Annual Conference 2024

Forest Futures: Building Bridges to Shape Strategies Collaboratively

FEMC

December 12, 2024

FEMC Staff

Principal Investigator: Jen Pontius

Faculty Advisor: Nick Aflitto

Director: Alison Adams

Assistant Director: Elissa Schuett

Monitoring Coordinator: Ben Porter

Data Engineer: Soren Donisvitch

Front-end Web Developer: Xana Wolf

Web and Database Developer: Nancy Voorhis

Data Specialist: Matthias Sirch

ECO AmeriCorps Member: Matthew Rios

Student Employees:

Elaina Buursma, Data Archive Assistant

Molly Babowal, Communications Assistant

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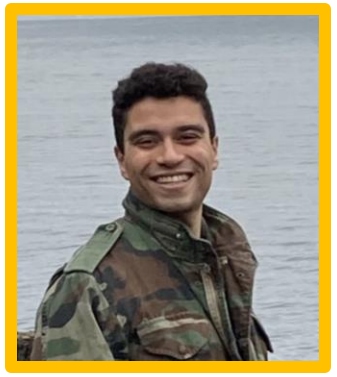

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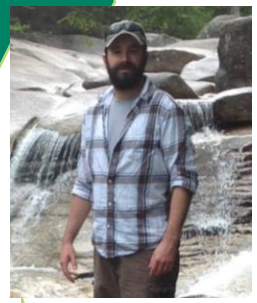
VT – Savannah Ferreira & Josh Halman

ME – Aaron Bergdahl & Jeff Harriman

NY – Amanda Dillon



MA – Eric Peterson

CT – Eli Ward

RI – Alana Russell

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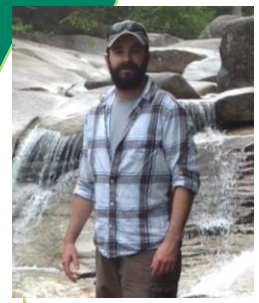


