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Ms. Dawn Hallowell
Director, Southern Maine Regional Office
Maine Department of Environmental Protection
312 Canco Rd,
Portland, ME 04103

June 12, 2025

RE: NECEC Conservation Plan – Opportunity for Comment

Dear Ms. Hallowell:

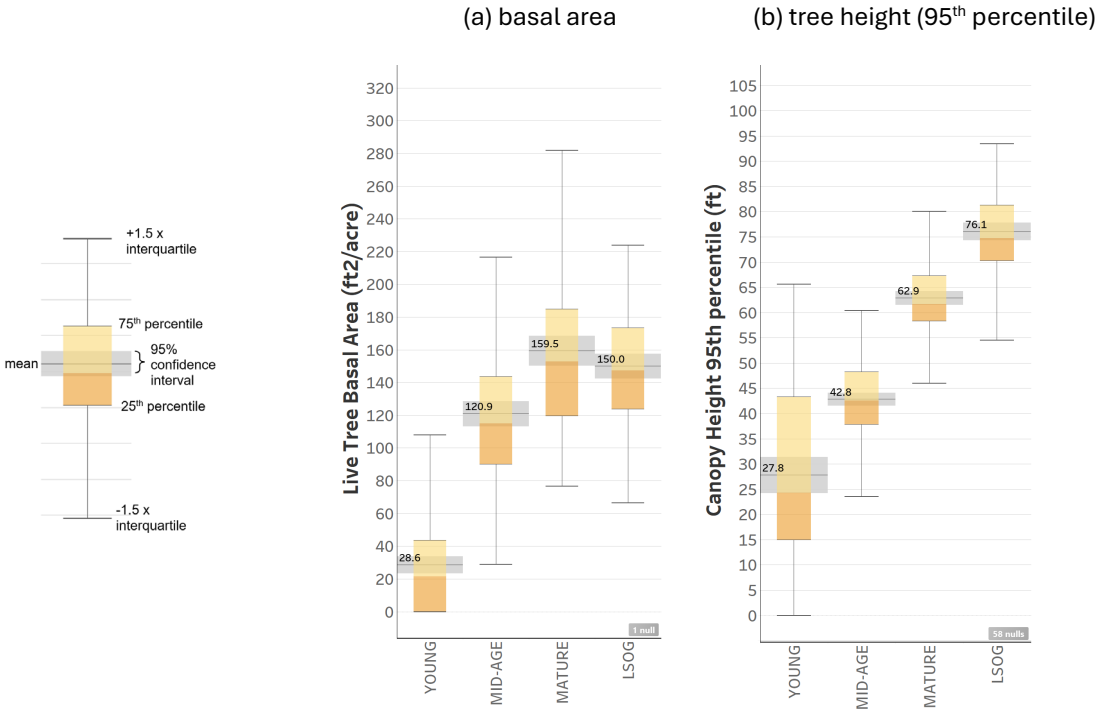
This letter provides public comment on the New England Clean Energy Connect (NECEC) Conservation Plan ("Plan") submitted by NECEC Transmission LLC ("NECEC LLC") to the Maine Department of Environmental Protection (DEP) on May 9, 2025. I present these comments as an experienced forest ecologist who has studied commercial forestry in Maine over the past three decades. Most of my studies have been done in partnership with commercial landowners, including Weyerhaeuser, the landowner involved in this easement. Before I offer my comments and analyses, I should be clear that I am a proponent of the corridor. To me, climate change is the primary threat to our children's well-being, and to biodiversity, in the 21st century. We need clean energy, and we need those who have capital and wherewithal to make it happen.

While acknowledging the environmental benefits of clean energy, the corridor through western Maine will also have (is having) a negative environmental impact on wildlife and biodiversity. As a society, we try to balance our many diverse values (e.g., our desire for both clean energy and wildlife habitat). The proposed conservation easement represents an effort to balance those values. My comments here are intended to help society achieve a better balance so that we can move forward with our need for clean energy. I hope these comments assist in effective mitigation of the negative environmental impacts of the corridor.

