Using Our Forests to Combat Climate Change:
A Systems Approach

CT GC3 Working & Natural Lands Working Group

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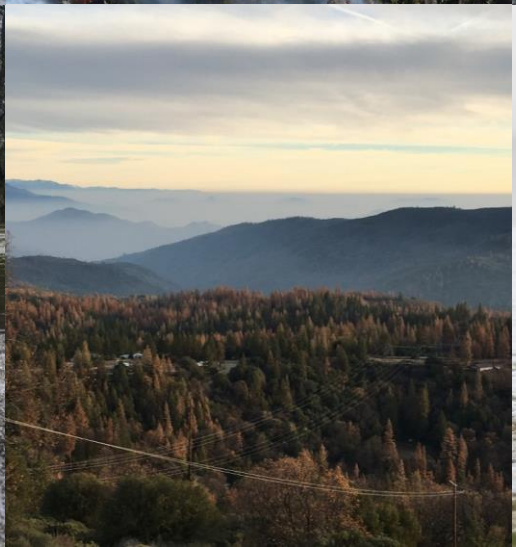
NEFF's Mission

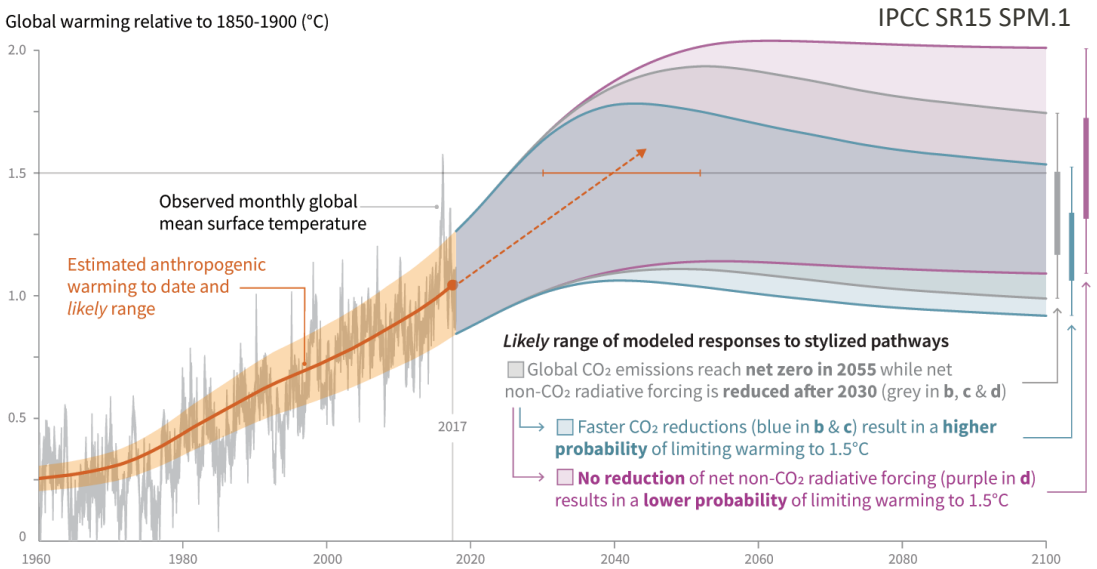
Through the application of our core expertise in conserving forestland and advancing Exemplary Forestry, New England Forestry Foundation (NEFF) helps the people of New England to sustain their way of life, protect forest wildlife habitat and ecosystem services, and mitigate and adapt to climate change.








