# BEYOND THE "ILLUSION OF PRESERVATION"

Taking Regional Responsibility by Protecting Forests, Reducing Consumption, and Expanding Ecological Forestry in New England

Caitlin Littlefield, Brian Donahue, Paul Catanzaro, David Foster, Tony D'Amato, Ken Laustsen, and Brian Hall

Photo: Tony D'Amato






## Pre-Forest


## Young Forest


## Mature Forest

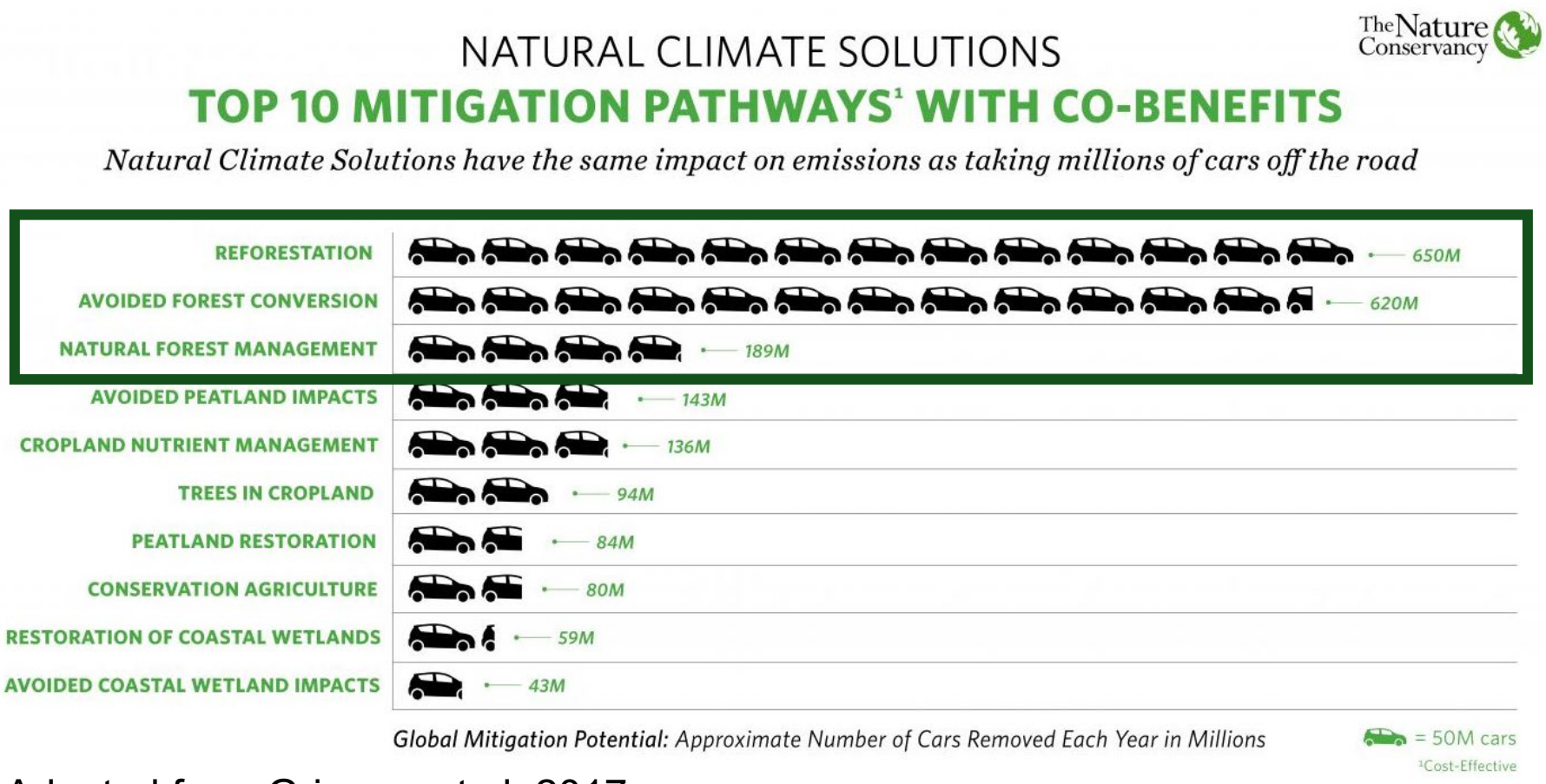

## Old Forest



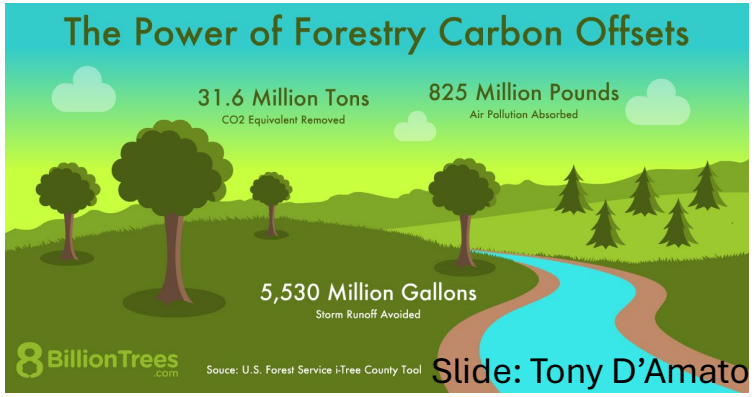


# Seeking maximum carbon benefit from forests

## Urgency of climate crisis has broadened