WMNF: Losing carbon and discounting the future.

The alternative: White Mountain National Park

WMNF's own documentation shows carbon loss in the forest caused by its logging. WMNF is required by its management plan to produce sustained yield. The proposed Lake Tarleton Logging plan, in promoting climate change, promotes unsustainable yields of lumber. The Tarleton Logging plan, as one of a continuous series of ecologically unsound logging plans written and enacted by WMNF, demoralizes the affected New Hampshire and Maine towns and impairs the cultural will to fight climate change.

Timber harvesting on the WMNF was the primary disturbance influencing carbon stocks from 1990 to 2011 (Fig. 7). Harvesting accounted for nearly 100 percent of the total non-soil carbon lost from the forest due to disturbances, while losses from fire and insects were negligible.[15]

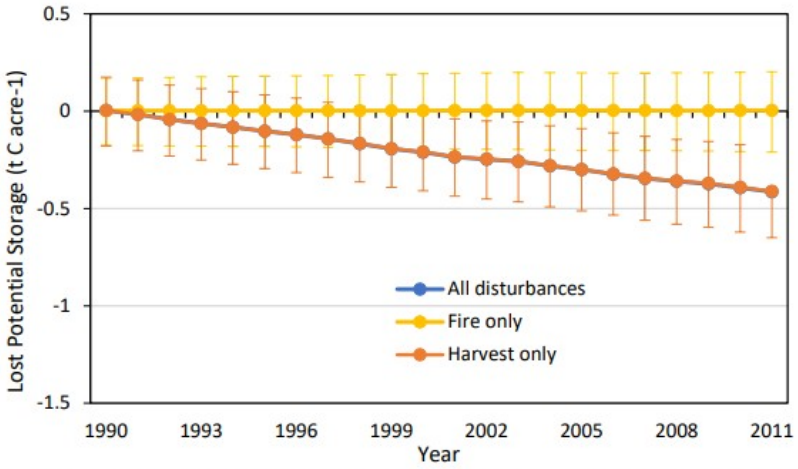


Figure 7. *Lost potential storage of carbon as a result of insect, harvest, and wind (abiotic) in WMNF, 1990–2011 (Figure 2n in Appendix A,* USDA Forest Service, in review*). The zero line represents a hypothetical undisturbed scenario.*

This graph does not show how much carbon would have been gained in WMNF if it hadn't been logged since 1990.

This graph does not mention that the forested area in WMNF increased from 738,878 acres in 1990 to 868,848 acres in 2013.

780,000 acres, halfway between these two figures, and an average of .4 tons of carbon lost per acre over twenty one years, yields a figure of 312,000 tons of carbon lost in WMNF from 1990-2011.

"According to the Intergovernmental Panel on Climate Change, a price level of $135–$5,500 in 2030 and $245–$13,000 per ton CO2 in 2050 would be needed to drive carbon emissions to stay below the 1.5°C limit.[7]

Latest models of the social cost of carbon calculate a damage of more than $3000/t CO2 as a result of economy feedbacks and falling global GDP growth rates, while policy recommendations range from about $50 to $200.[8"

https://en.wikipedia.org/wiki/Carbon_price

Using the precautionary principle and keeping feedback cycles in mind, the high-end figures result in $936,000,000. for the social costs caused by the 1990-2011 logging in WMNF, $1,710,000,000. for the cost in 2030 and $4,056,000,000. in 2050.