An Urgent Challenge



1.5°C of warming could occur between **2030 and 2052**

1.5°C requires **net zero by 2040**

2°C requires **net zero by 2055**

A Systems Approach

End Forest Conversion to maintain CO_2 already stored

+

Exemplary Forestry to remove and store CO_2

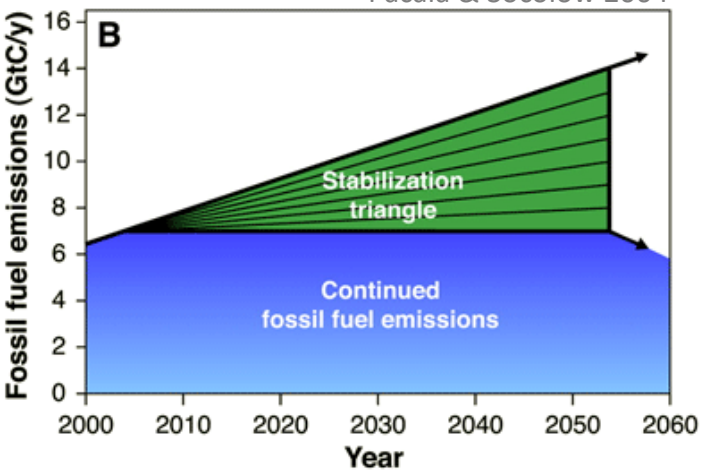
+

Long-lived wood products to reduce emissions and store more CO_2

=

A New Climate Wedge

Pacala & Socolow 2004




End Forest Conversion
to maintain CO_2 already stored
Exemplary Forestry
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Long-lived wood products
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A New Climate Wedge

End Forest Conversion to maintain CO_2 already stored + Exemplary Forestry to remove and store CO_2 + Long-lived wood products to reduce emissions and store more CO_2 = A New Climate Wedge

Part 1: End Forest Conversion

Whether for agriculture in the Amazon or for homes near Andover deforestation releases carbon already stored and eliminates future potential to store more

Video still from NY Times: https://www.nytimes.com/video/world/americas/100000006721982/amazon-rainforest-fires-burning.html

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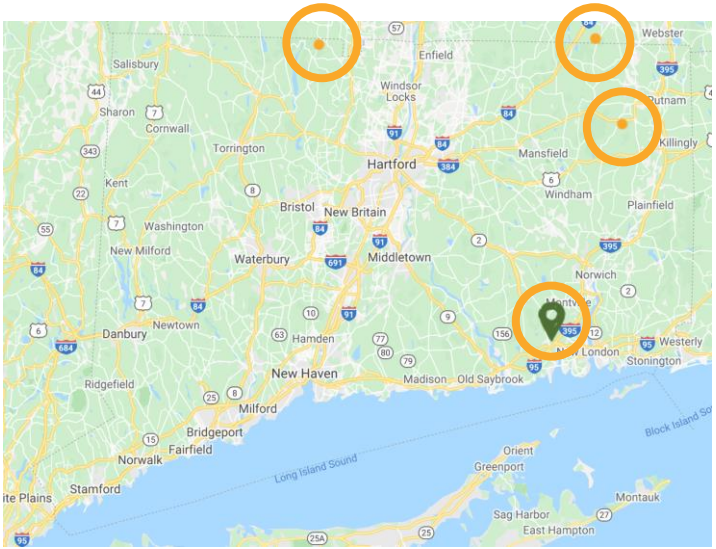
Part 1: End Forest Conversion

- ✓ NEFF has conserved over 1.1 million acres of forestland across N.E. since 1944
- ✓ Four community forests in CT

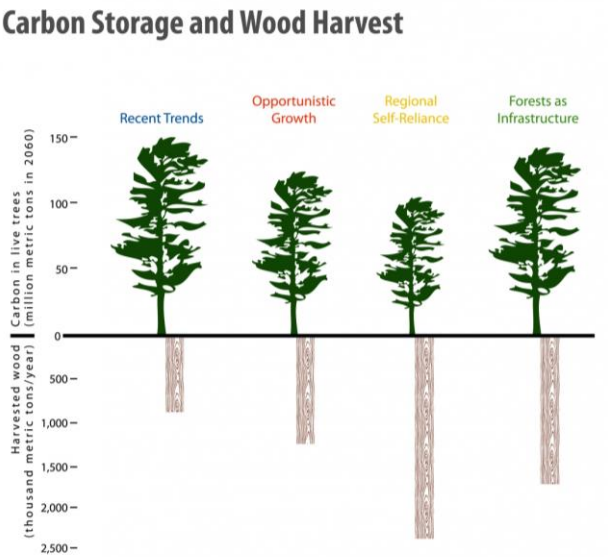


End Forest Conversion to maintain CO_2 already stored + **Exemplary Forestry** to remove and store CO_2 + Long-lived wood products to reduce emissions and store more CO_2 = A New Climate Wedge