awareness and interest in role forests play in capturing and storing carbon

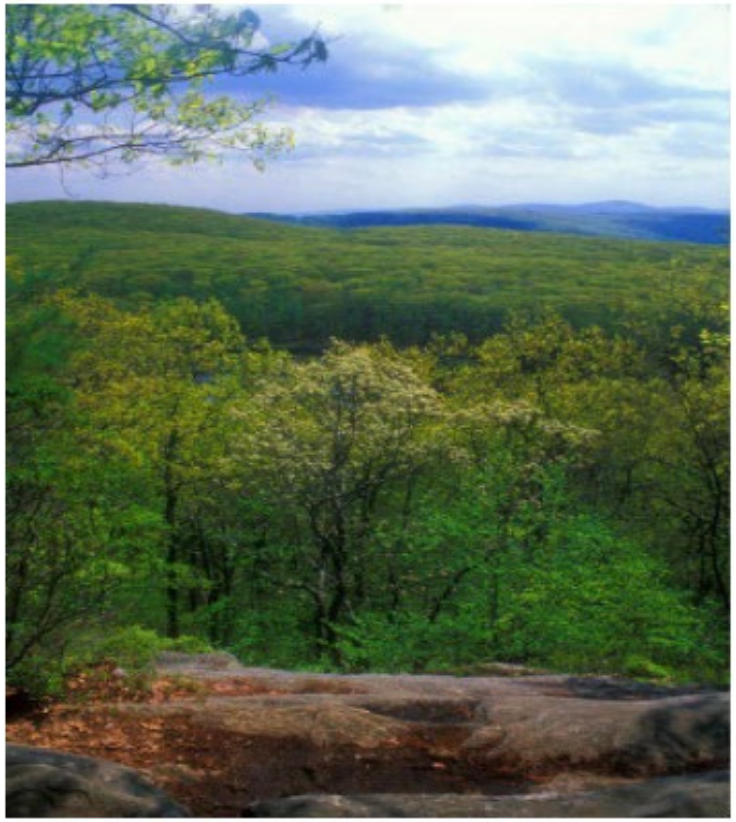



Adopted from Griscom et al. 2017

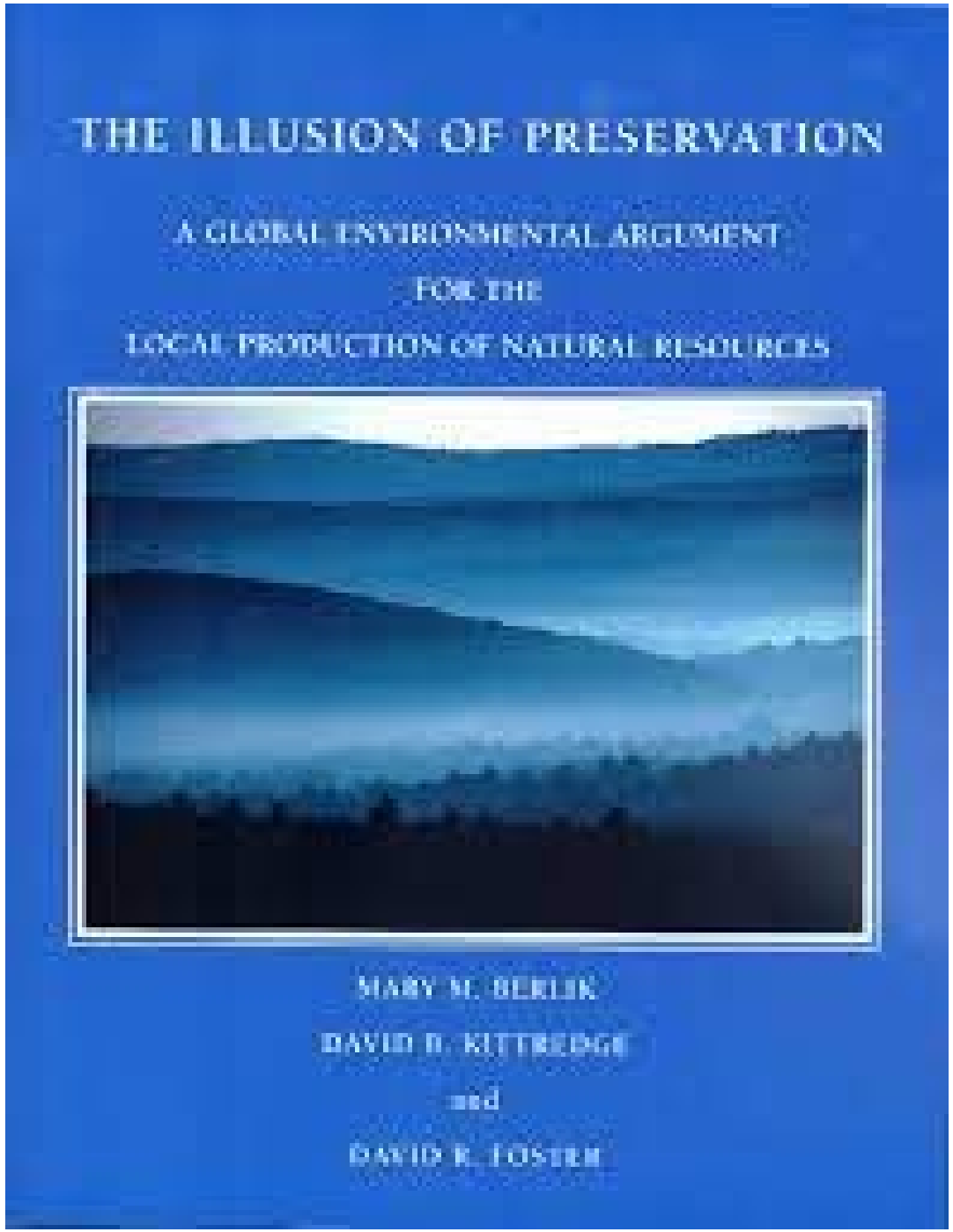

Slide: Tony D'Amato

Report of the Climate Forestry Committee: Recommendations for Climate-Oriented Forest Management Guidelines



"Committee opinion on wood production differed profoundly.... Others argued that our forests are better suited for removing and storing carbon and **those elsewhere** [emphasis mine] should produce Massachusetts' needs."

