



January 26th, 2022 Sent by electronic mail to bnr@dnr.wa.gov

Hilary Franz, Commissioner of Public Lands
Board of Natural Resources
MS 47000
Olympia, WA 98504-7000

RE: Request to rescind DNS for the Goodman 1 and Taylor Downhill Sorts Timber Sales

Dear Commissioner Franz and Board of Natural Resources:

Center for Sustainable Economy (CSE) and its partners, including members of Save The Olympic Peninsula (STOP) have filed letters of opposition to the Goodman 1 (SEPA No. 21-121602) and Taylor Downhill Sorts (SEPA No. 21-111801) timber sales on the grounds that climate impacts were not considered despite the fact that these timber sales are likely to generate significant (>10,000 tons) quantities of greenhouse gas emissions and make the land more vulnerable to the effects of climate change.

In the context of those letters CSE and its partners provided extensive citations to methods and sources of information available to DNR to complete a rigorous analysis of climate impacts on a timber sale basis. These methods and sources of information have been available to federal, state and local public agencies, including DNR, for many years. Despite this, DNR has failed to consider climate impacts on the grounds that “the SEPA Environmental Checklist does not include analysis of climate impacts” or that nothing in the evidence submitted warrants inclusion of climate impacts in the determination of non-significance (DNS).¹

In light of the catastrophic effects of climate change felt globally and here in Washington and the direct relationship between logging and climate change this is an irresponsible position, and one that subverts the SEPA process. There are several reasons why DNR should back

¹ Department of Natural Resources (DNR), 2021. Determination of Non-Significance and Response to CSE comments on the Taylor Downhill Sorts timber sale. For Goodman 1, DNR has offered no explanation of its reasoning for maintaining the DNS.

away from this position and either delay or cancel the Goodman 1 and Taylor Downhill Sorts timber sales until climate impacts can be disclosed and mitigated:

1. Climate change is an existential threat to humanity. Climate change is the most significant environmental issue humanity has ever confronted. The World Health Organization estimates that 150,000 fatalities each year, including deaths in Washington State, are attributable to climate change. Just last June, over 112 people died in Washington's unprecedented heat wave.² The state expects the effects of climate change to be catastrophic, long lasting, and increasingly lethal.³ To say that climate change is "not on our checklist" or that climate concerns do not even rise to the level of a detailed response is an affront to those who have lost loved ones and property from the wildfires, floods, and heat waves we're already experiencing.

2. Logging is a significant source of greenhouse gas emissions. Every time a new timber sale is approved, DNR is initiating chain of activities that generate significant greenhouse gas emissions all along the wood products life cycle. These sources are well known and readily measurable by existing data and methods (Exhibit 1-4). They include the carbon removed from site minus whatever is stored long term in wood products. Numerous life cycle analyses have found that between 75% and 85% of the carbon stored in a timber sale will end up in the atmosphere in a relatively short period of time. They include the emissions associated with construction of logging roads and the deforestation associated with these roads. They include fossil fuel emissions associated with diesel and gasoline powered machinery. They include the carbon lost to the atmosphere as logging residues decay or are burned. They include the fossil fuel emissions generated by transport, and during the manufacturing process. And they include the indirect emissions associated with the loss of carbon sequestration on a site, which is brought to zero for a period of 10-15 years after harvest – an effect that puts upward pressure on atmospheric CO₂ concentrations just as important as direct emissions.

3. Logging is the single greatest source of greenhouse gas emissions in Jefferson County, and DNR logging emissions account for a large share. Jefferson County recently completed a Forests and Trees Greenhouse Gas Inventory for 2001 to 2015 that estimated emissions associated with logging on each major forest ownership class (Exhibit 5). Logging-related emissions during this period were estimated to be 266,961 metric tons CO₂ per year, or 1.33 million metric tons total. For perspective, this is by far the largest source of GHG emissions

² Associated Press, July 20, 2021. Northwest Heat Wave: Death Toll Reaches at Least 112: Available online at: <https://www.usnews.com/news/best-states/washington/articles/2021-07-20/northwest-heat-wave-death-toll-reaches-at-least-112>.

³ Climate Impacts Group. 2009. The Washington Climate Change Impacts Assessment. M. McGuire Elsner, J. Littell, and L. Whitely Binder (eds). Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington, Seattle, Washington.

from any activity in the county, the next highest being annual emissions from transportation at 181,588 metric tons CO₂ annually (Exhibit 6).

