



CHECK EARLY AND OFTEN:
**Three invasive plants you
need to know**

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MASSACHUSETTS INVASIVE PLANT ADVISORY GROUP (MIPAG)

- Started off in 1995 as the Massachusetts Native Plant Advisory Committee
- Representatives from government, conservation, academia, nursery industry, weed science, horticulture and agriculture
- Asked by the EEA to provide recommendations re: how to recognize and manage invasive plants
- Developed a risk assessment procedure to evaluate non-native plant species for invasiveness
- <http://massnrc.org/mipag>

MIPAG MEMBERS:

- Federal
 - Silvio Conte National Fish & Wildlife Refuge
- State
 - MA Dept of Agriculture
 - MA Div. of Fisheries & Wildlife (Natural Heritage & Endangered Sp. Program)
 - MA Dept. of Conservation and Recreation
- Conservation
 - New England Wild Flower Society
 - The Nature Conservancy
 - Mass Audubon
 - The Trustees of Reservations

MIPAG MEMBERS:

- Science / Academia
 - Invasive Plant Atlas of New England (UConn)
 - Arnold Arboretum of Harvard University
 - UMASS Extension Service
 - Northeastern Weed Science Society
- Green Industry / Horticultural Interests
 - American Nursery & Landscape Assn.
 - New England Nursery Assn.
 - Massachusetts Nursery & Landscape Assn.
 - Ecological Landscaping Assn.
- Individuals from businesses experienced in land management (rights of way, conservation land, landscaping, etc.)

MIPAG INVASIVE PLANT LIST: PROCESS

- List compiled of non-native plant species thought to be invasive
- Each species is run through the risk assessment, using over a dozen criteria, including:
 - Biology
 - Distribution in Mass.
 - History of invasiveness elsewhere
- Species assessed as invasive are placed on the list following a majority vote of MIPAG's members

MIPAG INVASIVE PLANT LIST: PROCESS

- Criteria separate species into the following categories:
 - Invasive
 - Non-native species that have spread into native or minimally managed plant systems and cause economic or environmental harm.
 - Likely Invasive
 - At least 1 dense stand in Mass. OR
 - Invasive in nearby states but Mass. status unclear
 - Potentially Invasive
 - Not in Mass. but invasive elsewhere and considered a threat
 - Not Currently Meeting Criteria

PROHIBITED PLANT LIST

- In 2005, MDAR proposed creating a prohibited plant list using:
 - The MIPAG list of invasive, likely invasive, and potentially invasive species
 - The USDA Federal Noxious Weed List
 - 140 species total
- In January 2006, an MDAR regulation banned the import, sale or propagation of these 140+ plant species

PROHIBITED PLANT LIST

- MIPAG continues to evaluate new species, and periodically requests that MDAR amend the Prohibited Plant List
- Mass.gov → “Prohibited Plant List”

THREE INVASIVE PLANT SPECIES YOU NEED TO KNOW:

- Giant Hogweed (*Heracleum mantegazzianum*)
- Mile-a-Minute Vine (*Persicaria perfoliata*)
- Kudzu (*Pueraria montana*)

THREE TO LOOK OUT FOR

1) Giant hogweed

(Heracleum mantegazzianum)



THREE TO LOOK OUT FOR

1) Giant hogweed

- Native to Eurasia
- Introduced to USA in 1800s as an ornamental plant
- Discovered in Mass. in 2002

- Herbaceous biennial/short-lived perennial that can reach 20 feet in height
- Flowers in summer, seed heads persist
- Invades natural areas, promotes soil erosion along rivers
- A Federal Noxious Weed due to its phototoxic sap

