



Invasive Plant Mapping
West Newbury
June 2022 - August 2022

By: Dan McNamara & Kevin Stacey



Personal Introductions - The Interns:

Dan, 22: (right)

- Senior studying Environmental Science and Natural Resources Conservation at University of Massachusetts, Amherst

Kevin, 23: (left)

- Senior studying Marine Science, Safety, and Environmental Protection at Massachusetts Maritime Academy



Project Introduction

- Software Use
 - EDDmaps and MiMAP
- Areas surveyed
 - Mill Pond + Pipestave Hill - 270 acres
 - Dunn Field - 70 + acres
 - Riverbend Conservation Area - trail paralleling Merrimack River = ½ mile
 - Withers Conservation Area - 24 acres
 - River Road Preservation Area - 31 Acres, trail length of .96 miles
 - Brake Hill
 - Indian Hill St + Water Department Fields
 - Cherry Hill next to Indian Hill reservoir

Town of West Newbury

8/15/2022

Salisbury



Data Sources: Produced by Merrimack Valley Planning Commission (MVPC) using data provided by the Town of West Newbury & MassGIS/MassDOT. MVPC AND THE TOWN OF WEST NEWBURY MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY, COMPLETENESS, RELIABILITY, OR SUITABILITY OF THESE DATA. THE TOWN OF WEST NEWBURY AND MVPC DOES NOT ASSUME ANY LIABILITY ASSOCIATED WITH THE USE OR MISUSE OF THIS INFORMATION.

- Legend
- MVPC Boundary
 - Roads
 - Interstate
 - Major Road
 - Local Road



Target Plant Species

Targeted Species:

- Bush honeysuckle - *Lonicera spp.*
- Japanese honeysuckle - *Lonicera japonica*
- Black swallowwort - *Vincetoxicum nigrum*
- Pale swallowwort - *Vincetoxicum rossicum*
- Winged Euonymus/ Burning bush - *Euonymus alatus*
- Japanese barberry - *Berberis thunbergii*
- Common barberry - *Berberis vulgaris*
- Oriental bittersweet - *Celastrus orbiculatus*
- Glossy buckthorn - *Fragula alnus*
- Common buckthorn - *Rhamnus cathartica*
- Japanese knotweed - *Reynoutria japonica*
- Giant knotweed - *Reynoutria sachalinensis*
- Bohemian knotweed - *Fallopia x bohemica*
- Garlic mustard - *Alliaria petiolata*
- Multiflora rose - *Rosa multiflora*
- Privet - *Ligustrum spp.*
- Autumn olive - *Elaeagnus umbellata*
- Tree of Heaven - *Ailanthus altissima*

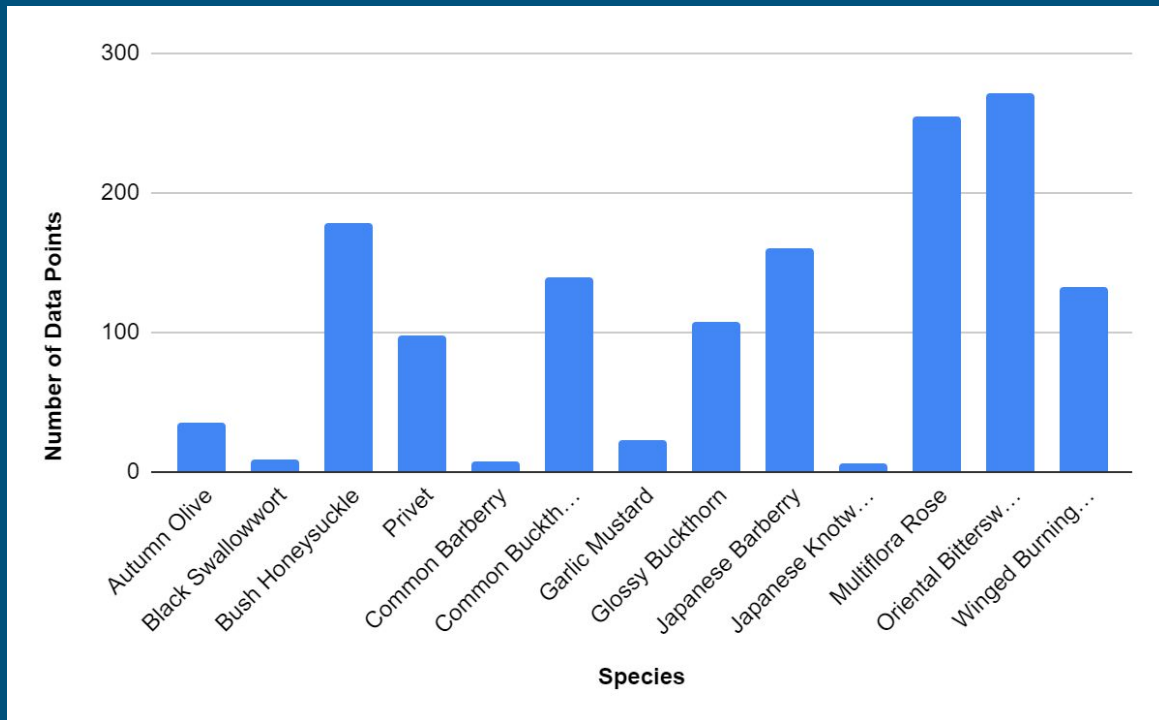
Found Species:

- Bush honeysuckle
- Black swallowwort
- Winged Euonymus/ Burning bush
- Japanese barberry
- Common barberry
- Oriental bittersweet
- Glossy buckthorn
- Common buckthorn
- Japanese knotweed
- Garlic mustard
- Multiflora rose
- Privet
- Autumn olive

Methodology

- Training and Supervisors
 - Michelle Greene - Conservation Agent, Direct Supervisor for the internship
 - Carol Decker - trainer for plant identification and site walkthroughs
 - Patricia Reeser - trainer for plant identification and site walkthroughs
 - Nancy Pau - Wildlife Biologist & trainer for the EDDMaps program
- Hiccups or Challenges of Process
 - Difficulties with fielding
 - Scheduling around weather impediments
 - GPS accuracy on forested trails

Breakdown of Plotted Data Points



Oriental Bittersweet



Multiflora Rose

MY EDDMAPS

ABOUT

Record ID 10510325

Location Information

Location Essex, Massachusetts, United States

Coordinates 42.80542, -70.96292

Infestation Information

Density 5-25%

Infested Area 0.457887 Acres

Infestation Status Positive

Reporter Information

Reporter Kevin Stacey

Observation Date June 30, 2022

Date Entered June 30, 2022

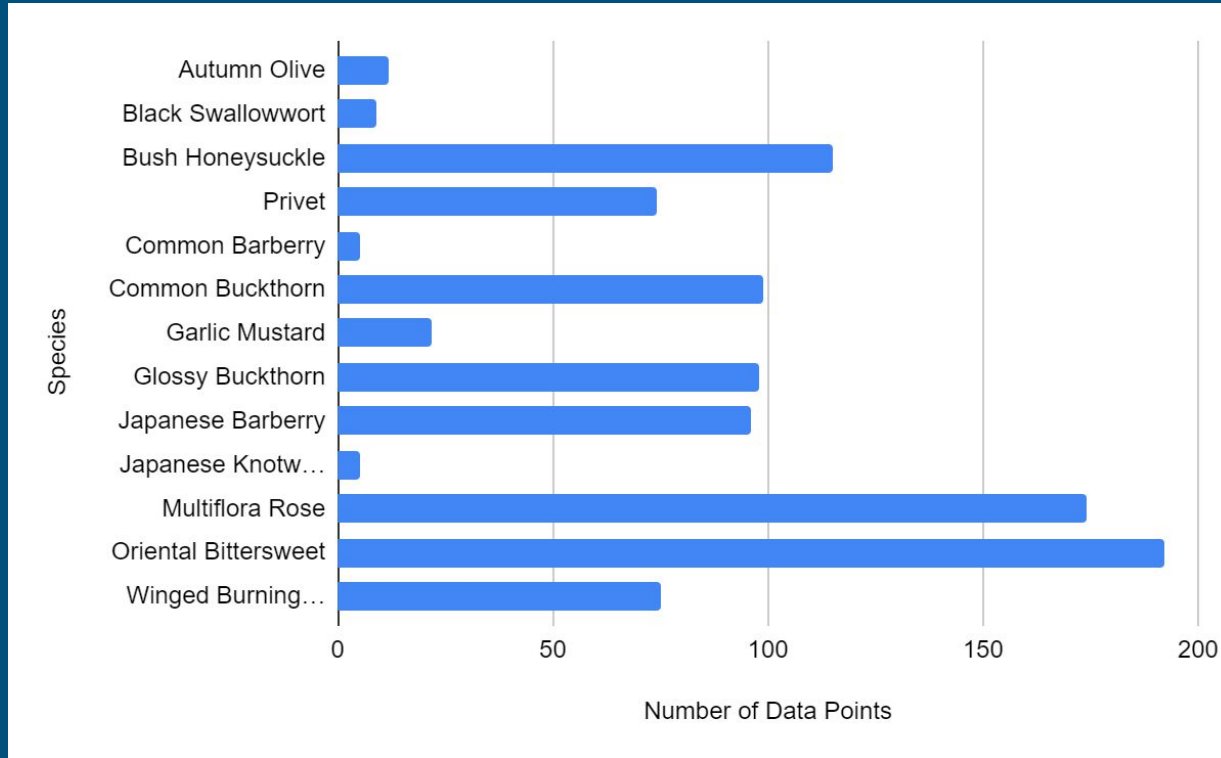
Date Updated June 30, 2022

Source iPhone

Type



Mill Pond Invasives



West Newbury MIMAP

Merrimack Valley Planning Commission (2022)

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Tool Labels



Observations of flora and species present

- Impact of species or other flora present
 - Pine forest vs. Oak forest
 - Wetlands/ Stream areas
 - Proximity to roadsides
- Impacts of Drought
 - Drought creates potential for invasive species to increase in abundance and variety
 - Drought increases competition for water and resources between flora which can help or hurt invasives depending on species (Autumn Olive, Japanese Barberry)

