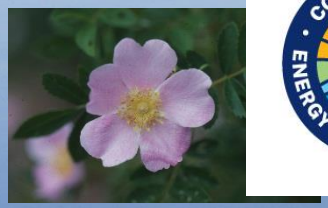
# “For The Love Of Plants… To Plant or Not To Plant ? ”




**Peter Picone, Wildlife Biologist**

860-424-3032

peter.picone@ct.gov

**Native little bluestem grass seed**

Wild turkey poult story at our land in Sprague, CT in 2004

**Wild Turkeys eating native little bluestem seeds.**


**Contents of Wild Turkey crop analyzed by Peter Picone in 2005**

**Wild Turkeys do not migrate and need food sources 4 seasons of the year.**

## Contents of Wild Turkey crop analyzed by Peter Picone from Road Kill in March of 2008



Spadix (blossom skunk cabbage)

DEEP Wildlife Biologist Peter Picone

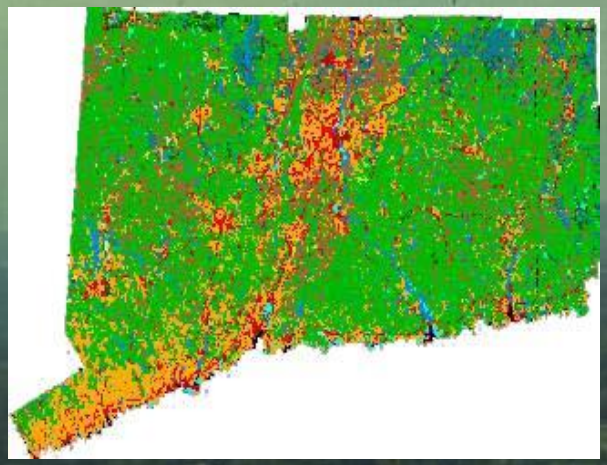
# Breeding Monarch Butterflies

**DEEP Wildlife Biologist Peter Picone**

# What is the future of the Connecticut Landscape ?

DEEP Wildlife Biologist Peter Picone

# CT Today about 56% Forested



**We know a lot about the Quantity**

**We are just beginning to address the Quality**

# Threats to Biodiversity

#1 - Habitat loss / fragmentation

#2 - Invasive Non-native species

DEEP Wildlife Biologist Peter Picone

## Habitat Change/Fragmentation

# A TOWN IN, CT

## 2015 Land Cover

| | | |
|---|---|---|
| **Forest:** | 8467 acres | - 405 acres |
| **Ag. field:** | 130 acres | - 193 acres |
| **Turf & grass:** | 3887 acres | +174 acres |
| **Developed:** | 11068 acres | + 507 acres |

## 1985 Land Cover

| | |
|---|---|
| **Forest:** | 8872 acres |
| **Ag. field:** | 323 acres |
| **Turf & grass:** | 3713 acres |
| **Developed:** | 10561 acres |

https://clear.uconn.edu/projects/landscape/CT/landcoverviewer.htm

# Connecticut

**2800 Total plants** (Merhoff, 2008)

**1800 Native plants**

**1000 Non-native plants**

**102 Invasive non-native species**

DEEP Wildlife Biologist Peter Picone

# Non-Native

Butterflybush (*Buddleia spp.)*

√ -NATIVE

Highbush Blueberry (*Vaccinium corymbosum*)

**Woodland Sunflower (*Helianthus divaricatus*)**

# WILDLIFE NEEDS

- **Food**
- **Water**
- **Shelter/ Cover**
- **Space**

**Arrangement**

DEEP Wildlife Biologist Peter Picone

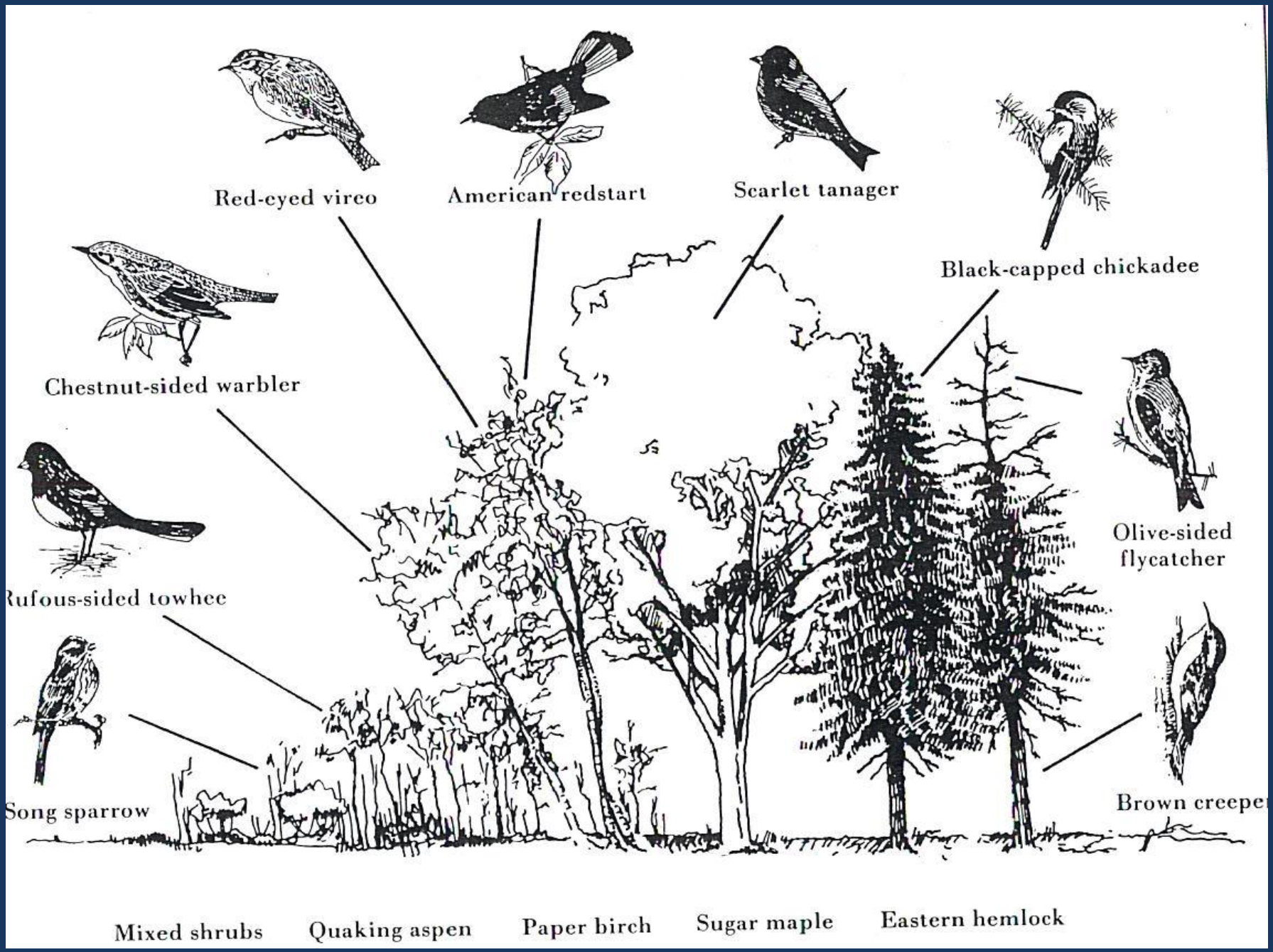
# What is a limiting factor ?

**FOOD** Seasonal Food (Spring, Summer )
( Fall or Winter )

**COVER** Seasonal Cover? Winter Cover?
Nesting Cover ? Escape Cover ?

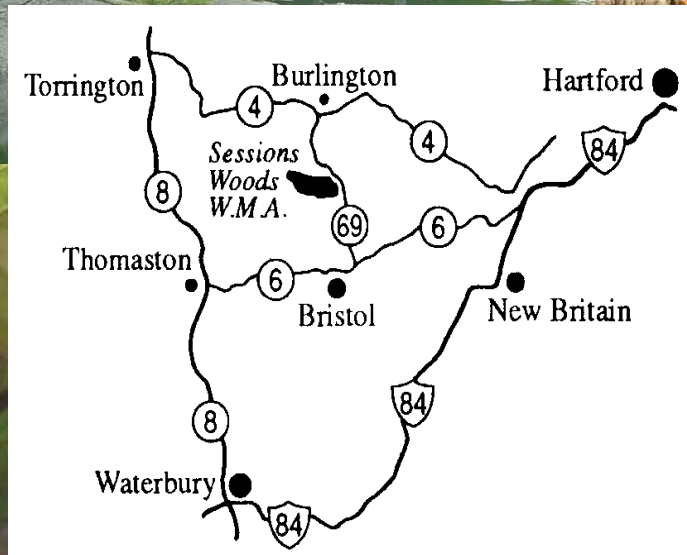
**SPACE**

**INVASIVE NON-NATIVES**


Red-eyed vireo
American redstart
Scarlet tanager
Black-capped chickadee
Chestnut-sided warbler
Olive-sided flycatcher
Rufous-sided towhee
Song sparrow
Brown creeper
Mixed shrubs
Quaking aspen
Paper birch
Sugar maple
Eastern hemlock


