



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

Re: **Addendum B** to Letter of Opposition to Bologna Timber Sale:  
Structurally Complex Stand Characteristics

DNR is required under the terms of its Policy for Sustainable Forests to manage structurally complex forests to meet older forest targets.<sup>1</sup> The HCP classifies structurally complex stands as those that are more than 70 years old. DNR forest inventory data suggests that units 3 and 4 of the Bologna timber are between 65 to 93 years old.

Structurally complex stands are defined by DNR as those that are in the botanically diverse, niche diversification, or fully functional stand development stage.<sup>2</sup> Forests in the niche diversification and fully functional stages of development are rare in the North Puget Sound HCP planning unit.<sup>3</sup> Most of the existing structurally complex forests in the planning unit are in the botanically diverse stage of stand development. DNR guidelines for Identifying Mature and Old Growth Forests suggest that stands in the botanically diverse stage of stand development range between 70 to 160 years old.<sup>4</sup> The stands contained within the cut boundaries of units 3 and 4 of the Bologna timber sale are up to 93 years old, and may contain an older cohort of legacy trees.

DNR's guidelines define botanically diverse stands as characterized by a shift of the dominate mortality processes from inter-tree competition to stochastic events (disease, wind, fire, pests). This

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<sup>1</sup> See Policy for Sustainable Forests, p. 46.

<sup>2</sup> See 2004 SHC FEIS, p. 4-22; PR 14-004-046, p. 1.

<sup>3</sup> According to DNR guidelines for Identifying Mature and Old Growth Forests, stands in the niche diversification and fully functional stand development stages are generally over 140 years old. DNR forest inventory data for the North Puget Sound HCP planning unit indicate that there are only about 12,000 acres of forestland that are over 140 years old in the entire 459,000 acre planning unit, which represents just 2.6% of the planning unit. According to DNR's own analysis, only 3.3% of the North Puget Sound HCP planning unit has protected forests in the niche diversification or fully functional stages of development. See Table 3, Estep & Buffo. 2021. Identifying Stands to Meet Older Forest Targets in Western Washington.

<sup>4</sup> See Van Pelt, 2007. Identifying Mature and Old Growth Forests in Western Washington. Department of Natural Resources, Olympia, WA, p. 64.


shift results in stem loss of larger trees (dominant and codominant) and a loss of shade. Openings in the Botanically diverse canopy appear, allowing regeneration of shade tolerant species including western hemlock and western redcedar. These stages generally lack large down woody debris and large snags.<sup>5</sup>

Tree species composition varies across units 3 and 4. Plant species diversity is a defining characteristic of botanically diverse forests.<sup>6</sup> Many of the dominant conifers in units 3 and 4, which include Douglas fir, western redcedar, and hemlock, are over three feet in diameter and close to 200 feet tall (see **Addendum C**, and LiDAR image, below). In areas dominated by large conifers, we observed numerous gaps in the overstory, and a diverse variety of shrubs and trees growing in the understory. Other parts of the timber sale are dominated by a diverse mixture of conifers, hardwoods (cottonwood and alder), and large shrubs.

The Policy for Sustainable Forests, and 2004 SHC FEIS, define the botanically diverse stand development stage as follows:

Multiple canopies of trees and communities of forest floor plants are evident. Large and small trees have a variety of diameters and heights. Decayed and fallen trees are lacking in abundance.<sup>7</sup>

These forests meet these criteria and are structurally complex.

A handwritten signature in black ink, appearing to read 'S. Kropp', with a horizontal line extending to the right from the end of the signature.

