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September 29, 2021

To: Board of Natural Resources
MS 47000
Olympia, WA 98504-7000
Submitted via email: bnr@dnr.wa.gov

Re: Petition to the Board of Natural Resources to Reject "Green Thomas" Timber Sale

Dear Chair Franz and Board Members,

The undersigned urge the Board to deny DNR's request to approve the "Green Thomas" timber sale. This timber sale would clearcut close to 120 acres of older, naturally regenerated, structurally complex Douglas fir and hemlock forest, that includes dozens of Douglas fir trees that are close to 200 feet tall, exceed four feet in diameter, and are probably well over 100 years old. Despite DNR claims to the contrary, this timber sale as currently mapped and marked on the ground, would also harvest approximately one to two acres of old growth, including a number of huge snags, and hemlock trees that approach six feet in diameter.

This timber sale is located in the middle of one of the largest remaining blocks of older, un-planted, structurally complex forest in southwestern Washington (Figure 1). Conserving this relatively intact, 580-acre block of older forest is critical to meeting the fully functional stand structure objectives of the Multispecies Conservation Strategy of DNR's Habitat Conservation Plan (HCP), and the older-forest objectives of the general silvicultural strategy of DNR's Policy for Sustainable Forests.

Despite belated attempts to demonstrate compliance with these objectives, DNR remains hopelessly behind in the Columbia HCP Planning Unit, and continues to fall further behind, with no reasonable plan in place to meet its older-forest or fully functional stand structure targets.¹ Most of the native forests in southwestern Washington are gone. Recent DNR forest inventory raster data suggest that less than 6% of the Columbia planning unit west of the Gifford Pinchot National Forest is covered by forests that are over 60 years old.² Stands as old as those in the "Green Thomas" timber sale occupy only about 1% of the planning unit, which encompasses the Cowlitz River Basin, the Lewis River Basin, and several smaller watersheds that drain to the Lower Columbia.

¹ See letter submitted by CRF to the BNR on June 1, 2021, Re. Response to Presentation to the Board of Natural Resources by Josh Halofsky and Mike Buffo.

² Includes all land ownership in the Upper Chehalis and Willapa Bay watersheds. Based on combined origin FRIS raster image, obtained from DNR Public Disclosure Office, August, 2021.