**"Average number of animals that can live in an area from season to season"**

# Sessions Wood Wildlife Management Area





Peter Picone, Wildlife Biologist

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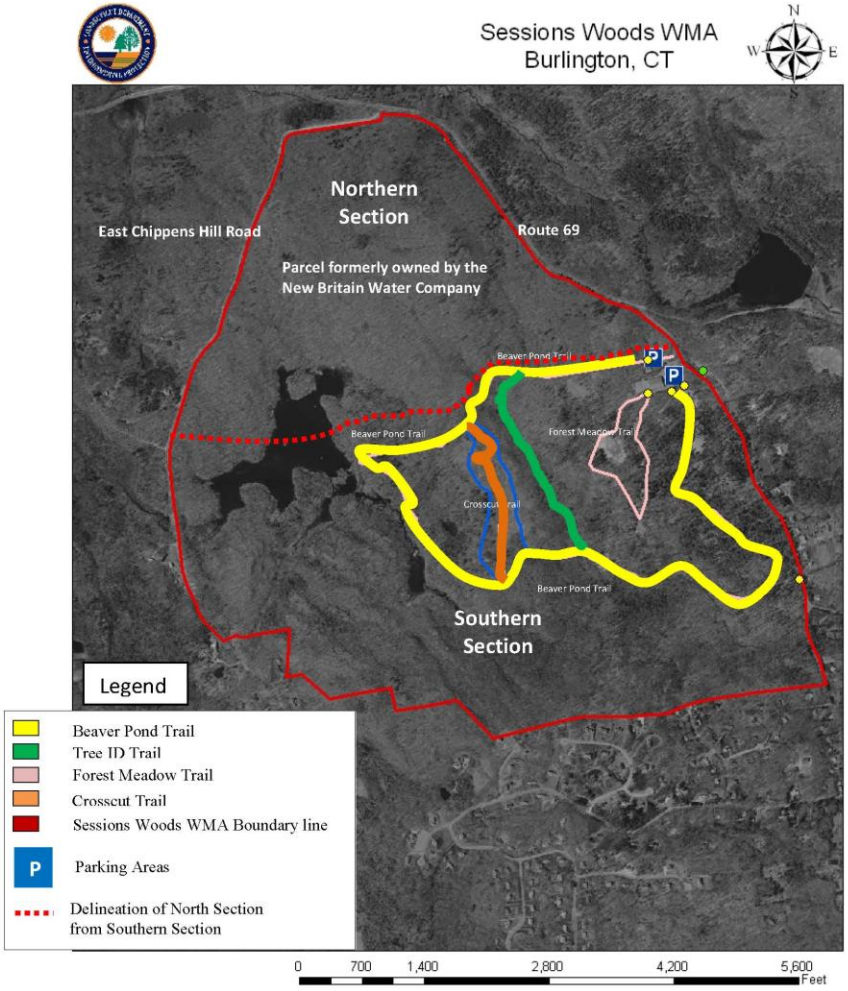


Sessions Woods Wildlife Management Area
Burlington, CT 764 acres



**DEEP Wildlife Biologist Peter Picone**

# Sessions Woods Goals

1- Maintain a biologically diverse property using scientifically guided habitat principles using a variety of modern habitat management techniques.

2- Educate the public on habitat management techniques that are small scale and large scale.

3- Provide a variety of wildlife-based recreational opportunities compatible with wildlife conservation principles and practices.

DEEP Wildlife Biologist Peter Picone

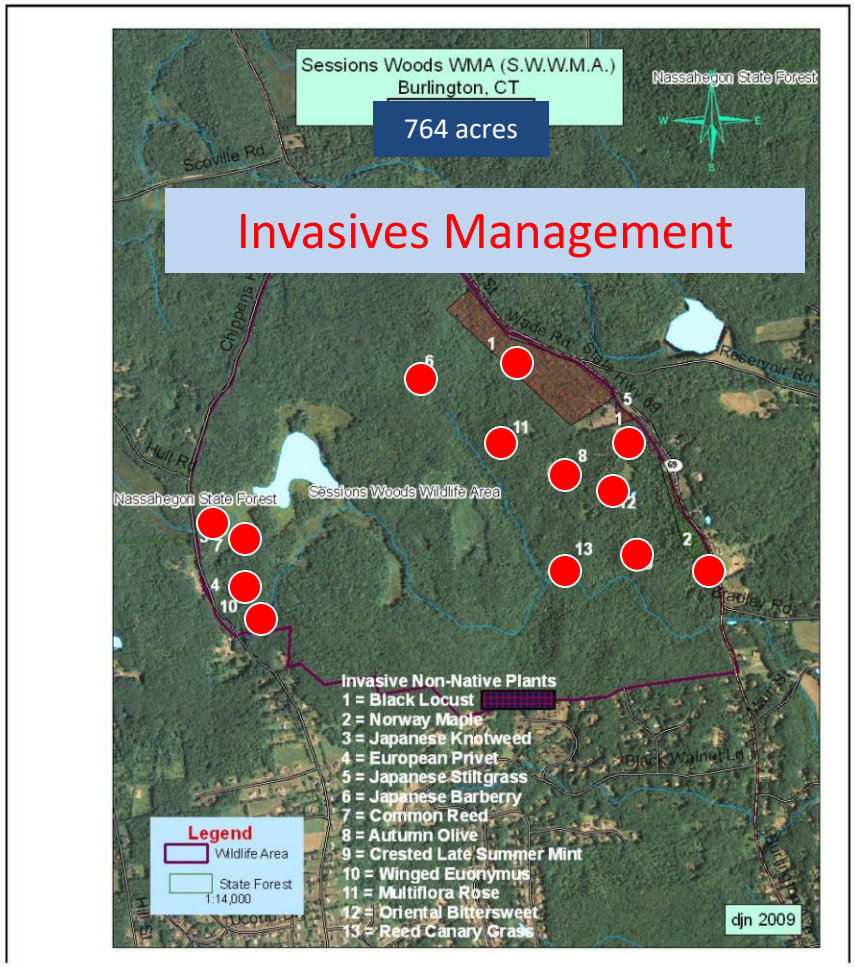


Figure 4. Locations of invasive non-native plants at Sessions Woods WMA in Burlington, CT.

**Invasive Non-native Plant Management**

Invasive non-native plant management has been implemented whenever feasible to serve as public demonstration areas and to enhance ecosystem health. The following are descriptions of the status and location of invasive non-native plants on the Sessions Woods WMA property (Figure 4):

1- Invasive non-native black locust (Forest Stands 1 and 3)

In 2006, a firewood permit was issued to remove a patch of invasive non-native black locust

# University of Delaware

Doug Tallamy, Melissa Richard and Adam Thomas

Compared

4 Invaded sites versus 4 Native sites

Results

Invaded Sites had:

- 6 times fewer caterpillar species
- 13.5 times fewer caterpillars
- 23.9 times less caterpillar biomass than the Native Sites







# Action Items

**Observe Nature.**

**Learn to Predict Seasonal Plant and Animal Interactions.**

**DEEP Wildlife Biologist Peter Picone**

# Silver Maple (*Acer saccharinum*)

# Action Items

**Prioritize Which Invasives You Will Manage**

**Make Notes of Locations of Invasives**

# Action Items

**Increase Native Plants.**

**Do Not Plant Invasive Non-natives.**

# Action Items

Diversify plantings.

Do not plant monocultures.

