

Invasive Plants and Land Management



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Maple Hill WMA West Stockbridge, MA



We may never again be able to watch the uninterrupted progression of succession.

- Ecological Integrity
- Biodiversity
- Ecosystem Resiliency
- Landscape Context
- Timber Values
- Aesthetics and Recreation



Considerations for Initiating Invasive Species Management

Setting Priorities

Resources Impacted

- Rare Species/Priority Natural Communities
- Nearby Resources Currently Unaffected

Resources Available

- Money
- Contractors vs. Volunteers/Staff
- Time (permitting, contracting...)

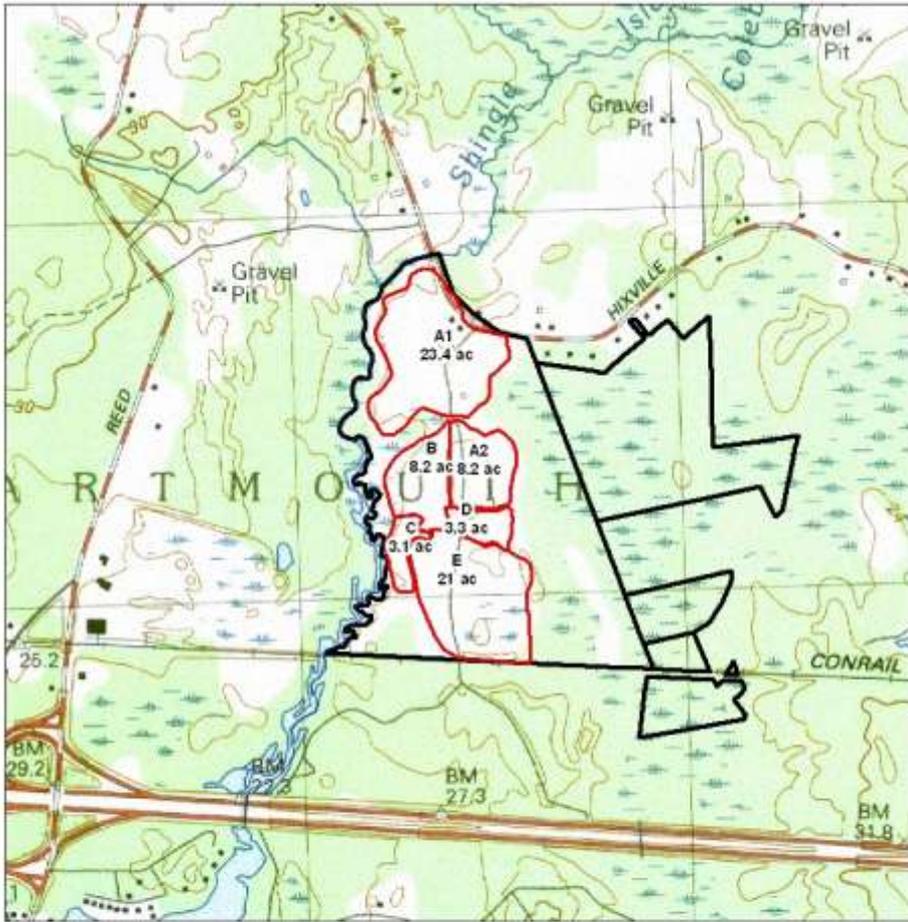
Achievable Goals

- Scale of project (Intensity and Acres)
- Future Commitments
- Eradication vs. Control vs. Containment

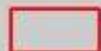
Noquochoke WMA

- High priority site for habitat management
 - Benefits to both game and nongame species
 - Abandoned pasture lands
 - High occurrence of invasive plants
 - Cost effective site characteristics
 - High habitat/species diversity
 - Opportunity to partner with other agencies for common objective