Definition of "mature forest"

Having spent decades doing forest plot surveys in Maine's commercial forest, the "mature forest" definition proposed in the Conservation Plan does not pass an ecological straight-face test**. If 60 ft^2/acre of basal area with some trees at least 50 ft tall is the criterion Weyerhaeuser is willing to meet, then call it "partially-cut mid-age forest." It is simply not "mature forest."** The Conservation plan further loses credibility on page 4 where is states "… there is ample evidence in the record to support a threshold condition of those forest stands that achieve a minimum height of 35 feet." Based on my field experience, mature forest would have a basal area of at least 120 ft^2/acre and trees at least 60 ft tall (see Figure 1). The Conservation Plan further states on page 4 that the 60ft^2/35' criterion "supports wildlife," as if *all* wildlife requires this specific condition. Indeed, the corridor, once built, with 0ft^2 basal area/acre, will provide habitat for many important early-successional bird species. But early-successional habitat is not limited in the transmission

Figure 1. Basal area (a) and tree heights (b) of different age-classes of forest, based on our studies of birds and LSOG forest in the unorganized townships of Maine, 2021-2024. [1,2] Canopy heights are based on highly accurate LiDAR data. (n=463 plots)



[1] Levy, F.S., Reed, J.M., McKinley, P.S., Gunn, J.S., Anderson, K. and Hagan, J.M., 2025. Increased bird abundances over 30 years in an extensive commercial forest landscape. Biological Conservation, 302, p.110934.

[2] Hagan, J., B. Shamgochian, M. Taylor, and M. Reed. 2024. Using LiDAR to Map, Quantify, and Conserve Late-successional Forest in Maine. Our Climate Common Report, Georgetown, Maine. 44 pp. (link)

corridor area of Maine or the commercial forest landscape of western Maine. By contrast, late-successional and old-growth (LSOG) is extremely limited and declining.

LSOG forest within the proposed easement

The stated purpose of the easement is to conserve and increase "wildlife habitat" over time. LSOG forest is a very special type of "wildlife habitat." LSOG forest represents age-classes of forest that are beyond the optimum rotation age in a typical commercial forest in Maine, which is why LSOG forest is disappearing**.** If the purpose of the easement is to mitigate habitat loss and fragmentation resulting from the transmission corridor, why not address one of the most at-risk forest age-classes in Maine, and indeed globally—LSOG forest—through the habitat-mitigating NECEC easement?

Using LiDAR, in 2024 my organization (Our Climate Common) completed a map of LSOG forest in the 10M-acre unorganized territory of Maine[1]. Our analysis of the proposed easement area indicates that 95.8% of the area is "Not LSOG." This compares to 80.3% average for the entire 10.4M acres (4.2M hectares) of unorganized territory of Maine (Table 1). The proposed easement area also

[1] Hagan, J., B. Shamgochian, M. Taylor, and M. Reed. 2024. Using LiDAR to Map, Quantify, and Conserve Late-successional Forest in Maine. Our Climate Common Report, Georgetown, Maine. 44 pp. (link)

Table 1. Summary of easement area by LSOG forest within the proposed NECEC easement, and in the 10M+ acres of Unorganized Territories of Maine.

		Proposed NECEC Easement		Unorganized Territories	
	Class	Hectares[1]	Percent of Landscape[2]	Hectares[1]	Percent of Landscape[2]
1	Not LS	18,063	95.8%	3,336,192	80.3%
2	Transitioning LS	737	3.9%	662,696	15.8%
3	Late-successional	42	0.2%	124,821	3.0%
4	"Old-growth like"	8	0.0%	37,060	0.9%
	TOTAL	18,850	100%	4,185,869	100%

[1] Land hectares below 2700' in elevation
[2] Percent of total land hectares analyzed.

