

April 2, 2017

**Submitted via email to: Timber.Comments@state.ma.us**

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**RE: Garnet Hill Lot Forest Management Proposal**

Dear Ms. Rowcroft:

Please accept our comments for the public record.

We are writing regarding the Garnet Hill Lot Forest Management Proposal for Peru State Forest, posted by the Department of Conservation and Recreation (DCR) on February 16, 2017.

This area of Peru State Forest has not been cut for 80 to 100 years. It is storing a huge amount of carbon and is just beginning to become mature and on the way to reaching an old-growth condition. It is in the middle of a large block of unfragmented state forest land, which provides habitat for interior plant and wildlife species. It offers public recreation in an unspoiled, natural forest landscape. Logging this tract of forest would seriously degrade these important values.

We are extremely concerned that the plan disregards carbon and climate change impacts. The plan would cut down most of the trees in the area and significantly disturb the soil. This would release huge amounts of greenhouse gas in a short period of time, including the vast majority of the carbon in the trees, vegetative understory, and soil. The plan makes no attempt to assess the amount of carbon currently in the forest and soil, how much would be lost because of logging, and how many decades — or centuries — it would take for the trees to grow back and reabsorb the lost carbon. The plan also ignores the massive amounts of carbon will be released from the fossil fuel that will be burned to cut, transport, and process the trees.

Even if some of the timber is used for long-lived wood products — and there is no assurance that this will be the case — studies have found that most of the original carbon in the forest will almost certainly be released to the atmosphere within a few weeks or months. The net impact will be to worsen climate change. For example:

“Ingerson (2009) completed one of the most comprehensive reviews on this issue, tracing the amount of the original live tree volume (and thus carbon stored) remaining after logging, primary processing, secondary processing, and construction. Compiling and calibrating estimates from a variety of sources, she concluded that these losses amount – on average – to 82% of the original live tree volume. In other words, when a site is logged and the wood converted into long-lived wood products, only 18% of the original carbon stores are preserved, and then only for a few decades at most before those longer lived wood products start to decay. The remaining 82% of the carbon stocks are released into the atmosphere in a relatively short period of time. This value is essentially 100% for short-lived wood and paper products.” (John Talberth, Dominick DellaSala, and Erik Fernandez. 2015.

Clearcutting our Carbon Accounts: How State and Private Forest Practices are Subverting Oregon’s Climate Agenda. Center for Sustainable Economy and GEOS Institute. November 2015 <http://sustainable-economy.org/wp-content/uploads/2015/11/Clearcutting-our-Carbon-Accounts-Final-11-16.pdf> and Ann L. Ingerson. 2009. Wood Products and Carbon Storage:

Can Increased Production Help Solve the Climate Crisis? The Wilderness Society, Washington, DC.  
[https://www.sierraforestlegacy.org/Resources/Conservation/FireForestEcology/ThreatsFores tHealth/Climate/CI-Ingerson-TWS2009.pdf \)](https://www.sierraforestlegacy.org/Resources/Conservation/FireForestEcology/ThreatsFores tHealth/Climate/CI-Ingerson-TWS2009.pdf)

Studies have documented that unlogged forests store more carbon per acre than forests that are logged. Therefore, there is good reason to believe that leaving the Garnet Hill Lot forest uncut would be the best way to maximize carbon storage and climate benefits. (See Jared S. Nunery and William S. Keeton. 2010. Forest Carbon Storage in the Northeastern United States: Effects of Harvesting Frequency and Intensity Including Wood Products, Forest Ecology and Management, Volume 259, Issue 8, 31 March 2010. pp. 1363 1375)

[http://www.uvm.edu/giee/pubpdfs/Nunery\\_2010\\_Forest\\_Ecology\\_and\\_Management.pdf](http://www.uvm.edu/giee/pubpdfs/Nunery_2010_Forest_Ecology_and_Management.pdf)

Moreover, research has found that the biggest trees increase their growth rates and sequester more carbon as they age. (See N. L. Stephenson, A. J. Das, R. Condit, S. E. Russo et al. 2014. Rate of Tree Carbon Accumulation Increases Continuously with Tree Size. *Nature*: doi:10.1038/nature12914 (2014).

