

Strategic Planning for Biodiversity Conservation at a Regional Scale

Sarah Wells

North Quabbin Regional Landscape Partnership

Thanks to:

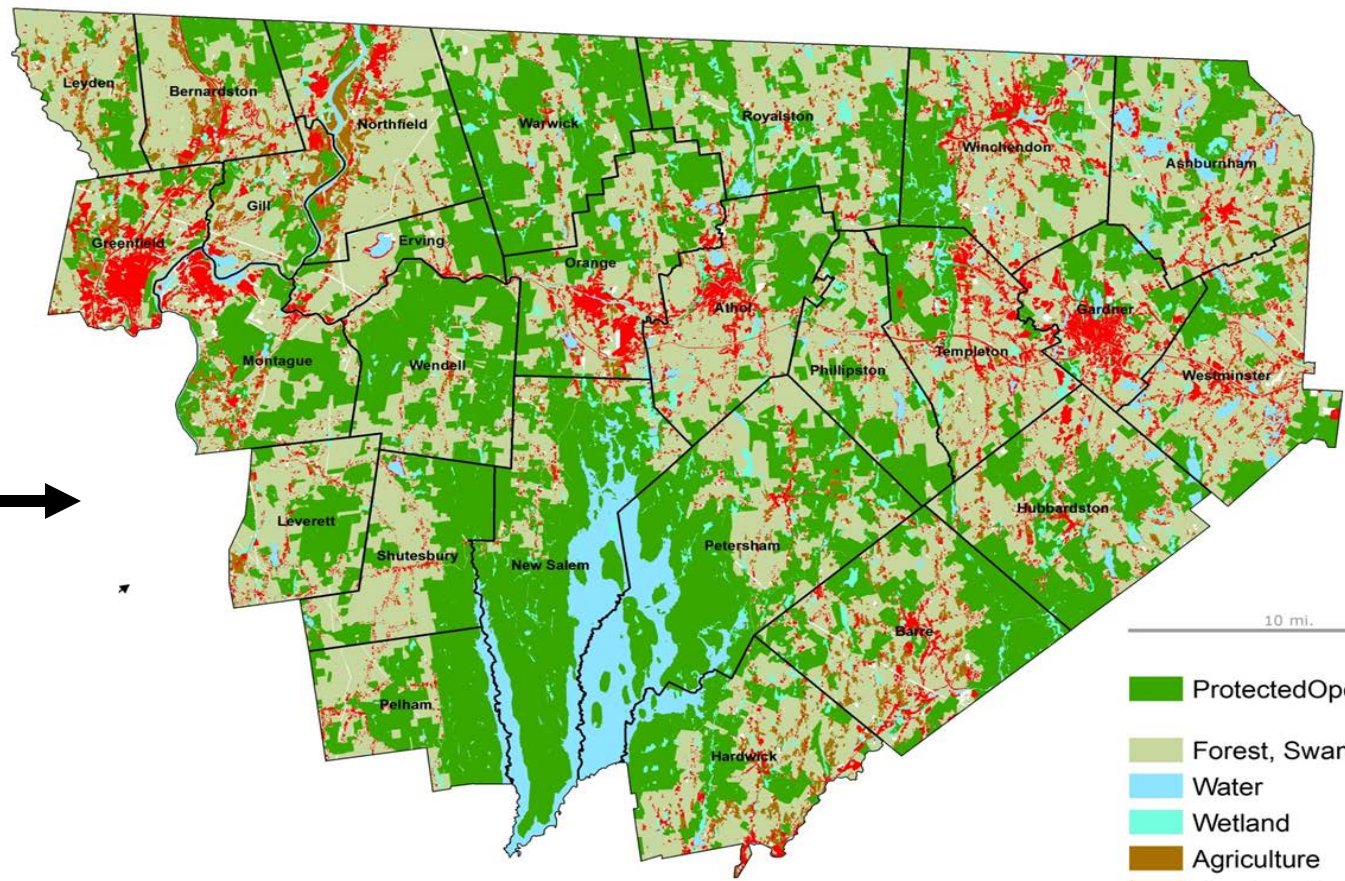
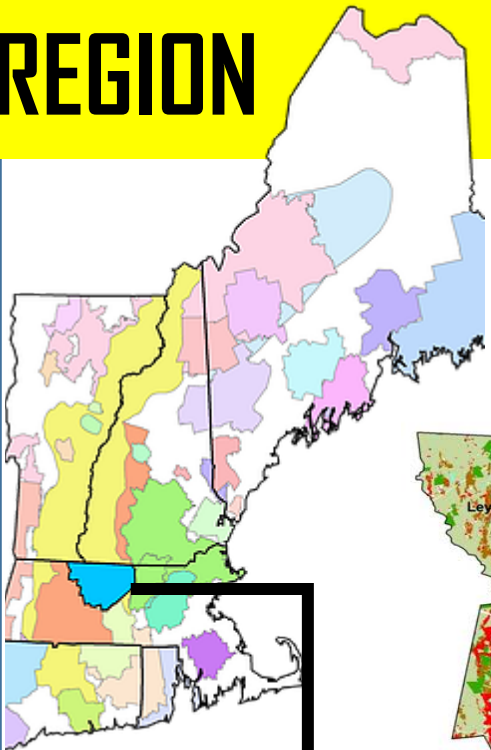
Brian Hall, Harvard Forest