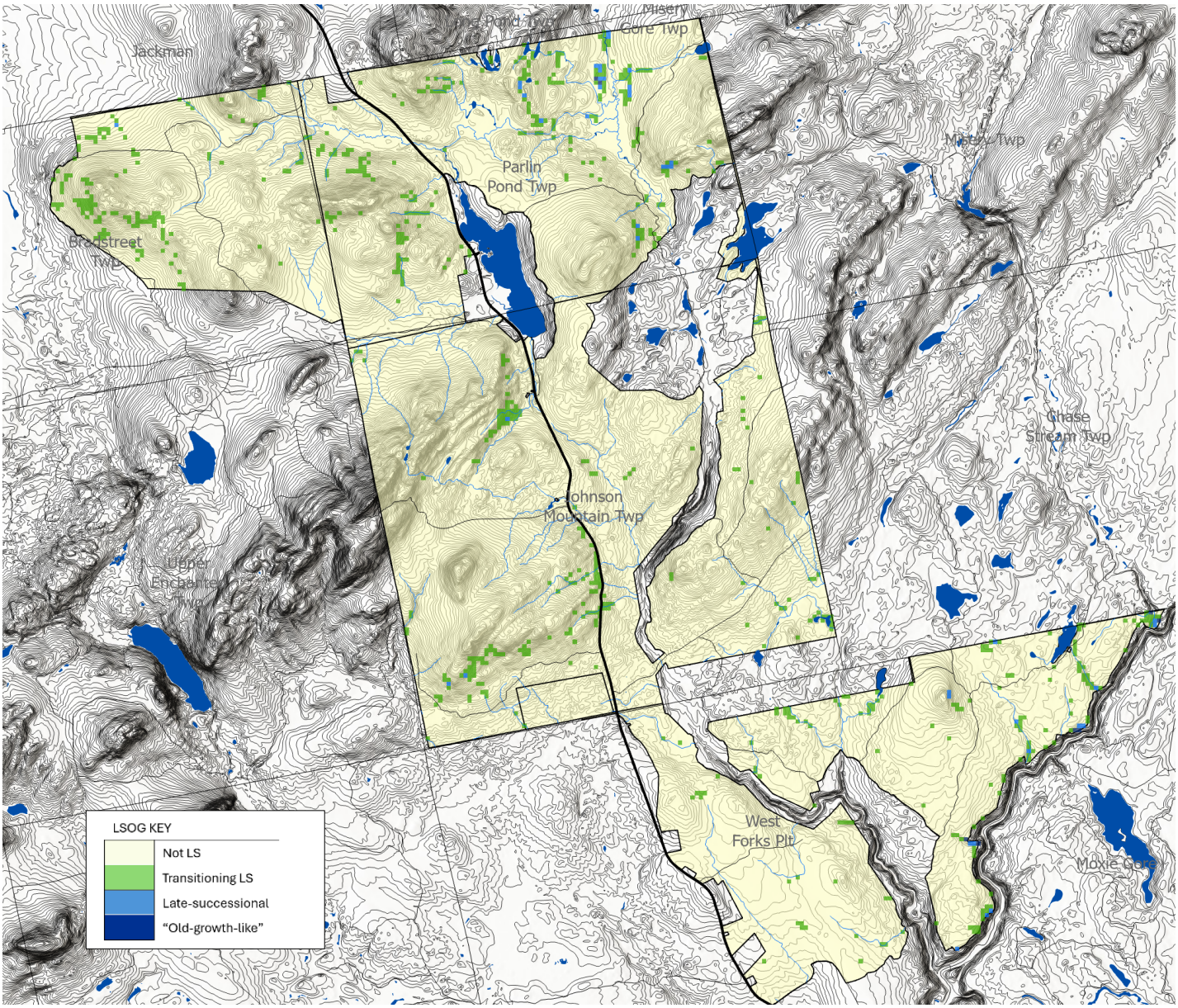
has a much lower percentage of Transitioning LS forest (3.9%) relative to the unorganized territories overall (15.8%). Finally, the easement area has only a 0.2% in the LS and OG classes, as compared to 3.9% for the unorganized territories on average (see Table 1). But even this 0.2% can be critical for ecological restoration of the larger landscape over time—a goal of the easement. There is a total of 1,943 acres of Transitioning LS, LS, and OG forest in the proposed easement area (see Table 1).

Figure 2 shows the current distribution of LSOG forest in the proposed easement. Even small 1-ha (2.47 ac) patches of LSOG forest can be ecologically significant. Many of the species most tightly associated with LSOG forest (lichens, mosses, liverworts) can persist for decades in small patches of LSOG forest. While these species do not need much area to survive, they do not disperse across the landscape very well. It can take them a long time (decades) to reach a nearby forest stand that grows into an LSOG condition. This is why these small patches of LSOG are so significant today. If we hope to restore these species to a larger area someday, these "lifeboats" of LSOG will be key. If biodiversity conservation is a goal of this easement, the easement developers could consider making these remnants of LSOG forest off limits to timber harvesting. Indeed, the landowners will need to be compensated for the forgone timber revenue, but the biodiversity benefit of the easement would be greatly increased.

Figure 3 shows a closer look at a small LSOG stand in the northeastern corner of the proposed easement. Both the LiDAR-derived canopy height model (3a) and the LSOG classification are shown together (3b). Note the "blue-magenta" pixels in 2a. These are areas with trees 75-90' tall, which classify as LSOG forest (see Hagan et al. 2024). The black areas are areas less than 6' tall and tend to be roads, clearcuts, wetlands, or relatively recent skidder trails in a harvest block. Note that it looks like the northern half of an LSOG stand was recently harvested (see arrow in 3a). The easement instrument could incorporate the protection of such rare habitat.