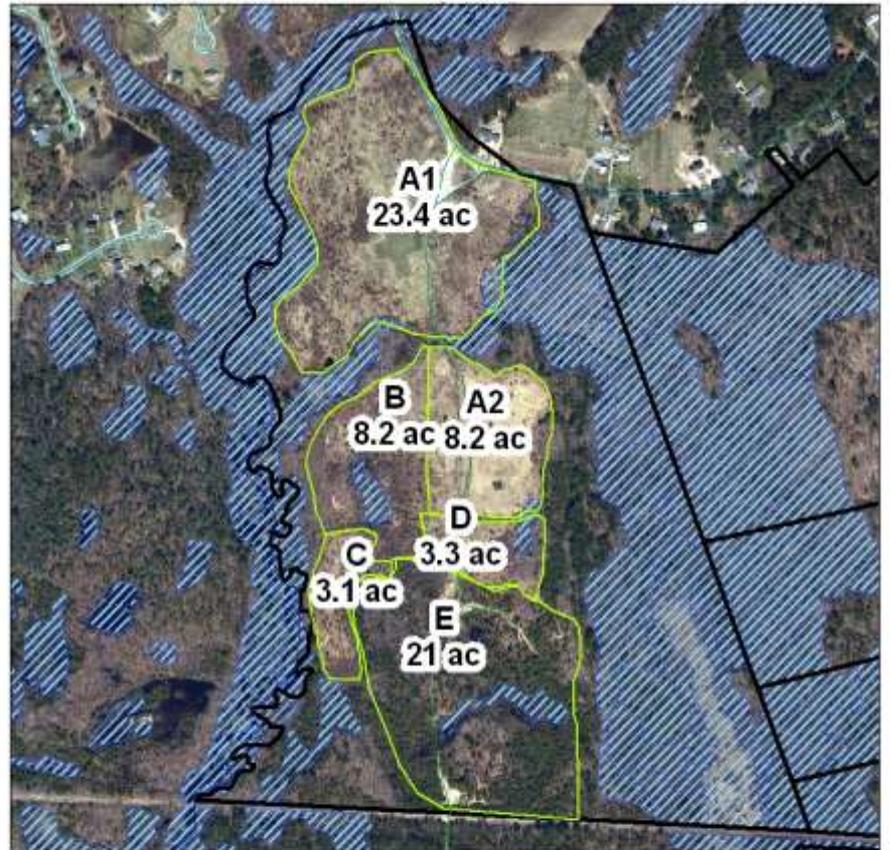


**Figure 2 Topo Map
Noquochoke WMA, Dartmouth**

 Treatment units



475 237.5 0 475 Meters

**Figure 1 Field Reclamation
Noquochoke WMA, Dartmouth**

 Treatment units
 DEP wetlands

190 95 0 190 Meters




- Area sees high usage

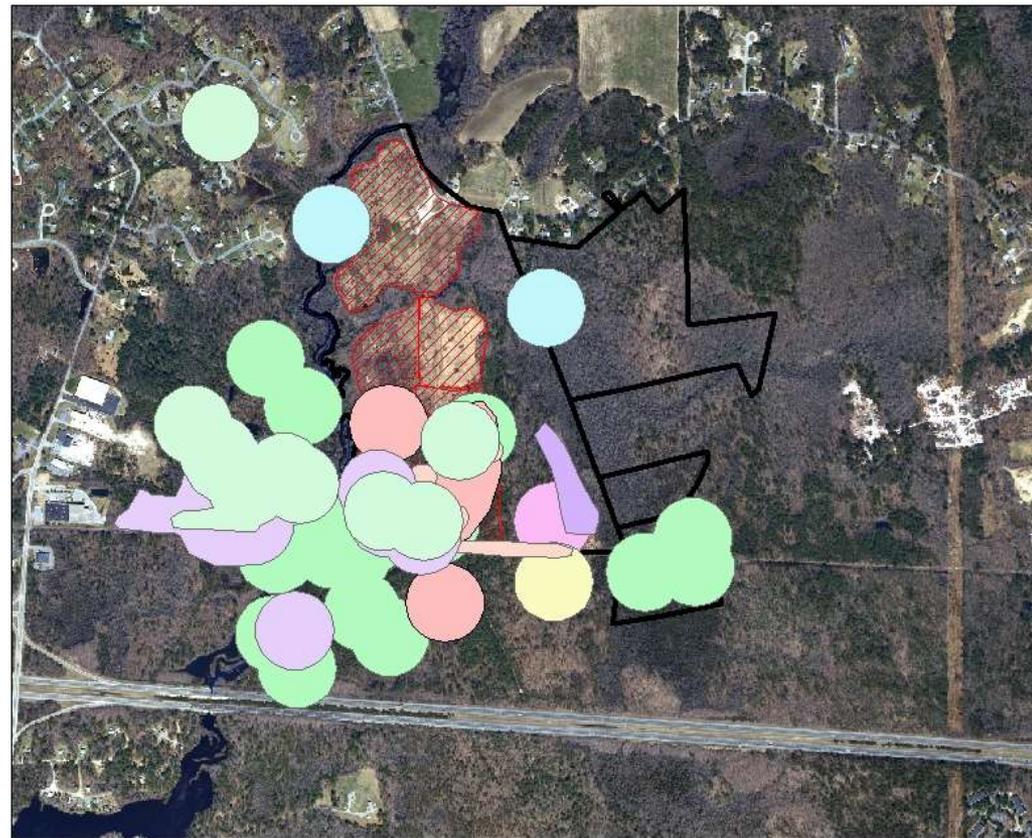
Dog walking

Upland game hunting

Bird/butterfly

Fishing/Canoe access

- High density of state listed species and species of conservation need



**Noquochoke EO
sp. common name**

-  Treatment units
-  Chain Dot Geometer
-  Chain Fern Borer Moth
-  Turtle
-  Frosted Elfin
-  Gypsywort
-  Long's Bulrush
-  Long-leaved Panic-grass
-  Plymouth Gentian
-  Purple Tiger Beetle
-  Spotted Turtle

**Figure 5.
Noquochoke WMA, Dartmouth**



Restoration techniques

- Initial biomonitoring and wetlands delineations
- Permitting
- Initial mulching
- 2 rounds of spot treatment herbicide
- Prescribed fire
- Field herbicide
- Warm season grass planting
- Follow up field mowing

Initial Mulching

- Lower height of target species
- Allow easier site access
- Easier to see targets
- Prep site for grassland expansion



Selective Foliar Application



Prescribed fire



- Help reduce woody plant occurrence-native and invasive
- Favor native fire adapted flora
- Reduce cool season grasses
- Prepare the fields for planting

Field treatments



- Field herbicide to create good seeding environment
- Herbicide mixture to affect wider range of species
- Seed a mix of native warm season grasses
- Follow up with elevated deck field mowing