<http://www.nature.com/nature/journal/vaop/ncurrent/abs/nature12914.html> ) By intensively logging the many mature trees in project area, the Garnet Hill Lot logging plan would very likely result in a significant loss of carbon storage and worsen climate change.

On the other hand, leaving the red pine and Norway spruce plantations that are threatened with mortality from insect infestations and disease uncut, is not likely to cause a major spike in releases of carbon dioxide. In fact, studies indicate that these trees would continue to store most of their carbon for decades, releasing it slowly and gradually. This would help to mitigate climate change. (See David J. P. Moore, Nicole A. Trahan, Phil Wilkes, et al. 2013. Persistent Reduced Ecosystem Respiration After Insect Disturbance in High Elevation Forests. *Ecology Letters*, (2013) 16: 731–737 doi: 10.1111/ele.12097

<http://onlinelibrary.wiley.com/doi/10.1111/ele.12097/abstract> )

The importance of protecting intact forests to absorb and store carbon cannot be overstated. This is highlighted in a report recently published by Dogwood Alliance.

"Standing forests are the only proven system that can remove and store vast amounts of carbon dioxide from the atmosphere at the scale necessary to keep global temperature rise below 1.5 degrees Celsius this century. It is therefore essential to not only prevent further emissions from fossil fuels, deforestation, forest degradation, and bioenergy, but also to expand our forests' capacity to remove carbon from the atmosphere and store it long-term.

"If we halted deforestation, protected existing forests, and expanded and restored degraded forests, we could reduce annual emissions by 75 percent in the next half a century. If fossil fuels were rapidly phased out during this same time period, we could reduce the amount of carbon in the atmosphere, meet the goals of the Paris Agreement and avoid catastrophic climate change. But, we cannot solve the climate crisis without a major scale-up in forest protection and restoration across the planet. We must not only protect remnant primary, intact forests, but also conserve and restore less pristine landscapes. Yet, to date, forest protection commitments and funding are too narrowly focused on tropical forests." (Bill Moomaw and Danna Smith. 2017. The Great American Stand: US Forests and the Climate Emergency. Dogwood Alliance. <https://www.dogwoodalliance.org/wp-content/uploads/2017/03/The-Great-American-Stand-Report.pdf> )

By increasing greenhouse gas emissions from the forest and undermining the capacity of the forest to absorb and store carbon, this plan conflicts with the goal of the Global Warming

Solution Act (GWSA) to dramatically reduce greenhouse gas emissions. DCR needs to provide an analysis as to why the benefits of this logging project would justify disregarding the critical mandate of the GWSA.

The proposed logging project would result in significant fragmentation of interior forest ecosystems. The DCR plan claims that this is a benefit, providing “the conditions for early seral or regenerating forest that will support diverse species.” In fact, there is no need to expand early successional forest acreage, which is already common in Massachusetts. On the contrary, there is a significant need for more mature and old-growth forest, especially in large, unfragmented blocks.

The Massachusetts Division of Fisheries and Wildlife’s BioMap2 report provides a strong rationale for protecting, not logging, the century-old, unfragmented forest in the Garnet Hill Lot project area.

“Forest interior habitat is widely recognized as critically important for species sensitive to forest fragmentation and is becoming increasingly scarce in highly populated regions of the country like Massachusetts. Forest interior habitats are the areas least impacted by roads, residential and commercial development, and other fragmenting features. Many bird species that breed in Massachusetts are sensitive to forest fragmentation, including Ovenbirds, Scarlet Tanagers, and many woodland warblers. Negative results of fragmentation include edge effects such as nest predation by species associated with development such as skunks, raccoons, and house cats; and nest parasitism by species such as the Brown-headed Cowbird that lay their eggs in the nests of other bird species and reduce their reproductive success. Forest interior habitats also support a wide range of native plants, animals, and ecological processes sensitive to other edge effects such as noise and light pollution from roads and development, invasive species establishment, and alterations to wind, heat, and other climate variables.” (Natural Heritage Endangered Species Program. 2010. Forest Core BioMap2 Components. Core Habitat: Forest Core Critical Natural Landscape: NA. Massachusetts Division of Fisheries & Wildlife.

