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Memorandum

To: The Forest Practices Board

From: Alec Brown, Policy Representative for the Forests and Fish Conservation Caucus

Date: June 3, 2019

Re: Anadromous Floor

Background

The Conservation Caucus has learned that the Department of Natural Resources (DNR) is concerned about the legality of enacting a new water-typing rule that includes an "anadromous floor" overlay. DNR staff has stated the concept of an "anadromous floor" was not properly considered within the Adaptive Management Program and, as a result, cannot be enacted as part of the rulemaking package expected in 2019. The Conservation Caucus respectfully disagrees with DNR's contention. The concept of an anadromous floor, using percent stream gradient as a threshold, for defining fish habitat was clearly proposed at the Timber Fish and Wildlife (TFW) Policy level prior to dispute resolution, and then again at the Forest Practices Board level as a recommendation from the Board's Science Panel's report on Potential Habitat Breaks (PHB).

Evidence of these proposals will demonstrate the "anadromous floor" concept was deliberated within the Adaptive Management Program prior to dispute resolution being initiated at Policy in 2016. Yet, it must first be understood what is meant by "anadromous floor" to acknowledge its existence. The "anadromous floor" as a term was introduced to the Forest Practices Board at the February 2018 meeting. At the meeting, the Board commissioned Potential Habitat Break Science Panel presented various PHBs as possible options to be adopted during implementation of the Fish Habitat Assessment Method (FHAM)[1]. The Board's science panel presented gradient thresholds as places to begin FHAM. As presented, percent stream gradient thresholds would be areas within known fish habitat that have a sustained gradient increase that would reduce the likelihood of fish passage. Above these areas, FHAM would commence (PHB Panel Report, Tables 3 and 4).

[1] FHAM is the Board accepted, via a stakeholder consensus Fish Habitat Technical Group (FHTG) and Policy recommendation, manner to delineate the end of fish habitat and the Type F/N watery type break.

Although the term used at the Board in 2018 was "anadromous floor", the concept was presented in prior conversations as a gradient threshold, or as a channel gradient that would likely preclude fish access. Despite the different terminology the concept, as presented both at the Board and at Policy, is the same. Additionally, once an issue has gone through formal dispute resolution at the Policy level it is the Board's duty to make a final determination (Board Manual Section 22). Thus, as this memo will demonstrate the anadromous floor concept has gone through the Adaptive Management Program process, thereby, making it undoubtedly within the Forest Practices Board's authority to select a stream gradient threshold as a floor when defining PHBs as part of a permanent water-typing rule.

Gradient Discussions at Policy

In February 2014, responding to TFW Policy's unsettled dispute resolution over a permanent water-typing rule, the Board ordered Policy to resolve their dispute in a number of ways. One of Policy's tasks was to develop "best practices" regarding electrofishing surveys. An Electrofishing Technical Workgroup (ETG) was subsequently formed to provide guidance to Policy. After the ETG completed its work in May of 2016[2] Policy was unable to agree to an electrofishing survey protocol and initiated dispute resolution.

In stage 1 of dispute resolution, Policy formed another workgroup The Fish Habitat Technical Group (FHTG). FHTG agreed by consensus that a new Habitat Assessment Methodology was needed to minimize electrofishing and delineate F/N breaks. Under FHAM, surveyors would begin at known areas of fish use and proceed upstream until they encountered a PHB. They would then electrofish above this PHB to test for fish presence; at the first fish encountered, the surveyor would then proceed to the next PHB. If no fish were found after surveying to the next PHB, the surveyor would declare this PHB to be the end of fish habitat.

While the FHTG members coalesced around the concept of FHAM, they did not agree upon the specific criteria defining stream characteristics that would initiate FHAM by surveyors. However, they did agree to "primary" physical channel characteristics to include in PHB design. One of the four metrics (listed below) was channel gradient, clearly indicating a gradient threshold could serve to delineate the potential end of fish habitat.