MA – Eric Peterson

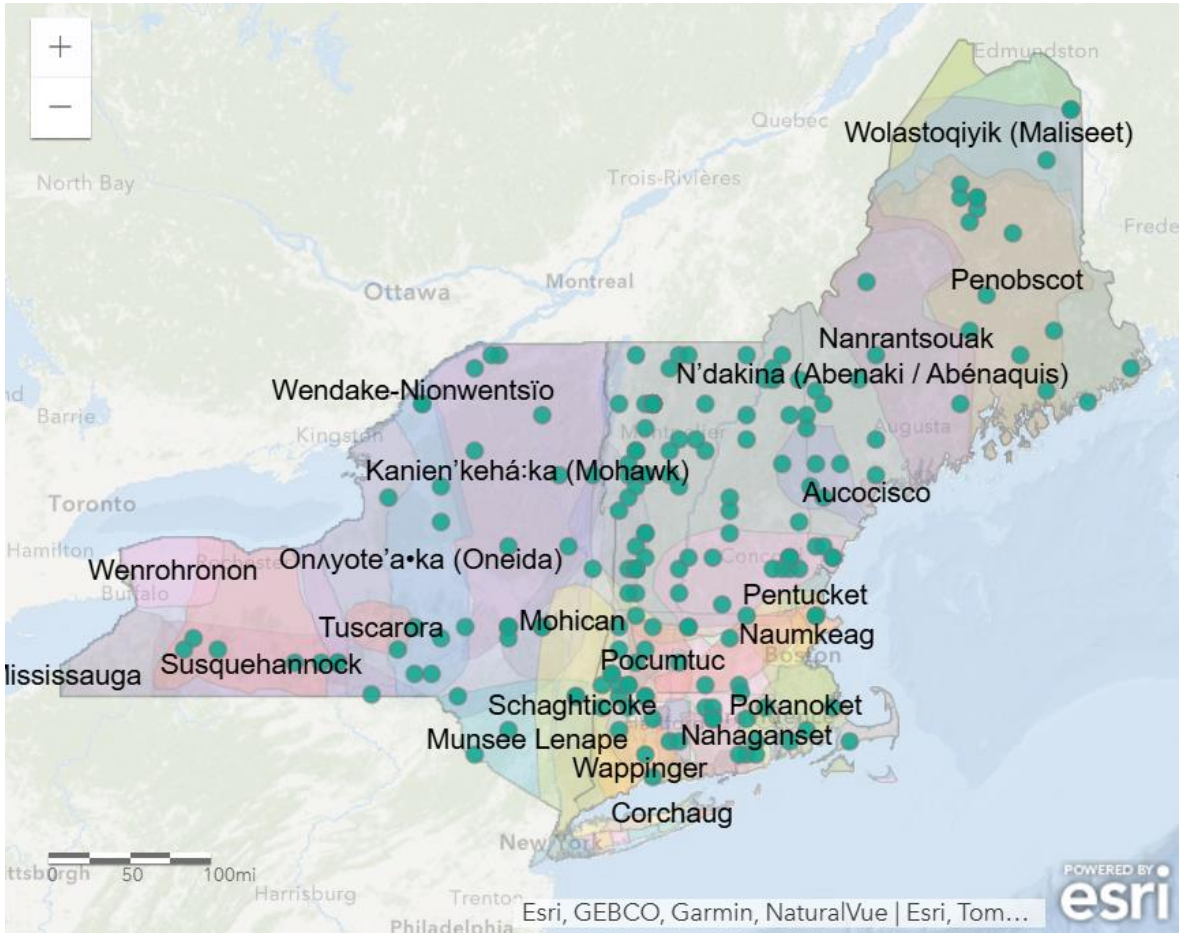
CT – Eli Ward

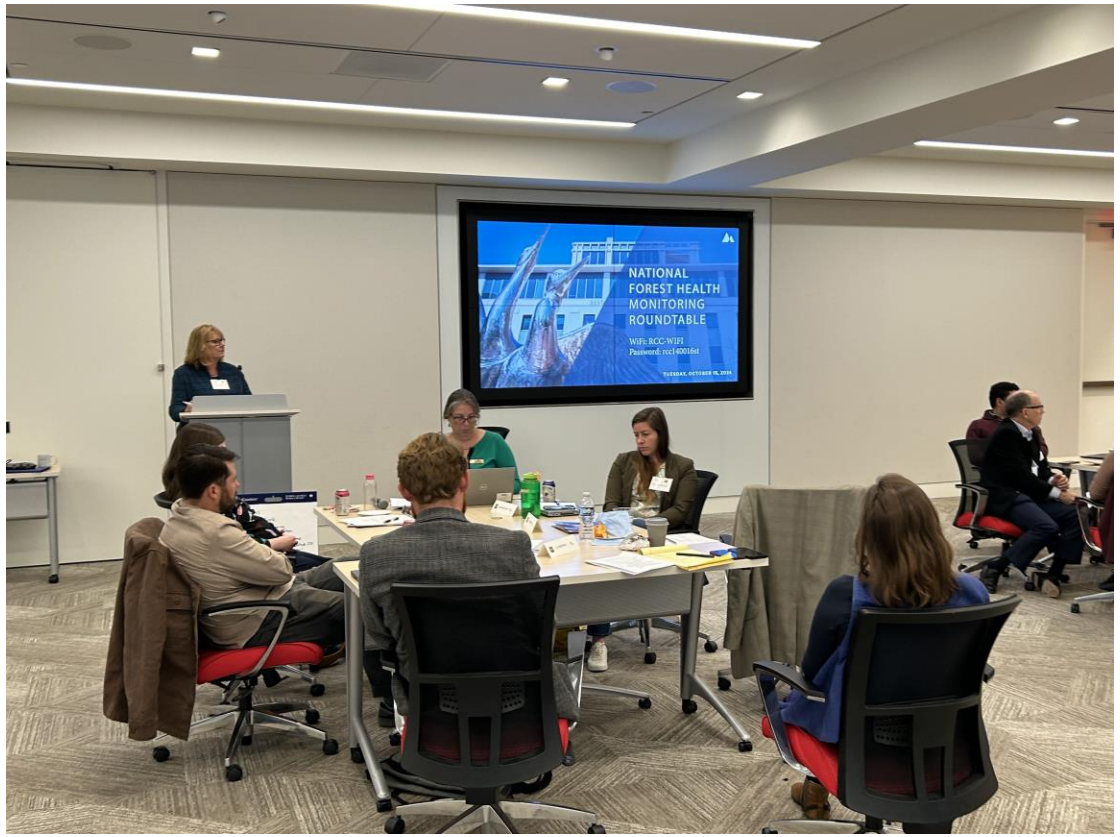
RI – Alana Russell

2024 FEMC Highlights

Building Collaborations

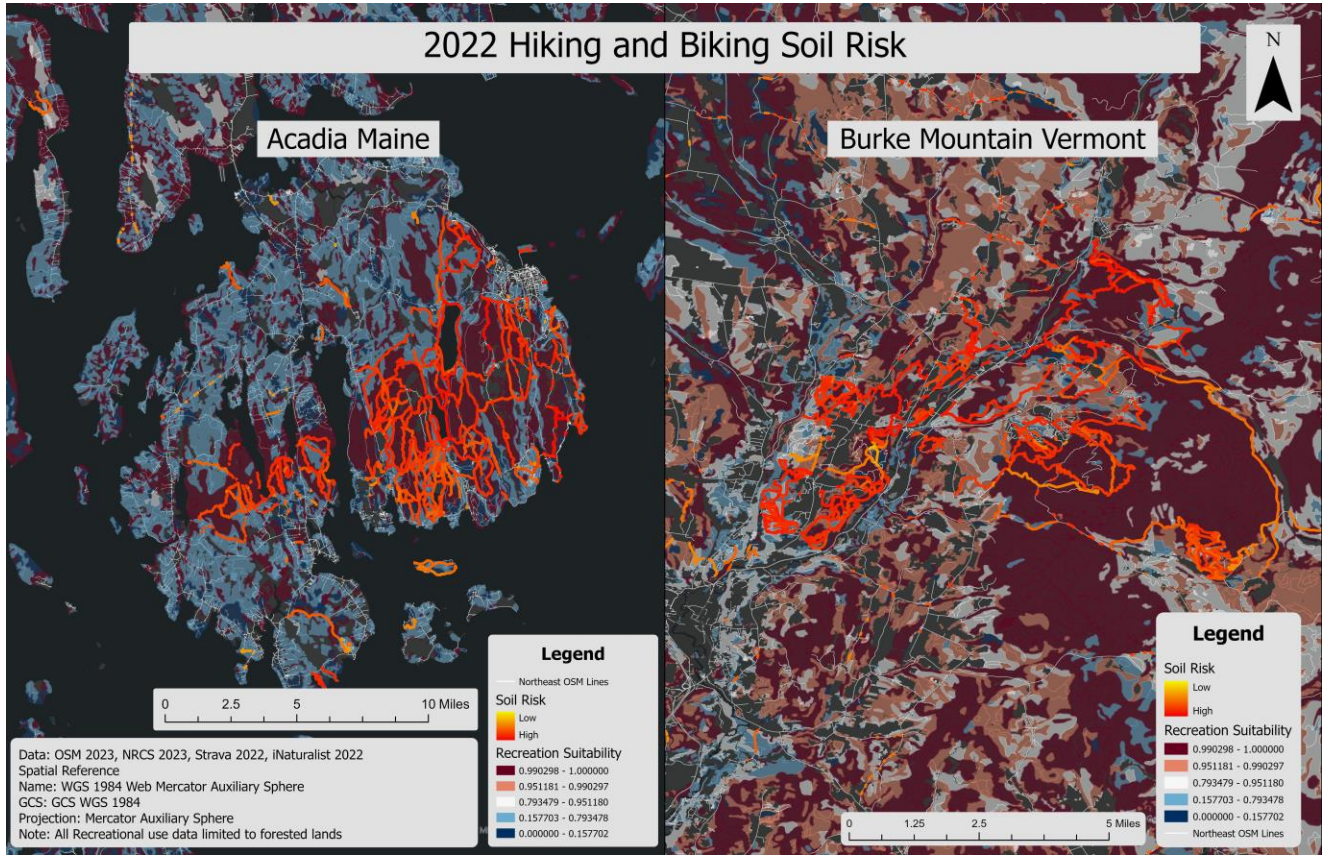
Tribal Nations in the FEMC region



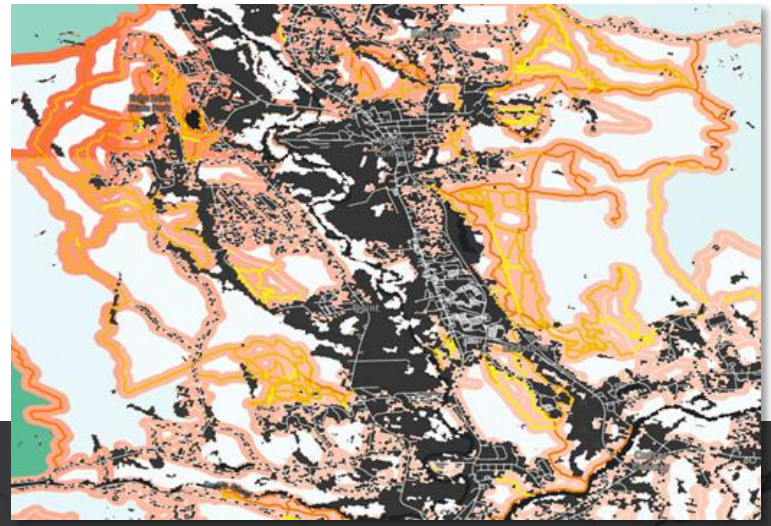


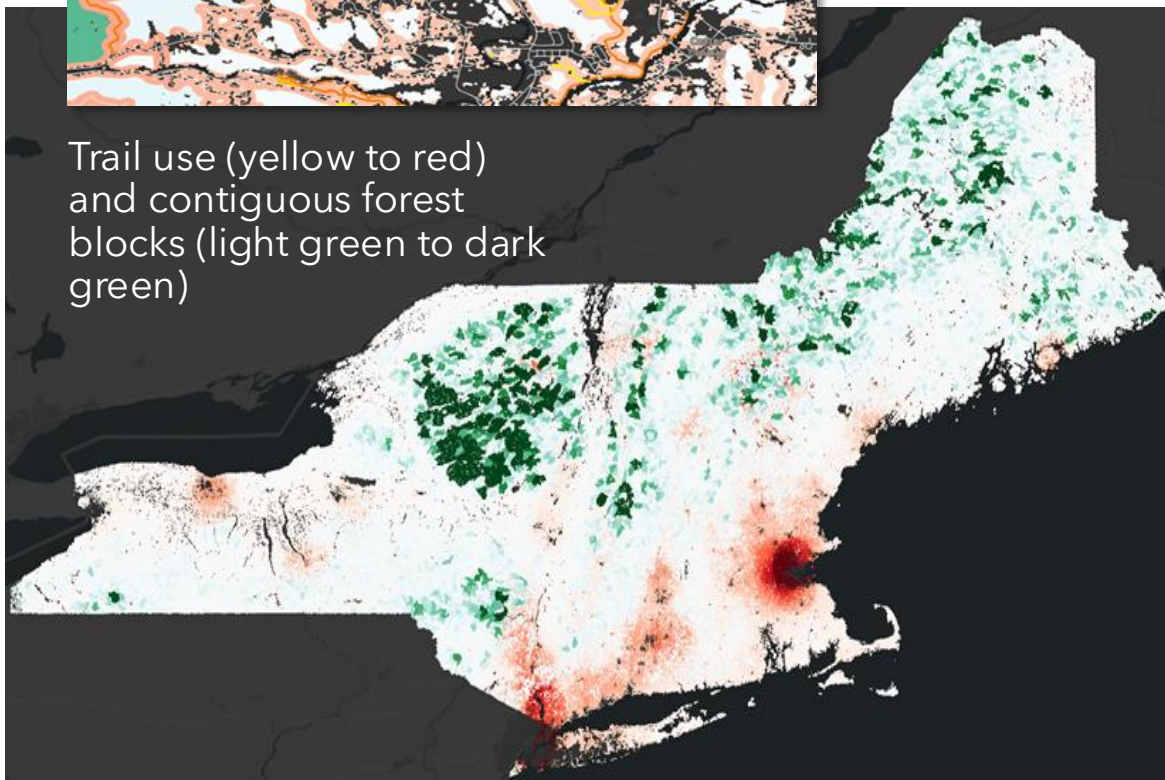
Forest Health Monitoring Roundtable in DC in October