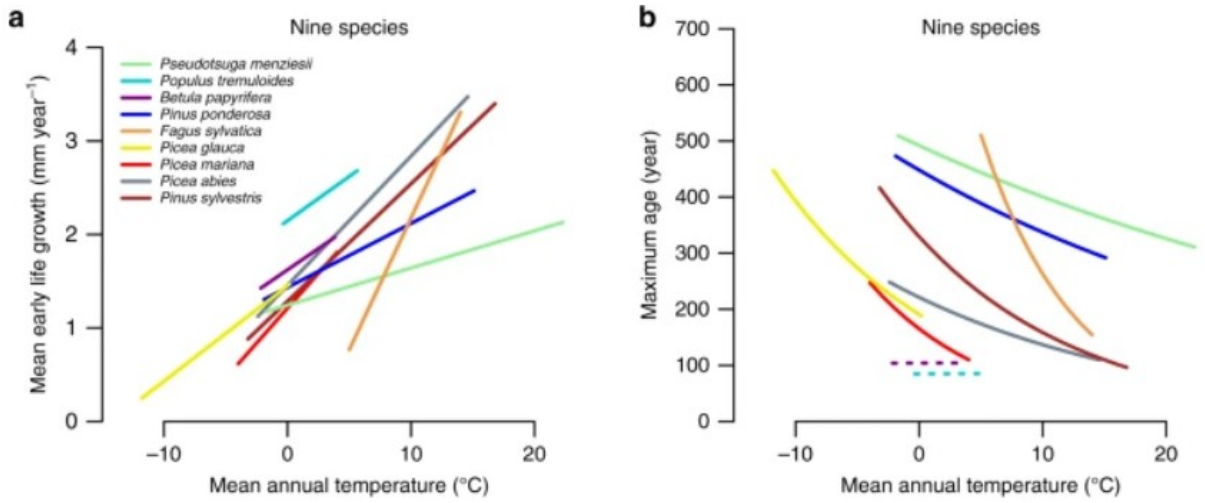
This figure does not take into account the carbon costs of logging, trucking, processing the trees into boards, trucking those boards to the lumber stores, and trucking them from the lumber store to where they were used, or the waste wood.

This figure does not take into account the probable shorter lifespan (thus carbon sequestration) of the trees that grow up in clear-cuts or "selective" cuts due to the existing root system of the stumps that will sprout, and increased sun and CO2: "On average, tree lifespan decreased exponentially with 23% reduction in lifespan for a 50% early growth increase."

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7479146/#:~:text=On%20average%2C%20tree%20lifespan%20decreased,Fig.%205a%E2%80%93e).

This figure does not take into account the negative correlation between temperature and tree lifespan, thus potential for carbon sequestration over a longer time span.

Fig. 2: Effect of temperature on early growth and tree lifespan.



https://www.nature.com/articles/s41467-020-17966-z

These costs can't be paid, they represent damage that cannot be undone, at this point. They can be avoided in the future by stopping the logging in WMNF. The proposed Lake Tarleton logging project failed to take these costs into consideration and adequately assess them.

If White Mountain National Forest, Nash Stream State Forest (40,000 acres) and the Connecticut Lakes Headwaters (171,000) were joined into a National Park, it would be 1,051,000 acres. Connecting these large forests would increase their ecological and social values. Logging would be precluded. If one prohibited motorized recreation, avoiding the noise, dust and pollution problems have plagued National

Parks like Yellowstone, a White Mountain National Park would provide high quality habitat for people and animals.

This land would be 1/6 of New Hampshire, half-way to the goal of 30% protected lands by 2030.

By using extractive, ugly and damaging logging practices, WMNF threatens its existence by driving the movement to turn White Mountain National Forest into White Mountain National Park.

WMNF acknowledges that many logging access roads it 'owns' are historic and damaged by use for logging, yet failed to integrate this knowledge into the logging plan for Lake Tarleton:

Background & Driver(s)

Timber harvest includes ground disturbance as a result of road construction and heavy equipment operation, and has potential to disturb subsurface archaeological deposits and destroy surface features such as stone building foundations. Past practices included minimal flagging of stone features, such as cellar holes, for avoidance, but did not consider disturbance to subsurface archaeological deposits, resulting in ground disturbance and compaction within archaeological sites. Such disturbance may result in destruction of artifacts, and loss of integrity to archaeological stratigraphy and cultural contexts. A 50 foot buffer, delineated by Heritage specialists, has been utilized in recent years, and monitoring is conducted to evaluate whether this buffer provides adequate archaeological site protection, or if a larger buffer may be necessary. Road maintenance and/or construction needed to access timber harvest areas also has potential to negatively impact cultural sites and features. As in many parts of the eastern United States, the modern transportation system on the Forest (highways, roads, skid trails) often overlays and overlaps with a transportation system that has been used for over 200 years. In many cases the historic (more than 50 year-old) elements of the road are considered historically significant. And in many cases, modern roads and trails occupy the same routes as the roads that once connected historic farm sites and communities. Project surveys and resource monitoring have helped us realize that maintenance of currently used roads and trails may affect their historic features, and historic sites located adjacent to them.