# Two Things to Avoid

1 -**Paralysis by Analysis**

2 -**Extinction by Instinct**

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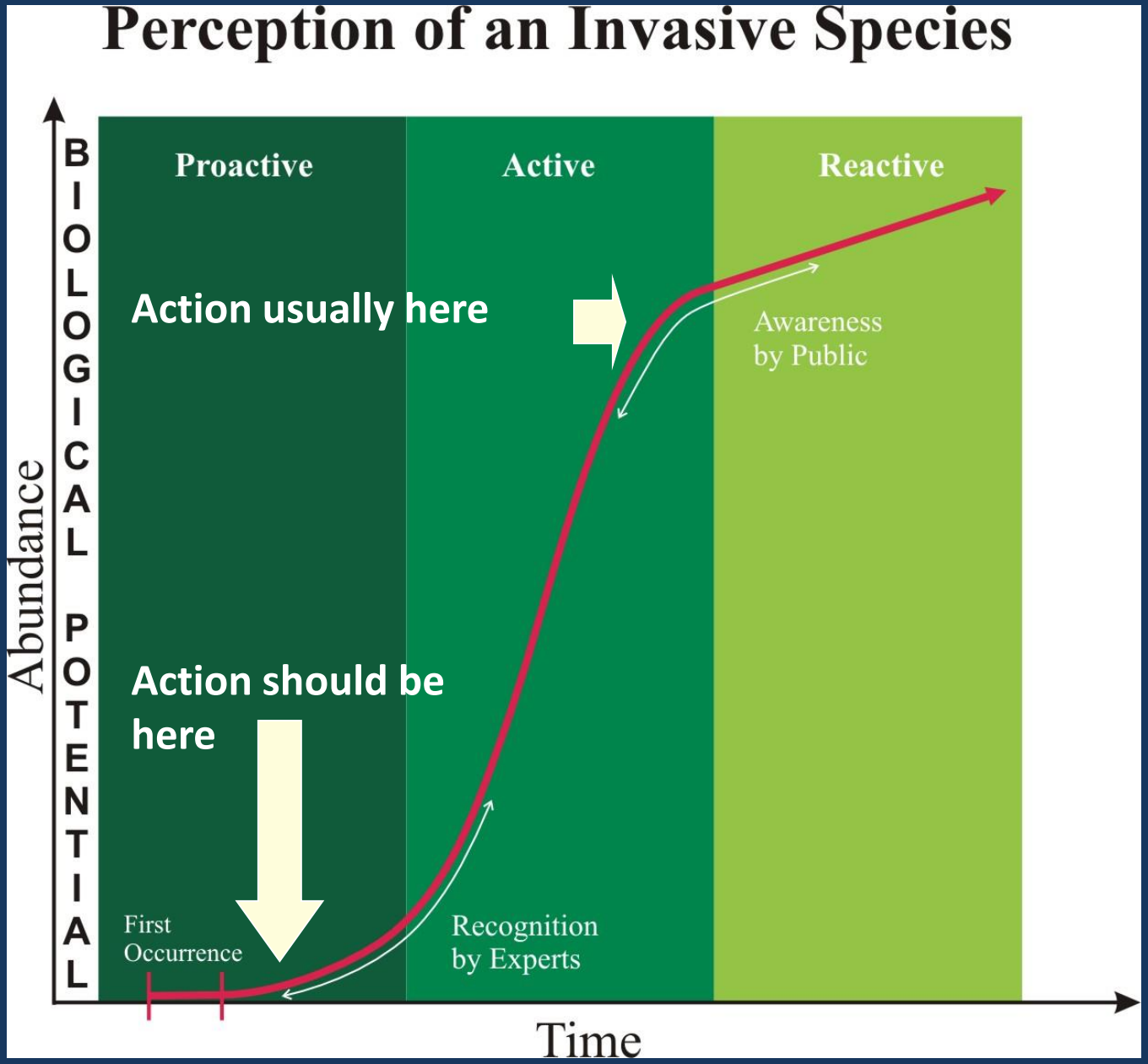
# Perception of an Invasive Species



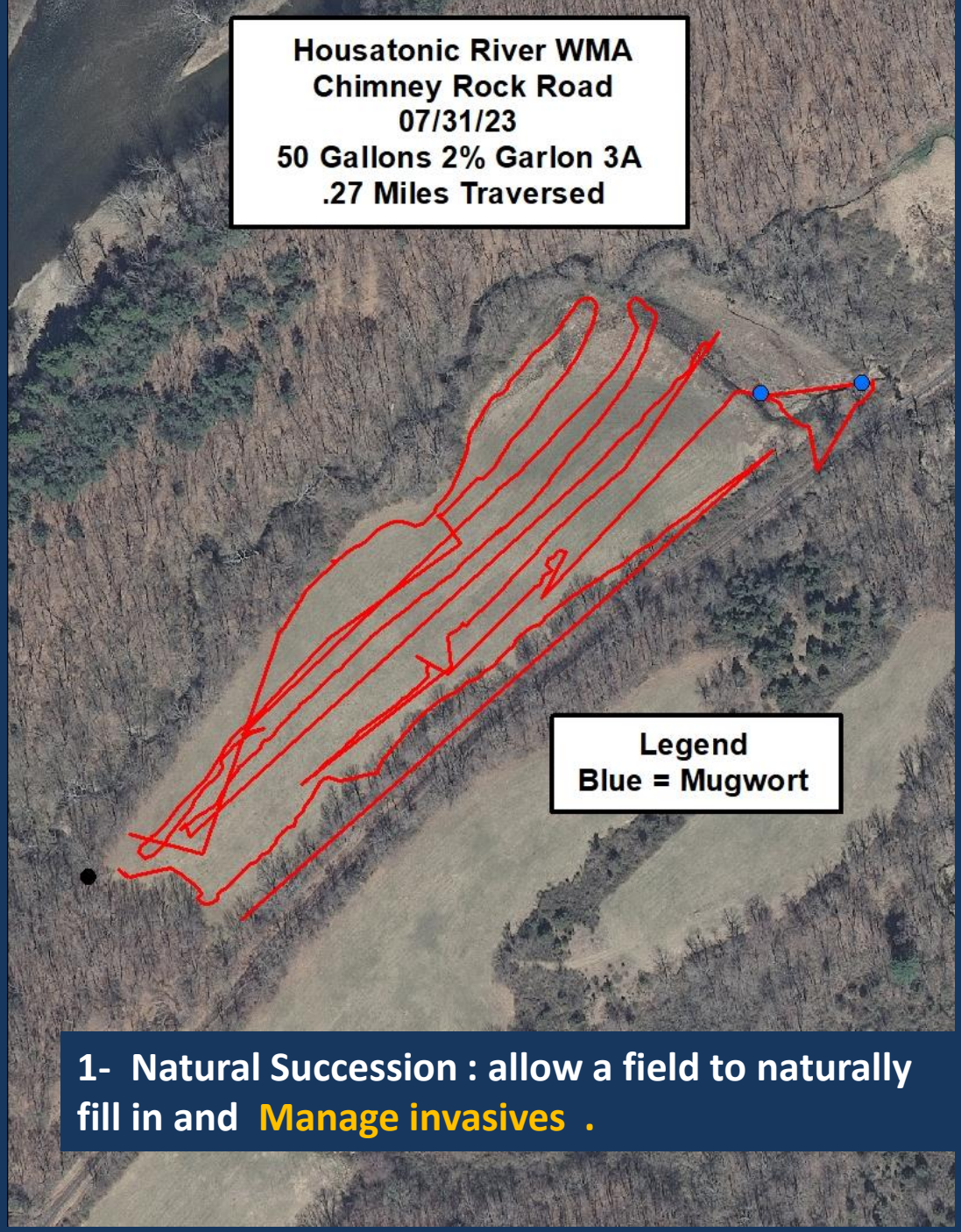

DEEP Wildlife Biologist Peter Picone

# 3 Methods of Establishing Habitat

**1- Natural Succession : allow a field to natural fill in and Manage invasives .**

2- Plant/Seed with desired species and Manage invasives.

**3- Natural Succession, Plant/Seed and Manage Invasives.**



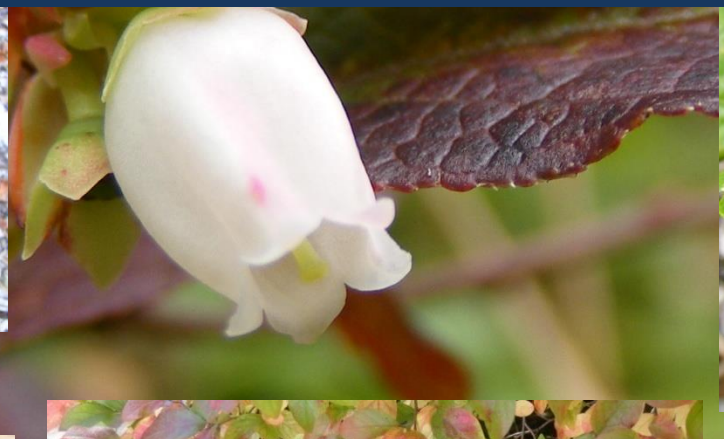

1- Natural Succession : allow a field to naturally fill in and Manage invasives .