Bill Labich, Highstead

Abby Weinberg, Open Space Institute

The Nature Conservancy

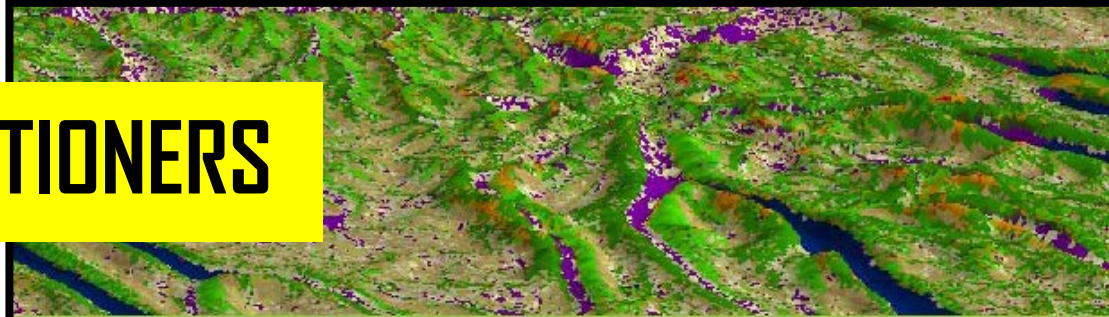
REGION



10 mi.

- ProtectedOpenSpace
- Forest, Swamp
- Water
- Wetland
- Agriculture
- Developed

GOAL: TOOL FOR PRACTITIONERS



The Nature Conservancy 
Protecting nature. Preserving life.™

Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region

The Nature Conservancy · Eastern Conservation Science
Mark G. Anderson, Melissa Clark, and Arlene Olivero Sheldon



OPEN SPACE
INSTITUTE

Highstead 

Dedicated to conserving New England's natural landscapes



HARVARD FOREST

Established 1907
Harvard University's 3500 acre laboratory & classroom
Long Term Ecological Research Site since 1988



2013

2014

GIS + INPUT

October

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January

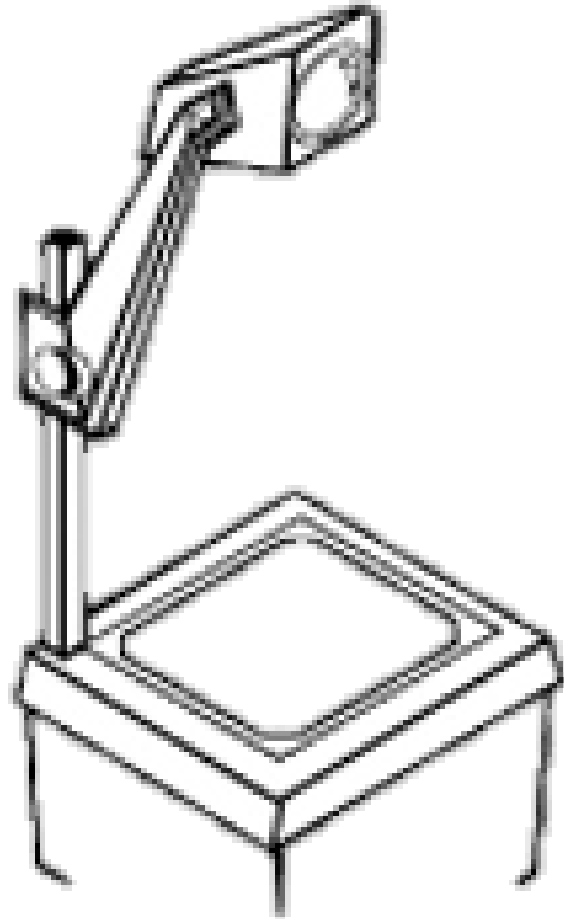
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February

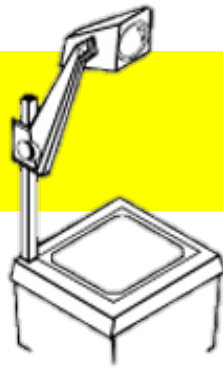
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	



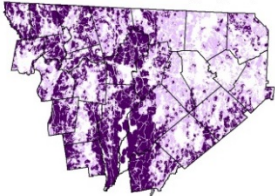
CO-OCCURRENCE MODELING



THE MODEL

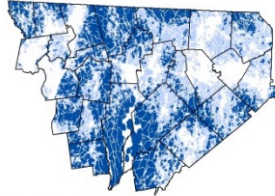


TNC Resilience Scaled To Geophysical Setting in Ecoregion (TNC)



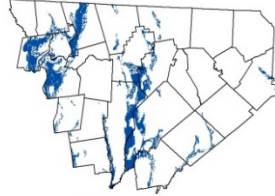
RTNCResilienceScoredToGeoPhysInEcoregionThirds
 ■ 1 (Top third)
 ■ 0.5 (Middle third)

Resilience Scaled To NQRLP (TNC)



RTNCResilienceZScoreThirds
 ■ 1 (Top Third)
 ■ 0.5 (Middle Third)

Under-represented Geophysical Settings Tier 1 (TNC/OSI)



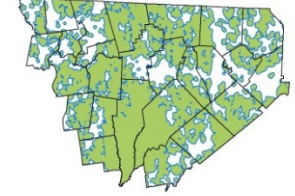
RUnderRepTier1
 ■ 1

Under-represented Geophysical Settings Tier 2 (TNC/OSI)