The largest single source of emissions from forestlands were from logging (with smaller amounts from fires, insect, disease and decay) and have been over three separate inventory periods. Losses of carbon from DNR lands accounted for 23% of carbon losses from all forestlands in the county, and “[t]he largest emissions from DNR land were from harvesting.”⁴ Logging related emissions from DNR lands in Jefferson County grew by 28% from 2006-2011 to 2011-2016. In contrast, and in large part due to public policies and procedures that monitor and seek to reduce greenhouse gas emissions, CO₂ emissions from the solid waste, industrial, commercial, and residential sectors achieved emissions reductions, respectively, of -18.7%, -51.1%, -85.7% and -88.1% (Figure 1). By excluding logging related GHG emissions from SEPA, DNR is precluding consideration of alternatives and mitigation measures that could achieve similar results.

Figure 1: GHG emissions for Jefferson County
(all units metric tons CO₂/year)

Table 2 – Harvested Wood Products Emissions and Removals Summary

Harvested Wood Product - All Jeff Co 2011-2015			
Units are metric tons CO ₂ per year			
In use	In landfills	Total stored	Total emitted
-124,701	-94,167	-218,821	266,961

Community-Wide Results – 2018 Compared to 2005

TABLE 2: COMMUNITY-WIDE EMISSIONS 2005 AND 2018 (IPCC 2ND ASSESSMENT)

	2005 Metric Tons CO ₂ e	2018 Metric Tons CO ₂ e	% Change
Stationary Energy	289,174	86,523	
Residential	107,214	12,792	-88.1%
Commercial	44,066	6,286	-85.7%
Industrial	137,894	67,445	-51.1%
Transportation	161,589	181,972	+12.6%
Solid Waste	2,271	1,846	-18.7%
Total	453,034	270,341	-40.3%

⁴ Exhibit 5 at 31.

4. Greenhouse gas emissions associated with the Goodman 1 and Taylor Downhill Sorts timber sales will be significant, both individually and cumulatively.

Jefferson County and other federal, state, and local public agencies use standard tools and publicly available sources of information to estimate emissions associated with timber harvest (Exhibit 7). In Jefferson County's GHG inventory, harvest related emissions were calculated using a simple formula that translated the specific gravity of tree species harvested to weight of wood harvested to carbon and then to carbon dioxide. This provides an estimate of the amount of embodied CO₂ removed from the land by timber harvest. Some of this is retained long term (i.e. 100 years) in wood products and so these removal calculations are then adjusted to account for this. The Jefferson County GHG inventory found that 23% of the CO₂ removed by timber harvest is likely to be stored long term, with the remainder being emitted to the atmosphere in a relatively short period of time.

Other calculations of harvest related emissions use emissions factors that estimate the CO₂ emissions per thousand board foot logged. Using these methods, CSE estimated that CO₂ emissions associated with the Taylor Downhill Sorts and Goodman 1 timber sales are likely to exceed 39,337 metric tons CO₂ and 48,348 metric tons CO₂, respectively.⁵ Washington's Department of Ecology considers emissions greater than 10,000 metric tons CO₂ to be significant, triggering reporting requirements.⁶ This threshold also appears in the draft Greenhouse Gas Assessment for Projects (GAP) rule for certain new or expanded facilities that involve combustion of fossil fuels (Exhibit 8).

5. Logging makes the land more vulnerable to climate change. In addition to driving climate change through significant GHG emissions, clearcutting, road building, and establishment of timber plantations is making the land more vulnerable to climate change. DNR is well aware of and has full access to the research connecting logging to increased wildfire risk, floods, landslides, harmful algae blooms, wind damage, water shortages, heat waves, and other stressors on the rise from climate change.

For example, because of their homogeneity, density, and young age, timber plantations burn hotter and faster than structurally complex natural forests (Exhibit 9).⁷ As another example, an Oregon study found that conversion of mature and old growth conifer forests to homogenous plantations of Douglas fir produced a persistent summer streamflow deficit of

⁵ Calculations appear in CSE's initial comment letters on both timber sales.

⁶ Washington Department of Ecology, Required Greenhouse Gas Reporting Program, available online at: <https://ecology.wa.gov/Air-Climate/Climate-change/Tracking-greenhouse-gases/Greenhouse-gas-reporting>.

⁷ Harold S. J. Zald, Christopher J. Dunn. Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. Ecological Applications, 2018; DOI: 10.1002/eap.1710.

