



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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ADMINISTRATOR'S
DIVISION

May 25, 2022

Michelle McMullin
NOAA Fisheries West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
Portland, Oregon 97232

Dear Michelle McMullin:

The U.S. Environmental Protection Agency has reviewed the National Marine Fisheries Service's March 2022 Draft Environmental Impact Statement for the Western Oregon State Forests Habitat Conservation Plan (CEQ Number 20220035, EPA Project Number 21-0011-NMFS). EPA has conducted its review pursuant to the National Environmental Policy Act and our review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to EPA and requires EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement.

The DEIS evaluates the potential environmental impacts associated with an authorization for incidental take of federally protected species during the Oregon Department of Forestry's HCP activities in state owned and managed forestlands in Western Oregon (i.e., west of the Cascade Range crest). The HCP activities include stand management, road system management, recreation infrastructure construction and maintenance, and conservation actions. The proposed HCP will support the anticipated incidental take permit (ITP) issuance. After analysis of potential impacts from the proposed action, the NMFS will process ODF's request for an ITP, then decide whether to grant, grant with conditions, or deny the ITP. The DEIS identifies and evaluates five alternatives: Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternative 3 (Increased Conservation), Alternative 4 (Reduced Permit Term), and Alternative 5 (Increased Timber Harvest). The preferred alternative has not been selected.

EPA supports improved forest conservation strategies. EPA identified concerns that the proposed action may have adverse impacts to water quality and aquatic resources and recommends Alternative 3 (Increased Conservation) as the preferred alternative in the Final EIS to address those concerns. The enclosed Detailed Comments provide an explanation of this recommendation and other recommendations for the FEIS.

Thank you for the opportunity to review the DEIS for this project. If you have questions about this review, please contact Caitlin Roesler of my staff at 206-553-6518 and roesler.caitlin@epa.gov, or me at (206) 553-1774 or at chu.rebecca@epa.gov.

Sincerely,

Rebecca Chu, Chief
Policy and Environmental Review Branch

Enclosure

U.S. EPA Detailed Comments on the

Western Oregon State Forests HCP DEIS May 2022

Water Quality and Aquatic Resource Impacts

EPA recommends selecting Alternative 3 (Increased Conservation) as the preferred alternative in the FEIS, considering the project's potential for adverse impacts to water quality and aquatic resources. EPA notes that the potential adverse impacts resulting from the proposed action (e.g., stream temperature increases) described in the DEIS need further analysis and discussion. HCP Conservation Actions 1 and 5 in Alternative 3 are modified from those of the proposed action as follows: Conservation Action 1 expands riparian conservation area (RCA) widths on certain stream types and protections related to landslide initiation sites; Conservation Action 5 includes increased commitments related to prioritizing and selecting road projects. These modifications will help protect cold water important to species.

Stream Temperature

Alternative 3 increases the width of riparian buffers from 35 feet to 50 feet on small perennial Type N (non-fish) streams upstream of a 500-foot process protection zone (PPZ). A PPZ is an RCA where 120-foot buffers are maintained for a length of 500 feet of water upstream from fish-bearing stream sections. The upstream buffer in both alternatives will maintain some shade to limit temperature increases in the headwaters and the wider 120-foot PPZ buffer will provide additional shading to promote the cooling of water before it enters a fish-bearing stream. Successful recovery of stream temperature in the PPZ is dependent on the amount of expected heat dissipation and groundwater recharge attenuating heat added upstream. The HCP states the relative total flow contribution of non-fish streams in a harvest unit to the receiving fish-bearing stream is critical for determining whether the increased headwater stream temperature has any measurable impact on the fish-bearing stream's temperature.¹ An example given in the HCP is that a headwater stream experiencing an increase in temperature of 1.5°C must comprise no more than 13% of the total fish-bearing stream's flow. The proposed activities in and nearby riparian areas have the potential to cumulatively impact the broader riverine ecosystem including fish species, particularly the salmonids that are subject to the ITP, and their prey species.

Recommendation for the FEIS:

- Include data regarding relative contributions of headwater streams to fish-bearing streams in Western Oregon State Forests, including potential cumulative impacts from temperature increases in multiple headwater streams flowing into the same fish-bearing stream.

The HCP suggests that it is reasonable to assume a 35-foot horizontal buffer will limit temperature increases to 1°C.² As noted in our April 2021 comments on the Notice of Intent for this project, results from the 2018 "Ripstream" study³ suggest a 35-foot buffer width would result in an average temperature increase of 1.65°C. A recently published study of the effectiveness of riparian management alternatives protecting cold headwater streams in western Washington showed that a continuous 50-foot buffer

¹ HCP, pg. 5-11.

² HCP, pg. 5-11.

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

resulted in temperature increases above 1°C.⁴ This study also suggested riparian buffers were subject to ongoing loss of trees to windthrow in post-harvest years that resulted in further loss of shade, increased temperatures, and an extended period of temperature recovery (with variation across buffer treatments and study sites).