THREE TO LOOK OUT FOR

1) Giant hogweed

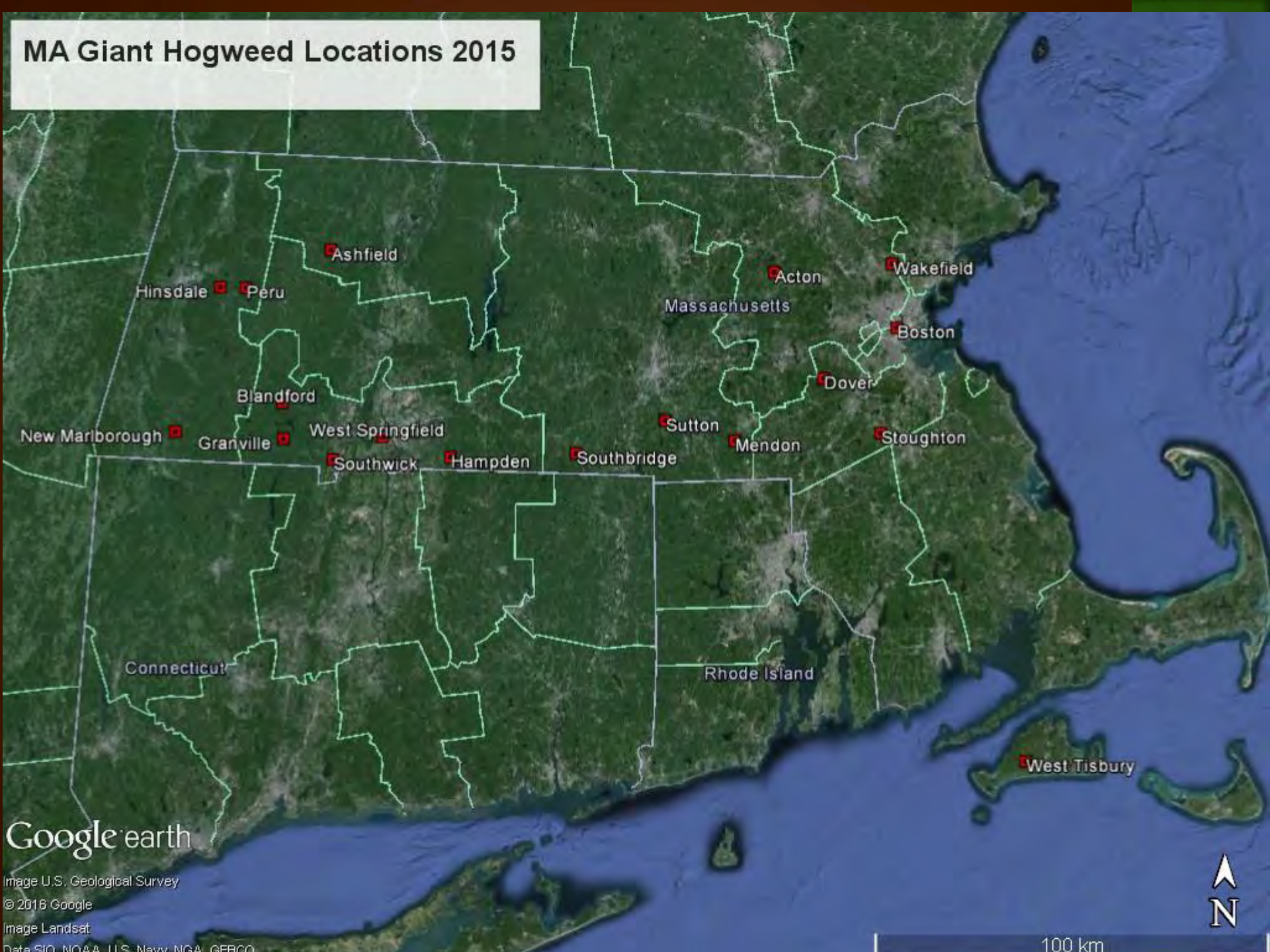


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GIANT HOGWEED: Pathways

- Originally introduced as an ornamental plant
- Once introduced, Giant Hogweed can spread via:
 - Soil transport (seeds can last 6 years in soil!)
 - Yard waste disposal
 - Flooding/soil erosion along rivers/streams

MA Giant Hogweed Locations 2015



Google earth

Image U.S. Geological Survey

© 2016 Google

Image Landsat

Data SIO, NOAA, U.S. Navy, NGA, GEBCO



100 km

GIANT HOGWEED: Identification

1



Leaves grow in a rosette around the bottom of the stem, and can grow up to 5ft wide. Mature leaves are deeply lobed, with each lobe deeply cut into pointed teeth. Smaller leaves are also found along the stem.

GIANT HOGWEED: Identification



Stem of Cow Parsnip is densely hairy, lacks purple spots

Green stems are splotted with purple and covered with stubby hairs. Stem nodes are prominently marked with a ring of coarse white hairs.

GIANT HOGWEED: Identification



Flower heads are clusters of tiny, white flowers attached to the top of the stem in an umbrella-like shape (umbels), similar to Queen Anne's Lace but significantly larger (up to 2ft across). Plants flower from June through July.