# Wildlife Biologists Perspective

## Has the Supply of Native Plants Gotten Better ?









# Has Native Plant Supply Gotten Better ?

Urban Parks and Urban Schools 2003 U.SF.W. Grant

# 2003

| Table 2. Plant materials distributed to urban parks for habitat enhancement. | | |
|---|---|---|
| | | |
| Perennial Plant Species | Size | Quantity |
| Red/Swamp Milkweed (Asclepias incarnata) | 5 pint | 30 |
| Butterfly Weed (Asclepias tuberosa) | 5 pint | 34 |
| New York Aster (Aster Novae - belgi) | 5 pint | 10 |
| New England Aster (Aster Novae - angliae) | 5 pint | 25 |
| Purple Cone Flower (Echinacea purpurea) | 1 quart | 31 |
| Beebalm (Monarda didyma) | 5 pint | 20 |
| Wild Bergamont (Monarda fistulosa) | 5 pint | 20 |
| Mountain Mint (Pycanthenum tenuifolium) | 3 inch pot | 15 |
| Black Eyed Susan (Rudbeckia hirta) | 1 gallon | 16 |
| Cardinal Flower (Lobelia cardinalis) | 5 pint | 5 |
| Wild Indigo (Baptisia australis) | 5 pint | 2 |
| Wild Columbine (Aquilegia canadensis) | 1 quart | 10 |
| Wild Geranium (Gerannium maculatum) | 5 pint | 3 |
| Hackberry (Celtis occidentalis) | Sapling | 1 |
| Summersweet Pepperbush (Clethra alnifolia) | 2 gallon | 3 |
| Bayberry (Myrica pensylvanica) | 2 gallon | 2 |
| Highbush Blueberry (Vaccinium corymbosum) | 2 gallon | 3 |
| Trumpet creeper vine (Campsis radicans) | 1 gallon | 1 |

Orange Butterfly weed (*Asclepias tuberosa*) yellow flower variety

# Connecticut Native Tree, Shrub, and Perennial Availability List

Connecticut Department of
Energy and Environmental Protection
Bureau of Natural Resources
Wildlife Division

UCONN
EXTENSION

University of Connecticut
College of Agriculture, Health,
and Natural Resources
Department of Extension

# Planting Examples :

1- Native Meadow Creation at Suffield WMA, Suffield CT

2- Riparian Planting along Housatonic River WMA Kent, CT

3- Monarch Butterfly Habitat Enhancement Charles Wheeler WMA Milford, CT

4- Tree Planting at Charles Island Natural Area Preserve, Milford, CT

5 – Robbins Swamp WMA Native Meadow Creation, Falls Village, CT

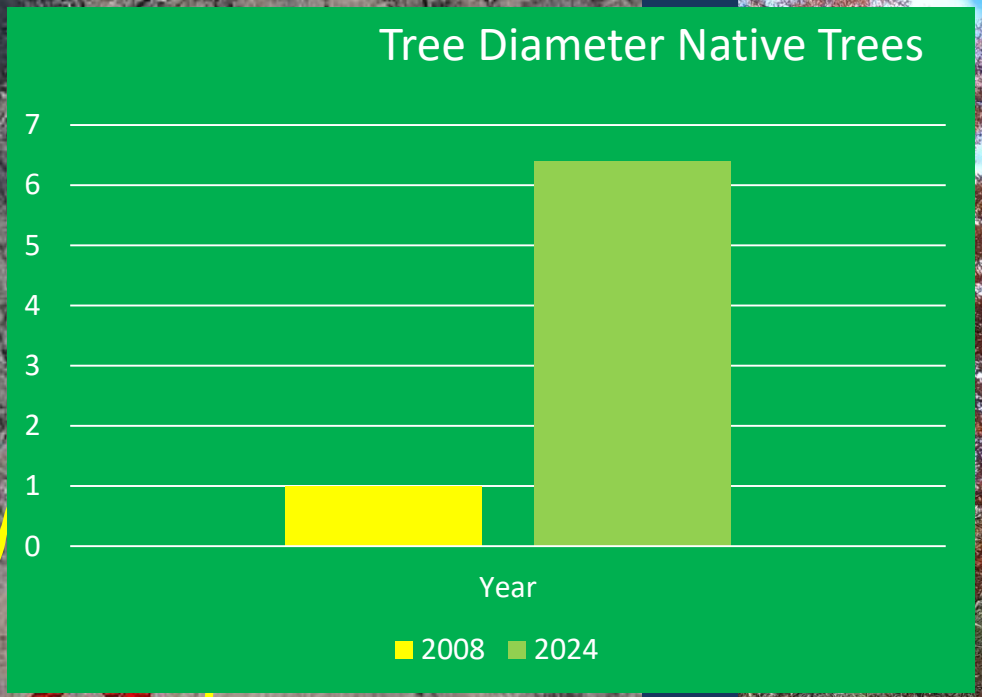
# Suffield WMA 15 acre Field Planting June 2024

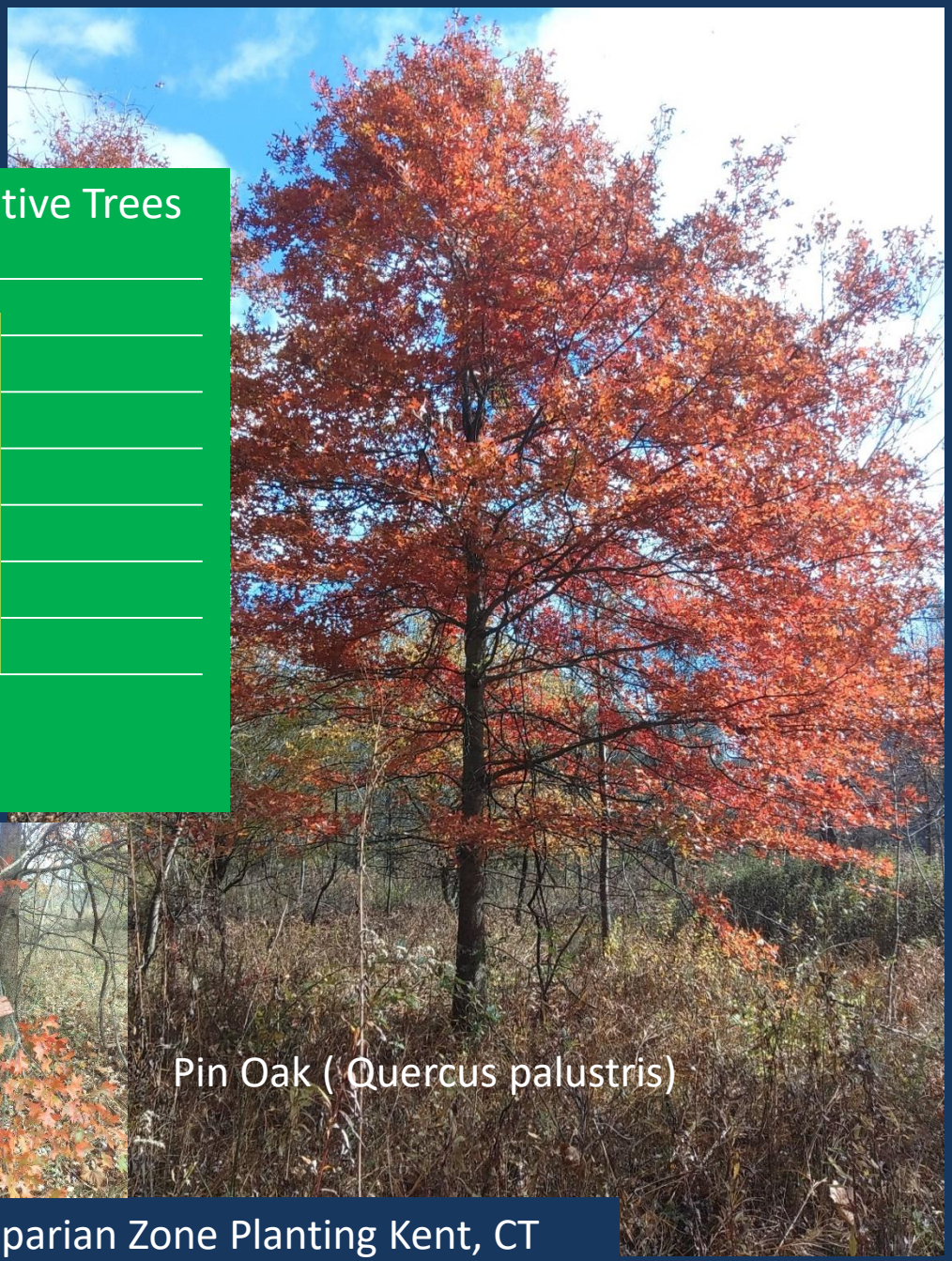
## MILLION SEED PLANT !!  58 People !



| | |
|---|---|
| nabinum) | 20,000 |
| tata) | 100,000 |
| emum tenufolium) | 250,000 |
| as incarnata) | 5,000 |
| **Total seeds** | **1,069,000** |

# Collecting Seeds From Diverse Native Meadows



*USDA NRCS WHIP GRANT

Pin Oak ( Quercus palustris)