- Permanent natural barriers
- *Channel gradient* (emphasis added)
- Channel size
- Interaction of channel size and gradient[3]

In their January 2017 report to Policy the FHTG also conceptually agreed on where to begin FHAM. "Start at a location of known fish use (e.g. previous information, visual observation, electrofishing detection)" Beginning at the upstream extent of known fish use is fundamental to FHAM effectiveness

[2] "Recommendations of Best Practices Regarding Protocol Survey Electrofishing: Results of the Electrofishing Technical Workgroup for TFW Policy Committee", Haemmerle, Howard, Bisson, Pete, and Berge, Hans, 31, May 2016.
[3] "A Conceptual Framework for Conducting an Alternative Protocol Fish Habitat Survey", Fish Habitat Technical Group to TFW Policy Stakeholders, 27, January 2017.

and to reducing electrofishing, but, unfortunately, the group did not explicitly define where this place is to occur in the field.

When it was apparent that no more progress would occur within the FHTG, Policy proceeded with dispute resolution and the caucuses were invited to present their own PHB metrics for FHAM to the Adaptive Management Program Administrator (AMPA) for review by a third party. Four proposals were given to the reviewer for consideration. Two of the four proposals specifically proposed stream gradient thresholds or "floors" below which fish habitat is assumed. The other two proposals did not include specific values, but did include the concept of stream gradients as a valid metric for determining PHBs.

Washington Department of Fish and Wildlife Proposal[4]

> **Step 1. Stream reaches assumed to be Fish Habitat:** The stream reaches meeting the following criteria are assumed to be Fish Habitat, and protocol surveys (electrofishing) for fish presence/absence should not be conducted in these reaches without prior consultation with an ID team.
>
> - Streams greater than 10 ft. Bank Full Width (BFW), with no permanent natural barriers downstream.
> - Streams less than 12% gradient (Trotter, P.C. 2000, Latterell et al. 2003) are likely to be fish habitat, if there are no permanent natural barriers downstream (Step 7 - permanent natural barriers).

Eastside Tribes Proposal[5]

> Step 3.
> Stream reaches assumed to be Fish Habitat[5]:
> The stream reaches meeting the following criteria are assumed to be Fish Habitat, and surveys (including electrofishing) for fish presence/absence should not be conducted in these reaches unless a potential natural barrier is encountered.
> All of the following criteria apply only if there are no potential natural barriers downstream to Type F waters.
>
> - Streams connected to downstream F waters greater than 2 ft. Bank Full Width (BFW) and less than 16% sustained gradient for 100 ft. with no resting pools
> - Streams connected to downstream F waters greater than 5 ft. BFW and less than 20% gradient sustained for 100 ft. with no resting pools (Trotter, P.C. 2000, Latterell et al. 2003) or
> - Tributaries to F streams in lower gradients are considered Type F up to 12% or to a potential natural barrier (see Sections 4). Smaller tributary streams (less than 2 feet BFW) are often used for seasonal or perennial rearing and overwintering

[4] "WDFW Proposal for: Statewide Stream Typing Habitat Assessment Methodology (Determining the Type F/N Break)" Washington Department of Wildlife 30, December 2016.

[5] "Eastside Tribal Caucus: Eastern Washington Stream Typing Fish Habitat Assessment Methodology (Determining the Type F/N Break)"
, Eastside Tribal Caucus, 30, March 2017.

habitat by anadromous and resident fish, especially coho, cutthroat, steelhead and bull trout.

The other two proposals were less explicit. The Washington Forest Protection Association called PHBs "nodes" and used the FHTG's primary characteristics to define nodes, "…nodes will coincide with the location of potential natural barriers and / or measurable changes in stream size, gradient, or a combination of the two." The proposal went further by stating, "A gradient change greater than "X" would help develop gradient node definitions."[6]

The Conservation Caucus's entire proposal was based on the concept of limiting electrofishing to the uppermost reaches of streams where fish are known to reside. Called Physicals Plus the proposal would only permit electrofishing to occur above permanent natural barriers as determined by WDFW. The proposal stated that one manner to determine fish use was by using LiDAR, identifying all reaches below 20% gradient and eliminating electrofishing in these sections. Below a natural barrier such as the gradient threshold, surveys would be conducted using the physical criteria defined in rule[7]. Of course, one of these current rule components is a gradient metric[8].

