




DEPARTMENT OF
NATURAL
RESOURCES

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MEMORANDUM

April 22, 2024

TO: Forest Practices Board 
FROM: Saboor Jawad, Forest Regulation Division Manager
Saboor.jawad@dnr.wa.gov | 360-742-7130
SUBJECT: **Monthly Progress Update:** Developing Rule Materials for Water Typing System Rule and Type Np Waters Buffer Rule

This memo provides a summary of progress on developing materials for two Board rule making efforts: the permanent Water Typing System Rule (WTR), and the Type Np Water Buffers Rule (Type Np). Staff are also implementing Board guidance on sequencing the rule development work. As a reminder, staff are developing the following materials for each of the rule packages:

- Administrative rule language
- Spatial analysis
- Preliminary cost-benefit analysis (CBA)
- Preliminary Small Business Economic Impact Statement (SBEIS)
- State Environmental Policy Act (SEPA) analysis
- Board Manual technical guidance

The rule packet materials are requirements of the Administrative Procedures Act (APA); the Regulatory Fairness Act (RFA); and the State Environmental Policy Act (SEPA). Spatial analysis is not a rule requirement, but its results partially inform the CBA and SEPA. Board manual guidance is included to help understand how the rule requirements would be applied during the public comment period.

Earlier this month, I informed the Board of a potential two-month delay affecting the rulemaking timeline. A revised timeline reflecting the delay is provided with this memo (Attachment A). Staff will provide an update at your May 2024 special meeting and look forward to discussing the revised timeline and rule packages with you.

The following is a summary of progress as of this update:

1- Spatial Analysis of Water Typing System Rule

The [draft spatial analysis report](#)¹ for the water typing system rule – containing methodology and preliminary results – was completed and shared with stakeholders. DNR received detailed comments from stakeholders that are summarized along the following broad categories:

- a. Comments, feedback, and notes related the limitations of LiDAR resolution and/or the interpretation of LiDAR data relating to the creation of synthetic stream layers and the identification of in-stream features (ability to detect vertical and non-vertical obstacles, detection of small features, ability to detect deformable and permanent features, accurate bank full width estimates and etc.)
- b. Comments, feedback and notes on lack of field verification and on representativeness of points selected to form the synthetic streams.
- c. Comments, feedback and notes related to estimating number and frequency of potential habitat breaks (PHBs) above last fish.
- d. Comments, feedback, and notes related to the accurate demarcation of Type N perennial (Np) and Type N seasonal (Ns).

Staff reviewed all comments and requested a reanalysis along with methodological reconsiderations. Four Peaks Environmental, the vendor conducting the spatial analysis, will address the following and produce a final report on the Water Typing Rule on or about the 10th of May 2024:

- Reanalysis to measure gradient in stream segments based on 5 bank-full width in length. The current look-ahead distance for identifying in-stream features is 20 bank-full widths. This change is expected to improve the chances of detecting vertical and non-vertical obstacles, ability to detect and report other in-stream features.
- An additional analysis of uncertainty to quantify – where possible – all sources of known uncertainty. Staff provided the vendor with a non-exhaustive list of known sources of uncertainty which include, among others, spacing of LiDAR ground return points; stream length scales used to measure topographic features; effects of Digital Elevation Model smoothing techniques; and synthetic stream limitations. Staff expects to see a sensitivity analysis and a chapter on limitations in the final report.
- Identifying more than one PHB above last fish and providing a frequency distribution where possible.
- More contextual information on PHBs, AFF and their interpretation and use in the analysis.

Revisions listed above will help understand and – where possible – quantify potential errors, and uncertainties. A sensitivity analysis, furthermore, will underscore the relevant contribution of model input factors to the final output. The Board should note that spatial analysis – with current limitation and without field verification – still

¹ This is a link to the draft spatial analysis report for the water typing rule. It is currently being revised and is not ready for use in the CBA.

produces useful information in the rulemaking process. The Board should also be confident in the CBA methodology and analysis which includes an additional sensitivity analysis quantifying the effects and contribution of spatial analysis data (as an input) relative to the contribution of other inputs in the final CBA. Spatial analysis for WTR will end once DNR receives and approves the revised report. At that point, staff will forward the spatial analysis to be used in the CBA for the water typing rule. The Board will receive a presentation on CBA for WTR at their August regular meeting.

