Forest Carbon Offsets *A Primer for Land Trusts*

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NEW ENGLAND FORESTRY FOUNDATION

Etheredge & Steuer, P.C.

Mass Audubon

Protecting the Nature of Massachusetts

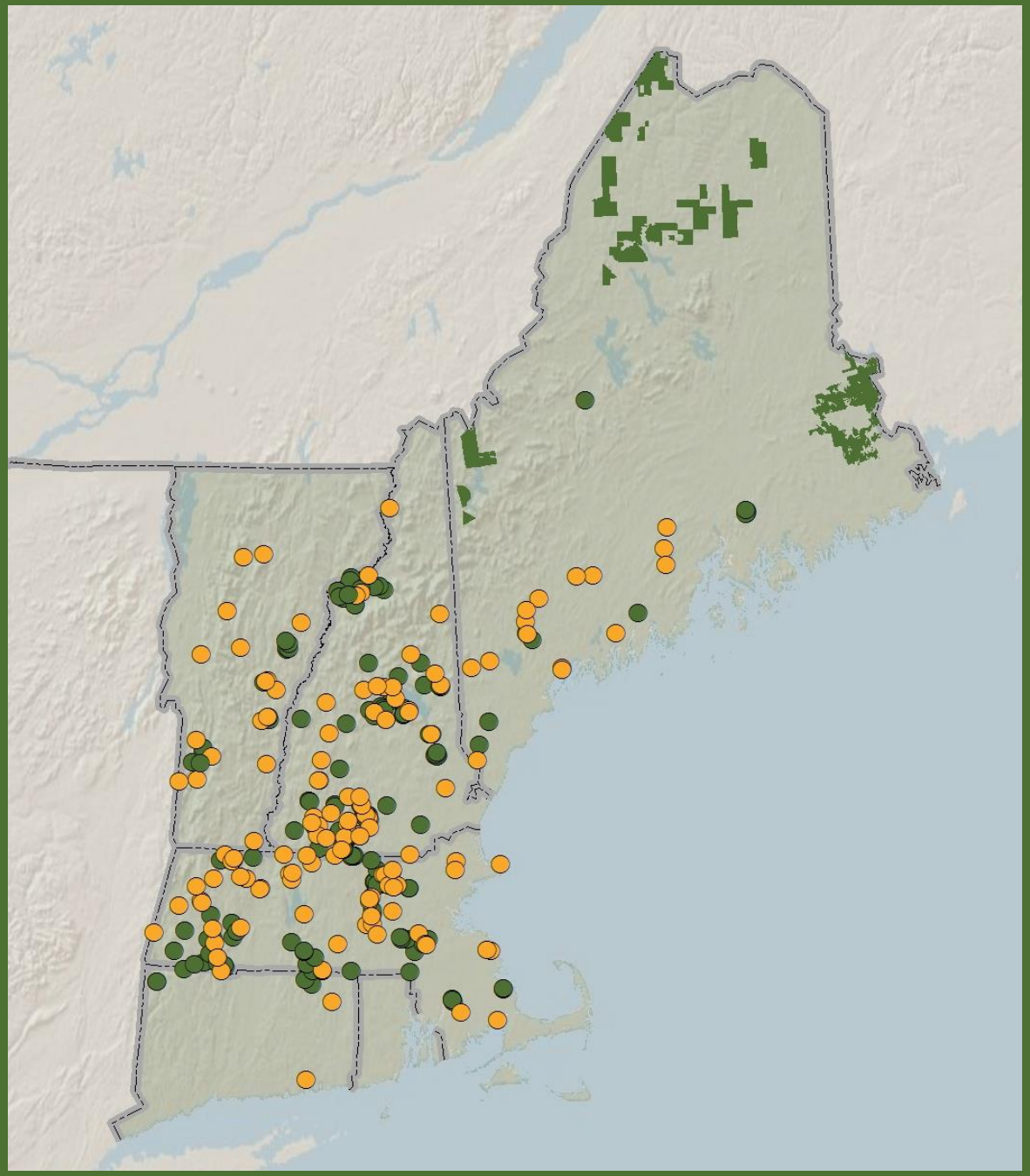
NEW ENGLAND FORESTRY FOUNDATION

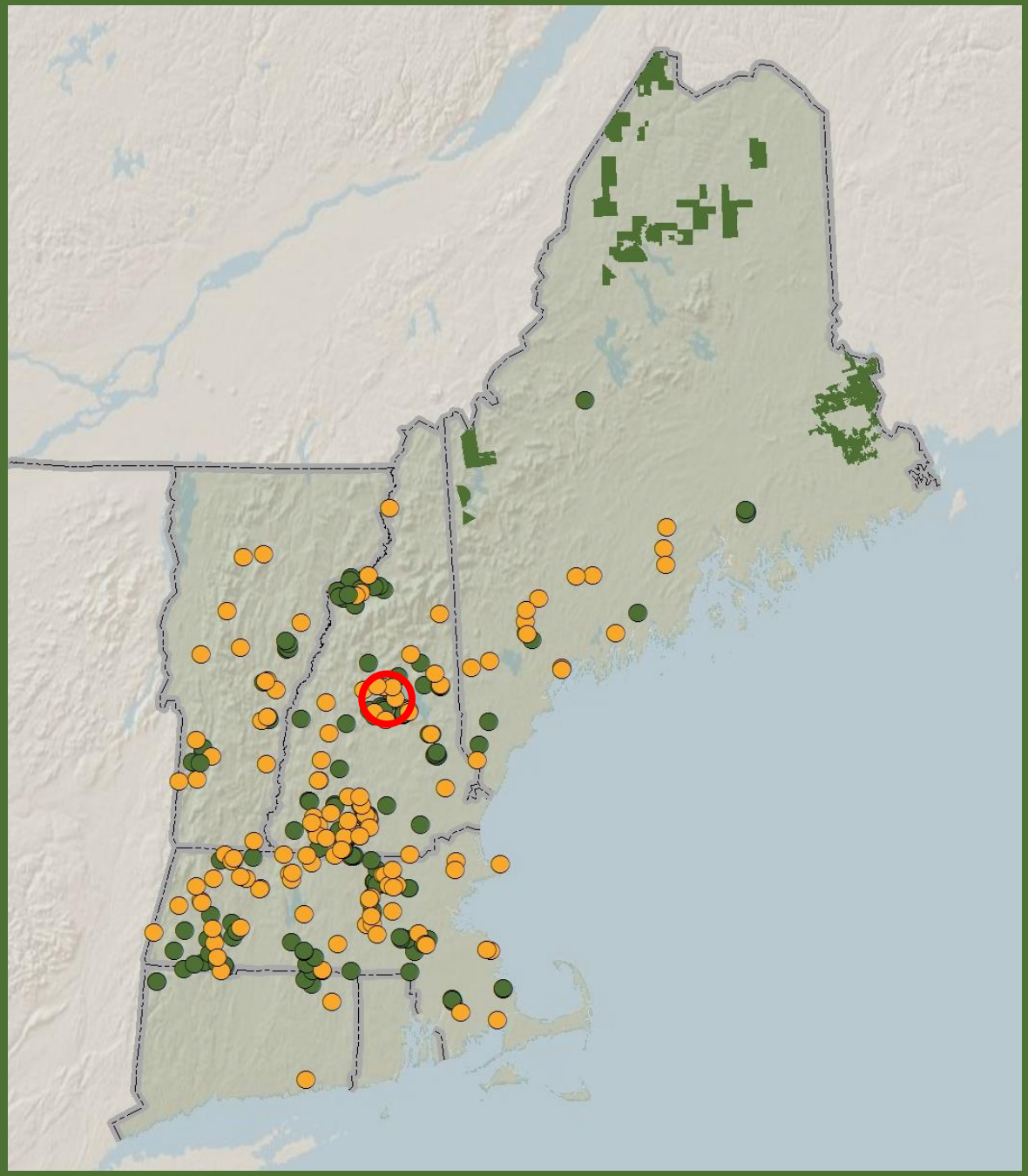
Hersey Mountain