GIANT HOGWEED: Identification

GIANT HOGWEED LOOK-ALIKES (Do Not Report):



Cow Parsnip



Canada Lettuce



Wild Angelica

GIANT HOGWEED: Management

- Goal in Massachusetts: Management towards Eradication
 - Some sites have already been eradicated
 - Some sites small enough to be quickly managed
 - Some sites are proving to need long-term management plans

GIANT HOGWEED: Management

Management Tools

- Hand-pulling/digging/taproot cutting
 - Good for smaller infestations, or in combination with other techniques at larger infestations
 - ONLY WITH PROPER PROTECTIVE EQUIPMENT!
 - Do it when leaves are still small
- Preventing Seed Production
 - Lop off flower heads to prevent fruit set
 - Timing must be good to prevent further bolting
 - Solarize flower heads in clear plastic bags

GIANT HOGWEED: Management

○ Management Tools

■ Mowing

- Used to control larger infestations
- ONLY WITH PROPER PROTECTIVE EQUIPMENT!
- Only when plants are small!

■ Herbicide

- Triclopyr and glyphosate are both effective

THREE TO LOOK OUT FOR:

2) MILE-A-MINUTE VINE

- *Polygonum perfoliatum* (*Persicaria perfoliata*)
- Also known as: devil's tail, Asiatic tearthumb, mile-a-minute weed, "MAM"



THREE TO LOOK OUT FOR:

2) MILE-A-MINUTE VINE

- Fast-growing, aggressive, annual vine
- Long-lived seed bank (about 6 years)



MILE-A-MINUTE VINE: Habitat

- Prefers open, disturbed areas
- Thrives in edge habitat (of forests, rivers, roads)
- Prefers strong light and soil moisture, but can survive in shade and dry soil



Photo: A. Lopez-Swetland

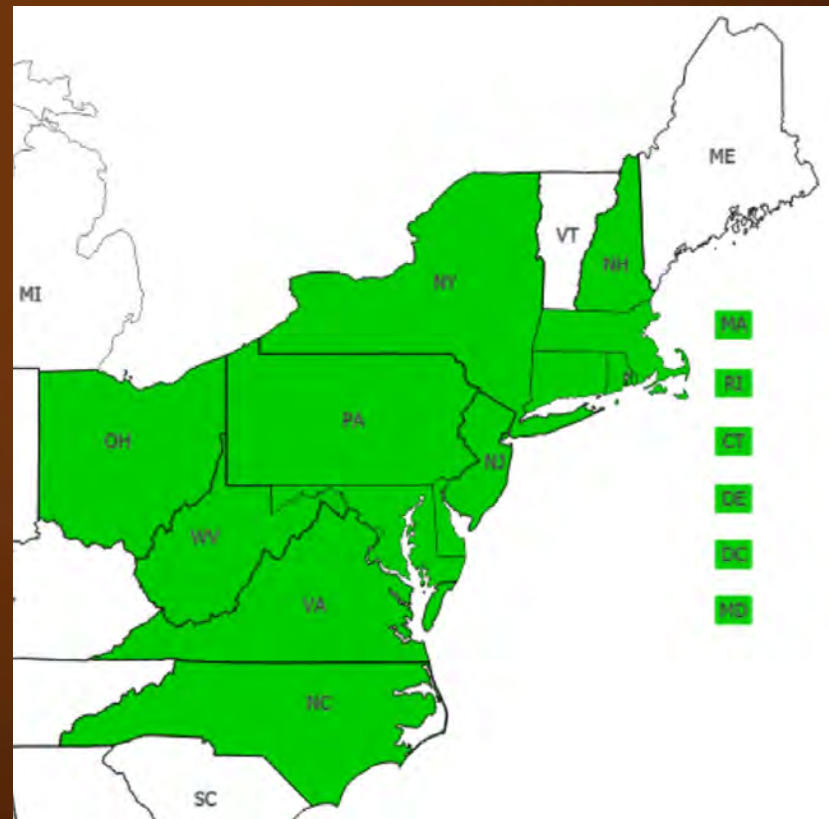
MILE-A-MINUTE VINE: Pathways

- Originally introduced as a contaminant in nursery stock
- Once introduced, MAM can spread via:
 - Soil transport
 - Vehicle/equipment contamination
 - Moving water (fruits float)
 - Wild animals, birds (eating the fruit)
 - Ants

