



DEPARTMENT OF  
NATURAL RESOURCES


FOREST PRACTICES DIVISION  
1111 WASHINGTON ST SE  
OLYMPIA, WA 98504

360.902.1400  
WWW.DNR.WA.GOV

## MEMORANDUM

April 26, 2017

TO: Forest Practices Board

FROM: Marc Engel   
Forest Practices Assistant Division Manager, Policy and Services

SUBJECT: Water Typing Rule System Work Products

In 2014, the Forest Practices Board directed the TFW Policy Committee (Policy) to complete recommendations for options for a permanent water-typing system rule. When completed, the permanent water-typing system rule will establish how to classify streams, lakes and ponds as Type S, F, Np, and Ns waters. Policy is continuing to complete recommendations through their May 4<sup>th</sup> meeting and Ray Entz, Policy co-chair and Hans Berge, Adaptive Management Program Administrator will present water typing system rule recommendations to the Board at your May meeting.

The manner in which fish habitat will be determined for the classification of Type F waters has been difficult to resolve. To do this, Policy has conducted workshops, formed technical subgroups and contracted expert services to provide the most current science and understanding related to fish habitat. Policy has reached agreement and consensus on a number of the elements to designate Type F waters, however, a number of elements have required dispute resolution to seek resolution. For those elements in disagreement, Policy has completed stages one and two of dispute resolution.

The following materials are being sent to the Board to assist members prepare for the upcoming presentations and discussions regarding the Policy recommendations for a permanent water-typing system rule. A follow-up mailing will contain caucus comments regarding the attached documents.

The *TFW Policy Proposed Framework for a Statewide Stream Typing Fish Habitat Methodology to Determine the Type F/N Water Break* document is a product of the final dispute resolution stage two Policy mediation session. It does not represent a complete Policy consensus, the points of non-consensus are indicated by the yellow highlighted and italicized text in Section 2 – Barriers of the document. Policy is continuing to discuss potential recommendations to present to the Board regarding barriers, specifically potential habitat breaks and whether the Board should provide the level of risk that a fish could pass a potential habitat break.

The February 2, 2017 document *TFW Policy Committee Resolution of Dispute over use of Water Type Modification Forms with approved break points* is a Policy consensus product. The remaining attached documents were prepared to inform and provide potential suggestions to Policy regarding potential elements of a protocol fish habitat survey, appropriate use of electrofishing, and the protection of off-channel fish habitat under the forest practices rules.

Agreed to provide and consensus materials

- Existing Rule Language in WAC 222-16-030 and -031, dated April 26, 2017
- TFW Policy Committee Resolution of Dispute over use of Water Type Modification Forms with approved break points, dated February 2, 2017

Off-Channel Habitat

- TFW Policy Committee, Off-Channel Habitat Dispute Summary, dated April 24, 2017
- Review of Off-Channel Habitat Protection Under Current Washington Forest Practices Rules, dated August 31, 2016

Fish Habitat Assessment Methodology

- TFW Policy Proposed Framework for a Statewide Stream Typing Fish Habitat Methodology to Determine the Type F/N Water Break, dated April 24, 2017
- Recommendations of Best Practices Regarding Protocol Survey Electrofishing, dated June 27, 2016
- Technical Working Group Recommendations to Assist in the Development of Type F Habitat Guidance, dated October 5, 2016

**TFW Policy Proposed Framework for a  
Statewide Stream Typing Fish Habitat Assessment Methodology (FHAM)  
to Determine the Type F/N Water Break**

4-24-17 v4

**Objectives**

The objectives of this proposed habitat assessment methodology framework are to:

- Provide a field methodology for determining the Type F/N water break, in a manner which accurately and reasonably identifies the uppermost extent of fish habitat likely to be used, as defined in WAC 222-16-010; and
- Provide a methodology which is implementable and enforceable.

A further objective of this proposal is to identify priority work for scientific experts to determine and provide the metrics to identify “potential habitat breaks” (PHB) to:

- Include habitat that is recoverable;
- Incorporate a reduction in risk that maintains the goal of FFR; and
- Assure an implementable, repeatable, and enforceable FHAM.

Fish habitat will be addressed through the development of the potential habitat breaks and through the assessment of permanent natural barriers to fish passage.

Training in stream morphology and fish biology will be required to be qualified to perform or review a fish habitat assessment and submit a water type modification form.

**Overall Framework of Fish Habitat Assessment Methodology**

The components of the habitat assessment methodology:

**Section 1 - Fish Habitat Assessment Methodology**

**Step 1: Pre-Field Office Preparation and Finding the Starting Point on the Ground**

**Step 2: Potential Habitat Break (PHB) Assessment and Revised Protocol Survey**

*- note that Section 2 happens in between steps 2 and 3 -*

**Step 3: Establish Type F/N Water Break**

**Section 2 - Barriers**

- **Potential Habitat Breaks (PHB)**
- **Permanent Natural Barriers (PNB)**

## **Section 1 – Fish Habitat Assessment Methodology**

### **Step 1. Pre-Field Office Preparation and Finding the Starting Point on the Ground**

- Pre-field preparation is critical for improving the accuracy of the Type F/N water break and protection of fish and their habitat. Office preparation helps focus on the appropriate starting point for field assessment; ensures the field assessment is based on the best available data and information; minimizes the need for electrofishing and survey effort; and maximizes efficiency in the review and approval process.
- The pre-field office method is critical, and should include pre-survey consultation and define documentation standards and expectations.
  - As Policy continues to develop recommendations, Policy will discuss pre-survey consultation triggers (e.g., when there is no Water Type Modification Form (WTMF) point); what constitutes pre-survey consultation; and where it should be in rule or guidance (for example, a checklist would be helpful).
- Look at DNR hydro layer to determine if the stream has a mapped Type F/N break:
  - If the mapped Type F/N water break point is represented by an approved WTMF, then this point is the regulatory Type F/N water break.
  - If the mapped (modeled) point is not represented by a previously approved WTMF, then this point is the starting point for the field FHAM assessment.
  - If the mapped stream does not have a modeled Type F/N water break or the stream is not mapped, then evaluate all available data starting with the last known fish observation.
- Also consider other datasets: designated Critical Habitat, SalmonScape, local knowledge, etc.