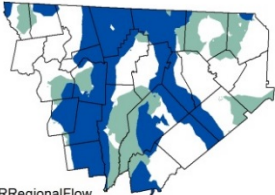
RUnderRepTier2
 ■ 1

Protected Open Space Within 400m

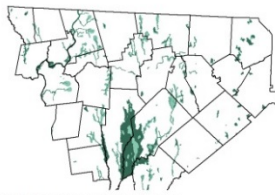


■ 1 (<200m away ~1/8 mile)
 ■ .5 (201-400m away ~1/8-1/4 mile)
 ■ 0 (>201m away)

Regional Flow (TNC)



RRRegionalFlow
 ■ 1 (Concentrate Flow)
 ■ 0.5 (Diffuse Flow)



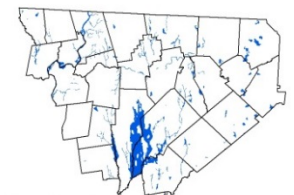
BioMap2 CNL Aquatic Buffer
 ■ 1 Aquatic Core
 ■ 1 Upland Buffer of Aq. Core



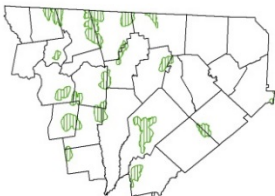
■ 1 BioMap2 CNL Landscape Blocks



BioMap2 CNL Wetland Buffer
 ■ 1 Least-disturbed wetland complexes
 ■ 1 Priority Natural Community Wetlands and Selected Oxbows
 ■ 1 Upland buffer



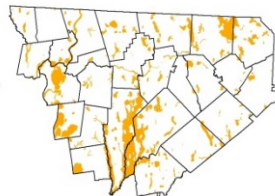
■ 1 BioMap2 CH Aquatic Core



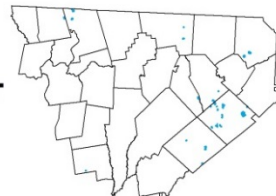
■ 1 BioMap2 CH Forest Core



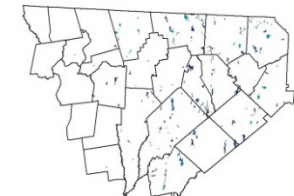
■ 1 BioMap2 CH Priority Natural Communities



■ 1 BioMap2 CH Species of Conservation Concern

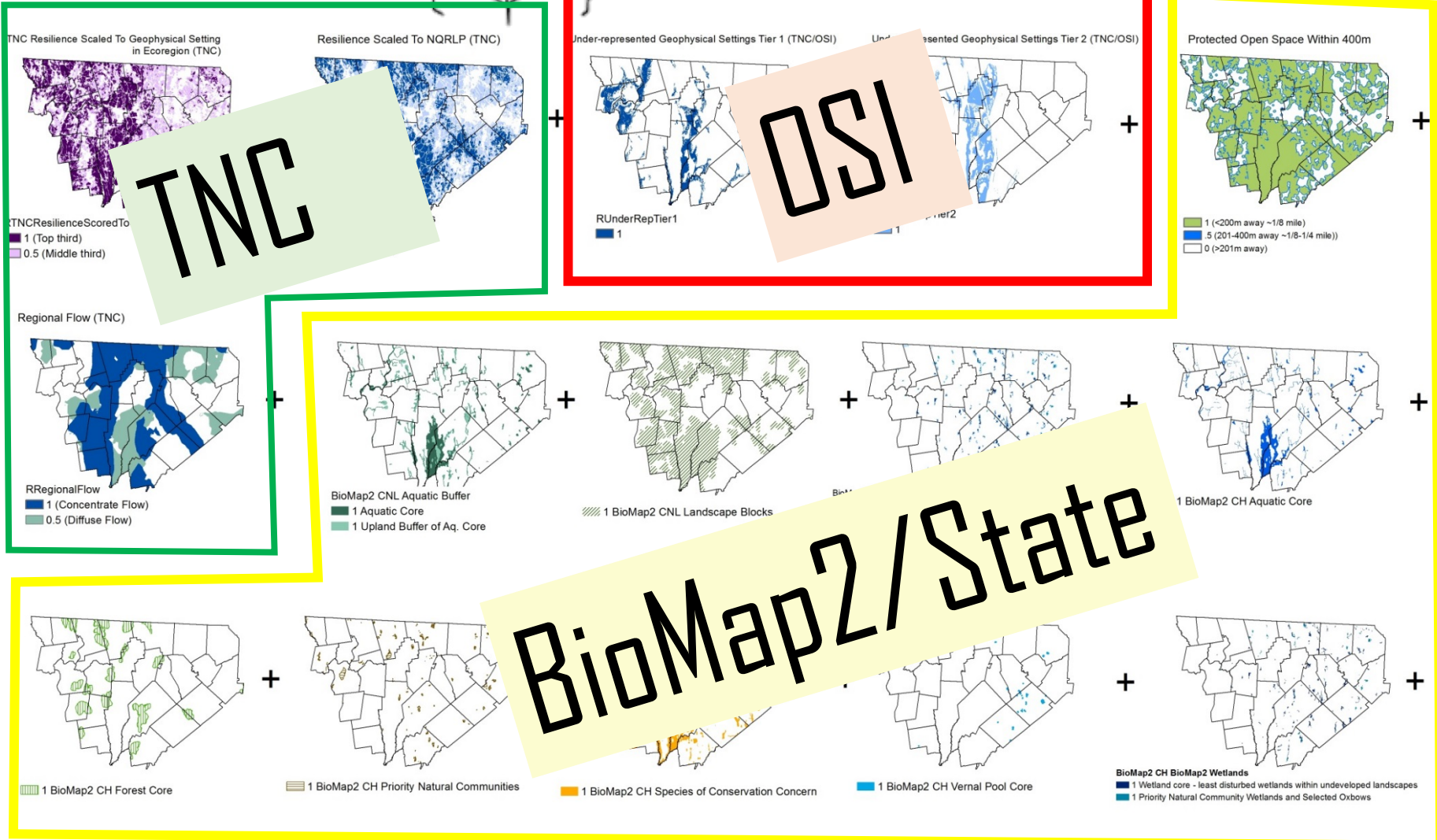
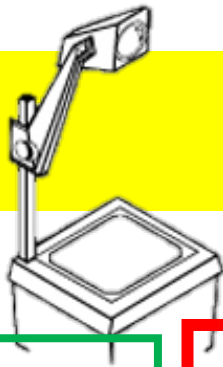