# Wood products are an essential human need!

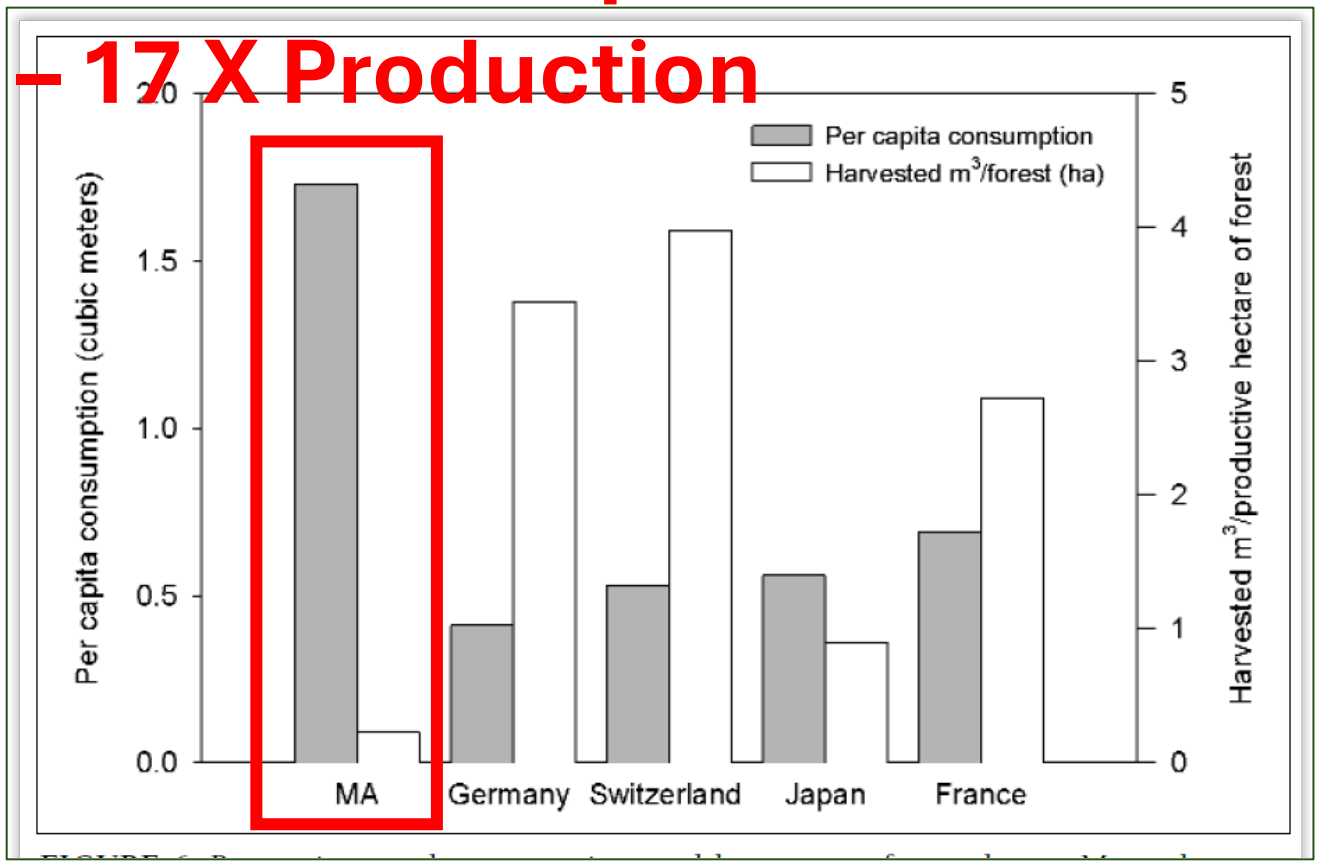



**Based on the original methodology....**

**MA was producing only ~2% of wood consumed**

**3 – 4 X Consumption**

**5 – 17 X Production**



# Impacts of the Illusion of Preservation

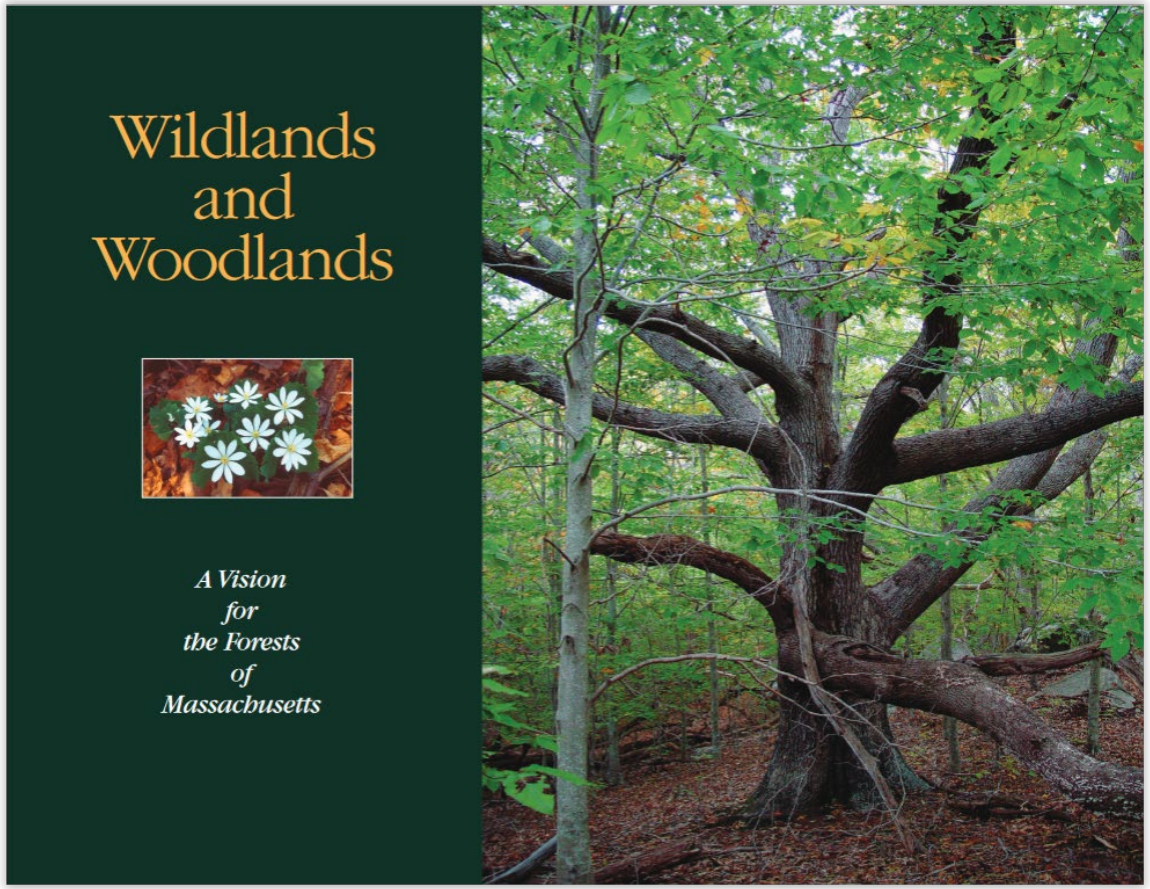
**(a.k.a., "those elsewhere" Producing Massachusetts' Wood Needs)**

- Less environmental oversight
- Harvesting in sensitive forest ecosystems (rainforests, old growth)
- Risk of invasive insect transport
- Less efficient processing
- Longer transportation distances (energy cost, supply chain vulnerability)