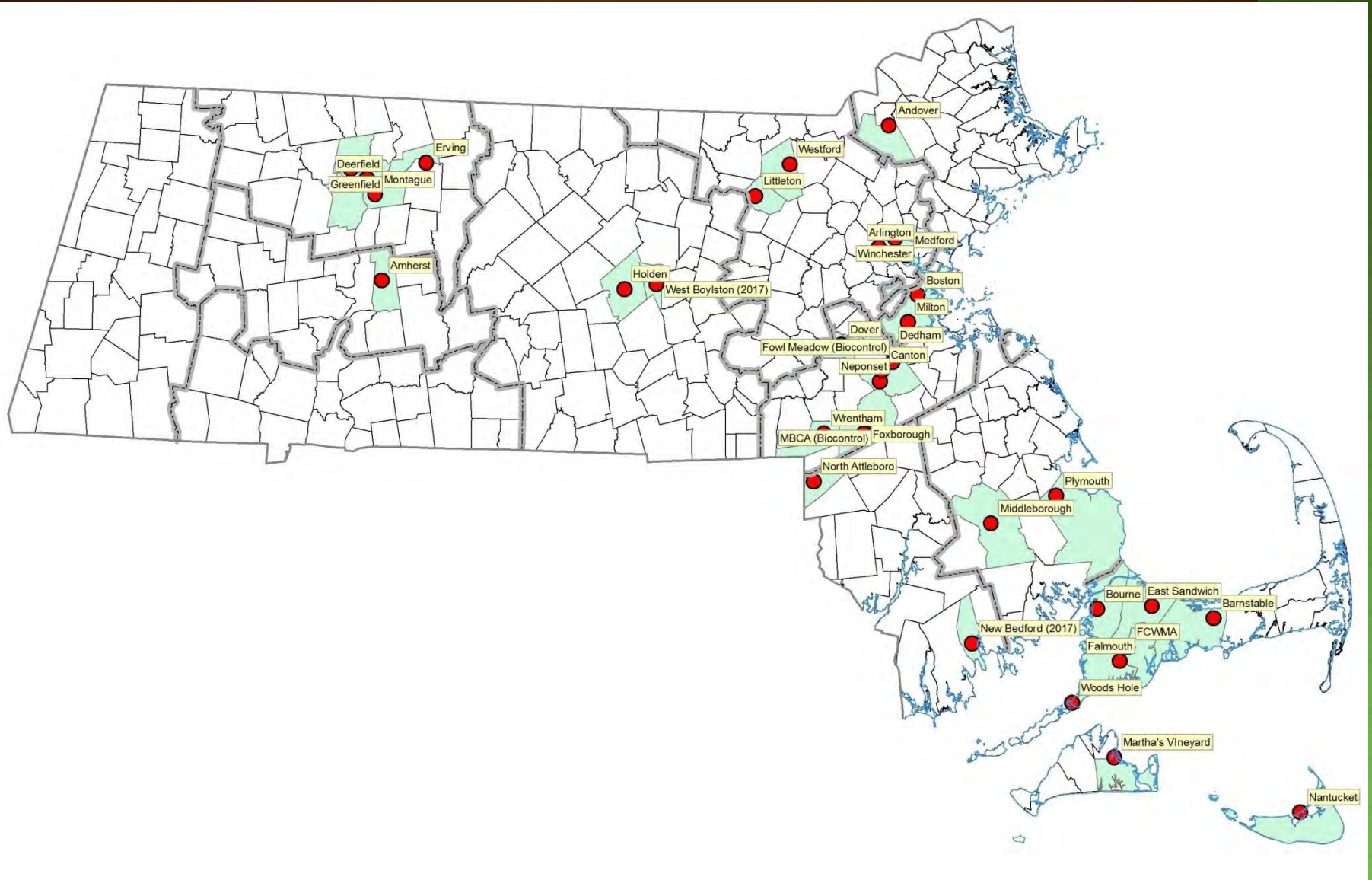
MILE-A-MINUTE VINE: History

- Native to Eastern Asia
- First US intro in 1890 in Oregon (did not survive)
- First known successful population in Pennsylvania, late 1930s
- Currently found in:

- Connecticut
- Delaware
- Maryland/D.C.
- Massachusetts
- New Hampshire
- New Jersey
- New York
- Ohio
- Pennsylvania
- Rhode Island
- Virginia
- West Virginia