Spatial analysis of the Type Np water buffer rule continues in parallel and is also impacted by the spatial analysis delays. The draft report was released to stakeholders on April 09, 2024. As with the previous review, stakeholders have two weeks to review the report and staff organized a stakeholder meeting in which report methodology and baseline data will be presented April 24th.

- 2- Preliminary Cost-Benefits Analysis (CBA):** The [draft CBA methodology](#) for WTR was developed and presented to the economist working group. Stakeholders are currently reviewing the methodology. DNR staff expects to have preliminary findings, in the form of a presentation, of the SBEIS and CBA ready for the August 14th board meeting. These findings will be provided with the board materials on July 31st in preparation of a Board decision on which anadromous fish floor (AFF) and PHB will be evaluated in the rulemaking process. The vendor will then move forward with the Board decided rule to conclude the preliminary CBA and SBEIS for the November 13th board meeting.

For the Type Np CBA, staff are finalizing the contract with Industrial Economics Inc. (IEc) which will be about a month later than originally anticipated, along with the stakeholder reviewed spatial data. Work on Type Np CBA will begin in mid-May. However, the current proposed schedule will not have the preliminary CBA and SBEIS prepared in time for the originally proposed November board meeting, we anticipate the rulemaking packet (including CBA and SBEIS) to be ready for your February 2024 meeting.

- 3- SEPA:** To provide the board with additional information on buffer impacts from the Board approved fish habitat assessment methodology (FHAM) applying the three PHBs, and two AFF alternatives, DNR staff will present the analysis including of a comparison to the current rule. The presentation will be provided in materials on July 31st to assist the Board decision on which AFF and PHB will be evaluated in the rulemaking process. DNR staff will then conduct a SEPA analysis on the rule, with the Board Chair, as the Responsible Official, issuing a threshold determination to inform your decision in November 2024 whether to approve the CR102.

For Type Np, DNR is soliciting for a vendor to identify and analyze potential environmental impacts of the rule change. This short duration contract (two months) is meant to provide staff with a consolidated background analysis to draft the SEPA checklist and the Board Chair, as Responsible Official, to make an informed determination and provide that to the board in February to inform your decision on whether to approve the CR102.

4- Administrative Rule Language:

At the February 2024 regular meeting, staff discussed the need to clarify rule language for both WTR and Type Np. Definition of off-channel habitat has been revised for the WTR language. Additionally, the sensitive site protections are now clearly described in the Type Np revised rule language. The revised WTR language is attached to this memo (Attachment B). The revised rule language for Type Np is separately included in your mailing packet along with a staff cover memo.

As illustrated in the revised rulemaking timeline, the CR102 and rule making package for WTR will be ready for your review and approval at your November 13th, 2024 regular meeting. You will receive a presentation on the preliminary CBA and SBEIS for WTR at your August 2024 regular meeting. Your approval of a CR102 starts a public comment period on both the rule making packet and the SEPA analysis. Public comments on WTR rule are expected to conclude by January 2025.

Staff expects to deliver the Type Np rule packet at your February 2025 regular meeting. A similar public comment process will start if the Board approves a CR102 for the Type Np rule.

I look forward to discussing these items with you at your May meeting. Please reach out to me if you have any questions. You are also welcome to reach out to the following DNR staff:

- Marc Engel, Senior Policy Advisor (marc.engel@dnr.wa.gov)
- Karen Zirkle, Assistant Division Manager Policy and Landowner Services (karen.zirkle@dnrwa.gov)
- Maggie Franquemont, Policy Program Manager (Maggie.franquemont@dnr.wa.gov)

SJ/

Attachments: **A-** Revised rulemaking timeline
 B- Water Typing System rule language

c: Katie R. Allen, Deputy Supervisor Aquatic Resources, Forest Regulation and Resilience, *a.i*
 Terry Pruitt, Assistant Attorney General, Forest Practices Board Attorney
 Marc Engel, Senior Policy Advisor, Forest Regulation Division
 Karen Zirkle, Assistant Division Manager Forest Regulation Division
 Maggie Franquemont, Policy Program Manager, Forest Regulation Division