The Conservation Plan also incorporates a 100' no-harvest buffer along all streams (see Figure 3b). At least over time, these no-cut buffers will grow into LSOG forest. Some buffers already are LSOG forest (see close-up in 5b). In the easement area, there are 2,633 acres of forest in this designated 100' buffer. Under the Conservation Plan, most all of these acres will become LSOG forest sometime in the future.

Figure 2. LSOG map for proposed NECEC conservation easement. There is a total of 1,943 acres (787 ha) of LSOG forest in the proposed easement area.



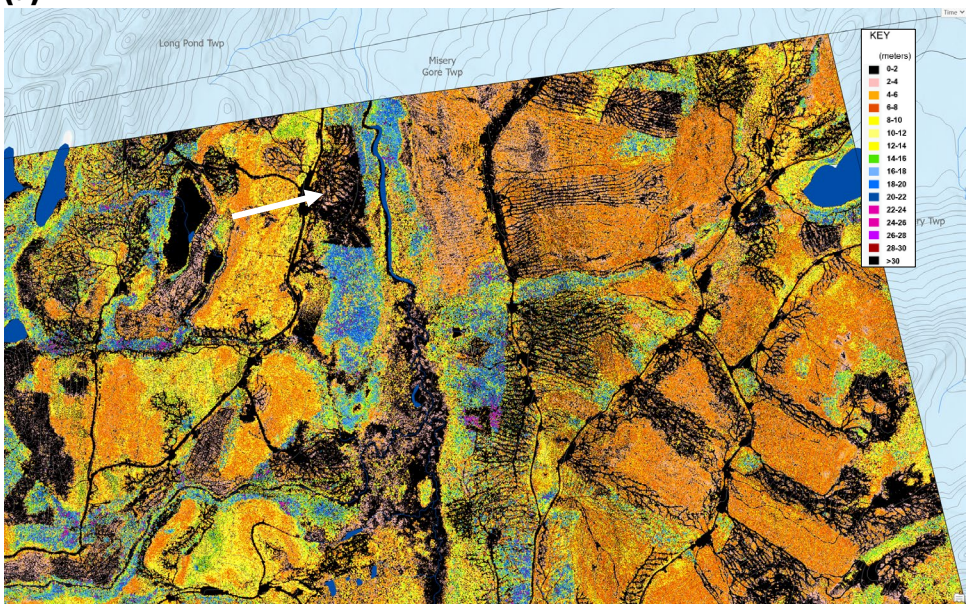
Of the 1,944 acres of LSOG in the easement area, 240 acres fall within the proposed 100' stream buffers. This represents 12.34% of all the LSOG acres in the proposed easement. These 240 acres represent 9.1% of the 2,633 acres within 100' stream buffers.

Current forest height in the proposed easement

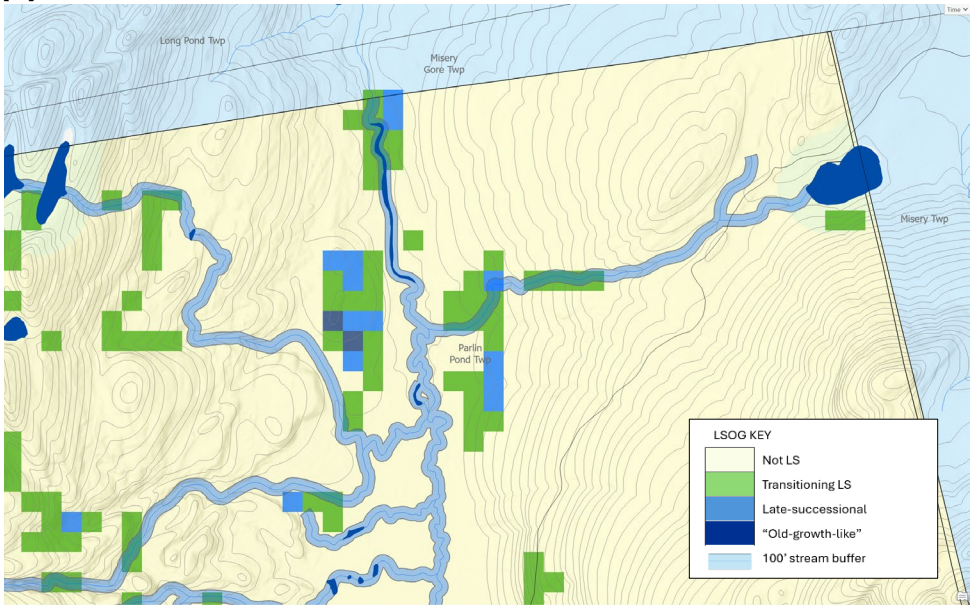
The proposed easement area has been one of the most intensively harvested areas of the unorganized township area of Maine in the last 20+ years (Figure 4.). This is not unexpected given that it is privately owned commercial forest and relatively close to mills.

