



Legacy Forest Defense Coalition
P.O. Box 7154
Tacoma, WA 98417
Phone: (360) 872-3264
Email: info@wlfdc.org

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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 Carrot 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.¹ The HCP classifies structurally complex stands as those that are more than 70 years old. The SEPA checklist for the Carrot timber sale suggests that the stands originated after 1910, but does not provide any specific stand age estimates or origin dates. DNR's plot-based forest inventory data suggests that the stands are between 87 to 96 years old. Historic aerial photographs taken in 1951 (below) show an abundance of large trees within the proposed timber sale cut boundaries. It is possible that many of the larger trees were standing before the area was originally logged, as it was common for loggers to leave trees behind for various reasons when these forests were logged in the early 1900's. If the larger trees are indicative of the origin date, then these stands are almost certainly more than 100 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.² Forests in the niche diversification and fully functional stages of development are virtually absent in the South Coast HCP planning unit.³ 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

¹ See Policy for Sustainable Forests, p. 46.

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

³ 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 South Coast HCP planning unit indicate that there are only about 250 acres of forestland that are over 140 years old in the entire 262,000 acre planning unit. According to DNR's own analysis, only 0.2% of the South Coast 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.

old.⁴ The stands contained within the cut boundaries of the Carrot timber sale are at least 85 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 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.⁵

Tree species composition varies across the three timber sale units. Plant species diversity is a defining characteristic of botanically diverse forests.⁶ Many of the dominant conifers in units 1, 2, and 3, 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 (maple 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.⁷

These forests meet these criteria and is structurally complex.



Stephen Kropp
Director

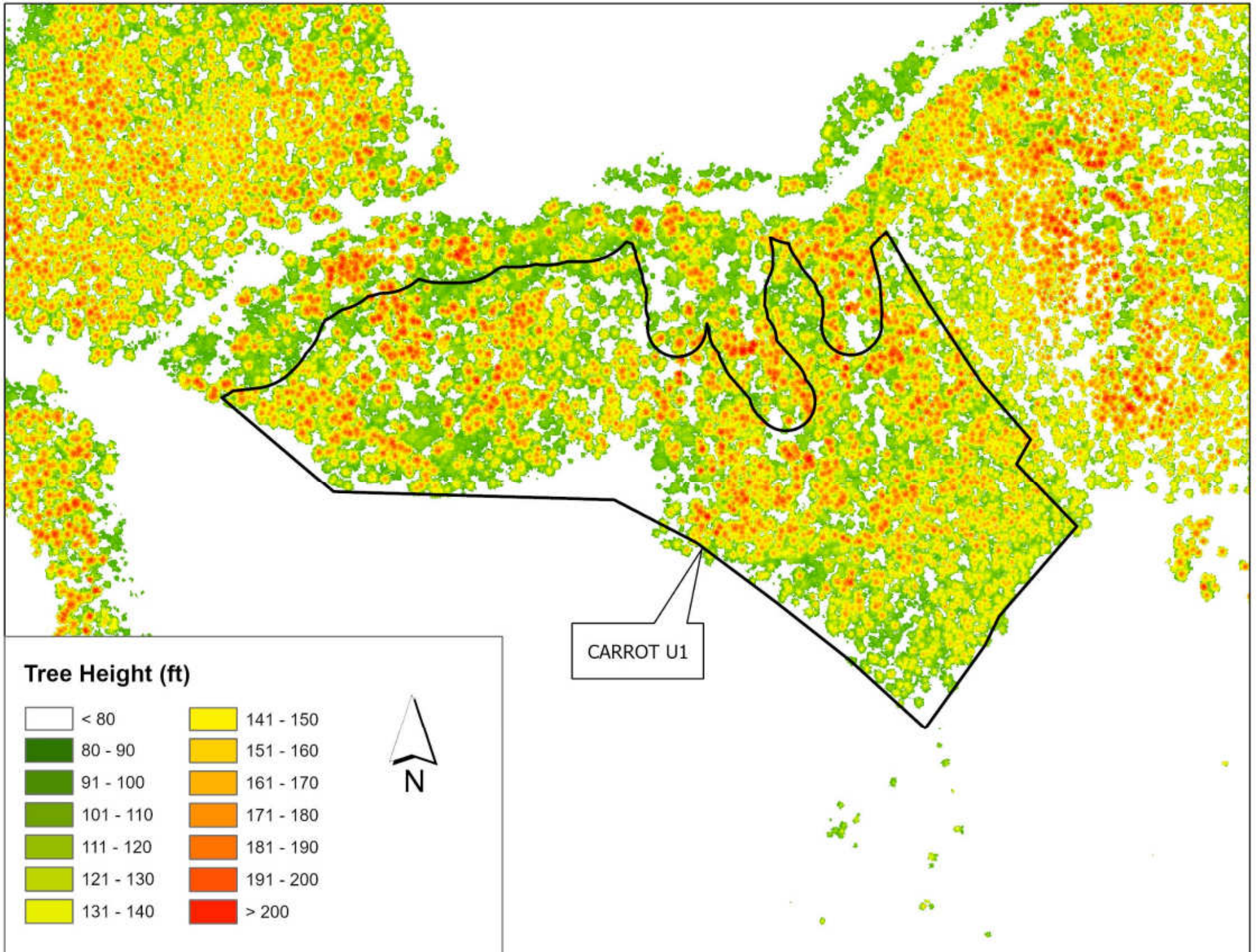
⁴ See Van Pelt, 2007. Identifying Mature and Old Growth Forests in Western Washington. Department of Natural Resources, Olympia, WA, p. 64.