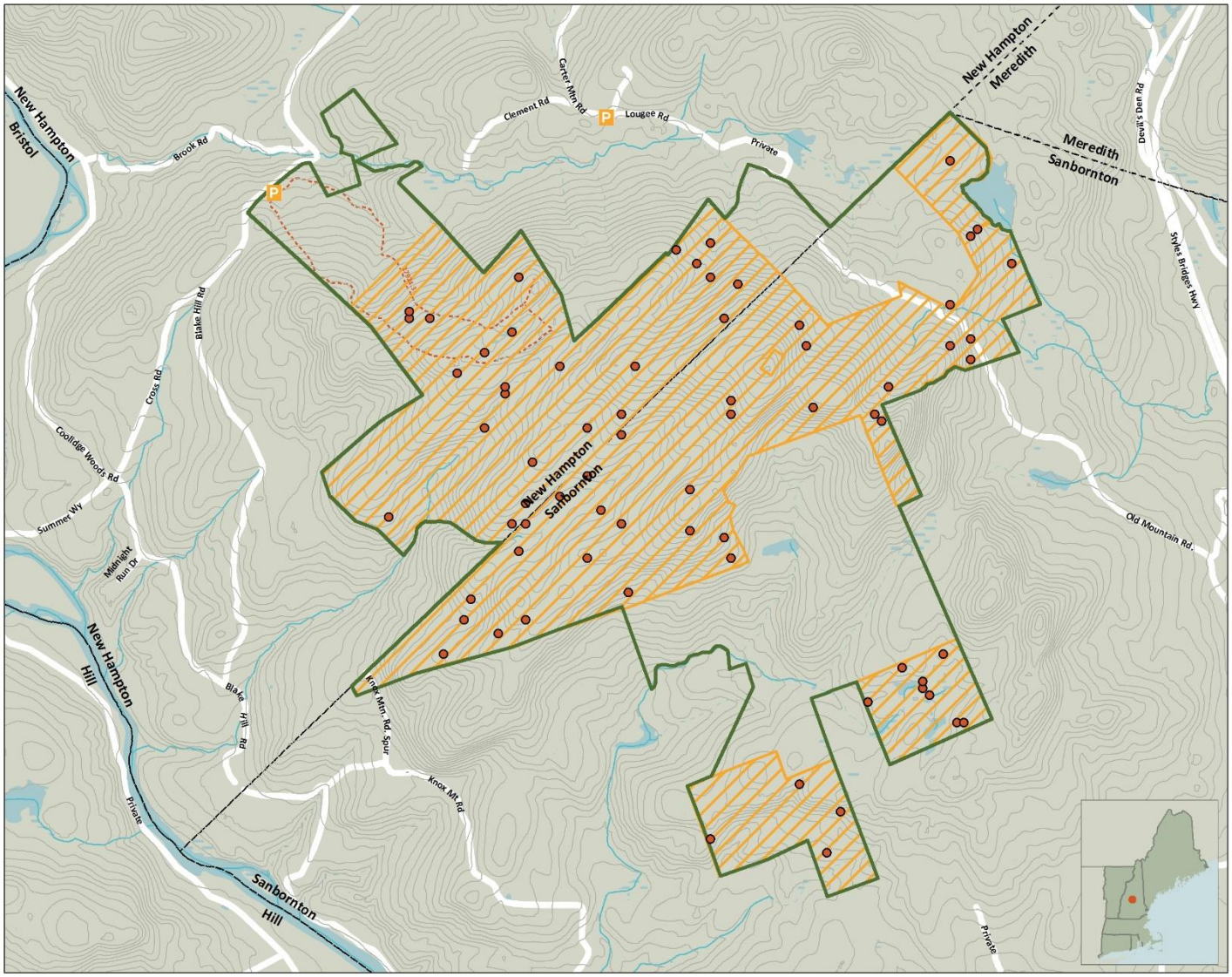
Improved Forest Management Project

NEFF Background

- Founded in 1944
- Dedicated to the conservation and sound management of privately owned forestlands throughout New England and beyond.
- Own 145 forests covering more than 27,000 acres across 5 New England states
- Hold 150 conservation easements covering over 1.1 million acres in 7 states
- “Green certified” under FSC & ATFS







Hersey Mountain Forest

Sanbornton & New Hampton, NH
3,288 Acres

Community Forest Recreation Map

LEGEND

- NEFF Boundary
- Wilderness Land & Carbon Project
- Carbon Inventory Point
- Open Water
- Wetlands
- Trails
- Perennial Streams
- Intermittent Streams
- Contours (ft)

Notes:

Credits:
ESRI 'Terrain Base' map service

Date: 3/19/2018
Property Number: 1271

Scale: 1 " = 2,000 '

0 1,000 2,000 4,000 Feet

NEW ENGLAND FORESTRY FOUNDATION

Document Name: 1265 Community Forest Carbon Map

Hersey Mountain Timeline

1996 – Mike Burke Mem. Forest	500 acres
1997 – Knox Mountain Tree Farm	730 acres
1997-2001 – acquired additional parcels with $ from Sweet Water Trust	2,058 acres
	3,288 acres

Through our agreement with Sweet Water Trust, we agreed to evaluate entire property and set aside a portion as wilderness to demonstrate the compatibility of adjacent wilderness and managed lands.

2,141 acres wilderness & 1,147 acres managed timberland

Carbon Project Timeline

2010 – Registered project with Climate Action Reserve

April 2010 - Signed service agreement with Finite Carbon

Summer/Fall 2010 – Began and completed carbon inventory

2013-2015 – Project verification by Rainforest Alliance

January 2015 – Listed project with CA ARB

July 2015 – Desk review by Ruby Canyon Engineering to transfer to compliance market

April 2016 – Sold offsets to Coop Carbone, Quebec

NEFF's Decision Points

- April 2010, regulatory window where landowners could register already conserved lands
- NEFF evaluated selling carbon on all its land and determined it to be too risky and complicated to commit to at the time
- Didn't want to put all our eggs in one basket (carbon or timber)
- Selling carbon fit into our educational mission
- An opportunity to get some $ from land where we would not otherwise get any financial return
- Looked into numerous project developers, chose to work with Finite Carbon

Finite Carbon's Service to NEFF

- Finite Carbon's responsibilities:
  - Develop and optimize the project.
  - Finance selected upfront development costs for a share initial offsets
  - Development tasks included: GIS and inventory, modeling, PDD development, facilitating account establishment and document distribution, verification, registration, and sales.
  - NEFF took on responsibility and cost of inventory & verification
- Finite Carbon received a percentage of NEFF tradable credits

Project Finances

Real & Projected Costs

- New inventory to meet higher standards – 70 permanent plots installed (done by NEFF) = $8,000
- Carbon verification by 3rd party = $25,000
- Annual monitoring and reporting = $500-1,000
- Re-verification every 6 years = ?
- Re-inventory every 12 years = $7,000?

Real & Projected Revenues

- 49,000 initial tons of carbon offsets = $500,000+
- 3,000 tons of offsets in annual growth = market price?