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Attachment A: Revised Rule Package Development Timeline

Rule and Rule Materials	% Complete	Status	Feb-24	May-24	Aug-24	Nov-24	Feb-25	May-25	Aug-25	Nov-25	Feb-26	May-26	Aug-26	Nov-26
Water Typing Rule														
Rule Language	100%	Complete. <i>Minor revisions needed</i>												
Synthetic Streams Spatial Analysis														
Conduct Spatial analysis	60%	Ongoing												
Draft Report including methodology available for stakeholder review	100%	Complete												
Cost Benefit Analysis & SBEIS	30%													
Conduct Analysis	30%	ongoing												
Preliminary CBA & SBEIS Complete	10%	ongoing												
Final CBA & SBEIS Complete		planned												
SEPA Analysis	0%													
SEPA Analysis (timeline reflects a DNS ONLY)		Planned												
Final SEPA Determination signed before FPB CR102 approval		Planned												
SEPA public comment period		Planned												
Concise Explanatory Statement	0%	Planned												

Initiate Rulemaking	0%	Planned												
CR102, public meetings, public comment, CR103 adopts rule by the FPB & approves BM23														
Rule in effect within 30 days														
Rule and Rule Materials	% Complete	Status	Feb-24	May-24	Aug-24	Nov-24	Feb-25	May-25	Aug-25	Nov-25	Feb-26	May-26	Aug-26	Nov-26
Type Np Buffer Rule w/SEPA DNS														
Rule Language	100%	Complete <i>Minor edits/revisions needed</i>												
Synthetic Streams Spatial Analysis	90%													
Conduct Spatial analysis	90%	Ongoing												
Draft Report including methodology available for stakeholder review	90%													
SEPA Analysis	0%													
DNS														
Final SEPA Determination signed before FPB CR102 approval														
SEPA public comment period														
Cost Benefit Analysis & SBEIS	0%													
Conduct Analysis														
Preliminary CBA & SBEIS Complete														
Final CBA & SBEIS Complete														

Concise Explanatory Statement	0%													
Initiate Rulemaking	0%													
CR102, public meetings, public comment, etc														
CR103 adopts rule by the FPB & approves BM23														
Rule in effect within 30 days														
Rule and Rule Materials	% Complete	Status	Feb-24	May-24	Aug-24	Nov-24	Feb-25	May-25	Aug-25	Nov-25	Feb-26	May-26	Aug-26	Nov-26
Type Np Buffer Rule w/SEPA DS and EIS														
DS and EIS														
Final SEPA Determination signed before FPB CR102 approval														
SEPA public comment period														
Cost Benefit Analysis & SBEIS	0%													
Conduct Analysis														
Preliminary CBA & SBEIS Complete														
Final CBA & SBEIS Complete														
Concise Explanatory Statement	0%													
Initiate Rulemaking	0%													
CR102, public meetings, public comment, etc														

CR103 adopts rule by the FPB & approves BM23										
30 days rule official										

1 **Attachment B**

2 **Draft Rule Proposal for a Water Typing System**
3 **FOREST PRACTICES BOARD**
4 **May 7, 2024**

5
6 **WAC 222-12-090 *Forest practices board manual.**

7 . . .

8 (13) ~~Guidelines for determining fish use for the purpose of typing waters under WAC 222-16-~~
9 ~~031~~ **Reserved.**

10 . . .

11
12 REPEAL

13 **WAC 222-16-031 Interim water typing system.**

14
15
16 **WAC 222-24-040 *Water crossing structures for all typed waters.**

17 (1) When a department approved water type change causes the location of the break between Type
18 F and Type N Water to be upstream beyond an existing water crossing structure, it must be re-
19 placed with a fish passable structure. Replacement is not required if: the existing structure is
20 fish passable per WAC 222-24-041; or, the structure is functioning with little risk to public re-
21 sources and has been installed under a forest practices hydraulic project in an approved forest
22 practices application or a hydraulic project approval by the department of fish and wildlife.

23 ~~(2)~~ Bridges are required for new crossings and reconstructed crossings of any typed waters
24 regularly used for recreational boating.

25 ~~(23)~~ Structures containing concrete must be sufficiently cured prior to contact with water.