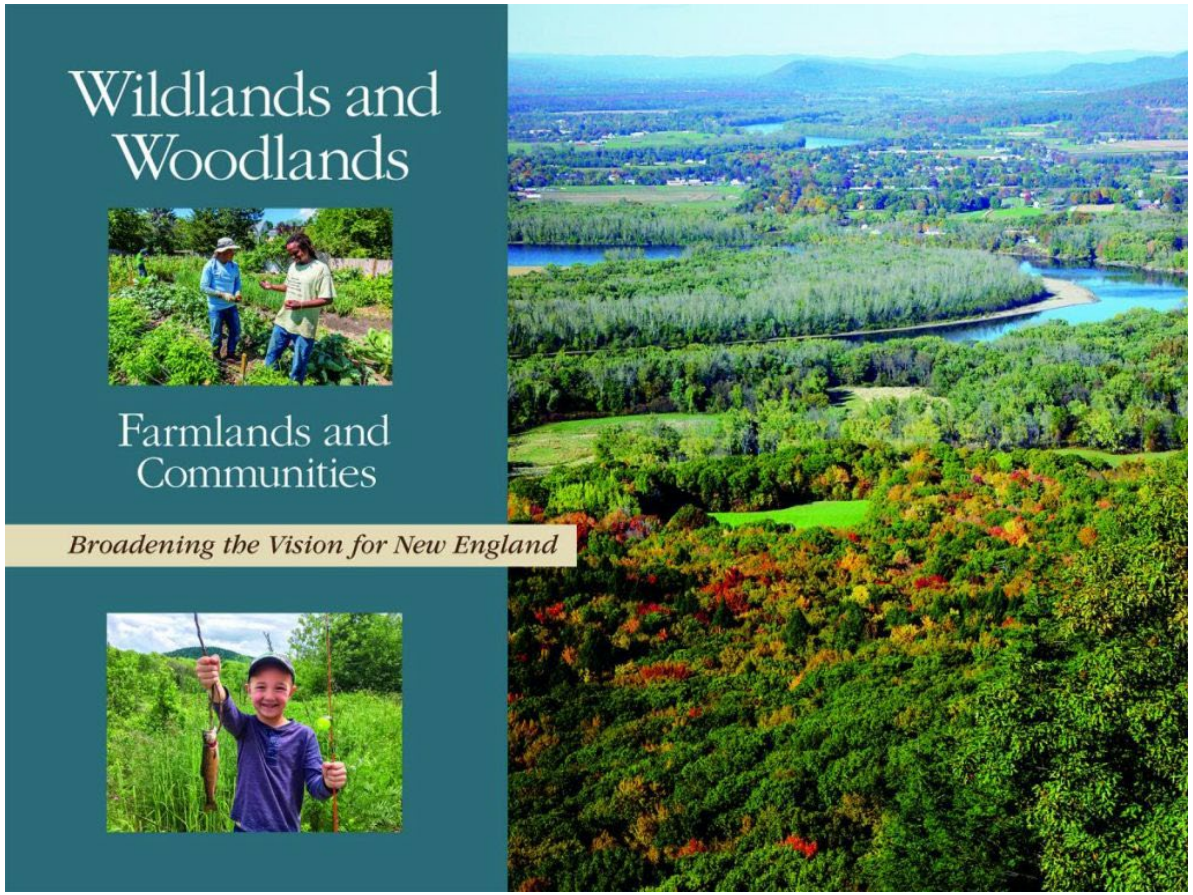
- Carbon impacts > global cycle
- Lost opportunities to sustain other critical benefits (e.g., wildlife, resilience)
- Lost opportunities for economic development
- Loss of rural traditions
- Pushing our production onto others > choice of the affluent

Approximately 45-50% of the world's wood supply comes from plantations.

Source: *Bennett, Brett M. Plantations and Protected Areas: A Global History of Forest Management*. MIT Press. 2015.




2005




2010 & Broadened in 2017

70% of the landscape as forest

- 10% - Wildlands
- 60% - Woodlands





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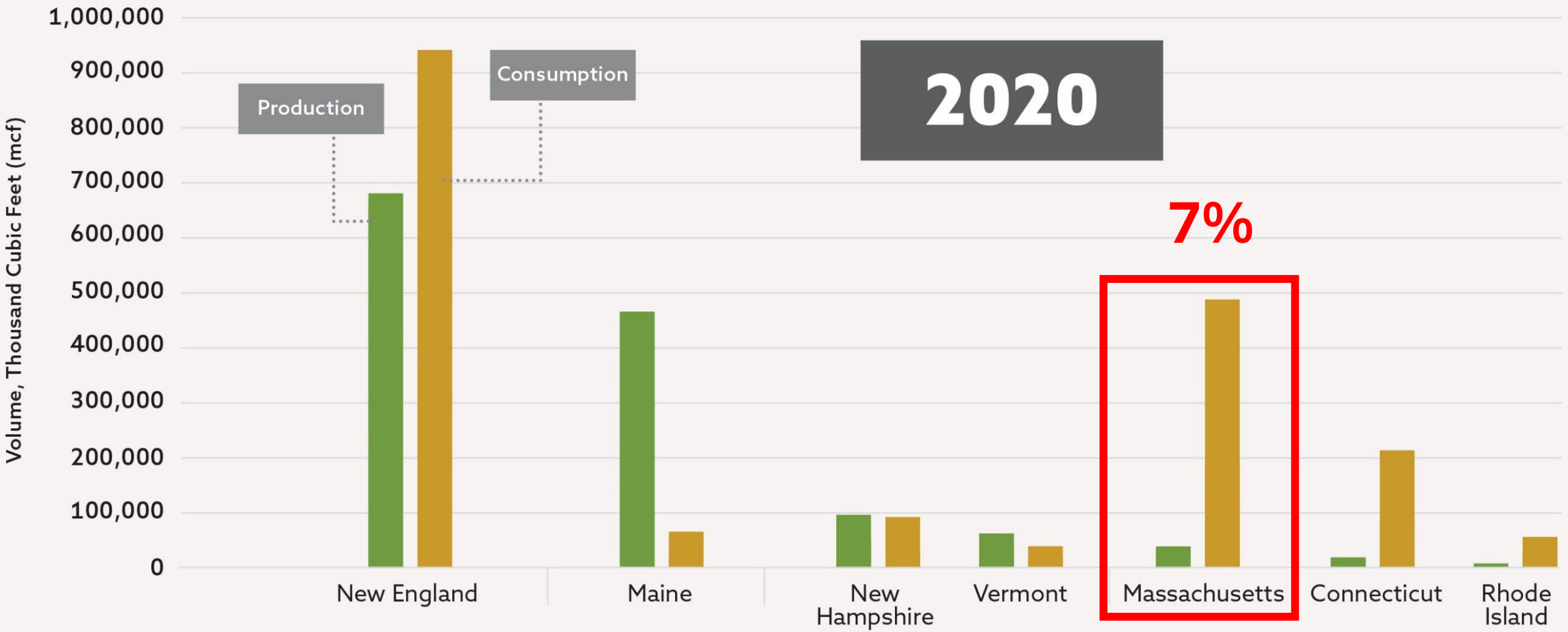
**FIGURE 1** Wood production and consumption in New England, circa 2020.




Present-day wood production numbers are derived from the USDA Forest Service's Forest Inventory and Analysis program, and consumption numbers are based on income-adjusted national per capita rates. These numbers include lumber and pulp and account for material recovered from waste streams; fuelwood is not included. A breakdown of numbers by product class (including fuelwood) is given in Table 4 of the Appendix, along with detailed methods.

70%

of New England's **production** comes from Maine.


70%

of New England's **consumption** occurs in southern New England.