50 percent in plantations aged 25 to 45 years relative to intact, older forests (Exhibit 10).⁸ As yet another example, during heatwaves, which are becoming more frequent and extreme, surface temperatures in open clearcuts can exceed 130 degrees Fahrenheit while under the shaded forest canopy temperatures are often 40 to 50 degrees cooler (Exhibit 11).⁹ By failing to consider climate impacts as part of SEPA analysis, the connection between logging and amplification of these climate risks has been overlooked by the SEPA analyses prepared for the Goodman 1 and Taylor Downhill Sorts timber sales. In DNR's response to comments for the Taylor Downhill Sorts Timber Sale DNR did provide some indication that the agency was aware of the connection between logging and some of these risks. But that response merely set forth ways DNR was attempting to mitigate these risks without any reference to whether such mitigation measures were adequate in the face of climate change.

6. Climate change affects DNR forestlands in ways that necessitate mitigation at the project level. In addition to driving climate change and making the land more susceptible to its effects, DNR also has a duty to consider how climate change, by itself, is affecting DNR forestlands and what changes in management activities, including changes in the configuration of individual timber sales, are necessary to adapt. For example, in DNR's Climate Resiliency Plan the agency thoroughly identifies and recognizes the impacts that climate change is projected to have on the forests under the agency's management (Exhibit 12).¹⁰ In the Plan, DNR enumerates the multiple risks to forest management operations from climate change including damage from insects and pathogens, reforestation challenges, negative impacts on forest productivity and changes in conditions that trigger landslides or damage roads. The Plan also acknowledges DNR's responsibility to "develop guidance for evaluating climate-related risks at project initiation."¹¹ But because climate impacts were not considered in the SEPA process, the configuration of the Goodman 1 and Taylor Downhill Sorts timber sales was not altered to mitigate such impacts.

7. SEPA rules require analysis of climate impacts. While climate impacts is not present on the SEPA checklist DNR uses for timber sales, climate is indeed an important element of the environment listed on Department of Ecology's SEPA rules under the heading of air quality.¹² And as you know, Ecology's SEPA rules are to be accorded "substantial deference" over other

⁸ Segura, C., Bladon, K., Hatten, J., Jones, J., Hale, C., Ice, G., 2020. Long-term effects of forest harvesting on summer low flow deficits in the Coast Range of Oregon, Journal of Hydrology, Volume 585, article id. 124749.

⁹ Hungerford, R.D., Babbitt, R.E., 1987. Overstory Removal and Residue Treatments Affect Soil Surface, Air, and Soil Temperature: Implications for Seedling Survival. Research Paper INT-377. Ogden, UT: USDA Forest Service Intermountain Research Station.

¹⁰ Department of Natural Resources, 2020. DNR's Plan for Climate Resilience. February 2020. Olympia, Washington: DNR.

¹¹ *Id* at 77.

¹² WAC 197-11-444 requires consideration of effects on air quality and climate. Statutory authority at RCW 43.21C.110.

agency-specific procedures.¹³ On Ecology’s SEPA checklist, under the heading of air, Ecology specifically notes that that “[g]reenhouse gas emissions are considered an air pollutant and may need be addressed. If the amount of emission cannot be quantified, describe the source(s) including known or assumed quantities.”¹⁴ As set forth above, DNR has all the methods and sources of information to be able to list the sources of emissions associated with each logging proposal as well as estimate their magnitude.

8. Consideration of climate impacts is also required to comply with SEPA’s general mandates. Irrespective of SEPA checklists, DNR also has a duty under SEPA more generally to meet the overall purpose of the statute. A recent Division II appellate opinion from Justice Anne Cruser underscores the necessity of climate impact analysis at the project level as part of “the responsibilities of each generation as trustee of the environment for succeeding generations (RCW 42.21C.020(2)(a)).”¹⁵ Justice Cruser’s opinion, coupled with the clear requirements of Ecology’s SEPA rules provides DNR with all the authority it needs to start taking climate impacts seriously in the context of its logging related decisions.