Native warm season grass at Noquochoke WMA

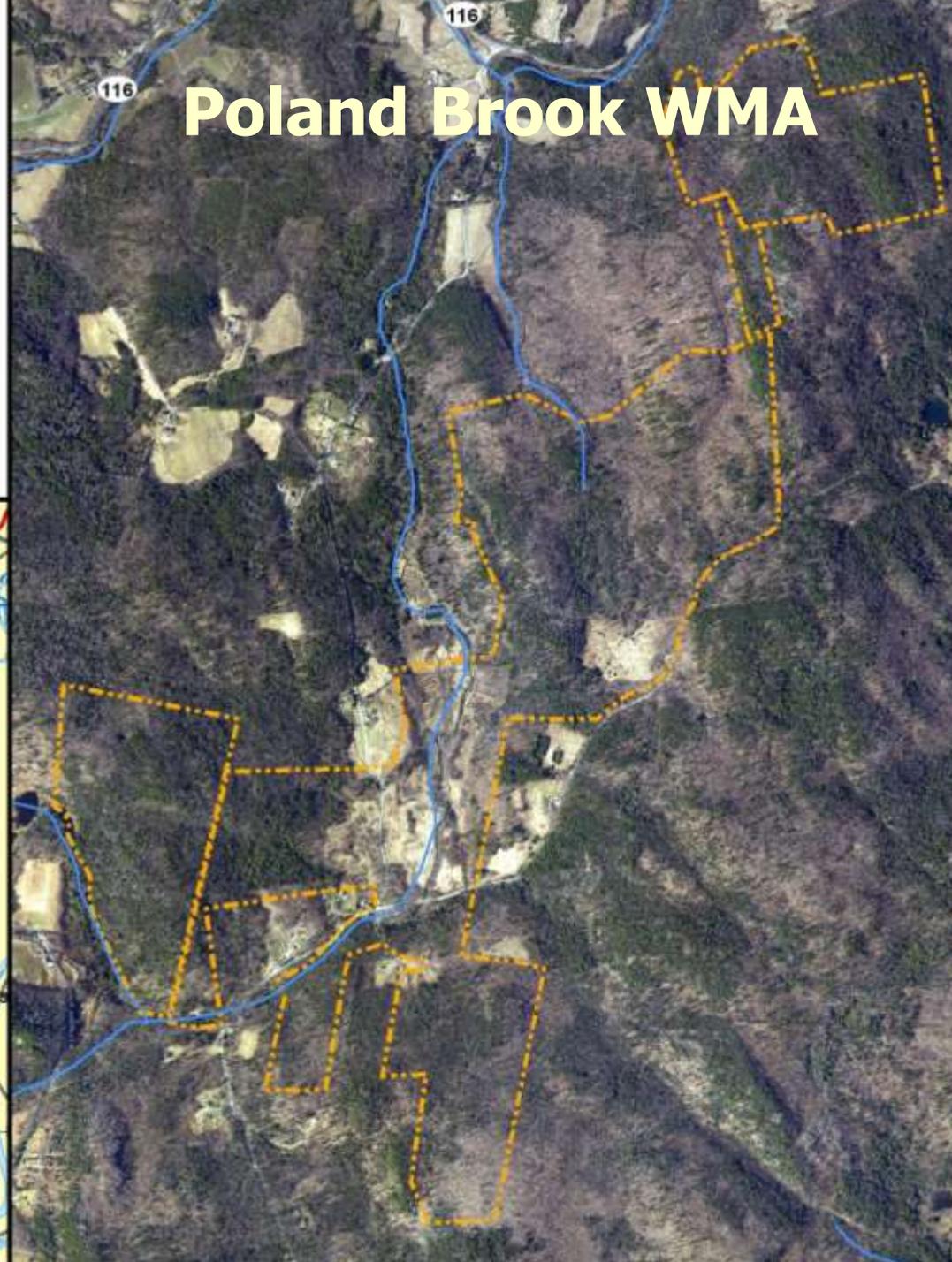
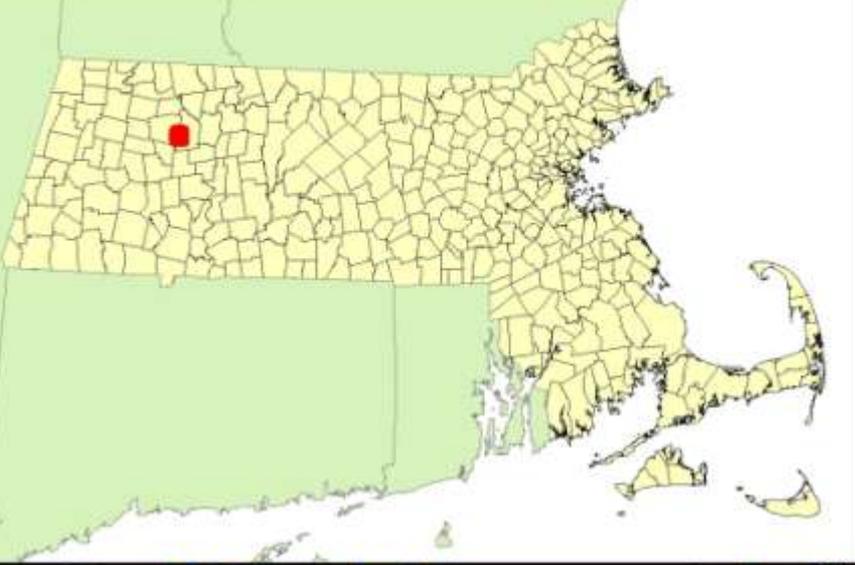
- Successful establishment of native warm season grasses
- Control and limit the presence/spread of invasive plants
- Increase the quality and quantity of habitat for game and non game species
- Area will be maintained through prescribed fire