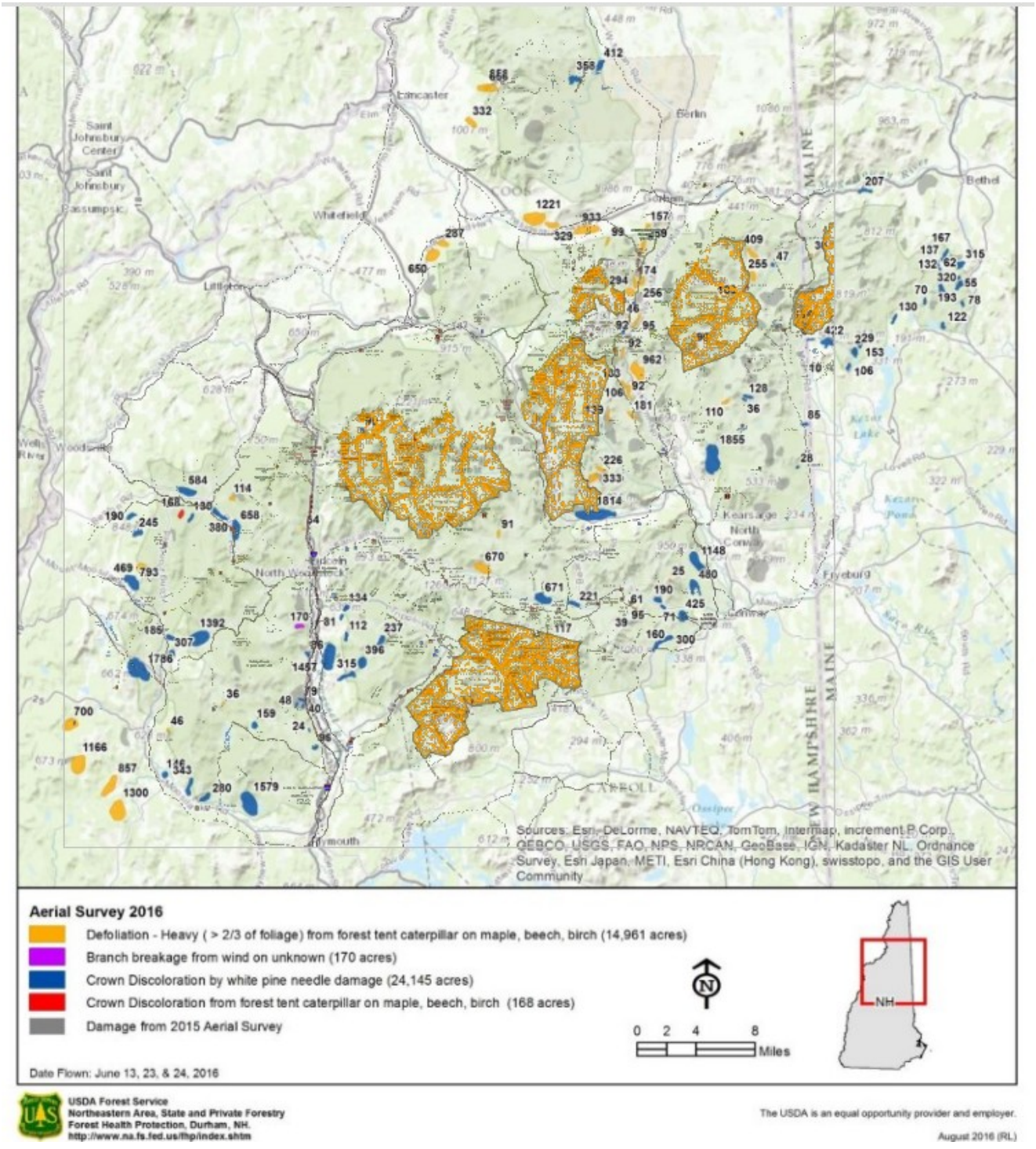
"Project surveys and resource monitoring have helped us realize that maintenance of currently used roads and trails may affect their historic features, and historic sites located adjacent to them."