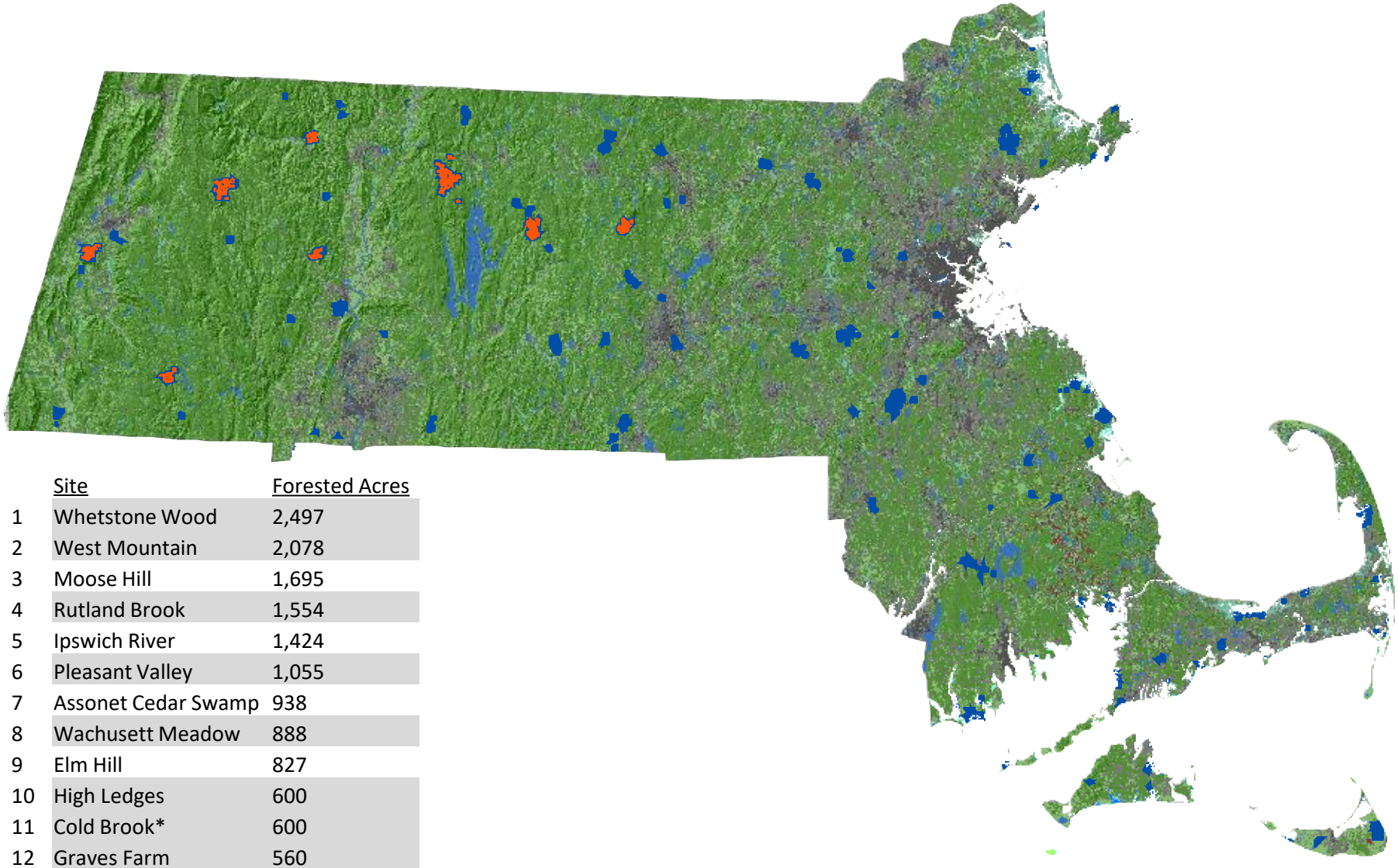
Challenges

- Feasibility – acreage, initial volume, growth rate, regional risks
- Following changing regulatory system both state & federal
- Uncertain future demand and price for product
- Long-term commitment (100 years from last sale of offsets)
- Future costs of inventory and verification

Our advice for landowners

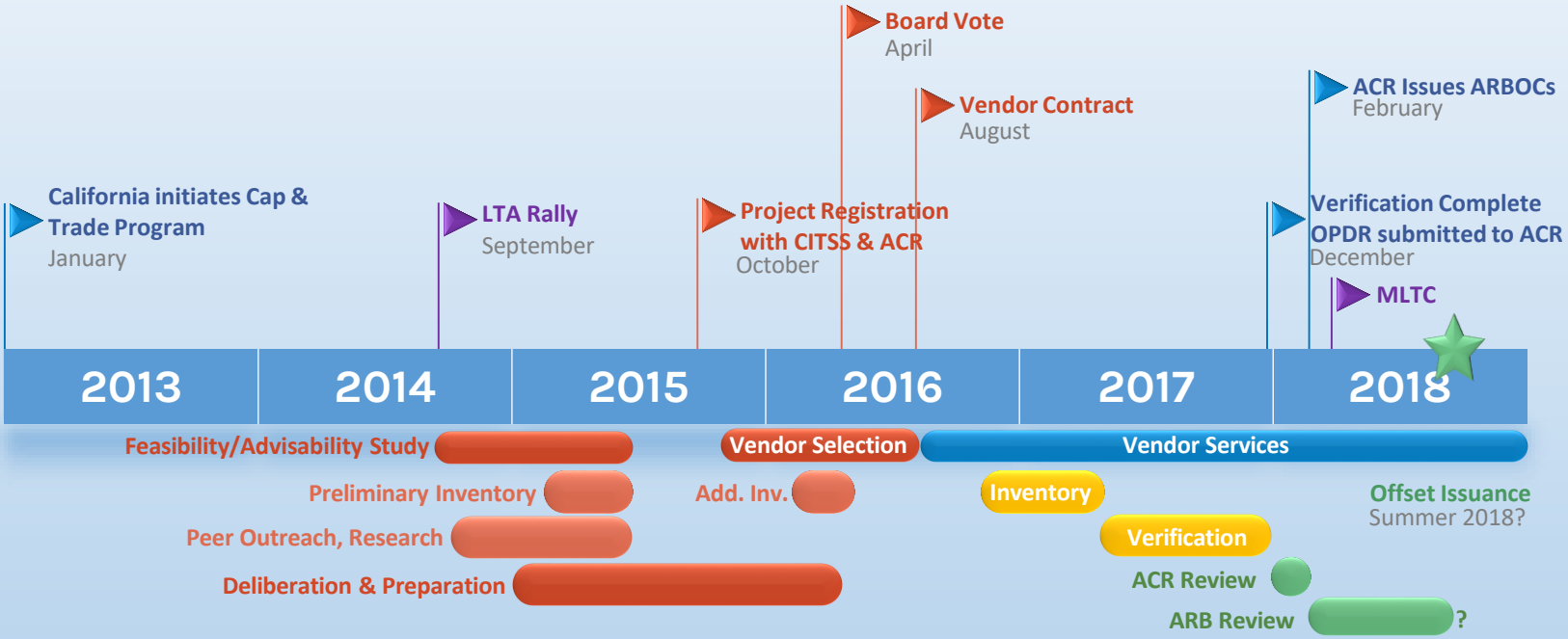
- Not a financial windfall – save or invest enough revenue to cover future costs
- Need a large enough land base to offset costs – not for small landowners (watch for aggregation projects)
- Keeps lands well stocked with healthy, vigorous trees – can only sell amount of carbon above FIA baseline

