

Timber, Fish, & Wildlife Policy Committee
Type F Draft Recommendations
v. 9-19-16

1.0 Background

The Legislature mandated that the Forest and Fish Report provide direction to the Forest Practices Board (Board), the Department of Natural Resources, and the Department of Ecology with respect to the adoption, implementation, and enforcement of rules relating to forest practices and the protection of aquatic resources. This includes any revision to the Board-adopted permanent rules, and any new rules covering aquatic resources must be consistent with recommendations resulting from the scientifically-based adaptive management process established by a rule of the Board. The Forest Practices Board has since made several motions to the TFW Policy Committee to provide solutions to the Type F waters issues. As a response to these motions, TFW Policy Committee recommends the following for Board consideration toward the development of new rule and/or improved Board Manual to address the Type F waters issues.

2.0 Recommendations

The TFW Policy Committee recommends that:

- The Board adopts one permanent rule with revised Board Manual guidance, in combination with a follow-up research/validation strategy with a defined timeline.
- The permanent rule is informed by the rules, processes, and legislative directives in place today.
- All changes are limited to making improvements on the TFW Policy jointly-identified Type F matrix as consensus (including the Type F/N regulatory break recommendations).
- The goal is to protect “fish habitat” as defined in rule (WAC 222-16-010), through the application of an agreed upon language, guidance, and/or field process.

The TFW Policy Committee bases their recommendations on the Forest and Fish Report, TFW agreement, and the HCP as foundations for a permanent water typing rule with all elements being equally important.

2.1 Definition of Type F Water

Type F Waters (Fish Habitat)

We recommend the permanent rule include that Type F waters are:

- Segments of natural waters within bankfull flow (BFF) of defined channels and periodically inundated areas including associated wetlands;
- Aquatic habitat features connected by a surface flow to defined channels of Type F Waters at the BFF, that are used by fish for off-channel habitat (OCH).
- Within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by: include all current descriptors of Type F waters as currently in 222-16-030 (a, b, c, d).

Fish habitat (or Type F water) is defined as “*habitat, which is used by fish at any life stage at any time of the year including potential habitat likely to be used by fish, which could be recovered by restoration or management and includes off-channel habitat*” (WAC 222-16-010 and WAC 222-16-030(5)(h)).

2.1.1 Draft Recommendation of Type F Waters or Fish habitat

We advance the permanent rule outlined in WAC 222-16-030 as the basis for recommendations to the Board for the Water Typing rule with consensus modifiers on specific rule related issues.

WAC 222-16-030 Water typing system. ~~The department in cooperation with the departments of fish and wildlife, and ecology, and in consultation with affected Indian tribes will classify streams, lakes and ponds. The department will prepare water type maps showing the location of Type S, F, and N (Np and Ns) Waters within the forested areas of the state. The maps will be based on a multiparameter, field verified geographic information system (GIS) logistic regression model. The multiparameter model will be designed to identify fish habitat by using geomorphic parameters such as basin size, gradient, elevation and other indicators. The modeling process shall be designed to achieve a level of statistical accuracy of 95% in separating fish habitat streams and nonfish habitat streams. Furthermore, the demarcation of fish and nonfish habitat waters shall be equally likely to over and under estimate the presence of fish habitat. These maps shall be referred to as "fish habitat water typing maps" and shall, when completed, be available for public inspection at region offices of the department. Fish habitat water type maps will be updated as necessary to better reflect observed, in field conditions. Except for these periodic revisions of the maps, on the ground observations of fish or habitat characteristics will generally not be used to adjust mapped water types. However, if an on site interdisciplinary team using nonlethal methods identifies fish, or finds that habitat is not accessible due to naturally occurring conditions and no fish reside above the blockage, then the water type will be immediately changed to reflect the findings of the interdisciplinary team. The finding will be documented on a water type update form provided by the department and the fish habitat water type map will be updated as soon as practicable. If a 16 20 Definitions Chapter 222 16 dispute arises concerning a water type the department shall make available informal conferences, as established in WAC 222 46 020 which shall include the departments of fish and wildlife, and ecology, and affected Indian tribes and those contesting the adopted water types.~~

Commented [r1]: Suggested to not keep as rule language, but consider for BM or other Departmental operation guidance.