Stephen Kropp  
Director

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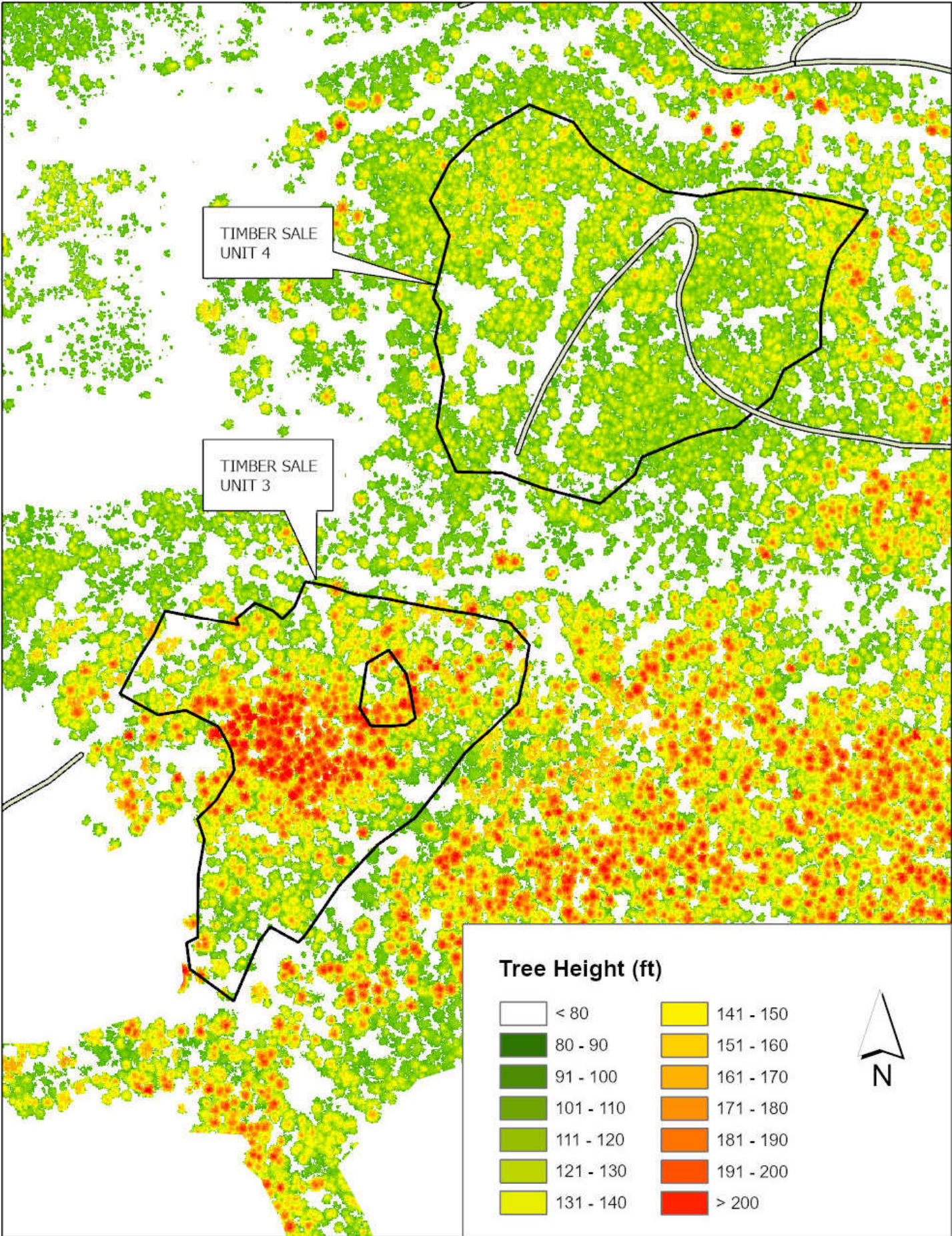
<sup>5</sup> See Van Pelt, 2007. Identifying Mature and Old Growth Forests in Western Washington. Department of Natural Resources, Olympia, WA, pp. 36-37, 103.

<sup>6</sup> See Draft 2004 SHC FEIS, p. B-40.

<sup>7</sup> See 2004 SHC FEIS, p. B-51.



# Map of Tree Heights: Units 3 and 4





# Aerial Photo: Units 3 and 4