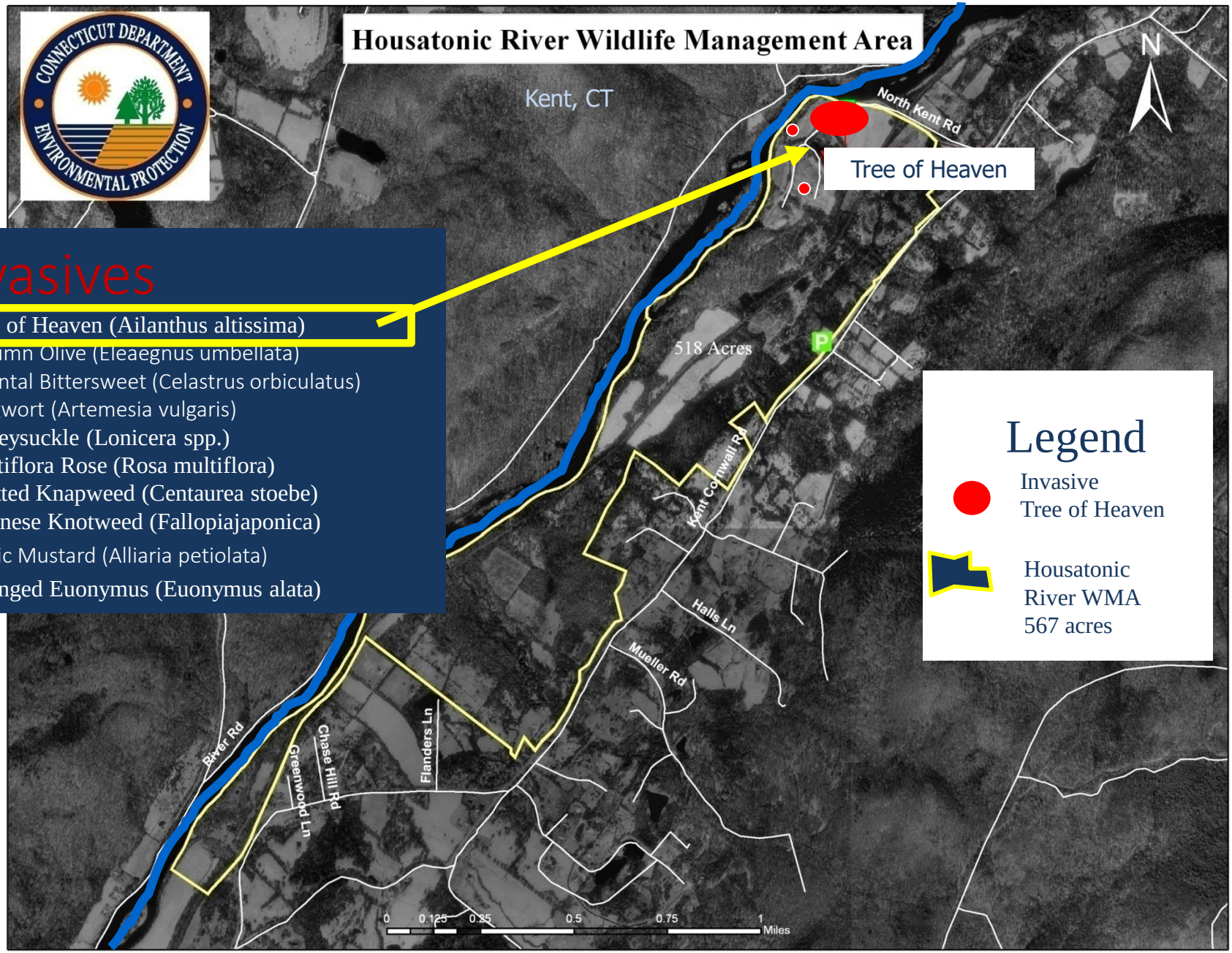
Housatonic River WMA Riparian Zone Planting Kent, CT
2008

# Managing Invasive Non-natives on State Land
## (* fields and edges only)

- GOOD SUCCESSES
  - Tree of Heaven (99 percent eliminated)
  - Autumn Olive
  - Oriental Bittersweet
  - Black Locust

- MODERATE SUCCESSES
  - Japanese Knotweed
  - *Japanese Barberry
  - * Bush Honeysuckle
  - *Multiflora rose
  - *Glossy Buckthorn
  - *Phragmites

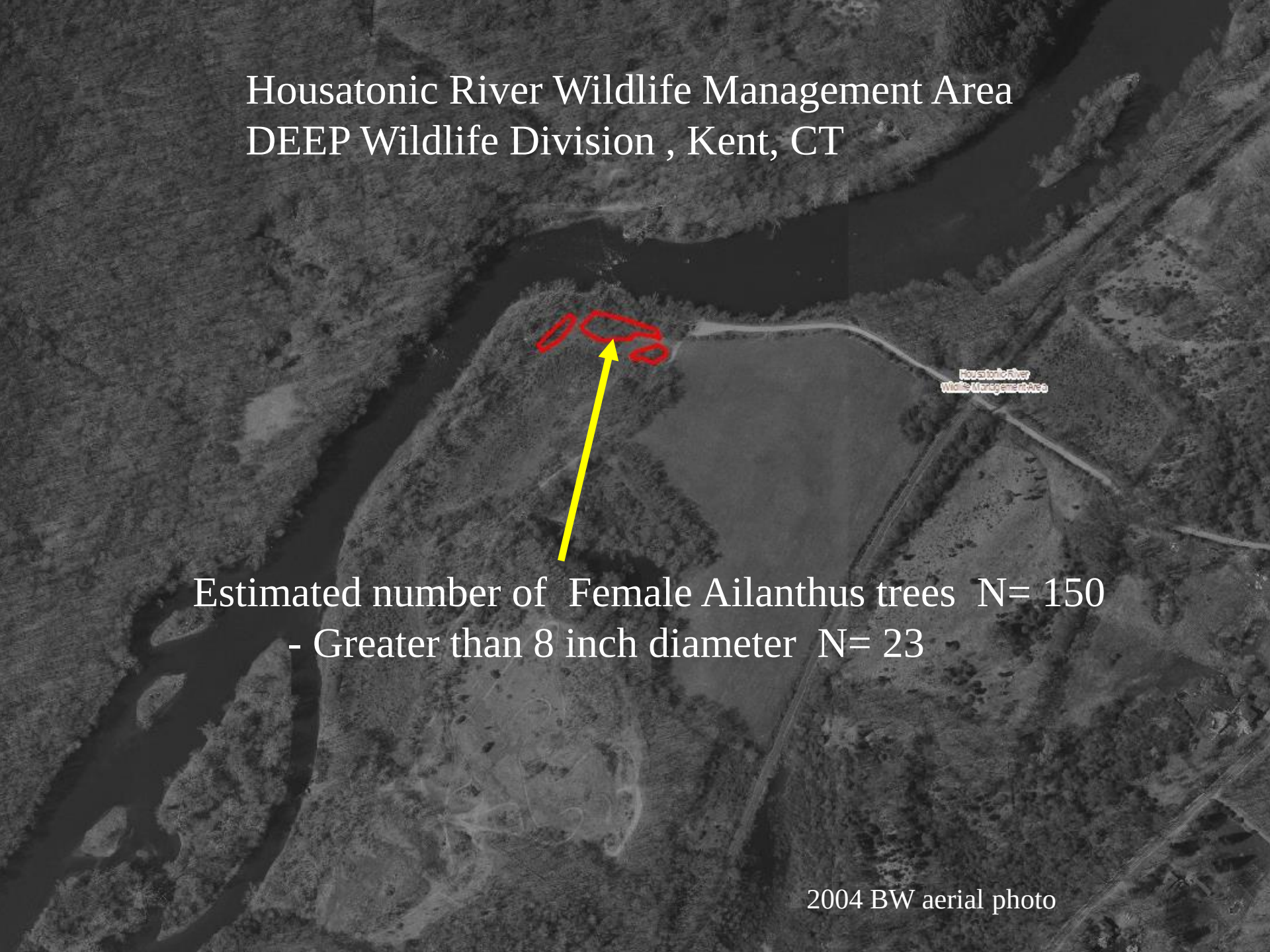
- VERY CHALLENGING / MIXED RESULTS
  - Mugwort
  - Spotted Knapweed
  - Canada Thistle
  - Reed Canary Grass




# Invasives

1- Tree of Heaven (Ailanthus altissima)
2- Autumn Olive (Eleaegnus umbellata)
3- Oriental Bittersweet (Celastrus orbiculatus)
4- Mugwort (Artemesia vulgaris)
5- Honeysuckle (Lonicera spp.)
6- Multiflora Rose (Rosa multiflora)
7- Spotted Knapweed (Centaurea stoebe)
8- Japanese Knotweed (Fallopiajaponica)
9- Garlic Mustard (Alliaria petiolata)
10- Winged Euonymus (Euonymus alata)