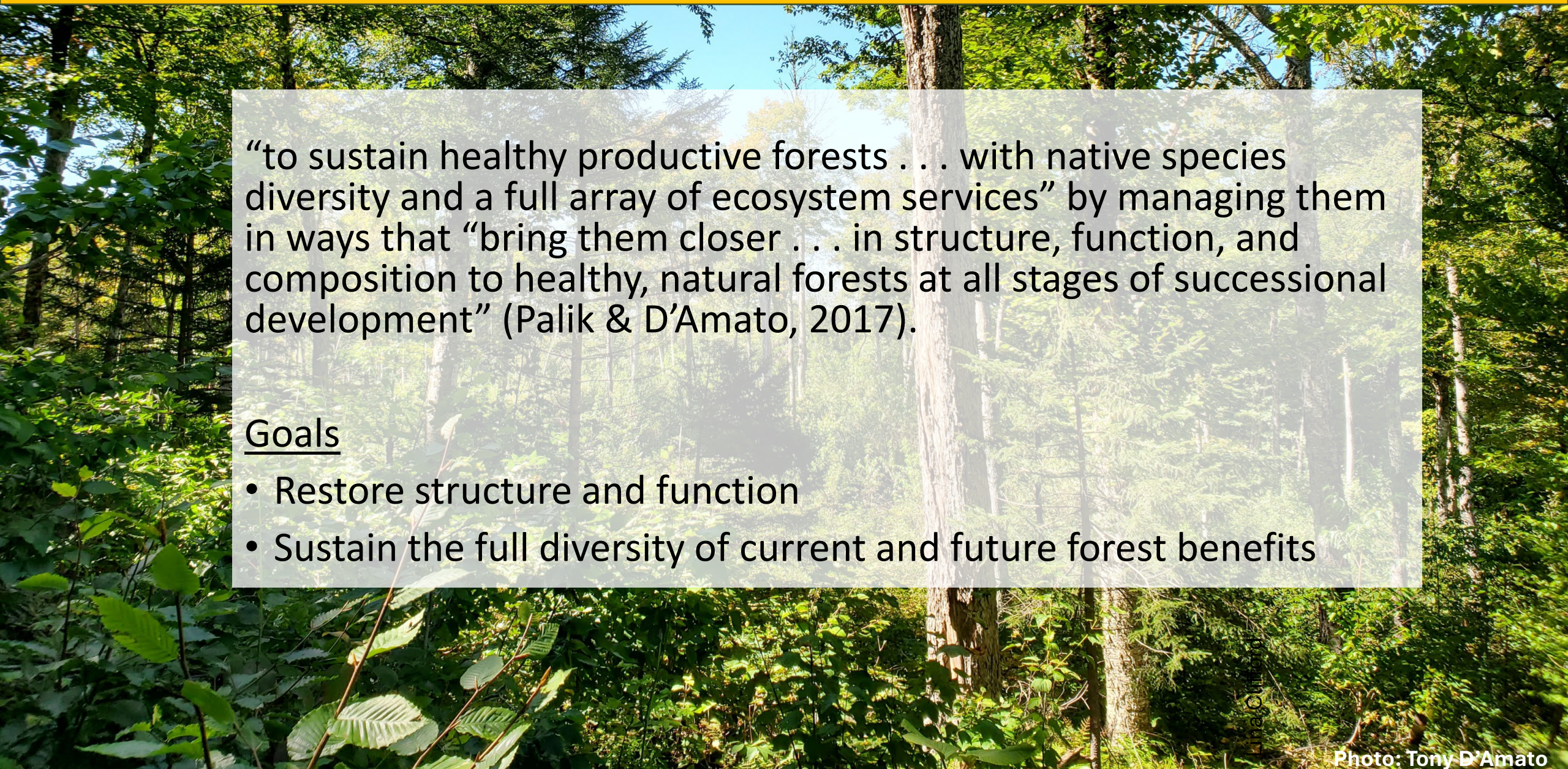
# Step 1: Protect 70% of the Landscape as Forests


# Step 2: Reduce Consumption by 25%

- Reduce lumber consumption by 25%
- Reduce paper consumption by 25%, shifting to more durable wood products
- Increase recycled content in paper to 50%
- Increase wood reclamation to 75%

Home Depot

# Step 3: Expand Ecological Forestry



"to sustain healthy productive forests . . . with native species diversity and a full array of ecosystem services" by managing them in ways that "bring them closer . . . in structure, function, and composition to healthy, natural forests at all stages of successional development" (Palik & D'Amato, 2017).

<u>Goals</u>

- Restore structure and function
- Sustain the full diversity of current and future forest benefits

