Eastern Washington Sustainable Harvest Calculation Scoping Report

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Acronyms

BNR	Board of Natural Resources
CO2	Carbon dioxide
DEIS	Draft environmental impact statement
DNR	Washington State Department of Natural Resources
EIS	Environmental impact statement
FDA	Forest development account
FEIS	Final environmental impact statement
FHRA	Forest health revolving account
FY	Fiscal Year
GIS	Geographic information system
HCP	1997 State Trust Lands Habitat Conservation Plan
JTD	Junior taxing district
NPV	Net present value
RCW	Revised Code of Washington
RMCA	Resource management cost account
SB	Senate Bill
SEPA	State environmental policy act
SHC	Sustainable harvest calculation
SHL	Sustainable harvest level
SHU	Sustainable harvest unit
TAC	Sustainable harvest calculation technical advisory committee
TLT	Trust land transfer
U.S.	United States
VRH	Variable retention harvest
WAC	Washington Administrative Code

WDFW	Washington Department of Fish and Wildlife
2SHB	Second Substitute House Bill

Background

In Washington state, the Department of Natural Resources (DNR) manages approximately 2.9 million acres of state trust lands, not including aquatic lands. State trust lands are lands held in trust for specific trust beneficiaries, such as public schools and universities. The term "state trust lands" refers to both State Lands and State Forestlands:

- State Lands (RCW 79.02.010(14)) are lands granted to the state by the federal government at statehood. State lands are also referred to as Federal Grant Lands.
- State Forestlands (RCW 79.02.010(13)) are lands acquired by Washington State from the counties. There are two types: State Forest Purchase Lands, which are lands purchased or acquired by the state as a gift, and State Forest Transfer Lands, which are lands transferred to the state from the counties.

As a trust lands manager, DNR's responsibility is to manage these lands consistent with fiduciary principles, which include producing a perpetual supply of revenue for specific trust beneficiaries. On forested state trust lands, revenue is produced primarily through the harvesting of trees.

Providing a perpetual supply of revenue requires responsible management with an emphasis on long-term sustainability. A major component of DNR's approach to sustainable management is calculation of a sustainable harvest level, which is the volume of timber to be scheduled for sale during a planning decade according to applicable laws, policies, and procedures (RCW 79.10.300(5)). Put another way, the sustainable harvest level is the amount of timber DNR can harvest from forested state trust lands on a continuing basis without major prolonged curtailment or cessation of harvest (RCW 79.10.310).

The eastern Washington sustainable harvest level applies to all forested state trust lands located east of the Cascade Crest in Washington (approximately 679 thousand acres, Appendix 1). These lands are divided into sustainable harvest units, each of which is assigned its own sustainable harvest level for the decade.

The sustainable harvest level is measured in board feet, which is a unit of volume equivalent to a 12-inch square, 1-inch thick piece of wood. The level is recalculated every 10 years. To ensure one generation of beneficiaries is not favored over another, the next decade's level cannot rise or fall more than 25 percent from the previous decade's level (refer to the policy on the Definition of Sustainability for the Sustainable Harvest Calculation in the *Policy for Sustainable Forests* (DNR 2006)).

DNR is required to set a sustainable harvest level by Washington state law. Specifically, DNR must periodically adjust acreages designated for inclusion in the sustained yield management program and calculate a sustainable harvest level (RCW 79.10.320). Sustained yield means harvesting on a continual basis without major prolonged curtailment or cessation of harvest (RCW 79.10.310). The sustainable harvest level is a policy decision that requires approval from the Board of Natural Resources.

DNR calculates the sustainable harvest level through a forest estate modeling process. The forest estate model is a mathematical, computer-based representation of the forest. Capable of manipulating vast quantities of data, the model is able to look across landscapes and decades to determine the sustainable harvest level that is the best balance of DNR's management objectives, which include both revenue production and ecological values such as wildlife habitat.

Public Scoping Process

Scoping is the first formal step in preparing an EIS and initiates public involvement. Analysis of comments received during public scoping helps DNR to: narrow the focus of the EIS to significant environmental issues, eliminate issues that would have insignificant impacts or that are not directly related to the proposal, identify alternatives to be analyzed in the EIS, and identify mitigation measures that address potential environmental impacts of the proposal.

Scoping Notice

2021

On October 25, 2021, DNR issued a Determination of Significance and Public Scoping Notice for the proposal to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust land in eastern Washington, indicating that DNR would prepare an Environmental Impact Statement (EIS) (Appendix 2) (RCW 43.21C.030(2)(c)). In the scoping notice, DNR invited agencies, affected tribes, and members of the public to comment on the scope of the EIS, specifically asking for comments on alternatives, mitigation measures, probable significant adverse impacts, and licenses or other approvals that may be required, adding that if the commenter was suggesting a particular approach or impacts to consider, to please explain why. The scoping notice went on to explain that the more evidence provided in support of a comment, such as peer-reviewed studies or reports, the more useful that comment would be to DNR in its analysis. Suggested comment topic areas included the following:

- Probable significant environmental impacts that need to be considered in the adoption of the sustainable harvest level.
- Key environmental issues that need to be addressed and analyzed by one or more of the alternatives.
- Alternatives that need to be considered that will meet the need for, and the purpose of, the proposal.
- Specific mitigation measures that DNR should consider to avoid or minimize impacts.
- Identification of additional environmental information, studies, or reports relevant to the development of sustainable harvest level alternatives.

In addition, the scoping notice opened a 45-day public comment period starting on October 25, 2021 and ending on December 9, 2021; announced a date for a public webinar, which is a public meeting held over the internet; and provided a link to a survey for meeting participants to use in order to submit comments to DNR as well as an option to mail comments to DNR staff. This notice was sent through U.S. Postal Service and email to a list of agencies, individuals, and organizations interested in state trust lands management decisions. In addition the notice was posted on DNR's website at "Sustainable Harvest Calculation" as well as on DNR's SEPA Center website. DNR also issued a press release.

2024

In 2023, DNR staff amended the purpose, need, and objective statement that was published in the 2021 scoping notice in order to analyze possible revisions to a department procedure concerning forest management activities within northern spotted owl circles. In addition, the extended period of time that had elapsed since 2021 scoping warranted another public scoping period. On January 8, 2024, DNR issued a Determination of Significance and Public Scoping Notice for the proposal to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust land in eastern Washington, indicating that DNR would prepare an Environmental Impact Statement (EIS) (Appendix 3) (RCW 43.21C.030(2)(c)). In addition, the scoping notice opened a 45-day public comment period starting on January 9, 2024 and ending on February 22, 2024; announced a date for a public webinar; and provided a link to a survey for meeting participants to use in order to submit comments to DNR as well as an option to mail comments to DNR staff. This notice was sent through U.S. Postal Service and email to a list of agencies, individuals, and organizations interested in state trust lands management decisions. In addition the notice was posted on DNR's website at "Sustainable Harvest Calculation."

Public Webinars

2021

DNR held a live public webinar at 6:00 p.m. on November 10, 2021 and made a recording of the webinar available for public viewing on DNR's website on November 16, 2021. The scoping notice provided a link for anyone interested in attending the webinar to use in order to register for the webinar. The webinar discussed six topics: background information on WA state trust lands; information on DNR's separate, but concurrent sustainable harvest calculations; the environmental review steps that are part of an EIS; the purpose of scoping; information on the eastern WA Sustainable Harvest Calculation project proposal; and how to make effective comments to the department during the scoping period.

Twelve non-DNR attendees viewed the webinar. These attendees included unaffiliated members of the public, representatives of environmental organizations, timber industry organizations, and trust beneficiaries. DNR provided time in the webinar for participants to make comment, although no one chose to do so.

2024

DNR held a live public webinar at 6:00 p.m. on January 24, 2024 and made a recording of the webinar available for public viewing on DNR's website on February 1, 2024. The scoping notice provided a link for anyone interested in attending the webinar to use in order to register for the webinar. The webinar discussed six topics: background information on WA state trust lands; information on DNR's separate, but concurrent sustainable harvest calculations; the environmental review steps that are part of an EIS; the

purpose of scoping; information on the eastern WA Sustainable Harvest Calculation project proposal; and how to make effective comments to the department during the scoping period.

Thirteen non-DNR attendees viewed the webinar. These attendees included unaffiliated members of the public, WDFW staff, representatives of environmental organizations, timber industry representatives and organizations, and trust beneficiaries. DNR provided time in the webinar for participants to make comments and ask questions but only received one question (see Questions Asked During Webinar).

Website

DNR provides information about the eastern WA sustainable harvest calculation on a website dedicated to the topic at https://www.dnr.wa.gov/programs-and-services/forest-resources/sustainable-harvest-calculation/eastern-washington-2025-34. The website provides links to the scoping notice and other background documents, as well as details about the comment period and the public webinar. Additional information, including EIS documents, related to the project will also be posted at this website.

Additional Opportunities to Comment

Although the public scoping comment period is now closed, additional opportunities for the public to comment on the sustainable harvest calculation are available at every Board of Natural Resources meeting, which occur on the first Tuesday of each month, except for August, and begin at 9:00 a.m. Agendas for these meetings are posted three business days before the meetings and include a standing topic for the public to comment on any item of interest that they may have. More information about these meetings is available on the Board of Natural Resources web site (Board of Natural Resources | WA - DNR).

Comment Summaries

2021

DNR received comments from 9 different individuals or groups. The public used either SurveyMonkey® (8 commenters) or email (1 commenter) to submit comments. Commenters affiliated with stakeholder groups, including environmental advocacy and industry groups as well as citizens' councils and beneficiaries, accounted for 8 of the commenter pool, while 1 commenter was an unaffiliated member of the public.

2024

During 2024 scoping DNR received comments from 8 different individuals or groups. The public used DNR's comment submission form to submit all comments. Two commenters were affiliated with the timber industry, one with WDFW, and one with the Confederated Tribes and Bands of the Yakama Nation. Four commenters were unaffiliated members of the public.