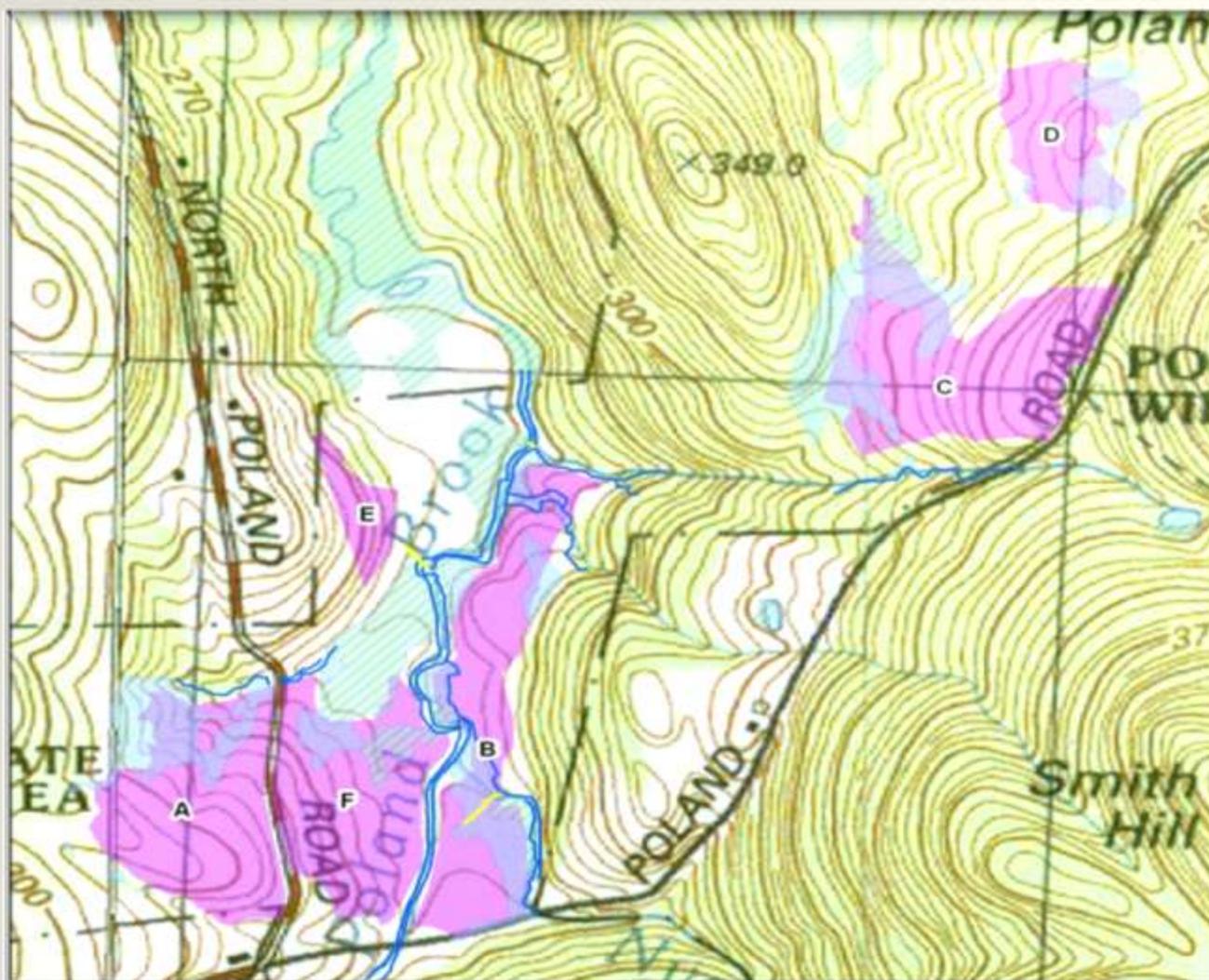
Poland Brook WMA

- High priority site for habitat management
 - Abandoned pasture lands
 - High occurrence of invasive plants
 - Cost effective site characteristics
 - High habitat/species diversity
 - Bird/Butterfly
 - Pheasant and Upland Game Bird Hunting