Interactions between recreation and forest health



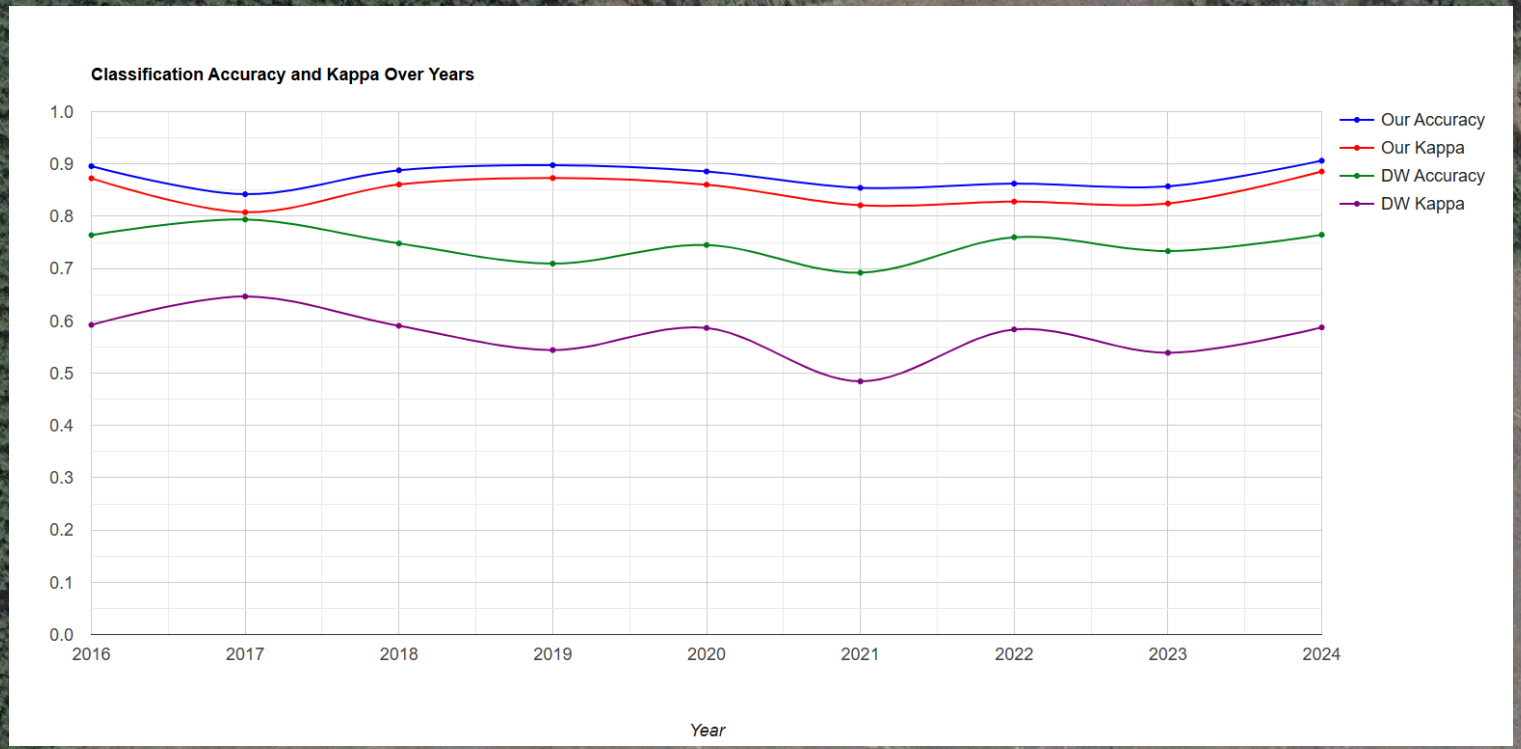
Trail use (yellow to red) and soil suitability (blue to maroon)

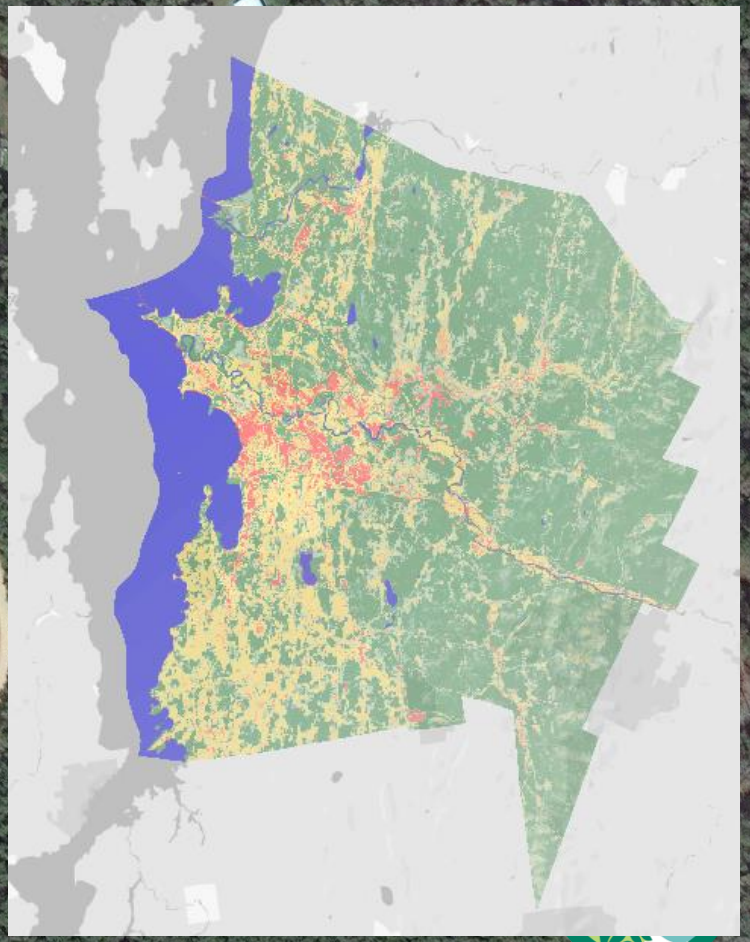




Trail use (yellow to red) and contiguous forest blocks (light green to dark green)

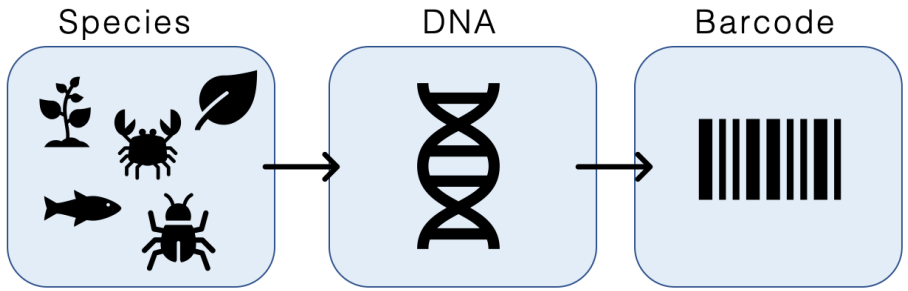
Forest cutting, conversion, and regrowth over 10 years





DNA metabarcoding geospatial database

- Met with potential end users and data contributors, including fungal DNA team
- Identified desired tool functions and areas of concern
- Developed UX designer position (hiring early 2025)



	A	B	C	D	E	F	G	H	I
2									
3	BOLD_Process_ID	BOLD_BIN_uri	BOLD_HIT%ID	BOLD_Grade%ID	BOLD_hit_Seq_Length	adjusted_Phylum_BOLD	adjusted_Class_BOLD	adjusted_Order_BOLD	adjusted_Family_BOLD
4	PHDIP372-11	BOLD:ABV5602	99.4%	99.7%	313	Arthropoda	Insecta	Diptera	Ulidiidae
5	TMNBD515-07	BOLD:ACE4734	100.0%	100.0%	313	Arthropoda	Insecta	Lepidoptera	Erebidae
6	TINA165-13	BOLD:AAH4103	100.0%	100.0%	313	Arthropoda	Malacostraca	Isopoda	Philosciidae
7	OPPQO044-17	BOLD:ACU8336	100.0%	100.0%	313	Arthropoda	Insecta	Coleoptera	Pyrochroidae
8	ELPCG9457-17	BOLD:ABW1226	100.0%	100.0%	313	Arthropoda	Insecta	Diptera	Phoridae
9	BBCEC427-10	BOLD:AAD5623	99.7%	99.8%	313	Arthropoda	Insecta	Coleoptera	Cantharidae
10	USDIP263-09	BOLD:AAB9140	100.0%	100.0%	313	Arthropoda	Insecta	Diptera	Calliphoridae
11	USCOC207-10	BOLD:AAM7754	100.0%	100.0%	313	Arthropoda	Insecta	Coleoptera	Curculionidae
12	GMGST032-13	BOLD:ACE2713	98.1%	98.4%	309	Arthropoda	Insecta	Coleoptera	Tenebrionidae
13	GMGMD523-14	BOLD:ACK1197	79.1%	78.9%	249	Arthropoda			
14	UAMIC761-13	BOLD:AAE5602	100.0%	100.0%	313	Arthropoda	Insecta	Hymenoptera	Tenthredinidae
15	GMGSE389-12	BOLD:ACA7648	98.4%	99.2%	313	Arthropoda	Insecta	Coleoptera	Tetratomidae
16	CNGBM242-14	BOLD:ABY1343	100.0%	100.0%	313	Arthropoda	Insecta	Coleoptera	Eucnemidae
17	PHCOL134-11	BOLD:ABW6304	99.7%	99.8%	313	Arthropoda	Insecta	Coleoptera	Curculionidae
18	SCOL232-12	BOLD:AAF2797	99.4%	99.7%	313	Arthropoda	Insecta	Coleoptera	Curculionidae
19	GMFRE339-14	BOLD:ACQ8709	99.1%	91.8%	264	Arthropoda	Insecta	Coleoptera	Curculionidae
20	ASCMT162-11	BOLD:ABY3977	100.0%	100.0%	313	Arthropoda	Insecta	Coleoptera	Oedemeridae
21	GBCLC721-19	BOLD:AAB9040	100.0%	96.99%	312	Arthropoda	Insecta	Coleoptera	Cerambycidae
22	PHCOL151-11	BOLD:AAI7042	99.4%	99.7%	313	Arthropoda	Insecta	Coleoptera	Cerambycidae
23	USCOL821-09	BOLD:AAB5640	100.0%	96.99%	313	Arthropoda	Insecta	Coleoptera	Coccinellidae
24	USDIP248-09	BOLD:AAA6618	100.0%	96.99%	313	Arthropoda	Insecta	Diptera	Calliphoridae
25	ASTAI1775-07	BOLD:AAC1602	93.9%	96.3%	309	Arthropoda	Insecta	Diptera	Tachinidae

