

Technical Working Group Recommendations to Assist in the Development of Type F Habitat Guidance 5 October 2016

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INTRODUCTION

A Technical Working Group (TWG) was formed by the Adaptive Management Program Administrator to develop recommendations for TFW Policy to consider for guidance to practitioners in establishing the regulatory break between Type F and Type N waters for lands subject to forest practice rules. The first meeting of the group took place on August 16, 2016. The goal for this group was to review the protocol survey methodology based on the Electrofishing Technical Group's work and final report; identifying when the use of a protocol survey is appropriate; and, provide draft recommendations to the AMPA for presentation and discussion at Policy.

TFW Policy gave further direction to the group to use the definition of fish habitat in WAC 222-16-010 (e.g., recoverable habitat, potential habitat likely to be used by fish, off-channel habitat, etc.). Emphasis for the group was placed in describing recommended changes to Board Manual Section 13, without creating the language itself, and consider general water typing goals (accuracy, error, and balancing remaining uncertainty).

Following these directions and relying on their experience and expertise, the group identified the seventeen points that need improvement in the current water typing procedure. Participants reached agreement (consensus) on 14 of 17 points, but were unable to resolve differences of opinions and concerns on the remaining three items (identified in **bold** text below). The group also identified six overarching ideas that need to be considered when evaluating each of the seventeen points and how those points either individually or as a whole could be applied during the development of a permanent water typing rule.

Three primary recommendations are included in this summary document to provide a basis for establishing the F/N break (see 12). These include moving forward with a LiDAR based water typing model, using default physical criteria, and a protocol that uses geomorphic and biological indicators as a basis for determining the location of the F/N Break.

Overarching Ideas for Each Discussion Point

- Necessary to incorporate the concept of “fish habitat” in addition to “fish use”
- Require water typing proposal to proponent to provide adequate rationale for why the F/N break was established where it was. Provide rationale for why stream segments above the proposed F/N break are not likely to be used by fish at any life

stage at any time of the year, including habitat which could be recovered by restoration or management. (per 222-16-010)

- Recommend language that encourages pre-consultation on all water type modification requests to potentially reduce the use of electrofishing and increase acceptance of survey results
- Technical group recommends that in the final water typing rule that - Type F water is equivalent to fish habitat
- Technical group agreed for the purposes of their discussions that the term “fish use” as used in BM13 equates to “last detected fish”.
- Determination of the F/N break incorporates factors that influence the extent of habitat likely to be used by fish over time.

RECOMMENDATIONS

(1) Default Physicals

Assumption: The default physicals will be reviewed for improvements statewide following implementation and acceptance of the Proposal Initiation currently in discussion at TFW Policy. ONGOING, FOR RESEARCH

Recommendation: Clarify language defining default physical criteria. - FOR BOARD MANUAL

Recommendation: Ensure that terms used in Board Manual and rule are consistent (e.g., channel width, defined channel, bankfull width). - FOR BOARD MANUAL

Recommendation: Provide guidance on how to establish bankfull average measurement and delineate basin area. - FOR BOARD MANUAL

Recommend that Small Forest Landowner Office be provided funding to provide this assistance. - POLICY RECOMMENDATION TO DNR

ADDITION: Add a Water Typing Assistance Office within DNR, and/or training or certification program - ADMIN

(2) Verifying Fish Presence/Absence above Permanent Natural Barriers.

Recommendation: The presence of a permanent natural barrier in itself does not justify the establishment of the F/N break at that point. A protocol survey is required above a permanent natural barrier to demonstrate fish presence/absence in determining location of F/N break, if the proponent is not using default physical criteria or some other method. RULE/BM

Recommendation: Streams that meet the default physical criteria for presumed fish presence above a natural barrier should be treated as Type F streams unless fish “absence” is demonstrated or a water type modification form is submitted. RULE/BM

Recommendation: If fish are detected above the PNB, caution should be exercised above PNB to avoid potential impacts to small isolated populations. **RULE/BM**

(3) What Generally Describes a Permanent Natural Barrier?

Group could not come to a consensus recommendation on this issue.

Recommendation: Create guidance on how to describe what constitutes a “permanent natural barrier” using multiple criteria (e.g. permanence of feature, gradient changes, vertical drop, grade, length, stream size, formative feature, confinement, plunge pool depth, etc.).