9. Failure to follow SEPA procedures has precluded “climate smart” project alternatives.

By failing to address climate impacts in the SEPA analyses for the Goodman 1 and Taylor Downhill Sorts timber sales, DNR is precluding consideration of alternatives that could lessen the effects of climate change on the timber sale areas, reduce the greenhouse gas emissions associated with each project, and reduce threats to climate resiliency. These include prohibiting new road construction (especially since road densities are already far beyond ecologically acceptable thresholds), increasing rotation lengths (which requires cutting fewer acres), establishing forest carbon reserves in all mature and natural forestlands in the sale areas and using variable density thinning (VDT) rather than clearcutting in younger tree plantations to expedite their growth into big, old, climate resilient trees.

The benefits of VDT have been well documented by public agencies.¹⁶ On forestlands managed by Jefferson County, variable density thinning is used instead of clearcutting to reduce threats from fire, disease and mortality and to respond to changing demands on forest ecosystems (Exhibit 13). Statewide, researchers have found that just two climate smart

¹³ RCW 43.21C.095: “The rules adopted under RCW [43.21C.110](#) shall be accorded substantial deference in the interpretation of this chapter.”

¹⁴ WA Department of Ecology, SEPA Checklist Guidance, Section B: Air. Available online at: <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air>.

¹⁵ Wa State Dairy Federation Et Al, Petitioner V Wa State Pollution Control Hearings, Respondents. Case No. 52952-1-II, consolidated with No. 53144-5-II. June 29th, 2021.

¹⁶ USDA Forest Service, Pacific Southwest Region, Variable Density Thinning Study, available online at: https://www.fs.fed.us/psw/topics/forest_mgmt/variabledensity/.

forestry strategies - longer rotations and avoided conversion - can meet up to 9% of Washington State's net zero climate goal by 2050 (Exhibit 14).

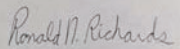
For these reasons, we respectfully request that DNR abandon its "not on our checklist" position and grant the relief set forth in our initial comments, which is:

1. That DNR rescind the determination of non-significance for the Goodman 1 and Taylor Downhill Sorts timber sales since those determinations are clearly erroneous with respect to climate impacts.
2. That, to the extent that DNR moves forward on these projects in the future, a full accounting of climate impacts be disclosed in the project's revised SEPA analysis. An adequate climate impacts analysis should include estimates of GHG emissions associated with the projects using life cycle analyses as well as a complete discussion of climate resiliency risks incorporating the best available scientific information.
3. That in the context of future SEPA analyses for these projects, DNR consider a 'climate smart' alternative design that sets aside the most productive lands within these sale areas as forest carbon reserves and uses low impact techniques like variable density thinning to accelerate the development of carbon rich late successional/old growth stand conditions in portions of the sale areas occupied by dense, young timber plantations.

Sincerely,



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Annotated List of Attached Exhibits:

Exhibit 1 - Peer reviewed research from Oregon State University and University of Idaho finding that logging is the largest source of greenhouse gas emissions in Oregon based on life-cycle analysis

Exhibit 2 - CSE analysis finding that logging is the largest source of greenhouse gas emissions in Oregon based on partial life-cycle analysis

Exhibit 3 - Peer reviewed research demonstrating method to track emissions from timber harvest nationwide and finding that timber harvest accounts for 93% of carbon losses from forestlands in Washington State

Exhibit 4 - Peer reviewed research documenting that for 10-15 years after logging, clearcut sites are net emissions sources as logging residuals decay

Exhibit 5 - Jefferson County Forests and Trees Greenhouse Gas Inventory for 2001 to 2015

Exhibit 6 - Jefferson County, Washington 2018 Inventory of Greenhouse Gas Emissions

Exhibit 7 - Declaration of Catharine Copass, member of the Forests and Trees GHG Inventory team for Jefferson County

Exhibit 8 - Department of Ecology, Greenhouse Gas Assessment for Projects (GAP)

Exhibit 9 - Peer reviewed research demonstrating that timber plantations and intensively logged lands burn hotter and faster than structurally complex natural forests

Exhibit 10 - Peer reviewed research finding a persistent summer streamflow deficit of 50 percent in plantations aged 25 to 45 years relative to intact, older forests

Exhibit 11 - Peer reviewed research finding that temperatures in open clearcuts can exceed 130 degrees Fahrenheit while under the shaded forest canopy temperatures are often 40 to 50 degrees cooler

Exhibit 12 - Department of Natural Resources, 2020. DNR's Plan for Climate Resilience

Exhibit 13 - Jefferson County variable density thinning program summary

Exhibit 14 - Peer reviewed study estimating that two changes in forest management, including deferred harvest and avoided conversion - can achieve up to 9% of Washington's emissions reduction goals by 2050