Recommendations for the FEIS:

- Extend buffers to greater than 50 feet.
- Consider the maximum range of temperature impacts that have been demonstrated to occur in the studies mentioned.
- Add a feathered buffer outside of the buffer to minimize blowdown and therefore better protect streams from temperature increase.

The DEIS states that “[s]tream temperature increases are projected to be minimal in groundwater-fed streams at high elevations in the Cascade Range and greatest in low-elevation streams that are fed by surface water (Dalton and Fleishman 2021).” Research has shown that stream temperature increases resulting from riparian disturbance have been shown to be partially mitigated by groundwater/hyporheic exchange within the stream network,⁵ which can also vary the downstream temperature response extent.⁶ However, stream temperature response to added heat loading due to riparian disturbance is variable but is generally greater in streams with lower volume and higher elevation.⁷

Recommendation for the FEIS:

- Ensure riparian management targets are applied to all streams regardless of the elevation of the stream reach.

Protecting Cold Water from Degradation

Working with NOAA, USFWS, States, Tribes and other scientific experts, EPA issued its Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards⁸ demonstrating that in addition to biologically based numeric criteria, protection of cold water is integral to maintaining a complex natural thermal regime with spatial temperature patterns important to the recovery of protected species. Protecting cold headwater streams will likely become more important to covered species with increasing stream temperature due to climate change.

Preventing additional warming of cold water is consistent with the antidegradation requirements of the Clean Water Act (CWA). Antidegradation policies are water quality standards that apply to CWA activities in the Waters of the U.S. They are not source specific and apply to both point and nonpoint

⁴ McIntyre, A.P., M.P. Hayes, W.J. Ehinger, S.M. Estrella, D.E. Schuett-Hames, R. Ojala-Barbour, G. Stewart and T. Quinn (technical coordinators). 2021. *Effectiveness of experimental riparian buffers on perennial non-fish-bearing streams on competent lithologies in western Washington – Phase 2 (9 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, WA.

⁵ Janisch J.E., S.M. Wondzell, and W.J. Ehinger. 2012. Headwater stream temperature: Interpreting response after logging, with and without riparian buffers, Washington, USA. *Forest Ecology and Management*.

⁶ Davis, Lawrence J., Maryanne Reiter, and Jeremiah D. Groom. 2016 "Modelling temperature change downstream of forest harvest using Newton's law of cooling." *Hydrological Processes* 30.6 (2016): 959-971 and Arismendi, Ivan, and Jeremiah D. Groom. 2019. "A novel approach for examining downstream thermal responses of streams to contemporary forestry." *Science of the Total Environment* 651: 736-748.

⁷ Fuller, M. R., Leinenbach, P., Detenbeck, N. E., Labiosa, R., & Isaak, D. J. 2022. Riparian vegetation shade restoration and loss effects on recent and future stream temperatures. *Restoration Ecology*.

⁸ U.S. Environmental Protection Agency. 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. EPA 910-B-03-002. Region 10 Office of Water, Seattle, WA.

sources such as forest practices (see 40 CFR 131.12(a)(2)).⁹ Antidegradation includes Tier 1 requirements for protection of existing uses; Tier 2 requirements for protection of waters at or above the quality needed to protect designated uses; and Tier 3 protections where no degradation is allowed for

any identified Outstanding National Resource Waters. Federal antidegradation rules at 40 CFR 131.12(a)(2)(ii) provide that before allowing any lowering of water quality for a “high-quality” water, a state shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located.

Oregon DEQ’s May 2, 2018, Memorandum “Addendum to Antidegradation IMD Clarifying Procedures When Allowing a Lowering of Water Quality”¹⁰ suggests that ODF has a direct role in implementing antidegradation procedures for the state. The Memo indicates that Oregon has established programs for management of nonpoint pollution, including administrative rules adopted by ODF that require implementation of best management practices for nonpoint source control.

Recommendations for the FEIS:

- Discuss the need for maintaining cold headwater streams and the role they play in maintaining natural thermal regimes that are important to species protection.
- Explain the applicability of Oregon’s antidegradation provisions to the project.
- Discuss the State of Oregon’s responsibility to determine if lowering of water quality in headwater streams (i.e., increasing headwater stream temperatures) is necessary to accommodate important economic or social development in the area in which the waters are located.

Activities in Riparian Conservation Areas

The extent of forest harvest activities proposed to occur in the RCA is important for stream temperature considerations, and it is currently unclear in the DEIS and HCP. The DEIS lists “[a]ctivities related to stream enhancement or restoration” as an activity that would be permitted to occur in RCAs.¹¹ However, the HCP states that “ODF will establish [RCAs] adjacent to streams. The functions of streams within the permit area will be maintained by retaining vegetation in riparian areas during adjacent harvest activities. No harvest will occur within the RCAs.”¹² In addition, the DEIS states that “[u]nder the HCP, ODF would implement timber harvest activities according to a new FMP [Forest Management Plan] that is being developed as a companion document to the HCP. The companion FMP would guide ODF’s forest management activities in accordance with the HCP.”¹³

The modeling effort to establish RCA widths associated with the alternatives used unharvested riparian buffer conditions,¹⁴ and thus including thinning within the RCA would likely result in requiring wider required RCA buffer widths.