Housatonic River Wildlife Management Area
DEEP Wildlife Division , Kent, CT




Estimated number of Female Ailanthus trees N= 150
- Greater than 8 inch diameter N= 23

2004 BW aerial photo

# INVASIVE Tree of Heaven (*Ailanthus altissima*)

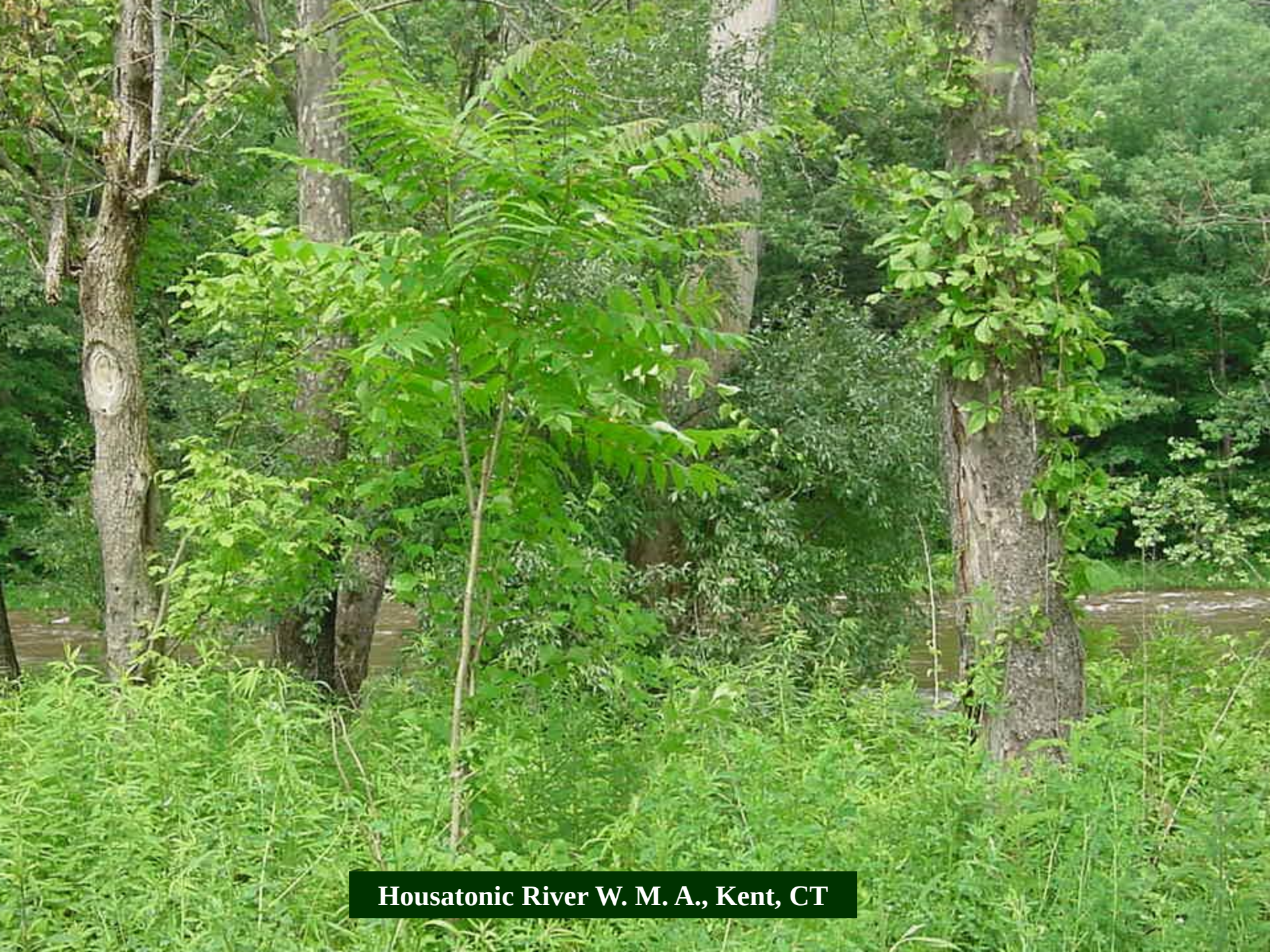
-Introduced from Asia in 1784 by a Philadelphia gardener

- Displaces native vegetation through its allelopathic nature and by an aggressive clonal / sprouting adaptation

- Roots and leaves have one or more phytotoxic compound (Journal of Chemical Ecology: Heisey 1998)

- Larval host of the Spotted Lantern Fly (Lycorma delicatula) (CT Agricultural Experiment Station 2021)


80 to 100 feet
Seeds
Up to 350,000 seeds
per mature tree
INVASIVE Tree of Heaven (*Ailanthus altissima*)



Housatonic River W. M. A., Kent, CT

# Managing Invasive Non-native Tree of Heaven

Used three vegetation management strategies :

## 1- Large mowing equipment (Brontosaurus)

## 2- Girdle and herbicide

INVASIVE Tree of Heaven (*Ailanthus altissima*)

# Cut and Treat

- Machete /
- Woodsmans Pal
- Hand Axe

- Chain saw



Herbicide Treatment
Triclopyr (Garlon 3-A)

3- Herbicide clonal sprouts

**Triclopyr 2 %**

INVASIVE Tree of Heaven (*Ailanthus altissima*)

# INVASIVE Tree of Heaven (*Ailanthus altissima*) sprouts / runners

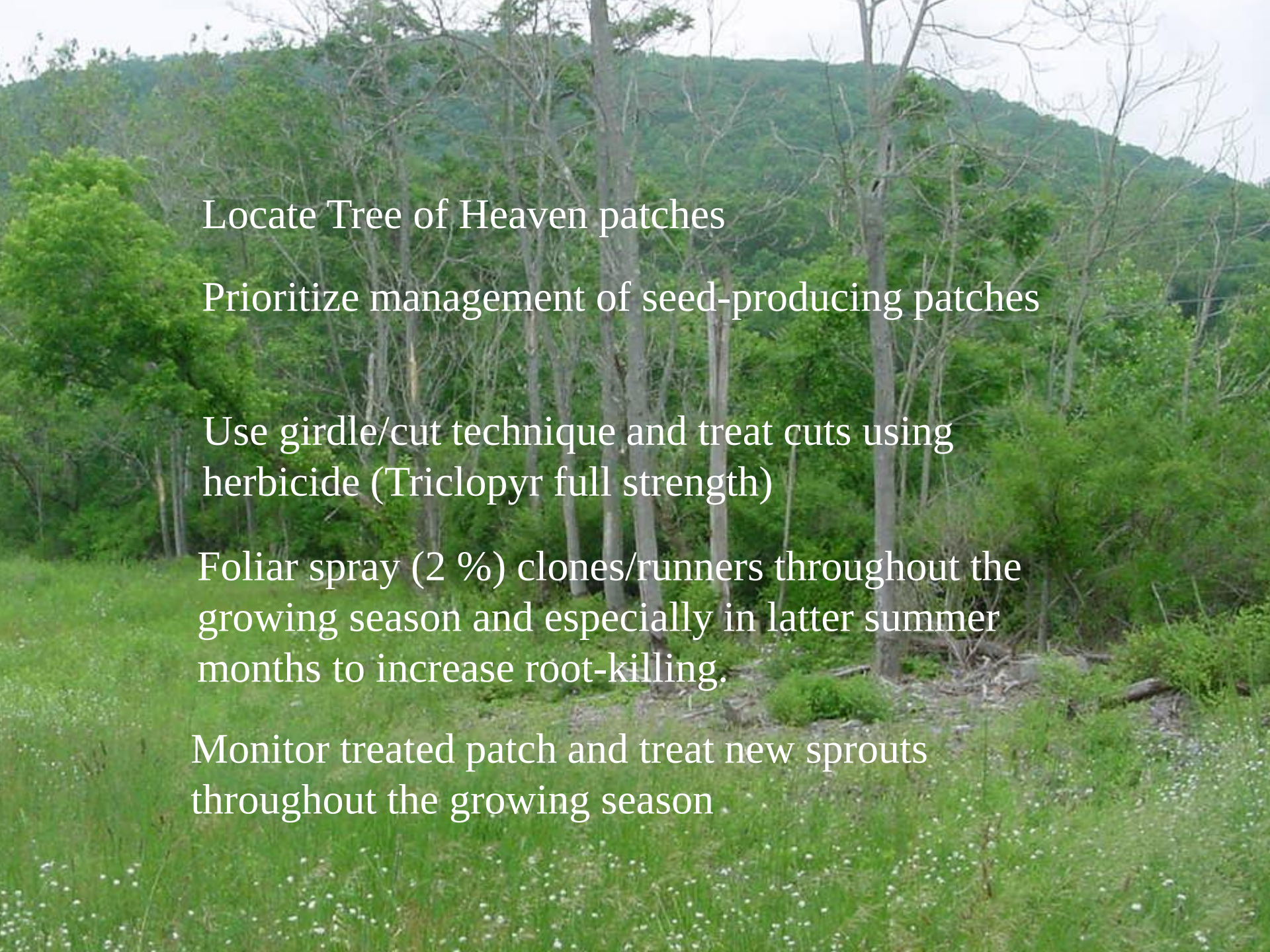
Mechanical Removal ?