26 ~~(34)~~ One end of each new or reconstructed permanent log or wood bridge shall be tied or firmly
27 anchored if any of the bridge structure is within ten vertical feet of the 100-year flood level.

28 ~~(45)~~ Alterations or disturbance of the stream bed, bank or bank vegetation must be limited to that
29 necessary to construct the project. All disturbed areas must be stabilized and restored according
30 to the recommended schedule and procedures found in board manual section 5. This
31 requirement may be modified or waived by the department, in consultation with the department
32 of fish and wildlife, if precluded by engineering or safety factors.

33 ~~(56)~~ When earthen materials are used for bridge surfacing, only clean sorted gravel may be used, a
34 geotextile lining must be installed and curbs of sufficient size shall be installed to a height
35 above the surface material to prevent surface material from falling into the stream bed.

36 ~~(67)~~ Wood removed from the upstream end of culverts and bridges will be placed at the downstream
37 end of such culverts and bridges in such a way as to minimize obstruction of fish passage and
38 to the extent practical, while avoiding significant disturbance of sediment in connection with
39 maintenance activities.

40 ~~(78)~~ Fords.

41 . . .

42
43
44 **222-30-021 *Western Washington riparian management zones**

45 . . .

46 *(1)(b)(i)(B) In addition to the conditions set forth above, permitted conversion activities in the **inner**
47 **zone** of any harvest unit are limited by the following:

- 1 • Each continuous conversion area is not more than five hundred feet in length; two conversion
2 areas will be considered "continuous" unless the no-harvest area separating the two conversion
3 areas is at least half the length of the larger of the two conversion areas.
- 4 • Type S and F (~~Type 1, 2, or 3~~) Water: Up to fifty percent of the inner zone area of the harvest unit
5 on one side of the stream may be converted provided that:
 - 6 ♦ The landowner owns the opposite side of the stream and the landowner's riparian area on the
7 opposite bank meets the shade requirements of WAC 222-30-040 or has a seventy-five foot
8 buffer of trees at least forty feet tall or:

9 . . .

10 (2)(b)(v) No timber harvest is permitted within a fifty-six foot radius buffer patch centered on a
11 headwater spring or, in the absence of a headwater spring, on a point at the upper most extent of a
12 Type Np Water as defined in WAC 222-16-030(3) ~~and 222-16-031~~.

15 **WAC 222-16-030 Water typing system.**

16 ~~Until the fish habitat water type maps described below are adopted by the board, the Interim Water~~
17 ~~Typing System established in WAC 222-16-031 will continue to be used. The objective of the water~~
18 ~~typing system is to correctly classify waters to inform the appropriate riparian protection to be applied~~
19 ~~to each water type. The primary component of this objective is the accurate determination of the extent~~
20 ~~of fish habitat streams at the landscape scale. This section identifies the criteria to classify waters. The~~
21 ~~requirements for determining fish use are described in WAC 222-16-0301(1).~~

23 The department ~~will classify streams, lakes and ponds on state and private forest lands of Washington~~
24 ~~State~~ in cooperation with the departments of fish and wildlife, and ecology, and in consultation with
25 affected Indian tribes ~~will classify streams, lakes and ponds~~.

27 ~~The department will~~ To assist applicants in determining water type classifications, the department shall
28 prepare and update water type maps showing the location of Type S, F, and N (Np and Ns) Waters
29 within the forested areas of the state. ~~The maps will be based on a multiparameter, field-verified~~
30 ~~geographic information system (GIS) logistic regression model. The multiparameter model will be~~
31 ~~designed to identify fish habitat by using geomorphic parameters such as basin size, gradient, elevation~~
32 ~~and other indicators. The modeling process shall be designed to achieve a level of statistical accuracy~~
33 ~~of 95% in separating fish habitat streams and nonfish habitat streams. Furthermore, the demarcation of~~
34 ~~fish and nonfish habitat waters shall be equally likely to over and under estimate the presence of fish~~
35 ~~habitat. These maps shall be referred to as "fish habitat water typing maps" and shall, when~~
36 ~~completed, be available for public inspection at region offices of the department. All Type S Waters,~~
37 ~~and department concurred Type F and N Water and Type Np and Ns Water breaks shown on the water~~
38 ~~type map are official and may be relied upon by landowners.~~