Ultimately, the contractor reviewed the proposals and declared their major distinctions were in the specific criteria defining metrics for PHBs. The report declared WDFW's, with the 12% floor, to be most like a rule and consistently implementable and repeatable. Finally, the report recommended the PHB breaks come from the literature and data on fish species in Washington State. Policy accepted the report recommendations and worked to outline the areas of agreement (general concept) and disagreement (specific metrics) on PHBs to be used with FHAM.

Per the Adaptive Management Program's Board Manual Section 22, at the end of dispute resolution the Administrator is to summarize the Policy dispute with minority and majority recommendations, collect relevant working documents, and deliver this information to the Board. What was to be included was discussed at the May 2017 Policy meeting. Policy wanted to be sure that the Board knew PHB discussions were centered on the upper reaches of fish habitat in a stream. The meeting notes reflect this concern, "The AMPA's report to the Board will include a description of the water typing disagreement focused on what threshold should define the lower bounds of electrofishing." The AMPA finalized his summary and delivered the documents to the Board in their May 2017 packet.

Water Typing and Gradient Discussions at the Board

Policy could only agree to the concept of FHAM recommended by the FHTG, not specific metrics defining PHBs, therefore at the conclusion of dispute resolution, Policy asked the Board to take control of the process by assembling an expert panel to define the metrics that would be codified in rule language. In their guidance as to where to begin FHAM, Policy wrote in consensus, "If there is no Type F/N water break point on a mapped stream or the stream is unmapped, start the field FHAM

[6] "Proposal to Incorporate 'Habitat Likely to be Used by Fish' in Protocol Survey Decision Making", Washington Forest Protection Association, 30, March 2017.
[7] "Physicals Plus: A Field Methodology for Identifying Fish Habitats for the Purposes of Water Typing", The Forest and Fish Conservation Caucus, 30, March 2017.
[8] WAC 222-16-031

assessment at the uppermost point of known fish or previously documented waters known to contain fish populations."[9]

At the May 2017 meeting the Board received Policy's disputed recommendations for a water typing system. Once again, the primary characteristics were suggested as to what may constitute a PHB. Those listed below were in a consensus part of the document. They include a stream gradient threshold.

- Permanent natural barriers
- *Percent stream gradient* (emphasis added)
- Stream, width, basin size, channel size
- Interaction of stream size and gradient[10]

In addition to the recommendations from Policy, individual caucuses presented comments to the Board. Within these comments was both explicit and implicit support for a stream gradient threshold floor concept. The Conservation Caucus asked the Board to "Find that the primary metrics for determining PHBs are stream gradient and stream width or their combination."[11] The Upper Columbia United Tribes presented three metrics from their proposal to Policy months earlier that incorporated the interaction of gradient and width as thresholds.[12] The Washington Forest Protection Association reminded the Board:

> Potential habitat breaks (PNB) may occur at potential permanent natural barriers, and/or at changes in stream size, gradient, or both, associated with a low likelihood of upstream fish use. Significant gains in the accuracy of water type classifications are easily achieved through the incorporation of previously known and/or surveyed fish use information, relative to a modeled or simple threshold physical criteria approach.[13]

The Board passed a number of resolutions at the May meeting. First, the Board accepted Policy's recommendation to take control of the process by stating Policy had completed its work and the Board would be "….assuming management for the development of the final issues needed to have a complete permanent water typing system in the forest practices rules." Most importantly, the Board then directed an expert "Science Panel" to provide recommendations for PHBs that would "…constitute in high probability the PHB is coincident with a significant change in habitat including stream size, stream gradient….thus the appropriate point to initiate a protocol survey."[14] Clearly, the Board asked the Science Panel to give guidance on where to begin electrofishing surveys.