■ 1 BioMap2 CH Vernal Pool Core

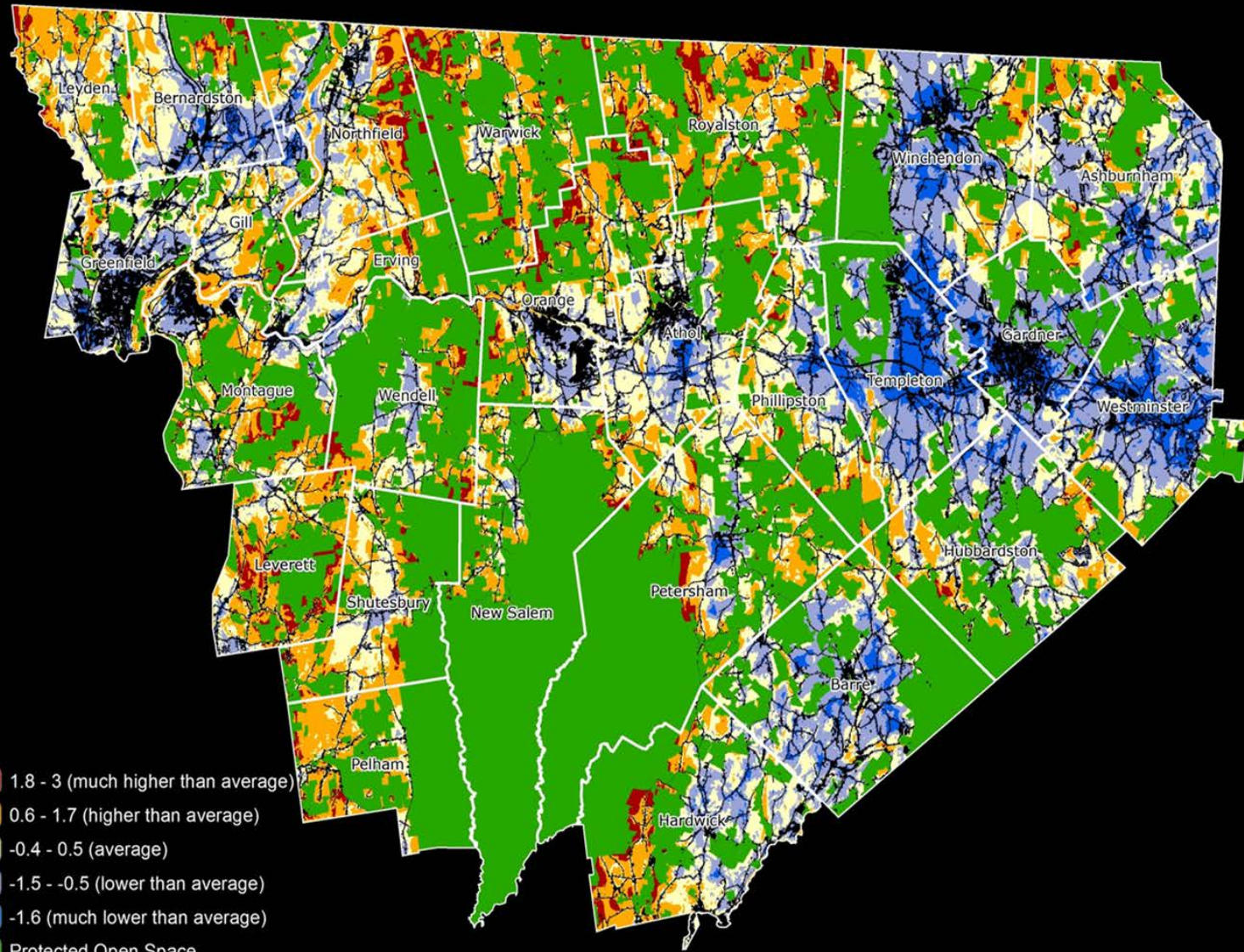


BioMap2 CH BioMap2 Wetlands
 ■ 1 Wetland core - least disturbed wetlands within undeveloped landscapes
 ■ 1 Priority Natural Community Wetlands and Selected Oxbows