Figure 2. Planned Timber Sales Near Elochoman River

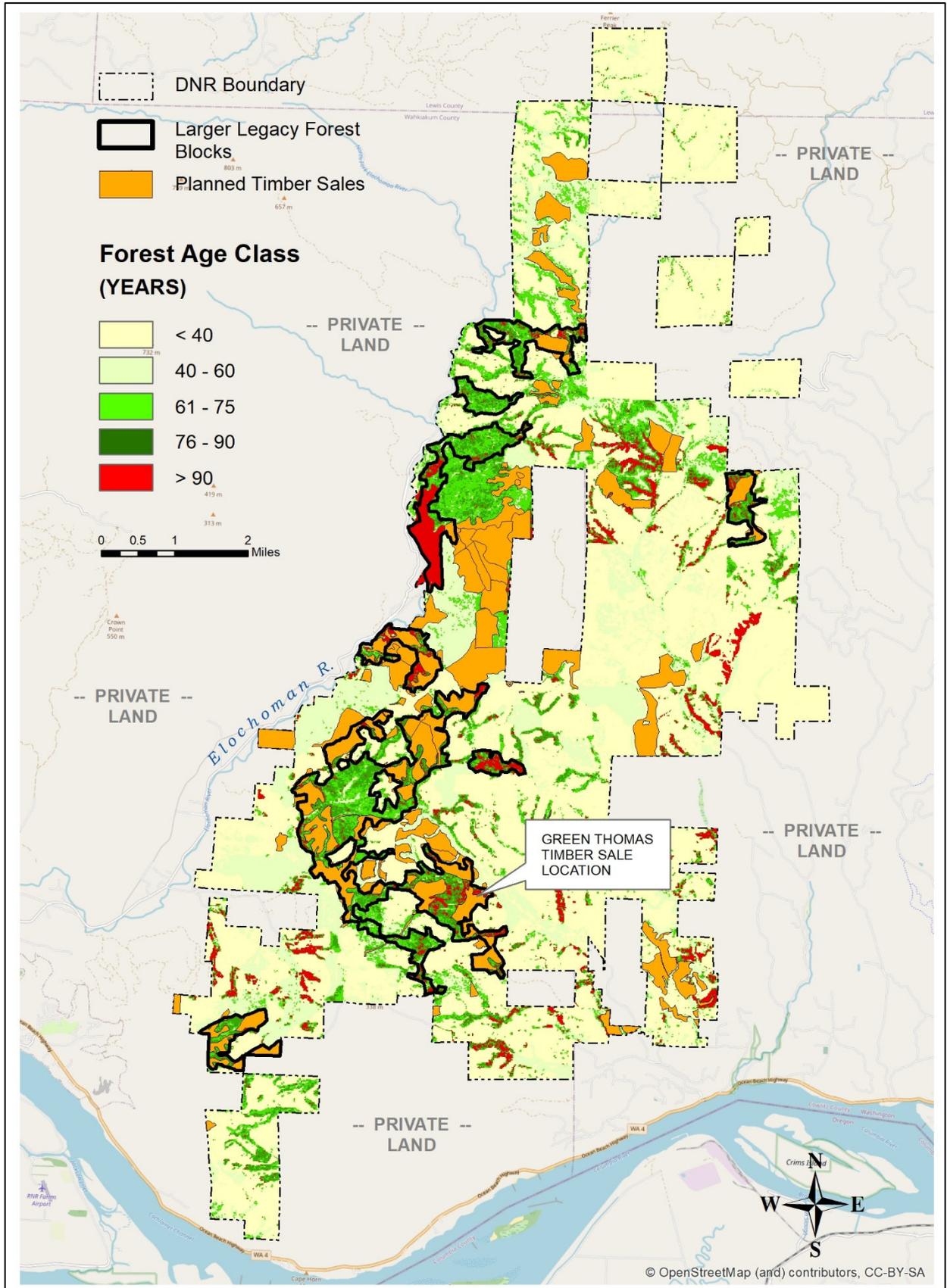


Figure 3. Old Growth Hemlock Trees Slated for Harvest in Unit 2



It is remarkable that so little natural forest is left in this part of the state. The Columbia HCP planning unit is a diverse area that spans 290 square miles and crosses the boundaries of eight different ecoregions. Most of the older, native forest that remains in the Columbia HCP planning unit west of the Gifford Pinchot National Forest is located on lands managed by DNR. For example, in the Abernathy Creek watershed, where the "Green Thomas" timber sale is located, nearly 94% of all forests over 80 years of age are located on lands managed by DNR.

These remaining older, un-planted blocks of native forest have the potential to play a critical role in preserving the genetic, biological, and ecological legacies of the eight ecoregions that intersect the Columbia HCP planning unit. There is still much that science does not understand about the ecology of native Pacific Northwest forests, and the long-term impacts of variable retention timber harvest on the organisms that are found there. According to Lindenmayer and Franklin:³

"Effects of human disturbance on biodiversity are poorly known, and some impacts may be irreversible. Others such as synergistic and cumulative effects can be extremely difficult to quantify or predict.... [and] for some species will probably never be known... Ultimately, this makes large ecological reserves valuable as 'safety nets' relatively free from human disturbance."

It is well established that rotting snags and logs found in these older forests provide tunnels, dens, and nesting cavities required by many organisms, from spotted owls to land snails and springtails. Dead and dying trees are used by a broad array of both vertebrates and invertebrates for foraging, nesting, and roosting. They provide essential habitat for many species of mushrooms, and a study of Douglas fir forests in western Oregon found that large logs in advanced stages of decay had the richest bryophyte flora of any forest substrate.⁴ These features are very difficult to restore in managed forests. Despite our best efforts to retain these structures during harvest, much of this habitat is lost when these forests are logged. Natural forests also contain significant components of non-commercial tree species such as spruce, cottonwood, alder, and big leaf maple. Some wildlife species have been found to be either strongly associated or dependent on specific tree species.⁵ When these species are logged and replaced with commercial nursery conifer seedlings, other species of flora and fauna that depend on them may also be negatively impacted.