Program Improvement Suggestions

- EddMaps mapping capabilities
 - Update the base map to highlight off road trails and paths to assist in accuracy of mapping, specifically in forested areas where the trail is normally hidden from view due to canopy cover
 - Ability to see a layer of all points from all mappers at once on a map for a sense of scale
 - More options for pre-set data descriptors (i.e., percent coverage, time spent in area, more habitat types and options)
 - Potential upgrade to EddMaps processing power to stabilize the program and reduce amount of glitches and bugs, such as quitting in the middle of plotting a polygon, or failing in the middle of data upload
- Select Board, ConCom, Open Space and Wild and Native Meetings

Recommendations / Suggestions (Species Management)

- Smaller densities for targeted removals
 - Plant removal days with volunteers
 - Focus on pulling and uprooting when possible to avoid the species from growing back
- Higher density areas
 - Prescribed Burning (difficulties with variability in precipitation and permitting)
 - Biocontrols
- MiMap Data Layer
 - Publish a MiMap layer of data from this year for points gathered, allowing points of reference for future interns if yearly mapping is to continue



Questions

Useful Links

- [EDDMapS Data Query](#)
- [iNaturalist](#)
- [Go Botany ID Tool](#)
- [Invasive Plant Atlas of New England](#)
- [West Newbury Hiking Areas and Trail Maps](#)

Bibliography

Huebner, Cynthia D., et al. *Invasive Plants Field and - US Forest Service*. USDA and Forest Service.

McCameron, Carly; McCarthy, John; and Geedey, Dr. Kevin. "Do Stands of Native Trees Harbor Different Invasive Species Than Stands of Planted Pine?" (2019). Celebration of Learning.

Walker, Nathan, et al. *United States Department of Agriculture Drought Impacts - US Forest Service*. Mar. 2018.