Comment Organization

Scoping comments from both the 2021 and 2024 comment periods were categorized into 14 different topics that were identified during the scoping process. Comments were further categorized into subtopics. The blue heading above each comment denotes whether the scoping comment(s) was/were received in the 2021, 2024, or both scoping comment periods. In some cases, comments from different commenters were combined into a single comment when the theme of the comments were similar. A commenter identification number is provided for each commenter from the 2021 scoping comment period and a commentor identification letter for each commenter from the 2024 scoping comment period. Tables 1 and 2 below indicate which commentor or group corresponds to each commenter identification number or letter. Some commenters provided references and/or additional sources of information with their comments; citations for these are included in Appendix 4.

Topic: Alternative Development

Subtopic: Climate change mitigation

SUMMARY OF COMMENT - 2021 SCOPING

One alternative should examine what the future climate impacts of different forestry practices are going to be and how the necessary management actions to mitigate those impacts are accounted for in the harvest calculation.

Commenter

6

Subtopic: Climate smart alternative

SUMMARY OF COMMENT - 2021 SCOPING

A 'climate smart' alternative is essential for many reasons. DNR should develop and adopt a climate smart management alternative that protects and restores the world's most productive terrestrial carbon sink, halts further loss of at-risk plants, fish, and wildlife, and transitions trust revenue streams towards carbon and other ecosystems services and away from timber. DNR should fully develop and rigorously analyze a climate smart alternative in the context of the EIS. A climate smart alternative would achieve the following goals: (1) reduction of logging related emissions; (2) an increase in carbon stored on the land; (3) an increase in carbon sequestered by DNR forests on an annual basis, and (4) an increase in the landscape's resiliency to climate change. Specific management actions that would be a part of this alternative include: establishing a network of forest carbon reserves on DNR lands, limiting timber harvest to variable density thinning of young tree plantations, diversifying trust revenue streams to prioritize income from recreation, tourism, conservation leasing, conservation land sales, payments for carbon storage and payments for other ecosystem services.

Commenter

3

SUMMARY OF COMMENT - 2021 SCOPING

All "reasonable" alternatives must be climate-smart and center forest health and wildfire resilience in the strategies the alternatives employ. Traits of climate-smart forest management which result in increased forest resilience must be included in all alternatives, and cannot be relegated only to (an) alternative(s) at a far end of the spectrum.

Commenter

7

Subtopic: Disturbance

SUMMARY OF COMMENT - 2021 SCOPING

Action alternatives should have natural disturbance, including wildfire, factored in.

Commenter

6

Subtopic: Fiduciary duties

SUMMARY OF COMMENT - 2021 SCOPING

All alternatives should reflect existing trust requirements and state law. Theoretical changes to either of those are the purview of the legislature and courts and should be left to them.

Commenter

4

SUMMARY OF COMMENT - 2021 SCOPING

DNR should assemble strategies to increase value that do not automatically require harvesting more volume.

Commenter

7

SUMMARY OF COMMENT - 2021 SCOPING

The SHC DEIS must contain significant analysis of all potential impacts of the Supreme Court decisions on sustainable harvest.

Commenter

8

Subtopic: Forest health

SUMMARY OF COMMENT - 2021 SCOPING

The Department must remain vigilant in its development of Alternatives for this proposal to adequately and appropriately describe any terms relating to forest health treatments to be consistent with trust management.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING

There should be an Alternative that considers compressing the 20 year timeframe for the Forest Health Treatment Prioritization and Implementation Plan on State Trust Lands in Eastern Washington down to 10 years or a completion date of 2027.

Commenter

2

SUMMARY OF COMMENT - 2024 SCOPING

DNR must consider the legislature's expectations (per direction in RCW 79.10.520) for forest health treatment prioritization when developing alternatives and considering various metrics to be analyzed.

Commenter

F

SUMMARY OF COMMENT - 2024 SCOPING

If forest health treatments required by E2SHB1711 cannot be modeled for a 2027 completion date then an Alternative should have a completion date that corresponds to the end of the planning decade (i.e., 2034).

Commenter

F

Subtopic: Habitat heterogeneity

SUMMARY OF COMMENT - 2024 SCOPING

Promote the creation of habitat heterogeneity into the sustainable harvest calculation through prescribed fire and harvest prescriptions.

Commenter

H

Subtopic: Harvest deferrals

SUMMARY OF COMMENT - 2021 SCOPING

DNR should identify all remaining blocks of interior forest habitat (blocks over a certain size threshold, such as 100 acres) and include these blocks in its base of deferrals. DNR should withdraw native and legacy forests from the harvest base.

Commenter

3

SUMMARY OF COMMENT - 2021 SCOPING

The SHL for 2025-2034 should be constrained by an across-the-board prohibition on new road construction and reconstruction only if the overall road density for a given basin is below the generally accepted threshold of significance of 1.0 miles/square mile.

Commenter

3

Subtopic: Increasing resilience

SUMMARY OF COMMENT - 2021 SCOPING

Every single alternative that is considered should result in increased forest resilience, particularly wildfire resilience. The calculation should incorporate climate resilience, forest health, wildfire risk reduction and resilience, carbon sequestration, and modernization of DNR silviculture as core components in each alternative that is drafted and considered, to reflect the reality of the climate crisis and its interaction with forest ecosystems.

Commenter

7

Subtopic: Non-DNR management

SUMMARY OF COMMENT - 2021 SCOPING

Should DNR explore ideas around modeling "cross-boundary" treatments in the eastern Washington SHC, we would ask the Department to provide substantive information on this prior to the development of any Alternatives for analysis in the EIS.

Commenter

2

Subtopic: Older forest

SUMMARY OF COMMENT - 2021 SCOPING

Updates to the agency's approach to meeting older forest objectives should be included in each alternative that is drafted and considered.

Commenter

7

SUMMARY OF COMMENT - 2021 SCOPING

Because the greatest amount of carbon is stored in the oldest forest ecosystems, DNR should immediately stop the logging on all forest stands which contain trees over 80 years old.

Commenter

8

Subtopic: Prescribed fire

SUMMARY OF COMMENT - 2021 SCOPING

Operations such as post logging pile burning and even low intensity broadcast burns to reduce post logging slash can be useful and necessary tools for mitigating the risk of loss of the trust asset. If DNR is planning to include ongoing fuels maintenance in its modeling it would be important to assure there are alternatives to compare the impacts to volume outputs by the use and non-use of prescribed fire for ongoing fuels maintenance.

Commenter

2

Subtopic: Reforestation

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

In all alternatives there should be a consideration for the reforestation and/or afforestation of previously burned state trust lands in eastern Washington. An alternative or a component of all of the action alternatives should explore the volume ramifications of reforestation and/or afforestation of understocked or non-stocked forested trust lands.

Commenter

2, F, G

Subtopic: Sustainable harvest units

SUMMARY OF COMMENT - 2021 SCOPING

DNR should consider creating two sustainable harvest units for each trust according to the rules the lands are managed under. For example, the Common School Trust would have an SHU for the lands included in the 1997 HCP and a separate SHU for the lands covered by the Forest Practices rules.

Commenter

2

Subtopic: Sustainability

SUMMARY OF COMMENT - 2024 SCOPING

When considering alternatives for the new calculation, think about sustainability in terms of what the ecosystem can provide rather than how much revenue can be obtained over the long term without requiring a "major prolonged curtailment."

Commenter

E

SUMMARY OF COMMENT - 2021 SCOPING

The “Federally granted trust and State Forest purchase Lands” should be disaggregated by county in the same way as the “State Forest Transfer Lands.”

Commenter

8

Subtopic: Trust land transfer

SUMMARY OF COMMENT - 2021 SCOPING

As DNR develops the eastern WA SHC it should evaluate and disclose any anticipated disposal of land parcels, especially through the TLT program.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING

DNR should develop and document a method in the SHC DEIS of how it will model and map the areas in Eastern Washington which can be protected through a Trust Land Transfer.

Commenter

8

Topic: Arrearage

Subtopic: Avoiding future arrearage

SUMMARY OF COMMENT - 2021 SCOPING

The BNR should set a realistic sustainable harvest level to avoid accumulating arrearage for this upcoming decade.

Commenter

7

Subtopic: Calculating arrearage

SUMMARY OF COMMENT - 2021 SCOPING

The EIS should show the differences in cutting level for each county between planned and actual level of cutting. Also, the differences should be shown for each year, not just the planning decade.

Commenter

8

Subtopic: No arrearage analysis

SUMMARY OF COMMENT - 2021 SCOPING

The Department should not expend time and resources to determine an arrearage volume. It is not practical to calculate an eastern Washington arrearage volume for this SHC calculation. The Department should focus on assuring the current inventory is up to date and accurate for this calculation and use this SHC volume as the baseline for future arrearage calculations in eastern Washington. Only after a current SHC has been established for Eastern Washington will it be time to consider end-of-decade analysis of arrearage.

Commenter

2

SUMMARY OF COMMENT - 2024 SCOPING

The ability to secure the data needed to efficiently and accurately calculate an arrearage volume for eastern Washington is likely challenging at best and may not produce useful and accurate results. Therefore, we would encourage the Department to focus on assuring the current inventory, GIS data, and data sources are up to date and accurate for this calculation and use this SHC volume as the baseline for future arrearage calculations in eastern Washington.

Commenter

G

Topic: Data and Analysis

Subtopic: Carbon

SUMMARY OF COMMENT - 2021 SCOPING

DNR should include information and analysis on logging and wood products emissions attributable to DNR. The agency should provide an analysis of the amount of carbon which will be emitted through all components of the "harvest to product" life cycle including the CO2 given off in road building, harvesting, transportation of logs, log processing, distribution of finished wood product materials to commercial outlets and other factors associated with cutting and processing. The agency should include a discussion of the difference in carbon stored and sequestered between the numerous thinning and clearcutting (VRH) harvest methods.

