

Forests, Forestry, Cities and Mitigating Climate Change: A Systems Approach

By Bob Perschel, Executive Director of the New England Forestry Foundation
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How can the forests of New England help us in a time of climate emergency? Which forests do we leave alone to grow as reserves or wilderness areas? Which ones do we manage and harvest for renewable products that could replace those made mostly from fossil fuels, like plastic, steel and concrete? My friends send me essays from Thoreau and Whitman about the beauty and non-utilitarian value of trees to human awareness and hope. I get it, I always have. But I also understand that within the next decades of the climate emergency there will be 2.3 billion more urban dwellers on this planet and they will all require buildings to live and work in. The Boston area alone has an urgent need for 185,000 new housing units. If we construct these buildings out of steel and concrete and furnish them with plastic objects, we will surely cook the planet. In fact, the amount of carbon required to build this infrastructure could be as high as 60 percent of the entire remaining budget we have to work with if we are to keep temperature rise below 2 degrees centigrade. Just as we have heard we cannot hope to solve the climate crisis if we continue to burn coal, we also cannot solve the climate crisis if we continue to build with steel and concrete.

In this climate emergency, we need to find a way to create these structures in a climate-friendly manner, and wood is the only widely available and renewable material we have. Tell me if you have a better, realistic alternative because I don't like to cut trees. I've read we can theoretically make buildings out of bacteria or fungus. While this may be the best alternative for Mars colonization, over the next several decades on Earth I don't see any viable climate-friendly, large-scale building material other than renewable forest products.

What this means is we must find a way to protect, nurture and use our forests wisely, since there are no other better alternatives. We need to balance the ecological realities of healthy forests with the societal need for renewable products in a time of climate change—which trees to let grow and never harvest, which trees to harvest later, which trees to harvest now, how to regenerate forests naturally through good management or planting new trees, and which products to make and use from the trees we do harvest.

I would argue with anyone that thinks choices about how we treat our forests are easily understood and “no-brainers.” Quite the contrary, this is a very complex question with no simple conclusions. In fact, the question of what we do with our forests over the next 10-30 years of the climate emergency will require a tremendous amount of gray matter and a direct role for our emotional attachments to forests—thank you Thoreau and Whitman and others.

For starters, we cannot afford to silo our thinking on this issue to just the forest. We need to expand the frame of our thinking to include the unavoidable demands of the coming 9.3 billion people living in a rapidly developing world economy. Letting a tree grow forever will improve the ecology of the site and

store more carbon on that site. But that strategy won't produce any useful products. If the consequences of letting the tree grow is that we make our buildings out of concrete and steel and ruin the planet's atmosphere, what have we gained? Does that solve our climate emergency or does it consign us to failure to hit our climate goals? These are difficult and complex questions, particularly if you are a lover and defender of wild places and wilderness like I am. It requires us to broaden our perspective to a systems approach that covers both the needs of the forest and the needs of a society over a timeline of decades of climate emergency.

Constructing our buildings out of engineered wood products, particularly tall buildings in urban areas, is an approach that could be one of the many necessary solutions to mitigating climate change. A recently released study by Yale School of Forestry and Potsdam Institute for Climate Impact Research found that building with wood could sequester 700 million tons of carbon a year and offset the impacts of providing structures for a world population of 9.3 billion. Another Yale study of a few years ago indicated that a full 31 percent of the planet's carbon emissions could be offset by building with wood. The caveat is that to achieve a net climate impact, the wood must come from sustainably managed forests.

I would add to that caveat that the definition of sustainable forestry we are using must be redefined to assure that in-forest carbon is maintained or enhanced with the crucial 10-30 period in front of us. This year, the New England Forestry Foundation will release a paper that addresses this re-definition, which we have already embodied in our [Exemplary Forestry standards](#). Our analysis shows that if we couple the technological revolution in building in urban areas with Exemplary Forestry practices in our New England forests, we could deliver a major climate mitigation wedge right here from New England forests and cities. This will require us to continue to harvest trees, but in a management scheme more closely aligned with a near-term climate emergency. We know how to do that; that is Exemplary Forestry.