The waters of the state will be classified using the following criteria:

- * (1) "Type S Water" means all waters, within their bankfull width, as inventoried as "shorelines of the state" under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW including periodically inundated areas of their associated wetlands.
- * (2) "Type F Water" means segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:
 - (a) Waters, which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;
 - (b) Waters, which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F Water upstream from the point of diversion for

1,500 feet, including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type F Water designation provided the department determines after a landowner requested on-site assessment by the department of fish and wildlife, department of ecology, the affected tribes and interested parties that:

- (i) The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and
- (ii) Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;

(c) Waters, which are within a federal, state, local, or private campground having more than 10 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;

(d) "Off-channel habitat consisting of aquatic habitat features that are connected to Type F/S fluvial waters at inundation by bank full flow of the Type S or F water." These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:

- (i) The site must be connected to a fish habitat stream and accessible during some period of the year; and
- (ii) The off-channel water must be accessible to fish.

(3) "Type Np Water" ...

Commented [CTC2]: New language

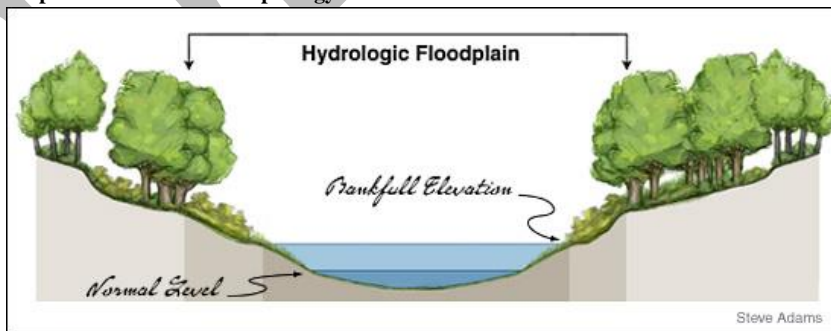
Commented [r3]: Should capture the need for gradient. If not accessible, not OCH. Must be "connected" and "accessible" (see definitions below).

Commented [r4]: The rest of 030 is not in dispute or under discussion.

Further OCH definitions for consideration:

- a) "Bankfull flow (BFF), bankfull elevation (BFE), bankfull depth (BFD), and bankfull width (BFW)" are interrelated definitions are associated with field observations of fluvial processes or evidence of such processes that determine the delineation of the width of the waters to be protected by various classifications of RMZ buffers. They are defined and/or measured as the datum where incipient flooding, indicated by deposits of sand or silt at the active scour mark, break in stream bank slope, and where perennial vegetation grows – 1.5- to 2-year interval peak stream flow events.

Shape of a River – Geomorphology Bankfull flows



- A river's shape is determined over time through the continuous interaction between water and the landscape. Rivers and streams of all shapes and sizes have a tendency

toward dynamic equilibrium, where the energy of the system is expressed in its pattern, dimension and profile.

- While the largest floods move large amounts of sediment over short periods of time and shape the valleys and floodplain, they are relatively rare. Research over the past 50 to 60 years has increasingly demonstrated the importance of bankfull flows in defining a river's shape.
 - The term *bankfull* refers to the water level stage that just begins to spill out of the channel into the floodplain. Bankfull flows tend to occur fairly frequently, on the average every 1.5 to 2 years. Because bankfull floods occur frequently, they move the most sediment over time and shape the stream channel itself. The range of forces- from major floodplain-forming events to recurring bankfull flows-are necessary for healthy river systems.
- b) "Connected to Type F/S waters" means that BFF physically connects OCH features to the Type F/S waters.
- c) "Accessible to fish" means that fish have the ability to access "connected" habitats at BFF. There are ditches, channels, depressions, or other features that allow for enough depth at BFF to permit fish to enter and exit OCH features.

2.2 Fish Habitat Water Typing Maps

We recommend the permanent rule include "fish habitat water typing maps." The foundation of the permanent water typing rule 030 is the establishment of Type F Waters on "fish habitat water typing maps". The rule directs:

- DNR in cooperation with WDFW and ecology, and in consultation with the tribes to classify streams, lakes and ponds and prepare water type maps showing the location of Type S, F, Np and Ns Waters within forested lands;
- The Fish habitat water type maps to be updated every five years where necessary to better reflect observed, in-field conditions; and
- The ability to change the map based on an on-site interdisciplinary team (IDT) using nonlethal methods identifies fish, or finds that habitat is not accessible due to naturally occurring conditions and no fish reside above a natural blockage.
 - The IDT findings must be documented on a water type modification form (WTMF); and
 - Disputes concerning a water type shall be documented by DNR through informal conferences, which shall include the WDFW, and ecology, and affected Indian tribes and those contesting the adopted water types.

Proposed Solution for Fish Habitat Water Typing Maps

The State Caucus proposes that the current DNR hydro-layer be used as the fish habitat water typing map. The rule states the fish habitat water typing maps will be based on the "model" (a multi-parameter, field-verified geographic information system (GIS) logistic regression model). The current DNR hydro-layer features Type F/N stream breaks based on tribal, modeled, and collaborated WTMF points. The State Caucus recommends that only WTMFs using "fish-plus points" be used for the maps. The DNR hydro-layer will be used as the "fish habitat water typing map".

