

1 **FOREST PRACTICES BOARD**  
2 **Special Board Meeting – August 10, 2022**  
3 via ZoomWebinar

4 *Meeting materials and subject presentations are available on Forest Practices Board’s website.*  
5 *<https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board>*  
6

7 **Members Present**

8 Alex Smith, Chair, Department of Natural Resources  
9 Ben Serr, Designee for Director, Department of Commerce  
10 Cody Desautel, General Public Member  
11 Dave Herrera, General Public Member  
12 Frank Chandler, General Public Member/Independent Logging Contractor  
13 Jeff Davis, Designee for Director, Department of Fish and Wildlife  
14 Kelly McLain, Designee for Director, Department of Agriculture (9 a.m. – 11:15 a.m.)  
15 Meghan Tuttle, General Public Member  
16 Pene Speaks, General Public Member  
17 Rich Doenges, Designee for Director, Department of Ecology  
18 Steve Barnowe-Meyer, General Public Member/Small Forest Landowner  
19 Vickie Raines, Elected County Commissioner  
20 Wayne Thompson, Timber Product Union Member  
21

22 **Staff**

23 Joe Shramek, Forest Regulation Division Manager  
24 Karen Zirkle, Forest Regulation Assistant Division Manager  
25 Marc Engel, Senior Policy Advisor  
26 Patricia Anderson, Rules Coordinator  
27 Phil Ferester, Senior Counsel  
28

29 **WELCOME AND INTRODUCTIONS**

30 Chair Alex Smith called the Forest Practices Board (Board) meeting to order at 9:05 a.m. Roll call of  
31 Board members and introduction of staff was made.  
32

33 Chair Smith recognized former Board members Carmen Smith, Tom Nelson, Bob Guenther and Brent  
34 Davies.  
35

36 **ZOOM MEETING INSTRUCTIONS**

37 Tracy Hawkins, Department of Natural Resources (DNR), provided instructions on how the Zoom  
38 meeting would be conducted and how to provide public comment.  
39

40 **RECOGNITION OF LARGE LANDOWNERS WHO COMPLETED RMAPS DURING THE**  
41 **PAST FIVE YEARS**

42 Commissioner of Public Lands Hilary Franz, DNR; Southwest Region Director Rich Doenges,  
43 Department of Ecology; and, Director of Conservation and Policy Jeff Davis, Washington Department of  
44 Fish and Wildlife recognized large forest landowners who completed their obligations under the road  
45 maintenance and abandonment plan program before the October 2021 deadline. This is a significant  
46 moment of success in the TFW/forest practices arena over the past two decades. The landowners who  
47 were recognized were:  
48  
49

Northeast Region

- Manulife Investment Management

Northwest Region

- Mid-Valley Resources
- Sierra Pacific Industries

Olympic Region

- Anderson and Middleton
- City of Hoquiam
- DNR State Lands – Olympic Region
- Fruit Growers Supply Company
- Olympic Timber LLC c/o Campbell Global
- Rayonier Forest Resources, LP
- Weyerhaeuser Company

Pacific Cascade Region

- BTG Pactual OEF
- BTG Pactual PNW Fund III REIT, Inc.
- DNR State Lands – Pacific Cascade Region

- Fruit Growers Supply Company
- Mid-Valley Resources
- PacifiCorp
- Rayonier Timberlands Holding Company, Washington, Inc.
- SDS Company, LLC
- Sierra Pacific Ryderwood
- Weyerhaeuser Company - Aberdeen
- Weyerhaeuser Company – Longview/St. Helens
- Weyerhaeuser Company – Lower Columbia Region
- Weyerhaeuser Company – Pe Ell
- Weyerhaeuser Company - Vail

South Puget Sound Region

- DNR State Lands – South Puget Sound Region
- Fruit Growers Supply Company
- BTG Pactual

1 **CHAIR REPORT**

2 Chair Smith noted the Board received several public comments regarding a timber harvest which was  
 3 conducted under an approved forest practices application in Olympia which has been appealed before the  
 4 Pollution Control Hearings Board by concerned citizens. She stated since the timber harvest a local  
 5 conservation group, on August 1, 2022, has purchased the site and intends to reforest and conserve it from  
 6 future development.

7  
 8 Chair Smith provided an update on the following:

- 9 • The TFW principals met once in December 2021 and twice in April to discuss the principal’s role in  
 10 the TFW process and to assist in the anadromous fish floor alternatives.
- 11 • TFW Policy co-chair memo reports the completion of two disputes since the May Board meeting--  
 12 Small Forest Landowner Relatively Low Impact Proposal Initiation Dispute and Type Np buffer  
 13 alternative dispute.
- 14 • Forest Regulation Division Personnel changes which included that Joe Shramek will be retiring at the  
 15 end of September.

16  
17 **APPROVAL OF MINUTES**

18 **MOTION:** Vickie Raines moved the Forest Practices Board approve the May 11, 2022 meeting  
 19 minutes.

20  
21 **SECONDED:** Wayne Thompson

22  
23 Discussion:  
24 None.

25  
26 **ACTION:** Motioned passed (9 Support / 4 Abstentions (Speaks, Chandler, Tuttle and  
 27 Barnowe-Meyer).

28  
29 **MOTION:** Vickie Raines moved the Forest Practices Board approve the June 27, 2022 meeting  
 30 minutes.

31  
32 **SECONDED:** Wayne Thompson

33

1 Discussion:  
2 None.

3  
4 **ACTION:** Motioned passed (10 Support / 3 Abstentions (Chandler, Speaks and Serr)).

5  
6 **2023-2025 BIENNIAL MASTER PROJECT SCHEDULE BUDGET AND SCHEDULE**  
7 **COMPLIANCE**

8 Chair Smith noted that the Board has received a consensus TFW Policy recommendation and request for  
9 the Board to approve the Master Project Schedule (MPS) and associated budget for the FY 2023-25  
10 biennium. In addition, she said per [WAC 222-12-045](#) the Board is required on every even calendar year to  
11 do a status check-in on the progress made to fully implement the Master Project Schedule. For this, the  
12 Board will need to determine whether the program is in substantial compliance with the MPS and, if not,  
13 must notify the National Marine Fisheries Service and the U.S. Fish and Wildlife Service by letter within  
14 thirty days.

15  
16 Saboor Jawad, Adaptive Management Program (AMPA), provided an [overview](#) of the MPS including the  
17 TFW Policy recommended amendments for the FY 2023-20235 biennium. In addition, he said the TFW  
18 Policy Committee has concluded that the identified projects are scheduled to be completed by 2031. The  
19 program's funding need is \$17,939,877 for all components in FY 24 and FY 25 which will fund three  
20 components of the program:

- 21 1- Administration including science staff, dispute resolution, contingency funds, scientific peer  
22 review and the implementation of State Auditor recommendations (\$4,279,703)
- 23 2- Research Projects (\$5,432,819)
- 24 3- Participation Grants (\$8,227,355)

25  
26 In addition to requesting the Board's approval of the MPS and associated budget, he recommended to use  
27 the proposed MPS as the basis for a legislative funding request of \$5,577,170.

28  
29 Board member Rich Doenges asked if the Clean Water Act Assurances projects are prioritized and Jawad  
30 confirmed that projects aimed at the Clean Water Assurances are among the top MPS priorities along with  
31 effectiveness monitoring projects.

32  
33 **PUBLIC COMMENT ON PROPOSED 2023-2025 MASTER PROJECT SCHEDULE BIENNIAL**  
34 **BUDGET AND SCHEDULE COMPLIANCE**

35 Elaine Oneil, Washington Farm Forestry Association (WFFA), recognized TFW Policy for their efforts to  
36 address a long standing inequity issue which is now captured in the current funding request included in  
37 the MPS. Specifically, additional funding for Adaptive Management Program participation funding for  
38 two non-governmental organization (NGO) caucuses, the small forest landowners and counties caucuses,  
39 both of whom have received a third of the value allocated to other NGO participants which has meant  
40 limited participation from these caucuses.

41  
42 Darin Cramer, Washington Forests Protection Association (WFPA), said the budget contains some pass  
43 through dollars for agencies that are not related to participation in the Adaptive Management Program.  
44 He said these are somewhat legacy issues and suggests the agencies use their own funds to accomplish  
45 their usual duties for the field or office reviews of Forest Practices Applications. He stated the agency  
46 pass through funding amounts to approximately \$450,000, and he believes this funding could be better  
47 used to advance priorities of the Adaptive Management Program including Extensive Monitoring. He also  
48 suggested that oversight of the CMER water typing studies go back into the Adaptive Management  
49 Program where TFW Policy will provide oversight. He also expressed concern for the fire hazard risks in

1 eastern Washington riparian areas if DNR doesn't figure out how to cost effectively manage within  
2 riparian areas where it's needed.

3  
4 Ray Entz, Kalispell Tribe, said the eastern Washington tribal caucus is one of the few caucuses who voted  
5 sideways on the budget for the purpose of presenting a consensus budget to the Board. He said asking the  
6 Legislature for more funding of the adaptive management program is important and having the caucuses'  
7 support for the request is important. He agreed with some of the points made by Cramer and Oneil  
8 regarding monitoring priorities and making sure that participation funding is available equitably to the  
9 various participants.

10  
11 **2023-2025 MASTER PROJECT SCHEDULE BUDGET AND SCHEDULE COMPLIANCE**

12  
13 **MOTION:** Meghan Tuttle moved the Forest Practices Board approve the 2023-2025 biennial Master  
14 Project schedule and associated budget. In addition, I move that the Master Project  
15 Schedule is generally in compliance with the 2012 settlement agreement as presented.

16  
17 **SECONDED:** Vickie Raines

18  
19 Board Discussion:  
20 Board member Meghan Tuttle acknowledges the enormous amount of work and praises the outstanding  
21 job by the budget committee.

22  
23 Board member Doenges echoes this sentiment and states the appreciation from Department of Ecology for  
24 the participation in the funding.

25  
26 Board member Pene Speaks said it appears the timelines for some projects are long and that she would  
27 like to see things move more quickly on the critical issues around rulemaking.

28  
29 **ACTION:** Motioned passed unanimously.

30  
31 **ADAPTIVE MANAGEMENT PROGRAM TYPE N EXPERIMENTAL BUFFER TREATMENT**  
32 **IN HARD ROCK LITHOLOGY PHASE II STUDY AND FINDINGS**

33 Aimee McIntyre and Bill Ehinger, Principle Investigators, presented the study results on the [Type N](#)  
34 [Experimental Buffer Treatment in Hard Rock Lithology Phase II Study](#). The study evaluated the  
35 effectiveness of riparian forest management prescriptions in maintaining key aquatic conditions and  
36 processes affected by Forest Practices for small non-fish-bearing (Type N) headwater stream basins  
37 underlain by competent, "hard rock" lithologies in western Washington. The greatest effects of alternative  
38 buffer treatments were observed in riparian stand condition, large wood recruitment and in-channel wood  
39 loading, stream shade and temperature, stream channel characteristics, and stream-associated amphibian  
40 densities.

41  
42 The study tracked coastal tailed frogs, moderate number of giant salamanders, and the most numerous  
43 species torrent salamander. The study also included the impact of the retention of a buffer on numbers of  
44 amphibians and stated the response as related to harvest but not necessarily buffer length. The study found  
45 amphibians in wood obstructed reaches and recorded a delayed response (fewer individuals and not all  
46 life stages) seven to eight years post-harvest.

1 **ADAPTIVE MANAGEMENT PROGRAM TYPE N EXPERIMENTAL BUFFER TREATMENT**  
2 **IN SOFT ROCK LITHOLOGY STUDY AND FINDINGS**

3 Bill Ehinger, Project Lead, presented the study results on the [Type N Experimental Buffer Treatment in](#)  
4 [Soft Rock](#). The study found similar responses as the Hard Rock Study: changes in riparian stand structure  
5 and wood input and loading; immediate post-harvest canopy closure was comparable between Soft Rock  
6 and Hard Rock studies; and changes in nitrogen concentration and export related to proportion of stream  
7 buffered in the Soft and Hard Rock studies. Responses that were different between the studies included:  
8 lower immediate temperature response in Soft Rock Study as well as quicker return to pre-harvest  
9 conditions in the Soft Rock which the authors said was likely the result of Soft Rock Study's longer  
10 buffers, greater post-harvest shade and lower wind throw.

11  
12 The authors presented the study results and responses on: stand structure indicating decrease in basal area  
13 and reporting wind as the dominant mortality agent; wood input indicating large wood input and similar  
14 to Hard Rock Study; canopy cover indicating decreased canopy cover at 1 meter and that ongoing shade  
15 loss was due to wind-throw similar to Hard Rock Study (continued shade loss one year post harvest also  
16 due to tree mortality); stream temperature indicating that the seven day average daily maximum  
17 temperature exceeded 16 C in only one site which had the highest pre-harvest maximum temperature and  
18 the lowest percent of stream channel with buffer; average seven day temperature response was 0.3 C or  
19 more four years post-harvest and 0 C by fifth year post-harvest. Authors reported that shade was the main  
20 driver of temperature response in both studies.

21  
22 **GENERAL PUBLIC COMMENT**

23 Jerry Dierker provided comments on a logging project near his house in Olympia. He said this project is  
24 on a landslide prone area and has impacted the wildlife in the area. He expressed frustration with DNR in  
25 not protecting this site by enforcing the law.

26  
27 Esther Kronenberg provided comments on the Cooper Point Road logging project in Olympia. She said in  
28 a matter of a few days, 25 years of community planning was trashed when this forest was clear cut  
29 without notice. She said an appeal, on behalf of at least 100 people and five local organizations, has been  
30 filed and she holds DNR responsible for the damages to this area.

31  
32 Curt Veldhuisen, Skagit River System Cooperative, urged the Board towards a timely approval of an  
33 updated water typing system rule in which includes an anadromous fish floor. He also described the  
34 stakeholder involvement process used when the RMAP extension rule was developed. He said that this  
35 significant rule change was crafted with uncharacteristic speed because TFW Policy made it a priority. It  
36 directly benefited landowners and was a substantial concession by tribes and other fish advocates. Now,  
37 he sees another much needed rule change and the resistance to it is frustrating.

38  
39 Ken Miller, WFFA, stated he is happy to share that the Board will likely address the small forest land  
40 owner buffer dispute at their November meeting. He encouraged the Board to read the small forest  
41 landowner position paper as it documents from their perspective their struggles through the adaptive  
42 management process.

43  
44 Ray Entz, Kalispell Tribe, stressed the urgency of the water typing system rule. He encouraged the Board  
45 to withdraw the eastern Washington tribal potential habitat break (PHB) option from the analysis and  
46 supports the use of the western Washington tribal PHB option for the statewide analysis. This would  
47 reduce the amount of analysis to two rule proposals—a proposal promoting anadromous fish floor (AFF)  
48 alternative A4(7%) and the western Washington tribal PHB option to be applied statewide; and a proposal  
49 promoting AFF alternative D and the landowner PHB option to also be applied statewide. He asked the

1 Board to discuss a potential resolution to the AFF in order for the Board to take action at their November  
2 2022 meeting.

3  
4 Elaine Oneil, WFFA, expressed disappointment with the majority report on the small forest landowner  
5 buffer width dispute and the inability for TFW Policy to bring forward a single consensus buffer width  
6 recommendation. She said the majority/minority reports identify a couple of significant issues within the  
7 Adaptive Management Program, specifically how outside science and proposal initiations are dealt with.

8  
9 JJ Lindsey provided comments on a timber harvest on 20 acres in Olympia. She said the harvest was all of  
10 a sudden. An appeal was made to DNR about the clear cut but the entire property was clear cut before the  
11 appeal period ended. She said she is unclear how this was allowed when an appeal has been made.

12  
13 Diane Carney expressed her concerns regarding the clear cut in Olympia. She specifically questioned if  
14 removing Green Cove Creek off of the FPA map during the permitting process is allowed. She said it may  
15 be a non-fish bearing creek but it definitely flows into a fish bearing creek. She suggested the procedures  
16 may need to be updated as there is clear science about the effects of runoff after a clear cut in an urban  
17 area. She invited the Board to go look at the site to see that even in August there is standing water.

18  
19 **WATER TYPING SYSTEM RULEMAKING**

20 Marc Engel, DNR, presented the [Board decisions regarding the water typing system rule](#) including  
21 decisions regarding inclusion of an anadromous fish floor (AFF) and next steps for the Board. He also  
22 presented outstanding issues for Board decisions before completion of a draft water typing system rule.  
23 Remaining water typing system rule elements for Board decisions include selection of an AFF alternative,  
24 confirming eastern Washington will be included in the water typing system rule, and determining if an  
25 AFF will be applied in eastern Washington.

26  
27 **PUBLIC COMMENT ON WATER TYPING SYSTEM RULEMAKING**

28 Paula Swedeen, Conservation Caucus, expressed concern about the new anadromous fish floor modeling  
29 for eastern Washington, as she doesn't think it's needed because the 7% gradient is below the typical use  
30 by anadromous fish. She said DNR doesn't need to convene another technical group as it is not needed  
31 and will take more time.

32  
33 Ray Entz, Kalispell Tribe, said statewide interpretation of an anadromous fish floor would apply to all  
34 known anadromy. He said there are several basins in eastern Washington that contain anadromous fish  
35 and the data is available through SWIFD which is sufficient to make decisions on regarding the AFF. He  
36 expressed concern that if a decision to move forward is not made, additional studies will be a waste of  
37 resources.

38  
39 Darin Cramer, WFPA, said the concept of a fish floor is fine and it should include all fish. He said the  
40 concept of a fish floor has been incorporated into landowner's survey protocols for many years, they  
41 figure out where the uppermost fish are and that is where the survey protocol starts. He provided in a  
42 [letter](#) to the Board a few options to keep the water typing system rule making moving forward. If the  
43 Board believes the AFF needs to be included, he requested the Board to provide a detailed justification.  
44 He said none of the steps needed for an agreement on the AFF have been addressed and that there are  
45 enough options for the Board to make a decision on the next steps for the Water Typing System Rule  
46 making.

47  
48 Kevin Godbout, Weyerhaeuser, said there have been several attempts to amend the water typing rules  
49 since the establishment of the Forests and Fish rules. Those attempts failed because a very accurate  
50 system is required in order to predict the presence of fish habitat and/or where fish habitat use surveys are

1 conducted. He said solutions must be equitable, science based, and implementable in the field; not an  
2 overly detailed process which will require more work in the field. He said the question is what the  
3 problem is that we are trying to fix, since what we are doing now is working. He said there is a 99%  
4 compliance with the existing system in rule, so what is there to gain with moving forward?  
5

6 Jason Spadaro, WFPA, said the Adaptive Management Program is a structure that must be maintained as  
7 it provides a structure for all of the decision making and rule proposals. This structure maintains scientific  
8 integrity. The concept of establishing an anadromous fish floor is not an objectionable concept to the land  
9 owners. He also stated the science that has been done with stream characteristics does not support how  
10 things work on the eastside of the state.  
11

12 Elaine Oneil, WFFA, reminded the Board on the importance of considering the impact to small forest  
13 landowners because of their location in the watershed (lower, nearer to the marine environment). She said  
14 an AFF should be part of the water typing rule as it is already part of small forest landowner's core  
15 habitat, but she is not in agreement on where the proposed AFF are on the landscape. Oneil said she is  
16 confident the fish habitat assessment methodology (FHAM) approach will capture habitat and that there  
17 are opportunities to find a solution on a permanent water typing rule. She said if the AFF is accepted in  
18 the water typing rule, they will be asking for AFF Alternative D be included.  
19

## 20 **WATER TYPING SYSTEM RULEMAKING**

21 Chair Smith stated that it is critical that the Board moves forward on a permanent water typing system  
22 rule. It's a commitment made in the habitat conservation plan and has been in the works for 20 years. She  
23 said all caucuses benefit from forward movement on a permanent water typing system rule. The Board  
24 has recommendations from the Board's Water Typing Rule Committee and has an opportunity to pick an  
25 alternative(s) to go forward for analysis. However, the recommendations were not a consensus product  
26 and that generates different reactions amongst the caucuses. She said based on the strong disagreement  
27 about the impacts of those certain proposals on the ground, the Commissioner engaged the principals to  
28 see if they could find areas of common ground. At this time, they have not come to an agreement on a  
29 single AFF alternative, so the Commissioner put forward a proposal at their last meeting. Based on that  
30 proposal Chair Smith presented a motion.  
31

32 **MOTION:** Alex Smith moved that the Forest Practices Board accept Anadromous Fish Floor (AFF)  
33 alternatives A4 (7 percent) and D for analysis for inclusion in the statewide permanent  
34 water typing system rule;  
35

36 She further moved that the Board request the Chair to direct DNR staff to prepare the  
37 information packet needed to begin formal rulemaking (through the filing of a Rule  
38 Proposal (CR-102)) for the statewide permanent water typing system rule; yet direct staff  
39 not to conduct analysis of the two AFF alternatives until after the November 2022 Forest  
40 Practices Board Meeting;  
41

42 Smith further moved that the Board request the Chair direct DNR staff to prepare a  
43 Proposal Initiation to develop an Anadromous Fish Floor validation study through the  
44 Adaptive Management Program.  
45

46 **SECONDED:** Dave Herrera  
47  
48  
49

1 Board Discussion:

2 Marc Engel clarified that an eastern Washington analysis for AFF alternatives in eastern Washington is  
3 not needed for a Board decision, however, a Board decision on an AFF alternative for inclusion in the  
4 draft rule is needed to complete the spatial analysis needed in the rulemaking. An approved AFF is needed  
5 to build a synthetic stream network to apply the AFF and PHB parameters the Board approves for  
6 analysis. The AFF analysis will also use known fish data in eastern Washington from a source like  
7 Streamnet.

8  
9 Chair Smith said DNR will put together a scientific team to run the spatial analysis. The Commissioner  
10 has heard the concerns around the AFF and the process not following the typical Adaptive Management  
11 process and that a Proposal Initiation (PI) to develop an AFF validation study is needed after the Board  
12 makes an AFF decision in November.

13  
14 Board member Speaks said to move forward now with an AFF is a good idea.

15  
16 Board member Barnowe-Meyer asks if a new synthetic stream model for the Eastside is really needed.  
17 Engel responded that the original spatial analysis that was done did not include an evaluation of the width  
18 PHB for the industrial landowner PHB option and only 18 data points were available for eastern  
19 Washington. Now there is over 200 points for eastern Washington and the Board approved the technique  
20 to identify the width PHB.

21  
22 Board member Speaks asked how the Proposal Initiation process will proceed, Engel clarified that the  
23 Proposal Initiation is presented to the adaptive management program administrator (AMPA) who then  
24 makes recommendations to TFW Policy on how to proceed, either a policy track or science track or both.  
25 He also pointed out the rule making is not dependent on this PI to move forward.

26  
27 Board member Tuttle said she supports an AFF validation study going to the AMPA through a PI process,  
28 however, there needs to be a well formed problem statement.

29  
30 Board member David Herrera asked whether the Board's Water Typing System Rule Committee should  
31 reconvene. Chair Smith responded that DNR believes the Committee has done its work.

32  
33 Board member Tuttle acknowledged unfinished items beyond AFF like the AFF performance goals and  
34 targets and water typing goals and targets that need to be discussed. The Board's Water Typing System  
35 Rule Committee recommendations for resolution of issues to the Board from the November 2019 meeting  
36 need to be discussed in order to move this forward.

37  
38 Board member Barnowe-Meyer supports Board member Tuttle's view on the unfinished items.

39  
40 Board member Jeff Davis said he appreciates Darin Cramer's comments in that if validation is necessary  
41 let's look at the whole water typing system. The Board's Water Typing Rule Committee did great work,  
42 but it was convened to assist with the AMP process and hopes one of our top priorities is to check the  
43 health of the AMP, so that we don't go through the majority/minority process so frequently.

44  
45 Board member Herrera said from the tribes' perspective protection and restoration of fish habitat need to  
46 be included in the rule to meet the requirements held by the caucus. He said the tribes listen to everyone's  
47 concerns to find a solution, however, hearing potential "process foul" comments does not help when  
48 trying to be solution oriented. He is in support of the motion as stated.

49



1 Board member Tuttle said she is not sure that all the water typing system issues will be resolved in  
2 November and that the issues that are harder to resolve may interfere with moving forward with the rule  
3 making.  
4

5 Chair Smith suggested a change to the motion to accommodate Board member Tuttle’s concerns. Board  
6 members Barnowe-Meyer, Herrera and Raines agreed to leave the motion as is and add the topic to the  
7 November meeting agenda.  
8

9 Board member Tuttle said she appreciates that the Commissioner is hearing the concerns about the  
10 Adaptive Management Program and specifically the anadromous fish floor.  
11

12 **ACTION:** Motion passed unanimously.  
13

### 14 **COMPLIANCE MONITORING 2020-2021 ANNUAL REPORT**

15 Lila Westreich provided a “story map” [presentation](#) on the compliance monitoring program, methods of  
16 data collection and statistical analysis process, as well as the status report for the biennium 20-21. Lila  
17 Westreich gives introduction to some methodologies that are used in the field and then some statistical  
18 tools used to understand the data analysis part of things.  
19

20 Rich Doenges asks for clarification about classification of perennial and seasonal stream classification by  
21 compliance monitoring. Lila said that this was a challenge to determine.  
22

23 Steve Barnowe-Meyer asks about rule clarifications versus board manual updates from observations in the  
24 field on stream classifications, and makes a comment on the idea of root cause analysis that's a standard  
25 safety and environmental analysis that gets done when you have deviations.  
26

### 27 **MAJORITY AND MINORITY REPORTS: SMALL FOREST LANDOWNER BUFFER WIDTH 28 DISPUTE**

29 Saboor Jawad, AMPA, provided a [presentation](#) on the small forest landowner buffer width dispute.  
30 Jawad’s presentation included the background on the dispute including the work of the Policy workgroups  
31 to develop consensus alternatives for small forest landowner buffers, a summary of the non-consensus  
32 majority/minority recommendations, and recommended next steps for the Board to resolve the issue.  
33

34 He said three caucus recommendations were submitted through the majority/minority report by the:  
35 counties; small and large landowners; and the state, tribal and conservation caucuses. In stage 2 of dispute  
36 resolution, there were two items of general agreement; the need for full legislative funding of the DNR  
37 Small Forest Landowner Office to address limited personnel for assistance to small forest landowners;  
38 and, broad acceptance that the western Washington Tribes could assist small forest landowners in the  
39 development of alternative plans. There was no formal documentation on how such assistance would be  
40 provided, however, the initial steps for assistance would come from small forest landowners.  
41

42 Next steps include a Board decision at the November 2022 meeting on whether there are elements of the  
43 original proposal that may meet the alternate plan requirements.  
44

45 Board Member Jeff Davis supports having a special meeting to focus on small forest landowner issues.  
46 He said he would like to create some victories here that address the long standing disproportionate effects  
47 on the small forest landowners who are trying to make a living and trying to pass on the forest land legacy  
48 to their family members.  
49

1 Board member Barnowe-Meyer suggested a second half day after the November meeting to include Board  
2 resolution to this dispute as the main topic along with Board action on the Policy consensus  
3 recommendations for resolution of the relatively low impact criteria dispute and amending of Board  
4 Manual Section 21.

5  
6 Board member Rich Doenges requested all the relevant scientific reviews and papers be consolidated  
7 together to review prior to the November meeting.

#### 8 9 **MARBLED MURRELET UPDATE**

10 Darric Lowery, WDFW, provided an overview of the [memo dated July 22, 2022](#) submitted to the Board  
11 on behalf of WDFW and the Marbled Murrelet Wildlife Working Group. WDFW and the working group  
12 are recommending rule changes to several forest practices rules relating to the marbled murrelet. The  
13 intent of the rule changes are to enhance avoidance of impacts on this state and federally listed species,  
14 reduce regulatory requirements for forest managers and benefit the conservation of the species. A request  
15 to begin rule making will be made at the Board's November meeting.

#### 16 17 **TFW POLICY COMMITTEE PRIORITIES**

18 Marc Engel, TFW Policy Committee Co-chair, highlighted from his [memo dated July 26, 2022](#) on-going  
19 projects and TFW Policy's priorities for the upcoming year.

20  
21 He shared TFW Policy has two new co-chairs--Court Stanley representing the counties, and Brandon  
22 Austin representing Ecology and WDFW.

23  
24 At the August meeting, TFW Policy approved continuation of the Budget Workgroup to remain engaged  
25 in the maintenance of the MPS including review and approval for work on ongoing project and funding  
26 contingencies and Board priorities.

27  
28 He said TFW Policy, by consensus, passed a motion to request the Board to assign the CMER water  
29 typing strategy group of projects to TFW Policy for oversight. Projects include the: potential habitat  
30 breaks validation study for use in delineating end of fish habitat in forested landscapes in Washington  
31 State; the default physical criteria assessment project; and, the lidar based water typing model studies.  
32 TFW Policy believes the benefits of gaining oversight of the Board approved CMER water typing studies  
33 include the ability to quickly review and approve key project documents, the ability to manage and make  
34 budget recommendations to the Board, and will follow the AMP process for receipt of the completed  
35 study and findings reports from CMER.

36  
37 Engel also provided an update on the ongoing disputes and recommendations from the State Auditor's  
38 Report. TFW Policy is on track to provide recommendations on recommendation #5 and #6 as well as  
39 recommendations on two of the small forest landowner disputes to the Board at the November 2022  
40 meeting.

#### 41 42 **STAFF REPORTS**

43 There were no questions from the Board or additional updates on the following reports.

- 44 • Adaptive Management Program Update
- 45 • Small Forest Landowner Office Update
- 46 • TFW Policy Committee Update
- 47 • Upland Wildlife Update
- 48 • Taylor's Checkerspot Butterfly Biennial Report
- 49 • Western Gray Squirrel Annual Report

- 1 • Legislative Report on Rule Making Progress for Water Typing and Type N

2

3 **2022 WORK PLANNING**

4 Marc Engel, DNR, reviewed the changes to the work plan as a result of today’s meeting. Changes include  
5 adding a small forest landowner workshop for November 10 and adding a placeholder on the 2023 work  
6 plan for revisions to board manual sections 15, 21 and 22 and marbled murrelet rule making.

7

8 **MOTION:** Cody Desautel moved to approve the amended work plan.

9

10 **SECONDED:** Meghan Tuttle

11

12 **ACTION:** Motion passed unanimously.

13

14 **EXECUTIVE SESSION**

15 None.

16

17 Meeting adjourned at 4:50 p.m.



DEPARTMENT OF  
NATURAL  
RESOURCES

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## MEMORANDUM

October 27, 2022

**TO:** Forest Practices Board

**FROM:** Saboor Jawad, Adaptive Management Program Administrator (AMPA) *SJ*  
[Saboor.Jawad@dnr.wa.gov](mailto:Saboor.Jawad@dnr.wa.gov) | 360-742-7130

**SUBJECT:** Request to approve Hans Berge as CMER voting member

The Upper Columbia United Tribes (UCUT) have nominated Hans Berge to serve as their voting member on the Cooperative Monitoring, Evaluation and Research Committee (CMER). DR Michel, UCUT Executive Director, has addressed the Board in the attached letter requesting your approval. The letter also includes a copy of Hans Berge's resume.

CMER voting members are approved by the Forest Practices Board as required by [WAC 222-12-045](#). This rule also requires CMER members to have expertise in a scientific discipline and to participate in the committee from a scientific standpoint only.

With your approval, Hans Berge will attend CMER meetings as a voting member starting with CMER's November 2022 regular meeting.

### Attachments:

- 1- UCUT Letter to the Forest Practices Board



25 W. Main, Suite 434  
Spokane, WA 99201  
t 509.838.1057  
f 509.209.2421  
[ucut.org](http://ucut.org)

October 26, 2022

Forest Practices Board  
Washington State Department of Natural Resources  
PO Box 47012  
Olympia, WA 98504

Dear Chair Smith and members of the Board,

The Upper Columbia United Tribes (UCUT), an organization that includes three Eastern Washington Tribes (the Confederated Tribes of the Colville Reservation, the Spokane Tribe of Indians, and the Kalispel Tribe of Indians), has contracted with Hans Berge to serve as UCUT's representative and voting member on the Cooperative Management, Evaluation, and Research Committee (CMER).