Photo: Tony D'Amato

# Step 3: Expand Ecological Forestry

## *Build on standard silviculture*

**Four Principles of Ecological Forestry**

1. Continuity: Carry current important forest characteristics into the future forest

2. Complexity and Diversity: Structural & Species

3. Context: Landscape Position

4. Time: Ecological timing (longer and shorter)

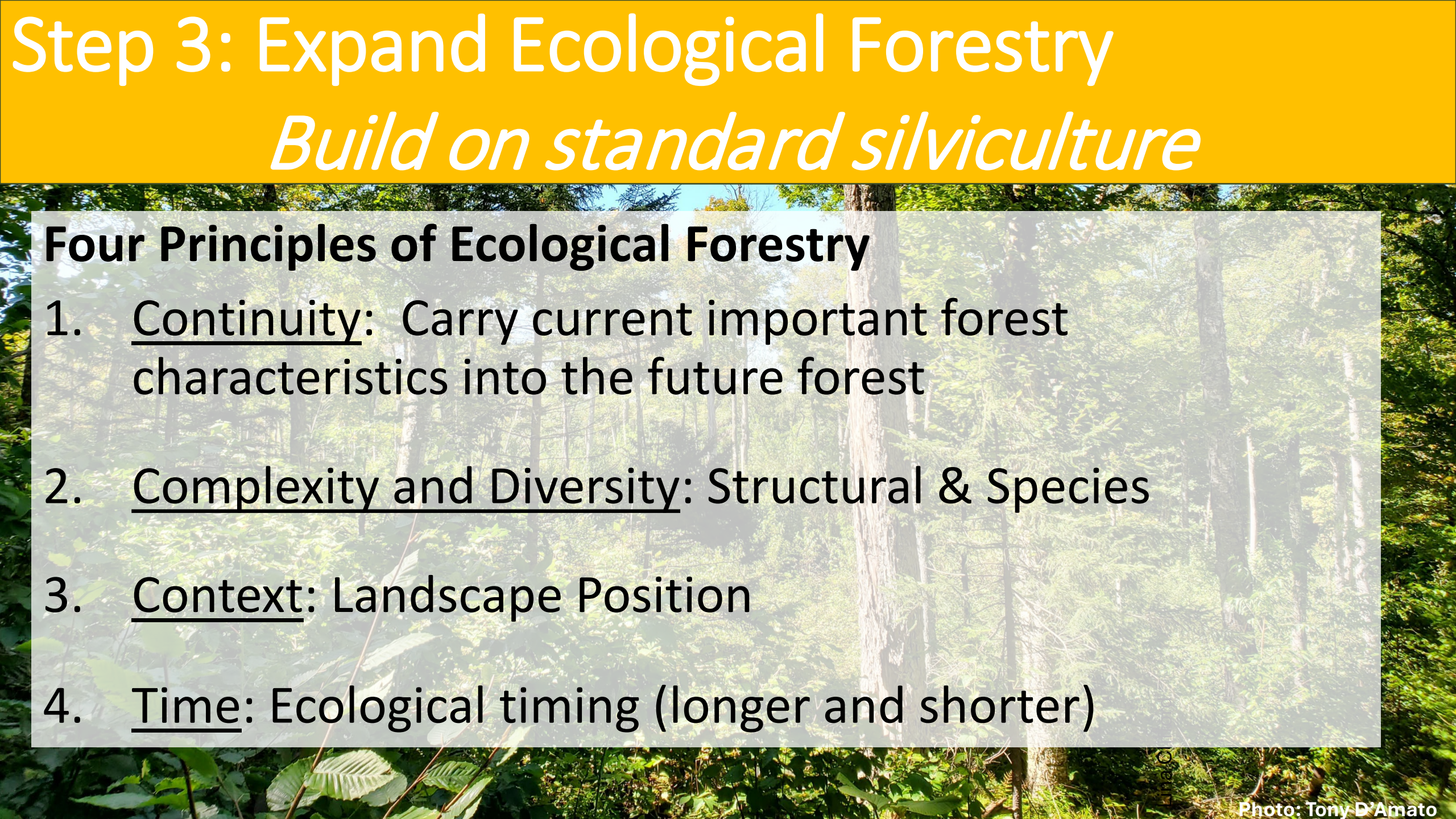


Photo: Tony D'Amato

## Standard Forestry

**Standard forestry** dedicates almost all of the area within a forest to active forest management over time. A small amount of the forest (<20%) is designated to retaining forest structure and species diversity. The illustration above represents approximately 5-10% of the area dedicated to those purposes.

## Ecological Forestry

**Ecological forestry** dedicates a portion of the forest to active forest management, but designates a substantial portion (20%-50%) of the forest to the retention of forest structure and species diversity to achieve forest continuity and complexity over time. The illustration above represents approximately 40-50% of the area dedicated to those principles.

All current dead wood is retained.

Non-commercial species retained to increase biological diversity and forest resilience.

Legacy trees retained to develop into large, old trees and future dead wood.

Trees available for removal from the forest.

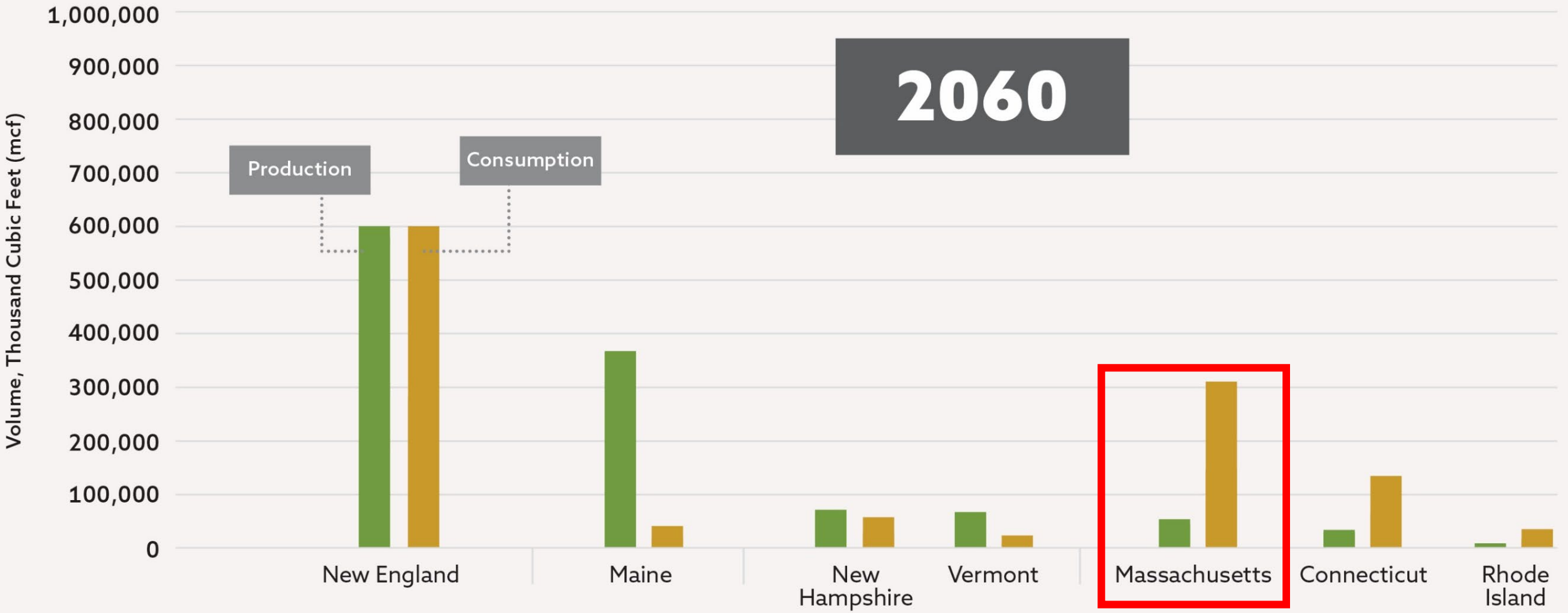
# Step 3: Expand Ecological Forestry

- 10% of the total landscape in wildlands (but not evenly distributed)
- 100% of industrial forests
- 50% of public forests
- <u>50% of FFO/Conservation Orgs.</u>
  20 million acres of forest
- All lands producing an average of **0.4 cords/year**
  ( 8 million cords)