Older, native forests can also contribute to the productivity of working forests or plantations. For example, small mammals including voles, shrews, and squirrels that find refuge in older forests may disseminate spores of mycorrhizal fungi to forests managed for timber production. Natural parasites and predators found in older, natural forests may also play an important role in preventing or limiting pest outbreaks in managed stands. However, only a fraction of these forests are protected within conservation areas on DNR managed lands, and about a quarter of the remaining older, natural forests on DNR managed lands are currently scheduled to be logged (Figure 2).

³ See Lindenmayer, D.B. and Franklin, J.F. 2002. *Conserving Forest Biodiversity: A Comprehensive Multiscaled Approach*. Island Press, Washington.

⁴ See Rambo, T. R. 2001. Decaying logs and habitat heterogeneity: implications for bryophyte diversity in western Oregon forests. *Northwest Science* 75: 270-277.

⁵ See Hagar, Joan C. 2007. Wildlife species associated with non-coniferous vegetation in Pacific Northwest conifer forests: A review," in *Forest Ecology and Management*, Vol. 246, pp. 108-122.

Logging of Old Growth Trees

There is no question that this timber sale, as mapped and marked on the ground, will commercially log old growth trees that have been characterized by DNR as part of a stand that is about 90 years old. When presented with photographs of these trees, the Pacific Cascade Region Office did not deny that the trees were old growth, but instead suggested that those trees were located in "an area which will be conserved as part of a retention area; either as a riparian management zone (RMZ) or leave tree area."⁶ In fact, these trees are **not** located in any identifiable leave tree area or riparian management zone that has been either mapped or marked on the ground.

We measured trees within this patch of old growth that exceed five feet in diameter (see attached photographs). Board policy dictates that structurally unique trees exceeding five feet in diameter are to be deferred from harvest. Structurally unique trees are defined as native conifers that possess one or more of the following characteristics: large, strong limbs; open crowns; hollow trunks; broken tops and limbs; or deeply furrowed bark. Many of the trees that we observed clearly meet these criteria, and yet none of them had been marked for retention.

When we asked DNR for a copy of the old growth or WOGHI assessment for this timber sale, we were told that no old growth assessment exists.⁷ This is particularly troubling given recent public assurances by DNR staff that any potential occurrences of old growth within proposed timber sales are routinely investigated, and suggests that either there is a disconnect between ground crew and management staff, or that the foresters who marked the timber sale do not know where the old growth trees are located within the sale.

The Pacific Cascade Region Office maintains that "the Green Thomas timber sale is comprised of a forest that was regenerated around 1930." This conclusion is inconsistent with historical aerial photographs, which clearly show a range of different sizes and ages of trees present across the area encompassed by this timber sale. The patchiness evident in the 1951 aerial photo is likely a result of the uneven effect that fire and selective logging had on the early 20th-century landscape (Figure 4).

Regardless of whether the patch of old growth in unit 2 is large enough to qualify for protection under PR 14-004-045, the Board must exclude old growth from harvest where it is found, given that there is so little old growth forest remaining in southwestern Washington, and to be consistent with DNR's publicly stated intention to conserve old growth.

Policy for Sustainable Forests: "Older-Forest" Targets

The **Policy for Sustainable Forests** directs DNR to protect wildlife species and habitats by working to conserve biodiversity:⁸