Commenters

3, 8

SUMMARY OF COMMENT - 2021 SCOPING

Impacts to carbon should include an analysis for the amount of carbon stored on the landscape and expected annual carbon flux for the lands of each trust beneficiary (common schools, counties, etc.) under each alternative. The cumulative impact of harvest on carbon storage and emissions for each alternative should also be analyzed.

Commenter

7, 8

SUMMARY OF COMMENT - 2021 SCOPING

The agency should estimate the impacts of a range of rotation ages on carbon storage and sequestration, as well as researching the applicable information on product substitution.

Commenter

8

SUMMARY OF COMMENT - 2021 SCOPING

The impacts from fires and fire management including their effects on stored and sequestered carbon should be analyzed as part of the SHC DEIS.

Commenter

8

SUMMARY OF COMMENT - 2021 SCOPING

The impacts on carbon from thinning operations should be included. DNR should provide estimates of the amount of biomass and carbon in thinning operations which will be sold and the amount which will be left to decompose from areas in fire management vs commercial thinning operations.

Commenter

8

SUMMARY OF COMMENT - 2024 SCOPING

Consider the carbon stored in harvested wood products and the effects of substitution and leakage as part of any carbon accounting analysis.

Commenter

F

SUMMARY OF COMMENT - 2024 SCOPING

Consider the entire carbon cycle, including carbon that is stored in harvest wood products.

Commenter

G

SUMMARY OF COMMENT - 2024 SCOPING

Consider the potential emissions associated with increased wildfire risks due to a lack of active management on DNR state trusts lands in eastern Washington.

Commenter

F

SUMMARY OF COMMENT - 2024 SCOPING

The department should consider the impacts on carbon sequestration and emissions due to forest mortality and wildfire.

Commenter

G

Subtopic: Ecotypes

SUMMARY OF COMMENT - 2024 SCOPING

Ensure that GIS and inventory data used for ecotypes are reviewed and documented so that the starting point ecotypes are accurate and the modeled changes to ecotypes over a 100-year period are credible.

Commenter

F

Subtopic: Financial analysis

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

A robust and comprehensive economic analysis of the SHC is the duty of the trust manager.

Commenter

2, G

SUMMARY OF COMMENT - 2021 SCOPING

Go beyond mere carbon credits in the financial analysis. A financial analysis must analyze multiple revenue streams from conservation leasing, conservation sales, expansion of recreation and tourism facilities, and leases for special forest products and other non-timber uses. The agency should calculate the value of the full range of ecosystem services potential of DNR Eastern Washington forests.

Commenters

1, 3, 8

SUMMARY OF COMMENT - 2021 SCOPING

DNR should utilize analysis techniques that value not only timber, but all ecosystem service values, particularly carbon. The agency should calculate and report in the SHC DEIS the cost of the loss of ecosystem services and recreation which would be caused by logging over the SHC DEIS period as well

as methods and alternatives to increase the value of recreation, carbon and other ecosystem services on DNR lands.

Commenter

8

SUMMARY OF COMMENT - 2021 SCOPING

Economic analyses should include but not be limited to sensitivity analysis around discount rates, Forest Health Revolving Account, management fees, revenue and job impacts on beneficiaries and local infrastructure and communities, and any other metrics needed to understand the economic impacts on beneficiaries and their resulting ability to deliver essential public services from various environmental choices.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

The Department should conduct a sensitivity analysis to varying discount rates used in the modeling of the FY2025 to FY2034 SHC. The rate for Washington municipal bonds with 2- to 4-year maturities should be considered in the determination of an appropriate discount rate.

Commenter

2, G

SUMMARY OF COMMENT - 2021 SCOPING

A sensitivity analysis of the impacts of the balances in the Forest Health Revolving Account on the various alternatives should be conducted. If any other sources of funding, such as the FDA and RMCA accounts are used, analyzing changes in those fees up 3% and down 3% in 1% increments would help to identify any limitations on volume output in the SHC driven by management fees.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

The Department should go beyond the relatively finite Net Present Value Analysis of the various Alternative's when conducting its economic analysis. The economic analysis of the Alternatives should at a minimum should include the following: regional changes in volumes, regional impacts to direct and indirect jobs, revenue impacts at the County and Junior Taxing District level (this should include expected Timber Excise tax revenue as some JTDs benefit more from Timber Excise Tax than from direct timber revenue), disclose itemized costs of management (e.g., staffing; equipment and facilities; silviculture costs including site prep, reforestation, precommercial thinning/density management, etc.; road maintenance costs), anticipated stumpage rates by species and region, and net present value outputs by trust.

Commenter

2, G

SUMMARY OF COMMENT - 2021 SCOPING

The social cost of carbon is one mechanism available to DNR to be able to estimate the climate externalities associated with its logging program. Other externalities should also be included in the financial analysis including increased water filtration costs incurred downstream associated with sediments generated by DNR's logging and road building activities. Calculations for the sustainable harvest should include the negative (unsustainable) economic impacts of these harvests on all ecosystem services, as well as economic benefit of recreation in rural communities.

Commenters

3, 8

SUMMARY OF COMMENT - 2021 SCOPING

The metrics for economic analyses should include employment and personal income and address at least direct timber effects as well as total effects from all economic sectors. Economic analyses must utilize the results of actual timber cutting levels that have been experienced when compared to estimated timber volume outputs produced by each SHC DEIS alternative. The latest employment/cut log volume and personal income/cut log volume multiplication factors relating to the existing timber economy should also be used. Multiplication factors should be determined for DNR lands as well as public and private ownership and divided into logging, solid wood products, and paper product sub-sectors to represent the total timber based direct economic effects. DNR should develop an assessment of the dependence of local economies at the county level in terms of employment and personal income for timber volume cut by ownership class and how changes in log volume cut from state lands relate to the total cut volume in each

county. The employment results should be compared to employment and personal income for each county as generated from all economic sectors.

Commenter

8

Subtopic: Forested landbase

SUMMARY OF COMMENT - 2021 SCOPING

An update to the forested landbase should be conducted. The Department should not round the managed acres to the nearest 1,000 or 10,000 acres.

Commenter

2

Subtopic: Harvest deferrals

SUMMARY OF COMMENT - 2021 SCOPING

The Department should clearly identify acres available for management versus those in long term deferral status and identify the acres by cause of deferral.

Commenter

2

SUMMARY OF COMMENT - 2024 SCOPING

Remove climate resilient large mature tree stands from the eastern Washington sustainable harvest calculation.

Commenter

E

Subtopic: Inventory data

SUMMARY OF COMMENT - 2021 SCOPING

Spatially explicit inventory data should allow DNR to better plan forest health, reforestation, and silviculture needs to increase volume production in future decades, thus minimizing the risk of catastrophic loss of timber assets to mortality and wildfire. For eastern Washington trust lands covered by the 1997 HCP, this more finite data should allow the Department to better identify the current and future metrics around the ecological goals outlined in the 1997 HCP at a finer landscape level.

Commenter

2

Subtopic: Limitations on harvest

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

The Department should determine if the volume outputs are limited by the biological capacity of the land or if the available harvest level is limited by staffing capability and policy.

Commenter

2, G

SUMMARY OF COMMENT - 2021 SCOPING

The agency should be realistic about operational constraints in its harvest calculations.

Commenter

7

Subtopic: New information for incorporation or reporting

SUMMARY OF COMMENT - 2021 SCOPING

The agency needs to fully integrate disturbance into its modeling.

Commenter

7

SUMMARY OF COMMENT - 2021 SCOPING

New information to include in the calculation should include forest departure analysis, wildlife species and habitat, old forests protection, drought, insects, aquatics, operational access and recreation utilizing the forest estate model.

Commenter

6

SUMMARY OF COMMENT - 2021 SCOPING

The EIS should incorporate many more metrics when analyzing and modeling long-term sustainability and consider what planning documents pertaining to implementation of forest health treatments in eastern Washington support a sustainable harvest.

Commenter

6

SUMMARY OF COMMENT - 2021 SCOPING

For all alternatives evaluated DNR must estimate and report metrics pertaining to all ecosystem services as well as estimates for carbon storage and sequestration that is impacted by various strategies of forest management as well as metrics on carbon storage and sequestration.

Commenter

8

Subtopic: Objectives

SUMMARY OF COMMENT - 2021 SCOPING

The SHC-East calculation needs to make note of and provide detailed analysis of how specific, unfulfilled objectives in federal and state laws, rules, policies and programs that guide management of DNR forestlands will be met. Objectives include: older forest targets in the Policy for Sustainable Forests (2006), HCP stand structure objectives, the US pledge to halt deforestation and forest degradation by 2030, the Climate Commitment Act SB 5126 (2021), and the Commissioner's Order on Climate Resiliency.

Commenter

3

SUMMARY OF COMMENT - 2021 SCOPING

The DNR should have modeling optimization parameters that integrate ecological-process-based metrics.

Commenter

7

Subtopic: Prescribed fire

SUMMARY OF COMMENT - 2021 SCOPING

DNR should estimate how many acres the DNR will treat with prescribe burning over the SHC period as well as the rational for how these areas will be selected. We also would request the DNR to disclose estimates of the amount of carbon which may be given off from prescribe burn treatment in the SHC area over the SHC period as well as impacts to wildlife from prescribed burns

Commenter

8

SUMMARY OF COMMENT - 2024 SCOPING

The currently challenging market for green biomass as well as the future markets should be factored into any analysis that includes the use of prescribed fire.

Commenter

F

Subtopic: Resilience

SUMMARY OF COMMENT - 2021 SCOPING

The analysis should assess which alternatives provide the greatest addition to resilience.

Commenter

7

SUMMARY OF COMMENT - 2024 SCOPING

Providing resiliency of habitat for wildlife needs to be analyzed.