40 ~~Fish habitat water type maps will be updated every five years where necessary to better reflect~~
41 ~~observed, in-field conditions. Except for these periodic revisions of the maps, on-the-ground~~
42 ~~observations of fish or habitat characteristics will generally not be used to adjust mapped water types.~~
43 ~~However, if an on-site interdisciplinary team using nonlethal methods identifies fish, or finds that~~
44 ~~habitat is not accessible due to naturally occurring conditions and no fish reside above the blockage,~~
45 ~~then the water type will be immediately changed to reflect the findings of the interdisciplinary team.~~
46 ~~The finding will be documented on a water type update form provided by the department and the fish~~
47 ~~habitat water type map will be updated as soon as practicable. If a dispute arises concerning a water~~
48 ~~type the department shall make available informal conferences, as established in WAC 222-46-020~~

1 ~~which shall include the departments of fish and wildlife, and ecology, and affected Indian tribes and~~
2 ~~those contesting the adopted water types.~~

3
4 The water type maps and instructions for use are available for public review from the department. All
5 water breaks concurred by the department are regulatory water type classifications; all other mapped,
6 and unknown Type F and N Water or Type Np and Ns Water type breaks must be determined, in the
7 field, by forest landowners or their representative. The water type break can be determined per this sec-
8 tion or, for fish use, WAC 222-16-0301. Small forest landowners can contact the department for tech-
9 anical assistance and/or ID teams to determine water typing breaks.

10
11 The department may convene an interdisciplinary team, as defined in WAC 222-16-010, to consider
12 proposed modifications to the departments water type map; to address observed in-field conditions,
13 including if observations of fish; to address naturally occurring stream conditions or blockages making
14 habitat inaccessible to fish; or, if a dispute arises concerning a water type classification in accordance
15 with WAC 222-46-020.

16
17 The waters will beare classified using the following criteria:

18 *(1) **“Type S Water”** means all waters, within their bankfull width, as inventoried as “shorelines of
19 the state” under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW
20 including periodically inundated areas of ~~their~~ associated wetlands.

21 *(2) **“Type F Water”** means segments of natural waters ~~other than Type S Waters, which are~~
22 ~~within the bankfull widths of defined channels and~~including periodically inundated areas of
23 their associated wetlands, ~~or within lakes, ponds, or impoundments having a surface area of 0.5~~
24 ~~acre or greater at seasonal low water~~not classified as Type S Waters, which have a fish,
25 wildlife, or human use; and which in any case contain fish habitat or are described by one of
26 the following four categories:

27 (a) Waters within lakes, ponds or impoundments having a surface of 0.5 acre or greater at
28 seasonal low water.

29 (b) Stream segments having a defined channel 20 feet or greater within the bankfull width
30 and having a gradient of less than 4 percent.

31 (c) Waters which are off- channel habitat. These are areas important for rearing and
32 survival of fish and include riverine ponds, wall-based channels, and stream associated
33 wetlands. The area must be connected to a Type F or Type S water and accessible to
34 fish during some portion of the year.

35 (i) For channelized streams, the edge of off- channel habitat is determined based on the
36 outer edge of inundation of the stream at the bankfull elevation flow.

37 (ii) For non-channelized streams, including stream associated wetlands, off-channel
38 habitat is the outer edge of the area periodically inundated at the ordinary high water
39 line.

40 (d) Waters used by fish. The department has prepared water type maps showing the
41 location of Type F Waters. All department concurred Type F and N Water breaks
42 shown on the water type map are official. Where fish use has not been determined:

43 (i) Waters having any of the following characteristics are presumed to have fish
44 use:

45 (A) Stream segments having a defined channel of two feet or greater within the
46 bankfull width in Western Washington; or three feet or greater in width in
47 Eastern Washington; and having a gradient of sixteen percent or less;