2024 Regional forest health monitoring

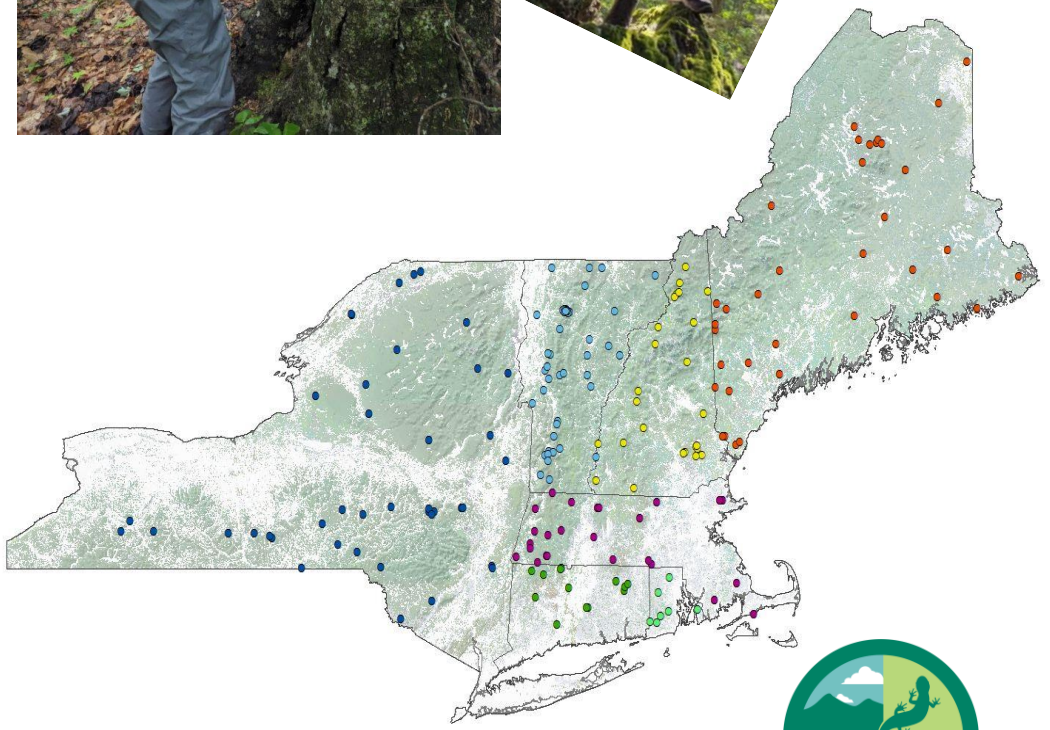
194 plots throughout New England and New York

Crews of 12 research technicians in NH, NY, MA, VT

- Crew leads (new addition to field season)
- Training and calibration of forest health metrics with staff and state agency personnel
- Separate crews for ME and CT

Long-term monitoring

- Overstory analysis
  - DBH measurements, dieback, transparency, vigor, defoliation, discoloration, tree heights, special damages, and prism
- Seedling regeneration
- Sapling survivorship
- Browse and invasives

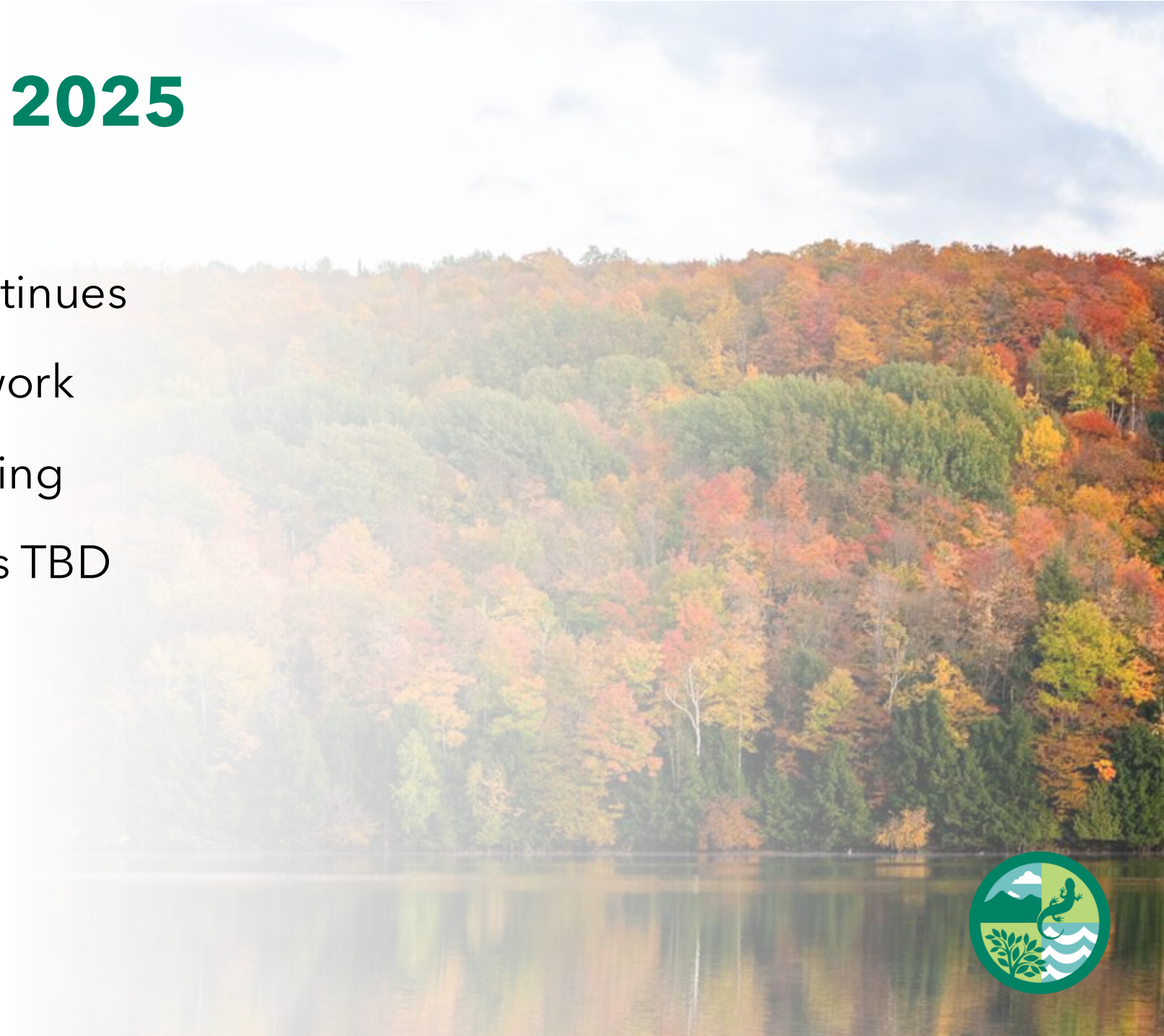


2024 Ecosystem Monitoring Fund

Enhanced ecosystem monitoring in New York City's only old growth forest Brad Oberle, NY Botanical Garden FEMC $19,953, Match $19,953
Establishing a long-term forest and tree-growth monitoring network in threatened coastal spruce ecosystems Megan Grega, University of Maine FEMC $16,575 Match $16,577
Database of Vermont Fungi Savannah Ferreira, Vermont Forest, Parks & Recreation FEMC $3,000 Match $3,000
A citizen science early-detection system for invasive plants and forest pests Kyle Lima, Schoodic Institute at Acadia National Park FEMC $11,760 Match $13,561