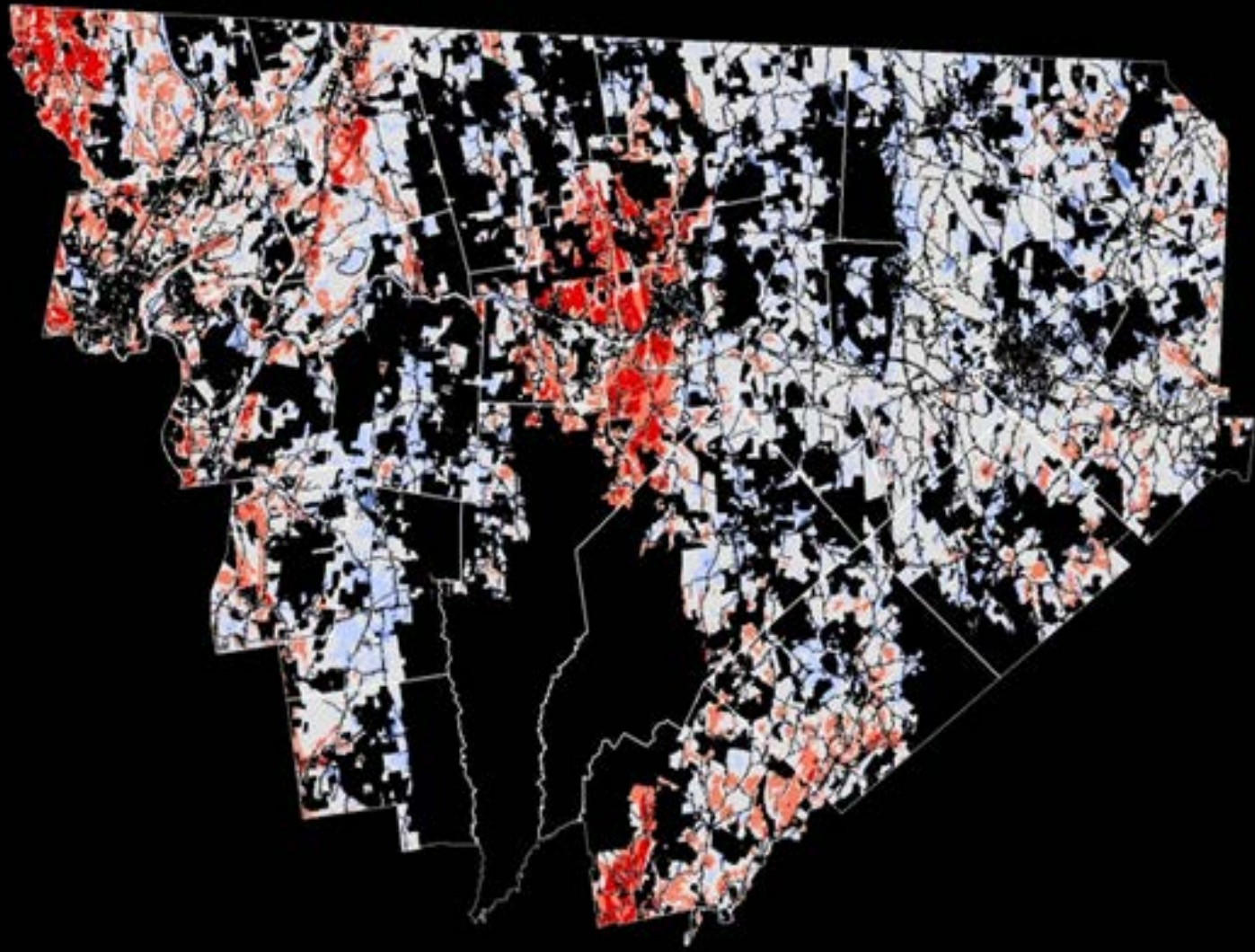
THE MODEL



THE MAP



TNC EFFECT



LESSONS LEARNED

- **What Worked:**

- GIS gurus
- "conserving the stage" concept

- **Next Time:**

- More time!
- Other types of resiliency (food, community, etc.)

LAND TRUSTS

East Quabbin
LAND TRUST



Conserving the land. Preserving our heritage.