Commented [r5]: Consider combining with the original introduction of 030 as BM or guidance (in strike-outs, above). This whole section needs more discussion; unchanged from original state caucus proposal.

Note: DNR commits to update to the hydro-layer to clearly indicate how each water type was designated and to clearly show all water downstream of the Type F/N break to be Type F water. DNR commits to schedule a meeting for all Policy caucuses to understand DNR's proposed changes pertaining to how the current hydro-layer is accessed and presented.

Map Modeling Component

Habitat-predictive model and hydro-layer

- We recommend improving the predictive model in areas where it is not currently working well and in areas that are currently unmapped as priorities.
- We recommend that the hydro-layer be improved using LiDAR as it becomes available. We further recommend the Board provide funding for the UW Precision Forestry Cooperative to continue making improvements to the model using LiDAR data.
- We recommend continued use of the model/map as the starting point for determining the Type F/N regulatory break on the ground.

2.3 Protocol Survey Method (TBD after PSM group report/recommendations and Policy discussion)

Protocol survey BMPs (including electrofishing)

- The starting point for conducting a protocol survey would be:
 - At the F/N break shown on the hydro-layer
 - Above a permanent natural barrier
- Technical group to come up with recommended guidance on BMPs for conducting protocol surveys to determine the F/N Break ("fish habitat" as defined in rule).
 - ***New improved protocol survey would include added determination of habitat above the last fish.***
 - These BMPs would include where and when it is appropriate to use electrofishing, as well as addressing implementation issues such as:
 - Recoverable Habitat above man-made barriers and where stream disturbance has occurred (mass wasting, debris flows)
 - Placing the Type F/N break above barriers:
 - Permanent Natural
 - Temporary Natural (wood steps...)
 - Temporary Man-made
 - Low flows – Drought or high flows
 - Timing for surveys
 - Notification (WDFW, Tribes, etc.)
 - When ID teams are recommended
 - Survey effort and documentation
 - Qualification and Training
 - Some form of physical criteria could be included to address habitat above last fish (maybe more guidance on things to consider, rather than definitive criteria, which will be worked on under "Physicals" next steps).
 - Policy to take recommendations and decide what fits in rule and/or guidance.

Commented [CTC6]: This whole bulleted list is a carry-over from state caucus proposal; placeholder language until Policy receives product from PSM Technical Group.

For Mapped Streams on Fish Habitat Water Typing Maps

1. Starting point is Fish Habitat Water Typing Maps based on DNR Hydro-layer.

a. DNR updates to hydro-layer

2. Landowner can:

a. Accept and use current mapped point and apply revised protocol survey method to establish final Type F/N regulatory break. [Note, DNR will ensure all landowners know how mapped Type F/N point was established];

b. Map/model as new watershed information is developed using LiDAR;

c. Application of newly define physical criteria; or

d. FP applicants/landowners will apply adjustments to the buffer for Type F Water based upon existence of OCH.

For Unmapped Streams – not on the Fish Habitat Water Typing Map

Locate regulatory Type F/N break using:

1. Physicals

2. Revised protocol survey method

2.4 **Physical Criteria** (TBD based on Proposal Initiation process)

- Current physicals stay in place until improvements are identified through the Policy recommended Proposal Initiation process that will likely include research strategies and objectives.
- Understanding history is a second priority and should be accomplished concurrently with other tasks.
- The Proposal Initiation process is intended to improve physical habitat descriptions/processes to be used:
 - As an alternative to electrofishing and protocol surveys, especially for those landowners not able to conduct protocol surveys.
 - For identifying the Type F/N regulatory breaks in unmapped streams.
 - To place the F/N regulatory break for “habitat” on the ground above last fish point when revised PSM guidance is implemented in the field.
 - For establishing the F/N regulatory break above man-made barriers, and above:
 - Permanent natural barriers when fish are likely to be present ;
 - Temporary barriers where fish are likely to be absent.
 - During “drought” conditions for individual unmapped streams.
 - Assisting with determining the final regulatory status (F/N) with an improved map/model.