Poland Brook WMA



**Figure 3. Wetlands and Perennial Streams
Poland Brook WMA, Conway**

JLC 6/407



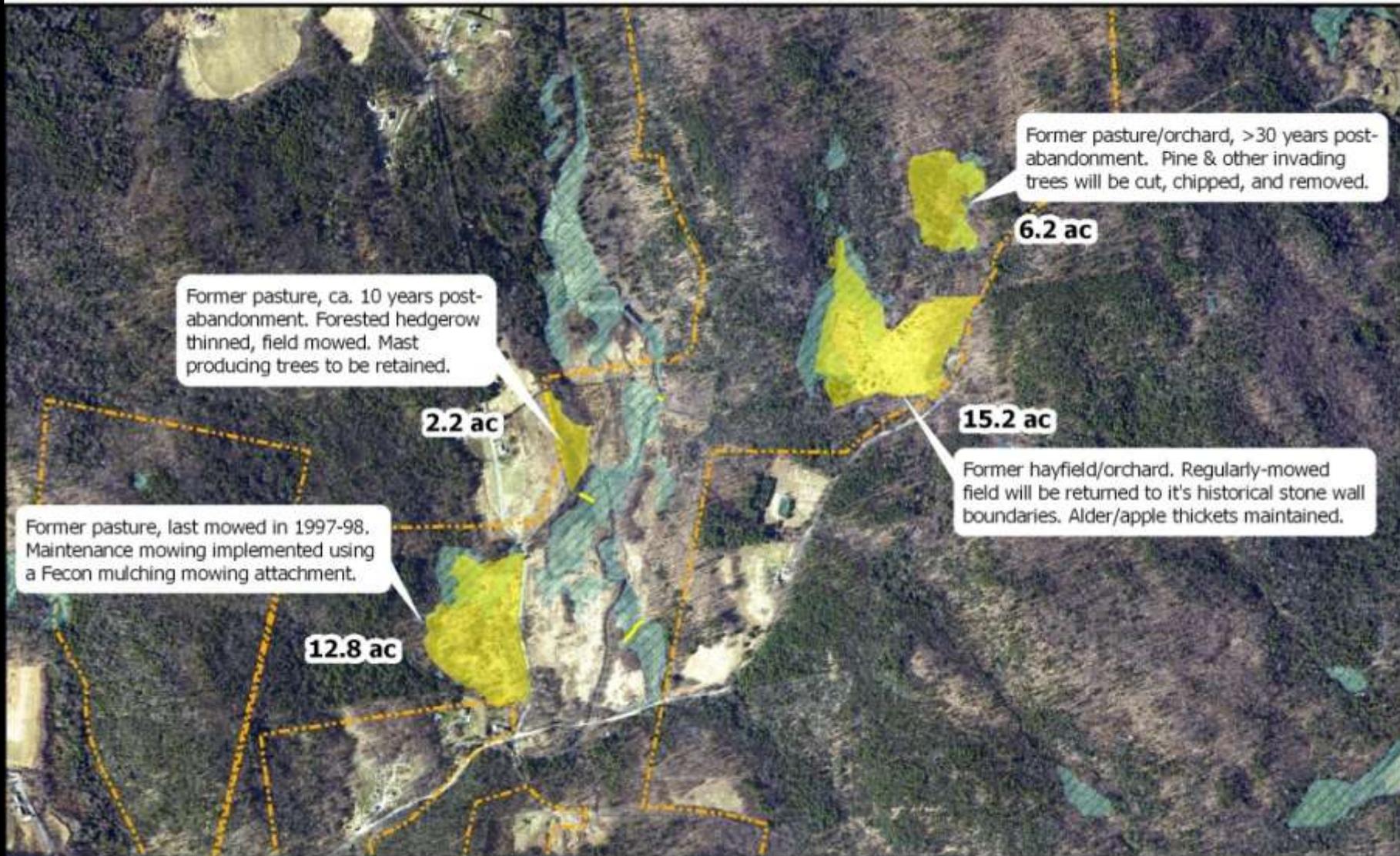
*Boundaries >100 feet from management units may be estimated



Pre-restoration conditions



Poland Brook WMA Habitat Partnership



-  Poland Brook WMA
-  Management units
-  Wetlands



1:12,000

0 500 1000 1500 Feet



Poland Brook WMA – monitoring

- Extensively used research site
 - Bird community composition; breeding bird surveys
 - State listed turtle habitat use
 - Vegetation and invasive plant surveys
 - American woodcock/ruffed grouse



Poland Brook WMA – partnership

- National Wild Turkey Federation MA chapter interest in habitat project
- NWTF and Massachusetts Division of Fisheries & Wildlife developed habitat plan
- Additional grant assistance provided by Northern Forest Woodcock Initiative