Hans is currently serving as a Senior Scientist with Cramer Fish Sciences and has extensive scientific knowledge and experience working on projects directly related to the work conducted in the Adaptive Management Program (AMP) and CMER. In addition to his scientific background, Hans also brings with him highly relevant experience in the AMP, having served as the Adaptive Management Program Administrator (AMPA) from 2015-2019. His background and experience will make him a highly qualified and valued member of CMER.

UCUT is requesting the Board vote to approve Hans Berge as a voting member of CMER, where he will represent UCUT.

Respectfully,

D.R. Michel  
UCUT Executive Director

Attachment: Resume

Cc  
Saboor Jawad  
Marc Engel

# Hans B. Berge

1613 7<sup>th</sup> Ave SE, Olympia, WA 98501 • hans.berge@fishsciences • 206-909-5322

## Education

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### **University of Washington**, Seattle, WA

M.S., 2009 in Aquatic and Fishery Sciences

Thesis Title The relationship between temperature and dissolved oxygen and salmonid distribution in Lake Sammamish, Washington

### **Utah State University**, Logan, UT

B.S., 1999 in Fisheries and Wildlife

Capstone Title Diet and condition of rainbow trout in the Green River downstream of Flaming Gorge Dam

## Professional Experience

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### **Cramer Fish Sciences**, Portland, OR

*Senior Aquatic Scientist/Fish Ecology Lab Manager, 2019-Present*

- Managed the Portland Fisheries Lab of senior biologists, biologists, and technicians engaged in a diverse portfolio of projects across the Pacific Northwest
- Responsible for business plan development, quality control of products, and client interactions
- Direct and oversee work of geneticists, geomorphologists, biometricians, fish biologists, and technicians
- Led project meetings for aggregate mining plans to include floodplain restoration with regulators and mining companies
- Developed project to conduct NEPA analysis for the US Forest Service
- Provided expert review of documents for Federal hydrosystem projects in California
- Handled personnel issues as needed, including hiring, mentoring, performance review, and salary adjustment
- Responsible for work planning, scheduling, prioritization, and budget tracking
- Worked with clients on watershed analysis, monitoring plan development, and writing and submitting funding proposals

### **WA Department of Natural Resources**, Olympia, WA

*Adaptive Management Program Administrator, 2015-2019*

- Oversaw all aspects of the multi-caucus Forest Practices Adaptive Management Program (AMP)
- Managed the statewide aquatic and riparian focused research program to inform Forest Practices Habitat Conservation Plan, with an annual program budget of \$8 million
- Met or exceeded all deadlines for deliverables to the DNR and Forest Practices Board
- Led expert scientific and policy panels to develop products to inform decisions made by the Forest Practices Board
- Supported Timber, Fish, and Wildlife Policy Committee's work to evaluate how scientific results inform policies and made recommendations
- Worked collaboratively with stakeholders representing Tribes, federal government, state agencies, environmental sector, and forest landowners, to implement programs and projects as part of the Forest Practices HCP
- Provided recommendations to the Forest Practices Board when it is advisable to adjust forest practice rules and/or guidance based upon best available science

- Provided expertise and advice in Endangered Species Act and Clean Water Act to DNR executive management, participants in the AMP, and the Forest Practices Board
- Implemented a lean study to refine and improve the function and processes in the AMP
- Initiated a meeting of the principal representatives to recommit to prior agreements in an effort to reform the AMP
- Prepared documents on water typing, electrofishing, unstable slopes, wildfire, policies, and strategies on a regular basis to executive management, AMP participants, and the Forest Practices Board
- Worked closely with DNR executive management and senior agency, Tribal, and forest landowner representatives on strategies and policies to resolve complex resource challenges
- Supervised program staff in project management, research, and contracting policies
- Management staff including hiring, disciplinary action, mentorship, professional development, and performance review.

**King County Department of Natural Resources and Parks, Seattle, WA**

*Senior Ecologist, 1999-2015*

- Provided fisheries and ecological expertise to Water and Land Resources Division programs and projects, including technical skills such as acoustic telemetry, PIT tagging, habitat inventory, snorkel surveys, beach seining, purse seining, gillnetting, fyke netting, trolling, electrofishing (boat and backpack), aging fish and freshwater mussels, fish dissection for contaminants, motor boat and raft operations, and fish handling procedures and development of sampling protocols.
- Co-led predation studies on large and small lakes, rivers, streams, and Puget Sound nearshore using bioenergetics and other food web models to better understand how acute predation influences the survival of anadromous salmonids.
- Managed junior staff and technicians to implement projects to restore habitats, conserve threatened or sensitive species
- Developed and implemented research programs to evaluate the success of restoration projects, salmon recovery plans, and understand the ecology of salmon, trout, and char in King County watersheds and nearshore marine habitats
- Designed, secured funding, and implemented a multi-agency program to recover kokanee salmon in Lake Sammamish
- Acquired and managed Endangered Species Act permits and provided expertise to the Department
- Secured grants and managed budgets for restoration projects and research programs throughout King County
- Coauthored Cedar/Sammamish and Puyallup/White Salmon Habitat Recovery Plans
- Representative of King County on the Cedar River Anadromous Fish Committee (2001-2014), Cedar River Adaptive Management Workgroup (2008-2014), WRIA 8 Technical Committee (2001-2014), WRIA 10 Technical Advisory Group and Citizen Advisory Group (2007-2014)
- Responsible for salmon recovery monitoring program in WRIA 8, including “fish in/fish out” and status and trends effectiveness monitoring.
- Member of grant selection team for King Conservation District, Salmon Recovery Funding Board, Community Salmon Fund, Puget Sound Ecosystem Restoration Program, and Coordinated Watershed Management grants
- Worked with multiple jurisdictions to present technical information to update critical areas ordinances, shoreline master plans, and critical areas ordinances

**Professional Training**

---

**American Fisheries Society, Bethesda, MD**

*Certified Fisheries Professional, 2005-Present*

**Portland State University, Portland, OR**

*Executive Management Leadership Course, 2017-2018*

**National Conservation Training Center**, Shepherdstown, WV

*Multivariate Statistical Analysis of Ecological Data Using R*, 2012

*National Urban Wildlife Refuge Partnerships*, 2013

**Portland State University**, Portland, OR

*Environmental Professionals Program*, 2012-2013

## Awards

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**2008** Washington Council of Trout Unlimited Conservationist of the Year

## Selected Publications

---

**Berge, H. B.**, P. A. Bisson, B. Fransen, J. L. Kershner, P. Roni, K. Ross, R. Timm, and P. Trotter. 2018. Review and recommendations for potential fish habitat breaks to begin protocol surveys to determine end of fish habitat on state and private forest lands in Washington State. Washington Department of Natural Resources, Olympia.

**Berge, H.B.**, H. Haemmerle, and T. Miskovic. 2017. Monitoring the effectiveness of forest practice rules in protecting aquatic resources. *Northwest Woodlands* 33(3) 14-27.

Tabor, R.A., A. Bell, D. Lantz, **H.B. Berge**, and D. Hawkins. 2017. Phototaxic Behavior of Subyearling Salmonids in the Nearshore Area of Two Urban Lakes in Western Washington State. *Transactions of the American Fisheries Society* 146. 753-761.

Tabor, R.A., R. Peters, **H.B. Berge**, R. Piaskowski. 2016. Diet of the Torrent Sculpin, *Cottus rhotheus*, in the Cedar River, Washington: Effect of Season, Habitat Type, and Predator Size with Emphasis on Piscivory. *Northwestern Naturalist* 97: 190-204.

R.W. Black, C.R. Czuba, C.S. Magirl, S. McCarthy, **H. Berge**, and K. Comanor. Effects of a levee setback on aquatic resources using two-dimensional flow and bioenergetics models. United States Geological Survey Scientific Investigation Report 2016-5025. Reston, Virginia.

Tabor, R.A., D.W. Lantz, J.D. Olden, **H.B. Berge**. 2015. Assessment of introduced prickly sculpin populations in mountain lakes in two areas of western Washington State. *Northwest Science* 89(1): 1-13.

David, A.T., C.A. Simenstad, J.R. Cordell, J.D. Toft, C.S. Ellings, A. Gray, and **H.B. Berge**. 2015. Wetland loss, juvenile salmon foraging performance, and conspecific density-dependence in Pacific Northwest estuaries. *Estuaries and Coasts* 1-14.

Quinn, T.P., M.H. Bond, and **H.B. Berge**. 2015. Use of egg size differences in anadromous (sockeye salmon) and non-anadromous (kokanee) forms of *Oncorhynchus nerka* to infer ancestral origin of a landlocked population. *Ecological Research* 30(3): 547-554.

Tabor, R.A., **H. B. Berge**, M.M. Klungle, B.E. Thompson, D.W. Lantz and B.E. Price. 2014. Predation of juvenile salmonids by resident trout and other fishes in the lower Cedar River, Washington.

Burton, K.D., L.G. Lowe, **H.B. Berge**, H.K. Barnett, and P.L. Faulds. 2013. Comparative dispersal patterns for recolonizing Cedar River Chinook above Landsburg Dam, Washington, and the source population below the dam. *Transactions of the American Fisheries Society* 142(3): 703-716.



- King County. 2012. Stormwater Retrofit Analysis for Juanita Creek Basin in the Lake Washington Watershed. Ecology Grant: G0800618. Prepared by J. Burkey, M. Wilgus, and **H.B. Berge**. King County Department of Natural Resources and Parks. Water and Land Resources Division. Seattle, Washington.
- Konrad, C., **Berge, H.B.**, Fuerstenberg, R., Steff, K., Olsen, T., and J. Guyenet. 2011. Channel dynamics in the Middle Green River, Washington, from 1936 to 2002. *Northwest Science* 85(1): 1-14.
- Berge, H. B.** 2009. The relationship between temperature and dissolved oxygen and salmonid distribution in Lake Sammamish, Washington. Master's Thesis. University of Washington School of Fisheries and Aquatic Sciences.
- Konrad, C., **H. B. Berge**, R. Fuerstenberg, T. Butler, K. Steff, T. Olsen, and J. Guyenet. 2009. A time-series model for channel migration analysis and application to the middle Green River, Washington. United States Geological Survey Technical Report. Tacoma, Washington.
- Overman, N. C., D. B. Beauchamp, **H. B. Berge**, M. M. Mazur, J. K. McIntyre. 2009. Differing forage fish assemblages influence trophic structure in neighboring urban lakes. *Transactions of the American Fisheries Society*. 138:741-755.
- DeGasperi, C. L., **H. B. Berge**, K. R. Whiting, J. J. Burkey, J. L. Cassin, and R. R. Fuersteerg. 2009. Linking hydrologic alteration to biological impairment in urbanizing streams of the Puget Lowland, Washington, USA. *Journal of the American Water Resources Association (JAWRA)* 45(2):512-533.
- Matzen, D. A., and **H. B. Berge**. 2008. Assessing small stream biotic integrity using fish assemblages across an urban landscape in the Puget Sound Lowlands of Western Washington. *Transactions of the American Fisheries Society* 137: 677-689.



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## MEMORANDUM

October 17, 2022

**TO:** Forest Practices Board

**FROM:** Saboor Jawad, Adaptive Management Program Administrator (AMPA)   
[Saboor.Jawad@dnr.wa.gov](mailto:Saboor.Jawad@dnr.wa.gov) | 360-742-7130

**SUBJECT:** Majority and Minority Recommendations: Type Np Action Development Dispute

The TFW Policy dispute over developing riparian management zone (RMZ) alternatives for non-fish bearing perennial streams (Type Np) concluded without consensus on 20 July 2022. Majority and minority recommendations emerging out of this dispute are now delivered to you to make the final determination as stated in [WAC 22-12-045\(h\)\(ii\)\(D\)](#).

This memo delivers two recommendations for your consideration:

- 1- Joint recommendations of Washington Association of Counties (WSAC) Washington Farm Forestry Association (WFFA), Washington Forest Protection Association (WFPA) representing county governments, small forest landowners and large forest landowners.
- 2- Joint recommendations of the following TFW caucuses: conservation; state (Department of Ecology, Department of Fish and Wildlife); Eastern Washington Tribal Governments; and, Western Washington Tribes.

Both recommendations include one common alternative on whole basin harvest<sup>1</sup>. This is denoted as Option 2 in the majority recommendation and as Prescription A in the minority recommendation. This alternative, while common among both, is not a standalone recommendation. Both sides are requesting your acceptance of the common option alongside their other preferred buffer alternative.

You will receive detailed presentations on both recommendations at your October 2022 special meeting. A panel comprised of TFW caucuses will also be available to answer your questions. Final majority and minority recommendations are attached to this memo. Also attached is the final report of Triangle Associates who mediated stage 2 of this dispute.

---

<sup>1</sup> A 75 ft, no-harvest and continuous buffer for the entire length of a Type Np stream when 85% or more of a Type Np basin greater than 30 acres is to be harvested within a five-year period.

## **Background and Timelines:**

TFW Policy is mandated by rule to consider the findings of CMER research and make recommendations to the Board. The Board's guidance for the adaptive management program, furthermore, has established a 180 timeline for TFW Policy to develop alternatives when the committee determines that a CMER findings report warrants action. The following three CMER studies triggered TFW Policy's review function:

### **1- Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington Study (Hardrock Phase I)**

- TFW Policy receives the findings package at their July 2018 regular meeting.
- The committee determined, by consensus, that the findings warrant action at their August 2018 meeting and begins to develop alternatives through a committee workgroup.
- The study's principle investigators present the findings to the Board on 08 May 2019. At the same Board meeting, TFW Policy brings forward a consensus recommendation that the findings warrant action and a request for Board approval to form a Technical Type Np Prescriptions Workgroup as supplemental element of the action alternative.
- At their 09 May 2019 special meeting, the Board accepts TFW Policy's recommendation and the amended timeline to address Type Np buffer prescriptions through a TFW Policy workgroup. The Board also approves additional changes to the workgroup charter at their August 2019 meeting.
- Type Np workgroup concludes its work in June 2021 and delivers three [recommendations](#)<sup>2</sup> to TFW Policy<sup>2</sup>.
- TFW Policy initiates discussions of the workgroup alternatives and receives additional alternative proposals from committee members. Citing lack of progress and the committee's inability to submit a buffer recommendation to the Board within the accepted timelines, the conservation caucus invokes dispute resolution at TFW Policy's November 2021 meeting.
- The dispute resolution process commences with the informal stage. In March 2022, the conservation caucus moves the dispute to stage 2 which requires mediation.
- Triangle Associates mediated the dispute in stage 2. Mediation occurred in a series of meetings from April to July 2022. On 20 July 2022, TFW Policy concluded the dispute without a consensus and began drafting majority and minority recommendations to the Board.

### **2- Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington Study (Hardrock Phase II Extended Monitoring)**

---

<sup>2</sup> A continuous 75-foot buffer with managed outer 25 ft; a continuous buffer that varies from 25 to 75 ft based on stream orientation; and a site-specific buffer retaining that portion of buffer that provides effective shade (based partly on the Smart Buffer Study Design concept)

### **3- Effectiveness of Forest Practices Buffer Prescription on Perennial Non-fish-bearing Streams on Marine Lithologies in Western Washington (Soft Rock Study)**

- TFW Policy receives the findings reports of both studies (Hard Rock Phase II and Soft Rock) at their January 2022 meeting. The committee determined at their February 2022 meeting that both studies warrant the same action as Hard Rock Phase I and decides to incorporate action as part of the ongoing deliberations on Np buffer recommendations.
- Principal investigators present study findings to the Board at their August 2022 regular meeting.

The alternative development process at TFW Policy has now concluded. You are receiving majority and minority recommendations and you are requested to make the final determination on this dispute. Your decision will also advance the adaptive management loop to its final stage as described in the Board's guidance for the program.

Please reach out to me if you have any questions or need additional information.

#### **Attachments:**

- Mediator's final report
- Joint recommendations of WFPA, WFFA and WSAC
- Joint recommendations of the conservation caucus; Department of Ecology; Department of Fish and Wildlife; Eastern Washington Tribal Governments and Western Washington Tribes.



FINAL REPORT  
*FOR TYPE NP BUFFER ALTERNATIVE  
DISPUTE*

# Timber, Fish & Wildlife Policy Committee

*Prepared by Triangle Associates for the  
Washington State Department of Natural Resources*



September 12, 2022

**Timber, Fish and Wildlife (TFW) Policy Committee  
Type Np Buffer Alternative Dispute  
Final Mediation Report  
(v. 9-12-2022)**

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*Type Np Buffer Alternative Dispute  
Final Mediation Report – v. 9-12-2022*

## **I. Executive Summary**

This report serves as the final product of the Timber Fish and Wildlife (TFW) Policy Committee's (Policy) Type Np Buffer Alternative Stage II dispute resolution process. Stage II of the dispute took place between March 2022 – July 2022. The Triangle Associates (Triangle) mediation team was contracted by the Department of Natural Resources (DNR) Adaptive Management Program to mediate this dispute. This report summarizes the background on the dispute, the origin of the dispute, the steps taken to resolve the dispute, and the outcome.

The report sections are as follows:

- Executive Summary
- Background Information
- Steps to Resolve the Dispute
- Outcome of Dispute Resolution
- Mediation Methods and Lessons Learned

The Background Information section defines the dispute using language developed by the DNR and descriptions the mediator gathered from all parties; identifies the parties involved in dispute resolution; describes previous efforts to resolve the dispute; and explains the stages of dispute resolution.

The Steps to Resolve the Dispute section describes the process the mediation team went through to resolve the dispute with the parties; details the types of mediation meetings and progress made by parties at each meeting; highlights the documents developed to facilitate dispute resolution; and explains how the final Type Np buffer alternative proposals were developed.

The Outcomes of Dispute Resolution section describes the final outcomes of Stage II dispute resolution including the areas of consensus and the areas of continued disagreement.

The Mediation Methods and Lessons Learned section describes how the mediation team worked with parties to work toward resolution of the dispute and details mediator observations and lessons learned from the dispute resolution process.

## **II. Background Information**

### **a. Dispute Language:**

In July 2018, the TFW Cooperative Monitoring, Evaluation and Research Committee (CMER) completed and delivered a findings report titled *Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington* (Hard Rock Phase I) to Policy.

Policy then formed a technical Type Np Prescription Workgroup to develop and evaluate the Riparian Management Zone (RMZ) buffer prescriptions. The workgroup completed the development and evaluation of RMZ prescriptions in May 2021 and submitted a final report (Type Np report) in June 2021.

Policy followed the process outlined Forest Practices Board (FPB) Manual section 22 for the development of Policy recommendations in response to CMER findings report.

In December 2021, the Conservation Caucus invoked Stage I of the dispute resolution process citing a lack of progress from Policy on the development of Type Np buffer alternatives.

In March 2022, the Conservation Caucus invoked Stage II of the dispute resolution process as Policy was unable to reach a consensus decision on a Type Np buffer alternative recommendation for the FPB within the 150-day timeline outlined in the FPB Manual after receiving the Type Np report.

*Type Np Buffer Alternative Dispute  
Final Mediation Report – v. 9-12-2022*

**b. Caucuses that elected to be involved in in the dispute:**

All the caucuses (parties) elected to participate in the dispute.

- Conservation
- Counties
- DNR
- Eastside Tribes
- Industrial Landowners
- Small Forest Landowners (SFL)
- State Caucus – Department of Ecology (Ecology)/Washington Department of Fish and Wildlife (WDFW)
- Westside Tribes

**c. Stage I Dispute Resolution:**

Stage I of this dispute resolution involved working for two months to resolve the issue outside of regularly scheduled Policy meetings. During this stage, Policy requested written responses from each of the parties to characterize the dispute, held informal dispute resolution meetings, and requested parties submit proposals for Type Np buffer alternative prescriptions.

Stage I did not resolve the dispute. Stage I documentation noted that the parties disagreed on when the 150-day timeline began for developing a consensus recommendation. Some parties felt the 150-days began at the release of the Type Np report while others felt it began in January 2022 when the Hard Rock Phase II and Soft Rock Studies were received. Since the parties agreed to develop a consensus recommendation on Type Np buffer alternatives through Stage II dispute resolution, the issue regarding timeline was determined to be no longer relevant to this dispute.

**d. Stage II Dispute Resolution:**

Triangle Associates (Triangle) was chosen as the contractor to serve as the mediator for Stage II as part of an on-call contract with the DNR. Triangle worked with the parties that had elected to participate to complete a mediation agreement to ensure understanding among the parties about the mediation process, the role of the parties, and the role of the mediator.

**e. Defining the Dispute:**

The first task under Triangle’s scope was to ensure that all parties had an equal understanding of the dispute and to identify where parties agreed and disagreed with each other. Triangle compiled caucus descriptions of the dispute, summarized their understanding of the dispute, and met with Policy to define the nature of the dispute and a path forward for resolving it.

**Areas of Agreement:** Caucus members agreed the origin of the dispute was the timeline for developing recommendations to the FPB in accordance with the process outlined in the FPB Manual. The parties agreed that the purpose of this mediated dispute resolution process should be to develop Type Np buffer alternative recommendations for the FPB in advance of their workshop and field tour in October 2022 with an FPB decision in November 2022.

They also agreed the original timeline issue was no longer relevant as a subject in the dispute resolution process. The parties agreed to work towards consensus recommendation for Type Np buffer alternatives in the 90-day Stage II dispute resolution timeframe.

**Areas of Disagreement:** The central disagreement among the parties was regarding the amount of change in buffer prescriptions that would be needed from current rules to meet the anti-degradation water quality temperature standard, and thus receive Clean Water Act assurances from Ecology. The parties also disagreed on how broadly the CMER study results should be applied across the landscape.



*Type Np Buffer Alternative Dispute  
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- i. While Policy agreed by consensus that both CMER Hard Rock Phase II and Soft Rock Studies warranted action, some parties felt more information was required to integrate the findings from these and other studies some Policy members felt were relevant, to assess how harvest practices impact temperature, and to understand the cost and benefits of the buffer recommendations being put forth by Policy.
- ii. The prescriptions in the proposals developed by the parties in Stage I differed in how they approached two aspects of prescriptions: 1) Increased buffer widths and lengths needed to result in less than .3-degree Celsius increase in stream temperatures (to meet anti-degradation standards), and 2) How prescriptions should be described to be feasible and easy to implement while balancing prescription costs to landowners versus stream temperature benefits.

### **III. Steps to Resolve the Dispute**

#### **a. April 12<sup>th</sup> Mediation Kick-off and Defining the Dispute:**

After Triangle compiled and summarized the descriptions of the dispute developed by each caucus, Triangle held a mediation kick-off meeting with all parties. The purpose of this meeting was to:

- 1) Confirm agreement among the parties for how the mediator characterized the dispute;
- 2) Review parties' positions and interests regarding the development of Type Np buffer alternatives; and
- 3) Determine the scope of the dispute and the process for dispute resolution.

Additionally, the parties considered including Structured Decision-Making in the process. The parties concluded that as it was used in the Hard Rock CMER study and there was not enough time or training to include it; the method would not be used.

The parties agreed that a small group should meet to determine the criteria and weighting to score each of parties' proposed Type Np buffer alternatives and to identify topics for the next dispute resolution meeting on May 12<sup>th</sup>.

#### **b. May 6<sup>th</sup> Small Group Meeting:**

The small group met to confirm the goals for the Type Np buffer alternative recommendations and to create an evaluation method for the parties to use to assess the differences between each caucus' proposal for buffer prescriptions.

To determine the goal of the buffer recommendations, group members each outlined what a successful buffer outcome would look like from their caucus' perspective and what is needed to achieve these goals. The group then discussed the criteria and approach for evaluating the prescriptions in the parties' proposals. The subgroup determined that to reach consensus, it would be more effective for the parties to sort proposals into categories based on each caucus' ability to "live with" the proposed prescriptions.

Following the meeting, the small group members reviewed a spreadsheet containing the prescriptions proposed by each caucus and begun identifying which element of each of the alternatives their caucus could live with, could not live with, or would require additional information to determine. If a caucus could not live with a prescription alternative, they were required to explain why they could not live with it and to share this explanation with the other parties.

#### **c. May 12<sup>th</sup> TFW Policy Meeting:**

The small group presented their recommended approach at a Policy meeting, and this included an exercise to sort the elements of the proposals into live with/not live with/more information needed categories. The parties discussed the details of the sorting exercise and the goal of identifying the elements of the prescription the majority could live with, areas a caucus could not live with, and areas where additional information was required. This exercise was conducted during the meeting.

*Type Np Buffer Alternative Dispute  
Final Mediation Report – v. 9-12-2022*

After parties reviewed and sorted all the proposed alternative prescriptions, all parties indicated that they could likely live with most of the elements in the state caucus' proposal, as described at that time.

The parties agreed to use the state proposal as a starter proposal for communicating with their caucus members. Several parties noted there were still important details that would need to be discussed and worked through at future dispute resolution meetings. Beyond the prescriptions of the Type Np buffer alternative recommendations the parties identified the following additional areas that would require further discussion: operational flexibility, cost and benefits of the prescription to landowners, and the need for a monitoring program.

**d. May 18<sup>th</sup> Standing Dispute Resolution Meeting:**

The parties met to confirm the specifics of the proposal the parties would each use and remaining items to be negotiated, discuss other aspects of the proposal for FPB consideration, and confirm an approach to develop the consensus recommendation. The parties agreed to advance the prescriptions in the starter proposal based on WDFW and Ecology's recommendations. A new small group was designated to flesh out the details of the proposal so that the proposal was clear to all parties.

The parties agreed that the topics of operational flexibility, operational feasibility, and cost effectiveness of the buffer alternatives are interests to be considered and discussed as they develop the Type Np buffer alternative recommendation, but these would not to be included within the prescription criteria.

The parties agreed that other existing Type Np Forest Practice rules, such as equipment limitation zones (ELZs), sensitive sites and riparian management zones (RMZs), and perennial initiation points (PIPs), would still apply and remain unchanged.

Lastly, the parties agreed that their prescription recommendation would need to be accompanied by a monitoring program, which they proposed to be developed by CMER.

**e. June 8<sup>th</sup> Small Group Meeting:**

A small group met to reach agreement on a proposal that at least the small group members can live with and would recommend to Policy to approve. They identified the areas of agreement, discussed the areas requiring additional information, and documented the remaining areas of disagreement with the starter proposal. The areas of agreement were used to begin drafting a proposal for the parties to build on at the next dispute resolution meeting.

**f. June 14<sup>th</sup> Standing Dispute Resolution Meeting:**

The parties met to develop proposed options of Type Np buffer alternative prescriptions that all parties can live with and be able to support advancing to the FPB.

After reviewing the outcomes from the small group meeting, the parties further identified areas of agreement to be included in the policy recommendation. They identified members to fully draft a proposal based on the areas of agreement.

The parties agreed that they were making significant progress on resolving the dispute and moved to extend formal Stage II Dispute Resolution through July 20<sup>th</sup>. A full proposal, referred to as the June 14<sup>th</sup> proposal, was drafted and distributed to be reviewed internally within each caucus.

**g. July 7<sup>th</sup> TFW Policy Meeting:**

The parties used a section of a Policy meeting to share the feedback they received on the draft June 14<sup>th</sup> proposal from within each of their caucuses.

- The Ecology (State Caucus) expressed concern about meeting Clean Water Act and anti-degradation water quality standards with the June 14<sup>th</sup> proposal. They developed an amended proposal to increase the length of 75' no cut buffers the above the F/N break to 600' and extended buffers over the entire Np stream length. They indicated there was not a good alternative to

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bankfull width to determine when to switch to smaller buffers. Their proposal reduced the bankfull width criteria from five-feet to three-feet to align it with their interpretation of study results.

- The DNR Caucus expresses support for the current concept of the proposal and recognized there may be changes to the specifics of the proposal based on the ongoing discussion within Policy. DNR indicated they are comfortable with all the proposed options currently being discussed as they all make a significant improvement from the current rule.
- The Industrial Landowners Caucus expressed concern about using bankfull width to determine management prescriptions as a component of the proposed Type Np buffer alternative in the June 14<sup>th</sup> proposal and would not be supportive of including it. They also expressed concern with the field feasibility of including a management zone within the buffer and noted this method is largely avoided by landowners. They expressed support for the concept of the proposal but wanted it to be simpler to implement. Lastly, they recommended the proposal include an optional prescription for SFLs and proposed the following prescription for SFLs: 50' buffers between F/N break and the PIP with the first half 25' no cut buffer and the next 25' be an optional management zone.
- The Counties Caucus expressed support for the June 14<sup>th</sup> proposal without changes provided it is accompanied by an adaptive management plan.
- The SFL Caucus noted they would have difficulty getting support within their caucus for any proposal above a 50' manageable zone. They noted their position on the Type Np buffer alternative recommendation is dependent on the ongoing Low Impact Template efforts. In the SFL Caucus' original proposal, they included an alternative management prescription for SFLs, and they wanted to see this in the final recommendation.
- The Conservation Caucus expressed concern with the buffer sizes in the June 14<sup>th</sup> proposal. They were not confident that the 50' and 75' buffers would be able to meet the water quality standards for temperature based on the Hard Rock and Soft Rock studies and information provided by Ecology. They also expressed concern about upstream warming due to the small size of the buffers in the upper watershed. They expressed support for the current process of open discussion regarding the specifics of the Type Np buffer alternative recommendation within Policy.
- The Eastside Tribal Caucus expressed support for the concept of the June 14<sup>th</sup> proposal and the specifics in it. They indicated the June 14<sup>th</sup> proposal is an improvement to the current rules. They also recognized implementing the proposal with a monitoring plan would assist with their need for adaptive management in case the Type Np buffer alternative prescriptions change in the future. Additionally, they expressed support for including an alternative set of prescriptions for SFLs.

As a result of the discussion at this meeting, the parties noted that there had been a shift in support for the June 14<sup>th</sup> proposal as a concept, in particular from Ecology. The meeting resulted in two different philosophies around the use of bankfull width with some parties indicating it should no longer be part of the implementation approach for forest practices in relation to buffers and others indicating it needs to remain. Other differences included the width of the proposed buffers at the headwaters and what this indicates for width of buffers downstream. The parties agreed more work was required to resolve their differences and they scheduled a small group meeting between the Conservation Caucus, the State Caucus, the Industrial Landowner Caucus, and the Counties Caucus to work on the metrics of the proposal.

The parties were able to come to agreement on the whole basin prescription for larger basins. This prescription would apply when harvest that takes place over a 5-year period or less, in a full watershed of

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30 acres or more, is harvested in its entirety (defined as >85% of basin). All caucuses, with some reservation expressed by the SFL Caucus, agreed that these watersheds would have a 75' no cut buffer extending through all NP streams in the basin to the PIP and ELZ above the PIP.

**h. July 12<sup>th</sup> Small Group Meeting:**

A small group met to work on the metrics of the Type Np buffer alternative proposal. The parties determined that there was not agreement around two central aspects of the buffer alternatives being discussed:

- i. the length and width of buffer prescriptions: The parties had differing points of view on what level of change is needed from the current rule to have certainty in meeting the anti-degradation temperature criteria.
- ii. Field feasibility of using bankfull width: Some parties removed bankfull from the proposal and instead, relied on the length of the stream and other factors. Other parties, including Ecology, indicated that while not perfect, bankfull width needed to remain in the recommended prescription, and it needed to be changed to three-feet instead of five-feet.

After the small group developed and considered possible alternative proposals to resolve differences between the caucus points of view, they identified any remaining areas of disagreement. Based on these areas of disagreement, the small group advanced the Ecology led proposal (see Ecology Proposal) and the Industrial Landowner led proposals (see Prescription A and B) for the parties to consider at the next meeting.