Western MA IFM Project Sites



	Site	Forested Acres
1	Whetstone Wood	2,497
2	West Mountain	2,078
3	Moose Hill	1,695
4	Rutland Brook	1,554
5	Ipswich River	1,424
6	Pleasant Valley	1,055
7	Assonet Cedar Swamp	938
8	Wachusett Meadow	888
9	Elm Hill	827
10	High Ledges	600
11	Cold Brook*	600
12	Graves Farm	560
		14,715
	Total in project:	**~9,660**

Mass Audubon's carbon project timeline



Project Models (An array of options at every step)

Management
- Self-managed
- Subcontracted
- Full service

Developer Payment
- Out-of-pocket
- Project Share
  - Share of credits
  - Share of revenue

Offset Sale
- Pooled
- Per project
- Etc.

bluesource

FiniteCarbon

NewForests

Spatial Informatics Group

Responsibilities

- Maintain carbon stocking levels at or above initial value
- Inventory, monitor, and report on project performance for at least 100 years following the initial offset sale
  - Annual desk audit
  - Onsite third-party verification every 6 years
  - Full forest carbon re-inventory every 6 years
- Other administrative tasks

Risks

- Invalidation – overstatement of project benefits
- Reversal – carbon stocking level drops below initial value
- Development – legal or technical issues could derail project before offset sale
- Market – price of carbon could rise (or fall)

Risks

1. Invalidation – overstatement of project benefits
2. Reversal – carbon stocking level drops below initial value
3. Development – legal or technical issues could derail project before offset sale
4. Market – price of carbon could rise (or fall)

Risk Management

1. Invalidation
    - careful initial inventory
    - third-party verification
    - review by California Air Resources Board
    - opportunity to re-inventory at year 3
2. Reversal
    - Passive management minimizes risk
    - Unintentional reversals are covered by a buffer pool
3. Development
    - Contractual details with project vendor can shelter landowner
    - Project developer can front costs in many payment models
4. Market - who can predict the future?

Benefits

- Substantial revenue from initial sale and sale of annual increment.
- Commitment to maintain forest carbon stocking levels (i.e., minimal harvesting), consistent with long-term ecological management goals, ensuring continuance of forest ecosystem services; hedges against future changes that might relax the current forest management policy.
- At least 100 years of regular (at least every 6 years) measurement and monitoring at permanent plots on enrolled lands, contributing to large database of forest condition.
- Participation in this program is a strong signal of support for a pioneering program in assigning a cost to carbon pollution, a necessary and powerful means to force emissions reductions.
- Direct involvement in program will drive understanding, which could potentially influence policy development and advocacy on state/regional/national level.

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