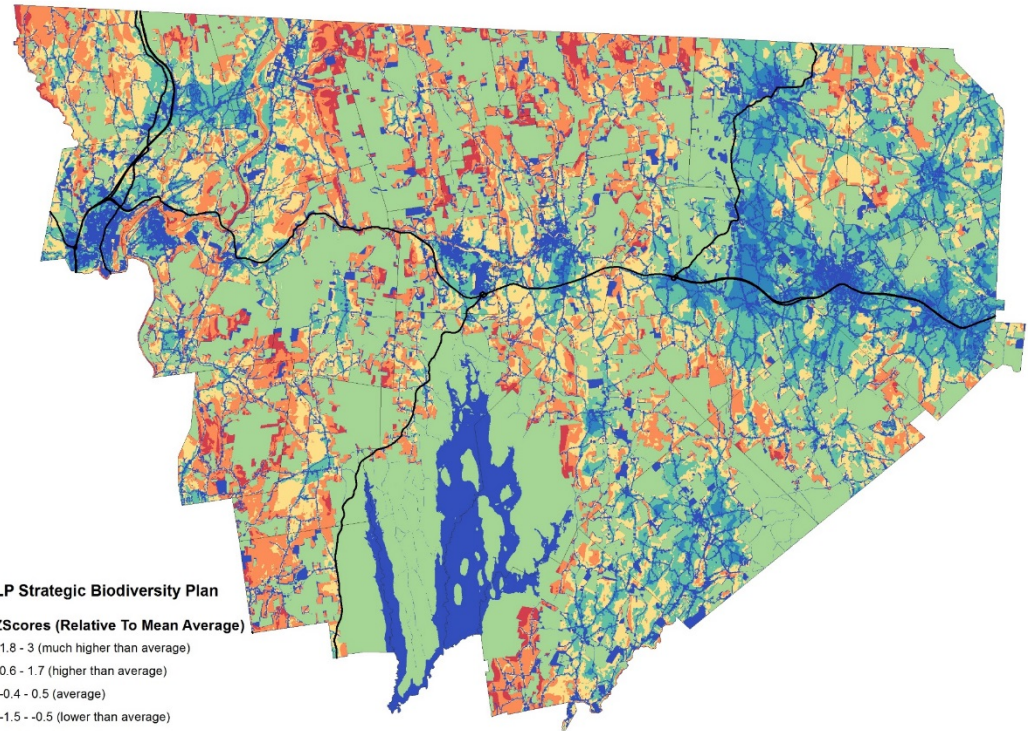
FRANKLIN LAND TRUST



KESTREL
LAND TRUST



**NORTH COUNTY
Land Trust, Inc.**



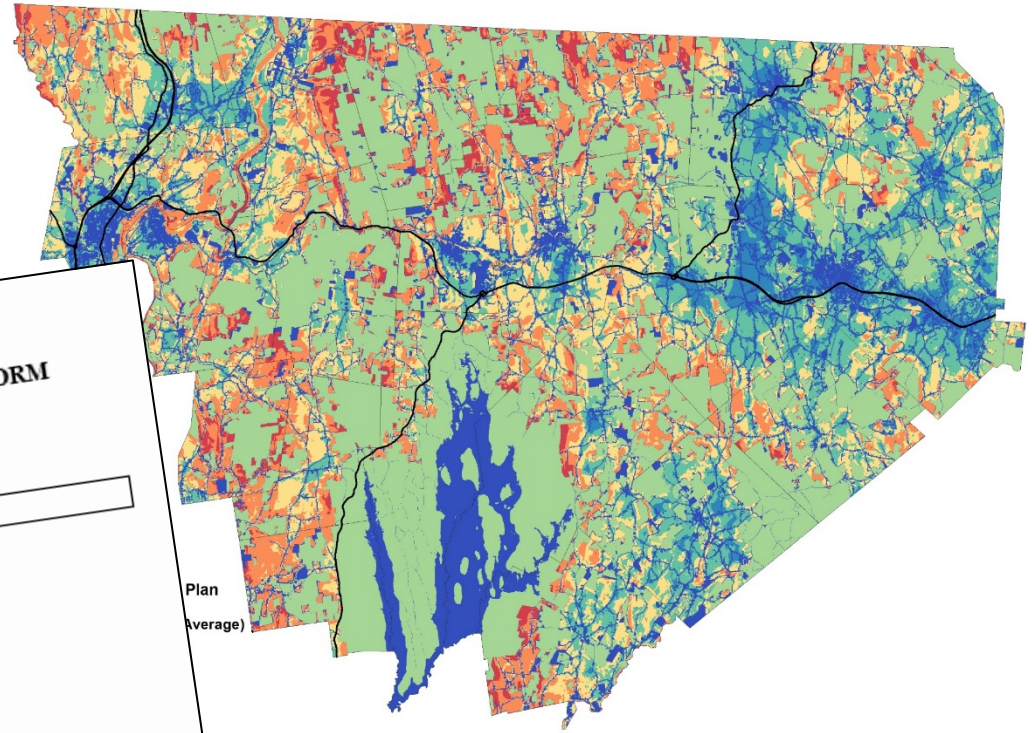
NQRLP Strategic Biodiversity Plan

FinalZScores (Relative To Mean Average)

- 1.8 - 3 (much higher than average)
- 0.6 - 1.7 (higher than average)
- 0.4 - 0.5 (average)
- 1.5 - -0.5 (lower than average)
- 1.6 (much lower than average)
- Developed Areas
- Protected Open Space

LAND TRUSTS

- Internal tool



**MOUNT GRACE LAND CONSERVATION TRUST
PROJECT INTAKE AND REMOTE SITE ASSESSMENT FORM**

I. INTAKE INTERVIEW

Date (month and year): _____

Landowner Information

Landowner Name(s): _____

Mailing Address: _____

Alternate Season Address: _____

Telephone number: _____, alternate: _____

Email address: _____, _____

Mount Grace Member(s)