### **Finding the Starting Point on the Ground**

Locate the starting point for the field FHAM assessment for your particular stream:

- If the mapped Type F/N water break point is represented by an approved WTMF, then this point is the regulatory Type F/N water break.
  - Document this point as established and assure the point is permanently recorded, such as permanent field monument and documented GPS coordinates (see **Step 3**).
  - When fish are observed above the regulatory Type F/N water break or in-field natural occurring channel conditions change, then an on-site Interdisciplinary Team (ID Team) will be assembled and the location of the Type F/N water break will be changed to reflect the findings of the ID Team.
- If the mapped point is not represented by a previously approved WTMF, the habitat assessment will start at the mapped Type F/N water break or the uppermost point at which fish are known to occur.
- If there is no Type F/N water break point on a mapped stream or the stream is unmapped, start the field FHAM assessment at the uppermost point of known fish or previously documented waters known to contain fish populations.

## **Step 2: Potential Habitat Break (PHB) Assessment and Revised Protocol Survey**

- A. Beginning at starting point, walk upstream looking for point(s) of significant change meeting the criteria of a potential habitat break (PHB) or permanent natural barrier (PNB). This is accomplished through an ongoing assessment of the primary elements noted in Section 2 for the PHB/PNB.
  - i. Document each PHB or PNB point and assure the point is permanently recorded and documented in the WTMF.
- B. Beginning above the PHB or the PNB, apply the revised protocol survey to determine if fish are present.
  - i. If fish are found, continue upstream and repeat the process per **Step 2(A)**.
  - ii. If no fish are found, establish the Type F/N break per the process outlined in **Step 3**.
    - a. Document this point as established and assure the point is permanently recorded.
    - b. When fish are observed above the water break or in-field natural occurring channel conditions change, then an on-site ID Team will be assembled and the location of the Type F/N water break will be changed to reflect the findings of the ID Team.

## **Step 3: Establish Type F/N Water Break**

When establishing the Type F/N water break through a WTMF, the establishment of the point in the field and in the DNR hydrologic mapping layer is critical for assuring the accuracy of the Type F/N water break and protection of fish and their habitat. These points must be documented in a manner to assure Type F/N water break is honored for all future FPAs. This requires the point to be permanently recorded, including:

- Accurate descriptions in the WTMF; and
- Documented in WTMF and in DNR hydro layer.

## **Section 2 – Barriers**

### **Potential habitat break (PHB)**

Knowing when to stop and when to keep walking is an essential element to accurately and reasonably identify the uppermost extent of fish habitat likely to be used.

Policy recommends that a group of internal and external scientific/technical experts be convened and that the Board direct the AMPA to put it together. This group will assist in determining and providing the metrics to identify “potential habitat breaks” (PHB); this could include the current offline working group and/or others.

Policy recommends that this group reports directly to the Board at its August meeting.

- a. This group will need to evaluate and report on a full range of PHB descriptors, and the probability that fish will pass upstream of each of them. Policy is not in consensus on the range but offers the following alternatives:
  - i. 5-20%: a low likelihood of fish to pass upstream;
  - ii. 5-50%: narrowing between i and iii; or
  - iii. No pre-determined percentage; full range of evaluation pending economic impact and ecological implications.

- b. Policy recommends that the Board provide the level of risk they are willing to accept on the probability that a fish can pass above a PHB. Policy is not in agreement whether the Board will need more information to make this decision.
- c. This scientific/technical group will need to determine if fish can pass the PHB; their work will determine those potential barrier features which may on their own or in combination with other features be potential habitat breaks.
- d. The potential habitat break features may include:

Primary:

- Permanent natural barriers (see below)
- Percent stream gradient
- Stream width, basin size, channel size
- Interaction of stream size and gradient
- WDFW and Eastside Tribes believe that stream morphology would go in the primary variables.

Secondary: (may)

- Water quantity
- Stream substrate
- Water quality
- Primary production (food)
- Stream morphology – in combination with features above
  - Step pools
  - Pool-Riffle and Plane-Bed
  - Bedrock/Boulder Cascade
- Temporal considerations (the end of habitat features is not deformable)

**Permanent Natural Barrier (PNB)**

(For both landowner caucuses, PNBs are a primary concern.)

Permanent natural barriers (PNB) are non-deformable barriers to fish passage upstream.

*Specific criteria need to be determined later, for example:*

- *Water falls*
  - *12 feet and greater (WDFW suggests scaling this to smaller headwater streams with smaller fish. 12 ft applies certain places but not in every situation).*
  - *Plunge pools downstream of barriers must be 1½ times the height of the jump required to pass the barrier maximum jumping height of cutthroat trout is 2.8 feet; (Bell, M. 1990. Fisheries handbook of engineering requirements and biological criterion. US Army Corps of Engineers. Portland, Oregon).*
- *Wood meeting the criteria of a waterfall if confirmed by an ID Team to remain intact for ≥ 140 years (DFC). (The federal caucus suggested that this feature is deformable and there is some uncertainty if this constitutes a permanent natural barrier. The conservation caucus suggested that criteria for accepting deformable barriers as PNBs would be validated by an ID Team.)*