(United States Department of Agriculture Forest Service Eastern Region
2018 Biennial Monitoring and Evaluation Report For Fiscal Years 2015, 2016 and 2017)

WMNF's proposed Lake Tarleton Logging Plan failed to incorporate WMNF's knowledge and promises regarding logging and its effect on cultural resources because it incompletely surveyed the proposed logging area, failed to consider viewshed effects of logging on the Old Charles ton Road and failed to consider the road, above, on, and below ground, as well as it's bordering walls and forest, as a historic resource.

The proposed Lake Tarleton Logging plan failed to consider that mature forests appear resistant to insect outbreaks and that severely limiting logging should be used as a control measure.

Yellow stippled and bordered areas are designated Wilderness Areas. (Note: there is a misalignment of imagery that places the Maine border of the transparency to the west of the real border, at the north end.)



WMNF in general, and the proposed Tarleton Lake Logging plan specifically, have failed to address logging's potential contribution to the vulnerability of forests to disease and the rare invasive species.

The proposed Lake Tarleton Logging plan fails to provide documentation supporting its rationale that logging increases wildlife habitat or diversity.

> Early in the establishment of wildlife management as a profession, theories were commonly presented as facts. It is not surprising then, that subsequently we have often been confused with contradictory evidence. One example is the aphorism that good timber management is good wildlife management. Bunnell (1976:147) protested that advocates of this doctrine espoused it "on the basis of ingenuous faith in the term 'good' with little supportive data."

https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/wildlife_forest_relastionships.pdf

The proposed Lake Tarleton Logging plan failed to adequately assess the proposed log landing areas for visual impact, damage to the historic resource of the Old Charleston Rd., and damage to environmental and historical/cultural resources:

Above: part of upper log landing, Jericho road, Easton 2022. This portion was a woods road before it was expanded hugely and it has not been restored.

Above: Panorama of the same landing. Distortion makes road entry and trail exit both visible.

Above: First Log Landing on Jericho Road, Easton, April 2022

Above: upper log landing, Jericho road resumes in the middle of the photo.

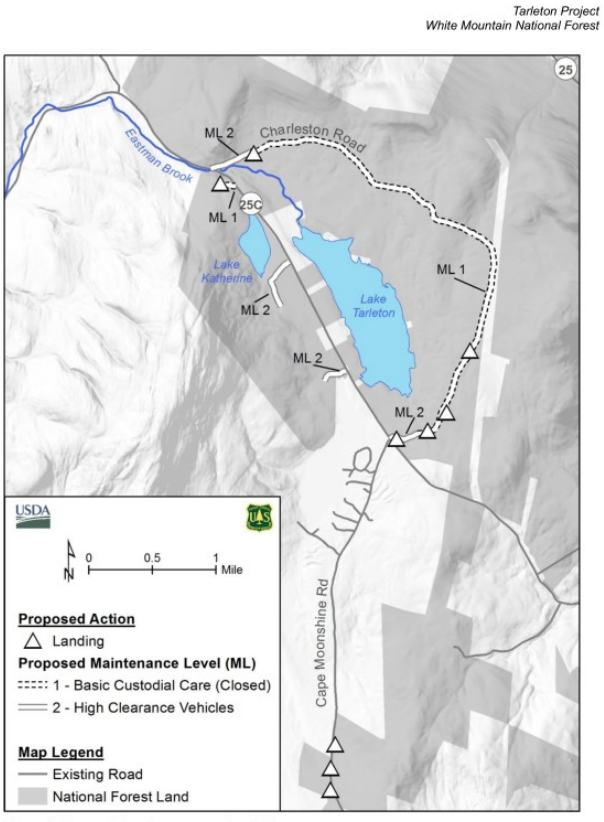
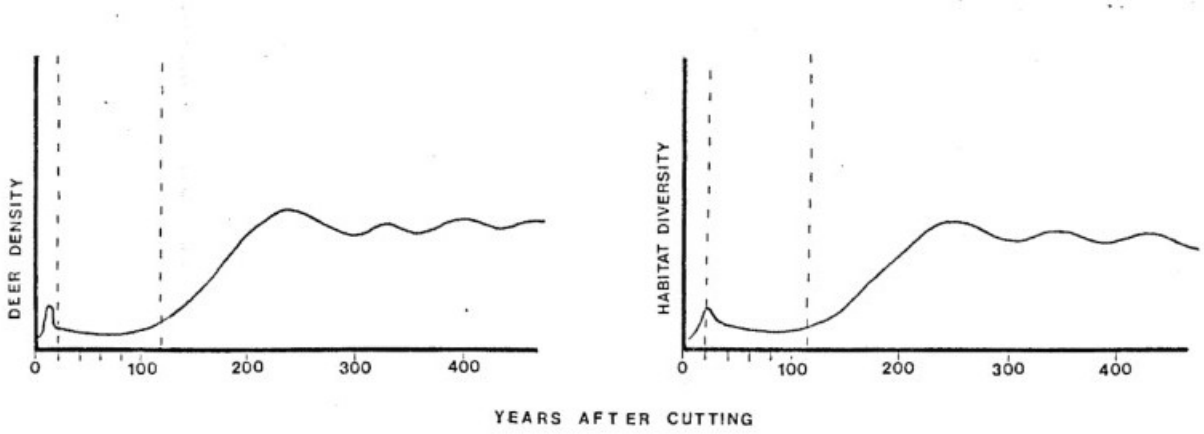