Looking ahead to 2025

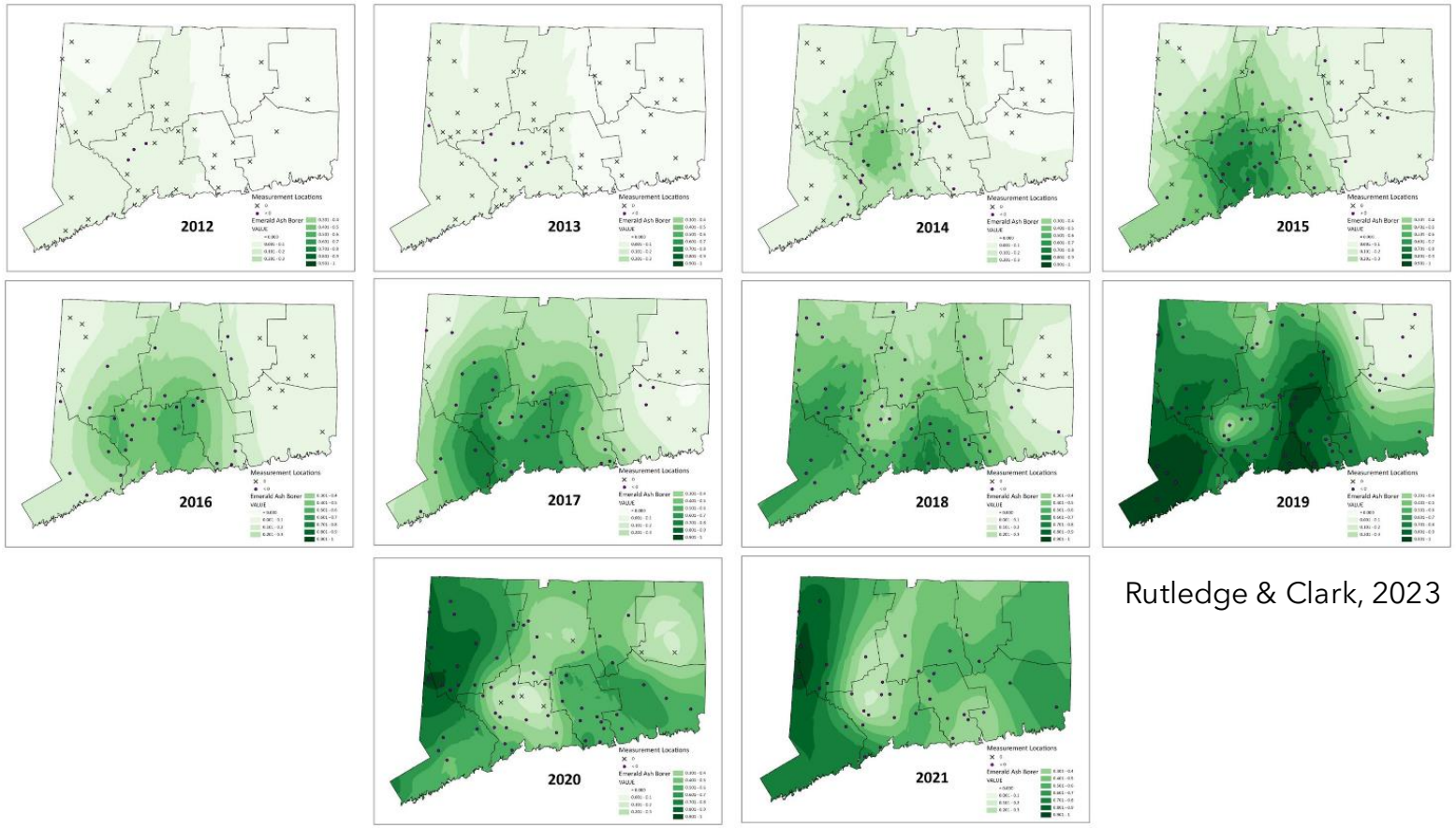
- BIL Insect DNA project continues
- Complete forest clearing work
- Continue regional monitoring
- New state-focused projects TBD
- …and more!



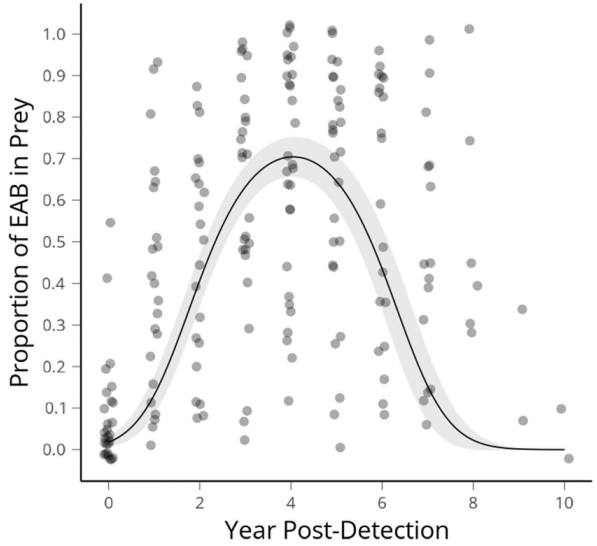
Regional forest health updates

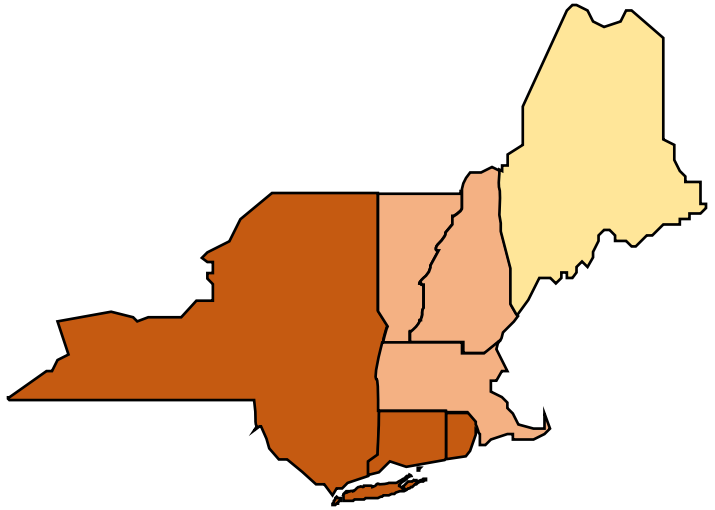
Regional forest health updates

Emerald ash borer



Rutledge & Clark, 2023



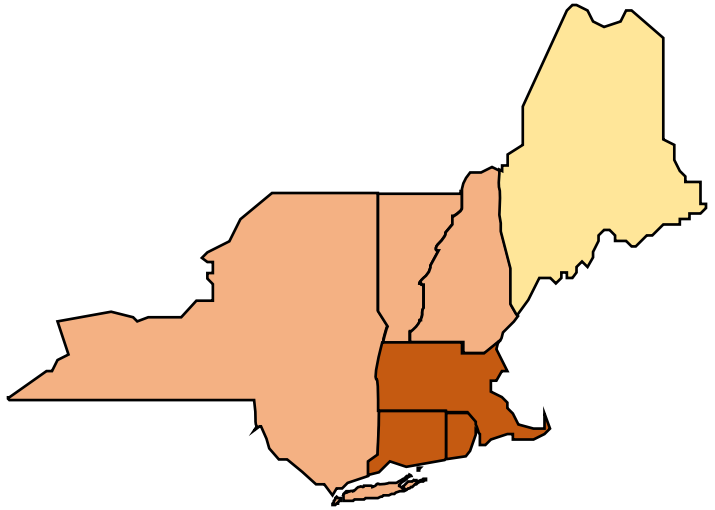


Regional forest health updates

Beech leaf disease

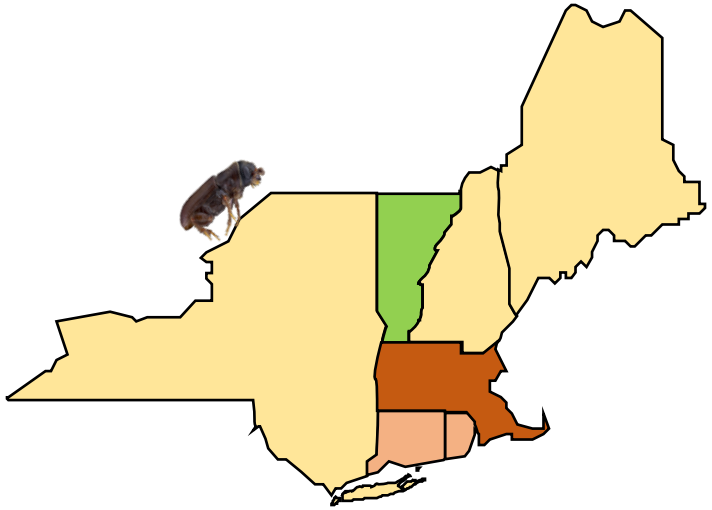
(Left) Thinned crown of beech tree. A common sight in southern RI, where BLD was found in 2020

(Below) A crew at a long-term BLD monitoring plot in Maine



Regional forest health updates

Southern pine beetle



(Left) Southern pine beetle damage on pitch pine in Nantucket

(Right) Southern pine beetle galleries

Regional forest health updates

Other pest concerns

Elm zigzag sawfly defoliation with larvae present

Regional forest health updates

Other pest concerns

Elm zigzag sawfly defoliation with larvae present

HWA biocontrol (*Laricobius nigrinus)* in Jamaica State Park in VT.

Regional forest health updates

Other pest concerns

Elm zigzag sawfly defoliation with larvae present

bius nigrinus) in Jamaica State Park in VT.

Browntail moth; found in New Hampshire (on an island!) for the first time in 70 years

Regional forest health updates

Other pest concerns

Elm zigzag sawfly defoliation with larvae present

Jamaica State Park in VT.

; found in New Hampshire (on an island!) for the first time in 70 years

Regional forest health updates

Invasive plants

Kudzu/
mile-a-minute

Quackgrass

Japanese
wisteria

Japanese barberry in fall/winter

and many more…!