The Science Panel presented a variety of options for PHBs at the August 2017 meeting. As directed by the Board, these options were composed of stream gradient, stream width, and their interaction as metrics. The Panel's test number 9 included a two-tiered gradient threshold. The first PHB would be an

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[9] "TFW Policy Proposed Framework for a Statewide Stream Typing Fish Habitat Assessment Methodology (FHAM) to Determine the Type F/N Water Break", TFW Policy, 24, April 2017.
[10] Ibid.
[11] "Further Recommendations for Fish Habitat Assessment Method", Scurlock, Marcy, Glasgow, Jamie, Mendoza, Chris, 5, May 2017.
[12] UCUT Letter to the Board, Gauthier, Marc, May 2017.
[13] "Comments on Water Typing Mediation and Progress". Terwilleger, Karen, 5, May 2017.
[14] "Forest Practices Board: Special Board Meeting". Minutes, 9, May 2017.

increase in stream gradient to 10% or greater, where downstream gradient is less than 10%, and above that point the PHB would be a 5% gradient change between upstream and downstream. This first PHB gradient threshold would become known as an anadromous floor.[15] Giving Board testimony, Jim Peters of the Northwest Indian Fisheries Commission supported test number 9. Further, Board Member Dave Herrera offered a motion seconded by Board Member Brent Davies to adopt number 9 as the PHB characteristics[16]. It was apparent to much of the Board at this point a gradient threshold was recommended by the Science Panel and should be adopted by the Board.

This motion did not pass at the August Board meeting. Further, the Board expressed dissatisfaction with the limited extent of the data used by the group to test the efficacy of PHBs and asked for a more extensive report to be delivered to the Board in February 2018. At the February meeting, the Science Panel presented a new report with PHB options for Board selection. Three caucuses also submitted recommendations with PHB metrics that were derived from the panel's report. All of these options included a gradient threshold, which became known in Board testimony and discussion as an anadromous floor or layer. This fact was not lost upon the Board. In fact, there was a lengthy discussion between Board Member Tom Nelson on gradient thresholds and the author of the report, Phil Roni. Board Member Nelson stated he believed the Board's August vote asked the Science Panel to create a report "…without establishing a gradient threshold under which all waters were to be considered fish." He asked when the panel decided to incorporate this. Roni explained the panel had always planned to incorporate such a threshold and had done so in the first report in August.

It is also clear the Board understood they were considering a gradient threshold by their motions in February of 2018. At the meeting, the Board sent the three caucus submitted recommendations and a no-action alternative to DNR for analysis to initiate rule making. In the unanimously supported motion, a floor was even referenced and its origins were declared to be derived from the panel's report. "Landowner's Proposal, as amended during board discussion at 2/14/2018 meeting; (test #15 from the science team's recommendations plus their description of an anadromous layer, eastern and western Washington.)[17]"

Board Authority

Given that both Policy and the Board have considered a gradient threshold as a place to initiate protocol surveys under FHAM, the Board's authority to make such a determination is clear. Once Policy has gone through dispute resolution that fails to result in a consensus recommendation to the Board, as they did in both 2014 and 2016 while working towards a permanent water-typing rule, it falls to the Board to settle the issue. Under WAC 222-12-045 "…. (D) If stage two dispute resolution within the policy committee does not result in consensus, the program administrator will report the majority and minority recommendations to the board. The board will make the final determination regarding dispute resolution." In this case, the Board accepted responsibility for selecting the final metrics to adopt a permanent water-typing rule. The Board then commissioned a Science Panel to submit recommendations for determining habitat breaks. The panel, like Policy before it, recommended a gradient threshold as a part of a PHB reliant water-typing rule. Consequently, the anadromous floor

[15] "Review and Recommendation for Potential Fish Habitat Breaks to Being Protocol Surveys to Determine end of Fish Habitat on State and Private Forest Land in Washing State", Potential Habitat Break Science Panel Members. 27, July 2017.
[16] "Forest Practices Board: August 9, 2017" Minutes
[17] "Forest Practices Board: Special Board Meeting February 13, 2018".

concept has already gone through the Adaptive Management Program process and it is appropriate for the Board to accept a gradient threshold as a part of FHAM.