- 1 (B) Stream segments having a defined channel of two feet or greater within the
2 bankfull width in Western Washington; or three feet or greater within the
3 bankfull width in Eastern Washington, and having a gradient greater than
4 sixteen percent and less than or equal to twenty percent, and having greater
5 than fifty acres in contributing basin size in Western Washington or greater
6 than one hundred seventy five acres contributing basin size in Eastern
7 Washington, based on hydrographic boundaries;
- 8 (C) Ponds or impoundments having a surface area of less than one acre at
9 seasonal low water and having an outlet to a fish stream;
- 10 (D) Ponds of impoundments having a surface area of 0.5 acre or greater at
11 seasonal low water.
- 12 (ii) The department shall waive or modify the characteristics in (i) of this subsection
13 where:
- 14 (A) Waters have confirmed, long term, naturally occurring water quality
15 parameters incapable of supporting fish;
- 16 (B) Snowmelt streams with short flow cycles that do not support successful
17 life history phases of fish. These streams typically have no flow in the
18 winter months and discontinue flow by June 1; or
- 19 (C) Sufficient information about a geomorphic region is available to support
20 a departure from the characteristics in (i) of this subsection, as
21 determined in consultation with the department of fish and wildlife,
22 department of ecology, affected tribes and interested parties.
- 23 (e) Waters, ~~which are~~ diverted for domestic use by more than ~~10-ten~~ residential or camping
24 units or by a public accommodation facility licensed to serve more than ~~10-ten~~ persons,
25 where ~~such the department determines the~~ diversion is ~~determined by the department to~~
26 ~~be~~ a valid appropriation of water ~~and the only practical water source for such users.~~
27 ~~Such-These~~ waters shall be considered ~~to be~~ Type F Water upstream from the point of
28 ~~such~~ diversion for ~~1,500~~fifteen hundred feet or until the drainage area is reduced by ~~50~~
29 ~~fifty~~ percent, whichever is less;
- 30 (bf) Waters, ~~which are~~ diverted for use by a federal, state, tribal or private fish
31 ~~hatcheries~~hatchery. ~~Such-These~~ waters shall be considered Type F Water for fifteen
32 hundred feet upstream from the point of diversion ~~for 1,500 feet~~, including tributaries if
33 highly significant for protection of downstream water quality. The department may
34 allow additional harvest beyond the requirements of Type F Water ~~designation~~
35 ~~provided~~classification if the department determines after a landowner-requested ~~on-~~
36 ~~site~~interdisciplinary team assessment ~~by the department of fish and wildlife, department~~
37 ~~of ecology, the affected tribes and interested parties~~ that:
- 38 (i) The management practices proposed by the landowner will adequately protect
39 water quality for the fish hatchery; and
- 40 (ii) ~~Such-The~~ additional harvest within the riparian management zone meets the
41 requirements of the water type ~~designation~~classification that would apply in the
42 absence of the hatchery;
- 43 (eg) Waters, ~~which are~~ within a federal, state, local governemental entity, or private
44 campground having more than ~~10-ten~~ camping units: ~~-. Provided, That the water shall~~
45 ~~not be considered to~~These are waters that enter a campground ~~until it reaches~~at the
46 boundary of the park lands available for public use and ~~comes come~~ within ~~100-one~~
47 ~~hundred~~ feet of a camping unit, trail or other park improvement;

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

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

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

7 (3) **“Type Np Water”** means all segments of natural waters within the bankfull width of ~~defined~~
8 ~~channels that are~~ perennial non-fish habitat streams. Perennial streams are flowing waters that do
9 not go dry any time of a year of normal rainfall and include the intermittent dry portions of the
10 perennial channel below the uppermost point of perennial flow.

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

16 *(5) For purposes of this section:

17 (a) “Residential unit” means a home, apartment, ~~residential~~ condominium unit or mobile
18 home, serving as the principal place of residence.

19 (b) “Camping unit” means an area intended and used for:

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

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

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

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

28 (e) “Seasonal low ~~flow~~” and ~~“seasonal low water”~~ mean the conditions of the ~~7~~ seven day,
29 ~~2~~ two year low water situation, as measured or estimated by accepted hydrologic
30 techniques recognized by the department.

31 (f) ~~“Channel Bankfull width and gradient”~~ for defined channels means a measurement over
32 a representative section of at least ~~500~~ five hundred linear feet with at least ~~10~~ ten
33 evenly spaced measurement points along the normal stream channel but excluding
34 unusually wide areas of negligible gradient such as marshy or swampy areas, beaver
35 ponds and impoundments. ~~Channel gradient may be determined utilizing stream~~
36 ~~profiles plotted from United States geological survey topographic maps (see~~ Sec board
37 manual section 23).