Regional forest health updates

Climate extremes

2024 flooding in Vermont, the second year in a row of extreme summer floods following a very wet spring

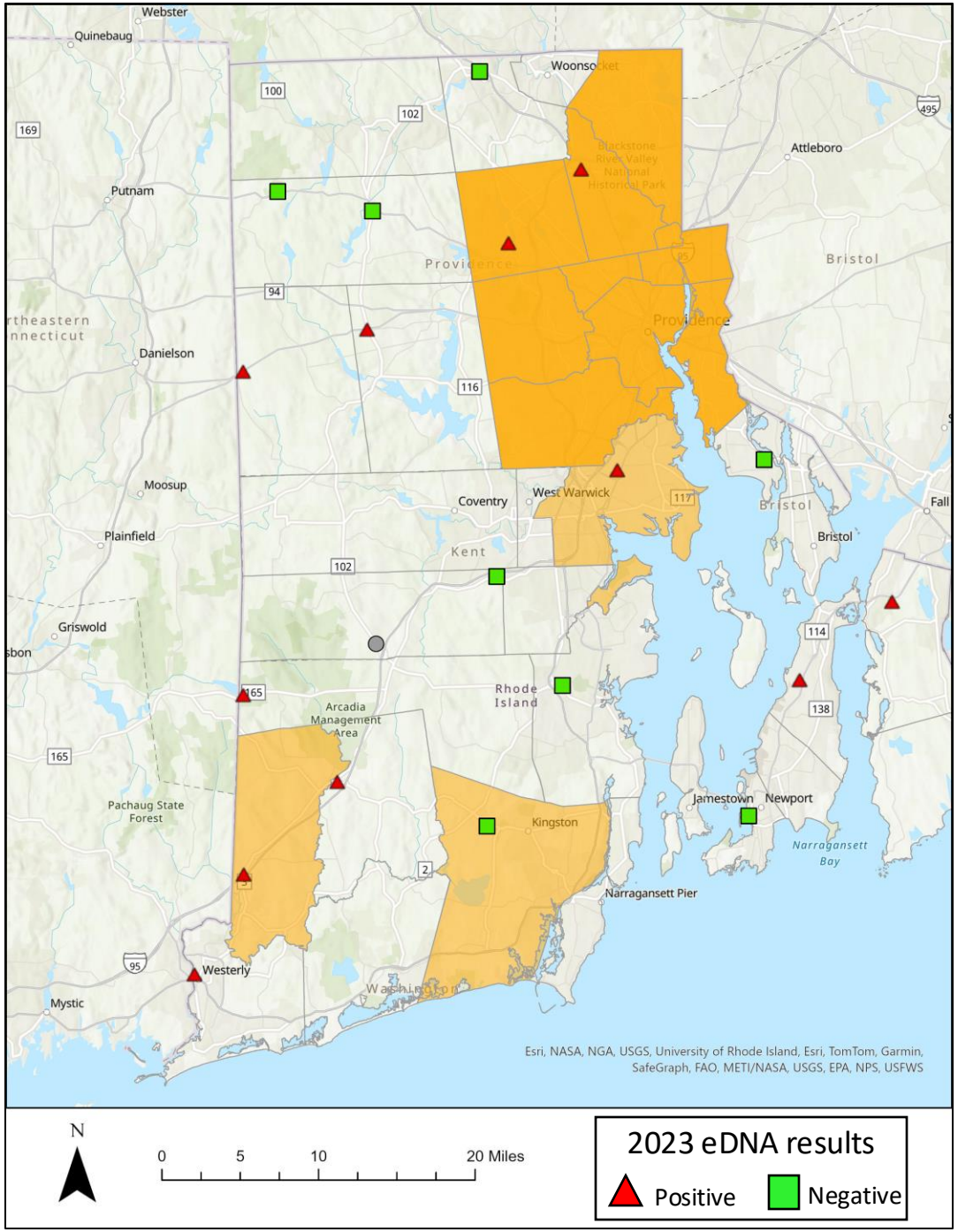
Connecticut had 6x as many wildfires as average this fall

But enough of the bad news… Let’s hear from FEMC’s state coordinators!

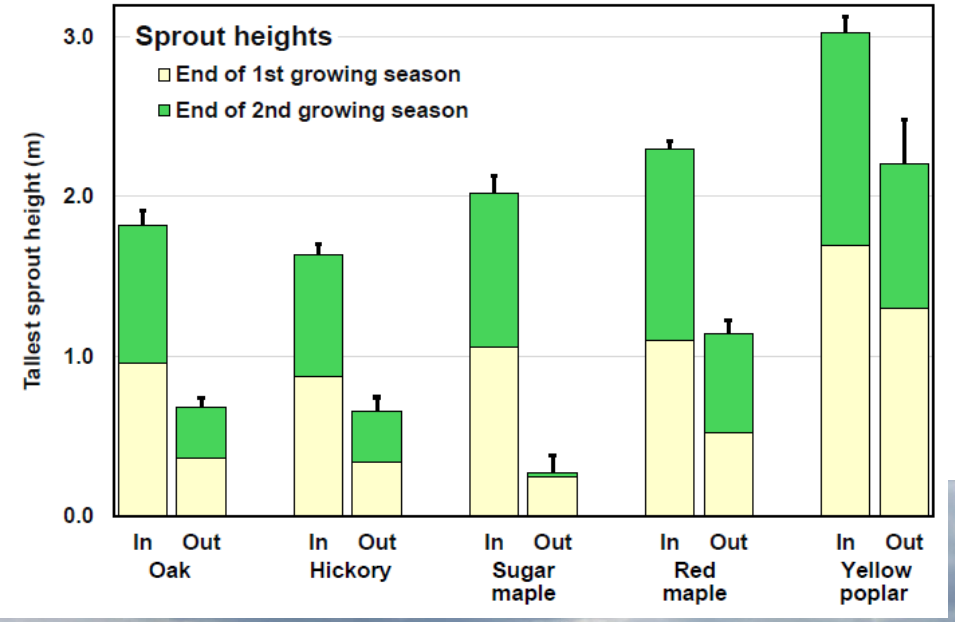
RI Forest Health Project Highlight

SLF eDNA survey

- SLF DNA detected at 10 out of 19 sites
  - Clusters of DNA positives preceded visual positives in 2024.
- Future forest health applications: HWA predator, ALB detection