Root fragments resprout

Herbicide Treatment ?

**Foliar Herbicide(Garlon 3A) (2 %) foliar spray**


Cut stump



Locate Tree of Heaven patches

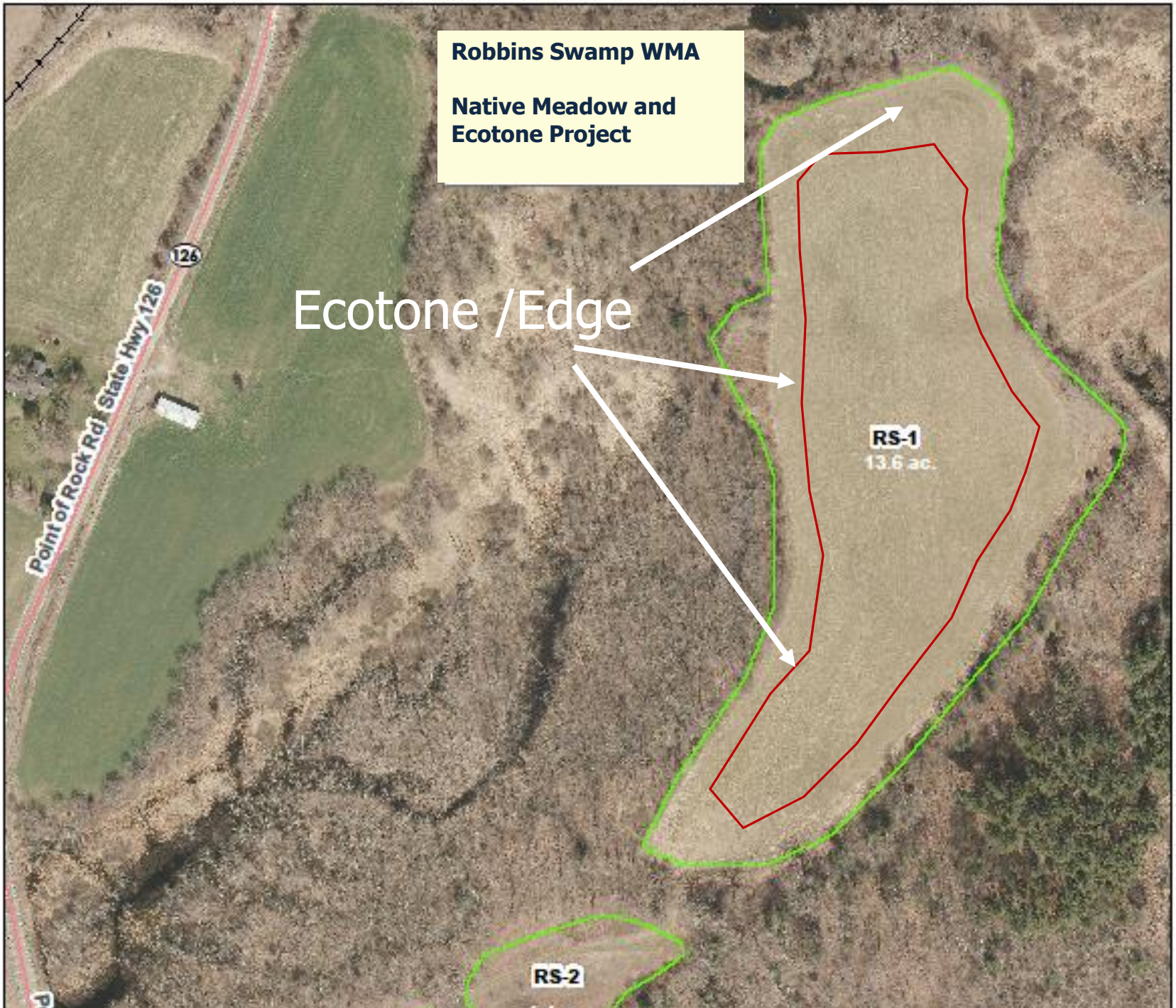
Prioritize management of seed-producing patches

Use girdle/cut technique and treat cuts using herbicide (Triclopyr full strength)

Foliar spray (2 %) clones/runners throughout the growing season and especially in latter summer months to increase root-killing.

Monitor treated patch and treat new sprouts throughout the growing season

Found one Invasive Tree Of Heaven Sapling At Housatonic River WMA in Summer 2024!


Robbins Swamp WMA
Native Meadow and Ecotone Project
Ecotone /Edge
126
Point of Rock Rd - State Hwy 126
RS-1
13.6 ac.
RS-2

## Prioritize managing fields and edges for biological diversity?

- Establish Native Grasses, Wildflowers, and Thicket Cover

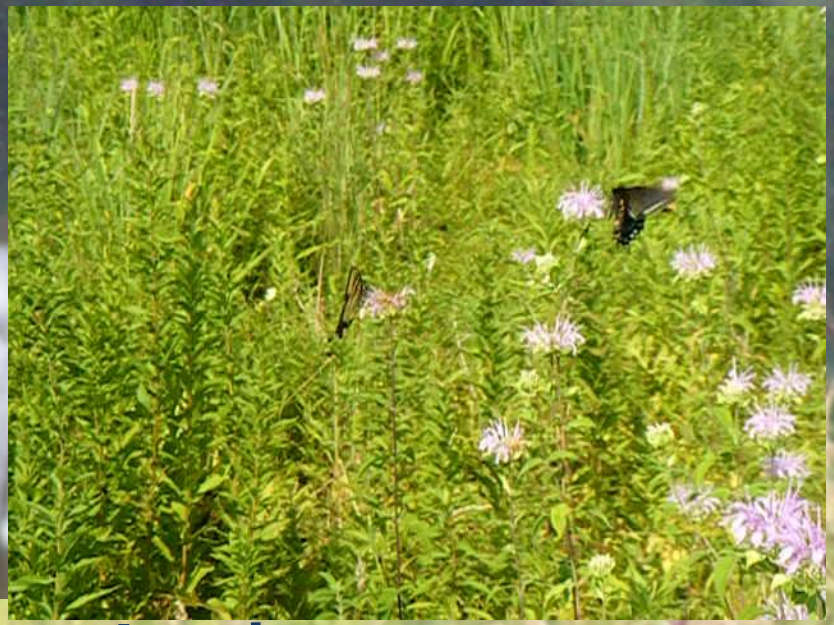
- Improved Edges/Ecotones Can Increase Food and Nesting Cover for Local and Migratory Wildlife

-Manage Invasives


Soft Edges


Robbins Swamp WMA
Native Meadow and Ecotone Project
Seeding/Planting the Field
Point of Rock Rd - State Hwy 126
126
RS-1
13.6 ac.
RS-2

# Fields and Meadows



American Goldfinch

Indigo bunting

√ -NATIVE

Evening primrose (*Oenothera biennis*)

Meadow Planting
June 2021

## Native Wildflowers

Asclepias syriaca - Common Milkweed
Asclepias incarnata - Red Milkweed
Asclepias tuberosa - Orange butterflyweed
Aster lavavis - Smooth Blue Aster
Aster novae-angliae - New England Aster
Aster novi-belgii - New York Aster
Chamaecrista fasciculata - Partridge Pea
Eupotorium fistulosum - Joe Pye Weed
Lobelia siphilitica - Great Lobelia
Mimulus ringens - Monkey Flower
Monarda fistulosa - Wild Bergamont
Penstemon digitalis - Tall White Beardtongue
Penstemon hirsutus - Hairy Beardtongue
Pycanthemum tenuafolium - Mountain Mint
Solidago juncea - Early Goldenrod
Solidago nemoralis - Gray Goldenrod
Tradescantia ohiensis - Ohio spiderwort
Veronica - New York Ironweed
Zizia aurea - Golden alexanders

## Native Grasses

Andropogon gerardii - Big bluestem
Schizochyrium scoparium - Little bluestem
Sorghastrum nutans - Indiangrass

March 16, 2022
Bare root planting

Burr Oak (Quercus macrocarpa)