Figure 4. Proposed travel management activities

Five log landings are planned on the old Charleston Road.

Forest Management = Forest Degradation

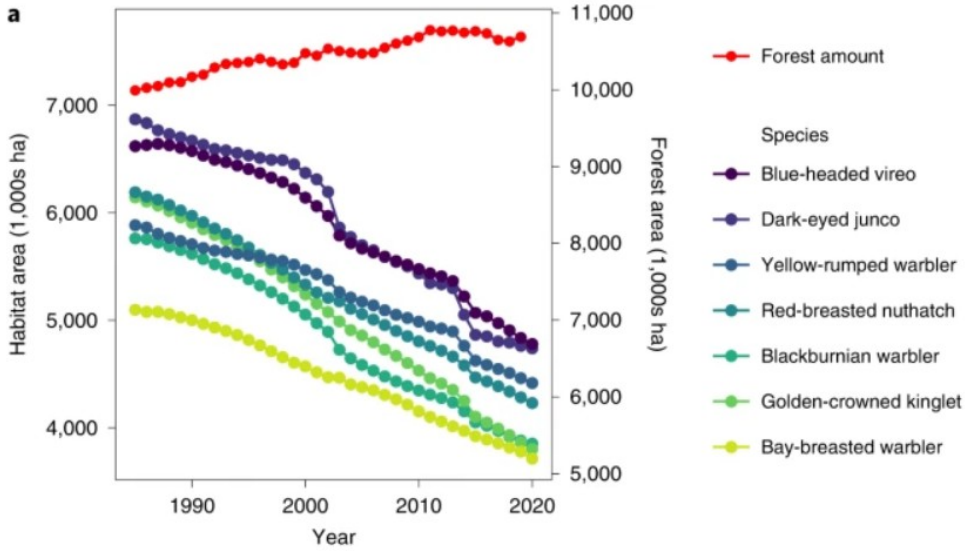


The Lake Tarleton Logging plan, by preventing old growth, is contrary to the best science and to the WMNF 2005 Plan. The Plan will decrease WMNF stated goal of habitat diversity by preventing the establishment of a natural percentage of mature and old growth forest.

https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/wildlife_forest_relastionships.pdf

"In many regions of the world, forest management has reduced old forest and simplified forest structure and composition. We hypothesized that such forest degradation has resulted in long-term habitat loss for forest-associated bird species of eastern Canada (130,017 km2) which, in turn, has caused bird-population declines. Despite little change in overall forest cover, we found substantial reductions in old forest as a result of frequent clear-cutting and a broad-scale transformation to intensified forestry. Back-cast species distribution models revealed that breeding habitat loss occurred for 66% of the 54 most common species from 1985 to 2020 and was strongly associated with reduction in old age classes. Using a long-term, independent dataset, we found that habitat amount predicted population size for 94% of species, and habitat loss was associated with population declines for old-forest

Fig. 3: Forest degradation rather than loss drives habitat declines in old forest-associated bird species.