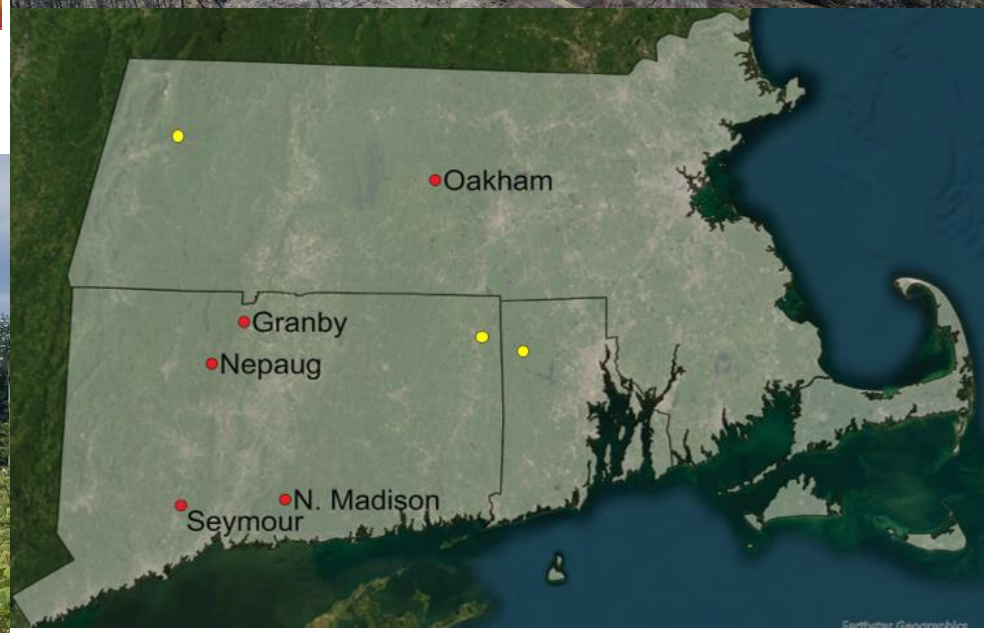


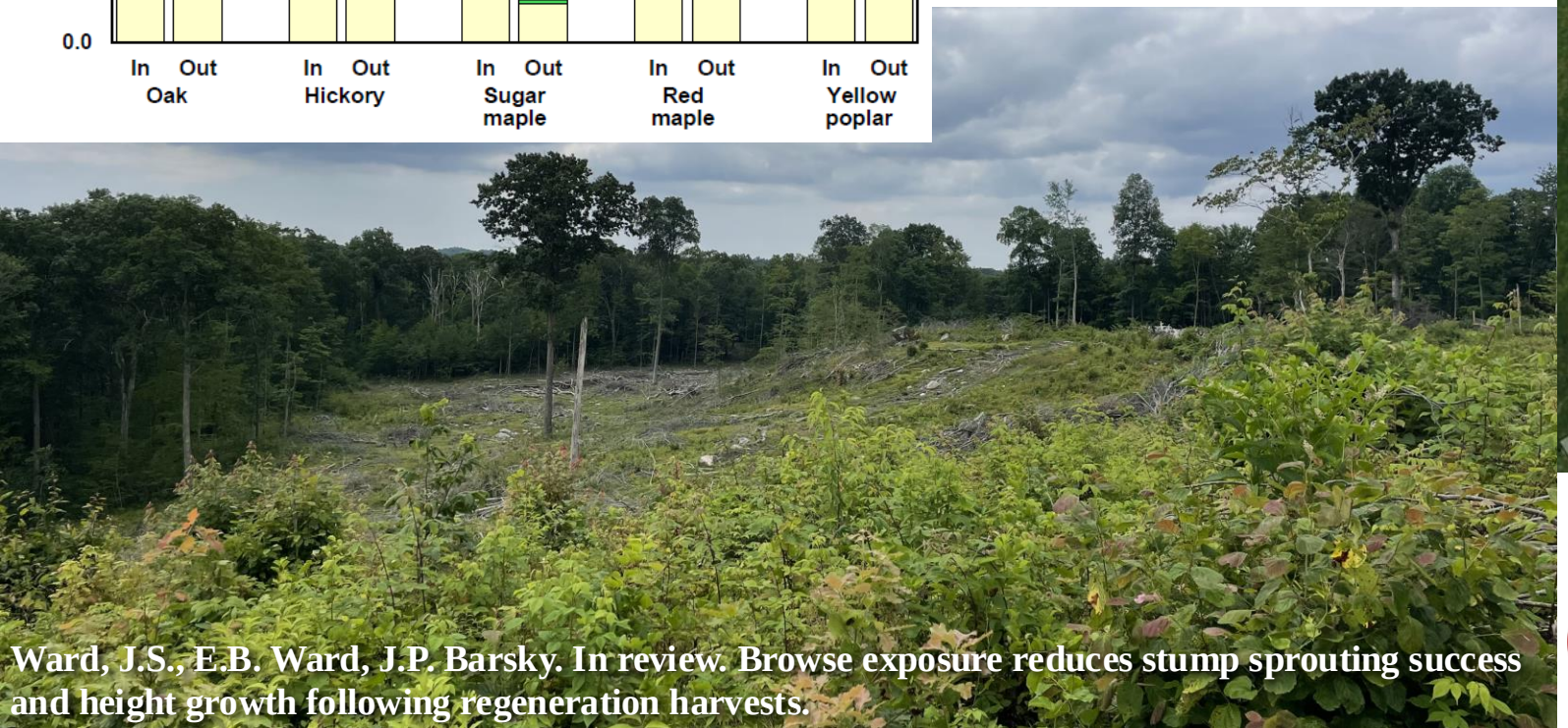
Promoting tree regeneration through deer exclusion with experimental slash walls in southern New England



The Connecticut Agricultural Experiment Station
CAES

Dr. Jeffrey S. Ward
Chief Scientist Emeritus





Ward, J.S., E.B. Ward, J.P. Barsky. In review. Browse exposure reduces stump sprouting success and height growth following regeneration harvests.

Smallidge, P.J., B. Chedzoy, et al. 2021.
Forest Ecology and Management

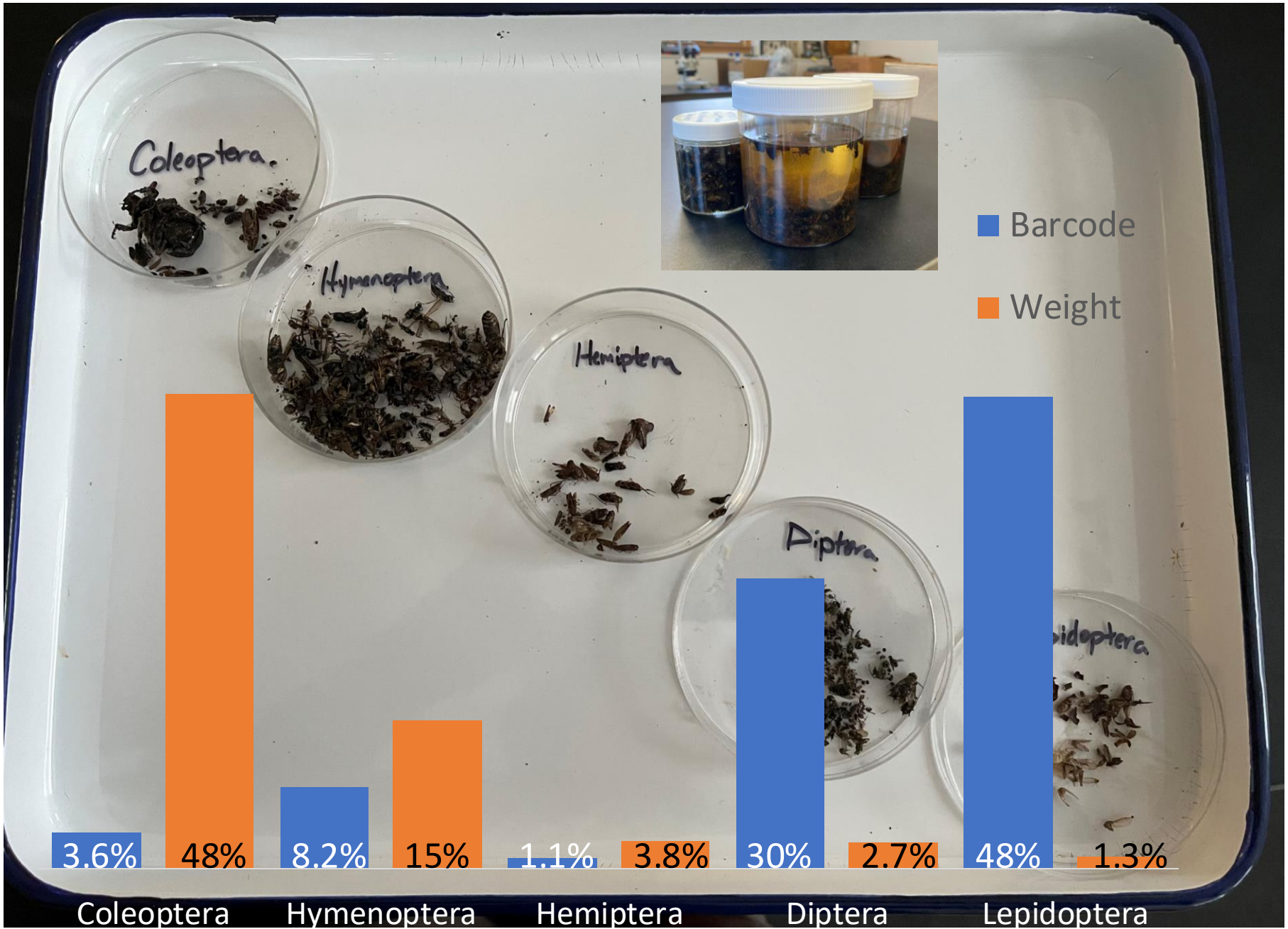
MASSACHUSETTS 2024 SOUTHERN PINE BEETLE

DENDROCTONUS FRONTALIS

MA Department of Conservation and Recreation's Forest Health SPB Trapping Program:

- Performing survey and suppression cuts for major infestation on Martha's Vineyard @ Manuel F. Correllus State Forest
- Working with local networks on Nantucket to assist with SPB outbreak
- Multiple small-level infestations on Cape Cod have already been surveyed and cut