Commenter

H

Subtopic: Silviculture

SUMMARY OF COMMENT - 2021 SCOPING

Discussions and analysis of the Department's silviculture needs and how assuring the necessary funding for that work can be secured are necessary. Active management and harvesting and conversion to wood products will be a key to increasing sequestration rates, and good stand data and silviculture treatments should assist in that work. If resource constraints are the cause of failure to perform silviculture activities that would increase the growth and yield, then those resource constraints have direct environmental impacts which should be explained by the EIS, and alternatives addressing those constraints should also be addressed.

Commenter

2

Subtopic: Stand age class

SUMMARY OF COMMENT - 2021 SCOPING

The SHC DEIS needs to develop and incorporate data on DNR forest stands by Age Class groupings that include: stand age area by county and trust, sequestration & carbon storage by stand age class, and optimum age class ranges where carbon storage is maximized. A definition of the acres to be entered by stand age class that includes in intervals of at least 50-65 years, 65-80 years, 80-100 years, and 100-120 years should be included for each alternative.

Commenter

8

Subtopic: Sustainable harvest calculation technical advisory committee

SUMMARY OF COMMENT - 2021 SCOPING

The timing of the sustainable harvest calculation technical advisory committee (TAC) recommendations and impacts of the recommendations should be part of the SEPA analysis. The Department should include how the impacts of any TAC recommendations, subsequent significant changes, or even delays in receiving recommendations may affect the SHC process and final calculations in the scoping analysis.

Commenter

5

Subtopic: Transparency

SUMMARY OF COMMENT - 2021 SCOPING

The EIS should be clear what the source of data is for various quantitative representations made in the EIS. Changes in the source of data or changes to the model should be fully disclosed. Any changes between the DEIS and FEIS need to be fully disclosed and described. The EIS needs to adequately describe the modeling that is used so that the public at large, the beneficiaries and all stakeholders, can understand the data that is used, the models that are used, the assumptions that are made, and how the modeling accounts for the various regulatory constraints that limit forest practices. The Forest Estate Model should be well documented in the EIS in a format that the beneficiaries and stakeholders can understand.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING

A spatially explicit stand-based GIS and inventory program leading to a spatially explicit stand based SHC will create the accountability and transparency expected by the beneficiaries and other stakeholders.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING

How the funding from the RMCA, FDA, and FHRA function as a variable (limiting or non-limiting) in the forest estate model and its volume outputs should be explained and analyzed.

Commenter

2

Subtopic: Uncertainties

SUMMARY OF COMMENT - 2021 SCOPING

The SHC calculation must include a rigorous evaluation of uncertainties related to data, ecology, policy, legal challenges, and climate change.

Commenter

3

Subtopic: Using the best science

SUMMARY OF COMMENT - 2021 SCOPING

Only the best relevant science should be used to analyze elements of the environment.

Commenter

2

SUMMARY OF COMMENT - 2021 SCOPING

DNR must analyze the best science in order to make the most appropriate decision to meet the objectives of the EIS process.

Commenter

8

Subtopic: Wildfire

SUMMARY OF COMMENT - 2021 SCOPING

The DNR should report on the eastside fire history over the last two decades and then provide projections of fire frequency for the future. The EIS should document the number of acres affected and carbon released from the atmosphere from: all areas which have burned in the last 10-20 years, all areas where the fires in the last 10-20 years were human caused, and all prescribed burns that were conducted in the last 10-20 years. Estimates of the range of acres in the SHC study area which could be burned and the carbon which may be released during the next SHC evaluation period should be disclosed in the EIS.

Commenter

8

SUMMARY OF COMMENT - 2021 SCOPING

Estimates for burned areas which would be replanted over the SHC period, including species composition and density should be included in the EIS. DNR should show the percentage of trees (and acres) of replanted forest which will eventually be harvested, the rotation age of harvesting, and the harvesting methods (i.e. thinning etc.) and if any of these forests could be protected from harvesting over the next 40 years.

Commenter

8

Topic: DNR Policies

Subtopic: Alternatives to maximizing net-present-value

SUMMARY OF COMMENT - 2021 SCOPING

The overall focus needs to shift more towards forest health and ecological management rather than optimizing net present value across the landscape. There is plenty of flexibility, and responsibility, within current DNR policies to balance multiple parameters, such as forest health, resilience, wildfire risk reduction and resilience, and habitat, in modeling the SHC rather than optimizing only for NPV.

Commenter

6, 7

SUMMARY OF COMMENT - 2024 SCOPING

The DNR needs to focus more on landscape level ecological management rather than net present value.

Commenter

H

Subtopic: Silviculture

SUMMARY OF COMMENT - 2021 SCOPING

The agency should provide the Board with status information on any implementation of silviculture policies that are behind schedule and/or DNR on which is not making sufficient progress.

Commenter

7

Subtopic: Updating the Policy for Sustainable Forests

SUMMARY OF COMMENT - 2021 SCOPING

The Board and agency should consider undertaking a concurrent update to the Policy for Sustainable Forests (PSF).

Commenter

7

Topic: Elements of the Environment

Subtopic: Additional elements

SUMMARY OF COMMENT - 2021 SCOPING

All of the elements of the environment analyzed in the last SHC FEIS should be included as well as impacts to public water supplies, impacts to historic and cultural resources and non-timber products, and impacts to scenic resources.

Commenter

7

Subtopic: Habitat and wildlife impacts

SUMMARY OF COMMENT - 2021 SCOPING

The impacts of each alternative to habitat & wildlife must be analyzed in detail.

Commenter

7

SUMMARY OF COMMENT - 2024 SCOPING

Wildlife habitat needs to be included in all sustainable harvest calculations due to the probable significant environmental impacts of forest harvest.

Commenter

H

SUMMARY OF COMMENT - 2024 SCOPING

Include analysis of impacts to northern spotted owl, western gray squirrel, fisher, lynx, blue grouse, flammulated owl, and white-headed woodpecker in the EIS.

Commenter

E

SUMMARY OF COMMENT - 2024 SCOPING

Commenter provided multiple citations and research findings related to demographic and habitat impacts to northern spotted owls from wildfire, barred owls, and forest management.

Commenter

F

SUMMARY OF COMMENT - 2024 SCOPING

The environmental analysis for northern spotted owls should include the current distribution and demographics of the species use of state trust lands in eastern Washington. Several metrics to include are

the proximity of habitat on trust lands to habitat on federal lands, existing wildfire impacts to areas that were designated as habitat, and areas of insect and disease infestations that impact NSO habitat.

Commenter

F

Subtopic: Public services

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

Public services should be considered as an element of the environment that should be analyzed given the scope of the proposal. The EIS must analyze the effect on both the supply of and demand for public services as a result of the SHC.

Commenter

2, G

Subtopic: Staying within proposal scope

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

The Board and Department should not expand the elements of the environment to those outside the scope of the proposal.

Commenter

2, G

Topic: Impacts and Mitigation

Subtopic: Biochar

SUMMARY OF COMMENT - 2024 SCOPING

Convert unmerchantable timber into biochar to reduce the impacts of timber harvest.

Commenter

A

Subtopic: Mitigating cultural resources impacts

SUMMARY OF COMMENT - 2021 SCOPING - 2021 SCOPING

Analyze and remove negative impacts to historic and cultural resources as well as non-timber forest products. Remove negative impacts to and interference with the Usual & Accustomed Areas of tribes.

Commenter

7

Subtopic: Mitigating greenhouse gases

SUMMARY OF COMMENT - 2021 SCOPING

The EIS accompanying the final Sustainable Harvest Level (SHL) adopted should acknowledge the role of logging in amplifying stressors already on the rise due to climate change and include measures to mitigate these risks. The EIS should include mitigation measures to reduce greenhouse gas emissions including: (1) reducing the overall harvest level in line with state commitments to reduce GHG emissions from all sources (for example, by zeroing out arrearage volume); (2) concentrate timber harvests in stands with relatively low carbon density; (3) ensure that all wood products taken from DNR lands are used for longer lived products rather than biomass, pulp or paper; (4) make variable density thinning the standard prescription in harvested stands to expedite the growth of big, old trees that can capture and store more carbon per acre than almost any terrestrial ecosystem on Earth.

Commenter

3

Subtopic: Prioritizing resilience

SUMMARY OF COMMENT - 2021 SCOPING

The agency needs to do more than just minimize impacts. It needs to be forward-thinking and prioritize resilience.

Commenter

7

Subtopic: Trust land transfer

SUMMARY OF COMMENT - 2021 SCOPING

DNR should identify the potential impacts from TLT, carefully and transparently in regard to ecological outcomes, revenues, and harvest volumes, as well as the risk of further erosion of the corpus of the forested estate when developing the next SHC.

Commenter

2

Topic: Purpose, Need, and Objective Statement

Subtopic: Biodiversity

SUMMARY OF COMMENT - 2024 SCOPING

Protect and bolster biodiversity of the whole area.

Commenter

B

Subtopic: Proposed changes to purpose, need, and objective statement

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

Suggested changes to the first sentence of Objective #1 as follows: "New information includes changes in the land base including appropriate updates to the corporate GIS data, changes in forest inventory (including requirements of 2SHB 1168), changes to the growth and yield calculations, and changes in technology."

Commenter

2, F, G

SUMMARY OF COMMENT - 2021 SCOPING

For objective #4 remove "trust management obligations" as these should already be captured in "existing DNR policies."

Commenter

7

Subtopic: Recovery of Species

SUMMARY OF COMMENT - 2024 SCOPING

Add recovery of northern spotted owl, western gray squirrel, fisher, and lynx to the project purpose and need statement.

Commenter

E

Subtopic: Resilience

SUMMARY OF COMMENT - 2021 SCOPING

The SHC must increase the resilience of public forests, not simply avoid decreasing their resilience. Rather than simply "support" implementation of DNR's forest health treatment and forest health strategic plans, any harvest on the eastside should be explicitly tied to improving forest health and resilience to wildfire and other disturbances.