Can we find solutions that address both the needs of the forest and the needs of society while we address the climate crisis? Yes, we can. But we'll need a team approach that includes lovers of wild places, forest managers, forest activists, climate activists, policy makers, the wood products industry, family forest owners and industrial forest owners. Why do we need all these interests on the team? Because we need a unified front that includes everyone who cares about forests in order to make progress against the powerful interests arrayed against us. Most people don't care that much about forests. Most of the money, power and influence resides with people that don't really care that much about forests. Wilderness activists are not power brokers. Foresters are not power brokers. Forest landowners are not power brokers. Climate activists are not power brokers. We are the ones who care and we are the ones that must present a unified, clear systems approach or none of us will achieve our goals. Or will the historical record show we weren't able to come to consensus on forests, and so no one listened and we missed the opportunity to use our forests to battle climate change in the critical years where it mattered the most?

This is not the time to for partisan warfare that pits wilderness activists against the interests of private forest landowners. The future of our planet is at stake and we need to be unified now, not next year or ten years from now. What is disheartening is to hear some forest activists claim that the best and only way to solve the climate crisis is to just leave forests alone. They are failing to take a systems approach to the problem. A systems approach requires us to protect wild places AND provide for society's needs. That means we need to manage and harvest some forests and do it very well. Foresters need to support the protection of wilderness areas. And forest activists need to acknowledge that some forests need to

be managed and to roll up their sleeves and help us figure out how to do it in the best ways for climate change. We see too many calls for action that don't acknowledge we have to manage and harvest in some forests. There is no thought of how we are to construct new buildings because this analysis stops at the forest boundary. It is as if there weren't any people to feed, clothe and house. This no-management approach to forests is very simple, very convenient and very impractical. Stopping all harvesting is not a climate solution; it is a recipe for climate disaster, as the world population would shift to replace organic, sustainable and renewable wood products with more polluting ones. I've known some forest activists for 30 years and have never once heard them support forestry, acknowledge its importance or, more importantly, get involved in how to improve the practices on the ground. For the sake of our planet's future it is now time to walk over that bridge and help the forest landowners of New England adopt and implement Exemplary Forestry practices.

New England Forestry Foundation's initial analysis indicates the privately owned and currently harvested forests of Maine alone could sequester the carbon equivalent of every automobile in New England for years, if they were managed according to Exemplary Forestry practices. Next, we need to analyze and estimate how much carbon savings we could achieve if we expanded Exemplary Forestry practices across all of New England and used some of that harvested wood to build with engineered wood instead of concrete and steel. It is going to be considerable. We are working on it.

We recognize that our vision of using New England's managed forestland to combat climate change is only part of the solution: we also need to protect our existing forestlands from development and to set aside more of our forests in a wild, never-to-be-harvested state. The upshot is that we need a four-part systems approach to using forests to combat climate change:

1. Keep forests from being destroyed by development to other use;
2. Set aside more forest in wildland reserves;
3. Manage some of our forest wisely to sequester carbon and produce the renewable wood that replaces plastic, concrete and steel;
4. Change our urban construction policies to build more with wood.

This four-part approach is embodied in the [Wildlands and Woodlands vision](#) for New England, and it is currently the most useful umbrella to bring different points of view together for a realistic solution.

Protecting forests in New England from development and setting up new reserves will both help battle climate change. However, each of these approaches individually and collectively do not have the climate change mitigation potential that managing our forests better and producing and using wood products has to offset carbon emissions. Conversely, just practicing better forestry on the working forest land base can never achieve the ecological health, scientific lessons, and spiritual blessings that wildlands can deliver. Although managing forests and using wood in tall buildings is the potential big winner in New England for climate change, it still requires systems thinking to integrate all the important components from forests to cities. New England Forestry Foundation is looking forward to partnerships across interest groups and sectors to design the best path forward, and we encourage you to join with us in our [Forest-to-Cities Climate Challenge](#), the entry point for our programs that work to link mass timber buildings in New England with the local forests that could sustainably generate the wood for them.