Figure 3. Close-up of northeastern corner of the easement. (a) forest canopy height model in 2-m (6.6 ft) increments, and (b) the LSOG classification of the same area. Note the blue-magenta color in (a). These colors tend to indicate LSOG forest (see computer classification in 2b. These "blue-magenta" stands should be protected from harvest if LSOG forest is a value of public interest. Once lost, this forest age-class is difficult to rebuild. Black represents 0-2m height (roads, wetlands, recent harvests). Note the recently harvested LSOG forest as indicated by the arrow in 5a.

(a)

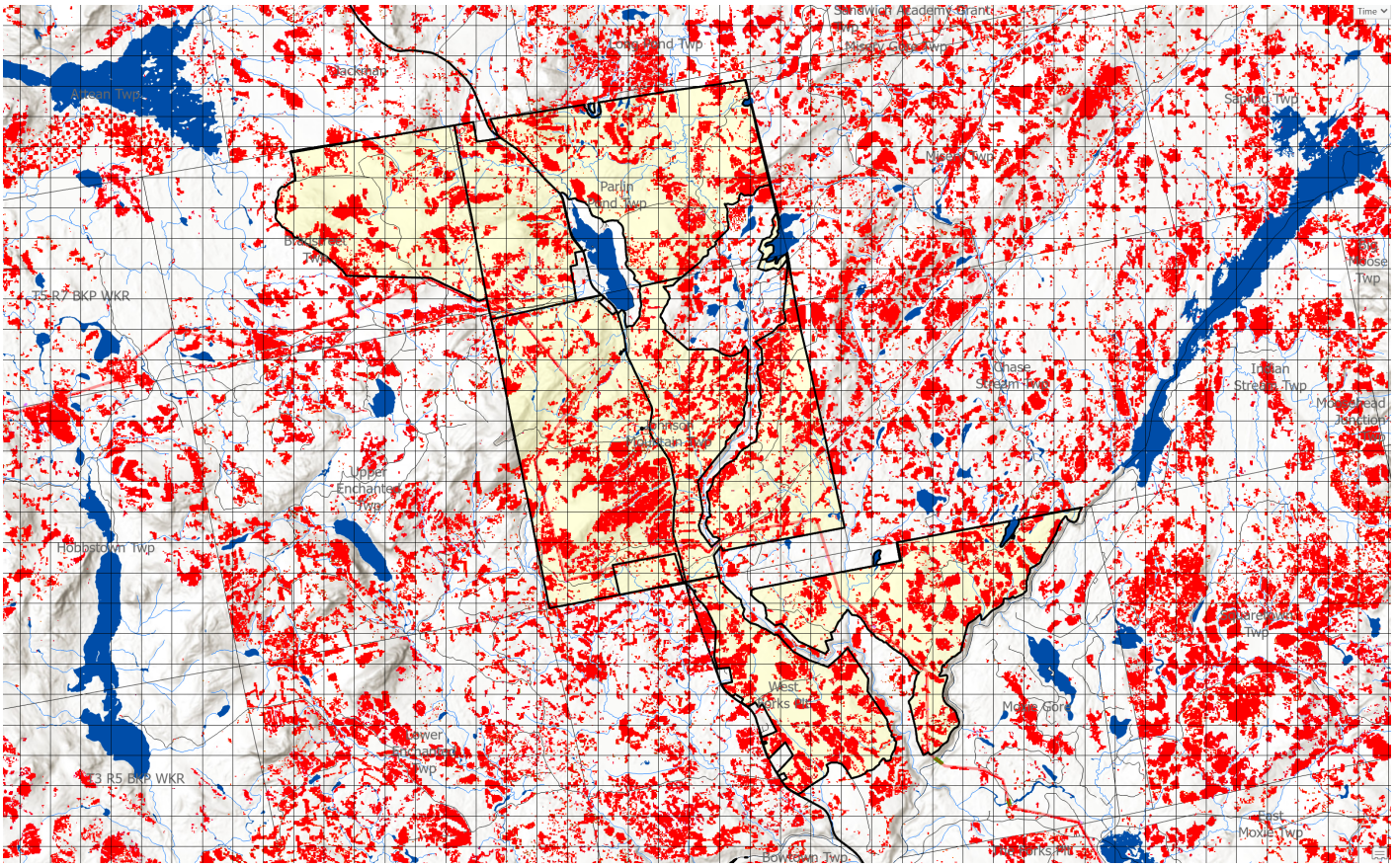


(b)