**i. July 20<sup>th</sup> Standing Dispute Meeting:**

The parties met to review the specifics of the two remaining Type Np buffer alternative proposals, and the full basin harvest option, to identify which should advance to the FPB. The parties agreed to advance the full basin harvest proposal (Prescription A) and the two remaining proposals (Prescription B and Ecology Proposal) to the FPB. The parties were in agreement that they had progressed as far as they could toward agreement. As this was the last day under the extended mediation timeline, the parties agreed to conclude the mediation with this decision.

The parties then agreed to continue meeting to finalize these proposals and to retain Triangle to provide facilitation to finalize the proposals. A motion was made to continue the dispute resolution process, but the motion failed, and Stage II dispute resolution was concluded without a consensus decision.

## **IV. Outcome of Dispute Resolution**

After four months of work, two draft proposals were approved for inclusion in the majority/minority reports to the FPB for their consideration along with a full basin harvest proposal that the parties agreed to by consensus. The intent of advancing these proposals to the FPB is for the majority/minority parties to present Type Np buffers alternatives in which they support for FPB consideration and to provide specific buffer alternatives which upon FPB approval for inclusion in potential rule making, can undergo a cost analysis to better understand the feasibility of implementing the proposed prescriptions.

The majority/minority report will include the package of proposals and a Policy request for CMER to develop a monitoring plan and validation study to be implemented with the recommended Type Np buffer alternative rule. The FPB may also consider a CMER study of the recommended Policy options to obtain more information to help finalize which buffer alternatives should be implemented in rule.

## **V. Meditation Methods and Lessons Learned**

### **a. Mediation Methods:**

The mediation team used a three-step method to work toward consensus:

#### ***Step 1: Information Sharing:***

This step included confirmation among the parties that all were in agreement about the information that informed the process including scientific studies conducted by CMER, the interests of each of the parties, and any other relevant information that should be known by all participants. For this dispute, the information sharing step had largely been explored in a previous dispute that had been brought by the Industrial Landowner Caucus and then withdrawn. This was referred to by the program as a “PI Dispute.” In that dispute, the parties concluded that they would make the decision on Type Np buffers using the information available through the CMER science program. In the early meetings of the Type Np buffer alternative dispute, each of the parties explained their interests and goals for buffer alternatives.

#### ***Step 2: Generating Options:***

This step included working with a spreadsheet of options that had been generated in Stage 1 of the dispute. This spreadsheet included specific criteria for Type Np buffer alternatives proposals from every caucus. Triangle developed a ranking exercise to help determine which aspects of the different proposals each party could live with and why, which proposal aspects they had questions about so were uncertain whether they could support it, and which aspects they could not support and why.

#### ***Step 3: Determining a Final Proposal and Agreement:***

Through a series of small group and full group meetings, the parties whittled down the proposals into two options to recommend to the FPB, along with a full basin approach that all parties agreed to. These proposals represented different points of view about the amount of change from the current rule and therefore, certainty needed for how much to widen the buffers or change field methods to meet the temperature criteria and thus the Clean Water Act assurances. Ultimately, the parties determined they could not agree on one final proposal and agreed that the mediation process had taken them as far as they could go with the information currently available.

### **b. Lessons Learned:**

Observations on lessons learned from the mediator’s perspective include:

#### ***i. Challenges from Stage I:***

The discussions that took place through Stage I of this dispute presented some challenges for setting up the dispute resolution process in Stage II. The parties had determined in Stage I that each caucus would put forward a Type Np buffer alternative proposal. However, the parties had not explored what the goals were for each caucus, and after the proposals were drafted had not schedule time to fully explore the rationale and reasoning for each proposal brought forward. This meant the parties were unable to thoroughly understand the reasoning for the proposals, the scientific foundation for each, nor reach a common understanding of each other’s objectives.

At the start of the mediation, the mediator observed that most parties assumed they understood why an aspect of a caucus’ proposal had been proposed without discussing and testing their assumptions with the author. This led to a series of misunderstandings that needed to be addressed and discussed as a full group and in small groups early in the Stage II.

The mediator also observed that the parties generally understood that they were developing Type Np buffer alternatives with a lack of agreement on how much change would be needed from the

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current rule to achieve the temperature criteria under consideration. While it is generally accepted that all policy making happens with a lack of perfect information, in this case, the information available led parties to very different conclusions on the degree of buffer rule changes.

The parties had not come to agreement in Stage I on what the CMER science reports (Hard Rock and Soft Rock) indicated for buffer width or other forest practices measures, however the mediator had explored this line of discussion with the parties. The mediator found the majority were not interested in further discussing their different points of view about what the results did or did not signal for change from the current rule, although at several points in the process the Conservation Caucus asked for more information about this from each of the parties. This meant the parties were moving forward with discussion of specific proposals without agreement on what the proposals were intended to achieve.

To help remedy this lack of agreement on goals and objectives for the proposals, the mediator worked with each of the parties during and in between meetings to encourage discussion of not just the proposed Type Np buffer alternative, but the rationale for that proposal. The rationale and reasoning were explored verbally at many meetings and captured as part of the proposal development. In the end, with the time available, the parties were able to come to agreement on some aspects of an alternative to the current rule but remained in disagreement on the amount of change needed from the current rule to ultimately meet the anti-degradation temperature criteria.

One recommendation to address this issue in future dispute resolution efforts is to address differing points of view, especially around each parties' interpretation of the studies, in order to explore each parties' interests, objectives and goals early in the process and to avoid going too far with individual proposals. This way, the parties can start from an agreement on the goals and objectives they are working to achieve before moving to proposals and mutually align their goals to better reach consensus.

***Standing Dispute Meetings:***

After two months of trying to schedule dispute resolution meetings on an ad hoc basis, scheduling monthly prescheduled dispute meetings was an effective tool at streamlining and facilitating the Stage II dispute resolution process. Each standing meeting served as a milestone to resolve aspects of the dispute and to identify action items and next steps for the parties to complete before the next meeting. This process facilitated the timeline for dispute resolution and eased the scheduling burden for all parties and the mediator, which enabled everyone to focus on the content of the dispute. Lastly, standing meetings provided parties deadlines for feedback on the proposal options and dedicated discussion time to advance resolution. Triangle recommends that future dispute resolution efforts establish a standing, monthly or bi-weekly meeting time early in the process.

***Capacity of Caucus Members:***

While all caucus representatives indicated to the mediator that this was an essential dispute to resolve and important to prioritize, capacity to participate was an issue for some caucus members and their participation was limited. The DNR Adaptive Management Program has an obligation to assist with capacity issues and does provide resources for parties with limited capacity, but many members may not use these resources.

Additionally, organizational cultures for some parties may limit responses to a sole key decision-maker. While there may be inequities around engagement for caucus members, some ways to increase accessibility to the dispute resolution process include maintain remote options for those with limited capacity to travel, have secondary decision-makers where possible, utilize standing meetings and book this time as far in advance as possible, provide advanced time for review items and clear deadlines, and utilize individual calls if necessary to gather feedback on dispute resolution proposals.



# **TYPE N ACTION DEVELOPMENT DISPUTE**

Majority/Minority Recommendations to the  
Forest Practices Board

TFW Policy Caucuses:  
Large Forest Landowners  
Small Forest Landowners  
Washington State Association of Counties

**October 10, 2022**

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# 1- Background/Introduction

The final Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington Study (Hardrock Phase I) and findings report were transmitted to Timber Fish & Wildlife (TFW) Policy in mid-2018. This triggered the TFW Policy review process outlined in Appendix B of Board Manual (BM) 22, responding to questions 7 - 10 of the CMER/Policy Interaction Framework on page 22-30 and within the timeline on page 22-31.<sup>1</sup> TFW Policy initially struggled with determining appropriate action in response to the Hardrock Phase I study. Some caucuses proposed emergency rulemaking to establish 75-foot buffers on all Np streams; other caucuses proposed further evaluation of existing information and delaying policy recommendations until completion of a series of related Np stream studies by the Cooperative Monitoring, Evaluation & Research (CMER) Committee.

## Np Workgroup Formed

Near the end of the 180-day period specified for TFW Policy deliberation in BM 22, TFW Policy decided to form a workgroup of technical experts (Np workgroup) to review the Hardrock Phase I study, along with a series of related Np stream studies, and make Np stream buffer recommendations for TFW Policy consideration. This TFW Policy consensus recommendation, along with a charter and timeline for the Np workgroup was initially transmitted to and accepted by the Forest Practices Board (FPB) at their May 2019 quarterly meeting. Based on FPB discussion at the May meeting, a revised Np workgroup charter and timeline was transmitted to and accepted by the FPB at their August 2019 meeting. The revised charter indicated the Np workgroup would convene in July 2019 and complete its work with recommendations to TFW Policy by September 2021. The workgroup actually convened in October 2019 and submitted their final report in June 2021.

The Np workgroup conducted a series of meetings between October 2019 and May 2021, which included one field trip to a CMER study site. The workgroup reviewed draft and final Np stream related CMER studies, received presentations from several CMER principal investigators and Ecology staff, and discussed non CMER science relevant to Np streams. CMER studies reviewed by the workgroup included:

1. Hardrock Phase I<sup>2</sup>
2. Changes in Stand Structure, Buffer Tree Mortality and Riparian-Associated Functions 10 Years After Timber Harvest Adjacent to Non-Fish-Bearing Perennial Streams in Western Washington (Type N BCIF)<sup>3</sup>
3. Type N Experimental Buffer Treatment Study: Post-harvest comparison of genetic diversity and demographic findings for three stream-associated amphibians (Amphibian Genetics)<sup>4</sup>
4. Stream Associated Amphibian Response to Manipulation of Forest Canopy Shading (Amphibian Buffer/Shade)<sup>5</sup>

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<sup>1</sup> [Board Manual 22 Guidelines for Adaptive Management](#)

<sup>2</sup> [fp\\_cmer\\_hard\\_rock\\_phase1.pdf](#)

<sup>3</sup> [bc\\_cmer\\_bcif\\_westside.pdf](#)

<sup>4</sup> [bc\\_cmer\\_post\\_harvest\\_genetics.pdf](#)

<sup>5</sup> [buffer\\_shade\\_study\\_ppt](#) (report not posted to web)

5. Extensive Riparian Status and Trends Monitoring Program-Stream Temperature Phase I: Westside Type S, F and Np Monitoring Project (Extensive Temperature Monitoring)<sup>6</sup>
6. Hardrock Phase II Study, Post Treatment Years 3-10 (Hardrock Phase II)<sup>7</sup>
7. Type N Experimental Buffer Treatment Study- Incompetent Lithologies (Softrock study)<sup>8</sup>

### **Np Workgroup Report & Recommendations**

The Np workgroup evaluated several different potential buffer configuration alternatives through a Structured Decision Making (SDM) process which scored alternatives based on a series of criteria. The workgroup was instructed that antidegradation temperature targets established by DOE of  $\leq 0.3^{\circ}$  Celsius (C) were necessary to be met for all forestry-related activities in rulemaking associated with this research. Given this assumption, three alternatives were recommended and included in a final report to TFW Policy in June 2021. The three alternatives included:

1. a continuous 75-foot buffer with the outer 25 feet available for management,
2. a stream orientation-based continuous buffer which varied from 25 feet to 75 feet, and
3. a site-specific buffer based on the WSPA Smart Buffer Design concept with the addition of a specific shade loss target.

Recognizing the considerable variability associated with headwater streams and workgroup confidence, or lack thereof, in any given management approach meeting threshold-based resource protection objectives, the workgroup included an Uncertainties and Future Direction section in their report. This section describes alternative approaches to evaluating management effectiveness, including a need for larger sample sizes, direct measurement of the temperature standard rather than approximation, and different approaches of evaluating temperature response which may be more important to growth and survival and key aquatic species.<sup>9</sup> The Np workgroup process was a worthwhile effort and produced useful information to consider. However, their decision-making space was constrained by Ecology staff interpretation of the antidegradation temperature criteria of  $\leq 0.3^{\circ}$  C applying everywhere, all the time, in Np streams. This appears to be a unique interpretation of the standard, not applied to other non-point sources and is inconsistent with the intent of the Forests & Fish (F&F) report and the Forest Practices Habitat Conservation Plan (FP HCP). Some Np workgroup members noted the awkwardness of a regulatory agency using one or two completed experimental research studies to inform an after the fact, far-reaching interpretation of state policy and questioned the biological relevance of such small changes in temperature.

### **TFW Policy Consideration & Dispute Resolution**

TFW Policy held a series of meetings after receiving the Np workgroup report and individual caucuses were invited to submit their own Np buffer proposals, which several caucuses did. Np buffer proposals were submitted by the Eastern Washington (EWA) Tribes, Washington State Association of Counties (WSAC), Ecology/Fish & Wildlife, and the Conservation Caucus in the fall of 2021. Several of the caucus proposals were based on or had some similarity with the Np workgroup recommendations. By late 2021, TFW Policy had at least seven different Np buffer proposals to consider, some of which had multiple components. In November, the Conservation Caucus called for Dispute Resolution (DR) due to lack of progress on submitting an Np buffer recommendation to

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<sup>6</sup> [extensive temp study ppt](#) (report not posted to web)

<sup>7</sup> [bc\\_fpb\\_typen\\_studies.pdf](#)

<sup>8</sup> [bc\\_fpb\\_typen\\_studies.pdf](#)

<sup>9</sup> [type n workgroup review final](#)

the FPB. Little progress was made in the informal stages of DR, so the Conservation Caucus triggered stage 2 of DR in March 2022. Near the end of DR stage 1 Washington Forest Protection Association (WFPA) and Western Washington (WWA) Tribes submitted Np buffer proposals. Triangle Associates mediated DR stage 2 with a series of meetings held between April and July 2022. While consensus was not reached in DR, TFW Policy did narrow the number of Np buffer alternatives down to three, one of which there appears to be agreement on. The other two alternatives represent divergent interpretation of the appropriate resource protection standard applicable to study results, the spatial and temporal scope/magnitude of the problem represented by the technical information available, and therefore suitable policy responses. The large/small landowners and WSAC proposal is a reasonable response to a relatively small, temporary problem which has substantial complexity, along with follow on monitoring and adaptive management to increase confidence over time.

## 2- Large/Small Landowner and WSAC Np Buffer Recommendation Description

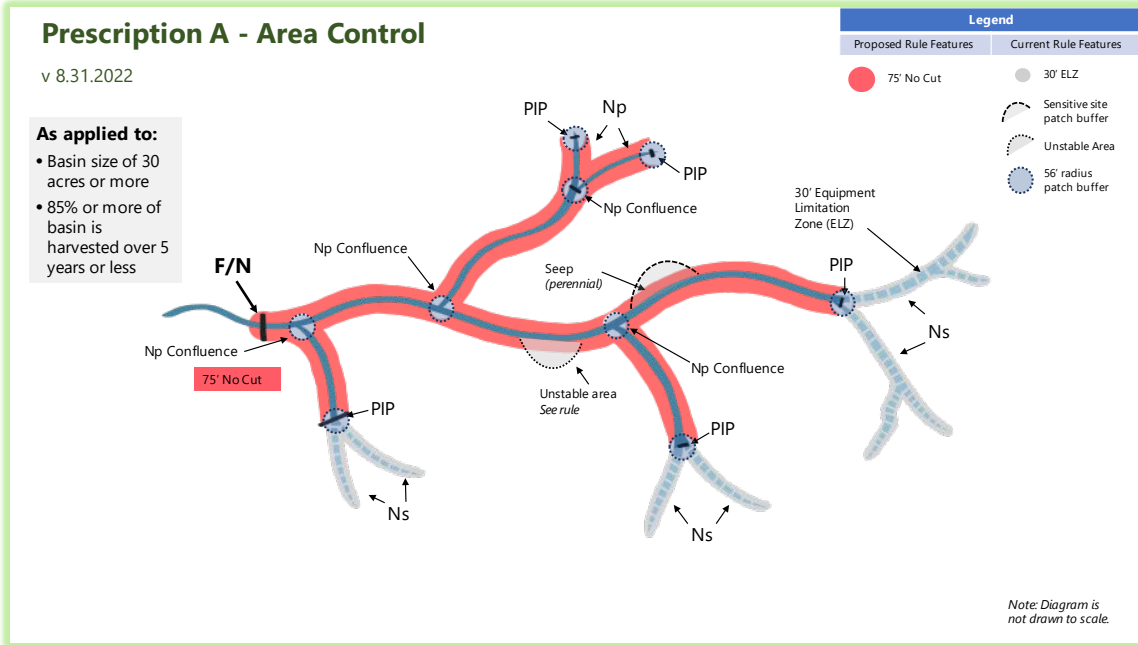
The large/small landowner and WSAC Np buffer recommendation is a two-component prescription for Western Washington (WWA) Np streams and includes a small landowner option. Unless otherwise specified, all existing Forest Practices Rules regarding timber harvest adjacent to Np streams apply.

Prescription A - Area Control: Type Np stream basins greater than 30 acres and 85% or more harvested over a five-year or less period require a 75-foot wide, two-sided, unmanaged continuous buffer from the confluence of a Type S or F water to the upper point of perennial flow (Exhibit 1, 2).

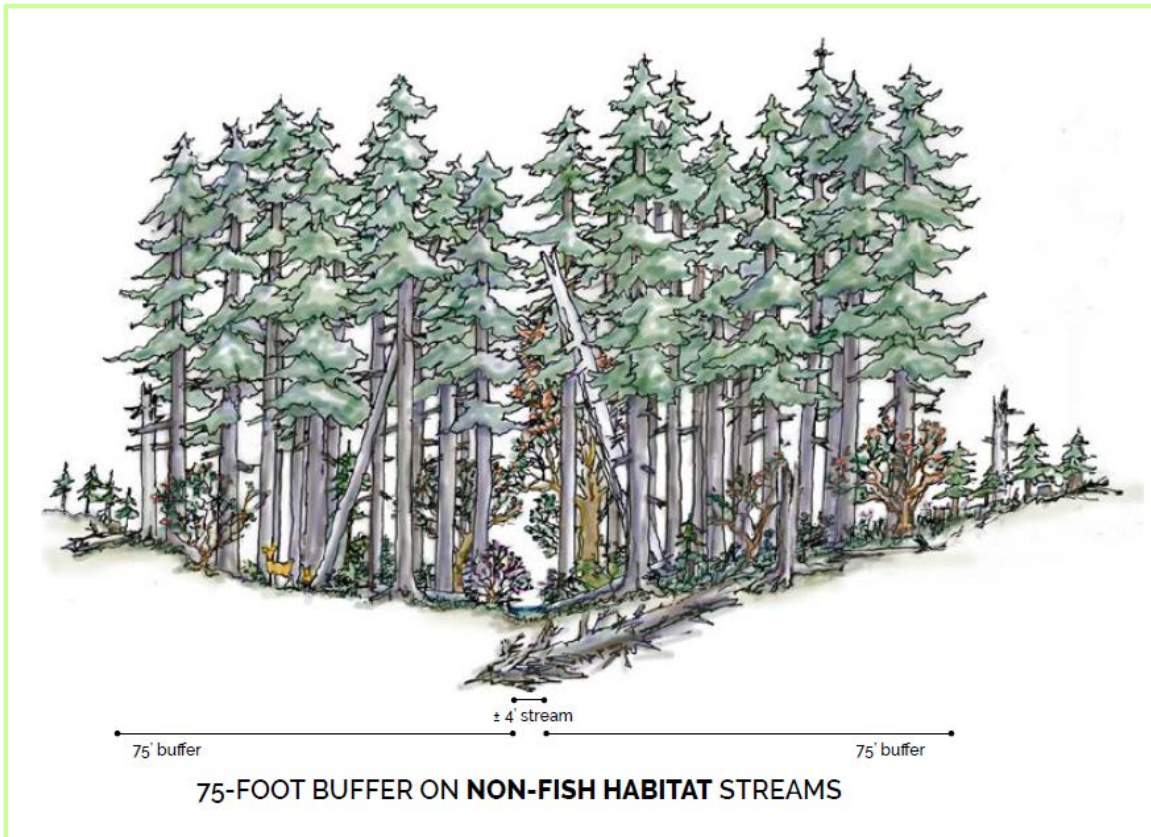
Prescription B - 1,000-foot Buffer: In all other circumstances, harvest adjacent to Type Np streams require a 75-foot wide, two-sided, unmanaged buffer for 500 feet upstream from the confluence of a Type S or F water and a 50-foot wide, two-sided, unmanaged buffer for the next 500 feet for a total of 1,000 feet. Landowners are encouraged to leave non-merchantable trees, understory, and shrubs within the 30-foot equipment limitation zone (ELZ) upstream of the no-cut buffered areas to the upper point of perennial flow (Exhibit 3, 4). Like the current rule, the objective is to provide a minimum of 50% buffering of the total Np stream length (inclusive of the 1000' of continuous buffer from F/N break). If an operating area is located more than 2,000 feet upstream from the confluence of a Type S or F stream and the Type Np stream is more than 2,000 feet in length, and if the 50% stream length buffered objective is not met by protecting sensitive sites, potentially unstable landforms, and/or other buffered leave areas, then additional 50-foot buffers are required to meet the objective of 50% of the Np stream length buffered.

Small Forest Landowner Option: The small forest landowner option is the same as prescription A and B above, except the buffer configuration is a 50-foot wide, two-sided buffer with the outer 25 feet manageable at the landowner's option. Small landowners who choose to manage within the outer 25 feet buffer may remove half the available volume in a "thin from above" approach (Exhibit 5).

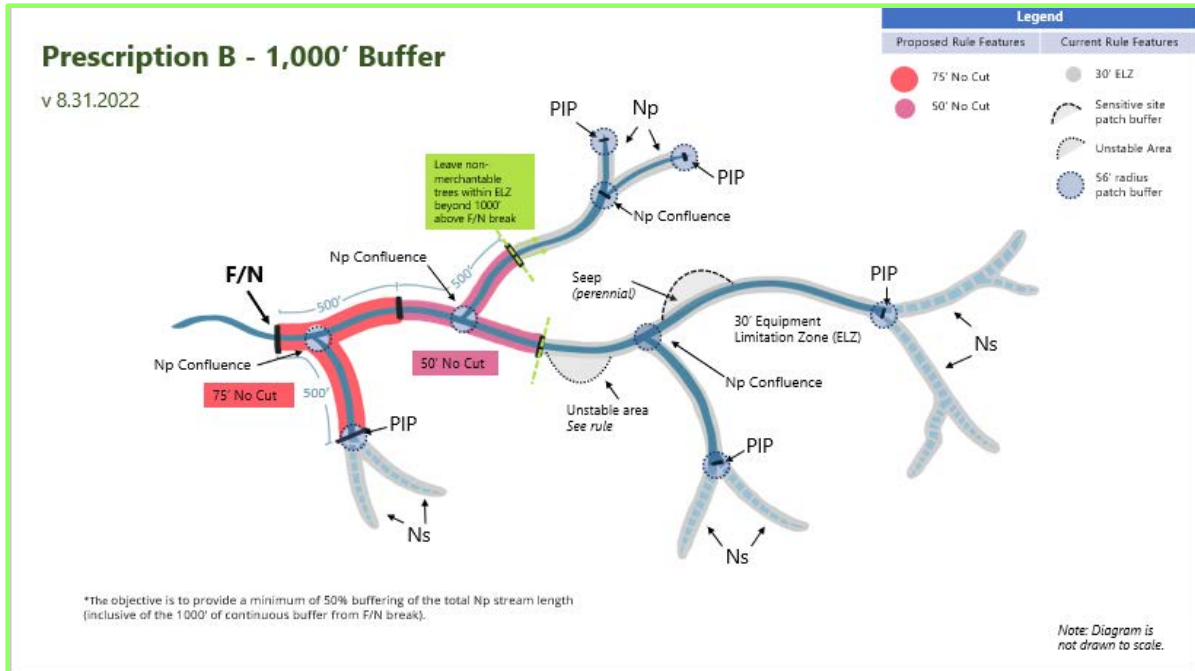
Note, Exhibits 1 and 3 are not drawn to scale. Exhibits 2, 4, and 5 are drawn to scale to illustrate different buffering schemes on a 4-foot-wide Np stream.



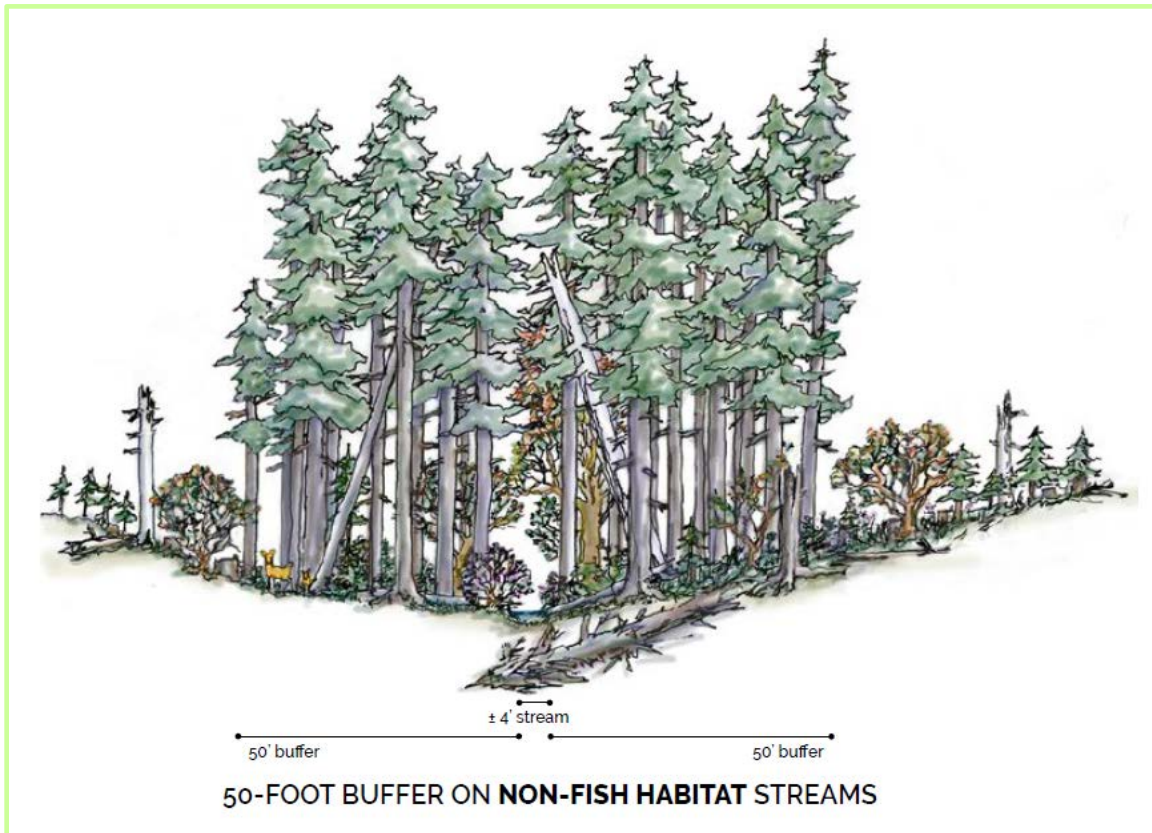
**Exhibit 1. Prescription A,  $\geq 85\%$  Np basin harvest over 5-year or less time period. Not drawn to scale, does not represent an actual Np stream**



**Exhibit 2. Profile view of 75-foot no-cut buffer. Drawn to scale, does not represent an actual Np stream**



**Exhibit 3. Prescription B, 1,000-foot buffer for all other harvest proposals adjacent to Np streams. Not drawn to scale, does not represent an actual Np stream**



**Exhibit 4. Profile view of 50-foot no-cut buffer. Drawn to scale, does not represent an actual Np stream**



a good idea and recommended a budget allocation in the [2023-25 Master Project Schedule \(MPS\)](#) to begin work. We will be looking to make considerable progress over the next year so that we can have a monitoring program in place prior to any new rules going into effect. We are also in need of more information on the biological effects and validation/refinement of performance targets, both of which can be addressed through intensive monitoring. Both Extensive Status and Trend and Intensive Cumulative Effects monitoring needs to be a priority in the AMP.

### **3- Rationale for Large/Small Landowner and WSAC Proposal**

Prescription A responds directly to the treatments evaluated in Hardrock and Softrock studies, i.e., whole basin harvest of Np stream basins greater than 30 acres, by proposing continuous, wider buffers for activities which appear to have the greatest probability to result in a measurable temperature increase. Prescription B expands minimum buffer protection (length and width) for less intense harvest activities, i.e., less than whole basin harvest. In all cases, the proposed buffering approach results in more protection of Np streams across WWA while attempting to balance environmental benefits with operational and regulatory costs. Expanded buffering in Prescription B at least doubles the minimum buffer length over the current rule and widens the buffer lower in the Np stream network above the Type F/N stream break to ensure protection of stream temperature regimes consistent with the biological needs of fish. This component of the proposal also minimizes unintended consequences of increased operational shadows, orphaned timber due to overlapping buffers, and increased road/landing construction and stream crossings which tends to result from continuously buffering entire Np stream lengths in all situations. Finally, wider buffering immediately upstream of the Type F/N stream break provides a measure of risk mitigation for those situations where fish may occasionally move upstream seasonally or annually.

The small forest landowner option recognizes the disproportionate economic impact to small landowners from substantive regulatory changes. It also acknowledges small forest landowners tend to have smaller harvest units and harvest less often than large landowners. Incentivizing small forest landowners to remain on the landscape, managing their forests, should be a policy priority for the FPB and the State of Washington.

#### **CMER Studies Reviewed by the Np Workgroup & TFW Policy**

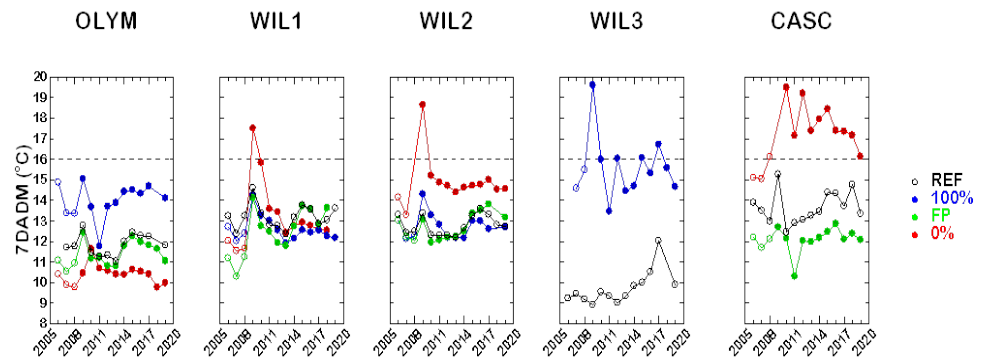
The AMP has completed approximately half of the Np stream studies identified in the 2020-21 Cooperative Monitoring, Evaluation and Research (CMER) workplan.<sup>11</sup> None of these studies were specifically designed to characterize temperature response to operational harvest practices as currently implemented under the current rules. While the Hardrock and Softrock studies were primary drivers in the TFW Policy response, a handful of other completed studies were also considered to varying degrees. These studies included the Hardrock Phase II study, Type N BCIF Study, the Amphibian Buffer/Shade Study, The Amphibian Genetics Study, and one round of Extensive Status/Trend Temperature Monitoring. Despite being far from complete with the Type N studies identified in the CMER workplan and very little effort specifically focused on characterizing the status and trend of stream temperature, the FPB is receiving a Policy response, primarily due to Ecology advocating for rule changes for Np stream buffers as a requirement to retain Clean Water Act Assurances.