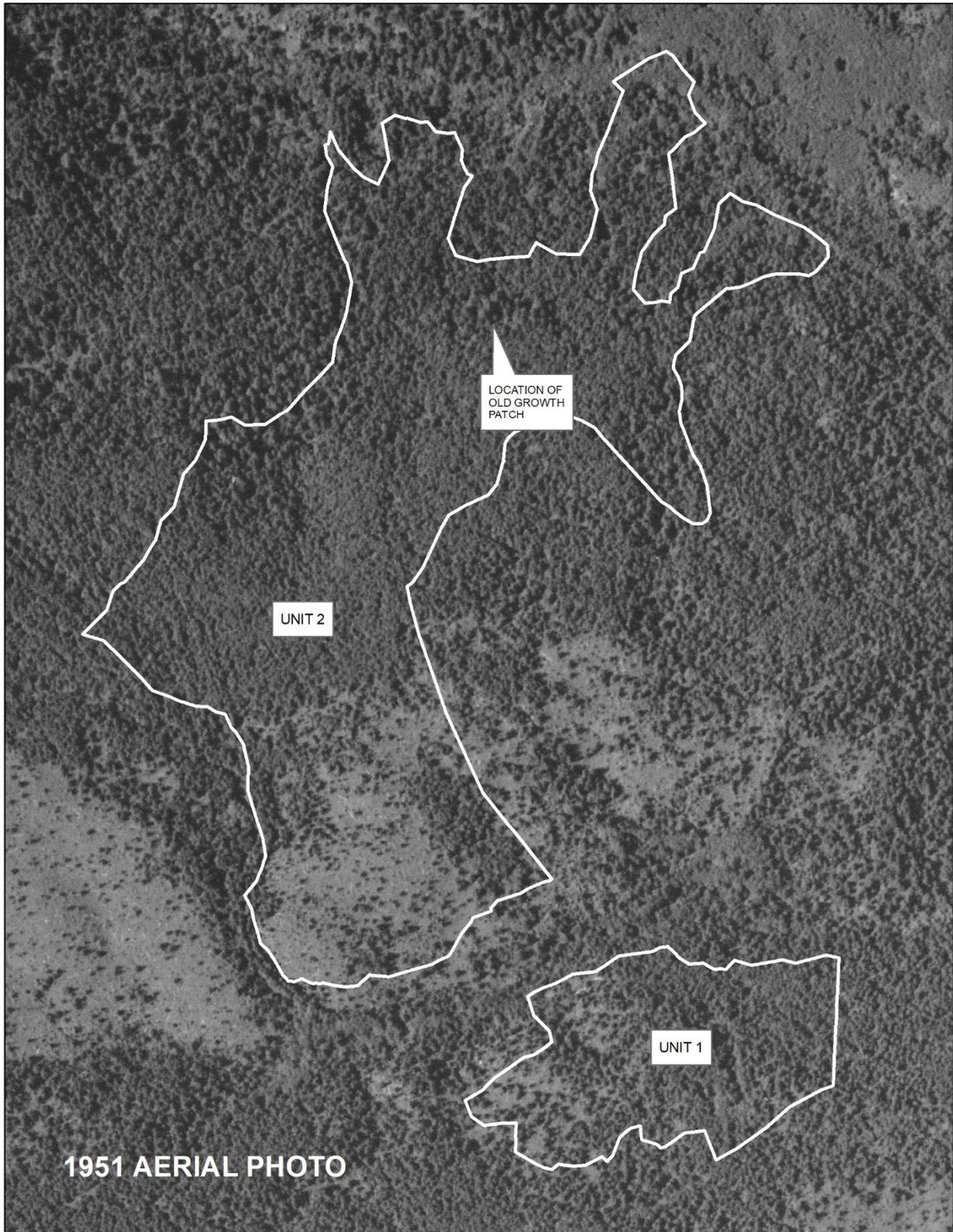
An important trust objective is the conservation of upland, riparian, and aquatic wildlife species, including fish and their habitats, species listed as threatened and

⁶ See September 8, 2021 response from Eric Wisch, DNR Pacific Cascade Region Manager, to SEPA comments, submitted by the Center for Responsible Forestry on August 10, 2021.

⁷ DNR Public Disclosure Office, Personal communication, September 9, 2021.

⁸ See Intended Outcomes, p. 6, Policy for Sustainable Forests (DNR, 2006).

Figure 4. 1951 Aerial Photograph



endangered, and non-listed species.... with a focus on ecosystem sustainability and the conservation of biodiversity across forested landscapes.