Poland Brook WMA – treatments

- Brush mowing successional old fields
- Tree removal in abandoned pasture
- Prescribed grazing in “sensitive areas”
- Herbicide invasive/exotics site-wide





Prescribed Grazing



Grazing



Poland Brook WMA – project success

- 4 management units treated: ~35 acres
- 3 organizations partner and fund >\$31,000 of habitat mgt
- Project met conservation goals of multiple organizations, public and private
- Overall 60-65 acres of early successional habitat now exist at Poland Brook WMA
- Biomonitoring results indicate strong response for both game and nongame species

Poland Brook WMA

Woodcock and chick tracks



Case Study – Agawam Lake, Stockbridge



Calcareous Basin Fen





55-acres of Phragmites treated 2013-2015



Takeaways:

- If it is a real priority, find a way to make it happen: earlier treatment is always easier
- Thoughtful treatment in wetlands is always better than the alternative
- Understand the scale of the issue and execute accordingly

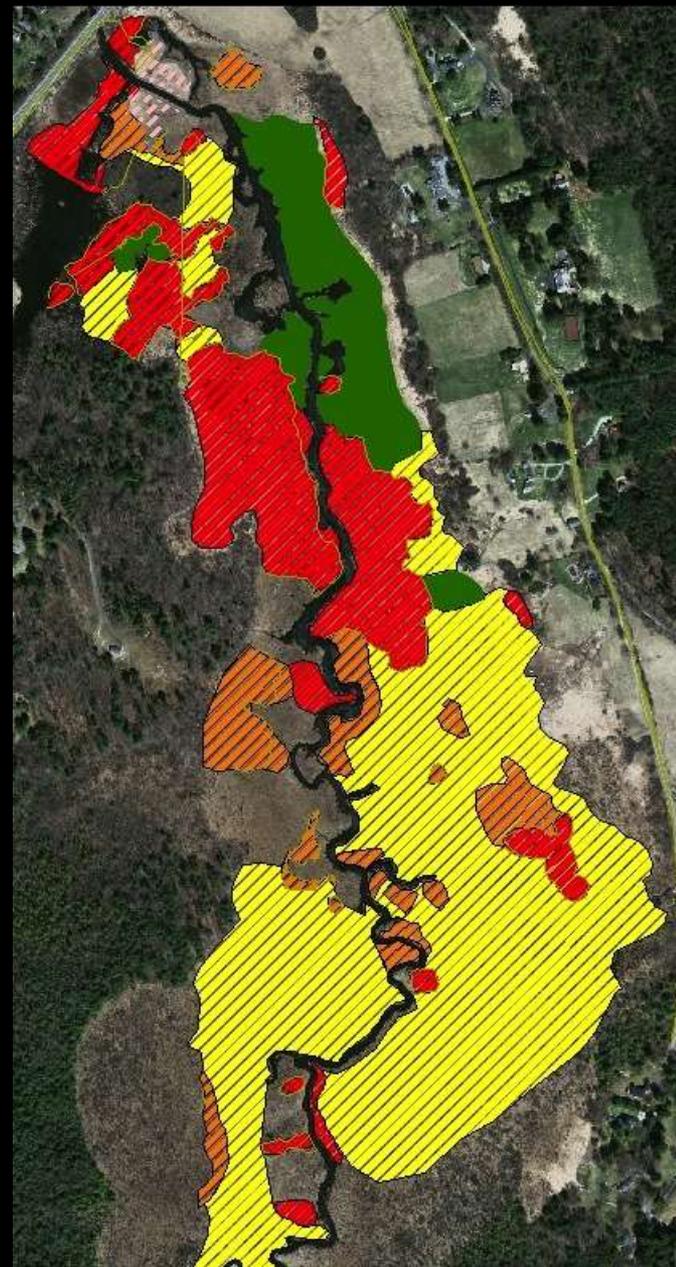


The Price of Inaction

Konkapot Marsh, Stockbridge

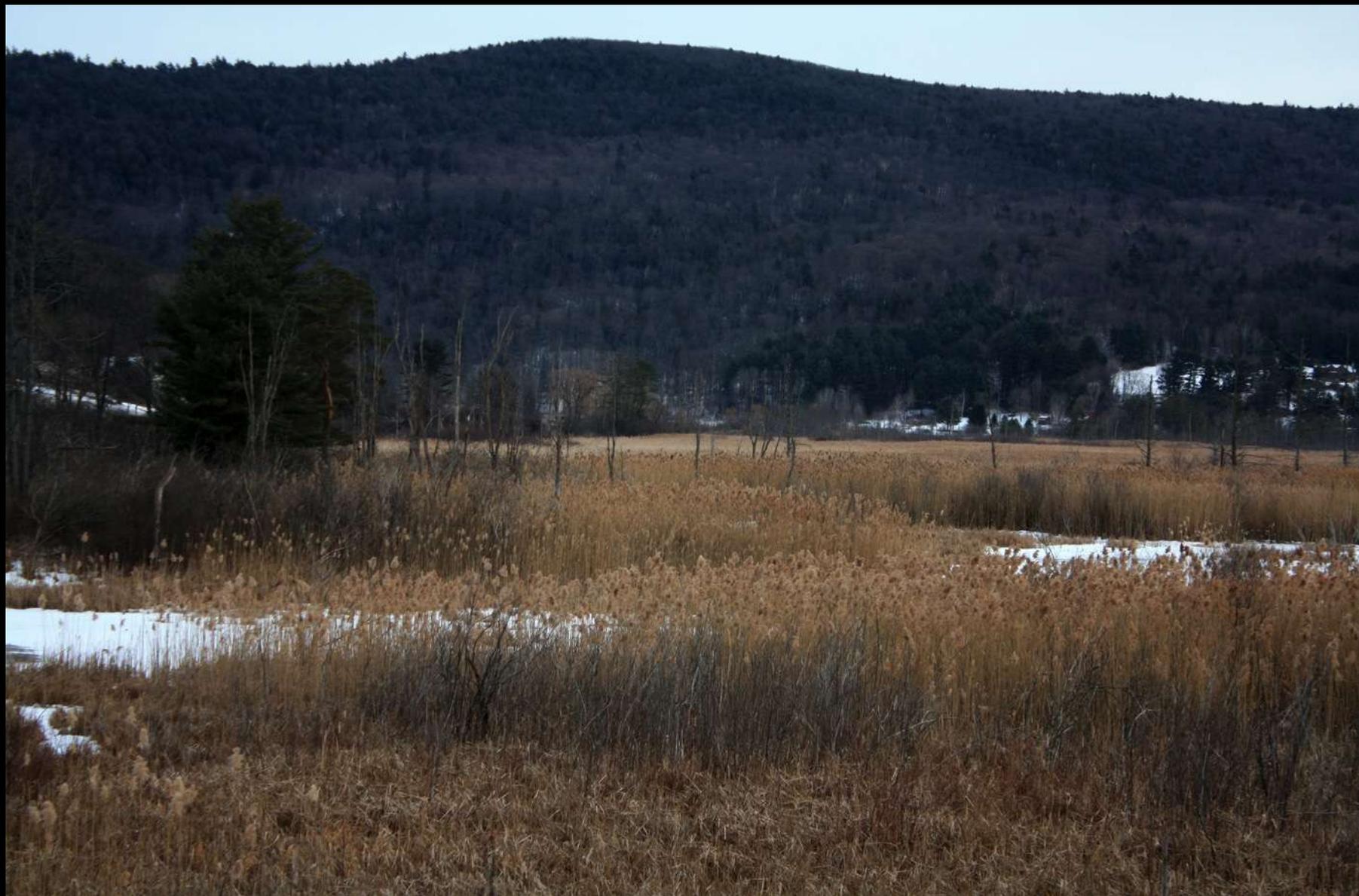


2010



2012

Konkapot Marsh, Stockbridge



Final Thoughts

- Early Detection/Rapid Response
- Carefully Choose Projects based on Resources Threatened and Achievable Goals
- Understand that Herbicides are a Tool
- Don't Fear Working in Wetlands
- Be Prepared to Follow Through over the Long-term
- Prevention is always first priority
- EARLY DETECTION/RAPID RESPONSE

Questions/Discussion