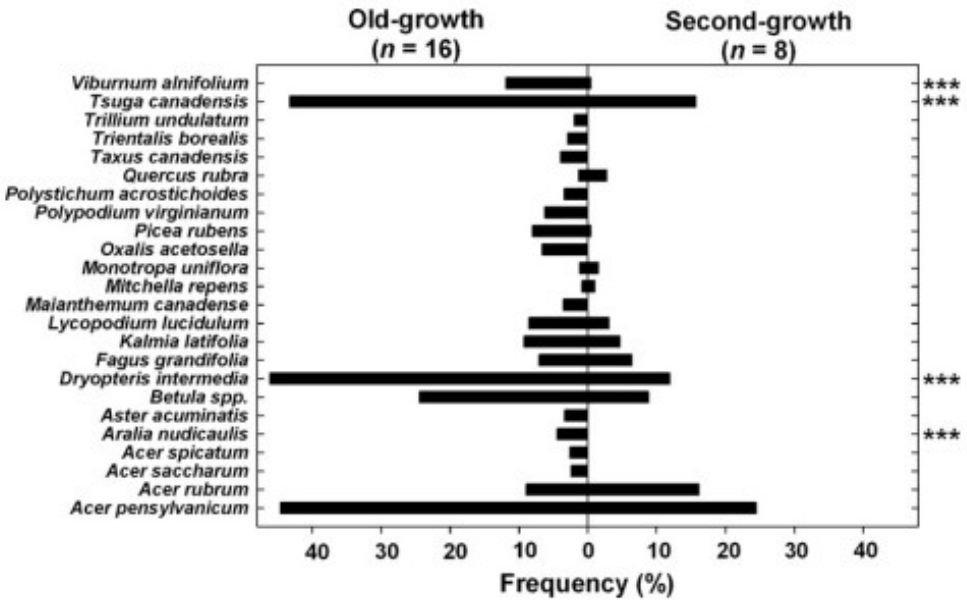


species. Forest degradation may therefore be a primary cause of biodiversity decline in managed forest landscapes."

"Several lines of evidence support forest management as the primary driver of forest degradation rather than alternative mechanisms (for example, climate-mediated forest decline, natural disturbance, permanent deforestation."

https://www.nature.com/articles/s41559-022-01737-8 (2022)

"We compared the understory communities (herbs, shrubs, and tree seedlings and saplings) of old growth and second-growth eastern hemlock forests (Tsuga canadensis) in western Massachusetts, USA. Second-growth hemlock forests originated following clear-cut logging in the late 1800sand were 136 years old at the time of sampling. Old-growth hemlock forests contained total ground cover of herbaceous and shrub species that was approximately 4 times greater than in second-growth forests (4.02 0.41%/m2 versus 1.06 0.47%/m2) and supported greater overall species richness and diversity. In addition, seedling and sapling densities were greater in old-growth stands compared to second-growth stands and the composition of these layers was positively correlated with overstory species composition (Mantel tests, $r > 0.26$, $P < 0.05$) highlighting the strong positive neighborhood effects in these systems."



	Old-growth (n = 16)	Second-growth (n = 8)
Plant cover (%/m^2)	4.02 (0.41)a	1.06 (0.47)b
Richness (S)	13.56 (1.11)a	6.88 (0.83)b
Diversity (H')	2.12 (0.08)a	1.64 (0.11)b
Evenness (E)	0.83 (0.01)a	0.88 (0.02)b

https://masswoods.org/sites/masswoods.net/files/pdf-doc-ppt/understory-hk-og-2nd-forests.pdf

Right:
https://masswoods.org/sites/masswoods.net/files/pdf-doc-ppt/understory-hk-og-2nd-forests.pdf