Other Issues/Sideboards/Considerations:

(Reserve for discussion, but not part of our FP Board recommendation – for now)

- Shared Risk: We need to clarify what we mean by this and where it is applied.
 - To be dealt with at the Policy level when addressing the end product.
 - Not to be dealt with by the technical group. They look at science and professional experience of determining fish habitat.
 - Not to be dealt with at the technical/on-the-ground level (other than at the ID team level where it might be discussed and agreed upon by members).
 - Shared risk applies to the model (95% or +/- 5% error either way).
 - Shared risk is not a 50:50. It depends upon the accuracy or error. Then Policy needs to determine how risk is allocated.
 - If necessary and remains a stumbling block, principals need to discuss this issue, if it cannot be agreed upon at the Policy level.
- Recoverable Habitat
 - Needs to be definable and implementable. Primary examples are:
 - Above man-made barriers
 - In streams where there has been disturbance (debris flow, mass wasting).
 - There could be something else, but it needs to be definable, or something that an ID team could agree to.
- Other tools to continue to explore:
 - eDNA and any other non-lethal fish detection tools

For Reference: Current WAC 222-16-030 Rule Language

Until the fish habitat water type maps described below are adopted by the board, the Interim Water Typing System established in WAC [222-16-031](#) will continue to be used. The department in cooperation with the departments of fish and wildlife, and ecology, and in consultation with affected Indian tribes will classify streams, lakes and ponds. The department will prepare water type maps showing the location of Type S, F, and N (Np and Ns) Waters within the forested areas of the state. The maps will be based on a multiparameter, field-verified geographic information system (GIS) logistic regression model. The multiparameter model will be designed to identify fish habitat by using geomorphic parameters such as basin size, gradient, elevation and other indicators. The modeling process shall be designed to achieve a level of statistical accuracy of 95% in separating fish habitat streams and nonfish habitat streams. Furthermore, the demarcation of fish and nonfish habitat waters shall be equally likely to over and under estimate the presence of fish habitat. These maps shall be referred to as "fish habitat water typing maps" and shall, when completed, be available for public inspection at region offices of the department.

Fish habitat water type maps will be updated every five years where necessary to better reflect observed, in-field conditions. Except for these periodic revisions of the maps, on-the-ground observations of fish or habitat characteristics will generally not be used to adjust mapped water types. However, if an on-site interdisciplinary team using nonlethal methods identifies fish, or finds that habitat is not accessible due to naturally occurring conditions and no fish reside above the blockage, then the water type will be immediately changed to reflect the findings of the interdisciplinary team. The finding will be documented on a water type update form provided by the department and the fish habitat water type map will be updated as soon as practicable. If a dispute arises concerning a water type the department shall make available informal conferences, as established in WAC [222-46-020](#) which shall include the departments of fish and wildlife, and ecology, and affected Indian tribes and those contesting the adopted water types.

The waters will be classified using the following criteria:

***(1) "Type S Water"** means all waters, within their bankfull width, as inventoried as "shorelines of the state" under chapter [90.58](#) RCW and the rules promulgated pursuant to chapter [90.58](#) RCW including periodically inundated areas of their associated wetlands.

***(2) "Type F Water"** means segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:

(a) Waters, which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;

(b) Waters, which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F Water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type F Water designation provided the department determines after a landowner-requested on-site assessment by the department of fish and wildlife, department of ecology, the affected tribes and interested parties that:

(i) The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and

(ii) Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;

(c) Waters, which are within a federal, state, local, or private campground having more than 10 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;

(d) Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:

(i) The site must be connected to a fish habitat stream and accessible during some period of the year; and

(ii) The off-channel water must be accessible to fish.

(3) "**Type Np Water**" means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.

(4) "**Type Ns Water**" means all segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.

*(5) For purposes of this section:

(a) "Residential unit" means a home, apartment, residential condominium unit or mobile home, serving as the principal place of residence.

(b) "Camping unit" means an area intended and used for:

(i) Overnight camping or picnicking by the public containing at least a fireplace, picnic table and access to water and sanitary facilities; or

(ii) A permanent home or condominium unit or mobile home not qualifying as a "residential unit" because of part time occupancy.

(c) "Public accommodation facility" means a business establishment open to and licensed to serve the public, such as a restaurant, tavern, motel or hotel.

(d) "Natural waters" only excludes water conveyance systems which are artificially constructed and actively maintained for irrigation.

(e) "Seasonal low flow" and "seasonal low water" mean the conditions of the 7-day, 2-year low water situation, as measured or estimated by accepted hydrologic techniques recognized by the department.

(f) "Channel width and gradient" means a measurement over a representative section of at least 500 linear feet with at least 10 evenly spaced measurement points along the normal stream channel but excluding unusually wide areas of negligible gradient such as marshy or swampy areas, beaver ponds and impoundments. Channel gradient may be determined utilizing stream profiles plotted from United States geological survey topographic maps (see board manual section 23).

(g) "Intermittent streams" means those segments of streams that normally go dry.

(h) "Fish habitat" means habitat which is used by any fish at any life stage at any time of the year, including potential habitat likely to be used by fish which could be recovered by restoration or management and includes off-channel habitat.

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