<http://www.mass.gov/eea/docs/dfg/nhesp/land-protection-and-management/forest-core.pdf> )

The Forest Futures Visioning Process, undertaken in 2009-2010 by the DCR as directed by the Secretary of Energy and Environmental Affairs (EEA), determined that it is critical to designate large reserves on state lands that are off-limits to logging and other industrial development. The resulting landscape designations for DCR-managed state lands included the establishment of a number of such reserves. As DCR describes them,

“The primary purpose of setting aside large areas of forest as Reserves is to allow forests to develop relatively unimpeded by human disturbance and to create late successional habitat.

....

“Reserves are meant to contain natural features across a landscape, ideally located across the state representing different ecological settings. Reserves are also intended to be several thousand acres in size to provide adequate protection of resources, with the potential to be increased over time (either via state or local land conservation efforts or by co-management of non-state protected forest) to reach sizes of 10,000 to 15,000 acres. [The Nature Conservancy] recommends large Reserves in the Eastern United States be a minimum of 15,000 acres; EEA recommends a minimum of 5,000 acres....” (Massachusetts Department of Conservation and Recreation. 2012. Landscape Designations for DCR Parks & Forests: Selection Criteria and Management Guidelines. (pp. 14, 16)

<http://www.mass.gov/eea/docs/dcr/l/management-guidelines.pdf> )

A small portion of Peru State Forest and most of the adjacent Middlefield State Forest are within the Middlefield/Peru Forest Reserve. According to DCR:

"The Forest Reserve management goal is to increase the area of late seral forest and to protect and conserve species that depend on this habitat, while allowing the effects of natural disturbances to create variation in successional trends in some areas. Only passive management is used in the Forest Reserves, mainly focusing on restoring native habitat by removing invasive species." (Avril de la Cretaz, Matthew Kelty, and Lena Fletcher. 2009. Middlefield/Peru Forest Reserve. Massachusetts Forest Reserve Long Term Ecological Monitoring Program. Department of Natural Resources Conservation, University of Massachusetts Amherst. Prepared for the Massachusetts Executive Office of Energy and Environmental Affairs.

<http://www.mass.gov/eea/docs/dcr/stewardship/forestry/pdf/middlefield-perufr.pdf> )

Yet the Middlefield/Peru reserve only covers 3,165 acres — less than one-half of the total of 6,532 acres that comprise the two state forests. Of this, only 595 acres are in Peru State Forest, scattered in seven isolated tracts, which greatly lessens their effectiveness and integrity. As a result, the reserve is not fully representative of the land types, geology, and ecosystems of the state forests. For example, the reserve protects significant lands in the Berkshire Massif, but virtually no lands in the Hoosac Formation or Rowe Schist bedrock.

This reserve configuration is not consistent with DCR's stated goal of a minimum reserve size of 5,000 to 15,000 acres. Middlefield and Peru State Forests constitute one of the largest tracts of public land in Massachusetts. If these two forests were entirely protected as a reserve (which could also include adjacent state Wildlife Management Area lands), it would fall within the DCR's range for minimum reserve size. This would be far more effective in promoting the stated goal of increasing late seral forest and the habitats and wildlife that depend on it.

The Garnet Hill Lot logging project would fragment and degrade the native biodiversity of the forest, thus undermining such an expansion. This is an important reason for seriously re-evaluating the project. Instead, DCR should explore the potential for expanding the Middlefield/Peru Forest Reserve to encompass this entire block of land.

One of the priorities in the plan is to cut trees before they lose their commercial value. But to say that these trees must be cut due to insect and disease threats is not a compelling reason to take this approach. The forest insect and disease threats that are described in the plan are, in our opinion, greatly overestimated. The insects and disease will kill some trees, but that is something that happens in all natural forests. Logging will do little to mitigate or stop them. Indeed, there is a strong likelihood that insect and disease problems would be exacerbated by spreading them to other areas being logged, and then throughout the whole forest.