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

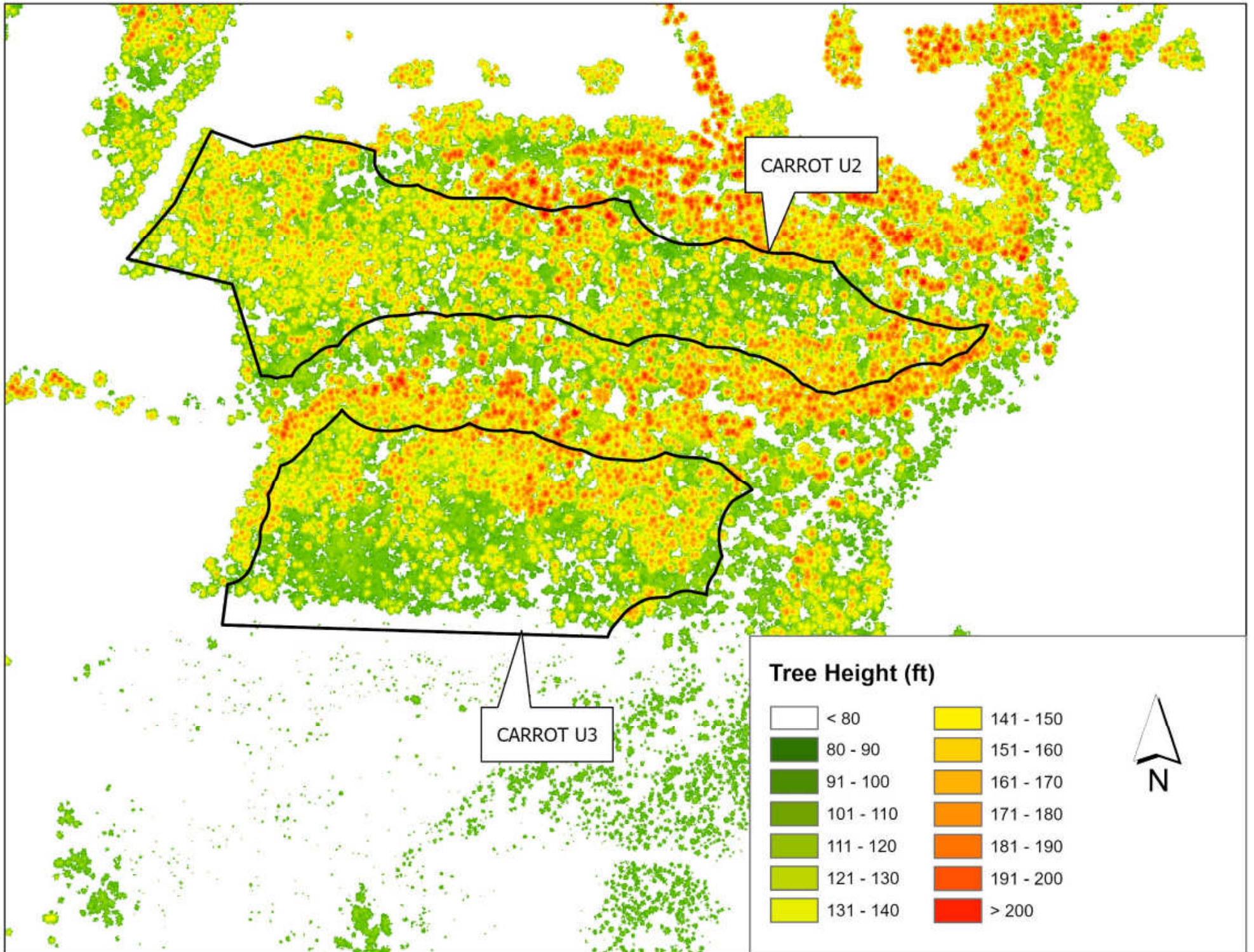
⁶ See Draft 2004 SHC FEIS, p. B-40.