Commenter

7

Subtopic: Support for not changing purpose, need, and objective statement

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

The Department and the Board should not change the Purpose Statement as written in the Determination of Significance. The Department and the Board should not change the Need Statement as written in the Determination of Significance, unless the Department and the Board determines the analysis of the arrearage can be handled outside of the SEPA analysis for the new SHC. The Department and the Board should not change Objectives #2, #3, or #4 as written in the Determination of Significance.

Commenter

2, F, G

Topic: Riparian

Subtopic: Riparian restoration

SUMMARY OF COMMENT - 2021 SCOPING

The Board and the Department should strive to reach the riparian restoration goals of the HCP and not to simply discount the available volume because of perceived challenges in achieving projected harvest levels.

Commenter

2

Topic: Trust Duties

Subtopic: Climate change risk

SUMMARY OF COMMENT - 2021 SCOPING

The Board must protect trust assets from risk, including those from climate change.

Commenter

7

Subtopic: Delay the calculation

SUMMARY OF COMMENT - 2021 SCOPING

It is premature, unwise, and inefficient for the Board of Natural Resources to make any decisions that define the scope of the sustainable harvest calculation process before the State Supreme Court Case, CNW v. Franz, is decided. It is in the public's best interest to be able to know the Court ruling before

offering comments and before DNR drafts its SHC and before the DEIS is issued. The SHC DEIS process should be suspended until the Supreme Court's decision is issued.

Commenters

6, 7, 8

Subtopic: Maximizing financial returns

SUMMARY OF COMMENT - 2021 SCOPING

Alternatives should include maximizing financial returns to beneficiaries on a sustainable basis.

Commenter

5

Subtopic: Revenue

SUMMARY OF COMMENT - 2024 SCOPING

DNR should take into account the multiple uses that forested state trust lands provide beyond revenue.

Commenter

E

Subtopic: Trust acres

SUMMARY OF COMMENT - 2021 SCOPING

Assuring the accuracy of the number of acres by trust, especially forested acres, should be a basic component of a fiduciary's management procedures.

Commenter

2

Subtopic: Trust land transfer

SUMMARY OF COMMENT - 2021 SCOPING

DNR should stay true to its trust duties, such as undivided loyalty to the trust beneficiaries, as it considers how the TLT concept will impact the sustainable harvest calculation going forward.

Commenter

2

Topic: Forest Health

Subtopic: Forest health goals

SUMMARY OF COMMENT - 2021 SCOPING

The department needs to assure that forest health needs are met.

Commenter

2

SUMMARY OF COMMENT - 2024 SCOPING

The department should prioritize areas that have been most impacted by wildfires and have the most at-risk forests. In addition, the department must increase the pace of treatments in order to make significant progress in attaining forest health goals.

Commenter

D

Subtopic: Forest health implications

SUMMARY OF COMMENT - 2021 SCOPING

The impact of Western Washington harvest levels on statewide timber infrastructure should be considered as timber infrastructure is impacted by statewide harvest levels. The impact of statewide harvest levels on

that necessary infrastructure, and the impact on the state's ability to address our forest health crisis, should be considered to ensure the state has the capacity to address forest health problems.

Commenter

4

Subtopic: Forest health revolving account

SUMMARY OF COMMENT - 2021 SCOPING

Include an explanation of how the Forest Health Revolving Account (FHRA) funds trust management on eastern Washington trust lands, and how the FHRA influences environmental outcomes from that management.

Commenter

2

Subtopic: Forest health treatments in the model

SUMMARY OF COMMENT - 2021 SCOPING

Site-specific treatments along with appropriate forest health prescriptions and underburning must be incorporated into modeling to gauge whether the sustainable harvest calculations are compatible with previously outlined forest health objectives.

Commenter

6

SUMMARY OF COMMENT - 2024 SCOPING

Consider alternative forms of forest health treatments, especially in "late-closed" structure classes where northern spotted owl habitat may be most affected by silvicultural practices.

Commenter

E

Subtopic: Resilience

SUMMARY OF COMMENT - 2021 SCOPING

DNR should prioritize forest health and resilience in its forest management practices.

Commenter

7

Topic: Wildfire

Subtopic: Criteria for treatment

SUMMARY OF COMMENT - 2021 SCOPING

DNR should provide information on how areas will be selected for thinning for fire treatment vs areas which will be thinned for non-fire areas during the SHC period.

Commenter

8

Subtopic: Fate of post-wildfire plantings

SUMMARY OF COMMENT - 2021 SCOPING

DNR should acknowledge if there is a certainty that some post-wildfire replanted forests will burn again and all the carbon stored and sequestered will be lost into the atmosphere.

Commenter

8

Subtopic: Public health risks from wildfire

SUMMARY OF COMMENT - 2021 SCOPING

An analysis of wildland fire risks and related active management and land closures should include public health risks from fire smoke inhalation and quality of life effects of poor air quality and forced reduced activity levels for adults and children, including school closures.

Commenter

5

Subtopic: Reducing fuel loads

SUMMARY OF COMMENT - 2021 SCOPING

Include salvage logging and thinning as part of the analysis, as these can reduce the fuel amounts for future fires, preventing or at least reducing their likelihood, intensity, and impact.

Commenter

9

SUMMARY OF COMMENT - 2024 SCOPING

Thin and log the forests in the North Cascades as much as possible to slowdown fires.

Commenter

C

Topic: Carbon and Climate Change

Subtopic: Adjusting yields to account for climate change

SUMMARY OF COMMENT - 2021 SCOPING

The forest estate model used to develop the SHL must adjust yield projections to account for slower growth and higher mortality expected from climate change. It is essential that the estate model be adjusted to take these factors affecting future yield into account.

Commenter

3

Subtopic: Carbon markets

SUMMARY OF COMMENT - 2021 SCOPING

If carbon markets are a component of an alternative DNR should consider how harvest rotation lengths impact additionality and the potential for utilizing carbon markets to generate revenue.

Commenter

5

Subtopic: Carbon sequestration

SUMMARY OF COMMENT - 2021 SCOPING

DNR's state-managed forests are significant, high-priority forests for carbon sequestration. Not harnessing these carbon sinks would be an enormous missed opportunity for the state, and contrary to its climate commitments to the public.

Commenter

7

Subtopic: Climate resilience

SUMMARY OF COMMENT - 2021 SCOPING

Using climate resilience as a primary driver for attaining sustainable harvests will help fulfill DNR's societal obligation to use their lands in an effort to mitigate climate change.

Commenter

6

Subtopic: Reducing risk of loss to the trust

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

Reducing mortality and the risk and/or loss of trust forested assets to wildfire should be factored into any climate and carbon analysis.

Commenter

2, G

Subtopic: Research utilized

SUMMARY OF COMMENT - 2021 SCOPING

DNR needs to conduct an extensive search of all peer reviewed research related to product substitution and embedded carbon in building materials and document these findings in the EIS. The public must clearly know what research is being evaluated and utilized by the DNR in the SHC DEIS when it is making decisions associated with climate.

Commenter

8

Subtopic: Revenue diversification

SUMMARY OF COMMENT - 2021 SCOPING

Markets for carbon and ecosystem services present DNR with an important opportunity to diversify and increase revenues to trust beneficiaries in the years ahead.

Commenter

3

Subtopic: Risk Mitigation and capturing value of forest asset under a changing climate

SUMMARY OF COMMENT - 2021 SCOPING

DNR should consider the following when analyzing changes to forest management and harvest due to climate change impacts: Whether it is advantageous to capture the value of certain forest products in the short term to mitigate risks of fire loss, how sequestration rates may be impacted, and how to adapt forest management strategies to capture the value of forestland assets in a sustainable way that maintains and enhances revenues and overall economic benefits.

Commenter

5

Subtopic: Substitution of timber for steel and concrete

SUMMARY OF COMMENT - 2021 SCOPING

Analysis of the impacts of harvest levels on climate change must include substitution of timber for alternatives like concrete and steel.

Commenter

4

Subtopic: Support for using 2019 analysis

SUMMARY OF COMMENT - 2021 SCOPING

The use of a similar methodology to that employed in the 2019 SHC to evaluate the impacts to climate change and carbon sequestration from proposed alternatives would be appropriate for this proposal as well. The 2019 methodology considered the entire sustainable forestry management process, including emissions from harvesting activities as well as the storage of carbon in wood products. A similar framework should be used for the current SHC proposal and update the analysis with any appropriate new information since the 2019 Western Washington SHC FEIS was developed. The Department should also consider the impacts on carbon sequestration and emissions due to forest mortality and wildfire.

Commenter

2

Subtopic: Updating analysis

SUMMARY OF COMMENT - 2021 SCOPING

Update the climate discussion to more closely comport with current scientific knowledge and State policy on the questions of Climate Change.

Commenter

8

Topic: Environmental Justice

Subtopic: Communities at risk from climate change

SUMMARY OF COMMENT - 2021 SCOPING

All rural communities are at risk from climate change.

Commenter

3

Subtopic: Forest health impacts

SUMMARY OF COMMENT - 2021 SCOPING

Assuring the next eastern Washington SHC maximizes forest health treatments and sustainable timber outputs, can start to reverse the negative impacts from the forest health issue in eastern Washington and will benefit many communities impacted by catastrophic wildfires economically through forest products jobs.

Commenter

2

Subtopic: Impacts that should be included in the environmental justice analysis

SUMMARY OF COMMENT - 2021 SCOPING

Impacts to air quality, water quality and quantity of nearby communities should be considered in environmental justice analyses.

Commenter

7

Subtopic: Including communities with high levels of unemployment and poverty

SUMMARY OF COMMENT - 2021 SCOPING

Communities with high levels of unemployment and poverty should be considered in the environmental justice analysis.

Commenter

4

Subtopic: Leakage

SUMMARY OF COMMENT - 2021 SCOPING

Calculations of increased carbon uptake by standing timber must include the impact on increased harvests elsewhere due to substitution.