⁹ Davies, T. U.S. Environmental Protection Agency. 1994. Memorandum: Interpretation of Federal Antidegradation Regulatory Requirement. Office of Water, Washington DC. <https://www.epa.gov/sites/production/files/2014-10/documents/davies-regrequire-memo.pdf>.

¹⁰ <https://www.oregon.gov/deq/FilterDocs/saMemoPNPreq.pdf>.

¹¹ DEIS pg. 2-7.

¹² HCP pg. 712.

¹³ DEIS pg. 2-3.

¹⁴ HCP Appendix E.

Recommendations for the FEIS:

- Clarify the occurrence, or not, of thinning activities in the RCA in the FEIS, HCP, and upcoming companion FMP.

- Describe the procedures and assessment methods that will be used to evaluate the additional impact of tree removal within the RCA on stream shade conditions, and subsequently stream temperatures, if thinning activities are included as a potential management option within the RCA.
- Provide studies to support evaluating the temperature impacts from thinning within the RCA.

Sedimentation

Road activities and harvest activities can be a source of high sediment loading into project area streams. EPA appreciates the protective actions (i.e., implementing a new risk inventory and evaluation program) to address potential sediment sources from roads for Alternative 3, however it is not clear what sediment protection and monitoring efforts will be implemented if Alternative 3 is not chosen as the preferred alternative. While the DEIS states that “[s]ediment did not rank in the top three impairment causes for any basin,”¹⁵ EPA notes that even without sediment listings on the Oregon 303(d) impaired waters list, excessive sediment loading in forested areas can result in water quality degradation. For example, the USEPA 2013/2014 National Rivers and Streams Assessment survey found that 24% of forested stream in the western mountains were in poor condition due to “excessive streambed sediments.”¹⁶ In addition, ODEQ reported that approximately 20% of forested streams in the Willamette basin were in poor condition due to “Percent Sands and Fines.”¹⁷

The DEIS explains that Conservation Action 5 of Alternative 3 “would include a requirement for ODF to adopt a risk inventory and evaluation program that includes motorized roads and trails in RCAs... The protocol would systematically identify road/trail-related risks that threaten water quality and aquatic habitat, including road surface sediment production and delivery, mass wasting risk from road-related gullies and landslides, risks of stream diversion and crossing failures, and road hydrologic connectivity.”¹⁸ EPA supports such a risk inventory and evaluation program for all alternatives.

Recommendation for the FEIS:

- Include an evaluation of potential excessive sediment sources and associated impacts from road activities as described in Alternative 3 Conservation Action 5.
- Consider adopting a risk inventory and evaluation program for the other alternatives, rather than Alternative 3 only, especially if Alternative 3 is not chosen as the preferred alternative. • Provide more detail for the risk inventory and evaluation program, including how problems will be identified, how they will be fixed, what entities are involved in implementing the program, and the timeline for agreeing to the protocol.

Environmental Justice

EPA is pleased that the DEIS analysis considers impacts to the community, including Tribal Nations and those with environmental justice (EJ) characteristics, that are both located within the project area and “rely

¹⁵ DEIS pg. 3.4-5.

¹⁶ U.S. EPA 2020. National Rivers and Streams Assessment 2013–2014: A Collaborative Survey. EPA 841-R-19-001. Washington, DC. <https://www.epa.gov/national-aquatic-resource-surveys/nrsa>.

¹⁷ ODEQ 2009. Willamette Basin Rivers & Streams Assessment #206-932. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.969.237&rep=rep1&type=pdf>.

¹⁸ DEIS pg. 2-12

on or hold value for the goods and services from lands and waters in the plan area.”¹⁹ As discussed in the DEIS, adverse impacts on habitat quality of most fish species could adversely affect recreational fishing in the study area. Recreation impacts under Alternative 5 (Increased Timber Harvest) are described as being the same as the Proposed Action and, due to benefits from increased timber sales, EJ populations would be less adversely affected. However, the DEIS describes the environmental consequences of fish and wildlife as such for Alternative 5: “Effects on covered salmonids under Alternative 5 compared to the no action alternative would be similar as described for the proposed action except that adverse effects related to harvest would increase with increased acreage of harvest and overall decrease in acres of HCAs [Habitat Conservation Areas].”²⁰ EPA recommends that the FEIS consider potential impacts to fish health in each alternative when evaluating recreational fishing.

Monitoring

EPA appreciates that project activities will be monitored to assess the implementation and effectiveness of the HCP in achieving conservation goals. Table 6-4 of the HCP provides an adaptive management response example for temperature, and we recommend adding the underlined addition: “potentially [revising] implementation plans during the subsequent 10-year planning cycle to modify amount and location of harvest in an affected watershed.”²¹

¹⁹ DEIS pg. 3.13-1

²⁰ DEIS pg. 3.6-12

²¹ HCP Table 6-4