the WLTL in unconfined channels, admitting they were applying only the minimum FPRs.

¹ Available literature regarding LWD recruitment mechanisms and source distances are based mostly on hill slop process studies. Little is know about the long term source distances of LWD recruitment on large flood prone areas except for documented stochastic events where floods have removed and rebuilt floodplains. During these events LWD can be recruited from across floodplain surfaces during flood events and receding flood flows and floodplain erosion via channel migration, bank evulsion and channel avulsion, usually in the presence of LWD such as log jams in the active channel.

In response to suggestions by the California Department of Forestry and Fire Protection (Cal Fire), DFG turned to mitigating potential adverse effects to riparian associated species on floodplains instead of trying to relocate the WLTL as recommended in the SRP. Examples of mitigations include recommending the extension of the WLPZ to encompass the entire floodplain and recommending specific conifer retention/forest restoration guidelines on floodplains, where they extend landward beyond the WLPZ. To date, in Mendocino and Sonoma Counties, DFG has had little success incorporating into THPs and NTMPs all its recommended mitigations for floodplains exhibiting habitat for listed anadromous salmonids and other riparian associated species. Therefore, redefining the WLTL definition as proposed above or at least as originally written in the 2000/01 FPRs would provide a more efficient means for ensuring floodplain recognition, protection, restoration for species such as coho salmon and DFG review and comment consistent with the intent of the Threatened and Impaired Watershed FPRs following the 1999 SRP report recommendations.

References

- Flosi, G., S. Downie, J. Hopelain, M. Bird, R. Coey and B. Collins. 1998. California Salmonid Stream Habitat Restoration Manual, THIRD EDITION Prepared by: State of California, the Resources Agency, California Department of Fish and Game Inland Fisheries Division.
- Ligon, F. A. Rich, G. Ryneerson D. Thornburgh, and W. Trush. 1999. Report of the Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat. Prepared for The Resources Agency of California and the National Marine Fisheries Service, Sacramento, California.