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<sup>11</sup> [bc\\_fpb\\_cmerworkplan.pdf](#)

## Hardrock Phase I & II Study Results

The Hardrock study applied three Np stream buffer treatments: no buffer (0%), the current Forest Practices rule (FP), 50-feet wide for 50% of stream length, and a continuous 50-foot buffer (100%) and compared the treatments to unharvested reference sites. The current Forest Practices rules were applied to four study sites, but only three of the four FP treatments were used in the temperature evaluation due to the fourth having an incomplete data set. Even though the same Forest Practices Rules were applied at each site, the resulting buffer differed given site variability. One of the four treatment sites resulted in continuous or near continuous buffering from the F/N break to upper point of perennial flow, this site was not used in the temperature evaluation. The buffering was wider than the 50-foot minimum in some segments of some of the buffer treatments as well. These outcomes were primarily a result of applying potentially unstable landform and sensitive site protection. The initial average temperature change post-harvest across the three FP treatment sites was just over 1° C, similar to the 100% buffer alternative evaluated. All three FP treatments seven-day average daily maximum (7DADM) temperatures ranged from ~10° - 14° C both before and after treatment. This is ~2° - 6° C below the designated use temperature standard of 16° C applicable to most of these streams (Figure 1).



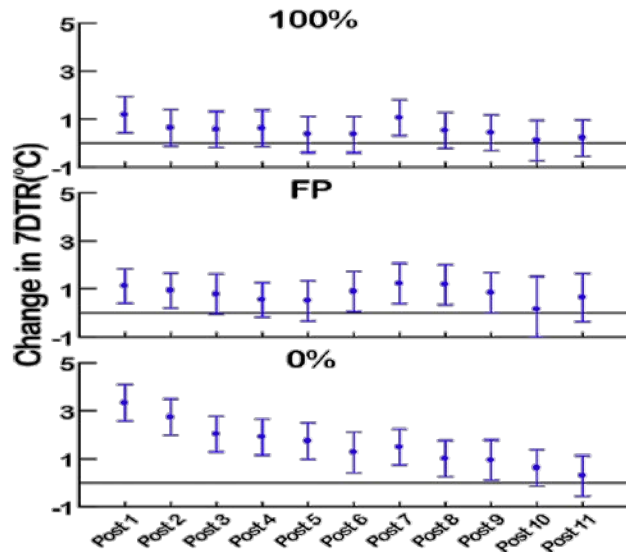
**Figure 1. Hardrock treatment blocks showing none of the FP and only one 100% treatment exceeded 16° C designated use temperature standards (dashed line), range of variability in 7DADM over study period at reference sites was ~3° C, from McIntyre et al., 2021**

## Hardrock Results Variable

Even though Np stream buffers with the same treatment looked different at different sites, the temperature data by treatment were combined and averaged in the reporting. While there is nothing inherently wrong with reporting results in this manner, it can obscure important site level details, particularly given the small sample size. For example, one of the three FP treatments in the Hardrock study had a considerably greater temperature response than the other two, an average of ~2+° C across the nine-year post treatment period versus an average of less than ~1° C and less than ~0.5° C respectively for the other two treatment sites. The one FP treatment site with the greatest temperature response also experienced the greatest windthrow and had a gravel pit located just upslope from the upper point of perennial flow. While windthrow appeared to be a significant factor in canopy closure decreases at some sites, the degree to which these two factors combined affected the markedly different temperature response at the one FP treatment site is unclear. Reliably measuring small temperature changes in these highly variable systems is difficult, it requires a complex statistical procedure which approximates the change rather than directly measures it. Therefore, a change of ~0.8° C is what can be reliably detected ([Pg. 4-73 Hardrock Phase II Report](#)).

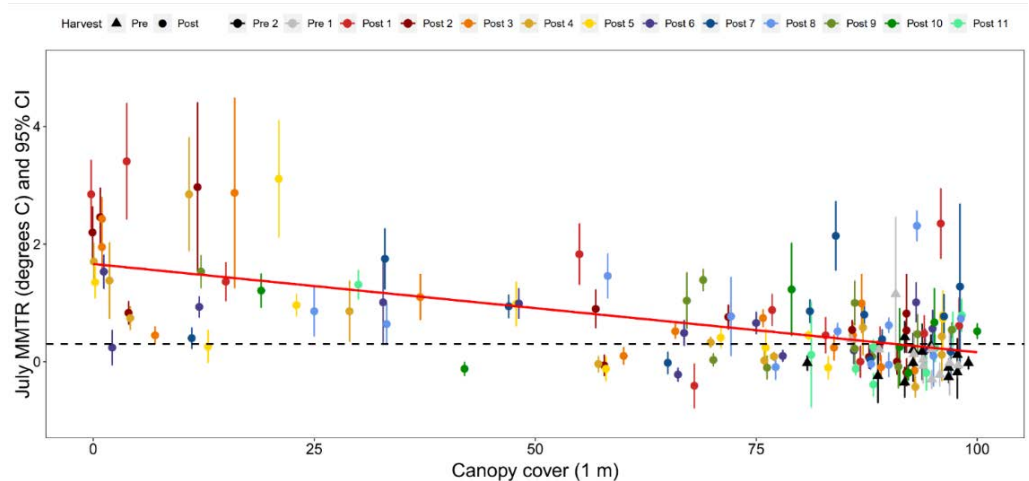


The degree of canopy closure remaining post-harvest was generally proportional to the degree of buffering of stream length. Also, the duration of temperature response measured at buffered sites tended to correspond proportionally to the degree of buffering, i.e., more continuously buffered sites tended to recover to pre harvest temperature sooner than others. For example, the 100% buffered sites began to recover by year two, whereas the FP buffered sites began to recover in year three. The FP sites' temperature went back up at year six before recovering again by year eight and nine. The 0% buffer treatments gradually recovered to pre harvest temperatures by year ten (Figure 2). The temperature recovery pattern at the FP sites is somewhat odd and inconsistent with the other Hardrock and Softrock treatments as well as published literature. This may reflect the lack of sufficient sample size necessary to consistently demonstrate a temperature response and/or other unknown site level factors having an influence. There was a weak relationship between degree of canopy closure and magnitude of temperature response, but the temperature response was inconsistent and had considerable variability. For example, in five of nine years the temperature response confidence interval at the FP treatment sites included 0.3° C (Figure 2), and as canopy closure recovered to ~80% or more, there was approximately an equal likelihood of being above and below a 0.3° C mean monthly temperature change in July (Figure 3). For reference, mature riparian stands with old growth like characteristics which tend to have high biological productivity exhibit canopy closure of ~75 - 85% which includes open gaps due to disturbance events. Reference sites used in the Hardrock (and Softrock) study had pre harvest canopy closure of ~95%. Streams with continuous, dense, stem-excluded riparian stand conditions are generally cold and dark with relatively low primary production (Kaylor & Warren, 2017). These are



**Figure 2. Hardrock average temperature recovered by year 2-3 at 100% buffered sites, year 4-5 and 9-10 at FP and 0% sites, from McIntyre et al., 2021.**

productivity exhibit canopy closure of ~75 - 85% which includes open gaps due to disturbance events. Reference sites used in the Hardrock (and Softrock) study had pre harvest canopy closure of ~95%. Streams with continuous, dense, stem-excluded riparian stand conditions are generally cold and dark with relatively low primary production (Kaylor & Warren, 2017). These are



**Figure 3. Hardrock canopy closure/temperature response across all treatment sites for all years, relationship highly variable, similar number of high canopy closure observations above and below 0.3 °C (dashed line).**

not the desired future riparian conditions and arguably not what we should be using as a reference target. Mature riparian stand conditions are generally what we are aiming for, yet our reference sites are representative of ~50-year-old stand conditions where shade is typically much higher than would be afforded by older stands. Aquatic species need both functional habitat conditions and proper nutrition to survive and thrive, focusing only on one or two components while ignoring the others will likely inhibit progress towards the overall FP HCP goals.

### Hardrock and Softrock FP Treatments Below 16° C Designated Use Standard for Fish Streams

The lack of specific performance targets, other than for temperature, precluded definitive conclusions about other important resources. Temperature response post-harvest and amphibian abundance changes measured eight to nine years post-harvest are the two primary areas of

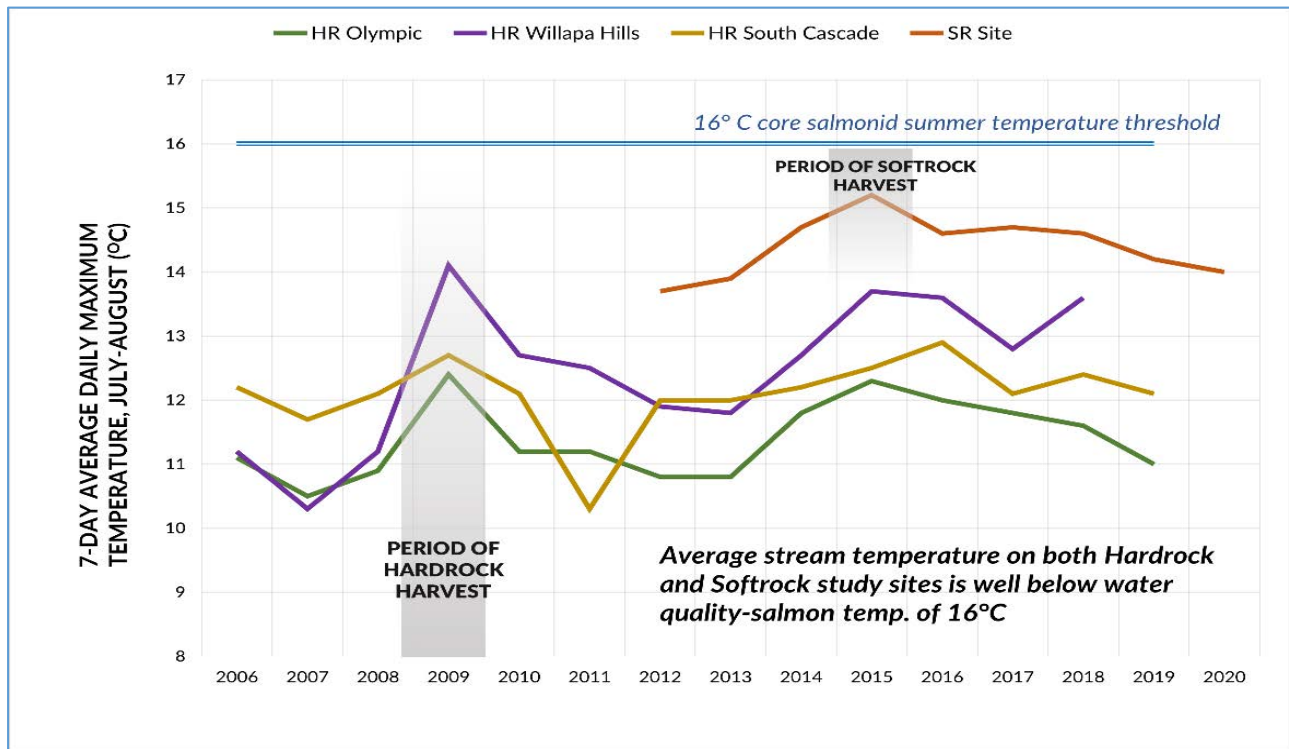
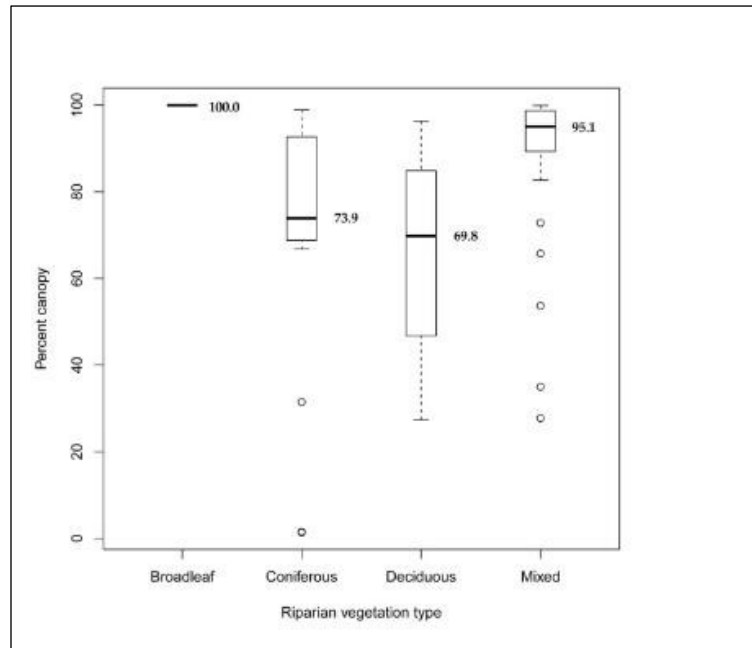


Figure 4. Hardrock and Softrock 7DADM temperature pre- and post-harvest

concern. While there has been great focus on the measurable change temperature standard of greater than 0.3° C, there has been little to no acknowledgement that most Hardrock (and Softrock) treatment sites were well below the 16° C designated use temperature standard both before and after harvest (Figure 4). All FP treatment sites in the Hardrock (and most Softrock sites) study were below this standard. This is great news. Having a measure of confidence, the Forest Practices Rules appear to be protective of temperature regimes in non-fish bearing waters for downstream fish habitat should be celebrated. Unfortunately, this information gets lost in the concerns about the Forest Practices rules “not protecting water quality” when evaluated against an unnecessarily precautionary and inconsistently applied antidegradation standard, when we should actually be delighted with the fact that it appears we do not have a fish or amphibian temperature problem. Of course, given the limitations of the Type N studies, additional research and monitoring is recommended to increase our understanding of public resource protection strategies and apply further adaptive management as appropriate.

## Extensive Riparian Status & Trends Temperature Monitoring Results

Another important piece of information learned is that applying the Forest Practices Rules often results in more than the minimum of a 50-foot buffer for 50% of the stream length. This finding from the Hardrock (and Softrock) study is also supported by results from the one and only round of Extensive Temperature Monitoring in WWA Np streams. Results from the monitoring indicated WWA Np streams are well shaded on average with a mean and median canopy closure of 82% and 93% across 55 randomly selected sites respectively (Figure 5). The average temperature across all sites was ~15° C, below the 16° C designated use temperature standard for most fish streams. While most of the Np stream monitoring sites were well below 16 °C, approximately 8 sites were above, some substantially so. These same sites varied in canopy closure from a low of 28% to a high of 99% and averaged 70%. These results suggest there is more buffering of Np streams than conventional wisdom assumes, and stream temperature may not simply be a function of shade levels. Heterogeneity in timber age class, variable timing, and location of harvest adjacent to Np streams and operational feasibility considerations likely all contribute to high shade levels on any given Np stream at any given moment. Of course, other temperature standards apply to forestland subject to the Forest Practices Rules. While the 16° C standard is the most geographically common designated use standard, both cooler and warmer standards apply to specific areas. There are also seasonal spawning and rearing standards which apply to particular fish stream segments. The AMP needs a robust and ongoing monitoring program to provide a spatial context for riparian functions/conditions which is necessary for assessing the transferability of the information in hand.



**Figure 5. Riparian canopy closure by category of vegetation encountered along 55 Np stream study reaches in WWA, mean across all sites = 82%, median= 93%, from Ecology, 2019**

## Softrock Study Results

The Softrock study did not evaluate an alternative treatment to the Forest Practices Rules. One unharvested reference site was paired with six Forest Practices treatment sites, four of which had near continuous buffers due to potentially unstable landforms and sensitive site buffers. One other reference site was compared with one treatment for a total of seven treatments. Pre to post treatment temperature patterns were similar to the Hardrock study. However, 7DADM temperature was slightly higher than Hardrock study sites, ~14° C vs. 12° C, and July mean monthly temperature responses post treatment were less, ~0.5° C in the first three years after harvest versus ~1° C for Hardrock buffered sites. Again, most sites were below the 16° C designated use temperature standard applicable to the study streams both pre- and post-harvest (Figure 6). Recovery to estimated pre harvest temperatures occurred sooner at the Softrock treatment sites, beginning in year three and fully recovered by year five (Figure 7).

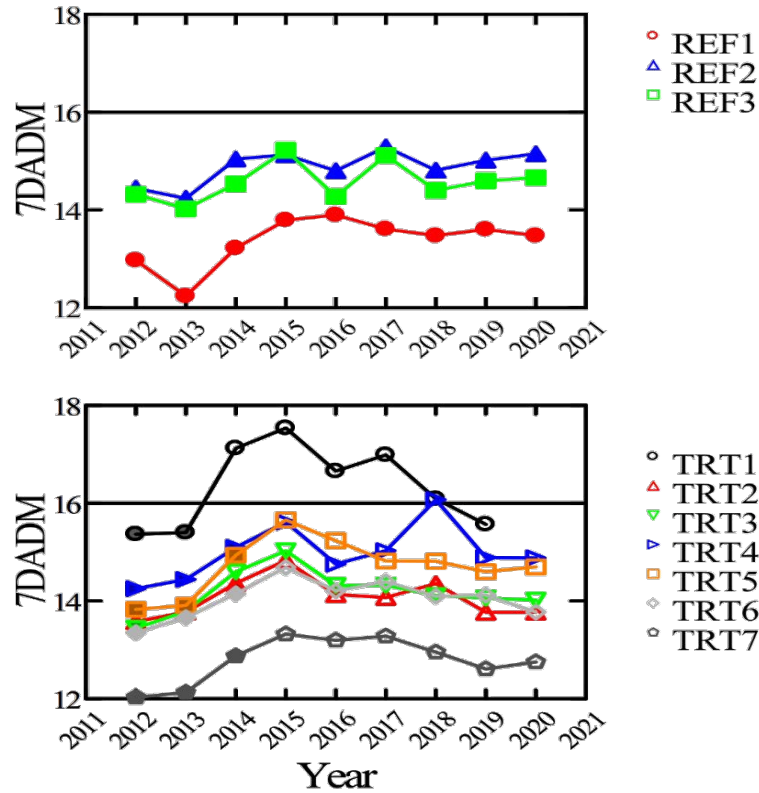


Figure 6. Softrock treatment sites for all years, designated use temperature standards mostly met, range of variability in 7DADM over study period for reference sites was ~2 °C, from Ehinger et al., 2021

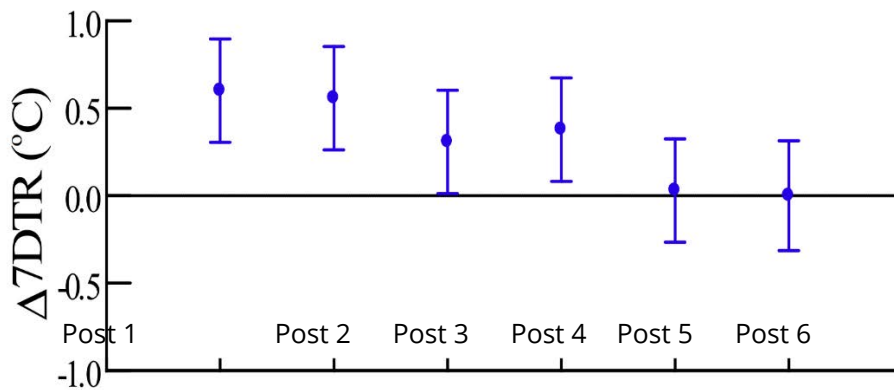


Figure 7. Softrock temperature recovery, post-harvest change in mean July 7day average temperature response by year, average temperature fully recovered by year 5, from Ehinger et al., 2021

### Amphibian Buffer/Shade Study Results

The Amphibian Buffer/Shade Study directly manipulated riparian canopy to achieve specific shade targets and measured biological response of amphibians in treatment reaches. The intermediate shade treatment of 72% canopy cover resulted in small temperature changes, although not significantly different than reference sites, and more neutral to positive biological responses than greater or lesser canopy closure (Figure 8). These results are similar to other studies which have manipulated riparian cover to increase light levels in dense 2<sup>nd</sup> and 3<sup>rd</sup> growth riparian stands and measured a corresponding increase in biological productivity in the near term (Kiffney et al. 2004,

Kaylor & Warren 2017). Unfortunately, this study did not get much attention within the AMP because it did not evaluate a specific rule prescription. Rather than prioritize learning and applying that learning through ongoing adaptive management, the AMP tends to focus attention only on those studies which could be used to promote rule changes to increase protection standards regardless of the biological effect.

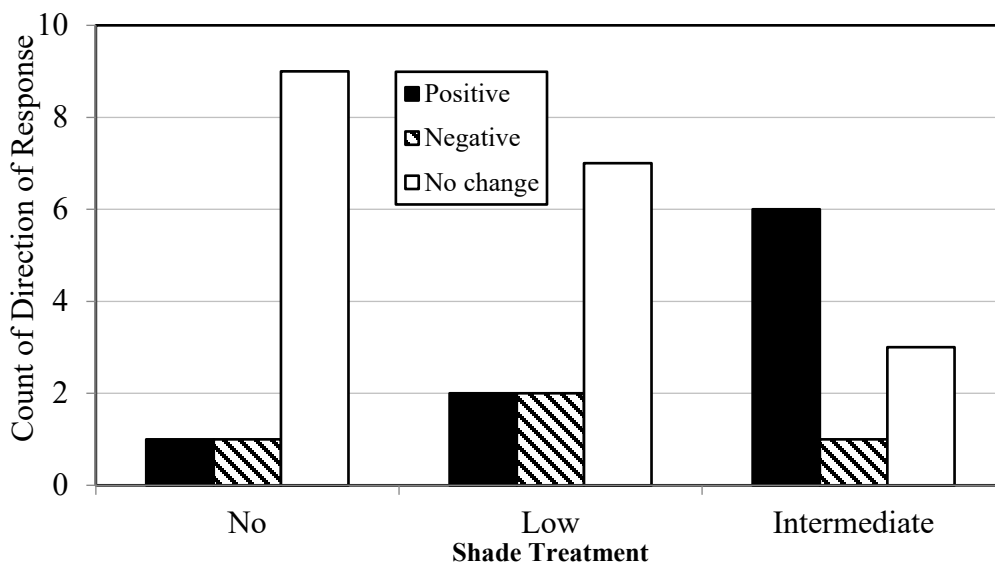


Figure 8. Amphibian abundance & body condition post treatment, from McCracken et al., 2018

### Amphibian Genetics Study Results and Proposed Hardrock Phase III

The Amphibian Genetics study assessed the genetic response of stream-associated amphibian species at the Hardrock study sites seven to eight years post-harvest. Although some minor pre to post and between treatment differences were found, there was not clear evidence of a change in genetic diversity due to timber harvest and alternative riparian buffer treatments. The authors of the study rightly caution against applying results too broadly and recommend follow up monitoring post generational turnover of amphibian species of interest. TFW Policy recommended and the FPB approved this and next biennium's MPS which contains funding for Hardrock Phase III, a follow-up evaluation of amphibian abundance/density at several treatment sites 15+ years post-harvest. This study should reduce uncertainty about longer term effects to amphibian species of interest; however, applying study findings may be complicated by Np stream buffer rules changing prior to the study being completed.

### Landscape Scale Status/Trend and Watershed Scale Cumulative Effects Monitoring Needed

There has been much speculation about downstream cumulative effects and the potential effects of climate change on stream temperature, and these possibilities have been used as rationale for wider continuous buffers on Np streams. However, the AMP has done little to no work on either of these topics. Having a robust landscape scale status/trend and watershed scale cumulative effects monitoring program would greatly assist our understanding of these potential issues, and we are hopeful the recent approval of funding for Extensive Monitoring will translate into tangible progress over the coming months.

## WFPA GIS Analysis & AMP Proposal Initiation to Evaluate Hardrock/Softrock Site Selection Criterion

In February 2021 WFPA submitted a proposal initiation (PI) related to the site selection criterion used in the Hardrock and Softrock studies of Np basins of 30 acres or greater harvested in a single entry. The ability to infer a temperature response from the Type N study results across the broader managed forest landscape requires a sufficient sample size and a representative sample of harvest lay-out configurations to be evaluated. We had questions about the frequency of full-basin harvest activity as required in the Type N studies to be operationally applied in WWA, and how this site selection criterion influenced the pool of available treatment sites. How sites were selected, and experimental treatments were applied may result in bias that could affect inference space associated with study results. The Type N study authors acknowledged that treatments were applied to maximize the likelihood of detecting a response rather than a representative sample of how rules are implemented operationally (McIntyre et al., 2018, Pg. 2-10).

In response to this question WFPA examined several Np basins in WWA which met the acreage criteria and piloted a GIS technique for calculating proportion of basin harvested over time, called Focal Watersheds. Our pilot effort indicated the GIS technique would likely be suitable to answer the full basin harvest question and that the frequency of harvest meeting the Type N Study requirements may be low. Given these findings, we thought the AMP would find the information interesting and useful to inform the deliberation about proposed Np buffer changes. We were wrong. Our PI was first rejected by the Adaptive Management Program Administrator<sup>12</sup> and a majority of TFW Policy voted to not accept it<sup>13</sup>. We opted to conduct a broader investigation independently while the TFW Policy DR process over our PI occurred. After several months of DR, both informal and formal, it became clear there was little interest in a substantive discussion about the questions we had and the information we had gathered to inform the questions, so WFPA withdrew the dispute.

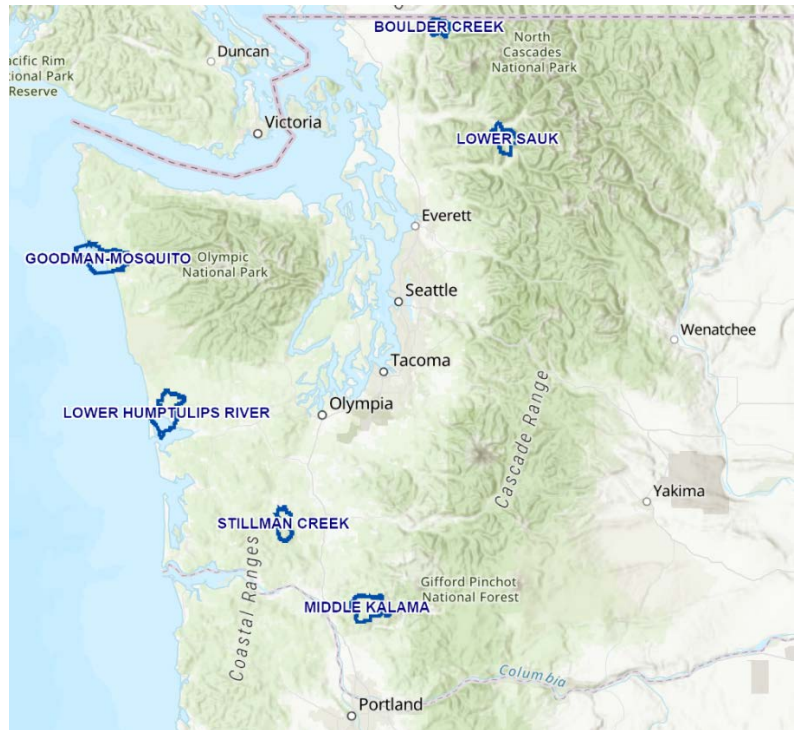
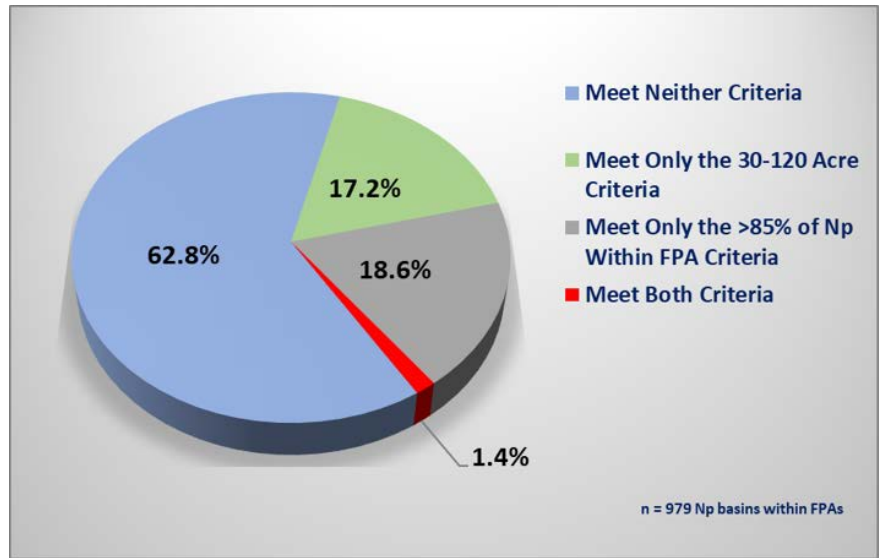


Figure 9. WFPA Focal Watershed Administrative Units outlined in blue

<sup>12</sup> [bc tfw policy wfpa basin analysis pi ampa assessment.pdf](#)

<sup>13</sup> [bc tfw policy may meeting minutes.pdf](#)

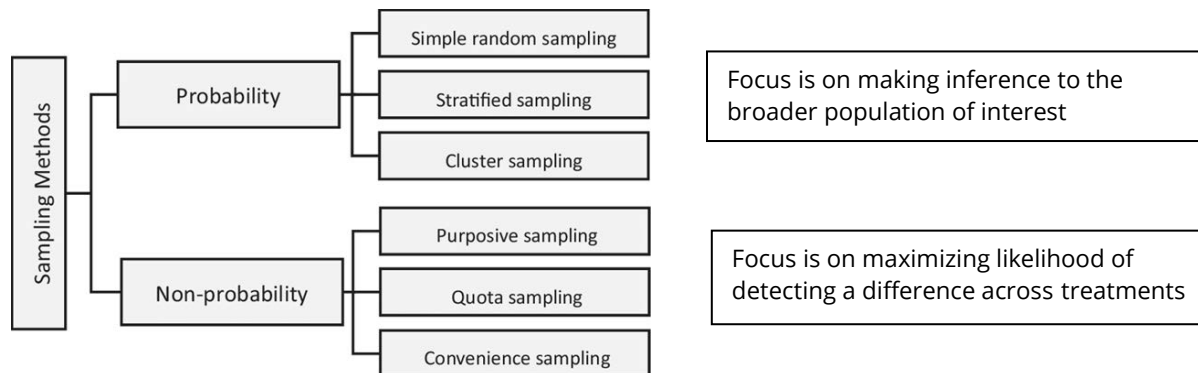
The focal watersheds GIS tool we developed for the PI analysis has been populated with a variety of datasets in six geographically dispersed WWA watershed administrative units (WAU) which allows us to evaluate different stream buffering scenarios and harvest patterns over time (Figure 9 above). We evaluated how often 30+ acre Np basins occur in WWA and how often they are harvested in a single entry and over time. We evaluated more than 900 Np basins and found that 80 - 100% harvests in Np basins between 30 - 120 acres are not frequent, even over five to ten years it is infrequent. We found fewer than 15 basins (1.4%) of 30 - 120 acres or greater being included in a single Forest Practices Application over this time period (Figure 10).



**Figure 10. Proportion of 30-120-acre Np basins in FPAs with >85% harvested, 2010-2020**

### Probability Versus Non-Probability Sampling

The Hardrock and Softrock study sites were selected through purposeful sampling with specific site selection criteria. Approximately 36,000 Np basins were screened in order to find just 17 - 18 hardrock sites which met all the selection criteria (Page 2-11, Hardrock Phase I report). Once a pool of sites was chosen which met the numerous criteria, random assignment to treatments then occurred. While desirable in a before/after control impact (BACI) style study, where the focus is on maximizing likelihood of detecting a difference across treatments, purposeful sampling limits inference due to uncertainty of fit within the population of interest (Figure 11). Furthermore, the BACI approach reflects a scenario that the Type Np buffer rules were applied to every acre at once. We know that this does not occur because the landscape comprises multiple age classes and other constraints of green-up and harvest size. Type Np streams frequently define the border of harvest units, splitting Type N basins into multiple sub-basins that are not harvested in a single operational entry. As noted in the findings reports, these considerations can change the inference implications of the results.