- A 20% gradient alone or a channel less than 2 feet width at bankfull does not constitute a permanent natural barrier that leads to a miss application of the process resulting in the termination of surveys and possible miss identification of the F/N break.

RESEARCH? – does a mention of this recommendation go in rule to correspond with BM guidance?

(4) A temporary natural blockage alone is not a feature that can be used to establish F/N break.

Recommendation: A temporary natural blockage alone should not be a feature that is used to establish F/N break (e.g. beaver dams, debris steps, wood, etc.). – **BOARD MANUAL**

(5) Use of Protocol Surveys above Man-made Barriers.

Group could not come to a consensus recommendation on this issue. Minority opinion: Upstream from man-made barriers default physical criteria should be used to determine the extent of fish habitat. Protocol surveys should not be performed above a man-made barrier without prior consultation with DNR, WDFW, and affected tribes.

Recommendation: Proponent should document how their proposed F/N break encompasses the full extent of fish habitat, and how protocol survey data were included in their decision. The distribution of fish above man-made barriers may not reflect the full extent of fish habitat in absence of the barrier. Presence of a man-made barrier alone is not sufficient to establish location of the F/N break. Consultation with DNR, WDFW, and affected tribes may be helpful in clarifying necessary information to be used in establishing the F/N break.

RULE/BOARD MANUAL

(6) Habitat disturbances (e.g., debris flow influenced) or Habitat Degradation.

Recommendation: Proponent should document how their proposed F/N break encompasses the full extent of fish habitat, and how protocol survey data were included in their decision. The distribution of fish in disturbed or degraded habitats may not reflect the full extent of fish habitat. Consultation with DNR, WDFW, and affected tribes may be helpful in clarifying necessary information to be used in establishing the F/N break.

- When there is evidence of stream disturbance that might affect the ability to detect fish as well as determine the appropriate F/N break, the proponent can default to physical criteria for determining the upper extent of fish habitat or request ID team review. Without ID Team intervention the proponent should provide documentation including:
 - A description of the disturbance, including length of stream, how stream habitat has been modified (aggradation, subsurface flows, isolated pools, loss of gravel, increased sediment, scouring to bedrock, etc.).
 - How the disturbance factors might affect results (utility) of a fish survey.
 - How the disturbance factor, might affect the uppermost extent of fish distribution or habitat in the stream system (e.g., relative density and/or condition of fish populations downstream of disturbance, temporary barriers (exposed bedrock features, temporary wood jams or subsurface flows, etc.), loss of spawning gravels, buried pools, etc).

BOARD MANUAL

(7) Drought / Low Flows

- Recommendation: Keep existing BM language (under Part 2 of BM13 “Drought Conditions and other Factors Affecting Population Distribution”) and add – Proponent to supply rationale on why the proposed F/N break is appropriate given stream flow at time of survey. Recommend that a standalone section is created within the Board Manual dealing with drought.
- Drought should not affect the placement of the F/N break.
- Pre-consultation is recommended prior to conducting a protocol survey during a declared drought.
- Recommend review appropriate stream flow metrics as it relates to this topic (e.g., review 75% is currently applied by Ecology – more science is required)
- During a declared drought season, before the proponent considers conducting protocol surveys on any streams, they should check the current status of the specific stream using the appropriate website link (to be determined).
- If the basin or sub-basin is subject to drought the proponent can default to physical criteria or, if conducting a protocol survey, provide justification that the determination of the F/N break was not affected by the drought or a proponent describe how the drought conditions influenced the effectiveness of the survey method used and the placement of the F/N break.
- Permanent changes to the hydro-layer that include electrofishing conducted in a basin subject to drought are less likely to be approved unless the protocol survey provides clear and convincing justification as to how the distribution of fish or ability for the protocol survey to detect fish and their identification of the upper extent of fish habitat was not affected by drought. The concern is that drought-influenced protocol surveys may indicate that the upper extent of fish use is lower in the stream system than it would be under “normal” flows, resulting in under-representation of Type F waters.
- **New: If water above PNB, without fish above, they wouldn’t be above the PNB regardless of drought/low flows.**

ADDITION: RULE-BASED TRIGGER

(8) Role of Electrofishing for informing the end of Fish Habitat

Recommendation: Clarify guidance on how electrofishing informs the F/N break.