New York – New Bycatch Metabarcoding Process



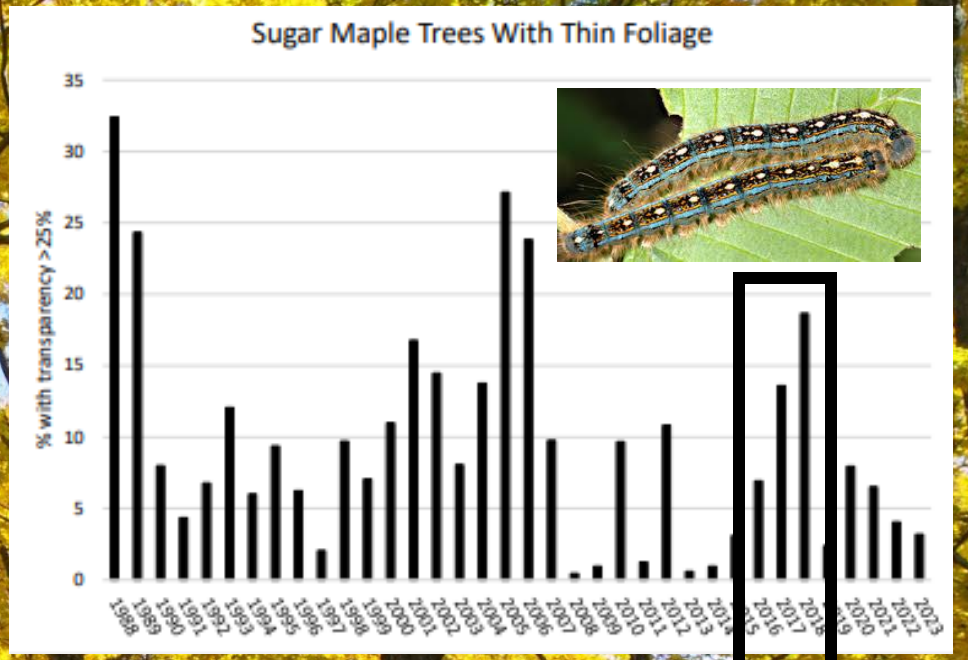
North American Maple Project

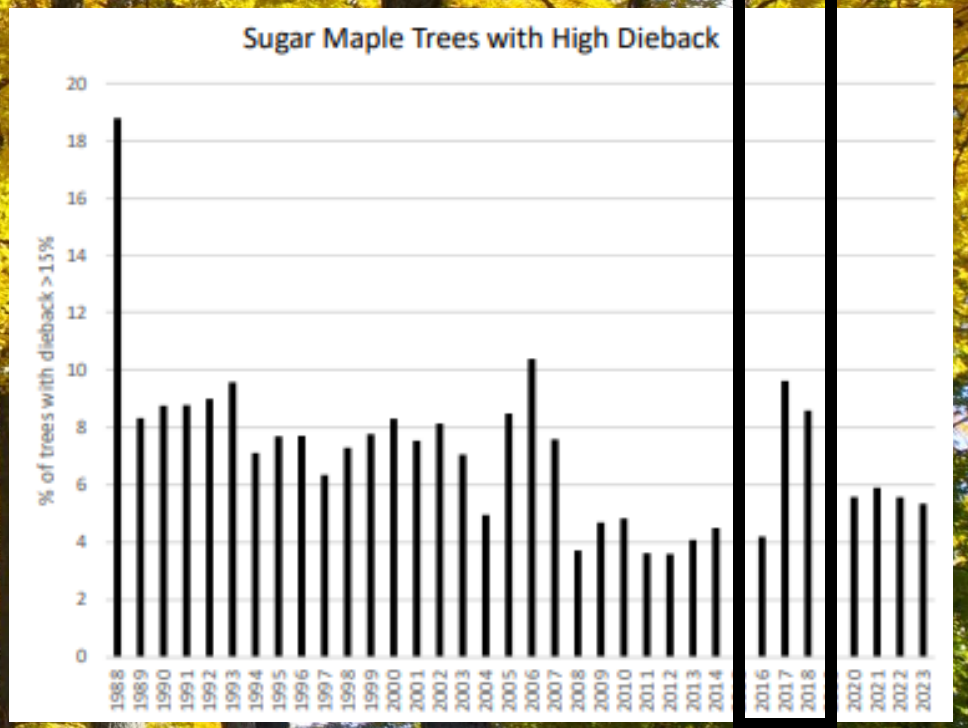
- Started in 1988
- Objectives:
  1. Determine the rate of change in sugar maple tree-condition ratings
  2. Determine if the rate of change differs between sugarbushes and non-sugarbushes
  3. Determine the possible causes of sugar maple decline
- Additional Current Objectives
  4. Monitor health metrics of all species

Foliage density & size

Dieback

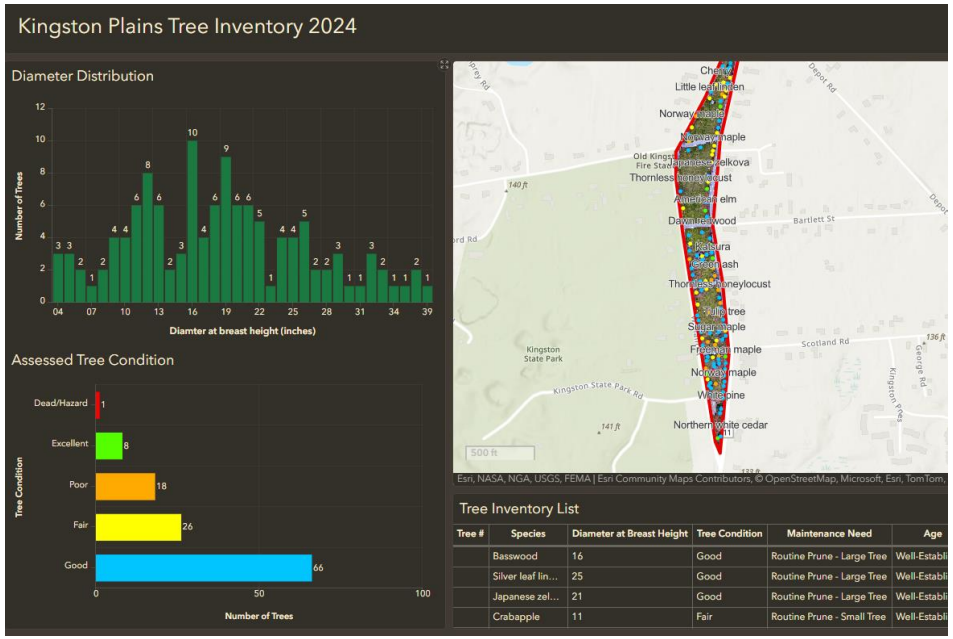
Damage agents: ie) Sugar maple borer





NEW HAMPSHIRE:

Incorporating & leveraging technology in our work.

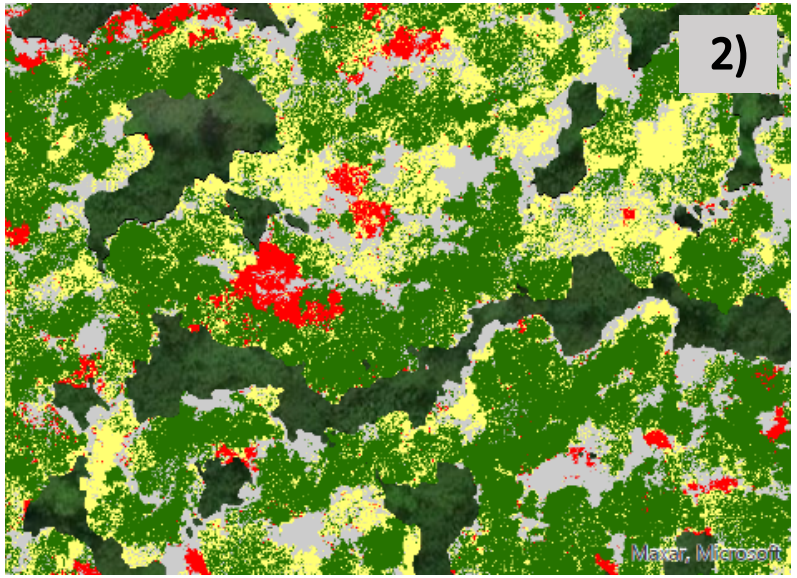


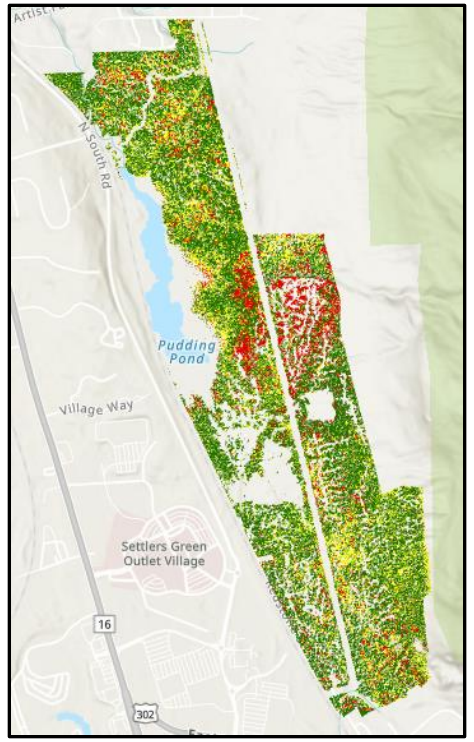
Classify by tree health

Healthy

Declining

Dead





Expanding the Coalition: Building Bridges through Relational Communication

Ethan Tapper
Author, *How to Love a Forest*
Forester, Bear Island Forestry

Amanda Mahaffey
Forest Ecologist
U.S. Fish & Wildlife Service

Expanding the Coalition

Building Bridges through Relational Communication

“Relational” Communication

Ethan

Amanda

Take 2 minutes to pair up with a neighbor and discuss…

Prompt 1:

Why did you get into this field? What do you love about it?

Take 2 minutes to pair up with a neighbor and discuss…

Prompt 2:

What is a different way of talking about what we do for forests?

Take 2 minutes to pair up with a neighbor and discuss…

Prompt 3:

What's one group in your community that you've never reached out to, that you think could support your work?

Take 2 minutes to pair up with a neighbor and discuss…

Prompt 4:

Set reality aside for a moment.

What would we do to build bridges?

Shaping Collaborative Futures

What ideas did you hear throughout?
What ideas do you want to pursue?

WE DID IT!