Part 2: Manage Forests Better

Address climate change through improved forest management on existing forest lands

- ✓ Maintain or increase stocking
- ✓ Increase productivity



Changes to the Land, Harvard Forest

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Exemplary Forestry

- ✓ Three co-equal goals:

Enhance Wildlife Habitat for full suite of species present	**↑ Wood Quality & Quantity** produced & retained in stands over time	**Enhance Role of Forests in Mitigating Climate Change**

- ✓ Operating at landscape scale
- ✓ Specific, measurable metrics
- ✓ Forest mgmt that is positive for full suite of forest values

Up Next…

Exemplary Forestry Standards for the North Central Hardwoods Region

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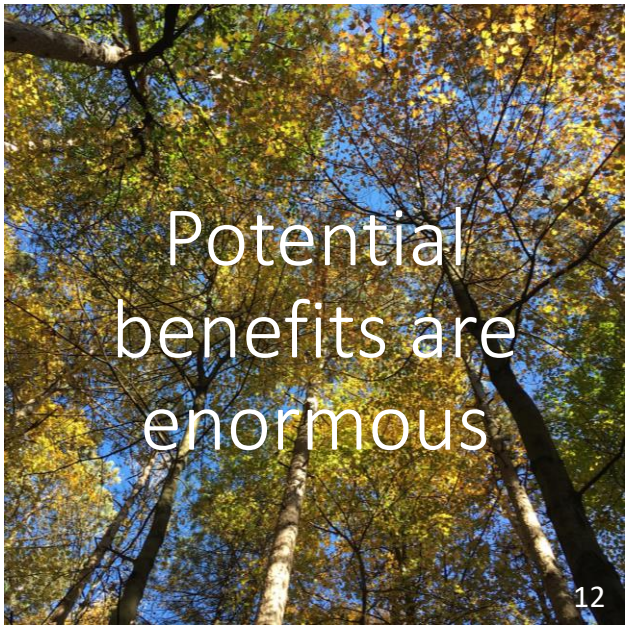
Part 2: Manage Forests Better

Achieving exemplary forestry outcomes in New England would store 1.9 Gt of CO_2 in new living wood.

If achieved over 20 years this would be equivalent to removing all vehicles in New England from the roads for the same time period or longer.

Production of sawlogs could increase.



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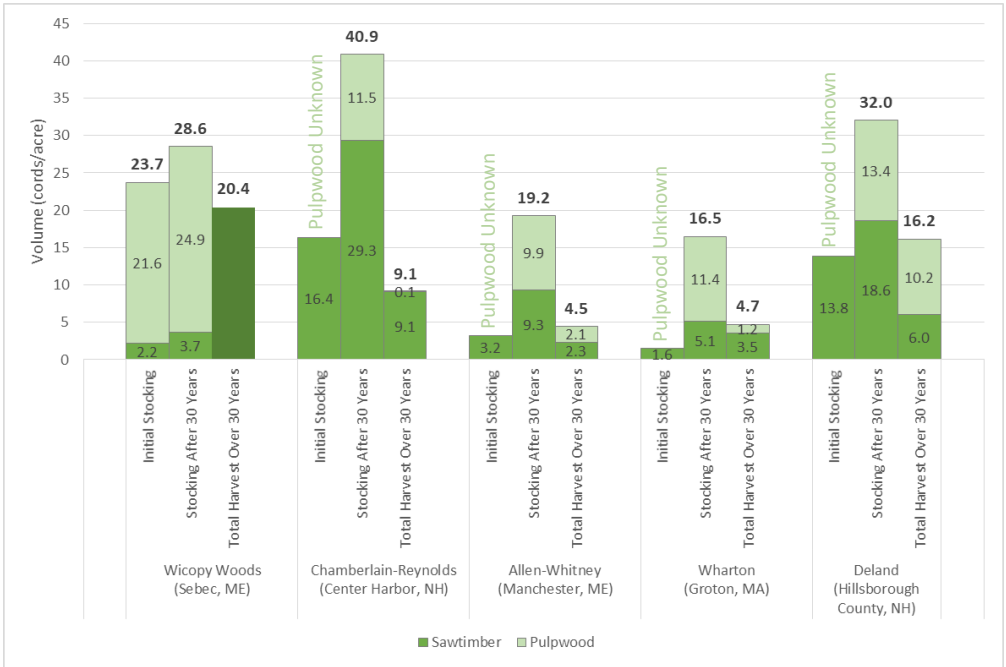
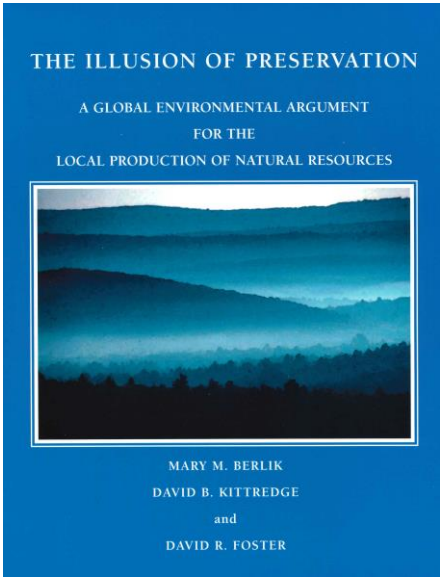
Part 2: Manage Forests Better