Commenter

4

Subtopic: Local economic impacts

SUMMARY OF COMMENT - 2021 SCOPING, 2024 SCOPING

DNR should analyze potential impacts of the proposed actions on local economies.

Commenter

6, F, G

Subtopic: Negative impacts of harvest reductions

SUMMARY OF COMMENT - 2021 SCOPING

A moratorium on harvest for any period of time is unacceptable, as it could be economically damaging to many of our small rural counties. Any assessment of environmental justice issues should also consider that reductions in the SHC will create negative fiscal and economic impacts in some of the most rural, economically challenged counties in the state.

Commenters

5, 9

Subtopic: Tribal considerations

SUMMARY OF COMMENT - 2021 SCOPING

Factors related to environmental justice that need to be considered include tribal consultations, treaty rights and maintenance and restoration of and access to traditional hunting and gathering grounds.

Commenter

6

Topic: Alternative Revenue Sources

Subtopic: Ecosystem services bond

SUMMARY OF COMMENT - 2021 SCOPING

DNR should create an ecosystem services bond valued higher than logging revenue and sell them to climate-focused funds.

Commenters

1

Subtopic: Futures contracts

SUMMARY OF COMMENT - 2021 SCOPING

Establish a futures portfolio. Use future contracts to hedge against falling lumber prices.

Commenters

1

Subtopic: Impacts of pursuing non-timber revenue sources

SUMMARY OF COMMENT - 2021 SCOPING

The SEPA analysis must include the financial impact on beneficiaries and the broader economic impacts on counties from decisions that pursue strategies other than timber harvest.

Commenters

5

Subtopic: Revenue from carbon and ecosystem services

SUMMARY OF COMMENT - 2021 SCOPING

The model should calculate the potential revenue produced through the selling of carbon credits as well as annual protected ecosystem services.

Commenters

8

Subtopic: Use of financial markets

SUMMARY OF COMMENT - 2021 SCOPING

DNR should explore the use of financial markets (other than carbon credits) to generate superior returns. DNR could use the financial markets to win increased revenue without logging more.

Commenters

1

List of Commenters

Table 1. List of Commenters on the 2021 Eastern Washington Sustainable Harvest Calculation Project Proposal

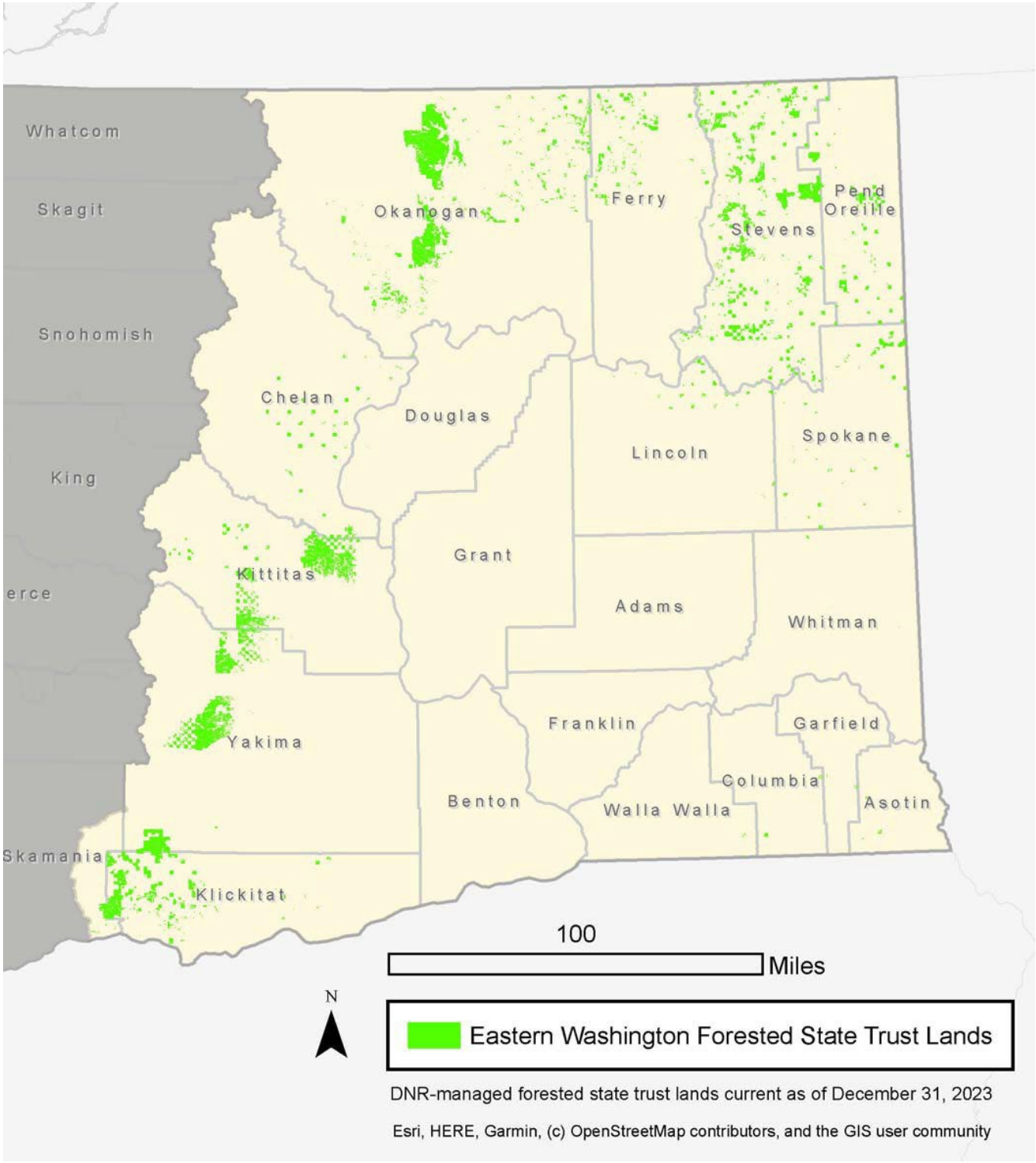
Commenter Number	Commenter Name	Commenter Affiliation
1	Robert Mitchell	Individual
2	Travis Joseph	American Forest Resources Council
3	John Talberth	Center for Sustainable Economy
4	Todd Myers	Washington Policy Center
5	Paul Jewell	Washington State Association of Counties
6	Sam Israel	Methow Valley Citizens Council
7	Sally Paul	Washington Environmental Council
8	Mike Town	Sierra Club
9	LaDon Linde	Board of Yakima County Commissioners

Table 2. List of Commenters on the 2024 Eastern Washington Sustainable Harvest Calculation Project Proposal

Commenter Letter	Commenter Name	Commenter Affiliation
A	Sandra Strieby	Individual
B	T.P.	Individual
C	Craig McDonald	Individual
D	Ryan Fortier	Individual
E	Brandon Austin	Washington Department of Fish and Wildlife
F	Travis Joseph	American Forest Resources Council
G	Adam Ellsworth	Sierra Pacific Industries
H	Phil Rigdon	Confederated Tribes and Bands of the Yakama Nation

Appendices

Appendix 1: Eastern WA Forested State Trust Lands



Appendix 2: Eastern Washington Sustainable Harvest Calculation 2021 Scoping Notice

DETERMINATION OF SIGNIFICANCE AND
REQUEST FOR COMMENTS ON SCOPE OF EIS

Description of proposal: The proposal is to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust land in eastern Washington.

Proponent: Washington Department of Natural Resources (DNR)

Location of proposal: All forested state trust lands located east of the Cascade Crest in Washington State (refer to attached map).

Lead agency: DNR

Determination: *Environmental Impact Statement (EIS) required.* The lead agency has determined this proposal potentially will have a significant adverse impact on the environment. An EIS is required under Revised Code of Washington (RCW) 43.21C.030(2)(c) and will be prepared.

Deadline for comments: Thursday December 9, 2021 by 5:00 pm

Scoping notice invites comments:
Scoping is the first formal step in preparing an EIS and initiates public involvement. Through scoping, DNR seeks public input on identifying the areas that require in-depth analysis, and those areas for which a more limited discussion is appropriate. This process helps to focus DNR's consideration on the issues that are truly significant, and avoids obscuring those issues with unnecessary detail. The primary purposes of scoping are to:

- Narrow the focus of the EIS to significant environmental issues;
- Eliminate issues that would have insignificant impacts, or that are not directly related to the proposal;
- Identify alternatives to be analyzed in the EIS; and
- Identify mitigation measures that address potential environmental impacts of the proposal.

Areas for public comment:
Agencies, affected tribes, and members of the public are invited to comment on the scope of the EIS. You may comment on alternatives, mitigation measures, probable significant adverse impacts, and licenses or other approvals that may be required.

DNR welcomes all comments relevant to the scope of the EIS. If you are suggesting a particular approach or impacts to consider, please explain why. The more evidence provided in support of a comment, such as peer-reviewed studies or reports, the more useful that comment will be to DNR in its analysis. Detailed and supported comments will help in developing a robust EIS. Suggested comment topic areas include the following:

- Probable significant environmental impacts that need to considered in the adoption of the sustainable harvest level.

- Key environmental issues that need to be addressed and analyzed by one or more of the alternatives.
- Alternatives that need to be considered that will meet the need for, and the purpose of, the proposal.
- Specific mitigation measures that DNR should consider to avoid or minimize impacts.
- Identification of additional environmental information, studies, or reports relevant to the development of sustainable harvest level alternatives.