- Electrofishing results provide data specific to species and location of the last fish detected during a single survey. Information on the last detected fish provides a useful starting point to inform the placement of the F/N break.

(9) Using Gradient to End Protocol Survey.

Recommendation: Require proponent to provide rationale on use of gradient change to determine end of survey point.

- A 20% gradient alone does not constitute a stopping point of a protocol survey. Proponent will need to provide rationale that the gradient either remains at 20% or greater or that the habitat conditions upstream do not support fish life.
- Proponent should provide information on changes in gradient and distance over which it occurred.

Recommendation: Define what “remains 20%” means in terms of survey effort and the determination of the F/N break. Group proposes that “remains” means to “channel head”.
BOARD MANUAL WITH RULE CONNECTION RELATED TO DOCUMENTATION

(10) Using Dry Stream Reaches Inappropriately to End Protocol Surveys and establish the F/N break.

- Recommendation: Protocol survey requirements and application of default physical criteria still apply regardless of the presence of flowing water
- The absence of flowing water, alone, should not be used to justify the F/N Break.
- Segments upstream of intermittent flow that meet the default physical criteria should be investigated for isolated fish populations and perched fish habitat

BOARD MANUAL

(11) Provide guidance on how to identify F/N break when reach edge of property ownership prior to end of survey, lack of access, etc.

Recommendation: Provide guidance on how to type waters when proponent reaches edge of property ownership prior to end of survey, lack of access, etc.

- Map layer needed that identifies current known distribution of fish within a stream. Data from a variety of sources could be used to develop layer. Need to identify keeper of data and how data provided. Water type data base should incorporate a criterion/symbology for a code to indicate the basis for the determination of the upper extent of fish habitat or fish distribution Recommendation: Consultation with DNR, WDFW, Ecology and affected Tribes is recommended. Alternatively, proponent may use default physical criteria.

RESEARCH BY BM GROUP

(12) What's missing - how to provide guidance on criteria that helps identify habitat that is "likely to be used by fish"

Require proponent to provide adequate rationale for why the F/N break was established where it was. Provide rationale for why stream segments above the proposed F/N break are not likely to be used by fish at any life stage at any time of the year, including habitat which could be recovered by restoration or management. (per 222-16-010)

Recommendation: Provide a definition of "likely to be used".

Recommendation: Provide better documentation on what is meant by "recoverable habitat" in -010.

- Include water quality parameters to help define/determine fish habitat.

KEY: How to find it in the field not in the rule.

FURTHER DEFINITION FOR RULE (010), CONNECTION TO BM WITH IMPLEMENTATION CLARIFICATION

(13) What is the definition of "Defined Channel"?

Recommendation: Clarify definition of defined channel within the bank full width.

Recommendation: Rectify the differences/disconnect between the rule language, Board Manual, and Definition (-010). "Defined channel inside the Bankfull width, defined channel, bankfull width, etc.

Recommendation: Provide clarification and guidance on whether "connection" should be used instead of "defined" or "undefined" channel when determining water type.

RULE AND BOARD MANUAL

(14) Survey Timing for Streams

Recommendation: Based on practitioner experience, no "perfect window" exists and the current window as defined by Board Manual 13 (March 1-July 15) is appropriate in most cases for western Washington. – RESEARCH NEEDED TO DEFINE WINDOW, POTENTIAL FOR CONSULTATION

Recommendation: Review science to determine if a shift/alternative timing for eastside surveys is necessary. – RESEARCH

(15) Pre-survey Meetings and Notifications

Recommendation: Keep existing Board Manual 13 language (last sentence Part 3 "Due to the complexities in anticipating when fish will be seasonally active, survey timing should be

determined in consultation with WDFW *and Ecology* and affected tribes prior to conducting a survey”).

Recommendation: Provide clarity that the need for pre-survey consultation applies to all proponents and reviewers regardless of stream size.

(16) Improve Documentation and Record Keeping

Recommendation: Identifying a clearing house for fish distribution data and fund this activity at WDFW.

- Create a widely available database of known fish distributions. If changes to stream location or water types are proposed and accepted for a FPA those changes should be reflected in a centralized GIS database to prevent unnecessary surveys. WDFW becomes holder of fish distribution data,
- have data submitted in a required format,
- should be a funded activity - currently is not,
- verified and non-verified data could be included,
- all of this would result in another tool that could be used in conjunction with the various other tools, and
- include fish presence data in FPAs)

Recommendation: Proponent contact DNR Forest Practices forester for help in determining if previously approved water type forms exist for the stream/basin of interest.