DCR's approach to "treating" red pine scale is to cut the trees down. In our view, DCR should take into account the biological analysis of this problem, done by Acadia National Park, where logging is prohibited. According to the National Park Service:

"An invasive exotic insect, red pine scale, has been confirmed...entomologists on dying red pines [in Acadia National Park].

....

"Park managers currently have no plans to cut and remove dead or dying red pines on large areas. Although salvage harvests have occurred in other states where red pine scale has killed trees, harvests do not appear to have prevented the spread of the insect. In fact, moving trimmed or harvested materials in spring through fall can actually spread the insect.

"Park biologists note that trees in the understory will likely respond to increased light conditions with quick and vigorous growth. As dead red pines trees begin to be recycled, they may provide important habitat to bats, woodpeckers, and other cavity dwellers, and will return nutrients to the soil for the next forest that will replace the dying overstory." (Acadia National Park. 2014. Invasive Insect Contributing to Red Pine Die-off on Mount Desert Island. National Park Service <https://www.nps.gov/acad/learn/news/invasive-insect-contributing-to-red-pine-die-off-on-mount-desert-island.htm> )

We believe that it makes far more sense for DCR to leave red pines in the project area standing, rather than cutting them down in a futile effort to "control" red pine scale or "salvage" the commercial value of the trees. The result of cutting them down would be a degradation of ecosystem health, as well as a release of carbon that would contribute to climate change.

Regarding the northern hardwoods in the project area, the proposed openings are larger than are currently allowed on state lands. Moreover, the logging plan would convert up to 50% of the 205 acres of forest and up to 75% of the other 102 acres to "openings." This means that up to 87.5% of the hardwood tree volume would be removed. We strongly oppose this devastation of a native, century-old forest ecosystem.

If the goal were to maximize timber value and output above all other values, then the plan to try to control beech bark disease by logging and chemical suppression would perhaps make some sense. However, this approach undermines the goal of sustaining a healthy, resilient, native forest. Characterizing the beech trees that would grow back as "undesirable" is a commercial, not an ecological classification. Beech is a native species that provides critical ecological benefits. Chemically controlling the growth of these trees on our public lands is unacceptable, from both an ecological and public health standpoint.

The forests of Pictured Rocks National Lakeshore have sustained major damage from beech bark disease. However, cutting down the beech trees in these forests is not an option, because they are protected from logging by law. The National Park Service concludes that cutting would not be appropriate, in any event. This is because in a diverse, unlogged forest, some trees will be naturally resistant, and they can serve as the basis for eventually restoring the beech tree population. (See Pictured Rocks National Lakeshore. 2014. Beech Bark Disease: A Species in Trouble. National Park Service. <https://www.nps.gov/piro/learn/nature/upload/Beech-Bark-Disease-3.pdf> ) We request that DCR take this same approach, and refrain from using cutting and chemical herbicides to suppress beech trees in an attempt to mitigate this disease.

We value our forested public lands as trees that are growing, not trees that are waiting to be logged. In contrast, DCR is proposing a 50-year cutting rotation for most of the Garnet Hill Lot area. We strongly oppose this practice, which is typical of aggressively logged industrial timberlands, and is completely unsuitable to an ecologically diverse public forest. Moreover, the DCR plan did not provide any analysis of the alternative of simply leaving the forest alone, instead of intensively manipulating it to solve supposed problems. Research at the Harvard Forest indicates that no action may well be the best alternative for this area.

"Although intuitive support exists for the development of 'protection forests' through silvicultural approaches to increase the resistance and resilience of forests to pests, pathogens, and natural disturbances, empirical data to support the approach are lacking. Not only is there sparse evidence that such approaches achieve their goals of increasing resistance and resilience, little evidence suggests that natural disturbances yield negative functional consequences. Therefore, current management regimes aiming to increase long-term forest health and water quality are ongoing 'experiments' lacking controls. In many

situations good evidence from true experiments and ‘natural experiments’ suggests that the best management approach is to do nothing.” (David R. Foster and David A. Orwig. 2006. Preemptive and Salvage Harvesting of New England Forests: When Doing Nothing Is a Viable Alternative. *Conservation Biology*. Volume 20, No. 4, (2006): 959-970. [http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/publications/pdfs/Foster\\_ConservationBio\\_2006.pdf](http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/publications/pdfs/Foster_ConservationBio_2006.pdf) )

We advocate allowing this forest to live in its natural cycle and eventually reach an ecologically sustainable, old-growth condition. The forest should be protected for the long-term benefit of plants, wildlife, habitats, and the people, not exploited for short-term resource extraction. The designation of the entire Middlefield and Peru State Forests as a reserve would promote this goal.