Property Address: _____

Total property acres: _____

Acres proposed for easement/restriction: _____

Size of proposed exclusion area: _____

Other landowners listed on deed: _____

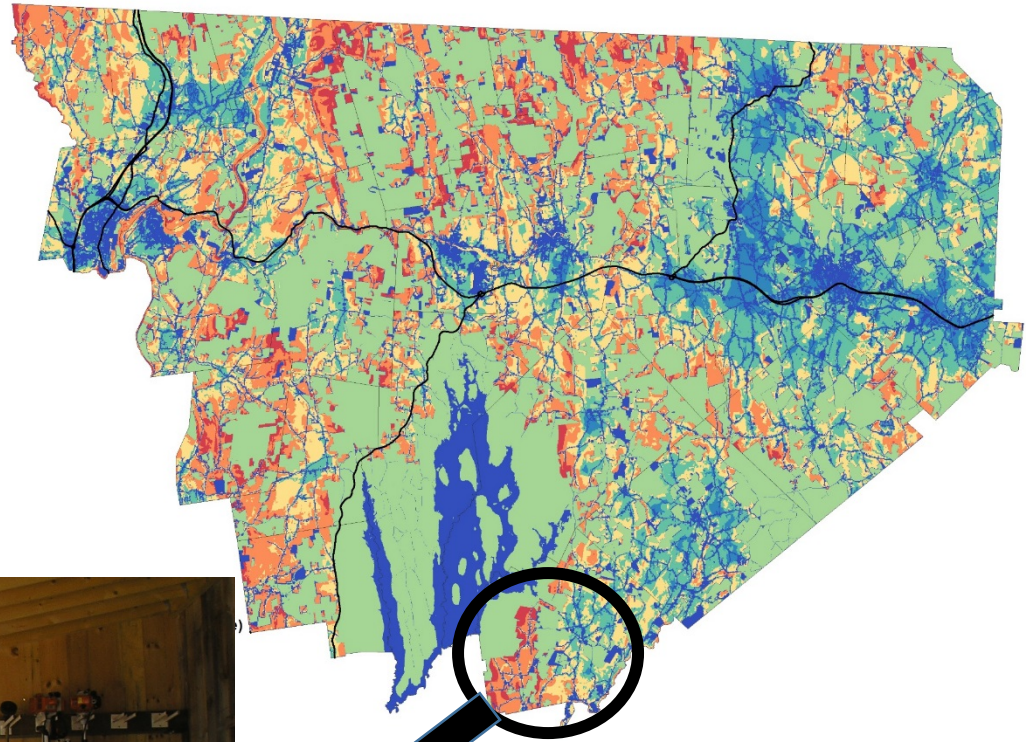
Landowner(s) live on property
How long: _____

Landowner type: Trust Estate
 Individuals
Other: _____



LAND TRUSTS

- Internal tool
- Neighborhood outreach



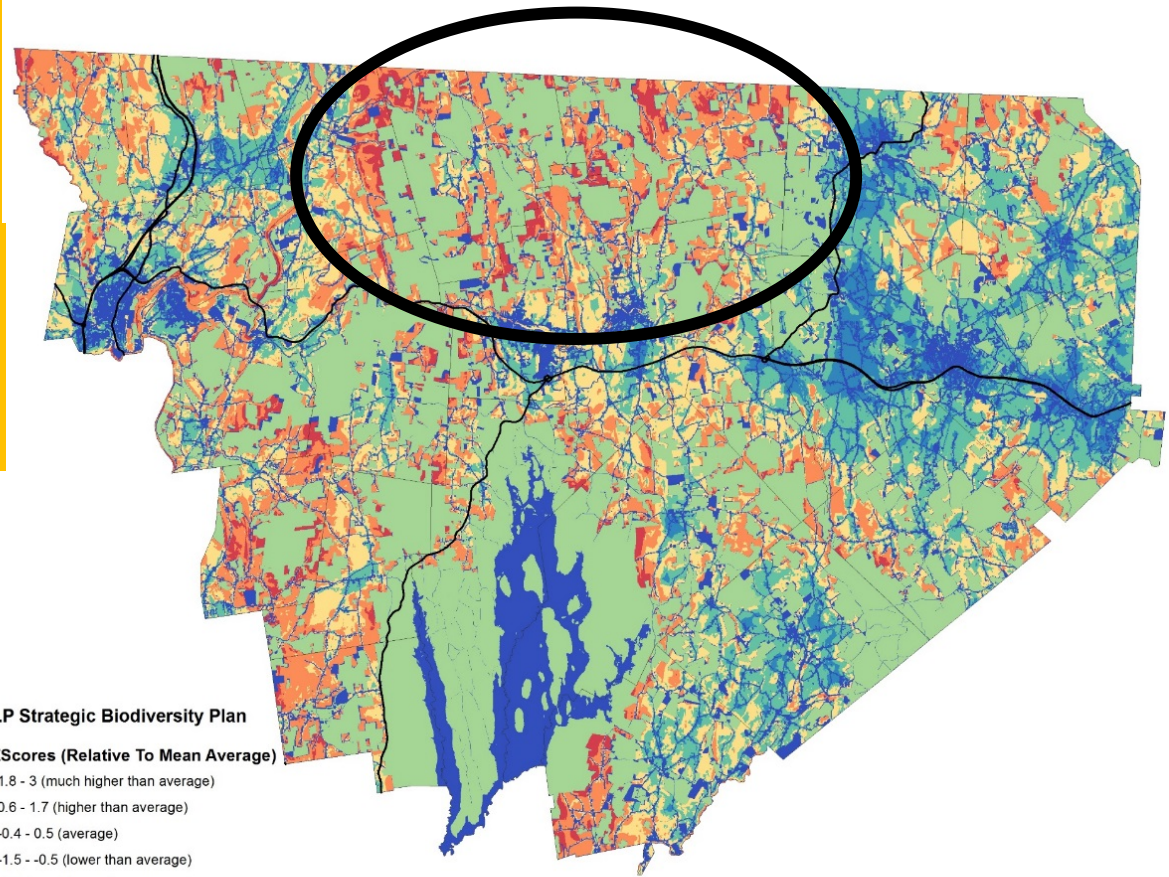
East Quabbin
LAND TRUST



Conserving the land, Preserving our heritage

LAND TRUSTS

- Internal tool
- Neighborhood outreach
- Landscape-scale initiative



NQRLP Strategic Biodiversity Plan

FinalZScores (Relative To Mean Average)