Species	OG	2G
Herbs		
Actaea alba	X	
Aralia nudicaulis	X	X
Arisaema triphyllum	X	
Aster acuminatus	X	X
Aster dumosus	X	
Aster divericatus	X	
Chimaphila maculate	X	X
Circaea alpina	X	X
Clintonia borealis	X	
Cypripedium acaule	X	
Epigaea repens	X	X
Galium spp.	X	X
Gaultheria procumbens	X	X
Laportea canadensis	X	
Maianthemum canadense	X	
Medeola virginiana	X	
Mitchella repens	X	X
Monotropa uniflora	X	X
Oxalis acetosella	X	
Polygonatum pubescens	X	
Solidago flexicaulis	X	
Tiarella cordifolia	X	
Trientalis borealis	X	X
Trillium erectum	X	
Trillium undulatum	X	X
Viola rotundifolia	X	
Graminoids		
Carex pensylvanica	X	X
Ferns		
Adiantum pedatum	X	
Dryopertis intermedia	X	X
Dryopteris marginalis	X	
Polypodium virginianum	X	
Thelypteris phegopteris	X	
Shrubs		
Cornus alternifolia	X	
Hamamelis virginiana	X	X
Kalmia latifolia	X	X
Rhododendron prinophyllum	X	
Rubus allegheniensis	X	
Rubus idaeus	X	
Sambucus racemosa	X	
Solidago flexicaulis	X	
Taxus canadensis	X	
Vaccinium angustifolium	X	X
Viburnum acerifolium	X	
Viburnum alnifolium	X	X
Club mosses		
Lycopodium annotinum	X	
Lycopodium lucidulum	X	X
Polystichum acrostichoides	X	X

"In the semi-natural landscape, martens selected old growth, native forest making almost exclusive use of arboreal dens in living trees and standing deadwood. Martens persisted in the human-modified landscape but with lower population density and recruitment, with a male-biased sex ratio. In the human-modified landscape martens denned in marginal habitats such as scrub, heath and property boundaries, while making use of subterranean or man-made structures for dens in response to a lack of above ground denning opportunities. We demonstrate landscape change-induced differences in behaviour and population structure in a recovering carnivor."

https://bioone.org/journals/wildlife-biology/volume-2020/issue-4/wlb.00760/All-forests-are-not-equal--population-demographics-and-denning/10.2981/wlb.00760.full

"Generally, species associated with old-growth forests have declined with the demise of that habitat, and a few species, such as the Carolina parakeet and passenger pigeon, became extinct as the region was cleared of timber and remaining wildlife was hunted for commercial market."

https://www.srs.fs.usda.gov/pubs/ja/ja_hunter001.pdf

Old Growth 2nd Growth

"Habitat loss and climate change constitute two of the greatest threats to biodiversity worldwide, and theory predicts that these factors may act synergistically to affect population trajectories. Recent evidence indicates that structurally complex old-growth forest can be cooler than other forest types during spring and summer months, thereby offering potential to buffer populations from negative effects of warming. Old growth may also have higher food and nest-site availability for certain species, which could have disproportionate fitness benefits as species approach their thermal limits."

https://andrewsforest.oregonstate.edu/publications/5036

TABLE 2. Number of territories and population densities (number territories/10 ha) of the core community of breeding birds in all plots (n = 11) of old-growth hemlock-white pine-hardwood forest on the northern Appalachian Plateau, Pennsylvania.