**Figure 11. The use of sampling methods in advertising research: a gap between theory and practice. International Journal of Advertising, from Sarstedt et al. 2017.**

### WFPA GIS Analysis of Np Stream Length

Some caucuses expressed concern about Prescription B of the landowner proposal which caps total buffer length at 1,000 feet unless the Np stream is more than 2,000 feet long. Again, Prescription B is for less intense harvest activities where only a portion of Np stream length or basin area are harvested, versus the entire basin harvested in a single entry. Landowners were interested in the distribution of Np stream lengths and how Hardrock and Softrock study streams fit within it. We evaluated more than 2,200 Np streams in the six focal WWA watersheds, the mean length was ~1,217 feet, and the median was ~503 feet with a range of ~15 feet - 95,000 feet. There are some very long Np streams, particularly in NW Region; however, approximately 70% of the more than 2,200 Np streams evaluated are 1,000 feet or less in length, approximately 85% are 2,000 feet or less (Figure 12). Mean and median stream lengths in the Hardrock and Softrock study were approximately 3,580 feet and 3,245 feet respectively, which occurred in ~2% of WFPA's focal watershed streams. We have also found that longer Np streams tend to have adjacent harvest patterns of only a segment at a time or only on one side of the stream; this was noted in both the Hardrock and Softrock findings report as lessening the impact to shade and stream temperature to an unknown degree. Many of the very long Np streams in NW Region tend to have continuous buffers post-harvest due to the prevalence of potentially unstable landforms within or adjacent to the stream channel. While our analysis of Np streams is also not from a random sample, the large sample size over a broad area in WWA along with the results suggests further evaluation of the Np stream population is needed.

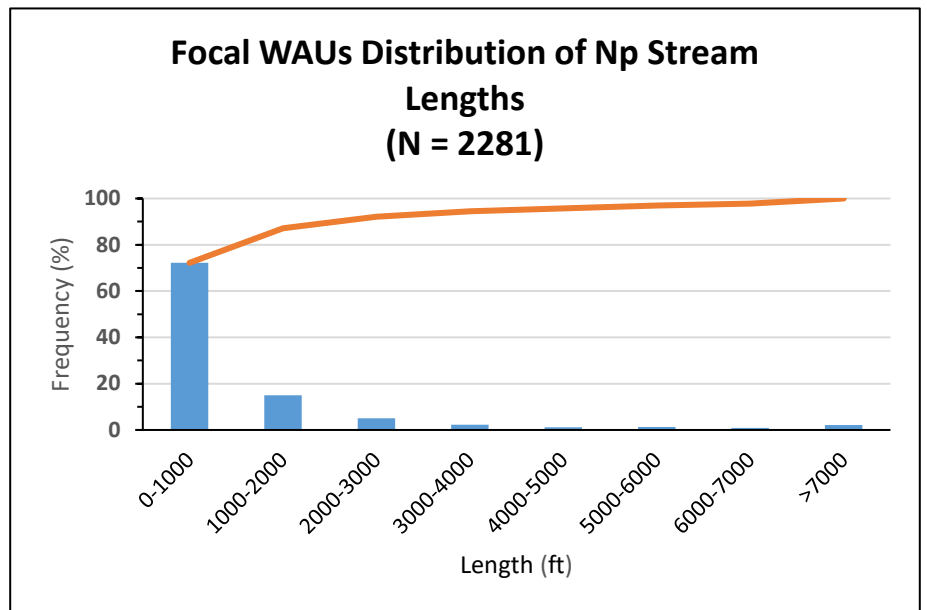


Figure 12. Np stream length distribution in six WWA WAUs

### WFPA and Np Workgroup Recommend Examining Routine Harvest Practices

Both the Hardrock and Softrock studies reports explain the whole basin harvest site selection constraint as necessary to increase the probability of detecting treatment effects. While necessary in a BACI style study, this creates a study bias with an uncertain extent. While the treatments implemented in the Hardrock and Softrock studies may have been legitimate on paper, our GIS evaluation suggests they represent the extreme tail of the range of operational harvest practices and are uncommon in real world harvest operations. In an Oregon study of headwater streams, Bladon et al. (2018) found the greatest stream temperature responses to forest harvesting were in basins with a higher proportion of area harvested and were underlain by less permeable lithologies (i.e., hardrock). In practice, harvest units rarely encompass entire Np basins. Streams, property lines and roads often form a harvest unit boundary. Additionally, Np basins may comprise more than one age class which dictates merchantability and harvest rates. While many TFW Policy representatives were uninterested in these potential issues, we strongly believe they need evaluation before a

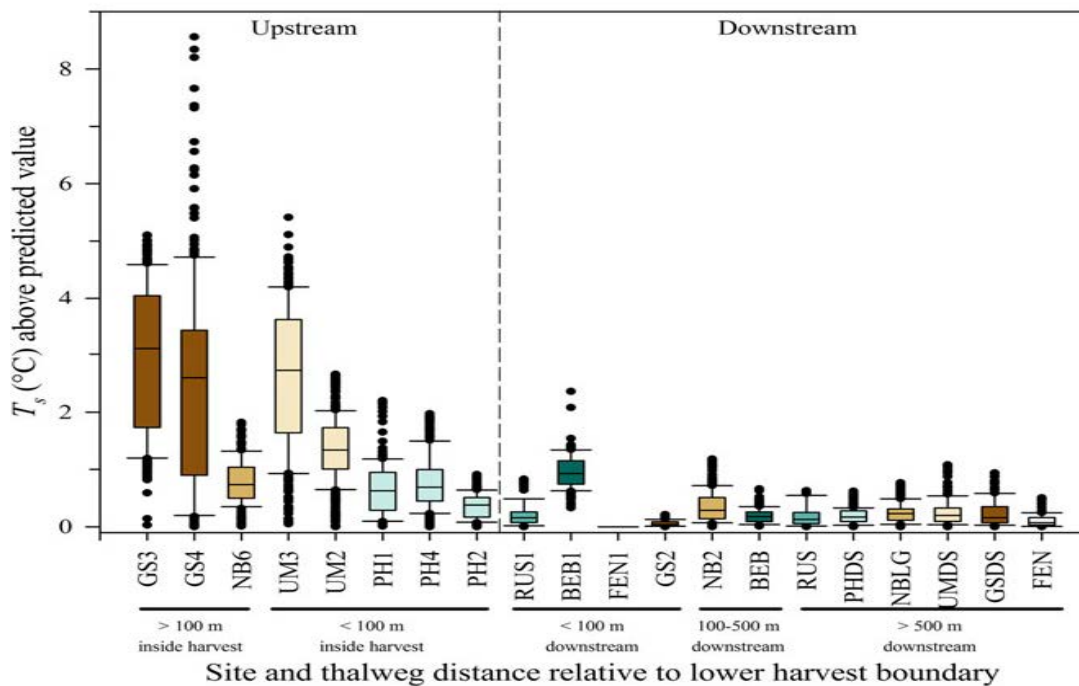


conclusion of widespread violation of the antidegradation standard is drawn. The final Np Workgroup Report (2021) commissioned by TFW Policy provides recommendations in the Uncertainties and Future Directions sections of the report about examination of the effects of representative real-world harvests on aquatic resources rather than experimental study treatments of entire watersheds as necessary to understand landscape scale harvest patterns and prescription effectiveness. We are hopeful the FPB will take them seriously and direct TFW Policy to take them up in the near future.

Drawing attention to these issues is not intended to be critical of the Hardrock or Softrock study, rather to emphasize important details to consider when interpreting the information and designing appropriate policy responses. It is also important to keep in mind a prescription scale experimental study must limit the number of samples to minimize confounding effects, which trades off spatial scope of inference. The Monitoring Design Team (2002) sample size estimate to reliably detect a  $\sim 1^\circ\text{C}$  temperature change given background variability was more than 100 sites, 250 sites (50/year) were recommended as a good tradeoff between reliably estimating status and detecting trends in stream temperature.

### Relevant Non-CMER Science

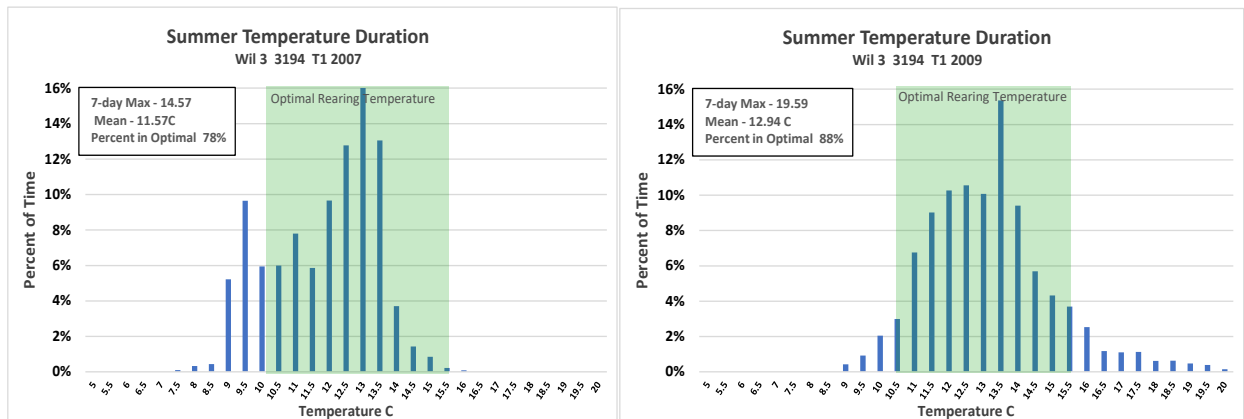
Research on stream temperature effects associated with timber harvest by Bladon et al. (2018) found that temperature increases upstream did not transfer downstream post-harvest (Figure 13).



**Figure 13. Downstream cooling associated with upstream harvest, from Bladon et al. 2018**

Similarly, Gravelle and Link (2007) observed no significant increase in water temperature at downstream fish-bearing sites regardless of temperature increases of  $\sim 3+^\circ\text{C}$  in the directly impacted non-fish-bearing reaches upstream. Others have considered alternative ways to consider stream temperature data which is more meaningful to fish and other aquatic life. Most aquatic

organisms are tolerant of short-term increases and decreases in temperature within the natural range of variation, and duration of exposure can be a much more important factor on growth and survival (Np Workgroup, 2021). Reiter et al. (2020) compared summer season stream temperature distribution pre- and post-harvest between 15 meter wide buffered and reference sites and found little to no difference. Comparing stream temperature distribution during the summer growth period to the optimal temperature range for target fish or amphibian species (i.e., estimate percentage of temperature distribution within optimal growth range) is a useful approach to understanding potential biological effects (Reiter et al. 2020). WFWA provided an example to TFW Policy of how this could be done with temperature data from one of the Hardrock study sites (Figure 14). Unfortunately, there was no interest in conducting such an evaluation. However, TFW Policy should recognize that evaluating stream buffer effectiveness with temperature thresholds which do not consider natural cycles at multiple scales may be misguided. One option to address environmental variability is to identify regime-based standards describing desirable distributions of temperature conditions over space and time (Poole et al., 2004). Implementation of temperature regimes poses a challenge for managers, as they would need to identify and validate suitable temperature distributions across a variable landscape. However, if we are interested in achieving improved aquatic habitat for covered species, shifting our management focus from threshold-based targets to maintaining key ecological processes is recommended (Poole et al., 2004; Reeves et al, 2020).



**Figure 14. Hardrock Willapa 3 treatment site, duration of summer temperature regime in optimal range**

In a BACI style study of different riparian buffer designs on small, headwaters streams in WA, Janisch et al. (2012) found temperature responses were highly variable. Stream shade level was not a strong predictor of stream temperature response. Other factors such as length of flowing water upstream of instrument locations, surface area of stream adjacent wetlands, and stream sediment texture appeared to be more strongly associated with temperature response. Janisch et al. concluded this raises the possibility that some headwater streams are thermally responsive to riparian management, and some are not. In a systematic evidence review of more than 20 studies in the Pacific Northwest, Martin et al. (2021) evaluated the effectiveness of buffering headwater streams to maintain stream temperature and amphibian populations. The review indicated substantial variability in temperature response to buffers, so much so that trends between summer stream temperature and buffer width were obscured. The review also indicated temperature response may be associated with factors other than shade retention post-harvest (geology, hydrology, topography, latitude, stream azimuth). The relationship between amphibian responses and post-harvest buffers

was mixed, with no strong evidence supporting positive population responses with larger buffers. Factors explaining variation in amphibian population responses were unclear. Martin et al. recommended future study should focus on alternative buffer treatments tailored to site and landscape characteristics. Uniform buffer prescriptions (i.e., one size fits all) to achieve a desired temperature threshold target are questionable given high spatial and temporal variability within and among watersheds.

## 4- Conclusion

Large/small landowners and WSAC recommends the FPB consider a two-component proposal for WWA Np stream buffer rulemaking. Prescription A (Area Control) is a 75-foot wide two-sided, continuous buffer and applies to harvest of 85% or more of an Np basin greater than 30 acres over a five-year or less period. This component of the proposal responds directly to the treatments evaluated in the Hardrock and Softrock studies, which indicated a temperature change of  $-0.5^{\circ}$  -  $1.0^{\circ}$  C was detectable for 3 - 9 years post-harvest. Prescription B (1,000-foot Buffer) is a 75-foot wide, two-sided buffer for 500 feet upstream from the confluence of a Type S or F water and a 50-foot wide, two-sided buffer for the next 500 feet for a total of 1,000 feet. Landowners are encouraged to leave non-merchantable trees, understory, and shrubs within the ELZ upstream of the no-cut buffered areas to the upper point of perennial flow. If an operating area is located more than 2,000 feet upstream from the confluence of a Type S or F Water and the Type Np Water is more than 2,000 feet in length, then additional stream length is buffered so the total buffer length is at least 50% of the total stream length. Prescription B doubles the minimum buffer length compared to the current rule and expands buffer width by 25 feet for 500 feet above the Type F/N break. This proposal also includes an ongoing, robust landscape and watershed scale monitoring program, prioritizing status and trend of stream temperature and riparian stand characteristics.

This proposal is fit to the technical information the AMP has accumulated relative to Np stream temperature conditions, both background and in response to different management treatments. Our understanding is that temperature in most Np streams is below the most geographically common designated use standard of  $16^{\circ}$  C both before and after harvest. Additionally, the range of variability in unharvested streams can be  $\sim 3^{\circ}$  C, and some headwater streams are thermally responsive to riparian management, and some are not. The two primary studies driving the policy deliberation are the Hardrock and Softrock studies, both of which evaluated an extreme example of harvest activities in WWA designed to maximize detection of treatment effects. While the treatments were legitimate on paper, there was no attempt to validate the frequency of actual occurrence, investigate if routine harvest operations produce similar temperature results, and if the status/trend of stream temperature across the landscape is changing or not. WFPA investigated how often harvests which are similar to the study treatments occur and attempted to bring this information to the AMP. It was rejected by a majority of TFW Policy. Based on our understanding of how routine harvests occurs, the minor temperature response measured in the Hardrock and Softrock studies ( $-0.5^{\circ}$  -  $1.0^{\circ}$  C) occurs over a relatively short period of time (3 - 9 years) compared to a harvest rotation of 40 - 60 years. When considering these findings in addition to other relevant CMER and non CMER studies, we believe this proposal addresses the perceived problem identified. The currently approved 303d list of temperature impaired water bodies maintained by Ecology (2018) contains more than 4,000 stream and river segments across all land uses<sup>14</sup>. While some of

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<sup>14</sup> [Assessment of state waters 303d - WDOE](#)

the segments on forestland are the result of contemporary, geographically specific monitoring (including some of the no buffer sites in the Hardrock study), a cursory review indicates many of them are from data collected ~20 - 30 years ago. The status/trend of temperature in many of these listed stream segments is unknown today and therefore still on the 303(d) list. Temperature and sediment listings from the 1990s were one of the primary drivers of F&F, yet we've done very little towards tracking progress of those original listings. Despite the lack of interest on the part of many in the AMP, and Ecology noting the first cycle of Extensive Monitoring as "complete" in the last CWA Assurance milestone update<sup>15</sup>, an ongoing, systematic, multi scale monitoring effort is essential to understanding the overall effects of F&F over time and space and making future adaptive management adjustments, as necessary.

## Forests & Fish Goal is to Meet Water Quality Standards Over Time

The goal of F&F was to meet water quality standards across the managed forested landscape, more than nine million acres, over time. While there was an expectation in Schedule M-2 of "...improved water quality in the short term and meeting water quality standards in the long term..." no specific timeframe was identified other than the reference in Schedule M-2 of "ten years being a reasonable amount of time to determine some initial water quality trends"<sup>16</sup>. Unfortunately, it took nearly 10 years to get one round of landscape scale temperature monitoring accomplished and another 10 years to complete the report, after which the AMP abandoned the effort. Instead, we have focused on prescription scale BACI style studies to drive AMP decision making across the landscape. Temporary impacts from forest practices disturbance are limited to a few events over decades of management. Importantly, the FP HCP anticipated small temperature increases in Np streams and recovery within 5 - 15 years to pre-harvest conditions.<sup>17</sup> Applying a standard of no change greater than 0.3° C everywhere, at all the times is inconsistent with this larger policy vision. HCPs are not intended to be zero impact propositions; they are aimed at conserving covered species. Applying a strict, essentially no impact standard to a highly variable non-point source environment can miss the point; the important questions should be how much different than the standard, for how long, over how broad an area and most importantly what is the resulting biological effect? Unfortunately, these questions do not get much attention in the AMP. Forest management activities are poorly represented by the antidegradation standard of 0.3° C because they are not point-sources which create persistent and permanent change. The full scope and scale of forest management over time should be considered in the context of the natural variability inherent in forested watersheds, and impacts should be viewed over the full rotation.

## Reasonable Antidegradation Policy Interpretation

The antidegradation policy in [WAC 173-201A-300](#) has several intent objectives, amongst them is *"...ensure that waters of a higher quality than the criteria assigned in this chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest."* In cases where water temperature is lower than the designated use standard, the antidegradation policy intends to maintain the higher quality of the water as much as possible. This objective is aimed at not allowing human activities to use up the assimilative capacity of a waterbody. For example, a stream which is "naturally" 13° C, and the designated use standard is 16° C should not be permanently impacted up

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<sup>15</sup> [fpb\\_cwaassuranceupdate\\_20210512](#)

<sup>16</sup> [F&F Report Schedule M-2](#)

<sup>17</sup> [FP HCP Chapter 4d \(pgs. 239-241\)](#)

to the standard due to human activities. This makes sense. However, what does not make sense is applying an everywhere, all the time interpretation of the antidegradation policy to forestry which tends to have small and temporary temperature impacts, well within the natural range of water temperature variability in the absence of recent harvest activity. Allowing some small and temporary impacts as long as designated use standards are not exceeded appears to be within Ecology's discretionary authority and was explicitly authorized in the WAC until revisions occurred in 2019.

## Benefits & Costs

More than a year ago WFWPA calculated preliminary estimates of expanding Np buffer length and width assuming 55% to 75% of the Np stream length is buffered under the current rule. This information was shared with TFW Policy, unfortunately most of TFW Policy was uninterested in factoring the information into the Np buffer deliberation. Costs associated with continuous, wider buffering ranges from ~\$140 million to over \$500 million dependent baseline assumptions of existing and proposed buffering. These are coarse estimates based on limited knowledge of the number of Np streams in WWA, total Np stream miles and the actual proportion of stream buffered under current rule. Further, these costs represent only the direct costs of forgone asset value. They do not include higher operational costs associated with increased road/landing and stream crossing construction, nor the indirect costs to the forest products market, jobs, and economic impact in rural counties. WFWPA intends to update these cost estimates based on updated information about Np streams, and we would be happy to work with FPB staff on developing representative Np stream information to be used in future cost/benefit analysis.

The benefits of the same buffering are difficult to determine when the focus is on reducing the frequency of a temporary ~0.5° C - 1.0° C temperature change to a ~0.3° C or less, assuming it applies broadly and could be reliably measured. There would be no benefit to covered fish (or presumably amphibians) since most Np streams appear to meet designated use protection standards for fish. Ecology's own Cost/Benefit Analysis from 2006 indicated application of the antidegradation temperature criteria were indeterminant across all land uses for both point and non-point sources *"Quantifying the benefits of antidegradation, however, is very difficult and cannot be reliably done because of the conditions, limits and allowances built into the rule on when and how antidegradation is applied. Therefore, in estimating the qualitative costs of temperature and dissolved oxygen, the net benefits of an antidegradation program were not specifically factored in."*<sup>18</sup>

It is difficult to reconcile a high cost, low benefit proposal with the Clean Water Act's (CWA) goal of cost effective and reasonable best management practices for non-point source control. In approving Ecology's 2003 revisions to the state's water quality standards, the Environmental Protection Agency (EPA) indicated a temperature increase of 0.3°C is insignificant regarding impacts on designated uses. Further, studies on temperature effects on salmonids are generally based on change increments of 1 °C or more<sup>19</sup>. This feedback pertained to point source discharges to water bodies naturally warmer than the designated use criteria. EPA did not act on Ecology's 2003 antidegradation proposal for nonpoint source discharges to water bodies naturally cooler than the designated use criteria since it is not a water quality standard under Section 303(c) of the CWA.

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<sup>18</sup> [Preliminary Draft CBA for Proposed Amendments to Washington's Surface Water Quality Standards](#)

<sup>19</sup> February 1, 2008, letter from Michael Gearheard, Director of Office of Water & Watersheds, to David Peeler, Water Quality Program Manager, Ecology

## **Incentive Based and Mitigation Tools Needed**

Regulatory proposals which have a wide gap between costs and benefits may be common from here forward given the substantial gain in resource protection resulting from the F&F rules, and unfortunately the FPB has an extremely limited set of tools to respond to such scenarios. This will make for difficult decision making and likely be dissatisfying to many interests. The FPB and the agencies should consider developing other response tools such as landowner incentives, particularly if the primary benefits are for downstream uses, and/or off-site mitigation opportunities to achieve identified and/or indeterminate benefits of regulatory proposals.

## **Clean Water Act Versus Endangered Species Act**

Applying a yes/no interpretation of the antidegradation policy to this situation is unnecessarily creating conflict between the CWA and the Endangered Species Act (ESA). Many forest landowners in the Pacific Northwest and around the country have entered into voluntary conservation agreements for aquatic species with the U.S. Fish & Wildlife Service and/or NOAA Fisheries in order to have long term regulatory stability and predictability in their investments. Having a state regulatory agency supersede those agreements and apply a higher standard after the fact will have a chilling effect on voluntary conservation agreements, here in WA and around the country. The public interest is not well served by requiring regulations with high costs and little to no measurable benefit. This is akin to regulation for regulation's sake. Rather, the public would be better served by implementation of reasonable and cost-effective controls, considering both costs and benefits. The remainder of our limited resources can then be more wisely spent on other environmental and social goals which can achieve greater benefits.

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# TYPE NP ACTION DEVELOPMENT DISPUTE

Majority Recommendations to the Forest Practices  
Board

TFW Policy Caucuses:  
Westside Tribal Caucus  
Eastside Tribal Caucus  
Conservation Caucus  
Department of Ecology/  
Washington Department of Fish and Wildlife

October 15, 2022



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## Executive Summary

Washington's Adaptive Management Program (AMP) evaluates the effectiveness of the state's forest practices rules at meeting resource objectives. When necessary, the AMP makes changes to these rules. Recently, the science committee published two studies, Hard and Soft Rock, that had been designed and approved at all levels of the AMP. Hard and Soft rock were prioritized by the AMP because of the high level of uncertainty associated with the non-fish perennial (Type Np) buffers in western Washington.

These studies found the current rules are not adequate in meeting Washington's water quality standards. To assist their response to the studies, the AMP Policy committee formed a workgroup of technical experts. This workgroup provided the Policy committee with three recommended alternatives that would protect stream temperature. All three alternatives employed a full-length buffer. The majority caucuses proposed recommendation to the Board is based upon two of these alternatives.

## Background and Introduction

This recommendation has been prepared for the Forest Practices Board's (Board) consideration and is supported by the majority of Timber Fish and Wildlife (TFW) Policy Committee caucuses (majority caucuses). The majority caucuses are the Eastside Tribal Caucus, Westside Tribal Caucus, Conservation Caucus, Washington Department of Fish and Wildlife, and Department of Ecology. It is being delivered to the Board as a response to two Type Np studies: *Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington*<sup>1</sup>(Hard Rock; McIntyre et al. 2021) and *Effectiveness of Forest Practices Buffer Prescriptions on Perennial Non-fish bearing Streams on Marine Sedimentary Lithologies in Western Washington*<sup>2</sup> (Soft Rock; Ehinger et al. 2021).

The Adaptive Management Program (AMP) is tasked with evaluating the effectiveness of forest practices rules in achieving resource objectives. One resource objective of the AMP is to meet the state water quality standards (WQS) that are adopted under the federal Clean Water Act (CWA). WQS are the state's response to the CWA requirement that every state submit standards to the Environmental Protection Agency (EPA) for approval. If they fail to submit standards consistent with the CWA, the EPA will write the standards for the state. The WQS are discussed in more detail below.

When the Forests and Fish Report rules were being evaluated by the Board for adoption in 2001, the Final Environmental Impact Statement for the new rule package found perennial non-fish bearing (Type Np) streams in western Washington to have a "moderate to high risk of temperature increases". The

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<sup>1</sup> McIntyre, A.P., M.P. Hayes, W.J. Ehinger, S.M. Estrella, D.E. Schuett-Hames, R. Ojala-Barbour, G. Stewart and T. Quinn. 2021. *Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington - Phase 2 (Nine Years after Harvest)*. Cooperative Monitoring, Evaluation and Research Report CMER 2021.07.27, Washington State Forest Practices Adaptive Management Program, Washington Department of Natural Resources, Olympia.

<sup>2</sup> Ehinger, W.J., W.D. Bretherton, S.M. Estrella, D.E. Schuett-Hames and S.A. Nelson. 2021. *Effectiveness of Forest Practices Buffer Prescriptions on Perennial Non-fish-bearing Streams on Marine Sedimentary Lithologies in Western Washington*. Cooperative Monitoring, Evaluation, and Research Report CMER 2021.08.24, Washington State Forest Practices Adaptive Management Program, Washington Department of Natural Resources, Olympia.

## Type Np Action Development Dispute, Majority Recommendations to the Forest Practices Board

Board, understanding this risk, prioritized studies to determine the effectiveness of the riparian buffers in meeting WQS on Type Np streams.

The Hard Rock and Soft Rock studies were collaboratively developed and executed by the Cooperative Monitoring, Evaluation, and Research Committee (CMER) with consensus approval by Policy and the support of the Board. Study design development for the first of these studies, Hard Rock, began in 2002, with site selection commencing in 2004. The Hard Rock study was completed in late 2017 and delivered to Policy in June 2018. A second phase of the Hard Rock study was completed and delivered to Policy in 2021. Soft Rock was subsequently delivered in 2022.

Upon receipt of the Hard Rock study, Policy representatives were concerned by the temperature findings of the report. Based on these concerns policy delivered a consensus recommendation to the Board stating that rulemaking would likely be necessary because of temperature increases associated with the current rules buffers. As part of that recommendation, Policy proposed the formation of an expert panel, the Technical Type Np Prescription Workgroup (Technical Workgroup), to advise Policy in developing new Type Np buffer rules.

Upon Board acceptance of the recommendation, the AMP developed a budget and charter for the Technical Workgroup. The Technical Workgroup delivered their report to Policy recommending three alternatives for consideration in the development of new Type Np rules in western Washington. Policy accepted the report from the experts on the Technical Workgroup and began to develop a recommendation for the Board. Unfortunately, despite attempting to find consensus Policy did not agree over what level of protection was needed in Type Np streams. Thus, Policy was unable to deliver one recommendation to the Board. The Hard Rock and Soft Rock studies demonstrated the current rules do not adequately protect stream temperature (violating WQS) in Type Np streams in western Washington. It is the conclusion of the majority caucuses that the completed CMER science and report from the Technical Workgroup demonstrates a continuous buffer, from the end of fish-bearing waters (F/N break) to the uppermost point of perennial flow of Type Np waters is required to meet Washington's Water Quality Standards.

## Type Np Buffer Recommendations

The majority caucuses are recommending two harvest prescriptions to the Board for consideration. Option 1 is based on the recommendations of the Technical Workgroup. In this report, we will discuss the details of this option at length. Option 2 represents a consensus Policy product that, when conditions for its use occur, provides the most protection for stream temperature. The Board could adopt one or both of the prescriptions. If the Board chooses to accept only one option, the majority caucuses recommend the Board adopt Option 1.

Option 1 could be applied across the entirety of the western Washington Type Np landscape. Option 2 alone would not be sufficient to protect water quality as it would only apply in certain basins and situations.

## Option 1

This proposal requires all Type Np streams to be buffered by a two-sided 75-foot no harvest buffer for the first 600 feet upstream from the F/N break, or for the lowest 600 ft. of the Type Np stream in the case of isolated Type Np streams which have no downstream confluence.

Upstream from the first 600 feet of a Type Np stream, the two-sided buffer width is determined by the bankfull width of the stream (BFW).

- Where Type Np streams have a 3-foot BFW or greater, one of the following prescriptions is required:
  - 1) Two-sided 75-foot buffer where the inner 50-foot management zone is no harvest and the outer 25-foot zone can be managed (see management prescription below); or a
  - 2) Two-sided 65-foot fixed-width no harvest buffer.
- Where Type Np streams average less than 3-foot BFW, a two-sided 50-foot fixed-width no harvest buffer is required.

All existing equipment limitation zones, sensitive sites, forest practices hydraulic project, roads, yarding corridors, and unstable slope rules will continue to be applied to the full length of all Type Np waters.

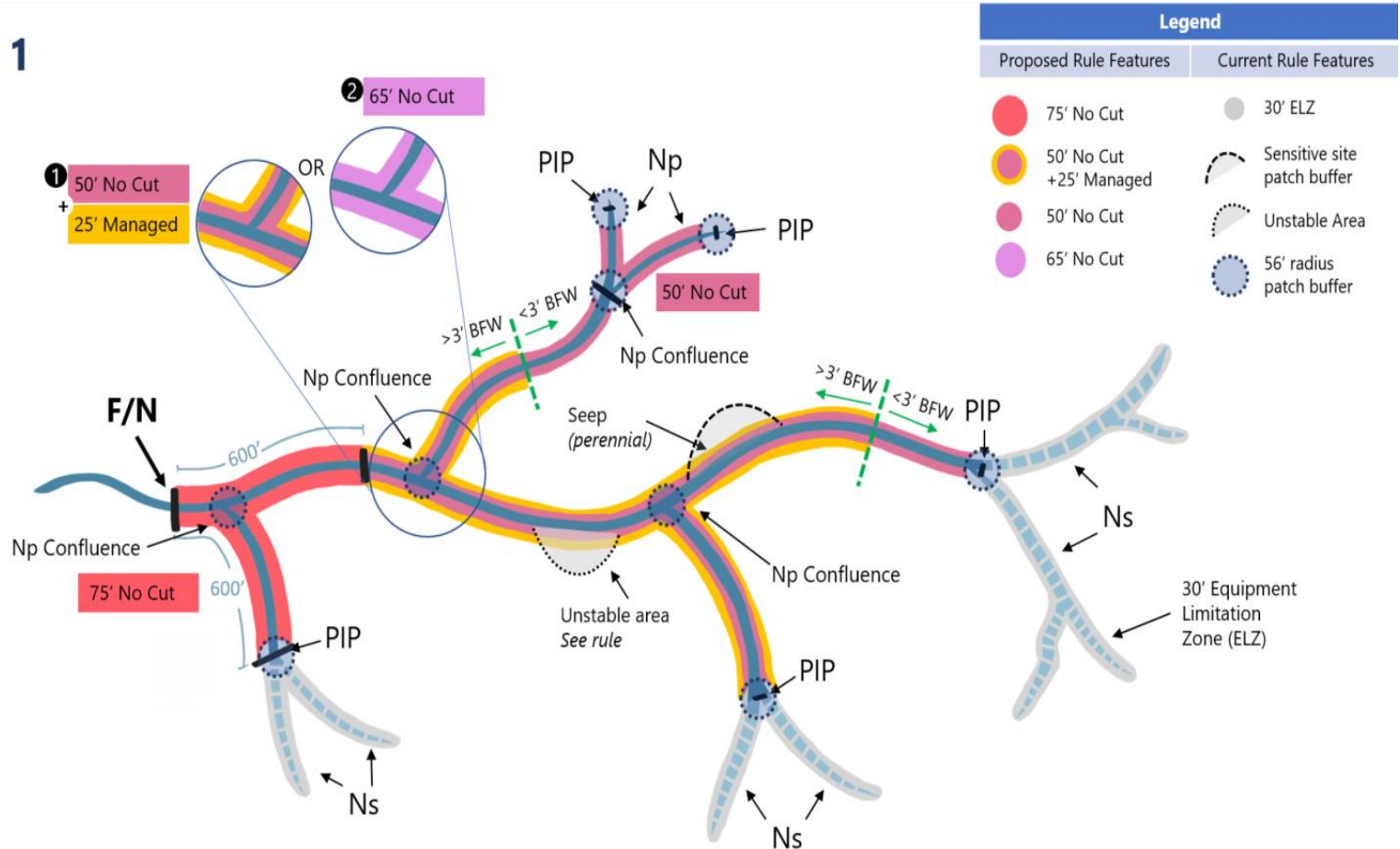
### *75-foot management prescription:*

This prescription applies *upstream from the first 600 feet* of a Type Np stream for streams having a 3-foot BFW or greater. The management zone is limited to the outer 25 feet of the Type Np buffer. Using an evenly spaced thinning strategy, such as by diameter class or relative density, 50% of the trees must be retained. The thinning strategy should be both implementable and enforceable.