It is possible to **increase carbon stocking** AND **maintain harvest**

End Forest Conversion to maintain CO_2 already stored + Exemplary Forestry to remove and store CO_2 + **Long-lived wood products** to reduce emissions and store more CO_2 = A New Climate Wedge

- ✓ Substitute for more carbon-intensive materials (plastic, steel, concrete)
- ✓ Long-term carbon storage in the products themselves



Growing what we need where we live

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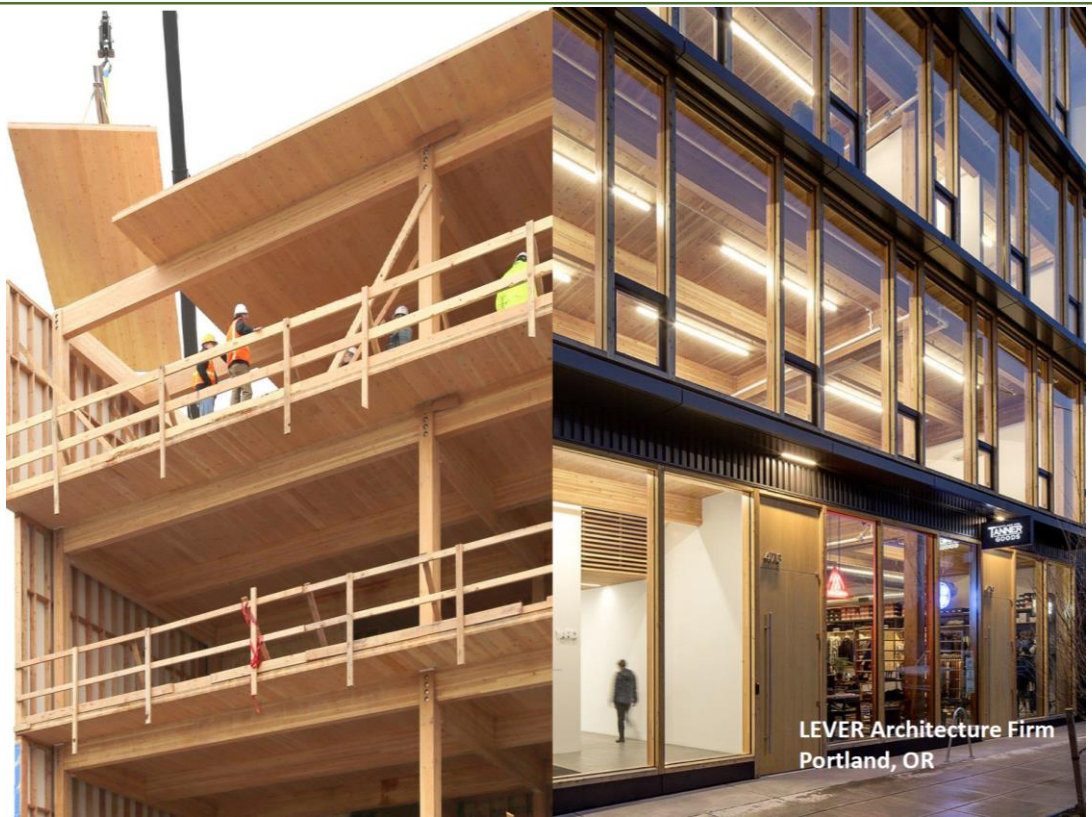
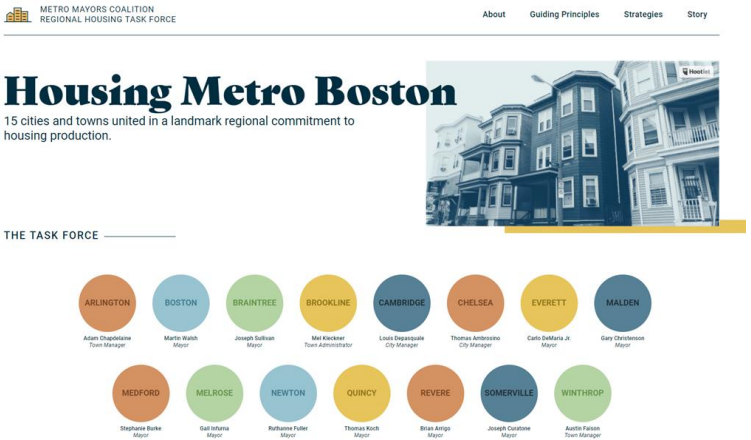