Regarding aesthetics, intensive logging in the Garnet Hill Lot has been deemed as acceptable because DCR will leave a “buffer” of uncut trees along the roads. This reminds us of clearcuts in northern Maine or the western United States and Canada, where the forest looks intact from the road, but where aerial photos show that what is behind the “beauty strip” is shocking and disturbing. This is especially objectionable when it occurs on land owned by the public. Hiding a logged area is a deception, not a responsible management practice.

Regarding the integrity of recreation and cultural resources, the plan suggests that this is not a concern, because people will still be able to access the area. Yet, there are cultural and historical features of this forest that will be negatively impacted by the level of disturbance planned in the proposal. The proposed repair of minor erosion of roads is touted as a benefit of the logging project, but low-impact uses such as hiking, horseback riding, bird watching, and picnicking do not depend on developed roads. The main reason to maintain these roads is to facilitate logging access. DCR should consider the potential benefits of converting some or all of the road mileage in this area to non-motorized trails.

Regarding streams and wetlands, we know that these areas have not been carefully surveyed. No logging should take place until they have been. The only reliable method for identifying wetlands is by careful on-the-ground observation by a qualified biologist in appropriate seasons. However, the project area has been buried in snow and frozen for months, so it is not possible for the public to ground-truth DCR’s claim that there are no vernal pools in the area.

Regarding rare and endangered species, the claim that they will not be affected is unsubstantiated. The project area has not been sufficiently surveyed for these species since at least 2008, when the 13<sup>th</sup> Edition of the Massachusetts Natural Heritage Atlas was issued (see <http://www.mass.gov/eea/agencies/dgf/dfw/natural-heritage/regulatory-review/regulatory-maps-priority-and-estimated-habitats/natural-heritage-atlas-book.html> ). Before any logging activities proceed, DCR needs to do a full, up-to-date survey and analysis of the area, with the participation of conservation biologists trained in rare and endangered species protection.

The Garnet Hill Lot plan does not include any discussion of how the public’s money is being spent. DCR claims that there is a need to log this century-old forest and to “improve” little-used roads. However, the plan provides no estimate of the cost for staff, vehicles, fuel, and other administrative overhead to implement the project. This cost will certainly be significant. Moreover, the logging will result in considerable collateral environmental damage that will need to be mitigated — if possible — at additional cost. The plan seeks to gain some revenue by cutting trees while they have still have some commercial value. Yet, these revenues are unlikely to even come close to offsetting the cost of the logging operation. As a result, this appears to be a financially irresponsible plan.

Although DCR has failed to provide any financial information in the Garnet Hill Lot logging plan, its Central Berkshire District plan (which includes Peru State Forest), does provide some district-wide information. This information indicates that the district's logging program is likely to result in annual losses of significant amounts of taxpayer funds. (See Department of Conservation and Recreation. 2007. Central Berkshire District Draft Forest Resource Management Plan (pp. 8, 70, 71) <http://www.mass.gov/eea/docs/dcr/stewardship/forestry/manage/cbk-resourcemanagement.pdf> )

Without any kind of cost-benefit analysis, the public has no way to judge whether or not the claimed benefits of the Garnet Hill Lot project justify the large taxpayer subsidies that will probably be needed to implement it. DCR needs to provide a full economic analysis of the costs and benefits of this project before taking any action beyond protecting public safety.

We urge DCR to withdraw this plan and complete a new analysis that considers the issues and concerns discussed above. If, after such an analysis, there is still a compelling ecological, social, and economic justification for the project, DCR should issue a new plan that takes all of these issues into account and is subject to full public review and participation. Until then, DCR should not proceed with project implementation.

Thank you for considering our comments.

Sincerely,

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