In the EIS, DNR will analyze the No Action Alternative and reasonable action alternatives (to be identified as a result of scoping). Alternatives to be considered in the EIS must meet the following parameters:

- DNR's trust mandate
- Applicable forest practices rules (Title 222 WAC)
- All other applicable state and federal regulations
- All current DNR policies, including the objectives of the *State Trust Lands Habitat Conservation Plan*
- Proposed purpose and need statement (attached to this notice)

You may submit these comments via one of the following methods:

- Online comment form, via: https://www.surveymonkey.com/r/EWSHC-25to34
- USPS mail: SEPA Center, P.O. Box 47015, Olympia, WA 98504-7015

Background Information:
In Washington, DNR manages approximately 5.6 million acres of state trust lands. State trust lands are lands held in trust for specific trust beneficiaries, such as public schools and universities. The term "state trust lands" refers to both State lands and State forest lands:

- State lands (RCW 79.02.010(14)) are lands granted to the state by the federal government at statehood. State lands are also referred to as Federal Grant Lands.
- State forest lands (RCW 79.02.010(13)) are lands acquired by Washington State from the counties. There are two types: State Forest Purchase Lands, which are lands purchased or acquired by the state as a gift, and State Forest Transfer Lands, which are lands transferred to the state from the counties.

As a trust lands manager, DNR's responsibility is to manage these lands consistent with fiduciary principles, which include producing a perpetual supply of revenue for specific trust beneficiaries. On forested state trust lands, revenue is produced primarily through the harvesting of trees.

Providing a perpetual supply of revenue requires responsible management with an emphasis on long-term sustainability. A major component of DNR's approach to sustainable management is calculation of a sustainable harvest level, which is the volume of timber to be scheduled for sale during a planning decade according to applicable laws, policies, and procedures (RCW 79.10.300)(5). Put another way, the sustainable harvest level is the amount of timber DNR can harvest from forested state trust lands on a continuing basis without major prolonged curtailment or cessation of harvest.

The eastern Washington sustainable harvest level applies to all forested state trust lands located east of the Cascade Crest in Washington (approximately 675 thousand acres). These lands are divided into sustainable harvest units, each of which is assigned its own sustainable harvest level for the decade.

The sustainable harvest level is defined in board feet, which is a unit of volume equivalent to a 12-inch square, one-inch thick piece of wood. The level is recalculated every 10 years. To ensure one generation of

beneficiaries is not favored over another, the next decade's level cannot rise or fall more than 25 percent from the previous decade's level.

DNR is required to set a sustainable harvest level by Washington state law. Specifically, DNR must periodically adjust acreages designated for inclusion in the sustained yield management program and calculate a sustainable harvest level (RCW 79.10.320). Sustained yield means harvesting on a continual basis without major prolonged curtailment or cessation of harvest (RCW 79.10.310). The sustainable harvest level is a policy decision that requires approval from the Board of Natural Resources.

DNR calculates the sustainable harvest level through a forest estate modeling process. The forest estate model is a mathematical, computer-based representation of the forest. Capable of manipulating vast quantities of data, the model is able to look across landscapes and decades to determine the sustainable harvest level that is the best balance of DNR's management objectives, which include both revenue production and ecological values such as wildlife habitat.

Notice of Public Meeting:

Due to safety considerations around COVID-19, public meetings will be held via webinar.

Live webinar **Meeting Date: Wednesday, November 10, 2021** **Meeting Time: 6:00-7:00 pm** **Meeting Location:** https://dnr-wa-gov.zoom.us/webinar/register/WN_LVd0OsjLSQmhFxcgby_VvA	

Responsible official: Dale Mix

Position/Title: Engineering and General Services Division Manager

Phone: 360-902-1199

Address: 1111 Washington St. SE, Olympia, WA 98504-7030

Date: October 12, 2021

Signature: Dale Mix

There is no DNR administrative SEPA appeal.

Eastern Washington Sustainable Harvest Calculation

Purpose and Need

PROPOSAL

The proposal is to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust lands in eastern Washington.

PURPOSE

The purpose describes what DNR is trying to achieve:

- The purpose of the proposed action is to recalculate a sustainable harvest level consistent with DNR policies, including the Policy for Sustainable Forests, the 1997 HCP, and applicable local, state, and federal laws.

NEED

The need describes why DNR is seeking to accomplish the purpose:

- Revised Code of Washington (RCW) 79.10.320 requires DNR to "manage the state-owned lands under its jurisdiction which are primarily valuable for the purpose of growing forest crops on a sustained yield basis insofar as compatible with other statutory directives. To this end, the department shall periodically adjust the acreages designated for inclusion in the sustained yield management program and calculate a sustainable harvest level." This RCW is reflected in the Policy for Sustainable Forests (Policy on Recalculation of the Sustainable Harvest Level) with a specific requirement to "recalculate the statewide sustainable harvest level, for Board of Natural Resources adoption no less frequently than every ten years."

- RCW 79.10.330 states that "[i]f an arrearage exists at the end of any planning decade, the department shall conduct an analysis of alternatives to determine the course of action regarding the arrearage which provides the greatest return to the trusts based upon economic conditions then existing and forecast, as well as impacts on the environment of harvesting the additional timber. The department shall offer for sale the arrearage in addition to the sustainable harvest level adopted by the Board of Natural Resources for the next planning decade if the analysis determined doing so will provide the greatest return to the trusts." This RCW is reflected in the department's policy on arrearage (Policy on End of Decade Analysis: Arrearage), a 2019 addition to the Policy for Sustainable Forests.

OBJECTIVES

The objectives describe how the purpose and need are fulfilled:

- Objective #1: Incorporate new information into a forest estate model to calculate the sustainable harvest level that will inform the Board of Natural Resources when setting the decadal harvest level. New information includes changes in the land base, changes in forest inventory (including requirements of 2SHB 1168), information concerning decadal arrearage and its causes, and changes in technology.

- Objective #2: Consider climate change as part of the affected environment, analyze climate change impacts and benefits of the alternatives, and identify possible mitigation measures that will reduce or eliminate any identified adverse environmental climate change impacts of the proposal.

- Objective #3: Support implementation of DNR's Forest Health Treatment Prioritization and Implementation Plan on State Trust Lands in Eastern Washington as required by E2SHB1711 and broader implementation of DNR's 20-Year Forest Health Strategic Plan.

- Objective #4: Ensure alternatives analyzed are reasonable, feasible, and consistent with DNR's trust management obligations, existing DNR policies, and applicable local, state, and federal laws.

Appendix 3: Eastern Washington Sustainable Harvest Calculation 2024 Scoping Notice

DETERMINATION OF SIGNIFCANCE AND REQUEST FOR COMMENTS ON SCOPE OF EIS

Description of proposal: The proposal is to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust land in eastern Washington.

Proponent: Washington Department of Natural Resources (DNR)

Location of proposal: All forested state trust lands located east of the Cascade Crest in Washington State (refer to attached map).

Lead agency: DNR

Determination: *Environmental Impact Statement (EIS) required.* The lead agency has determined this proposal potentially will have a significant adverse impact on the environment. An EIS is required under Revised Code of Washington (RCW) 43.21C.030(2)(c) and will be prepared.

Deadline for comments: Thursday, February 22, 2024 by 5:00 pm

Scoping notice invites comments:
Scoping is the first formal step in preparing an EIS and initiates public involvement. Through scoping, DNR seeks public input on identifying the areas that require in-depth analysis, and those areas for which a more limited discussion is appropriate. This process helps to focus DNR's consideration on the issues that are truly significant, and avoids obscuring those issues with unnecessary detail. The primary purposes of scoping are to:

- Narrow the focus of the EIS to significant environmental issues;
- Eliminate issues that would have insignificant impacts, or that are not directly related to the proposal;
- Identify alternatives to be analyzed in the EIS; and
- Identify mitigation measures that address potential environmental impacts of the proposal.

Areas for public comment:
Agencies, affected tribes, and members of the public are invited to comment on the scope of the EIS. You may comment on alternatives, mitigation measures, probable significant adverse impacts, and licenses or other approvals that may be required.

DNR welcomes all comments relevant to the scope of the EIS. If you are suggesting a particular approach or impacts to consider, please explain why. The more evidence provided in support of a comment, such as peer-reviewed studies or reports, the more useful that comment will be to DNR in its analysis. Detailed and supported comments will help in developing a robust EIS. Suggested comment topic areas include the following:

- Probable significant environmental impacts that need to considered in the adoption of the sustainable harvest level.
- Key environmental issues that need to be addressed and analyzed by one or more of the alternatives.
- Alternatives that need to be considered that will meet the need for, and the purpose of, the proposal.

- Specific mitigation measures that DNR should consider to avoid or minimize impacts.
- Identification of additional environmental information, studies, or reports relevant to the development of sustainable harvest level alternatives.

In the EIS, DNR will analyze the No Action Alternative and reasonable action alternatives (to be identified as a result of scoping). Alternatives to be considered in the EIS must meet the following parameters:

- DNR's trust mandate
- Applicable forest practices rules (Title 222 WAC)
- All other applicable state and federal regulations
- All current DNR policies, including the objectives of the *State Trust Lands Habitat Conservation Plan*
- Proposed purpose and need statement (attached to this notice)

You may submit these comments via one of the following methods:

- Online comment form, via: https://wadnr.commentinput.com/?id=HtPRZf7Vj
- USPS mail: SEPA Center, P.O. Box 47015, Olympia, WA 98504-7015

Background Information:
In Washington, DNR manages approximately 5.6 million acres of state trust lands. State trust lands are lands held in trust for specific trust beneficiaries, such as public schools and universities. The term "state trust lands" refers to both State lands and State forest lands:

- State lands (RCW 79.02.010(14)) are lands granted to the state by the federal government at statehood. State lands are also referred to as Federal Grant Lands.
- State forest lands (RCW 79.02.010(13)) are lands acquired by Washington State from the counties. There are two types: State Forest Purchase Lands, which are lands purchased or acquired by the state as a gift, and State Forest Transfer Lands, which are lands transferred to the state from the counties.

As a trust lands manager, DNR's responsibility is to manage these lands consistent with fiduciary principles, which include producing a perpetual supply of revenue for specific trust beneficiaries. On forested state trust lands, revenue is produced primarily through the harvesting of trees.