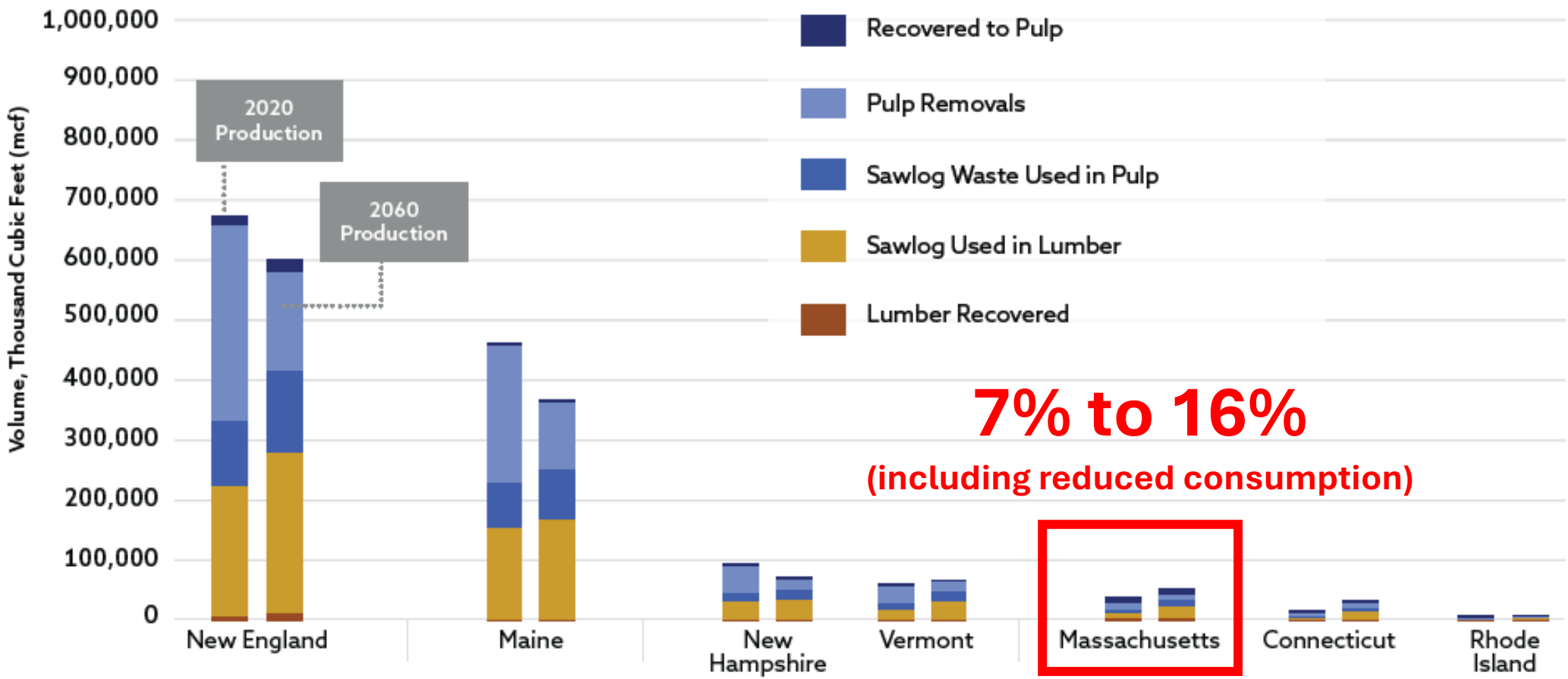
Photo: Tony D'Amato

**FIGURE 2** Wood production and consumption in New England, circa 2060.



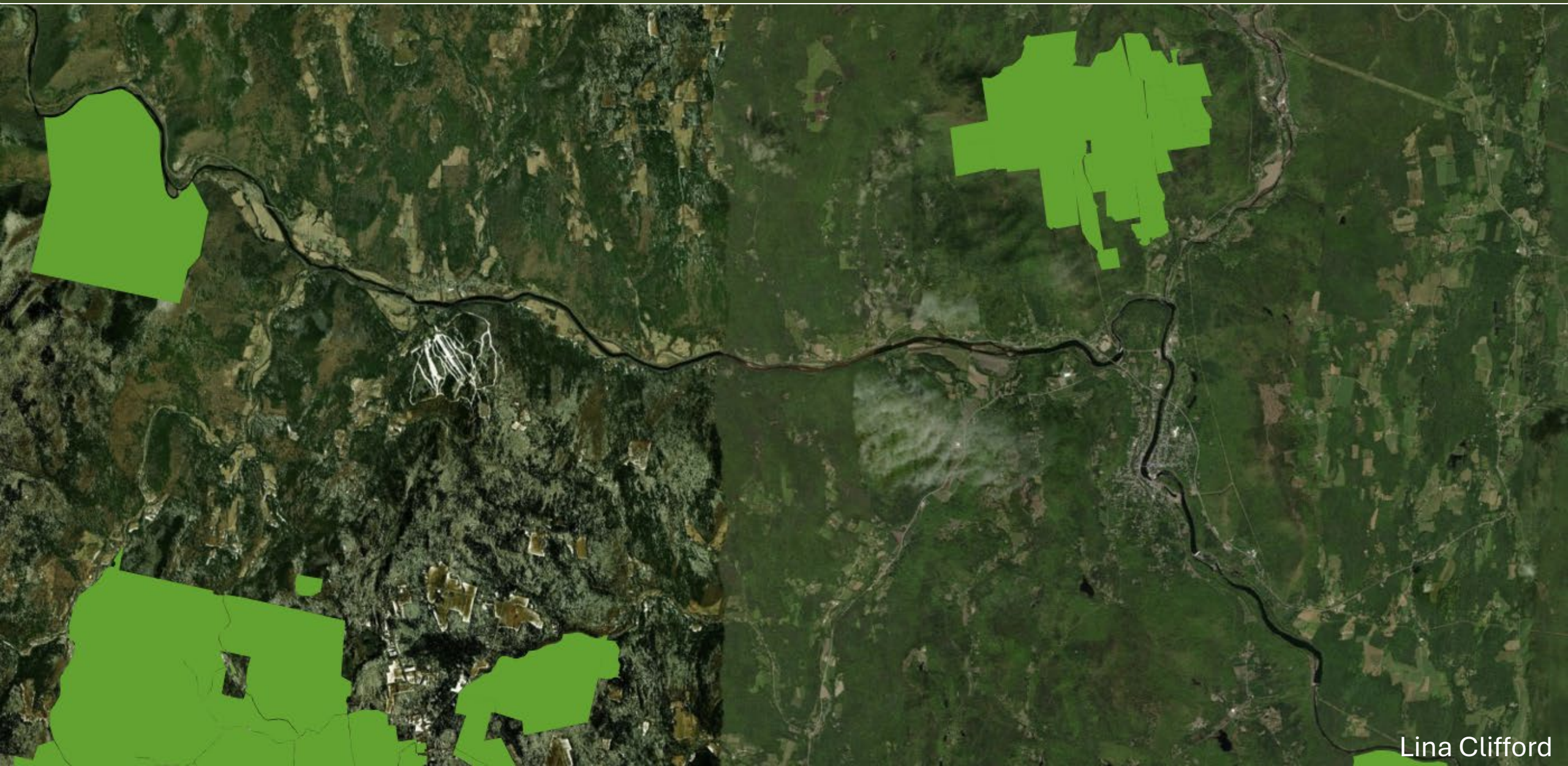

This production and consumption scenario for 2060 reflects a reduction in lumber and paper consumption relative to today's levels, enhanced rates of recycling and recovery, and a reorientation of production toward more durable products. Fuelwood and other non-pulp uses of lower-grade material are not included. Generation of this scenario is described in the section "Sustainably Producing the Wood New England Consumes," with a breakdown of numbers by product class (including fuelwood) provided in Table 5 of the Appendix, along with detailed methods.