Recommendation: Improve the water type modification form (e.g., to include values and not check boxes such as bankfull measurements rather than a single value). Fish presence data from FPAs worksheet is captured and incorporated into a yet to be specified data base (further discuss what to do when clearinghouse gets clogged). This does not include the designation of waters as type F in an FPA based on default physical criteria.

Recommendation: Look into development of a single clearing house for data on anthropogenic and natural barriers that would be available to proponents. *Will work with existing programs to identify the best way(s) to improve and move forward.*

(17) Training and Certification

Recommendation: Training-level requirement with certification for water typing should be made available.

- A demonstrated level (TBD) of expertise may be substituted for training.
- Training and certification *for water typing* should be available for reviewers as well as surveyors.
- *Ensure consistent funding for continual training*

(18) Using Gradient to Designate F/N Break. (Group did not fully discuss and come to agreement on the language provided here)

Recommendation: Require proponent to provide rationale on - if or how their interpretation of existing grade break was used in the determination of F/N break.

- *Gradient alone (e.g., a completed protocol survey) does not constitute a permanent natural barrier.*

Recommendation: Define what “remains 20%” means in terms of survey effort and the determination of F/N break.

Conclusion

Several proposals were discussed by the TWG at their final meeting on October 3, 2016 that seek to provide guidance in establishing the extent of fish habitat (F/N Break). These proposals fall into general categories of modeling, default physical criteria, and a habitat based assessment (geomorphology and biological indicators) to determine the F/N Break. The three proposals are described below.

Water Type Model: Results of the pilot LiDAR water typing project suggest that modeling could be a viable tool in establishing the F/N Break. Further work is necessary and a path forward has been presented to TFW Policy for consideration.

Default Physical Criteria: A proposal was made to use the default physical criteria as a basis for identifying the extent of fish habitat. The proposal is to use default physical criteria until a permanent natural barrier (PNB) is encountered, at which point the barrier is documented and described. At that point, a protocol electrofishing survey would be initiated. If a fish were found, then use default physicals until the next PNB, at which point the protocol repeats itself. This approach requires developing defensible definitions of PNBs. Part of this proposal would include an element of consultation to consider if there are specific circumstances that preclude fish from utilizing the extent of habitat identified by the default physical criteria.

Habitat Assessment Method: This method requires the proponent to evaluate the following elements into a proposal in establishment of the F/N break. The following items would be included in each proposal and would help the proponent and review team communicate on specific topics necessary for approval.

ADDITIONAL: INSTRUCTIONS/GUIDANCE/TRAINING FOR HOW TO ANSWER THESE QUESTIONS. TRAINING MAY DIFFER FOR DIFFERENT REGIONS.

1. Describe what is known about fish use (existing data, agency/tribe data, seasonality by species, etc...) in proximity to the proposed F/N break.
2. Explain how fish species occurrence and abundance was used in the proposed location of the F/N break.
3. How did you consider the morphology of the stream in establishing the location of the proposed F/N break?

4. How did you consider stream gradient in establishing the location of the proposed F/N break?
5. How did stream size influence the location of the proposed F/N break?
6. Describe the role of basin size, bankfull width, and bankfull depth in identifying the location of the proposed F/N break.
7. What role did channel confinement play in the location of the proposed F/N break?
8. How did connectivity to habitat downstream influence the location of the proposed F/N break?
9. How was perched habitat considered in the proposed location of the F/N break?
10. Did substrate effect the proposed location of the F/N break? If so, how?
11. Was channel complexity considered in the determination of the F/N break?
12. Was pool frequency a factor used in the location of the proposed break? If so, how?
13. How did you consider water quality in the proposed location of the F/N break?
14. How did the current flow regime influence the proposed F/N break?
15. How were biotic factors (e.g., primary productivity, vegetation, presence of other species) considered in the proposed F/N break?
16. How did disturbance (e.g., landslides, debris flows, channel head-cutting) influence the location of the F/N break?
17. How did the presence of barriers and blockages (natural and anthropogenic) influence your proposed F/N break?
18. How did you consider fish habitat that may be recoverable in the proposed location of the F/N break?

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