Type Np Action Development Dispute, Majority Recommendations to the Forest Practices Board

# Option 1

v 9.8.2022



Note: Diagram is not drawn to scale.

## Option 2

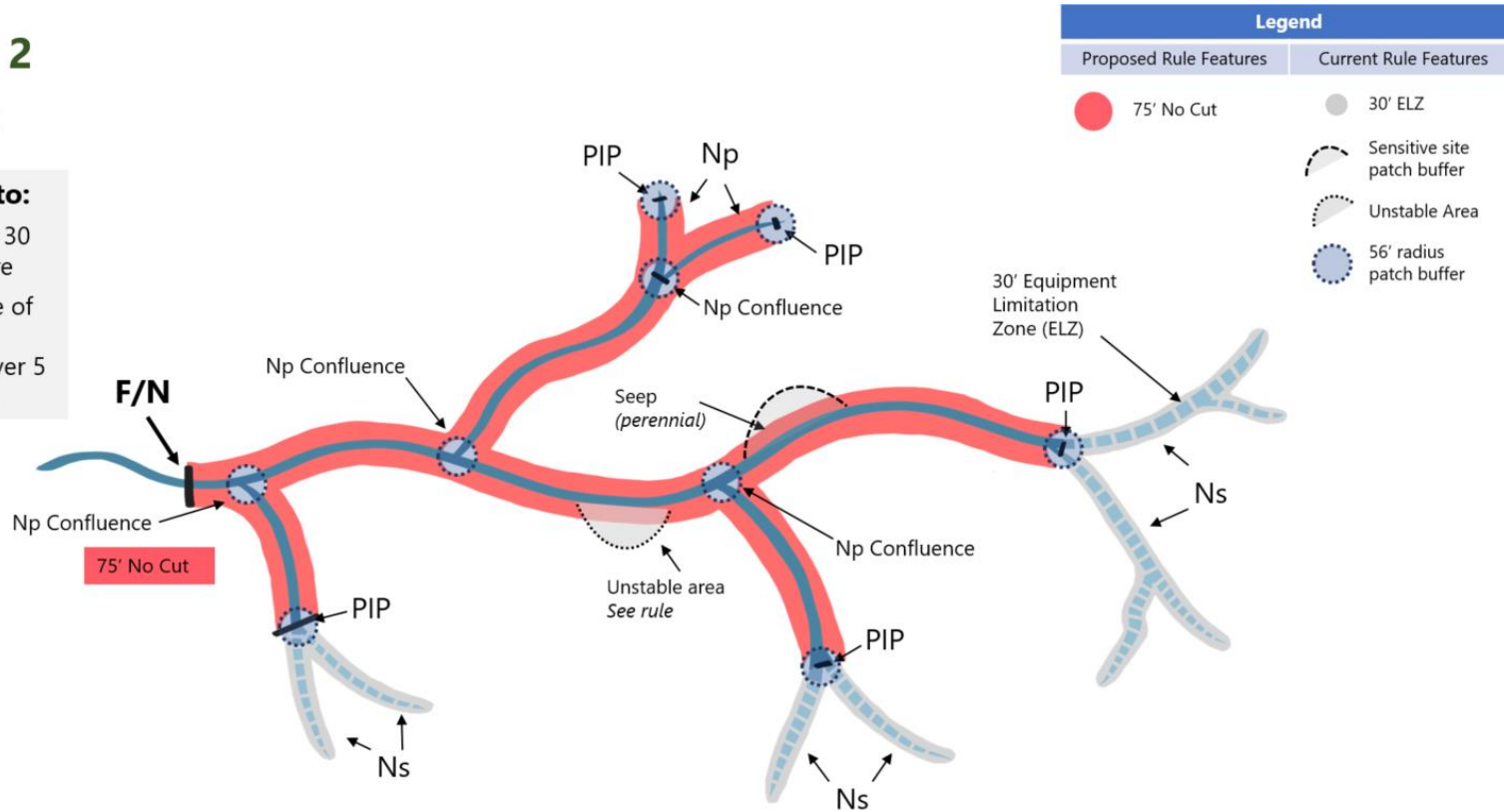
The majority caucuses support the Policy consensus Option 2 (minority caucus Prescription A) This prescription is applied when 85% or more of a Type Np stream basin greater than 30 acres is to be harvested within a five-year period. The prescription requires the Type Np streams to be buffered with a two-sided 75-foot wide no harvest buffer for the entire length of the Type Np stream.

## Option 2

v 8.31.2022

### As applied to:

- Basin size of 30 acres or more
- 85% or more of basin is harvested over 5 years or less



Note: Diagram is not drawn to scale.

## Rationale

### Summary of study findings

The majority caucuses Type Np water buffer proposal (Option 1) was developed in response to the temperature findings of the CMER studies which were:

- The Hard Rock Phase I and Phase II studies found that all of the riparian buffer treatment options resulted in a stream temperature increase greater than 0.3°C, exceeding the WQS. The study found:
  - The forest practices buffer (current forest practices rules) and 100% buffer (50-foot wide two-sided continuous buffer) treatments each averaged an increase of 1.2°C two years post-harvest;
  - For the forest practices buffer treatment, the stream temperature increase remained greater than 0.5°C for 10 years post-harvest;
  - For the 100% buffer treatment, the stream temperature increased more than 0.3°C for 4 of the 11 years post-harvest, in one site as much as 2.4°C; and
  - 4 harvested sites increased above the water quality threshold criteria of 16°C. One of these streams received the 100% buffer treatment.
- The Soft Rock study found the stream temperatures exhibited a 0.3°C or greater increase in sites harvested according to current forest practices rules. This increase was observed for the first 3 years post-harvest despite some sites having buffers wider and longer than the minimum required by current forest practices rule due to the presence of unstable slopes requiring additional buffer protections. In fact, four of the seven harvest treatment sites had buffer lengths greater than 92% of the stream length. The study found:
  - In the first two years post-harvest, the study found a temperature increase of 0.6°C after accounting for natural variability; and
  - One site exceeded the numeric criterion of 16°C for all 4 years.,
- The science team conducting the studies found that results were comparable to other studies conducted looking at relationship of shade removal and temperature.

### Water Quality Standards

In July 2018, upon receiving the final report of the Hard Rock Phase 1 study, Policy began meeting to understand the implications of the results. Policy requested and received a briefing from the Department of Ecology (Ecology) staff on how Washington's WQS are applied to forestry.

The WQS incorporates designated uses (aquatic life, wildlife, swimming, fish harvest, and other miscellaneous uses such as navigation and aesthetics). The designated uses are protected through both numeric and narrative criteria as well as an antidegradation policy. All aspects of WQS are independently applicable.

The WQS require the protection of the most sensitive aquatic life in both fish-bearing and non-fish-bearing waters and have been approved by the EPA in consultation with US Fish and Wildlife Service and the National Marine Fisheries Service.

## Type Np Action Development Dispute, Majority Recommendations to the Forest Practices Board

The EPA states “One of the principal objectives of the Clean Water Act is to “maintain the chemical, physical and biological integrity of the Nation’s waters.” Antidegradation requirements provide a framework for maintaining and protecting water quality that has already been achieved”. The antidegradation policy consists of:

- Tier I - protection and maintenance of existing and designated uses;
- Tier II - protection of waters of higher quality than the standards. Tier II does not allow a “measurable change” for waters that do not exceed the designated use criteria; and
- Tier III - protection of outstanding resources waters.

Tier II applies to waters that are not impaired where lowering of water quality is allowed to a limited extent, defined for temperature as not greater than “measurable change” defined as 0.3° C. Tier II of the antidegradation policy applies to “pollution control programs” of which Ecology considers the implementation of the Forest Practices rules and the administration of studies through the Adaptive Management Program (AMP) to be one.

The WQS apply to all surface waters, whether they are fish bearing or not. Type Np waters are an important source of nutrients, cool water, and other beneficial uses to fish bearing (Type F) waters lower in the watershed. Type Np waters also support other aquatic organisms such as amphibians and macroinvertebrates, which are an important food source for fish. While the impact of a single timber harvest may be limited in time and only affect a small area, the cumulative impacts of multiple adjacent harvests over time may significantly degrade a watershed.

The AMP has committed to complying with the WQS with the inclusion of Schedules L-1 and M-2 in the Forests and Fish Report. The State has further committed to meeting the WQS in Section 5.2.1 of the Forest Practices Habitat Conservation Plan. Since the temperature monitoring data of the Hard Rock and Soft Rock studies found harvest activities conducted under the current Type Np buffer rules can and do exceed the criteria for temperature, the AMP must develop new rules to protect water quality.

Meeting the requirements of the CWA is a priority of the AMP. As EPA states, antidegradation requirements provide a framework for maintaining and protecting water quality that has already been achieved. When Washington adopted antidegradation provisions, as required by EPA, it was made clear that the Forest and Fish rules would need to meet the Tier 2 antidegradation requirements. Thus, the majority caucuses understand warming of Type Np streams should be limited to 0.3°C in accordance with the state’s Tier II antidegradation standards.

### Technical Type Np Prescription Workgroup

Per the Forest Practices Board Manual, once Policy received the Technical Workgroup report it had six months to formulate a response to the Hard Rock study. Policy agreed by consensus “a rule change was likely” given the temperature results. However, participants also understood the Hard Rock study only looked at a portion of western Washington Type Np stream lithologies. Harvest prescriptions on the remaining Type Np stream lithologies were being evaluated in the Soft Rock study which was to be completed within a year. Further, stakeholders understood that a hastily designed rule change could come with a significant financial cost to the timber industry. Policy decided, in consensus, its initial response to the Hard Rock study would be to form the Technical Workgroup, tasked with developing



## Type Np Action Development Dispute, Majority Recommendations to the Forest Practices Board

harvest prescriptions that meet the antidegradation standard across all lithologies. The Technical Workgroup would give Policy the time to receive the Hard Rock Phase II and Soft Rock study results, and the expertise to evaluate how potential new rule configurations could protect water quality while minimizing cost to landowner.

In the spirit of the original TFW Agreement, Policy's direction to the Technical Workgroup elevated two fundamental priorities of the Forests and Fish Report and the AMP "to meet the requirements of Clean Water for water quality..." and to "keep the timber industry economically viable in Washington State." Specifically, the Technical Workgroup was asked to design prescriptions that would meet the state's WQS but also "minimize additional economic impact."

The Technical Workgroup consisted of technical experts with both academic expertise and substantial field experience. Upon reviewing the studies, the Technical Workgroup agreed with the Policy determination that the Hard and Soft Rock studies were well designed and demonstrated the current rules for Type Np streams are not maintaining temperatures in accordance with the WQS. According to the authors, the studies used "a reasonable approach for evaluating the measurable change standard" and found "the current Forest Practices Type Np buffer prescription did not categorically protect against stream temperature increases."

In their discussion of temperature, the Technical Workgroup reviewed the literature and determined that a 75-foot buffer "is required to maintain post-harvest temperature increases to less than 0.3°C." This conclusion was drawn from the work of Groom et al. (2018<sup>3</sup>). This study also equated a 75-foot two-sided buffer to a 7% reduction in shade. Thus, the Technical Workgroup evaluated all proposals against this level of shade protection.

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<sup>3</sup> Groom, J.D., Madsen, L.J., Jones, J.E. and Giovanini, J.N. 2018. Informing changes to riparian forestry rules with a Bayesian hierarchical model. *Forest Ecology and Management* 419: 17-30.

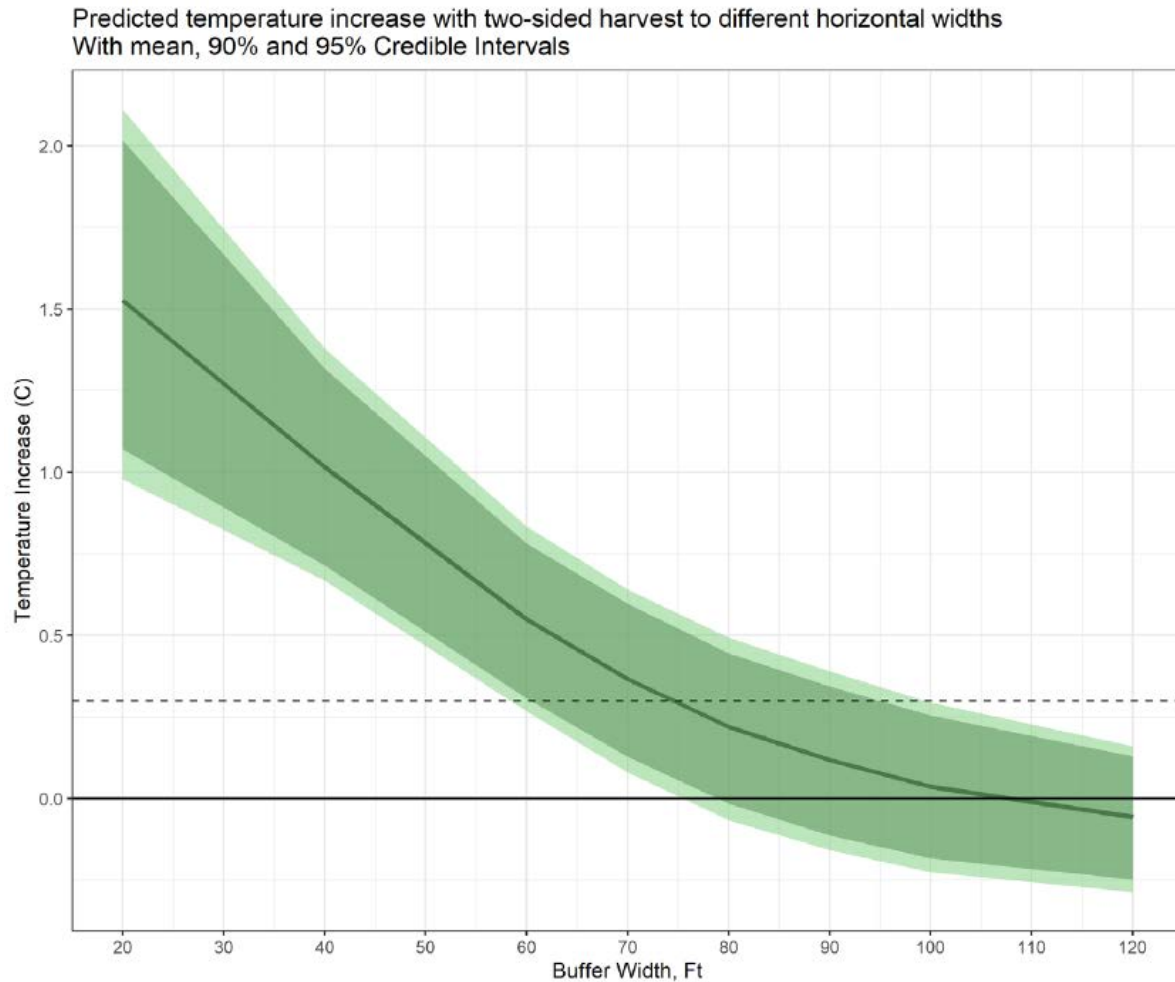


Figure 3. Predicted relationship between two-sided buffer width and stream temperature increase post-harvest. This prediction was based on the data and analysis approach of Groom et al. (2018).

Designing an effective buffer alternative to protect stream temperature is difficult given the natural variability across the landscape. The Technical Workgroup did, however, agree that “clear-cut portions of stream channels generally warm following harvest.” This determination necessitated the adoption of a full-length buffer to protect stream temperature. Ultimately, the Technical Workgroup evaluated seven prescriptions and recommended that Policy consider three of these alternatives. All three recommended alternatives employed a continuous buffer from the F/N break to the upper-most point of perennial flow.

**The need for a continuous buffer made it impossible to recommend a prescription that would avoid economic impact. To minimize that impact while meeting the WQS, it was inevitable the recommended alternatives would have some level of uncertainty as to their effectiveness of meeting the WQS.**

Rooted in the original TFW Agreement, the AMP must continue the cooperative attitude among its participants and listen to the concerns of each other while attempting to minimize economic impact and

maintaining compliance with the WQS. The majority caucuses accepted the Technical Workgroup report and began discussing alternatives with this in mind. Our prescription was developed from the information Policy received from the Technical Workgroup as well as the Hard Rock and Soft Rock studies.

## Option 1

Guided by the Technical Workgroup's discussion on temperature, Policy's deliberations quickly centered on 75-foot buffer proposals. **The majority caucus proposal applies two-sided 75-foot buffers on all Type Np streams within the first 600 feet upstream of the F/N break.** The Technical Workgroup report gives us confidence this will protect water temperature in these vitally important reaches.

When a harvest unit is greater than 600 feet upstream from the F/N break (or the downstream end of the Type Np stream, if isolated), the majority proposal applies full length buffers, but the width varies depending on the BFW of the stream within the harvest unit. If the stream is wider than 3-foot BFW, landowners may apply a 75-foot buffer with the option of thinning within the outer 25 feet or a 65-foot fixed-width no harvest buffer.

This prescription was derived from two of the Technical Workgroup's three recommended prescriptions. Technical Workgroup authors understood that introducing a thinning to a 75-foot buffer prescription increases uncertainty as to the likelihood of stream temperature change remaining below 0.3°C. However, the authors note the Groom study, upon which the alternatives were compared, evaluated fish streams that were likely moving more slowly than the average Type Np stream in forestland. They agreed the thinning "may reduce the efficacy of the buffer, but we do not know to what extent". While concerning, they also expressed doubt it would be common practice to maximally thin the buffers. **As a result, the Technical Workgroup believed the 75-foot buffer with thinning in the outer 25 feet would generally be as protective as a 75-foot no harvest buffer.**

The majority caucuses accept the Technical Workgroup's framing of this prescription and offer it as a component of our proposal for a rule package.

**The majority caucuses recognize that a 75-foot buffer with a 25-ft outer thinning zone may be difficult for landowners to implement. Thus, the majority recommendation also comes with the option of a continuous 65-foot two-sided no harvest buffer.** This is a simplified alternative for landowners, particularly small forest landowners. The 65-foot no-harvest buffer option was a component of one of the Technical Workgroup's recommended alternatives. The authors felt this alternative, with all of its components, would "have a reasonable chance" to meet the WQS. The majority caucuses determined the other components of this recommendations were too complicated and untested to be adopted by rule, but saw opportunity for a simplified prescription. Therefore, the majority recommendation proposal also offers landowners an option of a 65-foot two-sided no-harvest buffer.

**Where the stream averages less than 3-foot BFW, a continuous two-sided 50-foot fixed-width no harvest buffer is required upstream of the first 600 ft. from the F/N break. The majority caucuses are less confident about this prescription meeting the WQS.** The Technical Workgroup did evaluate a 50-foot buffer and found it would not protect stream temperatures. The basis informing their evaluation

came from the results of the Hard and Soft Rock studies. However, the CMER studies did not specifically evaluate the rules on streams less than 3-foot BFW.

Given that shade is a significant driver of stream temperature and the Technical Workgroup's recommendations for a continuous buffer on all prescriptions, the majority caucuses agree a no-harvest buffer is necessary to protect water temperature in headwater streams. We are not certain a 50-foot continuous buffer on Type Np streams less than 3-foot BFW will be adequate at meeting the WQS. Nonetheless, in an attempt to meet the spirit of the TFW Agreement, we included this prescription despite our uncertainty because these smaller streams were not specifically evaluated. **As a result, the majority caucuses strongly recommend monitoring of harvest activities and additional study to determine the effectiveness of this prescription.**

Finally, the majority caucuses would like to discuss the overall buffering strategy. Our recommended buffers upstream from the 600 feet above F/N break come with a level of uncertainty. For the first 600 feet of a Type Np stream, we are confident the full 75-foot buffer will protect water temperature. This design, where streams with less protective buffers flow into streams with more protective buffers, was developed to somewhat mitigate the risk of stream warming to fish streams. We know from Bladon et al. (2018)<sup>4</sup> "heated water from harvested sites rapidly decreased in temperature after flowing into stream reaches with full forest cover." The Hard and Soft Rock studies also found water temperatures decreasing downstream of the harvest units upon entering full forests. We recognize a 75-foot buffer does not qualify as "full forest cover", but it would likely decrease the potential warming coming from the narrower upstream buffers. This design gives us more confidence to offer a proposal with buffers that are at the margins of what is known to be necessary to protect stream temperature in order to provide more flexibility to landowners.

**Offering this package is also done with confidence in the AMP. As we discuss below, it is imperative that the AMP evaluate the effectiveness of this new buffering scheme for Type Np streams in western Washington once the options are placed into rule.**

## Option 2

Option 2 was developed from a proposal that was delivered to Policy by the industrial landowner caucus. As we understood it, their proposal was developed to meet the WQS for harvests most closely aligned with the harvests evaluated in the Hard Rock study. Like the Technical Workgroup's report, the proposal presented continuous 75-foot buffers on Type Np streams to protect stream temperature. However, it sought to limit the prescription to basins larger than 30 acres that would be entirely harvested.

Policy participants evaluated the proposal against the prescriptions implemented in the Type Np studies. It was found entire basins were not always harvested due to the presence of sensitive sites and rule identified landforms. Thus, the basin harvest size requirement was adjusted to 85% or more of a 30 acre or larger basin.

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<sup>4</sup> Bladon, K.D., Segura, C., Cook, N.A., Bywater-Reyes, S. and M. Reiter, M. 2018. A multicatchment analysis of headwater and downstream temperature effects from contemporary forest harvesting. *Hydrological Processes* 32:293–304.

Finally, Policy discussed the likelihood of entire basins to be harvested at one time. Concerns were raised that portions of a basin would be harvested on different schedules, resulting in an entire basin being harvested in a short period of time. The Type Np studies found that the duration of elevated temperatures spanned multiple years. This led Policy participants to agree that harvests over a 5-year time period would qualify as a whole basin harvest and the 75-foot buffer would apply within the basin.

The majority caucuses support this proposal for adoption because we believe it will protect stream temperatures on these Type Np streams. It does come with some implementation issues the Board should consider. Of primary interest to the majority caucuses is a clear definition of a complete Type Np basin and how to evaluate for compliance when an entire basin is not owned by a single landowner or when applications are submitted in different years.

## Other Recommendations and Considerations

### Recommendations

It is critical that monitoring and future evaluation is a part of this rule package. Some of the majority caucuses' policy decisions presented here are based on uncertainty due to a lack of existing data. During the dispute, all parties agreed that an effectiveness monitoring program must accompany the Type Np buffer prescriptions. The majority caucuses envision a monitoring program, to be developed by CMER, which would evaluate the ability of the new rule(s) to meet the state's WQS. The study design should be developed within the AMP following the normal CMER processes and procedures with Policy review and approval. Based on the majority caucuses recommended prescriptions, a few potential areas to monitor are;

- does a two-sided 75-foot no harvest buffer with a length of 600' reduce impacts to temperature from when water enters the buffer until it leaves;
- does a 75-foot buffer (50-foot core, 25-foot managed) provide enough shade to limit temperature increase to less than 0.3°C; and
- how does stream temperature respond in Type Np streams less than 3-foot BFW when harvested under the new rule.

The majority caucuses also recommend the Schedule L-1 objective for stream shade be updated. Currently, the Westside shade objective is an approximation of the current rule. Since the rule does not protect water temperature as needed, this objective is obsolete. We recommend the Forest Practices Board reopen Schedule L-1 for updating.

### Other Considerations

The majority caucuses did not recommend a small forest landowner option as we were not able to define an option that would meet the "equal in overall effectiveness" language in the Forests and Fish law. If, however, the Board considers a small forest landowner option, the majority caucuses strongly recommend that there be a harvest limit to individual ownership harvests and/or collective ownership harvests within single watersheds watershed, limited by distance of streams treated under any option to minimize potential adverse effects to Washington's water quality standards and stream temperatures.

The majority caucus's recommended alternative is designed to address the temperature concerns found in the Soft and Hard Rock studies. We note that review of the studies and subsequent discussions amongst the caucuses elicited other concerns. As such, we would like to share those concerns with the Board.

## Stream Associated Amphibians

Stream-associated amphibian population viability is one of several overall Performance Goals of the Forests and Fish (FFR) agreement. Stream-associated amphibians were selected as a key performance goal because stakeholders identified them as one of the important biotic resources to be protected in Type N Waters (USFWS 1999<sup>5</sup>). Stream-associated amphibians are sensitive to changes in stream habitats that are often associated with upland timber harvest, including changes in shade, stream temperature, and instream sediment storage.

In the Hard Rock study, streamside tree removal during timber harvest and blowdown of trees in riparian buffers resulted in shade reductions and subsequent increases in stream temperature for all riparian buffer treatments. Instream sediment storage also increased in both the 0% and FP riparian buffer treatments eight years following harvest. Over the same period there was a decline in basin-wide larval Coastal Tailed Frog abundance in all buffer treatments (-65%, -93%, -84% in the 100%, FP and 0% treatments). Similar declines were observed for tailed frog post-metamorphs in the 100% and FP treatments. This differed from a general lack of negative response for stream-associated amphibians in the two years immediately following harvest (i.e., Phase I results).

While the Hard Rock study was not designed to identify the mechanisms for potential changes in amphibian abundance in response to timber harvest, we have certainty in the fact that something at harvested sites changed in response to harvest in a way that negatively affected amphibians, given that we did not see similar declines in abundance at unharvested reference sites over the same period.

## Windthrow

Multiple CMER studies have found that current 50' buffers on Type Np streams have high rates of windthrow compared with the studies' reference sites:

### Type N Experimental Buffer Treatment Study in Soft Rock Lithologies

- Wind and physical damage from falling trees accounted for approximately 75% of mortality in the RMZ FP Buffers and 81% of mortality in the PIP FP Buffers, compared to <10% in the reference site RMZs and PIPs.<sup>6</sup>

### Type N Experimental Buffer Treatment Project in Hard Rock Lithologies

- Windthrow was the primary cause of mortality and tree fall in both RMZ and PIP buffers. There was substantial variability in windthrow mortality among and within sites. We observed higher rates of windthrow in the RMZs of the coastal blocks (Willapa 1 and Willapa 2) than in sites located further inland in both the pre- and post-harvest periods.

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<sup>5</sup> USFWS. 1999. Forests and Fish Report. US Fish and Wildlife Service and 11 other organizations. Washington Forest Protection Association, Olympia, WA.

<sup>6</sup> CMER/TFW Policy Interaction Framework Six Questions:

Type N Experimental Buffer Treatment Study in Soft Rock Lithologies; November 4, 2021

## Type Np Action Development Dispute, Majority Recommendations to the Forest Practices Board

- Higher tree mortality in PIP buffers was likely due to their exposed locations and vulnerability to windthrow.<sup>7</sup>

Westside Type N Buffer Characteristics, Integrity and Function (BCIF) Study – Extended 10-year post-harvest report

- Mortality was variable, but extensive mortality occurred at some sites. About one-quarter of the RMZ buffers and two-thirds of the PIP buffers had substantial mortality (>5%/year), resulting in reduction of density, canopy shade and wood recruitment potential, but tree fall from wind supports the resource objectives by providing a pulse of large wood.<sup>8</sup>

Windthrow is inevitable in riparian areas, though wider buffers are intrinsically more windfirm than narrower buffers. We think the additional 15' to 25' of buffer on streams wider than 3' will help mitigate the potential for catastrophic windthrow events.

## Climate Change

Climate change will inevitably affect riparian stands and stream temperatures across western Washington. While the studies did not specifically consider impacts related to climate change, stream temperature warming due to climate change increases the risk of future exceedance of water temperature standards. Wider buffers can help mitigate this potential warming of headwater streams. Additionally, climate change will likely lead to more intense storm events, further supporting the need to establish wider, more wind resilient buffers that can better withstand these events.

## Conclusion

The AMP is tasked with reviewing, evaluating, and, when warranted, making changes to the forest practices rules. The Policy approved study designs for both Hard Rock and Soft Rock underwent rigorous scientific review by CMER and independent scientists. The studies were designed to address fundamental concerns brought forth through the Final Environmental Impact Statement preparation for the Forests and Fish Report, where the environmental effects of the proposed rule had a “Moderate to High risk of temperature increases along non-fish bearing streams.”

The Hard Rock and Soft Rock studies produced results showing the current rules are not adequate in meeting the Washington’s water quality standards. The majority caucuses find that to address the temperature increases as reported in the Hard Rock and Soft Rock studies, Type Np buffer prescriptions which protect the full length of Type Np waters and are wider in overall width than the current forest practices buffers are required. The Technical Workgroup report evaluated many potential buffer prescriptions, all of which had full-length buffers. They agreed upon three that were delivered to Policy. The majority caucus’s proposal is primarily based on two of these recommendations.

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<sup>7</sup> CMER/TFW Policy Interaction Framework Six Questions:  
Type N Experimental Buffer Treatment Project in Hard Rock Lithologies; February 27, 2018

<sup>8</sup> CMER/TFW Policy Interaction Framework Six Questions:  
Westside Type N Buffer Characteristics, Integrity and Function (BCIF) Study – Extended 10-year post-harvest report; November 15, 2019



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## MEMORANDUM

October 25, 2022

**TO:** Forest Practices Board

**FROM:** Saboor Jawad, Adaptive Management Program Administrator (AMPA) 

[Saboor.Jawad@dnr.wa.gov](mailto:Saboor.Jawad@dnr.wa.gov) | 360-742-7130

**SUBJECT:** Net-gains options for TFW Policy and status of SAO audit recommendations

In January 2021, the Office of the Washington State Auditor (SAO) completed a performance audit of the Forest Practices Adaptive Management Program (AMP)<sup>1</sup>. The audit provided 13 recommendations for improving program performance. The report referred eleven of these recommendations to the Forest Practices Board (FPB). In May 2021, the Board approved staff suggested relative priorities among the recommendations in the form of a response plan.

Based on recommendations from a TFW Policy workgroup and the AMPA, TFW Policy has now identified and approved a list of five net gains options for the program. These options align well with the intent of auditor's recommendation #05 on adopting a net gains model for TFW Policy. The option paper is now submitted for your consideration of approval. Your approval will allow TFW Policy to fully develop each option leading to changes in Board manual guidance for the adaptive management program.

In May 2021, the Board also directed the AMPA to provide status reports to the Board at six month intervals. In Tables 1-3 of the attachment to this memo, I am providing an update to the Board on the status of each action item related to all SAO recommendations.

Please let me know if you have any questions or need more information.