Association: Species[a]	Total territories	Territorial density	
		Mean	SE
Positive old-growth affinity:			
Hairy Woodpecker (*Picoides villosus*)	12.5	0.50	0.42
Acadian Flycatcher (*Empidonax virescens*)	24.5	1.27	1.57
Red-breasted Nuthatch (*Sitta canadensis*)	10	0.40	0.36
Brown Creeper (*Certhia americana*)	31	1.58	0.71
Winter Wren (*Troglodytes troglodytes*)	30.5	1.73	0.98
Golden-crowned Kinglet (*Regulus satrapa*)	4	0.10	0.23
Swainson's Thrush (*Catharus ustulatus*)	35	2.08	2.42
Hermit Thrush (*Catharus guttatus*)	36.5	1.90	1.49
Blue-headed Vireo (*Vireo solitarius*)	88	4.57	2.26
Magnolia Warbler (*Dendroica magnolia*)	185	11.10	2.70
Black-throated Green Warbler (*Dendroica virens*)	176	9.41	5.36
Blackburnian Warbler (*Dendroica fusca*)	410	23.94	8.25
Pine Warbler (*Dendroica pinus*)	5	0.17	0.25
Dark-eyed Junco (*Junco hyemalis*)	83	4.09	0.92
Purple Finch (*Carpodacus purpureus*)	17	0.72	0.52
Neutral oldgrowth affinity:			
Red-shouldered Hawk (*Buteo lineatus*)[b]	2.5	0.09	0.13
Barred Owl (*Strix varia*)[b]	4.5	0.18	0.24
Yellow-bellied Sapsucker (*Sphyrapicus varius*)	4	0.14	0.26
Pileated Woodpecker (*Dryocopus pileatus*)	5.5	0.25	0.31
Common Raven (*Corvus corax*)	1.5	0.07	0.19
Black-capped Chickadee (*Poecile atricapillus*)	24	1.14	0.62
Red-eyed Vireo (*Vireo olivaceus*)	110	5.22	3.06
Hooded Warbler (*Wilsonia citrina*)	15	0.87	1.40
Scarlet Tanager (*Piranga olivacea*)	42.5	2.23	1.08
Chipping Sparrow (*Spizella passerina*)	20	1.00	0.63
Negative old-growth affinity:			
Mourning Dove (*Zenaida macroura*)	3	0.09	0.21
Ruby-throated Hummingbird (*Archilochus colubris*)	2	0.06	0.11
Least Flycatcher (*Empidonax minimus*)	3.5	0.18	0.53
Great Crested Flycatcher (*Myiarchus crinitus*)	1.5	0.08	0.18
Blue Jay (*Cyanocitta cristata*)	10.5	0.45	0.35
American Crow (*Corvus brachyrhynchos*)	1.5	0.06	0.14
Tufted Titmouse (*Baeolophus bicolor*)	2	0.11	0.19
White-breasted Nuthatch (*Sitta carolinensis*)	7.5	0.27	0.31
Wood Thrush (*Hylocichla mustelina*)	1.5	0.09	0.25
American Robin (*Turdus migratorius*)	4.5	0.20	0.40
Cedar Waxwing (*Bombycilla cedrorum*)	2	0.10	0.23
Black-throated Blue Warbler (*Dendroica caerulescens*)	18	1.08	1.46
American Redstart (*Setophaga ruticilla*)	7.5	0.43	1.28
Ovenbird (*Seiurus aurocapillus*)	8	0.46	0.95
Common Yellowthroat (*Geothlypis trichas*)	2	0.06	0.14
Rose-breasted Grosbeak (*Pheucticus ludovicianus*)	5	0.24	0.44
Brown-headed Cowbird (*Molothrus ater*)	9	0.32	0.58

[a] Does not include species found only in one plot or for which less than one full territory was recorded (Table 1).
[b] Positively associated with oldgrowth at landscape level of entire state but not at level of physiographic province.

https://sora.unm.edu/sites/default/files/journals/wilson/v111n01/p0089-p0099.pdf

The public outreach for the Lake Tarleton Logging Project was inadequate. Even if the SOPA was sent to 500 people, and notice sent to Warren and Piermont and notice published in local papers, this project is in a National Forest and the population of the Nation is 329 million.

In its proposed Lake Tarleton Logging plan WMNF failed to consider "Whether the action (C02 production) is related to other actions with individually insignificant but cumulatively significant impacts.'

Your response to comment #11 in the Chatham Logging Project was: “Mitigating climate change is not one of the purposes of the 2005 Forest plan…” Far before 2005 the world reached a point where following (industry-influenced) rules no longer relieved an agency from responsibility for its actions in contributing to climate change. Though WMNF has changed its response to global warming in the proposed Lake Tarleton Logging document, its new rationale that the CO2 produced by the project is small as to be globally inconsequential involves the same abdication of moral responsibility. In allowing itself to being guided by propaganda disseminated by the fossil fuel companies to discredit the climate change data that threatened to lower their profits, WMNF is guilty of crimes against humanity/the ecosystem.

“The timber industry is pulling the strings now. The Forest Service has lost its way."

Kris Pastoriza, Easton, NH krispastoriza@gmail.com May 2, 2022