Box Elder (Acer negundo)
N= 2

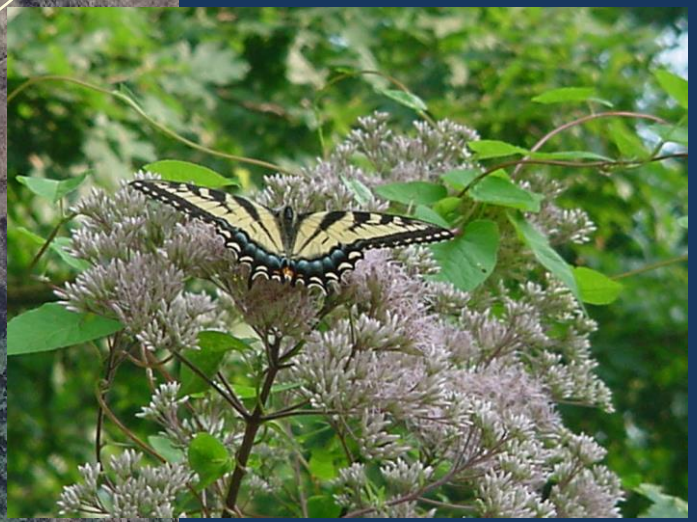
Blackberry (Rubus alleghaniensis)
N= 21

March 23, 2022
Bare root planting

Meadowsweet (Spiraea latifolia)
N= 2
Staghorn Sumac (Rhus typhina)
N= 1
Silky dogwood (Cornus amomum)
N= 2
Maleberry ( Lyonia ligustrina)
N= 1

September 27, 2022
Bare root segments/stems

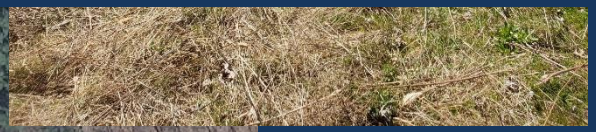
Joe Pyeweed (Eupatorium fistulosum)
N= 33



Robbins Swamp WMA
Bare root planting
Speckled Alder (Alnus incana)
05/16/2022 N= 14
05/23/2022 N= 3
04/19/2024 N= 66


**American Woodcock nest in ectones and feed in alder thickets.**

Harvesting Bare root Native Speckled Alder from old farm field



Robbins Swamp WMA
Native Meadow


2 % Garlon 3A


Avenza App
Track Invasives Management
UTV mounted Sprayer
2% Triclopyr
Target Invasives:
Mugwort
Canada Thistle

Robbins Swamp WMA
Native Meadow

**Managing Invasive Oriental Bittersweet**
**Edges/Ecotone/FIeld**

Garlon 3A  Triclopyr Full Strength

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  - Canada Thistle
  - Reed Canary Grass


Invasive Non-native
Autumn Olive

√ -INVASIVE

**Autumn Olive (*Eleagnus umbellata*)**

Silky Dogwood (*Cornus amomum*)

√ -NATIVE


# Mechanical Removal


Invasive Autumn Olive Mechanical Removal
Charter Oak Tree Farm, Sprague, CT 2004

**Charter Oak Tree Farm (Picone Private Property)**
**Autumn Olives Mechnically Removed**
**32 - (4 to 7 foot high)**
**67 - (saplings)**

**Autumn Olives**
**Foliar Sprayed with**
**Triclopyr 2 %**
**14 shrubs - (2 to 3 feet high)**

**Autumn Olives Cut Stem Treated with Triclopyr :**
**21 shrubs- (6 to 8 feet high)**


Italian Hoe

MECHANICAL REMOVAL INVASIVE AUTUMN OLIVE (Eleagnus umbellata)

# Cut and Treat

Chain saw

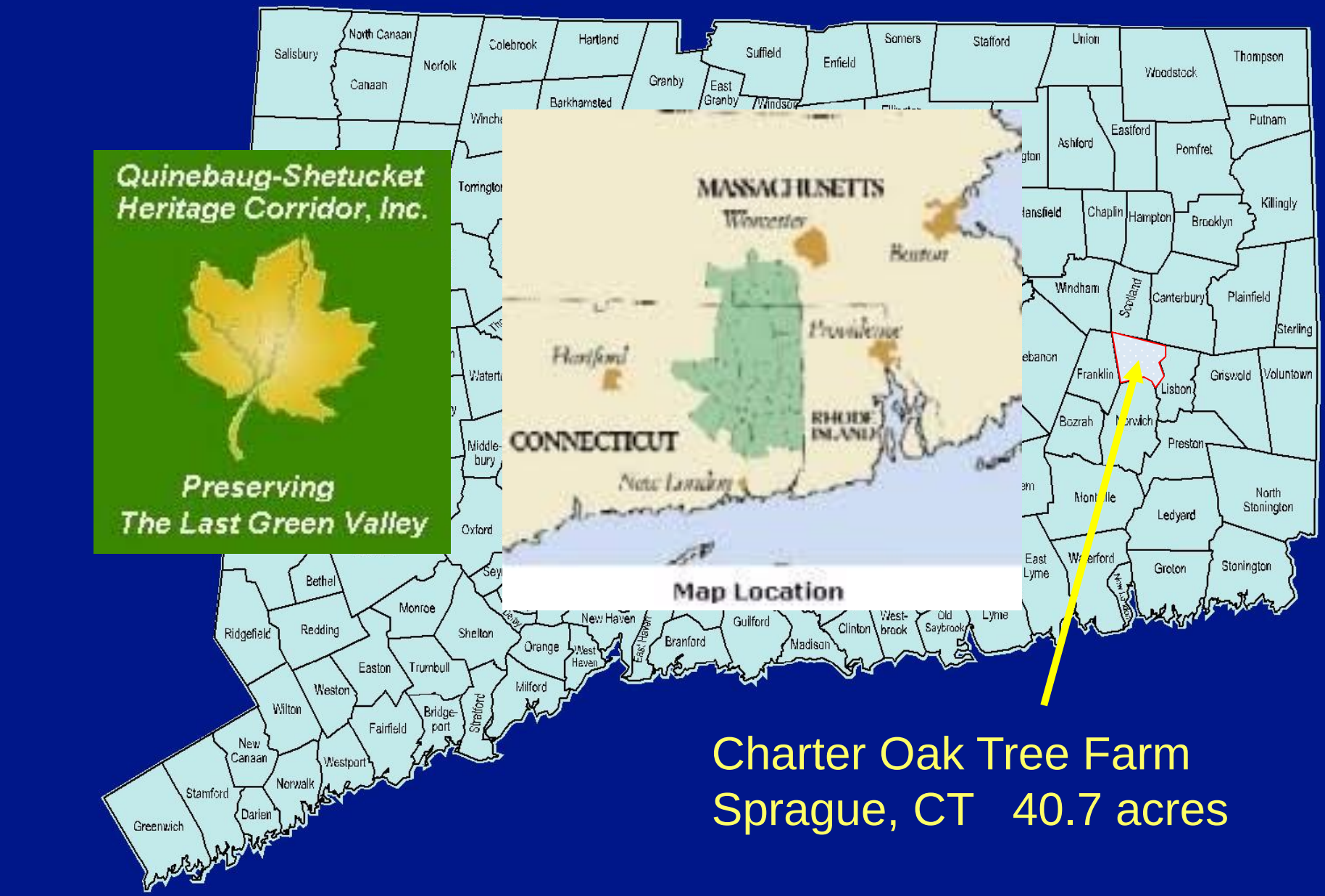



Machete /
Woodsmans Pal
Hand Axe



**Herbicide Treatment**
**Triclopyr (Garlon 3-A)**


**Foliar Spray**
**Triclopyr-based**
**Herbicide**


Quinebaug-Shetucket
Heritage Corridor, Inc.
Preserving
The Last Green Valley
MASSACHUSETTS
Worcester
Boston
Hartford
Providence
CONNECTICUT
RHODE ISLAND
New London
Map Location
Salisbury
North Canaan
Canaan
Norfolk
Colebrook
Hartland
Granby
East Granby
Windsor
Suffield
Enfield
Somers
Stafford
Union
Woodstock
Thompson
Putnam
Ashford
Eastford
Pomfret
Killingly
Chaplin
Hampton
Brooklyn
Windham
Scotland
Canterbury
Plainfield
Sterling
Franklin
Lisbon
Griswold
Voluntown
Bozrah
Preston
North Stonington
Ledyard
Groton
Stonington
East Lyme
Old Saybrook
Lyme
Clinton
Westbrook
Madison
Guilford
Branford
New Haven
West Haven
Orange
Milford
Stratford
Bridgeport
Fairfield
Westport
Norwalk
Darien
Stamford
Greenwich
New Canaan
Wilton
Weston
Easton
Trumbull
Shelton
Monroe
Redding
Ridgefield
Bethel
Oxford
Middlebury
Torrington
Charter Oak Tree Farm
Sprague, CT 40.7 acres


Tesla(GSP), Anthony, JoAnne, Neil and Peter Picone

# Wildlife Diversity Depends on Native Plants

DEEP Wildlife Biologist Peter Picone

# Thank You

# Questions ?