### Attachments:

- 1- Summary of progress on implementation of SAO recommendations
- 2- TFW Policy net gains option paper

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<sup>1</sup> [Performance Audit of the Adaptive Management Program](#)



## 1- Progress on Implementation of SAO Recommendations

**Table 1:** Recommendations to be considered and acted upon by caucus principals that may be aided by third-party neutral assistance focusing on conflict transformation

Focus Area	Action Item	SAO Rec #	Status	Update
Decision making process	<ol style="list-style-type: none"> <li>1) Review consensus decision making model:</li> <li>2) Require participation by caucus principals</li> </ol>	1 and 2	<b>Delayed</b> Expected to be completed next biennium.	<p>The status of these two recommendations have changed from on-track to delayed since the last update. This is primarily because any changes to the decision making model would require a rule-change. A rule-change in the remainder of the current biennium is unlikely.</p> <p>Two rounds of TFW Principals meetings have been held this biennium.</p> <p>The FPB approved the MPS with funds to continue facilitating the Principals meeting in the next biennium. The principles are expected to continue discussions.</p>

**Table 2:** Recommendations involving changes to AMP processes to be evaluated mainly through the appropriate AMP committees

Focus Area	Action Item	SAO Rec #	Status	Update
Decision making process	Adopt decision criteria for determining actions that will occur depending on project results before those results have been found	6	<b>Delayed</b> But expected to make significant progress in the remainder of this biennium	TFW Policy workgroup on SAO Audit Recommendations has started discussions on developing decision criteria for projects in the program. Developing decision criteria is more complicated than anticipated. TFW Policy will have joint sessions with a CMER workgroup on this recommendation. The FPB can expect to receive a consensus recommendation at their May 2023 meeting.
Decision making process	Implement a “net gains” approach to each proposal, project, and decision that benefits more than one caucus by considering packages of projects instead of individual projects	5	<b>Completed</b>	TFW Policy has approved a list of potential net gains options. Implementation will commence with Board approval of the

				options paper at their November 2022 meeting.
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**Table 3:** Recommendations that are administrative in nature to be evaluated primarily by Board and AMP staff and brought to the Board for decision and action

Focus Area	Action Item	SAO Rec #	Status	Update
Decision making process	Update language in the board manual to reflect WAC which says dispute resolution is required when consensus cannot be achieved within the Science or Policy committees.	3	Completed	Board Manual 22 has been updated. Board staff presented revisions to the Board in February 2022 and obtained the Board's approval
Decision making process	The board should set a trigger for dispute resolution. It should work with the Adaptive Management Program Administrator and the chairs of the committees to determine the appropriate amount of time:  <ol style="list-style-type: none"> <li>1- Identify and recommend to the Board schedule or process based triggers for invoking dispute resolution</li> <li>2- Add line item for dispute resolution in the Master Project Schedule</li> <li>3- Establish on-call contracts for dispute resolution for Policy Committee</li> <li>4- Establish on-call contracts for a CMER technical arbitration panel</li> <li>5- Establish on-call statistical assistance contract for CMER</li> </ol>	4	Completed	Board staff have completed drafting mark-up language for Board Manual Section 22. Presentation to the Board is delayed until February 2023 when Board manual revision is expected to be on the Board's agenda.
Transparency and Accountability	<ol style="list-style-type: none"> <li>1) Tracking system for life cycle of projects</li> <li>2) Public facing dashboard</li> </ol>	10,11	On track Significant progress made since last update.	<p>AMP staff have started work on a project tracking system and on introducing cost and schedule metrics for continuous monitoring of projects.</p> <p>A DNR supported SharePoint Online platform has now been created. CMER and TFW Policy members will receive training in the remainder of this calendar year. Members of both committees will be provided access to the platform in calendar year 2022.</p> <p>DNR also issued a request for proposal (RFP) to build a public-facing dashboard this quarter. The RFP has now closed and the resulting contract will be signed in early November 2022. AMP staff</p>

				expect to complete the development of the dashboard by June 2023.
Transparency and accountability	Complete biennial fiscal and performance audits of the AMP every two years	9	<b>On track</b>	Status has changed from planned to on track since last the update to the FPB. Draft language is ready to be reviewed by FPB at their <b>February 2023</b> meeting when Board manual revision is expected to be on the Board's agenda.
Transparency and accountability	Peer review science program every 5 years	7	<b>On track</b>	<p>Status has changed from planned to on track since the last update. Board staff have developed mark-up draft language requiring 5 year review for part 6.1 of Board Manual Section 22. Draft language will be presented for Board decision in <b>February 2023</b> when Board manual revision is expected to be on the Board's agenda.</p> <p>The rule-required science review of the program will be fulfilled this biennium through a separate project lead by Washington Department of Fish and Wildlife</p>
Decision making process	Onboarding and training for new members	8	<b>On track</b>	<p>Status has changed from planned to on track.</p> <p>Board staff have completed a draft mark-up language for Board Manual Section 22 that would require training for new AMP participants. Revisions will be presented to the Board at their February 2023 meeting when Board manual revision is expected to be on the Board's agenda.</p> <p>Funds are added in the MPS for the next biennium to develop training materials.</p>

*Performance Evaluation of the Adaptive Management Program:  
State Auditor's (SAO) Recommendations*

## **OPTIONS PAPER**

**SAO Recommendation # 5: Adopt a Net Gains Model for Project Planning**

**TFW Policy Committee**

**And**

**Saboor Jawad, AMP Administrator**

06 October 2022

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## 1- BACKGROUND

The State Auditor’s Office (SAO) completed a Performance Audit of the Forest Practices Adaptive Management Program (AMP) in January 2021<sup>2</sup>. The audit provided 13 recommendations for improving program performance. The report referred eleven of these recommendations to the Forest Practices Board (Board).

In May 2021, the Board approved staff suggested relative priorities among the recommendations in the form of a response plan. The plan also identified additional resources that are needed to make and sustain identified changes. Consistent with the Board’s February 10, 2021 letter to the SAO, recommendations are separated into three groups based on entities that would need to complete the critical developmental work (Table-1). The Board assigned TFW Policy and the Adaptive Management Program Administrator (AMPA) the responsibility to address SAO recommendation number 5. The Board expects to receive an options paper at their November 2022 meeting.

**Table-1:** *Summary list of SAO recommendations referred to the Forest Practices Board*

SAO Rec.	Action Item	Implementation Responsibility	Status
1	Review consensus based decision making model	Assigned to TFW caucus principals for consideration	On track to be implemented
2	Require participation by caucus principals	Assigned to TFW caucus principals for consideration	
3	Update dispute resolution language in Board Manual Section 22	Administrative nature and assigned to Board staff	Completed
4	The Board should set substantive and benchmark triggers for dispute resolution	Administrative in nature and assigned to Board and AMP staff	On track to be completed. Dispute resolution on-call contracts are in place, and funds are added in the MPS.
5	<b>Adopt a net gains model for project planning</b>	<b>Assigned to TFW Policy and the AMPA</b>	<b>On track to present options paper to Board by November 2022</b>
6	Adopt decision criteria for determining actions that will occur depending on project results before those results have been found	Assigned to CMER, TFW Policy and AMPA	Delayed and expected to be delivered to Board at their May 2023 meeting
7	Perform peer review of science program every five years	Administrative in nature and assigned to AMP staff	On track and requires additional resources. Funds are allocated in out-years on the MPS
8	Onboarding and training for new staff	Administrative in nature and assigned to AMP staff	On track to develop training materials in 23-25 biennium
9	Complete biennial fiscal and performance audits of the AMP every two years	Administrative in nature and assigned to AMP staff	On track to present staff recommendations to Board in February 2022
10	Develop a tracking system for life cycle of projects	Administrative in nature and assigned to AMP staff	. Additional resources were provided in the MPS and the development work has started.
11	Develop a public facing dashboard		

The SAO’s fifth recommendation SAO Recommendation number 05 is the focus of this paper. The recommendation is for the development of a net gains model for project planning in the AMP. The auditor’s report recommends that TFW Policy “use a net gains approach to each proposal, project,

<sup>2</sup> [Adaptive Management Program: Improving Decision-Making and Accountability](#), Office of the Washington State Auditor, February 23, 2021

and decision that benefits more than one caucus by considering packages of projects instead of individual projects”. The auditors also provide examples of two other stakeholder based forums that pursue a net gains approach. These include the Yakima Basin Integrated Plan and the Snohomish Sustainable Lands Strategy (SLS). Both forums use a net gains approach by ensuring that every project aligns with stated goals of stakeholders or use a multi-benefit planning approach.

The auditor’s evaluation report also refers to net gains as the principle that makes the benefits of broad-scale agreements greater than the cost for every party involved. No person or group should be expected to accept a net loss so that someone else can gain. Only “win-win” agreements in which all parties see more gain than loss should be completed.

The AMP Administrator and a TFW Policy subgroup reviewed the net gains model as proposed by the SAO. Its applicability in the AMP program was discussed to identify net gains options for TFW Policy. By analyzing existing decision making process in TFW Policy, this paper cannot determine whether the net gains model as proposed by SAO is neatly applicable to the AMP. Projects in the AMP are vastly different than projects in the stakeholder forums identified by the SAO auditors. The Forest and Fish Report (FFR) has set four goals for the AMP. These include:

1. To provide compliance with the Endangered Species Act (ESA) for aquatic and riparian-dependent species on non-federal forest lands;
2. To restore and maintain riparian habitat on non-federal forest lands to support a harvestable supply of fish;
3. To meet the requirements of the Clean Water Act for water quality on non-federal forest lands; and
4. To keep the timber industry economically viable in the State of Washington.

Decisions within the AMP would need to consider the four goals listed above. Net gains options for TW Policy, nonetheless, are needed. Five net gains options are identified and proposed that if implemented can improve processes in TFW Policy. These options together can significantly improve AMP project planning as well as increase transparency and accountability in the AMP.

## **2- NET GAINS PRACTICES IN THE AMP**

The AMP is a collaborative science-based program. The program commenced with a monumental collaborative effort in the form of the Forest and Fish Report (FFR). This aspect is recognized by the Washington State Legislature stating that federal and state agencies, Tribes, county representatives, and private timberland owners have spent considerable effort and time to develop the FFR (RCW 76.09.055). The AMP is the continuation of the FFR process and spirit. With over two decades of history, the program has consistently carried out scientific research and has informed the Forest Practices Board on the effectiveness of forest practices rules. Of the program’s three participants, the Timber Fish and Wildlife Policy Committee (TFW Policy) is a consensus-based forum that supports the AMP by developing solutions to issues that arise in the Forest Practices Program.

Net gains options as defined by SAO Auditors are largely pursued by TFW Policy. The committee’s nature as a full consensus based body reflects the collaborative origins of FFR and its precursor the

TFW process. The nature of the projects and problems that TFW Policy considers are vastly different than other stakeholder forums including those identified by SAO Auditor’s report that include the Yakima Basin Integrated Plan and the Snohomish Sustainable Land Strategy. Unlike these forums, the majority of projects, issues or problems that TFW Policy attempts to address arise from science reports on rule or program effectiveness or policy identified needs to amend landowner guidance on how to implement the forest practices rules. Solutions to these problems often include the preparation of rule amendments and/or Board Manual (BM) guidance recommendations. While net gains are important to TFW Policy, the process of finding solutions to problems is deliberate, time-consuming and – often times - contentious. With a full consensus-based decision making model, TFW Policy still has a relatively good record of reaching consensus. In the last five years, 84% of the committee members’ votes have been consensus votes. About 2% of votes have been non consensus votes (Figure 1a). In the last decade, the committee has presented consensus recommendations to the Board. On water typing rule system, for instance, Policy submitted multiple consensus work products in May 2017. The Board then assumed the responsibility of completing the remainder of the process.

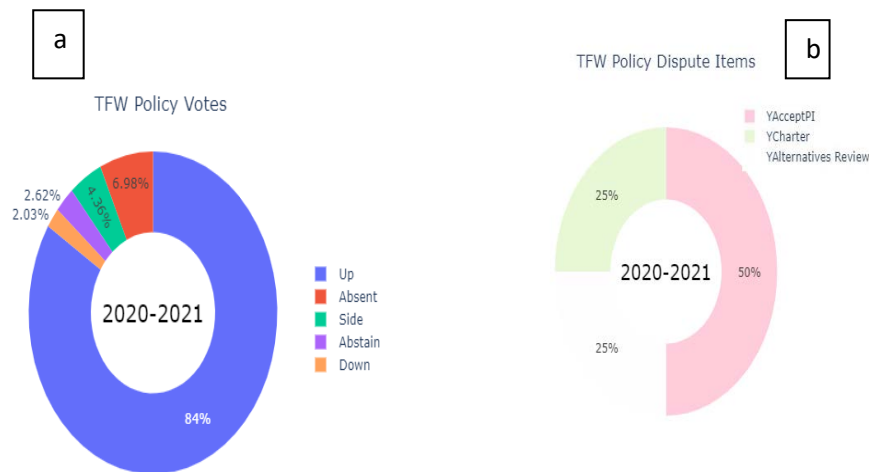


Figure 1: voting patterns (a) and number of disputes by items at dispute (b) in the last five years at TFW Policy

The down votes, small in number as they may be, do lead to disputes (Figure 1b). The dispute resolution process is among the central tenets of the program. The process is designed to break impasses when consensus has not been achieved and keep the process moving forward. While number of disputes is not a measure of dysfunction, in practice, however, disputes in TFW Policy do take much longer than mandated in rules to resolve. Though consensus is the goal of the process, a consensus recommendation at end of the full dispute process is also not a guaranteed outcome. TFW Policy disputes can end in minority and majority reports submitted to the Forest Practices Board. This outcome doesn’t result in win-win situations underscored by the SAO Auditors.

Even if the projects in other stakeholder forums are different than AMP projects, the concept of net gains as suggested by SAO Auditors remains relevant to TFW Policy. It is in line with the spirit and intent of the SAO Recommendation #5 if not the letter to identify a suite of net gains options that



could reduce the number of disputes and increase the number of consensus recommendations to the Board.

### 3- PROPOSED NET GAINS OPTIONS

We propose the following options for FPB consideration to be incorporated into BM 22 once options are fully developed. These options capture the intent of SAO recommendation and are expected to improve transparency, objectivity and quality of TFW Policy decisions.

#### 3.1. Adopt Multi-Criteria Decision Making

Relevance/Benefits	Complexity	Resource Requirements	Feasibility
High	High	Medium	Does not require changing WACs or RCWs Requires guidance and training
<b>Implementation Timeline in 2022-2023:</b>			
<b>October:</b> Policy acceptance and recommendation to the Board   <b>November:</b> Board approval for development   <b>Nov-Feb:</b> Develop guidance; test option in a series of workshops and revise guidance if needed   <b>May '23:</b> present final guidance and Board Manual Section 22 changes to the Board for approval			

Multi-criteria decision making (MDM) is widely used in policy analysis, resource allocation, planning and in resolving conflicts. Adopting a form of MDM is very close to the intent of the SAO recommendation on net gains options for TFW Policy. This approach to decision making provides a logical framework in which TFW Policy can simultaneously consider several decision factors. MDM can be an iterative process triggered once TFW Policy determines that a Cooperative Monitoring, Evaluation, and Research Committee (CMER) findings report warrants action. For MDM to be effective, this process should not be carried out in the shadow of an ongoing dispute. Dispute resolution can be invoked if at least three iterations – each not lasting more than a month - of an MDM process do not lead to a consensus recommendation. Each iteration can be carried out collaboratively in a workshop setting with staff support. The AMP should also have the option of bringing in subject-matter experts who can facilitate MDM workshops.

TFW Policy members would need to get further acquainted with the specific MDM tool and receive detailed training on its use. This could include jointly developing a MDM model. A Microsoft Excel template can be the simplest form of such a model. With expert support, however, TFW Policy could collaboratively develop a detailed MDM model that also allows the incorporation of a variety of data originating from either CMER or other reputable sources. A widely used and critically acclaimed MDM approach is proposed here as a net gains options for TFW Policy decision making process.

##### *3.1.1. Structured Decision Making*

Of the many available MDM models, Structured Decision Making (SDM) appears well suited for TFW Policy needs (Figure-2). A large and active community of practice, availability of literature and

guidance and – importantly – familiarity of TFW Policy members with SDM are all factors that make it a good choice to adopt. The TFW Policy technical workgroup on Type N alternative development, for example, used SDM to prepare a final report for TFW Policy.

SDM’s emphasis on collaborative and facilitated application of multi-criteria or multi-objective decision making is very relevant to nearly all types of TFW Policy decisions including non-rule making recommendations such as project planning and prioritization. SDM allows for the consideration of practical needs and constraints that natural resource managers face. Additionally, successful use of SDM highlights areas of agreement and disagreement. When applied in the informal stages of TFW Policy disputes, the process can – at the very least – sharply focus the subsequent stage 2 of the dispute on areas of disagreements. For a science-based adaptive management setting, SDM offers clear integration of science and policy. Other key SDM concepts include “making decisions based on clearly articulated fundamental objectives, recognizing the role of scientific predictions in decisions, dealing explicitly with uncertainty, and responding transparently to societal values in decision making”<sup>3</sup>

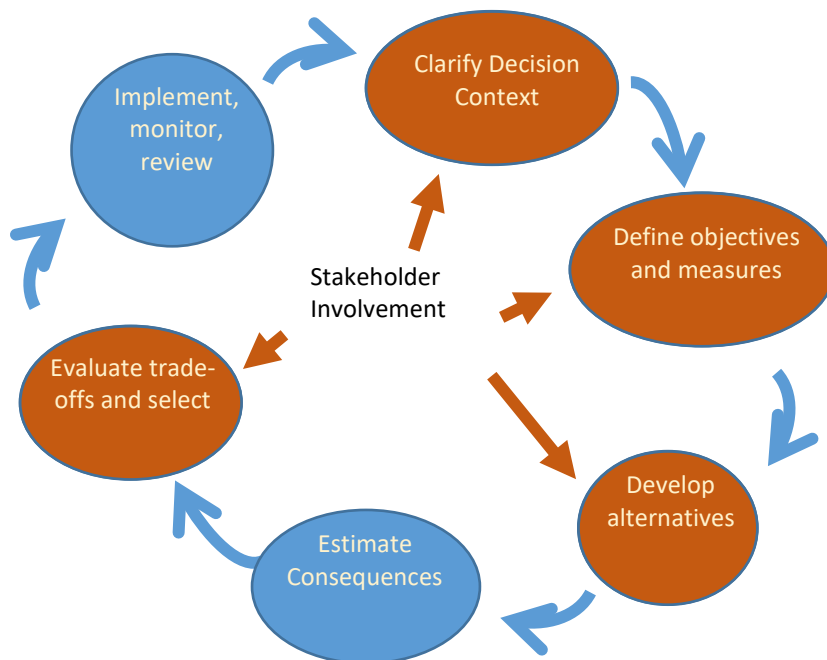


Figure 2: The iterative concept of a Structured Decision Making Model (SDM)

When developing alternatives and recommendations to the Board, SDM can provide a transparent process for TFW Policy to set clear objectives; identify relevant measures for each set of objectives; develop alternatives; and evaluate alternatives against objectives. The process alone is not a substitute for TFW Policy decisions. The committee will still need to take final decisions on a set of alternatives following the established consensus decision making process. The following steps would need to be followed to develop alternatives and make final decisions:

<sup>3</sup> [Structured Decision Making](#), Eastern Ecological Science Center, United States Geological Survey (USGS)

- Define the problem: the process would begin with a focused discussion on setting the decision context. The key objective here would be to define the policy problem being addressed. TFW Policy would clarify the involvement of concerned members; and note or record their concerns which may be social, economic, environmental, costs and/or risks. This step will end with a description of possible options and a set of clear decision goals. At this point the problem is clearly defined and TFW Policy may find the solution and wouldn't need to carry out the rest of the SDM analysis. The rest of the analysis would be completed in all cases where the solution is not obvious.
- Objectives and measures: within the defined decision contexts, objectives are all things that are important and that matter to participating TFW caucuses. Each participating caucus would list a set of objectives and a desired direction of change (ex. increase, decrease, more or less). Everything that matters would be listed at this step regardless of whether they are quantifiable. Each objective would also have a measurable indicator of progress. These could also be considered as evaluation criteria that serve as performance measures for each objective. TFW Policy could select any number of natural, proxy or constructed performance measures. This step, while time consuming, is necessary to establish a transparent and consistent SDM process; to allow for comparison of alternatives; and to clearly communicate the rationale of TFW Policy decisions to the Board and others who would not be directly involved in TFW Policy.
- Develop alternatives: the goal of this step is to create alternatives that are responsive to the objectives. Ultimately, the quality of decisions depends on identifying, combining or creating the best responsive alternatives.
- Estimate consequences: the consequences of each alternative are measured against objectives and visualized in this step. TFW Policy can use CMER studies as sources of information, other credible scientific information or local, traditional, and expert knowledge as well.

### ***SDM Iterations and Timelines***

Depending on the complexity of the problem being addressed and with expert facilitation, a SDM iteration can take up to 40 hours to complete. Policy can complete the process in two calendar months. Policy would be encouraged to use this tool well in advance of receiving a findings package from CMER. In doing so, Policy will also need to determine decision criteria which in itself is a separate SAO recommendation. The SDM will become a very effective tool if it is also coupled with a well-defined decision criterion before final reports reach Policy.

If initiated after receiving a CMER report, the SDM process would need to be completed within the rule-required timelines for certain policy decisions. These decisions include adaptive management recommendations to the Board based on certain CMER reports. Policy would need to complete the SDM process within the 180-day time-frame outlined in Board Manual Section 22. This timeline does not include the two stages of dispute resolution which together takes up to 5 months to complete. The SDM iteration could also be repeated in the informal stage of any dispute. In the formal stage of a dispute, however, the focus is on mediation and SDM would not be suitable. A

total of two SDM iterations are possible between the time a CMER report reaches Policy and the initiation of stage two of the dispute resolution process.

***Categories of Policy Decisions***

SDM is applicable to a wide range of decision and decision contexts. For example, SDM would be applied to the following categories of Policy decisions:

- All decisions that lead to adaptive management recommendations to the Board. These would include recommendations arising from both policy and science track projects
- Recommendations developed in Policy workgroup settings
- AMP program priority decisions
- Other ad-hoc uses of SDM for policy track projects

***Training Needs:***

To adopt SDM and successfully apply it to a wide range of decision contexts, TFW Policy members would need to receive training on SDM. Program staff, moreover, could obtain relevant SDM training and certification and could facilitate SDM sessions on ongoing basis.

**3.2. Clarify Process for Outside Science**

Relevance/Benefits	Complexity	Resource Requirements	Feasibility
High	Low	Medium – High	Requires updating Board Manual Section 22
<b>Implementation Timeline:</b> <b>October:</b> Policy acceptance and recommendations to the Board   <b>Nov:</b> Board approval of recommendations   <b>Feb '23:</b> fully develop option   <b>May '23:</b> present final guidance and Board Manual Section 22 changes to the Board for approval			

WAC 12-22-045 has assigned to CMER the task of advancing the science needed to support the program. This rule requires CMER to develop a process by which policy approval is obtained for research projects including the use of external information. The rule further clarifies that external information may also be reviewed through the Independent Scientific Peer Review Process (ISPR). The current version of Board Manual Section 22 (BM22) lacks sufficient clarity on how to incorporate outside science in the AMP. Outside science is any scientific effort, report or product that is not directly produced or supervised by CMER. BM22 does, however, clarify that external science may be brought to CMER as needed to address CMER work plan tasks and that both TFW Policy and the Board can ask CMER to review outside science. No further clarity exists on what the review entails or if the outside science review would be considered an AMP project. While CMER has developed guidance for best available science, detailed process guidance on using external information is not currently incorporated in CMER’s Protocols and Standards Manual (PSM).

This ambiguity is a key source of contention pertaining both to conditions that would warrant the need to use outside science as well as to whether the program’s dispute resolution can be applied to outside science. Nearly half of recently concluded TFW Policy disputes are either on the use of

completed outside science or on the request to incorporate completed outside science through the Proposal Initiation (PI) process. Some stakeholders in the AMP contend that CMER is not the only source of relevant science to consider in AMP. The universe of outside science, however, is vast. The quality and relevance of completed outside science also varies considerably. TFW Policy can lead the process of clarifying the role of outside science in the AMP as part of the net gains options allowing the program to benefit from forestry and aquatic resources interaction research that may be happening outside the program

The rule-outlined purpose of CMER means that the route to incorporating outside science in the AMP would need to go through CMER. Advancing the science for use in the AMP is the purpose of CMER as stated in WAC 12-222-045. To resolve the issue of outside science and to provide clarity on using outside science, TFW Policy would consider initiating a policy track project that carries out or clarifies the following:

- Request CMER to develop a guidance section in the PSM for review and use of completed outside science including developing review templates separate from the ones used for CMER science but including elements that are relevant to a Policy question which may include relevance, quality of science, and applicability to Washington forests. This guidance could be developed with the recognition that not all outside science will lead to, influence or be used in rule changes. Outside science could, however, be effectively used to reduce uncertainty and add to the growing body of knowledge within the program. Management change may result if warranted in certain conditions.
- Determine whether CMER should go into dispute over completed outside science while also considering the resource implications of disputing completed outside science. BM22 currently states that “as a body, CMER may have to conduct dispute resolution on issues presented by a Scientific Advisory Group or on issues originating in CMER”<sup>4</sup>
- Identify conditions or situations that would warrant the use of outside science
- Propose amendments to BM22 and seek the Board’s approval

Amending relevant WAC does not appear to be needed if the changes are made without affecting the standard PI process. If, however, it is the intent of TFW Policy to amend the standard PI process for outside science then relevant WAC sections would also need amendment. TFW Policy would then need to propose a rule-making alternative to the Board. The timeline presented above assumes that TFW Policy would clarify the process for completed outside science through a separate process which includes requesting changes to CMER’s PSM.

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<sup>4</sup> Forest Practices Board Manual Section 22: Guidelines for Adaptive Management Program, page 21

### 3.3. Set Clear AMP Priorities

Relevance/Benefits	Complexity	Resource Requirements	Feasibility
High	Low	Low	May require amending BM 22 Does not require amending WAC 12-222-045
<b>Implementation Timeline:</b> <b>October:</b> Policy acceptance and recommendation to the Board   <b>Nov:</b> Board acceptance and approval of guidance development   <b>May'23:</b> BM 22 amendments are presented for Board approval			

CMER work plan, the Master Project Schedule (MPS) and TFW Policy annual work plan are key documents of the AMP. These documents set out AMP priorities with an associated long-term budget in the MPS. The process of prioritizing projects on the MPS, however, needs to be consistently applied and clearly described in BM 22. Differing viewpoints on priorities, success measures, and decision criteria can slow the process of the AMP and often does lead to contention. Agreeing on a clear set of priorities – or, at a minimum, a clear process for agreeing on program priorities – and consistently applying it can improve the adaptive management process.

WAC 22-222-045 requires the AMPA to work with CMER and Policy to present a MPS to the Board. BM 22 clarifies CMER work planning process as does CMER’s PSM. The MPS process is not clearly included or described in BM 22.

Setting clear priorities for CMER and by extension for the AMP is the most obvious net gains option for TFW Policy. This can be achieved by orienting the focus of the program such that:

- CMER studies that test rule effectiveness or validate rules will have the highest priority in both work plan and the MPS
- Projects agreed to by consensus and that meet Department of Ecology’s Clean Water Assurances (CWA) will have second highest priority

TFW Policy currently prioritizes projects through the MPS process. This process, however, is not clearly articulated. The priorities listed above should be reflected in BM 22. The SDM can be effectively used to prioritize all other projects that don’t meet the criteria listed above. At a minimum, a new section in BM 22 on the MPS prioritization process is required. Policy would fully develop this option to include the following elements that are currently missing:

#### 1- CMER work plan and MPS:

The program’s biennium budget and the CMER work plan are currently developed asynchronously. This means that the program’s budget is developed, accepted by Policy and approved by the Board before CMER concludes their biennial work plan. This process needs to be reversed such that AMP priorities set by Policy are first clearly reflected in CMER work plan. Program staff would then provide a better cost estimate of the work plan and deliver that package to Policy. At this time, Policy can work with the AMPA to develop an MPS that both reflects the program’s priorities and is responsive to the CMER work plan. To synchronize the processes, the following changes would be needed:

- a) CMER would deliver their draft work plan to Policy no later than January of each even year. Currently, CMER delivers their work plan in January of odd years.
- b) Policy budget workgroup together with the AMPA and program staff would begin the process of developing the MPS in February of even years with the objective of delivering a draft MPS to Policy at their May regular meeting of even years. The MPS would then need to be delivered to the Board at their August regular meeting of even years.
- c) This synchronization can be achieved with an amendment of the BM Section 22.

**2- List of Program Priorities**

Policy to adopt and approve a standing list of program priorities for each biennium. New projects would get listed here and communicated to CMER in time to be included in the CMER work plan.

**3- MPS Contingency Plan**

Each MPS would also accompany a contingency plan. This plan would lay out possible scenarios and identify cost saving measures, and/or project elements that can be delayed in the event of a budget shortfall. A contingency plan would account for the program’s priorities first and then identify project elements that can be postponed without adversely affecting ongoing projects, projects that are near completion or projects that are Policy and Board priorities.

**3.4. Initiate Reform Dialogue with CMER**

Relevance/Benefits	Complexity	Resource Requirements	Feasibility
Low-Medium	Low	Low	Stakeholder consensus is needed May not require amending BM 22 Does not require amending WAC 12-222-045
<b>Implementation Timeline:</b> <b>Nov:</b> Policy acceptance and recommendation to the Board   <b>Nov:</b> Board approval of recommendations   <b>June '23:</b> negotiate options with CMER			

This option requests the Board to direct CMER to initiate a dialogue with TFW Policy Committee on potential reforms and changes in CMER. The following is an initial list of topics that can be discussed with CMER to start the dialogue. With AMPA and staff support, the dialogue can be expanded to include lessons learned from recently completed studies and other areas of interest for CMER members.

- A diverse and well seated CMER committee will improve the AMP. Revising membership in the committee is probably a net gains option for the program as a whole and not necessarily a net gains option for TFW Policy alone. This option would require limiting voting membership in CMER to one member per caucus. The broader scientific community can continue to participate in CMER and its associated Scientific Advisory Groups (SAGs). The intent is to allow CMER to sharply focus on science and not engage in policy issues in that committee. Revising membership may lead to such an outcome including exploring

minimum experience/skill requirements and setting high standards for CMER members. Implementing this option is largely dependent on consensus among AMP participants (CMER and TFW Policy Committee). Neither the BM22 nor WAC 12.222.045 limit the number of participants for CMER. Adjustments to CMER membership can, therefore, happen voluntarily.

- A related proposal involves modifying the structure of CMER as the science arm of the program. Under this proposal, the science function would be carried out independently by a research organization. The stakeholder or cooperative nature of doing science would no longer function in its current form. This is a fundamental change to the AMP. It most certainly would require a consensus process leading to Policy recommendation to the Board..

This dialogue could result in consensus recommendation to the Board including on items that aren't listed here.

The following is a nested option that Policy can immediately recommend to the Board:

- Amend Board Manual Section 22 to require annual CMER and Policy interaction/conference. The Board can task the AMPA to facilitate a conference focused on CMER need for policy clarifications that frequently arise in the course of implementing CMER projects. The AMPA would consult both committees to identify topics for the conference and facilitate the sessions including with external support if needed.