I used publicly available airborne LiDAR data from 2016 to estimate height of the forest in the Conservation Plan easement area. Very accurate estimates of canopy height can be derived from LiDAR, usually within 5 or 10 cm (2-4"). LiDAR allows an estimate of canopy height for every square

Figure 4. Harvest blocks (red) between 2001 and 2023 in the proposed easement and vicinity. Grid 1km^2. Data from Global Forest Watch. (https://data.globalforestwatch.org/). The initial clearing for the corridor is evident.

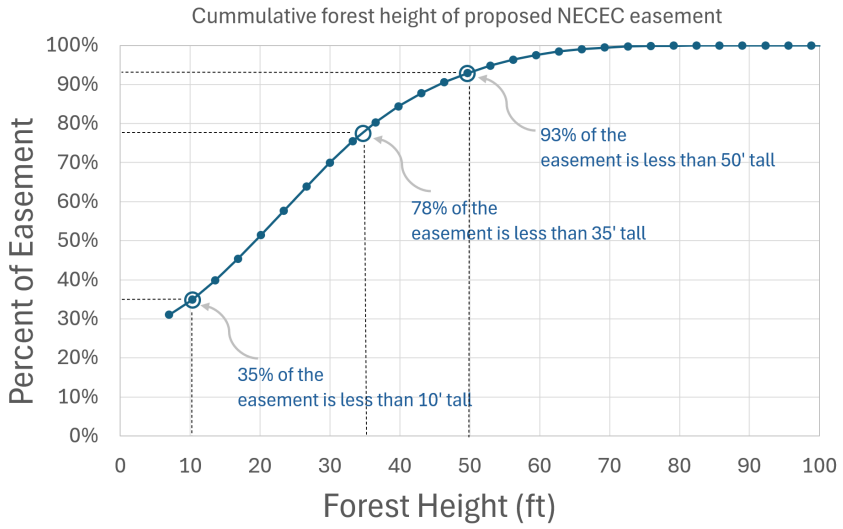


meter in the area of interest. There are some 206,500,000 data points from which to generate a canopy height distribution for the proposed easement area.

Because LiDAR data were obtained in 2016, I added 7 feet (2.13m) to all heights in the data layer, allowing for forest growth since then. I then derived the height distribution from the growth-adjusted canopy height data (Figure 5). This adjustment errs towards an *overestimate* of current height because the 2016 LiDAR does not include harvested areas since that time, which would result in a reduction in height.

I found a discrepancy between the height of the forest reported in the Conservation Plan and LiDAR-derived heights. The Conservation Plan states that 40% of the easement area is greater than 35' tall. By contrast, growth-adjusted LiDAR data indicate that only 22% of the forest greater than 35' tall (Figure 5). The difference is probably methodological. Foresters might classify an entire stand as 35', even if just some of the trees are 35'. LiDAR classifies the height of every square meter in a stand, whereas a forester might assign a maximum height to a whole stand, irrespective of any canopy gaps resulting from prior harvesting. A second common stand descriptor called canopy closure is used by foresters to describe stocking level (A=closed canopy, D=very open canopy, such as a recent shelterwood harvest). While the differences between my analysis of canopy height and the Conservation Plan's analysis may be methodological, it is still good to know the *true* height of the entire landbase with the 1-m^2 precision provided by LiDAR data.

Figure 5. Forest height of proposed easement area derived from growth-adjusted 2016 LiDAR data.



Probably for the same reasons, my estimate of the amount of forest greater than 50' tall also differed from the Conservation Plan. I found 7% of the area of interest greater than 50' tall. The Conservation Plan reports 13%.

Conclusion

I encourage the easement planners to:

(1) consider including a moratorium on harvesting any remaining LSOG forest, regardless of whether it is in a 100' riparian buffer.

(2) avoid the use of "mature forest" if the easement forest specifications are to remain set at 60ft^2/acre of basal area and trees at least 50' tall, or come up with a definition that is ecologically credible with the broader scientific community.

I hope these comments are helpful in balancing our many environmental interests.

Sincerely,

John Hagan, Ph.D.
President and CEO
Our Climate Common