Providing a perpetual supply of revenue requires responsible management with an emphasis on long-term sustainability. A major component of DNR's approach to sustainable management is calculation of a sustainable harvest level, which is the volume of timber to be scheduled for sale during a planning decade according to applicable laws, policies, and procedures (RCW 79.10.300)(5). Put another way, the sustainable harvest level is the amount of timber DNR can harvest from forested state trust lands on a continuing basis without major prolonged curtailment or cessation of harvest.

The eastern Washington sustainable harvest level applies to all forested state trust lands located east of the Cascade Crest in Washington (approximately 675 thousand acres). These lands are divided into sustainable harvest units, each of which is assigned its own sustainable harvest level for the decade.

The sustainable harvest level is defined in board feet, which is a unit of volume equivalent to a 12-inch square, one-inch thick piece of wood. The level is recalculated every 10 years. To ensure one generation of beneficiaries is not favored over another, the next decade's level cannot rise or fall more than 25 percent from the previous decade's level.

DNR is required to set a sustainable harvest level by Washington state law. Specifically, DNR must periodically adjust acreages designated for inclusion in the sustained yield management program and calculate a sustainable harvest level

(RCW 79.10.320). Sustained yield means harvesting on a continual basis without major prolonged curtailment or cessation of harvest (RCW 79.10.310). The sustainable harvest level is a policy decision that requires approval from the Board of Natural Resources.

DNR calculates the sustainable harvest level through a forest estate modeling process. The forest estate model is a mathematical, computer-based representation of the forest. Capable of manipulating vast quantities of data, the model is able to look across landscapes and decades to determine the sustainable harvest level that is the best balance of DNR's management objectives, which include both revenue production and ecological values such as wildlife habitat.

Notice of Public Meeting:

Live webinar	**Recorded webinar**
Meeting Date: Wednesday, January 24, 2024 **Meeting Time: 6:00 – 7:00 pm Meeting Location:** https://dnr-wa-gov.zoom.us/webinar/register/WN_p-ygPYvERTqON2er75212g	**Meeting Location:** https://www.dnr.wa.gov/programs- and-services/forest-resources/sustainable-harvest-calculation/eastern-washington-2025-34

Responsible official: Dale Mix

Position/Title: Engineering and General Services Division Manager

Phone: 360-902-1199

Address: 1111 Washington St. SE, Olympia, WA 98504-7030

Date: January 8, 2024 **Signature:** 

There is no DNR administrative SEPA appeal.

Eastern Washington Sustainable Harvest Calculation

Purpose and Need

PROPOSAL

The proposal is to establish a sustainable harvest level for the 2025 to 2034 fiscal year planning decade for forested state trust lands in eastern Washington.

PURPOSE

The purpose describes what DNR is trying to achieve:

- The purpose of the proposed action is to recalculate a sustainable harvest level consistent with DNR policies, including the Policy for Sustainable Forests, the 1997 HCP, and applicable local, state, and federal laws and to evaluate the environmental impacts of revising or rescinding the 1999 procedure (PR 14-004-120) related to managing spotted owl habitat in eastern WA HCP units in order to bring northern spotted owl habitat conservation practices into alignment with HCP landscape-level conservation strategies and forest health and catastrophic loss prevention strategies and policies.

NEED

The need describes why DNR is seeking to accomplish the purpose:

- Revised Code of Washington (RCW) 79.10.320 requires DNR to "manage the state-owned lands under its jurisdiction which are primarily valuable for the purpose of growing forest crops on a sustained yield basis insofar as compatible with other statutory directives. To this end, the department shall periodically adjust the acreages designated for inclusion in the sustained yield management program and calculate a sustainable harvest level." This RCW is reflected in the Policy for Sustainable Forests (Policy on Recalculation of the Sustainable Harvest Level) with a specific requirement to "recalculate the statewide sustainable harvest level, for Board of Natural Resources adoption no less frequently than every ten years."

- RCW 79.10.330 states that "[i]f an arrearage exists at the end of any planning decade, the department shall conduct an analysis of alternatives to determine the course of action regarding the arrearage which provides the greatest return to the trusts based upon economic conditions then existing and forecast, as well as impacts on the environment of harvesting the additional timber. The department shall offer for sale the arrearage in addition to the sustainable harvest level adopted by the Board of Natural Resources for the next planning decade if the analysis determined doing so will provide the greatest return to the trusts." This RCW is reflected in the department's policy on arrearage (Policy on End of Decade Analysis: Arrearage), a 2019 addition to the Policy for Sustainable Forests.

- RCW 79.10.520 requires the department to "develop and implement a policy for prioritizing investments on forest health treatments to protect state lands and state forestlands . . . to: (i) Reduce wildfire hazards and losses from wildfire; (ii) reduce insect infestation and disease; and (iii) achieve cumulative impact of improved forest health and resilience at a landscape scale." The intent of this RCW is reflected in the Policy for Sustainable Forests Policy on Forest Health and Policy on Catastrophic Loss Prevention. PR 14-004-120 is limiting DNR's ability to effectively manage for forest health and catastrophic loss prevention.

OBJECTIVES

The objectives describe how the purpose and need are fulfilled:

- Objective #1: Incorporate new information into a forest estate model to calculate the sustainable harvest level that will inform the Board of Natural Resources when setting the decadal harvest level. New information includes changes in the land base, changes in forest inventory (including requirements of 2SHB 1168), information concerning decadal arrearage and its causes, and changes in technology.

- Objective #2: Consider climate change as part of the affected environment, analyze climate change impacts and benefits of the alternatives, and identify possible mitigation measures that will reduce or eliminate any identified adverse environmental climate change impacts of the proposal.

- Objective #3: Support implementation of DNR's Forest Health Treatment Prioritization and Implementation Plan on State Trust Lands in Eastern Washington as required by E2SHB1711 and broader implementation of DNR's 20-Year Forest Health Strategic Plan.

- Objective #4: Ensure alternatives analyzed are reasonable, feasible, and consistent with DNR's trust management obligations, existing DNR policies, Habitat Conservation Plan and Amendments, and applicable local, state, and federal laws.

Appendix 4: Additional Information

This appendix contains links and citations to references and additional information to consider that was provided during scoping by commenters.

Additional information provided by commenter 2 and F

CLIMATE CHANGE AND CARBON

Final Report Carbon Accounting of a DNR Timber Sale: Case Study-Forest to Product: CORRIM-AFRC-Penny-Final-Report.pdf (amforest.org)

https://www.ncasi.org/wp-content/uploads/2020/12/Review_Carbon_Implications_Proforestation_Dec2020.pdf

North American Softwood Lumber – Environmental Product Declaration (awc.org)

https://www.ncasi.org/wp-content/uploads/2020/07/NCASI_White_Paper_Avoided_GHG_Emissions_July2020.pdf

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ECONOMICS

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https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/economic-trends/washington-and-us-capita-personal-income/capita-personal-income-county

ENVIRONMENTAL JUSTICE

https://washingtonstatereportcard.ospi.k12.wa.us/

https://www.k12.wa.us/policy-funding/child-nutrition/child-nutrition-program-reports

https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/economic-trends/washington-and-us-capita-personal-income/capita-personal-income-county

https://www.doh.wa.gov/DataandStatisticalReports/WashingtonTrackingNetworkWTN/InformationbyLocation/WashingtonEnvironmentalHealthDisparitiesMap

NORTHERN SPOTTED OWL

Katie M. Dugger, Eric D. Forsman, Alan B. Franklin, Raymond J. Davis, Gary C. White, Carl J. Schwarz, Kenneth P. Burnham, James D. Nichols, James E. Hines, Charles B. Yackulic, Paul F. Doherty, Larissa Bailey, Darren A. Clark, Steven H. Ackers, Lawrence S. Andrews, Benjamin Augustine, Brian L. Biswell, Jennifer Blakesley, Peter C. Carlson, Matthew J. Clement, Lowell V. Diller, Elizabeth M. Glenn, Adam Green, Scott A. Gremel, Dale R. Herter, J. Mark Higley, Jeremy Hobson, Rob B. Horn, Kathryn P. Huyvaert, Christopher McCafferty, Trent McDonald, Kevin McDonnell, Gail S. Olson, Janice A. Reid, Jeremy Rockweit, Viviana Ruiz, Jessica Saenz, Stan G. Sovern, **The effects of habitat, climate, and Barred Owls on long-term demography of Northern Spotted Owls,** *The Condor*, Volume 118, Issue 1, 1 February 2016, Pages 57–116, https://doi.org/10.1650/CONDOR-15-24.1

Damon B. Lesmeister[1*], Julianna M. A. Jenkins[1], Zachary J. Ruff[1], Raymond J. Davis[2], Cara L. Appel[1], Alaina D. Thomas[1], Scott Gremel[3], Dave Press[3], Tara Chestnut[3], James K. Swingle[1], Todd Wilson[1], David C. Culp[1], Heather Lambert[1], Christopher McCafferty[1], Kirsten Wert[1], Brandon Henson[1], Laura Platt[1], Dylan Rhea-Fournier[3], and Steven Mitchell[3] **Bioacoustics 2021 Annual Report, February 28, 2022, US Department of Agriculture Forest Service Pacific Northwest Research Station *and* US Department of the Interior National Park Service Pacific West Region**

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Additional information provided by commenter 3

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Additional information provided by commenter 4

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Washington State Office of Financial Management. Families in poverty, families with children under age 18 in poverty, individuals in poverty, individuals age 65 and older in poverty. 2021. https://ofm.wa.gov/washington-data-research/statewide-data/washington/trends/social-economic-conditions/families-poverty-families-children-under-age-18-poverty-individuals-poverty-individuals-age-65-and-older-poverty

Additional information provided by commenter 5

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Additional information provided by commenter 7

CLIMATE AND CARBON

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We're also happy to provide names of folks to reach out to for more information on ecohydrology modeling, watershed forestry, and water resources, upon request.

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