### 3.5. Develop Guidance or Manual for TFW Policy

Relevance/Benefits	Complexity	Resource Requirements	Feasibility
High	Low	Low	Requires amending BM 22 Does not require amending WAC 12-222-045
<b>Implementation Timeline:</b> <b>October:</b> Policy acceptance and recommendation to the Board   <b>Nov:</b> Board approval of recommendation for development   <b>Nov '22 – June '23:</b> develop detailed guidance for TFW Policy. <b>August '23:</b> Board receives approval request for an amended BM 22 or a separate TFW Policy Manual			

BM 22 currently serves as the guidance for TFW Policy processes. This section of the manual needs amendments to clarify a number of very important aspects of the committee's work. TFW Policy could either adopt a separate manual similar to CMER's PSM or propose detailed amendments to BM22 to cover every aspect of TFW Policy process. Such guidance will improve transparency and provide much needed clarity to AMP participants. While this is an involved process, TFW Policy can begin by providing the following process and participant related details in either BM 22 or a separate manual:

- Clarify dispute resolution process and separate it from CMER's process in BM 22
- Add a section on the roles and responsibilities of TFW Policy Co-Chairs as well as their nomination and election process
- Expand TFW Policy membership requirements to include:



- List qualification requirements for membership including experience, skill, and decision making authority with clear instructions or documented authority delegation from their principals
  - Members to be approved after an interview process with the Board
  - Annual performance evaluation of TFW members along with a performance measurement plan with an emphasis on adherence to established process
  - Demonstrated commitment to strengthen relationships, as well as to contribute constructively and frequently.
- Adopt consensus recommendation to the Board as an indicator of net gains in evaluating the performance of TFW Policy as a whole. Report this data on annual basis and make it available on a public facing dashboard along with a record of other decisions and metrics



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## MEMORANDUM

July 25, 2022

**TO:** Forest Practices Board

**FROM:** Saboor Jawad, Adaptive Management Program Administrator (AMPA) *SJ*  
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**SUBJECT:** Oversight of CMER's Water Typing Group of Projects

TFW Policy Committee (Policy) is requesting your approval to assign oversight responsibilities of CMER's water typing group of projects to Policy.<sup>1</sup> These projects include: 1) Evaluation of potential habitat breaks (PHBs) for use in delineating end of fish habitat in forested landscapes in Washington State, 2) Default physical criteria assessment (DPC) project, and 3) LiDAR based water typing model.

Currently, the Board has direct oversight of these projects. Assigning oversight responsibility to Policy means that Policy would review and approve key project documents such as project charters and scoping documents as well as manage and make budget recommendations to the Board as part of the overall Master Project Schedule (MPS). Like all other projects on the MPS, Policy would also receive the findings report from CMER, determine whether the report warrants action and submit Policy recommendations and alternatives to the Board.

The Board, acting on recommendations of Water Typing System Board Committee, assigned CMER the responsibility of developing the studies and passed the following motion at the Board's November, 2019 meeting:

“Recommend the Cooperative Monitoring, Evaluation and Research Committee (CMER) to develop study designs for the PHB validation, physical characteristics, and map based Lidar model studies, and then to report on the study designs to the Board by their May, 2020 meeting.”

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<sup>1</sup> TFW Policy Committee passed the following motion at their July, 2022 meeting: Court Stanley moved to request the Board to assign the water typing strategy group of projects to Policy and Policy to oversee the project following the AMP process.

CMER then assigned this group of projects to its Instream Science Advisory Group (ISAG). The Board has been receiving regular updates on the status of these projects from both the program administrator and from ISAG co-chairs. CMER is currently reviewing the final draft of the study design for the PHB project.

# Washington State Department of Natural Resources Adaptive Management Program

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Field Report **P. 5**



### Adaptive Management Team



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## Summary

The Cooperative Monitoring, Evaluation, and Research Committee (CMER) held regular monthly meetings this quarter. The committee approved or advanced to TFW Policy the following Adaptive Management Program (AMP) project deliverables:

- Approved the Eastside Forest Health Strategy guidance document,
- Approved a revised Charter for the Eastside Type N Riparian Effectiveness Project,
- Approved the Study Design for Potential Habitat Breaks, and initiated interactive ISPR,
- Approved a charter and Project Management Plan for the Riparian Characteristics and Shade Response project, and
- Approved Project Charter and Project Management Plan for the Unstable Slope Criteria project.
- Approved multiple chapters of the CMER workplan for the 23-25 biennium
- Approved the Forested Wetlands Effectiveness Project management plan
- Approved the Riparian Literature Synthesis as a mini scoping document for TFW Policy's review and approval

CMER had one outstanding dispute over the Smart Buffer Study Design at the beginning of this quarter. The dispute had been elevated to stage 2 requiring technical arbitration. The arbitration panel was formed in July, 2022. Following meetings with the disputing parties, the panel submitted their final decision in late August, 2022. CMER received the final decision and that concluded the dispute over the Smart Buffer Study Design at CMER. The panel could not recommend that CMER approve the study design as was presented to the committee.

## AMP Project Managers



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## Project Updates

The **Road Prescription Scale Effectiveness Monitoring Project** examines high-traffic, near-stream forest logging roads as sources of sediment and seeks to better understand mitigating best management practices. The project is in its third year of data collection, with the main experiment and many sub-projects actively implementing. The dry weather of the July-September quarter allowed the project team to conduct a complete site maintenance need assessment across the approximately 80 western Washington sites which will inform annual site maintenance activities in the next quarter. The project team also made progress on evaluating data collected in the preceding wet season including data from the Ditch Line Hydraulics Experiment, calibrating tipping bucket data, and processing data from the Micro-Topography Experiment. Unfortunately, a storage facility used by the project team was broken into and much of the equipment, some very specialized and custom built, was stolen. In response, the project team quickly identified urgently needed replacements, systematically reviewed current inventory, and have now selected an additional storage facility with enhanced security to protect project equipment. Extensive fieldwork is planned for the October-December quarter, so substantial work was also allocated to preparing implementation plans and coordinating with project partners.

The **Eastside Type N Riparian Effectiveness Project (ENREP)** will help inform if, and to what extent, the prescriptions found in the Type N Riparian Prescriptions Rule Group are effective in protecting water quality and some riparian functions, particularly as they apply to sediment and stream temperature in eastern Washington. The project is currently in full implementation. Springdale and Tripps basins were harvested in 2021. Two years of pre-harvest data, harvest year, and one year of post-harvest data have been collected at these basins. Blue Grouse basin harvest was completed in 2022. Three years of pre-harvest data and harvest year data have been collected here. Fish Creek and Coxit basins are scheduled for harvest in 2023. Two years of pre-harvest data have been collected in these basins. Data collection includes: biophysical variables, including streamflow, wetted channel extent, suspended sediment concentrations, stream shade, riparian forest mensuration, large wood, temperature, and stream cross sections, aquatic life (benthic macroinvertebrates), and habitat.

The **Eastside Timber Habitat Evaluation Types (ETHEP)** project is scoped to develop an ecologically meaningful and reliable framework for applying riparian harvest rules along fish-bearing (Type S and Type F) streams in eastern Washington. A post-doc was hired to assist in completion of the Study Design. The Study Design is currently in SAGE review, and is expected to be sent to CMER in December 2022.

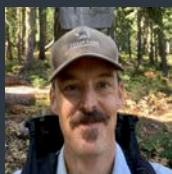
The **Westside Type F Riparian Prescription Effectiveness Project** is designed to evaluate the effectiveness of Westside riparian prescriptions for F and S streams in achieving resource objectives and performance targets. This quarter, extensive iterative reviews were conducted between report authors and CMER commenters. Report authors worked diligently to provide a series of revised report versions to commenters, working towards a final version that would gain final CMER approval in the next quarter. This pilot study is intended to be used to develop a Study Design for a more rigorous test of the effectiveness of the Type F (fish bearing stream) rule buffers. The final report is anticipated to be up for CMER approval in October 2022 and would be presented to Policy thereafter.

## CMER Co-Chairs



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The **Unstable Slopes Criteria** project will evaluate the degree to which the landforms described in the unstable slopes rules identify potentially unstable areas with a high probability of impacting public resources and public safety. This quarter, the Project Team is working on Project 2, Object-Based Landform Mapping with High-Resolution Topography Study report. The Study Design for the Empirical Evaluation of Shallow Landslide Susceptibility and Frequency by Landform (Project 3) and the Empirical Evaluation of Shallow Landslide Runout (Project 4) was reviewed by UPSAG and CMER this quarter and is expected to begin the ISPR review process in October. Dan Miller, the contractor working on the Study Design, attended UPSAG and CMER meetings to discuss the Study Design and respond to any final questions or concerns.

The **Deep-Seated Landslide Research Strategy** utilizes the results of the literature reviews for forest harvest effects on glacial and bedrock deep-seated landslides to address key knowledge gaps identified during the literature reviews and to address questions from the Forest Practices Board and Policy regarding the potential effects of forest practices on deep-seated landslides.

A consultant was hired to assist UPSAG in the development of the DSL Study Design based on the Policy-approved Scoping Document for the Landslide Mapping and Classification Project (4.5 and 4.6) under the Deep-Seated Landslide Research Strategy. UPSAG and the DSL Project Team had a kick-off meeting with the consultant in September to contribute to the outline and help guide them to the most relevant research papers and data to inform the development of the Study Design. The draft Study Design is expected to be delivered to UPSAG in January 2023.

The **Water Temperature and Amphibian Use in Type Np Waters with Discontinuous Surface Flow** study will inform the Overall Performance Goals to meet water quality standards and support the long-term viability of covered species by evaluating the influence of intermittent stream reaches on water temperature and FP-designated amphibian use. This project is on pause until fall 2022 when Landscape and Wildlife Science Advisory Group (LWAG) will begin the project scoping. A draft scoping document is anticipated to be delivered to CMER in November 2022. Further work on this study (beyond scoping) is scheduled to begin in FY25.

The **Type N Experimental Buffer Treatment Project in Hard Rock Lithologies Amphibian Monitoring Phase III** project will collect additional data for stream-associated amphibians and other relevant covariate data (e.g., stream temperature data) to evaluate continued trends in amphibian densities. The Phase III Amphibian Demographics project is in implementation. Amphibian sampling and handling began June 27th and continued through early October. The final sampling event for this project will begin summer 2023.

The **Forested Wetlands Effectiveness Project (FWEP)** projects will look at the effectiveness of forest practices prescriptions to protect, maintain, and restore aquatic resources, namely water quality and wetland hydrologic and ecological functions. It will be evaluated to determine if they achieve the FPHCP goal of no-net-loss of functions of those wetlands by half of a timber rotation cycle while meeting water quality standards (FPHCP). FWEP has an approved Study Design. Tanner Williamson, CMER Wetland Scientist, along with the Project Team are currently working on implementing 4 sites as part of a staged implementation process. Additionally, landowner outreach, site selection and validation for the the additional 20 sites is ongoing. These additional 20 sites are planned for implementation in early spring 2023.

The **Wetland Management Zone Effectiveness Monitoring Project** will evaluate wetland functions to determine if the target of no-net-loss of hydrologic function, CWA assurance targets, and hydrologic connectivity are being achieved. Following the April 2022 CMER approval of the project charter, the project team has begun to plan out the scoping process. The development of scoping documents such as the Best Available Science Document and Prospective Six Questions Document are slated to begin in the next quarter. Funding for the WMZ begins in FY26, with implementation funding slated to begin in FY28. The initial scoping will begin FY23. Funding to assist in this work was moved out 3 years on the MPS August 2020 (funding begins FY26) due to the AMP budget limitations.

The **Water Typing Strategy** projects are intended to determine possibility/advisability of combining the 'Physicals', 'PHB', and/or 'LiDAR Model' studies. The Project Team developed a Study Design to assess **Potential Habitat Breaks (PHB)**, which was approved by CMER in September 2022, and has entered an interactive (open) ISPR process. The Project Team has initiated work on the Study Design that will allow an assessment of the **Default Physical Criteria (DPC)**. That Study Design is expected to be delivered to CMER to initiate a concurrent CMER/ISAG review in February 2023. A statistical consulting firm is assisting the Project Team in evaluating methods for the PHB and DPC Study Designs. Once these two projects are complete, the results would then be used in the development of a study to try and create an effective LiDAR-based water typing model.

The **Eastside Forest Health Strategy** workgroup developed a report that was reviewed by CMER in April 2022. The Eastside Forest Health Strategy workgroup recommended the development of a research and monitoring strategy investigating active RMZ management approaches that build on current RMZ prescriptions and are designed to balance disturbance resiliency and resource protection objectives outlined in the FP HCP (Schedule L-1 functional objectives and performance targets, Appendix N). The Eastside Forest Health Strategy document was discussed at the July Policy meeting and a motion was passed to reconvene the Eastside Forest Health Strategy workgroup to finalize the strategy guidance. The strategy guidance is expected to be approved at Policy by the end of the year and work will begin to develop the strategy in 2023.

The **Riparian Characteristics and Shade (RCS)** project will be a field research project intended to evaluate the combined effect of stream-adjacent no-harvest zone width and adjacent-stand harvest intensity (i.e., thinning density) on stream shade. The Study Design was approved by ISPR in January 2022 and approved by CMER in March 2022. The Project Team completed a field trial this summer to provide a more detailed understanding of the cost and logistical elements of implementation.

The **Extensive Riparian Status and Trends Monitoring – Vegetation, Type F/N Westside and Eastside Project** was reengaged following an April 2022 memo from TFW Policy to CMER requesting the development of an Extensive Monitoring proposal for stream temperature and riparian stand condition. In response, RSAG organized a workgroup to identify how best to respond to this memo and considering next steps. To facilitate the iterative conversations TFW Policy proposed, RSAG drafted a memo to TFW Policy and developed a joint CMER/TFW Policy Workshop in August with the goal of clarifying the TFW Policy request and answering some of RSAG's initial questions. RSAG is now in the process of developing a project charter while continuing to discuss how to make progress towards scoping this project. The TFW Policy Extensive Monitoring Workgroup will be convening in October 2022 to develop a formal response to August memo.

The **Riparian Function Literature Synthesis** was reengaged and assigned to RSAG in June 2022. RSAG located a document outlining the approach for the literature synthesis, as originally proposed in 2017. RSAG reviewed and edited the overview document and delivered an initial draft to CMER in July 2022. CMER approved sending the document to TFW Policy for feedback. TFW Policy provided feedback, which RSAG addressed in a revised version. TFW Policy will continue to discuss the desired approach to this literature synthesis at their November 2022 meeting.

## RCS Field Trial

The RCS Field trial was implemented between July and August 2022, as an all-hands-on-deck effort including partners Rayonier, contractors (Pacific Forest Management, Dilley and Soloman, and West Fork Environmental), the Project Team, and CMER staff. The study location was a tributary of Crooked Creek within in the Lake Ozette Watershed, and was selected because the timing lined up with Rayonier's planned upland harvest schedule. Implementation week consisted of a carefully coordinated 3-part thinning sequence over 3 days at a single 325 x 100 foot plot, with drone flights and hemiphoto collections completed by the contractors and the Project PI after each phase of thinning. The outcomes of the field trial included a detailed understanding of time and budget requirements, a refined understanding of the resource concerns raised by the ID team at the field trial, and the development of a thinning approach to meet study objectives. In this case, hand felling was determined to be the most effective method for the thin-from-below approach used in this field trial.

In September 2022, RSAG and Program Managers followed up on the field trial with a site visit, as part of a combined field trip for the FWEP project and RCS project. Next steps for RCS are to develop the site selection plan for implementation across Washington.



Left to right: Pacific Forest Management contractors laying out a tricky transect line through old cedar stumps during the layout phase; Rachel Rubin (Principal Investigator) after taking hemiphotos at dawn; AMP Project Managers at the RCS field trial site.

## AMP Vacancies:

The program currently does not have any vacancies.





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October 23, 2022

**TO:** Forest Practices Board

**FROM:** Tami Miketa, Manager, Small Forest Landowner Office

**SUBJECT:** Small Forest Landowner Office and Advisory Committee

**Small Forest Landowner Advisory Committee  
SFLO Program Updates**

Since my last report, the Small Forest Landowner Office (SFLO) hired the final SFL Regulation Assistance Forester in Olympic Region. These foresters will consult and provide expert technical assistance to help small forest landowners prepare to conduct forest practices activities on their forestland. These foresters will help them understand and apply the Forest Practices Rules including small forest landowner alternate plan templates, long-term applications, forest road assessments and construction techniques, timber harvest techniques, and other Forest Practices Rule related issues. The SFL Regulation Assistance Program is fully staffed with a Program Manager, a Fish & Wildlife Biologist, and five SFL Regulation Assistance Foresters located across the state.

The Department of Natural Resources (DNR) recently released a new web platform designed to help small forest landowners navigate the array of resources offered by DNR and partner organizations to help them manage their forests now and for future generations.

The Landowner Assistance Portal is a collaborative effort between the Forest Resilience and Forest Regulation divisions of DNR. Many of the most popular programs offered or administered by the agency for private landowners—including financial and technical assistance for fuels reduction, wildlife stewardship, and wildfire preparedness—reside in one or both of these divisions.

Based on an informal survey conducted this spring, many small forest landowners may know what they're looking for, but often struggle to find all the necessary information. The Landowner Assistance Portal brings all of those resources under one umbrella to provide a one-stop shop experience.

When utilizing the portal, users will find 34 of the most common subjects sorted into four categories: Resources for Managing My Forest, Keeping My Forest Healthy, Education and Training, and Permits and Regulations. Landowners can use the simple interface to locate the information they need to take care of their forests.

*“This new tool is a one-stop shop for private forestland owners in Washington,” said Commissioner of Public Lands Hilary Franz. “We are making transformational investments in our landowner assistance programs with the goal of keeping Washington the Evergreen State. Easier access to information on forest health, stewardship, and wildfire prevention will help landowners protect their homes and forests. Healthy forests, no matter what size, provide benefits to all who live in Washington.”*

To view the Landowner Assistance Portal, click [HERE](#).

Launching the Landowner Assistance Portal marks a key milestone as DNR continues to expand its Service Forestry program in the Forest Resilience Division. Washington residents can also use a new [Find Your Forester tool](#) to locate service foresters and other assistance staff in their area.

The agency used funding from House Bill 1168 to create more than two dozen new positions in support of landowner assistance located across the state.

### **Long-Term Applications (LTA)**

In this Forest Practices Board report, the SFLO regularly shows the status of Long-Term Applications. There are currently 311 approved long-term applications, which is one more approved LTA since the end of the last reporting period (7/22/2022).

<b>LTA Applications</b>	<b>LTA Phase 1</b>	<b>LTA Phase 2</b>	<b>TOTAL</b>
Under Review	8	2	<b>10</b>
Approved	1	311	<b>312</b>
<b>TOTAL</b>	<b>9</b>	<b>313</b>	<b>322</b>

### **Upcoming Events**

#### UPCOMING EDUCATION OPPORTUNITIES

##### **Workshops**

[Focus on Forestry](#)

Thursday, Nov. 10

Evergreen State Fairgrounds, Monroe

##### **Webinars**

[2022 Carbon Friendly Forestry Conference](#)

Dec. 7-8

WA Environmental Council’s virtual conference

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**Classes**

[WSU Forestry Extension Forest Stewardship University Modules](#)

On-demand, self-paced, online learning on forest stewardship topics.

\*Free but Pre-registration required\*

[Coached Planning – WSU Forest Stewardship Short course](#)

Thursdays, Nov. 3 to Jan. 19

Cle Elum

Podcast Series

[The Forest Overstory Podcast- WSU extension forestry](#)

For more information regarding these events, go to <http://forestry.wsu.edu/>

Please contact me at (360) 902-1415 or [tamara.miketa@dnr.wa.gov](mailto:tamara.miketa@dnr.wa.gov) if you have questions.

TM/



**Timber, Fish and Wildlife Policy Committee  
Forest Practices Board**

**PO BOX 47012, Olympia, WA 98504-4712**

**Policy Co-Chair:**  
Court Stanley, Washington Association of  
Counties  
Brandon Austin, Department of Ecology

October 27, 2022

TO: Forest Practices Board  
FROM: Court Stanley and Brandon Austin  
SUBJECT: TFW Policy Committee Report

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The Timber, Fish, & Wildlife Policy Committee (Policy) workload is driven by internal process deadlines and priorities directed by the Forest Practices Board (Board). To accommodate the heavy workload, Policy relies on additional meetings, email communications between meetings and policy workgroups to address specific issues and meet deadlines to accomplish their work.

**TFW POLICY COMMITTEE BUSINESS UPDATE for August-October 2022**

Type Np Buffer Recommendation Development

After completing Stage II of dispute resolution in July 2022, Policy continued to meet under facilitate guidance from Triangle Associates to develop a clear understanding of the two Type Np buffer alternative recommendations for delivery to the Board. These recommendations were reported to the Board at the October 31 special meeting.

Extensive Monitoring

The AMP held a joint Policy/CMER workshop to discuss CMER's questions related to Policy's request for the development of an extensive monitoring study design to be implemented under the Board's approved Master Project Schedule.

SAO Recommendation #5

Policy approved recommendations addressing SAO Recommendation #5, Net Gains to be presented to the Board at their November meeting.

Budget Workgroup

The Policy budget workgroup continues to meet to discuss projects and funding in out years as well as develop a regular practice of having a contingency budget should the legislature reduce adaptive management program funding for the Board approved Master Project Schedule.

Interest Based Negotiation Training

At the conclusion of the Type Np dispute resolution, where Structured Decision Making was discussed as a potential process for reaching consensus, Policy asked the AMPA to find a source for additional training on the decision-making process. The adaptive management program was able to contract instructors to deliver a two day workshop on Interest Based Negotiation. Ongoing work is required, but the training was well received by Policy members and there is a commitment to continue this work.

## MAJOR TFW POLICY COMMITTEE TOPICS FOR CALENDAR YEAR 2023

- **Adaptive Management Program (AMP) budget and the Master Project Schedule (MPS):** Policy will review and prepare recommendations to present to the Board at the May 2023 meeting
- **CMER Work Plan:** CMER will deliver to Policy for approval in January 2023
- **SAO:** If approved, Policy will develop the implementation criteria for SAO recommendation #5 for inclusion in the rule or guidance in calendar year 2023.
- **Small Forest Landowner Experimental Harvest Prescriptions:** Policy has received the workgroup recommendations for two alternative harvest prescriptions. With the conclusion of the small forest landowner buffer dispute, it is expected Policy will complete the review to bring forward recommendations for experimental harvest prescriptions to the Board in 2023.
- **Water Temperature and Amphibians in Discontinuously Flowing Type Np Water Reaches:** Policy will receive from CMER for approval the study scoping document in March 2023.
- **Unstable Slope Criteria Project – Object Based Landform Mapping with High Resolution Topography Report:** CMER will deliver to Policy in April 2023.
- **Extensive Riparian Monitoring:** Policy will receive for approval from CMER a recommended extensive riparian monitoring scoping document for riparian vegetation and stream temperature in July 2023.
- **Riparian Literature Synthesis Report:** CMER will deliver to Policy in August 2023
- **Eastside Forest Health Strategy:** CMER will deliver to Policy in November 2023
- **Wetland Management Zone Effectiveness Monitoring Program Scoping Document:** CMER will deliver to Policy in December 2023

### New Projects:

The Policy Committee workload is heavy yet must also remain sensitive to the changes in various timelines and to new issues as they come up. The capacity for Policy to accept any new work as assigned by the Forest Practices Board or taken on for other reasons could require delaying existing priorities and/or scheduling additional meetings.



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE  
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October 24<sup>th</sup>, 2022

## MEMORANDUM

**To:** Forest Practices Board  
**From:** Darric Lowery, WDFW Forest Habitats Section Manager  
**Subject:** Upland Wildlife Update

The following provides a brief status update for ongoing or pending actions pertaining to priority wildlife species in forested habitats:

### Marbled Murrelet

1992: Federally listed as Threatened  
1993: State listed as Threatened  
1996: Federal critical habitat designated  
1997: FPB enacted State Forest Practices Rules  
2017: State uplisted to Endangered

The species' status has not improved since state listing in 1993. State-wide, Washington's murrelet population has declined by 4.1% annually (2001-2020) overall. It has declined by 3.3% annually along the Washington coast (2001-2021) and 5.0% in the U.S. portion of the Salish Sea (2001-2020) (McIver et al. 2022). To put these numbers in perspective, in the Salish Sea during the breeding season in 2001 for example, there were an estimated 5,740 birds. In 2020, there were approximately 3,140 birds in this same area. There has been nearly a 50% decline in the regional population over those 20 years. Following the 2017 state uplisting to endangered status, the Washington Department of Natural Resources (WDNR), in consultation with the Washington Department of Fish and Wildlife (WDFW), recommended that the Forest Practices Board (Board) support a forest practices rule assessment including relevant stakeholders. WDFW established a Wildlife Working Group (WWG) to evaluate efficacy of the rules, identify potential rule modifications to improve clarity and implementation, and provide recommendations to the Board. The draft recommendations are nearly finalized and WDFW, with the support of the WWG, intends to present them at the February 2023 Board meeting. A memo requesting consideration was presented at the Board's August 2022 meeting.

WDFW continues to monitor Marbled Murrelet populations at-sea in the Puget Sound and Straits (most recently monitored in 2022) and the Washington coast (monitored in 2021) every other year during the nesting season. These are the only data available to assess murrelet abundance and trends. The NW Forest Plan Effectiveness Monitoring team's 25-year report has been published ([https://www.fs.usda.gov/pnw/pubs/pnw\\_gtr998.pdf](https://www.fs.usda.gov/pnw/pubs/pnw_gtr998.pdf)) as well as a report on trends in habitat conditions (<https://www.fs.usda.gov/treesearch/pubs/63314>). The 2020 and 2021 at-sea survey reports are now available (Lance & Pearson, 2021; Pearson et al. 2021; McIver et al. 2022) and a paper on winter trends over an 8-year period was recently published that found strong non-breeding season declines in Puget Sound (Pearson et al. 2022). Ongoing research in collaboration with Dr. Beth Gardner and PhD Student Sierra Gillman at the University of Washington is developing predictive density surfaces for the murrelet

and examining the factors driving changes in abundance and distribution.

Contact: Taylor Cotten ([t.cotten@dfw.wa.gov](mailto:t.cotten@dfw.wa.gov))

### **Canada Lynx**

- 1993: State listed as Threatened
- 1994: FPB enacted voluntary management approach
- 2000: Federally listed as Threatened
- 2017: State uplisted to Endangered

With the 2017 uplisting to state endangered status, it was recommended that no action be taken to include lynx in the forest practices rule designation for critical habitat (state) and to maintain existing voluntary protections. WDFW continues to explore lynx conservation opportunities in collaboration with landowners, Canadian federal and provincial entities, US Fish & Wildlife Service (USFWS), US Forest Service (USFS), conservation organizations, tribes, and academic partners. The goal is to refine recovery actions that can be implemented in the near- and long-term to benefit lynx conservation in Washington.

Evaluation of Forest Practices Applications (FPAs) on private lands continues in order to identify potential impacts to lynx habitat. Given wildfire impacts in northcentral Washington, WDFW has pursued ongoing coordination with partners to bring awareness of the importance of balancing habitat protection with the need to address fire risk, including on federal lands.

Under DNR's Lynx Habitat Management Plan (2006), DNR and Washington State University (WSU) have begun developing a proposal to investigate the effects of different pre-commercial thinning designs on snowshoe hare use of habitat, vulnerability to predation, and sources of mortality. The information gathered may then be used to better inform forest management treatments favorable for snowshoe hares while also providing increased foraging opportunities for lynx. Additionally, Colville Confederated Tribes is leading a lynx conservation project and they have released nine lynx in the 2021-2022 season into the Washington Kettle Range.

To further lynx conservation, WDFW participates in ongoing multi-agency surveys for lynx in the North Cascades, WDFW maintains a current database of verifiable lynx detections, and WDFW is currently updating the periodic status review for the lynx (last done in 2017), and this updated version is expected to be available for public review in early 2023.

Contact: Jeff Lewis ([Jeffrey.Lewis@dfw.wa.gov](mailto:Jeffrey.Lewis@dfw.wa.gov))

### **Northern Spotted Owl**

- 1988: State listed as Endangered
- 1990: Federally listed as Threatened
- 1996: FPB enacted State Forest Practices Rules
- 2012: USFWS designation of revised critical habitat
- 2016: State retention of Endangered status

The Northern Spotted Owl population has continued to decline primarily due to ongoing competitive interactions with Barred Owls. The Barred Owl removal experiment, which included study areas in Washington, Oregon, and California, indicated, among other findings, a positive response in survival rates by Spotted Owls following Barred Owl removal (Wiens et al. 2021).

DNR, WDFW, and the Northern Spotted Owl Implementation Team (NSOIT) worked with DNR's consultant to develop a Programmatic Safe Harbor Agreement (SHA) that would be held by DNR. The SHA is designed to provide federal regulatory assurances to nonfederal landowners through a voluntary

program regarding forest management of Spotted Owl habitat. The SHA framework, an associated Environmental Analysis (EA), and an explanation of an enrollment mechanism for landowners to voluntarily enroll in the SHA have been created. Although the supporting legislation that would allow DNR to hold the SHA did pass this legislative session, it is hoped that funding will be provided in the next session.

The USFWS has continued to address Barred Owl management and subsequent conservation of Spotted Owls in Washington, Oregon, and California. WDFW is an active partner in a process to develop management concepts and scenarios that will guide decision making by USFWS about the scope of Barred Owl management options that will be evaluated in an Environmental Impact Statement.

Contact: Joe Buchanan ([Joseph.Buchanan@dfw.wa.gov](mailto:Joseph.Buchanan@dfw.wa.gov))

### **Fisher**

1998: State listed as Endangered

2016: Federal status: Final decision for west coast DPS - not warranted for listing (April 2016)

2018: Ruling on 2017 withdrawal of proposed ESA listing, USFWS ordered to revisit that decision

2019: Federal revised proposed rule to list fishers, excluded fisher in Washington

Fisher reintroductions into Washington have been completed by WDFW and cooperating partners, with a total of 260 fishers, including 90 in Olympic National Park (2008-2010), and 170 in other federal lands within the Cascade Range. Non-federal landowners can continue to voluntarily enroll in the Candidate Conservation Agreement with Assurances (CCAA) and receive federal regulatory assurances if the fisher were to become listed under the ESA in the future. By enrolling in the CCAA, landowners agree to follow basic conservation measures that protect fishers that may use their lands. To date, 62 entities who own or manage 3,442,491 acres of non-federal forest lands are enrolled in the CCAA.

WDFW and project partners are continuing the long-term monitoring of reintroduced fisher populations in the state, following the 2013- 2016 monitoring project on the Olympic Peninsula. WDFW and project partners, beginning October 2022, have initiated a distribution and occupancy survey of much of the federal lands in the South Cascades Ecosystem (between I-90 and the Columbia River). This survey will be completed in July of 2023 and then WDFW and partners will conduct a similar survey in the North Cascade Ecosystem (from I-90 north to the WA-BC border) from October 2023 to July 2024.

Contact: Jeff Lewis ([Jeffrey.Lewis@dfw.wa.gov](mailto:Jeffrey.Lewis@dfw.wa.gov))

### **Western Gray Squirrel**

1993: State listed as Threatened

2002: Petitioned for Federal listing

2003: Federal listing denied

2013: FPB enacted voluntary management approach

2016: State retention of Threatened status

A final report has been completed that summarizes results of the statewide western gray squirrel hair tube survey concluded in 2020. A report summarizing results of a statewide habitat change assessment was recently completed as well. Results of these reports will be incorporated into the periodic status review currently underway, which we expect will be available for public review by fall 2022 and completed late 2022.

Contact: Mary Linders ([mary.linders@dfw.wa.gov](mailto:mary.linders@dfw.wa.gov))



### **Future Updates to the Board**

The forest practices rules require that when a species is listed by the Washington Fish and Wildlife Commission and/or the U.S. Secretary of the Interior or Commerce, WDNR will consult with WDFW and makes a recommendation to the Forest Practices Board as to whether protection is needed under the Critical Habitat (State) rule (WAC 222-16-080). WDFW and WDNR coordinate to anticipate federal actions and to respond to changes in the status of species addressed by the rules.

cc: Tom O'Brien (WDFW)  
Hannah Anderson (WDFW)  
Taylor Cotten (WDFW)  
Wendy Connally (WDFW)  
Marc Engel (DNR)  
Colleen Granberg (DNR)  
Joseph Shramek (DNR)

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