The Policy for Sustainable Forests recognizes the **conservation of biodiversity** as a "**fundamental guiding principle for sustainable forest management**."⁹

In order to promote the conservation of biodiversity and protection of unlisted species, the Policy for Sustainable Forests lists as one of its intended outcomes to "meet a 10 percent to 15 percent older-forest target for each Western Washington HCP planning unit" within 70 to 100 years of the adoption of the HCP in 1997.

According to the Policy for Sustainable Forests:

DNR intends to actively manage structurally complex forests, especially those suitable stands in the botanically diverse stage of stand development, to achieve older-forest structures across 10-15 percent of each Western Washington HCP planning unit in 70-100 years. Older-forest structures that contribute to this target are represented by stands in the Niche Diversification or Fully Functional stage of stand development.

In the Policy for Sustainable Forests FEIS, the Board's preferred alternative "emphasizes that the 10 to 15 percent older-forest targets will be accomplished" within 70 to 100 years. DNR's HCP Implementation Procedures for Identifying and Managing Structurally Complex Forests (PR 14-004-046) dictate that the Department develop landscape level management strategies to achieve the 10 to 15 percent older-forest targets during the forest land planning process that will be conducted for each HCP planning unit. **Only after the 10 to 15 percent target is met** may structurally complex forest stands be considered for harvest activities.¹⁰

As stated above, stands that contribute to the older-forest target are defined in the Policy for Sustainable Forests as those that are in the **Niche Diversification** or **Fully Functional** stages of stand development. Robert Van Pelt divides forest stand development into eight stages (Table 1). The Niche Diversification and Fully Functional stages of development are the last stages of development, and equivalent to what we generally consider to be old growth. The HCP suggests that at least 150 years is required for a stand to enter the Fully Functional stage of development. According to Van Pelt, old growth characteristics begin to emerge after 175 to 250 years.

Most of the native forests that exist on state forestlands are in the Maturation I stage of development. The Maturation I development stage precedes the Maturation II, Niche Diversification, and Fully Functional development stages. Van Pelt developed a key that may be used to classify forests by development stage. This key is regularly used by DNR to identify stands to be deferred from harvest and protected as old growth. DNR policy dictates that stands must be in either the Maturation II, Niche Diversification, or Fully Functional stage of development to qualify for protection under the Old Growth Timber Harvest Deferral and Protection policy (PR 14-004-045).

⁹ See Policy on Wildlife Habitat, p. 36, Policy for Sustainable Forests (DNR, 2006).

¹⁰ See Policy for General Silvicultural Activity, p. 46, in Policy for Sustainable Forests (DNR, 2006).

Stands in the Maturation I stage of development are defined by Van Pelt as those in which the dominant trees have reached 60-70% of their maximum height, and "tree crowns become more individualized to their own space, rather than intermingling with neighboring trees as they did when younger". Increased light levels in the understory allow shade-tolerant plants to emerge during this development stage.

Stands in the Maturation II stage of development are defined by as those in which the dominant trees have reached 80-90% of their maximum height, and the spatial, competition-based mortality process that were dominant in earlier stages of development shift to "mortality processes driven by fungi, wind, and insects." In this stage, Van Pelt states that the understory is "often fully recovered and remains so for all subsequent stages." According to Van Pelt, stands that are currently in this development stage, like those in later Niche Diversification and Fully Functional stages of development, pre-date European settlement. All of the stands that *currently* exhibit the characteristics of forests in Niche Diversification and Fully Functional development stages on lands managed by DNR originated prior to 1850.

In practice, these policies have done nothing to slow the clearcutting of older upland forests. The continued logging of some of the most biologically and structurally diverse forests is justified by DNR based on a re-interpretation of the niche diversification stage of stand development, that was never formally recognized by USFWS or any other outside agency, that allows DNR to count stands that are currently as young as 45 years old as contributing toward meeting older-forest targets.¹¹ By classifying 45-year old tree plantations as "older-forests", DNR is able to clearcut natural forests that are currently a century or more old.