38 (g) “Intermittent ~~streams~~” means those segments of streams that normally go dry.

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

42
43 NEW SECTION

44 **WAC 222-16-0301 Verification of fish habitat and the break between Type F and Type N Water.**

45 To assist applicants in determining the water type classification, the department prepares water type
46 maps showing the location of Type S, F, and N (Np and Ns) Waters within the forested areas of the
47 state. The mapping tool and instructions for viewing water type maps is available on the department’s
48 website.

1
2 For the purposes of forest practices, landowners are required to verify the water type break between
3 Type F and N Waters where fish use has not previously been determined. Department concurred
4 breaks between Type F and N Waters are shown on the water type map. These breaks are official and
5 can be used by the landowner. All other mapped stream breaks, and the establishment of the Type F
6 and N Water break on streams not shown on the map, need to have the Type F and N Water break
7 established through the application of the default physical characteristics, per WAC 222-16-
8 030(2)(d)(i); or, through the application of the fish habitat assessment method (FHAM) described in
9 (1) of this section.

10
11 The application of FHAM is intended to establish the line of demarcation between fish and non-fish
12 habitat waters. No application of default physical characteristics or FHAM to determine the Type F
13 and N Water break is allowed within the anadromous fish floor (AFF), unless a landowner requests an
14 interdisciplinary team, as defined in WAC 222-16-010. The AFF demarks the point downstream of
15 which anadromous fish use is always presumed and upstream of which the default physical
16 characteristics or FHAM may be applied to establish the Type F and N Water break.

17
18 *Option A*

19 Waters within the anadromous fish floor. These are all waters connected to saltwater which are below
20 the combined upstream most documented or presumed anadromous fish use point included in the most
21 current available anadromous fish data, and the upstream associated waters occurring below either a
22 sustained stream gradient of seven percent or a permanent natural barrier, whichever comes first.

23 Publicly available anadromous fish data is available through the Statewide Washington Integrated Fish
24 Distribution map layers (SWIFD), StreamNet, or a WDFW approved alternative resource; and where:

25
26 A permanent natural barrier to anadromy is defined as:

27 (a) Non-vertical barrier:

- 28 • Channels < 5 feet bankfull width: sustained gradient $\geq 20\%$ for ≥ 100 feet (30 meters) without
29 resting areas.
- 30 • Channels 5–10 feet in bankfull width: sustained gradient $\geq 20\%$ for ≥ 250 feet (76 meters)
31 without resting areas.
- 32 • Channels > 10 feet in bankfull width: sustained gradient $\geq 20\%$ for \geq
33 525 feet (160 meters) without resting pools.

34 (b) Vertical Barrier (permanent natural features):

- 35 • Channels < 5 feet in bankfull width: near vertical drop ≥ 5 feet in height (1.5 meters)
- 36 • Channels 5 – 10 feet bankfull width: near vertical drop ≥ 8 feet in height (2.5 meters)
- 37 • Channels > 10 feet bankfull width: near vertical drop ≥ 12 feet in height (3.7 meters)

38
39 OR

40
41 *Option B*

42 Waters within the anadromous fish floor. These are all waters connected to saltwater that are included
43 in publicly available GIS datasets of known and presumed anadromous fish use, and include associated
44 tributaries lacking a five-percent gradient increase or permanent natural obstacle at the junction with
45 saltwater or the main stem stream to the next upstream PHB as described in (3) of this section. Publicly
46 available GIS anadromous fish datasets are available through the Statewide Washington Integrated
47 Fish Distribution map layers (SWIFD) or StreamNet; and where:

- 1 A permanent natural obstacle is:
- 2 • A vertical obstacle with a height equal to or greater than three feet; or
 - 3 • A non-vertical step which is equal to or greater than twenty percent gradient and the elevation
 - 4 increase is equal to or greater than the upstream bankfull width.