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0.6 - 1.7 (higher than average)

-0.4 - 0.5 (average)

-1.5 - -0.5 (lower than average)

-1.6 (much lower than average)

Developed Areas

Protected Open Space

LANDOWNERS



LANDOWNERS



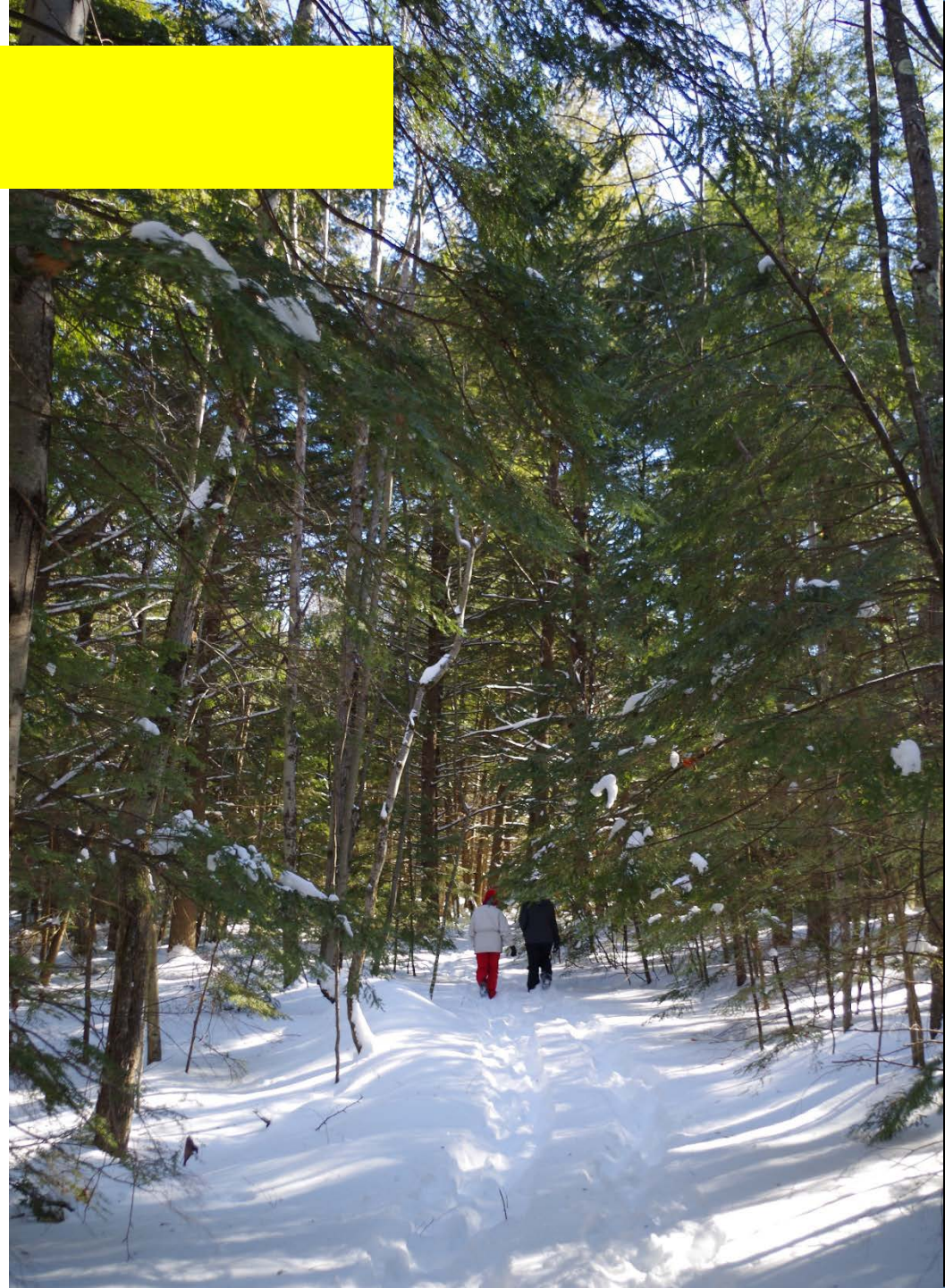
MESSAGE

LOCAL

ACTION

JARGON

POLITICS





CALL FOR RATES
DAILY & MONTHLY PARKING
CONTACT:
BOSTONPUBLICWORKS.COM
CITY ADMINISTRATION & P&S

Drew

SEA
CHANGE
BOSTON

ON
EXHIBIT
AT
DISTRICT
TRIAL
GALLERY

IF NOTHING IS DONE, THIS IS WHERE HIGH TIDE COULD BE IN 2100

IF NOTHING IS DONE, THIS IS WHERE HIGH TIDE COULD BE IN 2100

SASAKI

WOODS WALK



GENERAL PUBLIC



HIKES



VERNAL POOLS



INVASIVE PULLS



TRACKING

LESSONS LEARNED

- ✓ Land trust use
- Outreach: evolving
- Multiple benefits!