**FIGURE 8** Wood production in New England states, circa 2020 and 2060.




For New England as a whole, we envision a modest decline in production by 2060, even as we call upon southern states to increase production and double or triple the volume of sawlogs removed. Most of the decline would occur in Maine. There, the reorientation of production from lower-grade wood to sawlogs would not only increase stumpage values but could also foster a larger value-adding supply chain and reinvigorate vibrant, forest-based economies. Note that fuelwood is not illustrated, as it is assumed that consumption is equal to production, even as the 2060 scenario promotes a shift away from combustion of lower-grade material toward more durable uses. A breakdown of numbers by product class (including fuelwood) is given in Tables 4 and 5 of the Appendix, along with detailed methods.

# State Lands and Conservation Organizations



Lina Clifford

# 50% Family Forest Owner Engagement

# Where on the landscape?

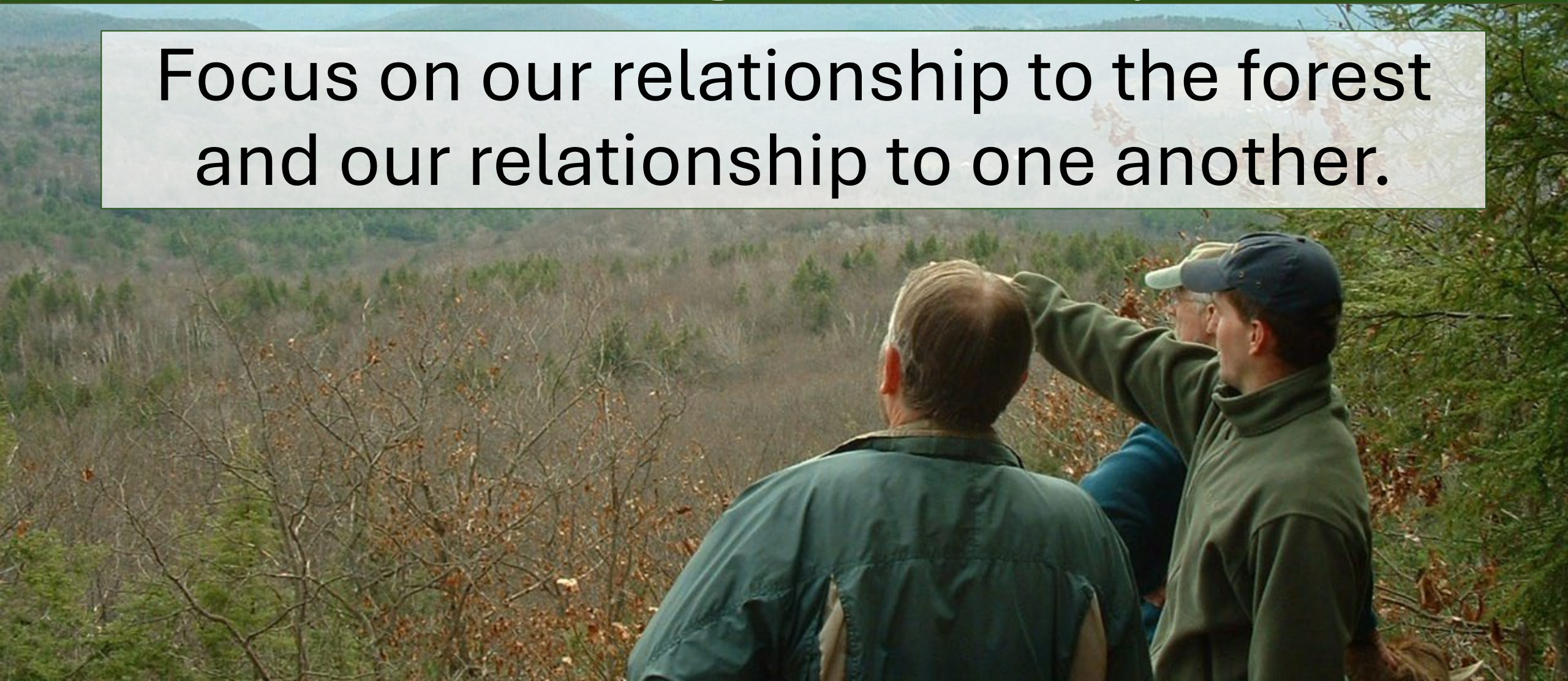
- Site characteristics
  - Quality
  - Sensitivity
  - Vulnerabilities
  - Access
  - Educational opportunities

- Seek to achieve multiple benefits > wood as the byproduct of creating condition
  - Diversify habitat
  - Increase resilience


- Consider landscape context.
  - What's happening around your land?
  - What are the opportunities (e.g., habitat diversification) & challenges (e.g., invasive insects)

# Engaging 50% of Family Forest Owners in Ecological Forestry

Focus on our relationship to the forest and our relationship to one another.



# Case Study: Harry and Michelle Webb – Hardwick, MA

- 142 acres
- Landscape of Quabbin and MassWildlife
- T&E Species Habitat
- Placed a CR on the property
- Applying ecological forestry
- Habitat for species in decline
- Invasive plant control

<u>Removals</u>

- 357,533 board feet
- 385 cords
- 209 cords of pulp
- 295 tons of biomass
- 61 cords of firewood for home heating

<u>Standing</u>

- 1 million board feet
- 1,200 cords

# Case Study: Tony & Anne Borton – Conway, MA

# Case Study: Town of Wendell OSC

- OSC targeted landowners with large acreages and Biomap
- Mailing including a map of their land's location and Biomap
- 50 landowners
- Information on forest management and land protection
- Landowner stories
- Lunch from a local farm
- Woods walks on local properties

**Thank you Dan Leahy and the Wendell OSC!**

# Case Study: Hilltown Land Trust


**Closing the Loop: Sustainable Forest Management & Community.**
**Hilltown LandTrust & River Valley Co-op**

https://www.youtube.com/watch?v=dHnoSBhJkdU

# Victory Forests




“To both use and conserve nature
requires complex knowledge and practices
[and relationships],
far more complex than leaving nature alone.”
—M. Kat Anderson, Tending the Wild
Dave Publicover

*Webinar*

# Understanding Passive Forest Management to Further Ecological Forestry


Forest Stewards Guild

University of Massachusetts Amherst

# Thank you, MLTC.

# Have a Great Conference!

www.masswoods.org/illusion

paulcat@umass.edu

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Renewable Resources Extension Act (RREA)

USDA