5

6 ***(1) Fish Habitat Assessment Methodology (FHAM).** The FHAM is a series of steps used to

7 delineate the upper extent of fish habitat coincident with the regulatory water type break between

8 Type F and Type N Waters. Proposals to change the department water type map must include

9 documentation of the use of the FHAM on a form designated by the department. FHAM shall be

10 applied in waters situated upstream from the anadromous fish floor or known fish use. Board

11 manual section 23 provides additional technical guidance for conducting the FHAM.

12

13 The FHAM requires the identification of geomorphic features meeting the definition of a

14 potential habitat break (PHB) as described in (3) of this section. The steps to conduct FHAM are:

Step 1	Locate the upstream extent of the AFF or other upstream most point of known fish use, whichever is furthest upstream. The process and sources used to determine known presence or fish habitat must be documented. Proponents are encouraged to contact the department of fish and wildlife and/or affected Indian tribes to assist in determining areas of known fish use.
Step 2	Locate the first PHB situated upstream of the point in Step 1. See the PHB criteria in (2) of this section.
Step 3	Begin the fish habitat assessment directly upstream of the PHB identified in Step 2. If a fish is observed in the stream segment upstream from the first PHB, stop the electrofishing survey and proceed upstream to the next PHB. Repeat this process until no fish are observed upstream of a PHB;
Step 4	When fish are not observed in the stream segment directly above a PHB, continue protocol surveying of all available habitats for ¼ mile upstream of the PHB. If no fish are observed, this point becomes the end of fish habitat for the stream segment and the proposed water type break between Type F and Type N Waters. Document this location as the proposed habitat break.

16

17 *Option A*

18 ***(2) Potential Habitat Breaks (PHB).** For purposes of the FHAM, the criteria for a PHB include any

19 of the following:

- 20 (a) Western Washington
 - 21 (i) Stream segments having a gradient increase equal to or greater than five percent. The
 - 22 minimum distance for determining the gradient increase is measured over twenty-times
 - 23 the bankfull width both downstream and upstream from the change in gradient; or
 - 24 (ii) Stream segments having a bankfull width equal to or less than two feet. The minimum
 - 25 distance for determining a decrease in bankfull width is measured over twenty-times the
 - 26 average bankfull width both downstream and upstream from the change in width; or
 - 27 (iii) A permanent natural obstacle having a vertical obstacle height equal to or greater than the
 - 28 bankfull width, but not less than three feet.

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OR

Option B

- *(2) Potential Habitat Breaks (PHB).** For purposes of the FHAM, the criteria for a PHB include any of the following:
- (a) Stream segments having a gradient increase equal to or greater than ten percent. The minimum distance for determining the change in gradient is measured over twenty-times the average bankfull width.
 - (b) Stream segments having a bankfull width equal to or less than two feet. The minimum distance for determining a decrease in bankfull width is measured over twenty-times the bankfull width.
 - (c) A permanent natural obstacle having:
 - (i) a vertical obstacle height equal to or greater than the bankfull width, but not less than three feet; or
 - (ii) a non-vertical step equal to or greater than twenty percent gradient if the elevation increase is equal to or greater than the upstream bankfull width.

OR

Option C

- *(2) Potential Habitat Breaks (PHB).** For purposes of the FHAM, the criteria for a PHB include any of the following:
- (a) Stream segments having a gradient increase equal to or greater than five percent.
 - (b) Downstream to upstream bankfull width decrease at the tributary junction equal to or greater than twenty percent. The minimum distance for determining a decrease in bankfull width is measured over twenty-times the bankfull width.
 - (c) Permanent natural obstacle having:
 - (i) A vertical obstacle height equal to or greater than three feet; or
 - (ii) A non-vertical step equal to or greater than twenty percent gradient and the elevation increase is equal to or greater than the upstream bankfull width.
- *(3) For purposes of this section:**
- (a) **“Permanent Natural Obstacle”** means a natural, non-deformable obstacle that completely blocks upstream fish movement. “Permanent natural obstacles” include vertical drops, steep cascades, bedrock sheets and bedrock chutes.
 - (b) **“Potential Habitat Break”** means a permanent, distinct, and measurable change to in-stream physical characteristics. PHBs are typically associated with underlying geomorphic conditions and may consist of natural obstacles that physically limits fish access to upstream reaches or a distinct measurable change in channel, bankfull width or a combination of the two.