Habitat Conservation Plan: Fully Functional Stand Structure Objective

The Multispecies Conservation Strategy of the HCP specifically directs DNR to provide suitable habitat for "unlisted animal species of concern and other unlisted animal species". The strategy names a total of 62 animal species of concern, but allows that other species are likely to be added to the list, because it is "difficult to predict which species are at the brink of 'at risk'". Each species has its own unique habitat requirements, and the use of indicator or keystone species such as spotted owls or murrelets as biodiversity surrogates is no longer generally accepted as a valid strategy for ensuring that the habitat requirements of other species of concern are met.¹² For example, areas set aside to provide habitat for spotted owls and murrelets are concentrated in areas where these species are most abundant, and not necessarily in larger blocks of older forest. This problem is acknowledged in the HCP, which states that "species-specific forest practices have become an inefficient and impractical means of attaining wildlife conservation objectives". Instead, the HCP dictates that Multispecies Conservation Strategy objectives be met through "forest management that provides a variety of well-distributed, interconnected habitats" in order to support the continued presence of suitable habitat for each species "over as much of its historic range as possible", thereby ensuring the "successful reproduction of wide-ranging unlisted species".

¹¹ Assumptions appears to be based on a report published by DNR in 1996, that is out-of-print and no longer available for download on the DNR website, entitled "A Pragmatic, Ecological Approach to Small Landscape Management" by S. Carey et. al.

¹² See Lindenmayer, D.B. and Franklin, J.F. 2002. Conserving Forest Biodiversity: A Comprehensive Multiscaled Approach. Island Press, Washington.

The 1997 Intra-Service Biological Opinion¹³ states that:

- A. *"The HCP includes commitments to provide [among other outcomes] certain percentages of stand structural classes from open forest to fully functional complex forests."*
- B. *"Timber harvest... must be consistent with the goals and objectives to of the HCP to develop and maintain these habitat types."*

The HCP classifies forests into six development or stand structural stages: open, regeneration, pole, closed, complex, and fully functional. The Biological Opinion establishes specific stand structural targets that require DNR to develop or maintain **12 to 22% of each HCP planning unit** as fully functional forest by the year 2096. The provision of specific percentages of stand structural stages is described as necessary to "ensure that the full range of upland forest habitats are available for use by species in the HCP area" and that stand structural stages "not provided by other conservation strategies of the HCP are present" within each HCP planning unit. Fully functional forests are defined in the Biological Opinion as conifer forests that are at least 150 years old. DNR's own internal analysis indicates that DNR will not come close to meeting this objective within the Columbia HCP planning unit by 2096. According to DNR, existing conservation areas will contribute only between 4.7% to 8.3% fully functional stand structure objective by 2096.¹⁴

DNR argues that it can continue to harvest existing older, structurally complex forests, because more than 10% of lands covered under the HCP within the Columbia planning unit will reach 150 years of age by the year 2110. This is not consistent with the requirements of the incidental take permit as described above. By its own admission, DNR is not on track to meet satisfy the fully functional stand structure objectives of its incidental take permit, and needs to exclude other areas that are capable of contributing to this objective from timber harvest.

Furthermore, data obtained from DNR's Public Disclosure Office suggests that the vast majority lands that DNR has designated as contributing to fully functional stand structure objectives are located within riparian buffers and areas that have been classified as potentially unstable slopes. Areas classified as potentially unstable slopes occupy about 10% of the total land base in Western Washington, or about one-quarter of areas that DNR has identified as conservation areas that it claims contribute to fully functional stand structure or older-forest targets. As illustrated in Addendum A of our Joint Petition to the BNR, counting these areas toward older-forest targets is misleading, because they are rarely excluded from logging after they have been ground-truthed.

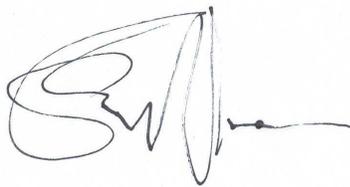
A strategy that relies so heavily on riparian corridors and unstable slopes to meet older-forest and fully functional stand structure objectives will result in a fragmented landscape that is subject to edge effects, lacks interior forest habitat, lacks large conifers, and is often dominated by alder and other early successional or invasive species. We believe this approach is both unrealistic, and inconsistent with the intent of the Multispecies Conservation Strategy and the objectives of the Policy for Sustainable Forests.