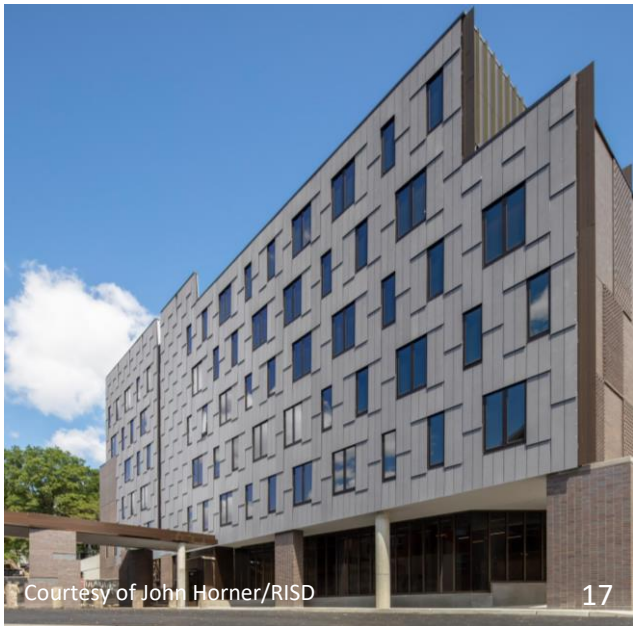
Part 3: Build Wood Buildings



"The Metro Mayors Coalition will need to add 185,000 housing units from 2015 – 2030 in order to meet demand and reduce – or at least stabilize -- housing costs."

Part 3: Build Wood Buildings

✓ Lower emissions



Courtesy of John Horner/RISD

End Forest Conversion to maintain CO_2 already stored + Exemplary Forestry to remove and store CO_2 + **Long-lived wood products** to reduce emissions and store more CO_2 = A New Climate Wedge

Part 3: Build Wood Buildings

- ✓ Lower emissions
- ✓ Sequestration in the building

Source → **Sink**

Photo courtesy of UBC

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Part 3: Build Wood Buildings

- ✓ Lower emissions
- ✓ Sequestration in the building
- ✓ Different pattern of development

Carbon benefits depend on sustainability of harvesting

- Oliver et al 2014: 14 – 31% of global carbon emissions
- BUT– presumed harvesting limited to growth on annual basis
- Currently, lands where harvesting greatly exceeds growth creates a carbon debt

- ✓ Forest products at the center of climate-driven development
- ✓ More jobs in depressed rural communities
- ✓ More housing, with more affordable pricing
- ✓ Improve mobility and reduce future sprawl
- ✓ Maintain wildlife habitat, clean air, clean water
- ✓ Help solve the climate crisis

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A New Climate Wedge

Continue to support land conservation

Stop/limit conversion of forestland to other uses

Outreach & incentive programs for private landowners

↑ Supply

↑ Demand

QUESTIONS?

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