⁷ See 2004 SHC FEIS, p. B-51.

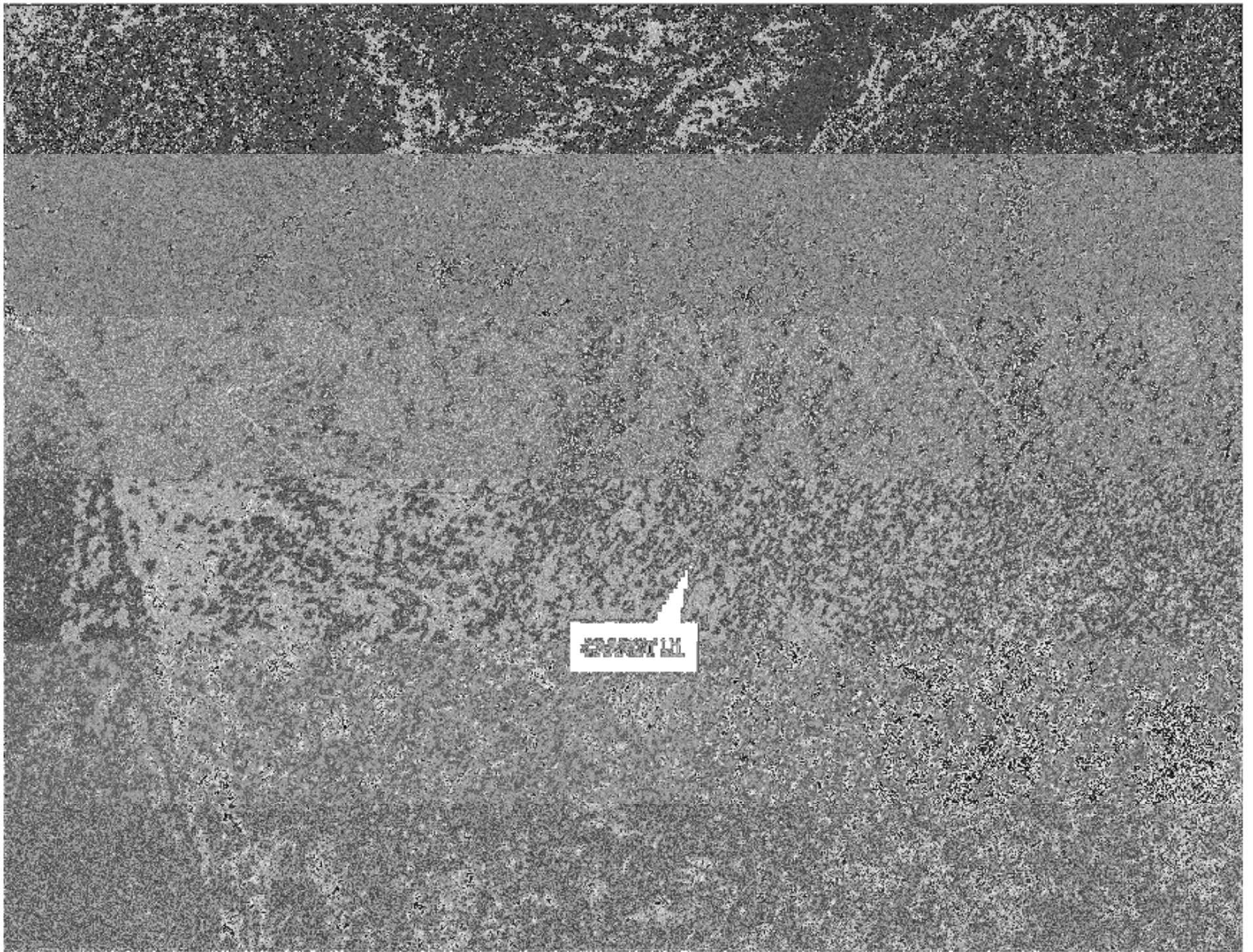
Map of Tree Heights: Unit 1



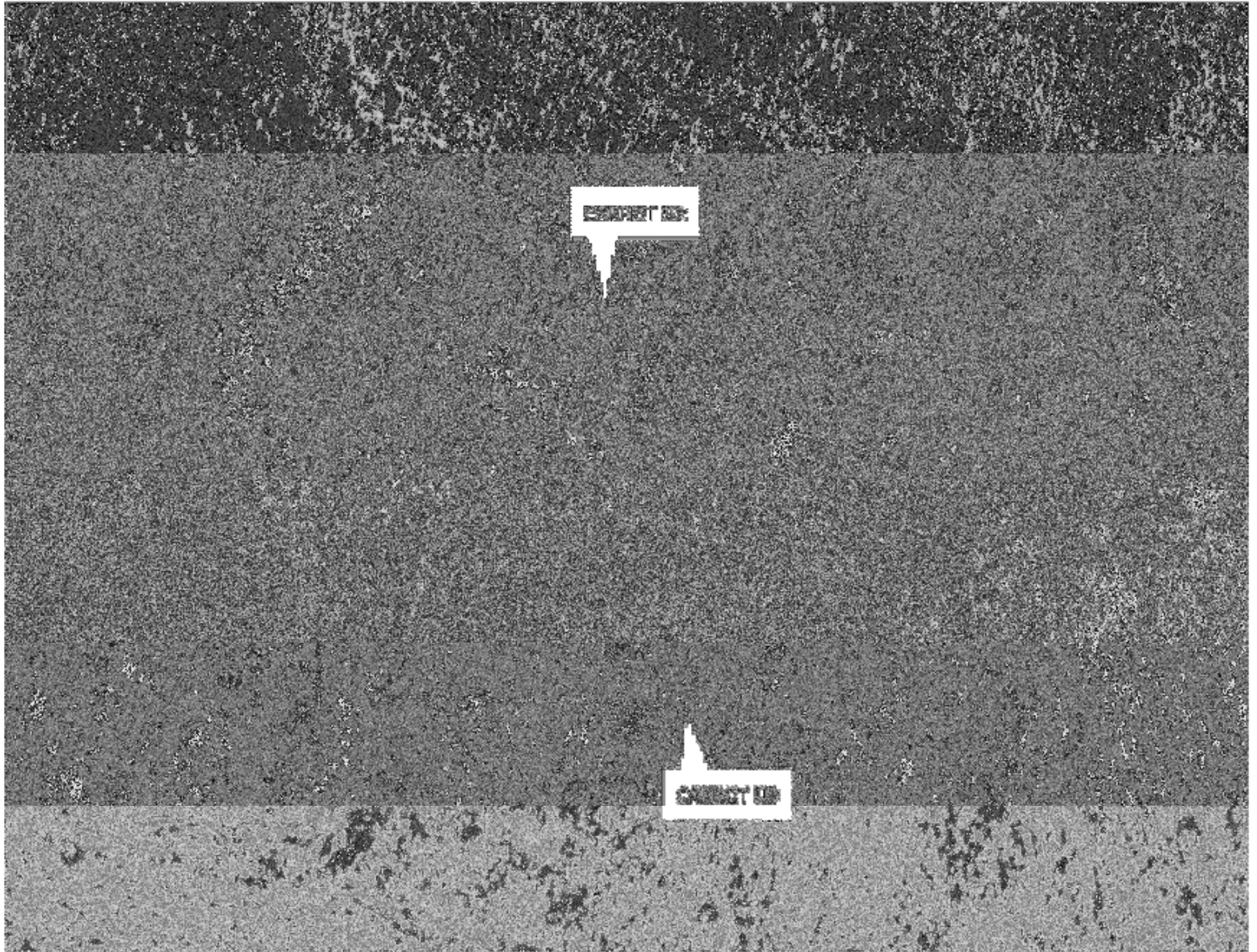
Map of Tree Heights: Unit 2 and 3



1951 Aerial Photo: Unit 1



1951 Aerial Photo: Unit 2 and 3



2022 Aerial Photo: Unit 1



2022 Aerial Photo: Unit 2 and 3