¹³ See USFWS. 1997. Intra-Service concurrence memorandum and Biological Opinion for the Washington Department of Natural Resources Habitat Conservation Plan. U.S. Fish and Wildlife Service, Lacey, WA. January, 1997, pp. 5-6, 14, 22, 23, and 66.

¹⁴ See DNR. 2021. Identifying Stands to Meet Older Forest Targets in Western Washington, Allen Estep and Mike Buffo, p. 11, Table 5.

In summary, DNR has failed to develop a plan to meet the older-forest targets described in the general silvicultural strategy of the Policy for Sustainable Forests; has failed to implement the Multispecies Conservation Strategy of the HCP in the Columbia planning unit; and has failed to demonstrate that it can meet the stand structure objectives of its incidental take permit in the Columbia HCP planning unit. Instead of logging the oldest and most structurally complex forests that remain in the planning unit, we urge the Board to direct DNR to focus on developing a revised management strategy to generate revenue for trust beneficiaries that conserves native forests, accelerates the development of fully functional forest characteristics in younger forests, and is consistent with the requirements of DNR's Habitat Conservation Plan, the Intra-Service Biological Opinion for the HCP, PR 14-004-046, and the Policy for Sustainable Forests.

Respectfully,

A handwritten signature in black ink, appearing to read 'SK', with a horizontal line extending to the right.

Stephen Kropp
Director

[signed by three other organizations]

Attachments:

1. Photographs of Green Thomas timber sale
2. CRF SEPA comments - Green Thomas (File No. 21-072703), August 10, 2021
3. DNR response to CRF SEPA comments - Green Thomas, September 8, 2021
4. Previous letters and responses from DNR Pacific Cascade and South Puget Sound Region offices concerning similar timber sales
5. June 2021 Chair Report on Older Forests Policy
6. Critical review of Halofsky-Buffo BNR Presentation
7. DNR Internal Memo entitled "Identifying Stands to Meet Older Forest Targets in Western Washington", May 11, 2021
8. Public records request, June 12, 2021
9. Joint Petition to the Board of Natural Resources, April 1, 2021

Table 1. Stand Development Stages

Source: Van Pelt, R. 2007. Identifying Mature and Old Forests in Western Washington. Washington State Department of Natural Resources.

OG Guide	DNR Glossary	Essential Ecological process, elements and other notes
Cohort establishment phase	Ecosystem initiation	Establishment of cohort individuals
Canopy closure	Competitive exclusion: sapling exclusion	Canopy closes
Late canopy closure and early Biomass accumulation/stem exclusion	Competitive exclusion: pole exclusion	Inter-tree competition is the dominant ecological process. Live trees compete with each other for resources (light, water, nutrients). Loss of stems <2" dbh due to shading; Self pruning begins
Biomass accumulation /stem exclusion and early Maturation I	Competitive exclusion: large tree exclusion	Inter-tree competition is the dominate ecological process. Live trees compete with each other for resources (light, water, nutrients). Loss of stems <5" dbh due to shading.
Maturation I	Understory development And Botanically diverse	A shift of the dominate mortality processes occurs from inter-tree competition to stochastic events (disease, wind, fire, pests) resulting in stem loss of larger trees (dominant and co-dominant) and a loss of shade. Openings in the canopy appear, allowing regeneration of shade tolerant species. High rate of biomass accumulation is maintained. In later stages, rate of live biomass accumulation begins to decrease. Continued understory development and stochastic stem loss. Stages generally lacking large down woody debris and large snags.
Maturation II	Botanically diverse	Development of additional species in lower and mid canopy. Large down woody material and large snags are generally absent or at low levels.
Vertical diversification	Niche diversification	Development of additional species in lower and mid canopy to abundant additional species at all canopy levels and increasing levels of large down woody debris and large snags.
Horizontal diversification	Fully functional	More stochastic stem losses create larger gaps. High accumulation of large woody debris, large snags.

Development stages used in this guide from Franklin et al. 2002. DNR stages adapted from Carey et al 1996 and Franklin et al 2002.