

**Timber, Fish, & Wildlife Policy Committee**  
**Type F Draft Recommendations**

v. 9-28-16

**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 and unless directed to be changed in these recommendations should be maintained in the new permanent rule.
- 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 Waters (Fish Habitat)**

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

- As defined in 222-16-030 (2), but modify subsection (d) to reference off-channel habitat which is further defined in these recommendations, and
- That the definition of 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*” (maintain WACs 222-16-010 and 222-16-030(5)(h)).

Move the preamble section of 222-16-030 to a separate section of the rule as recommended to be modified further in these recommendations (Section XX).

## 2.2 Off-Channel Habitat

The following definition of off-channel habitat (OCH) is recommended to be included as part of the definition of a Type F water as described in Section 2.1 of these recommendations:

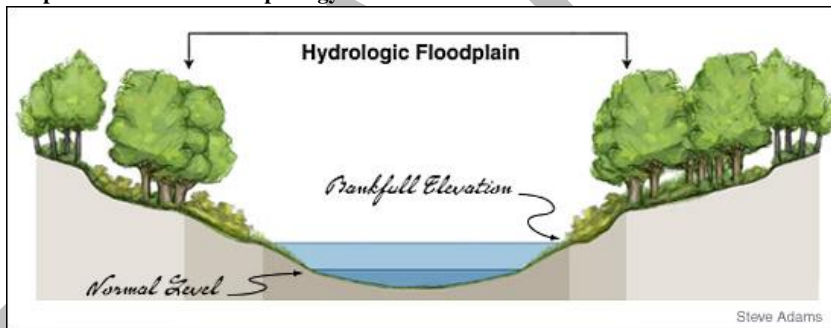
“Off-channel habitat consists of aquatic habitat features that are connected via surface flow to Type F/S waters by inundation at bank full elevation of the Type S or F water.”

Furthermore, the following concepts shall be included in Board Manual:

- Use standard field technology/tools (e.g., clinometer).
- Clarify that the drawings don't include channel migration zones.
- Fix the “A” drawing to clarify as Marc Ratcliff did at 9/21/16 meeting. Consider another drawing of the wetland without flowing water in it (true “off channel”).
- “Bankfull flow (BFF)”, “bankfull elevation (BFE)”, “bankfull depth (BFD)”, and “bankfull width (BFW)” are interrelated definitions 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.

**Commented [CTC1]:** Question by at least one caucus about the relationship between “line of periodic inundation” and “bankfull flow”. May need more discussion.

### 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, is necessary for healthy river systems.

- “Connected to Type F/S waters” means that BFF physically connects OCH features to the Type F/S waters.
- “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.

### 2.3 Rule-Based Fish Habitat Maps

A subset of points (identified through WTMFs) would become rule-based map points. These points would not be reconsidered after this recommendation. Only points that have concurrence from all parties would populate the map. Points on the existing DNR hydro-maps will be used as the rule-based fish habitat overlay. Default physicals and fish habitat protocol surveys would also remain as options for determining the F/N break in unmapped and originally modeled and unverified map points. Notes on the protocol surveys include:

- Protocol surveys (PS) are prohibited below an established F/N break from the rule-based fish habitat overlay;
- PS are prohibited below a point that was known to be based on fish observation through formal WDFW/tribal/forester consultation with an optional appeals process; and
- PS are prohibited below a point that was established from approved WTMFs (this could be redundant from the first bullet).

Using the enhanced fish habitat protocol survey...placeholder until we have the recommendations from the Protocol Survey Method Technical Group.

Other conceptual agreements:

- Future research and/or work needed to refine the modeling tools (LiDAR, etc.) – think about what is implementable short-term and what will need more work in the AMP framework.
- Keep the records of fish presence from all WTMFs, not just the ones informing the map.
- Policy commitment to fund map/model annually over a longer-term period. Might be an opportunity to capture under spending to advance certain objectives.
- Maintain the preamble language in 222-16-030 as relevant to 1) use of mapping, and 2) any future model work.

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

Protocol survey BMPs, including electrofishing (placeholder language from 9/7/16 state caucus proposal)

- 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:

**Commented [CTC2]:** Concern by a few caucuses about these points from WTMFs and whether using them is an acceptable risk. Needs more discussion.

- 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.

#### 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

## 2.5 Physical Criteria

Current default physical criteria stay in place until Policy recommends any changes based on the results of the proposal initiation (PI) and the subsequent adaptive management process as described below (*the following is directly from the AMPA's recommendations on the Physicals PI, as approved by Policy in August 2016*):

- Phase 1 (concurrent with Phases 2 & 3): Review the history of the default physicals including the original designed use(s). Determine how the default physicals may be used in the application of a new water typing rule. This includes:
  - A) Review and summarize original data used to develop the 1996 Emergency Rule default physical characteristics;
  - B) Clarify what the default physicals were developed to predict (fish presence, fish use, fish habitat);
  - C) Document the history of the 1996 defaults; and

- D) How are the default physicals being used in the current process? Are all criteria being used, including default basin size?
- Item 1 of Phases 2 & 3 (concurrent with Phase 1): Assemble a technical group to identify and summarize additional data that can be used to: assess the accuracy of the current physical defaults for determining presumed fish use (Phase 2); and determine if default physical criteria can be refined to minimize error (Phase 3). This requires the technical group reviewing data and literature to determine the next steps and providing a report to Policy. This includes:
    - 2.A) What degree of uncertainty exists about whether the current default physical criteria accurately reflect presumed fish use for all regions? For all stream morphologies?
    - 2.B) Can the overall precision and accuracy of current default physical criteria be determined? If so, what resources and funding would be needed?
    - 2.C) Can currently available data be used for assessing accuracy and precision such as: 1) WTMF channel width, gradient, and default basin size to determine proportion of Type F/N breaks accurately estimated by current defaults; 2) data collected by stakeholders specifically to evaluate the current default criteria; 3) Data collected by other scientists or investigators relevant to evaluating the current default criteria; 4) ISAG data used for habitat model development and validation; and 5) Other data characterizing habitats used by fish and not used by fish.
    - 3.A) Can additional criteria be added to channel width, gradient, and basin size to minimize error (e.g., stream morphology type, region-specific geomorphology, etc.?) Or can the existing criteria be adjusted to improve accuracy?
    - 3.B) Review results of Pilot Water Typing Model, when completed, to determine the need for physicals.
    - 3.C) Are there other alternatives for determining a presumption of fish use, including the fish habitat model, the fish habitat model using LiDAR, modified physical defaults, snorkeling, trapping, eDNA, and lentic sampling techniques?
    - 3.D) If so, characterize precision and accuracy of alternatives.
    - 3.E) Is additional research and/or field monitoring needed to fill in important scientific gaps and/or areas of uncertainty, particularly those uncertainties related to regional variations?
    - 3.F) Identify possible short-term and long-term approaches for developing physical criteria for the presumption of fish use that minimize error and are implementable and enforceable.

### **3.0 Other Issues/Sideboards/Considerations**

*(Reserve for discussion, but not part of Policy's recommendations to the Board 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 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, caucus 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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