MILE-A-MINUTE VINE: Distribution



THREE TO LOOK OUT FOR: MILE-A-MINUTE VINE



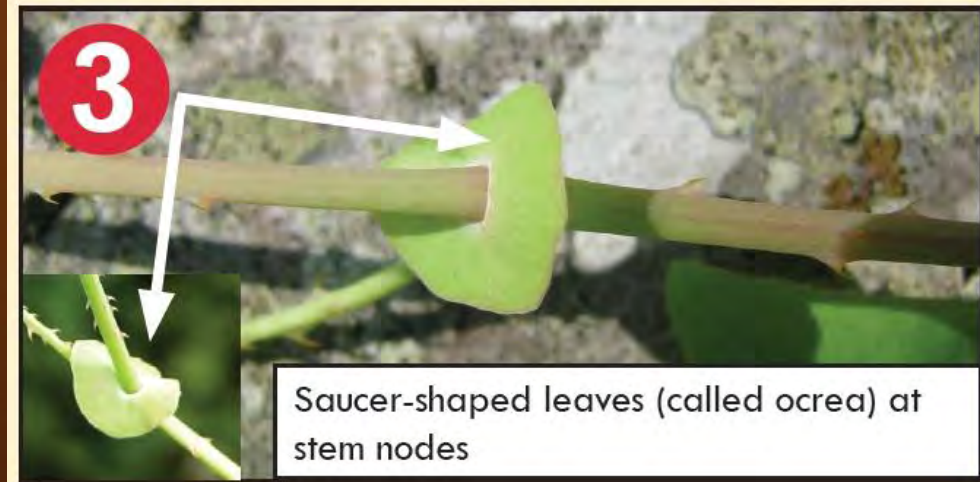
Photo: A. Lopez-Swetland, MDAR

THREE TO LOOK OUT FOR: MILE-A-MINUTE VINE



MILE-A-MINUTE VINE: Identification

- Perfectly triangular leaves
- Barbed stems
- Saucer-shaped leaves at stem nodes



MILE-A-MINUTE VINE: Identification

- Clusters of fruits are metallic blue in color



In summer, MAM fruits ripen from green to metallic blue

MILE-A-MINUTE VINE: Identification

- Similar species include:
 - Halberd-leaved Tearthumb (*Persicaria arifolia*)
 - Morning Glory (*Convolvulus* spp.)
 - Hog Peanut (*Amphicarpaea bracteata*)
 - Bindweed/False Bindweed (*Convolvulus/Calystegia/Fallopia* spp.)
 - Arrow-leaved Tearthumb (*Persicaria sagittata*)



Leaf shapes of other vines; these species do not harm ecosystems and should **not** be reported:



NO



NO



NO



NO



NO

MILE-A-MINUTE VINE: Management

- It is likely that MAM is here to stay. However...
- Goal in Massachusetts: Management
 - Some sites have already been eradicated
 - Some sites small enough to be managed towards eradication
 - Some sites (Fowl Meadow, Frances Crane WMA) require long-term management plans

MILE-A-MINUTE VINE: Management

Management Tools

Hand-pulling

- Good for smaller infestations, or in combination with other techniques at larger infestations

Cultural

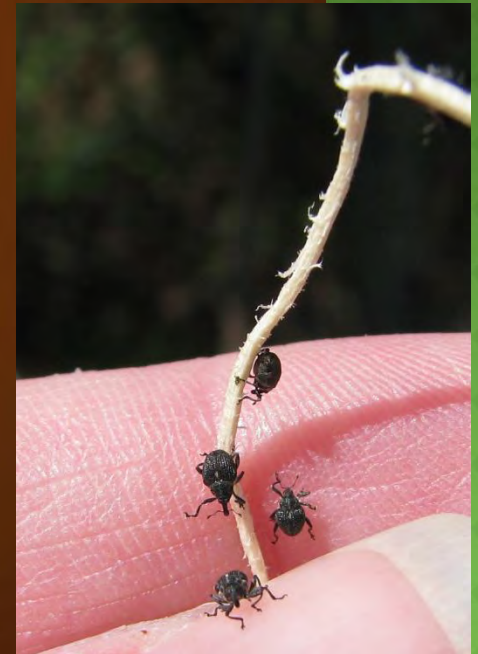
- Keep fruits from spreading by acting before seed set
- Avoid contamination of fill, machinery

Herbicide

- Pre-emergents (pendimethalin, sulfometuron, and imazapic) have been successfully used in some states
- Triclopyr and glyphosate are effective post-emergents
- Application near wetlands can be an issue

Biocontrol

- MDAR has been releasing a weevil (*Rhinoncomimus latipes*) that bores into the stems of MAM



MILE-A-MINUTE BIOCONTROL PROGRAM

- 3 release sites:
 - Canton
 - Falmouth
 - Foxborough



THREE TO LOOK OUT FOR

3) Kudzu (*Pueraria montana* var. *lobata*)



THREE TO LOOK OUT FOR

3) Kudzu

(Pueraria montana var. lobata)

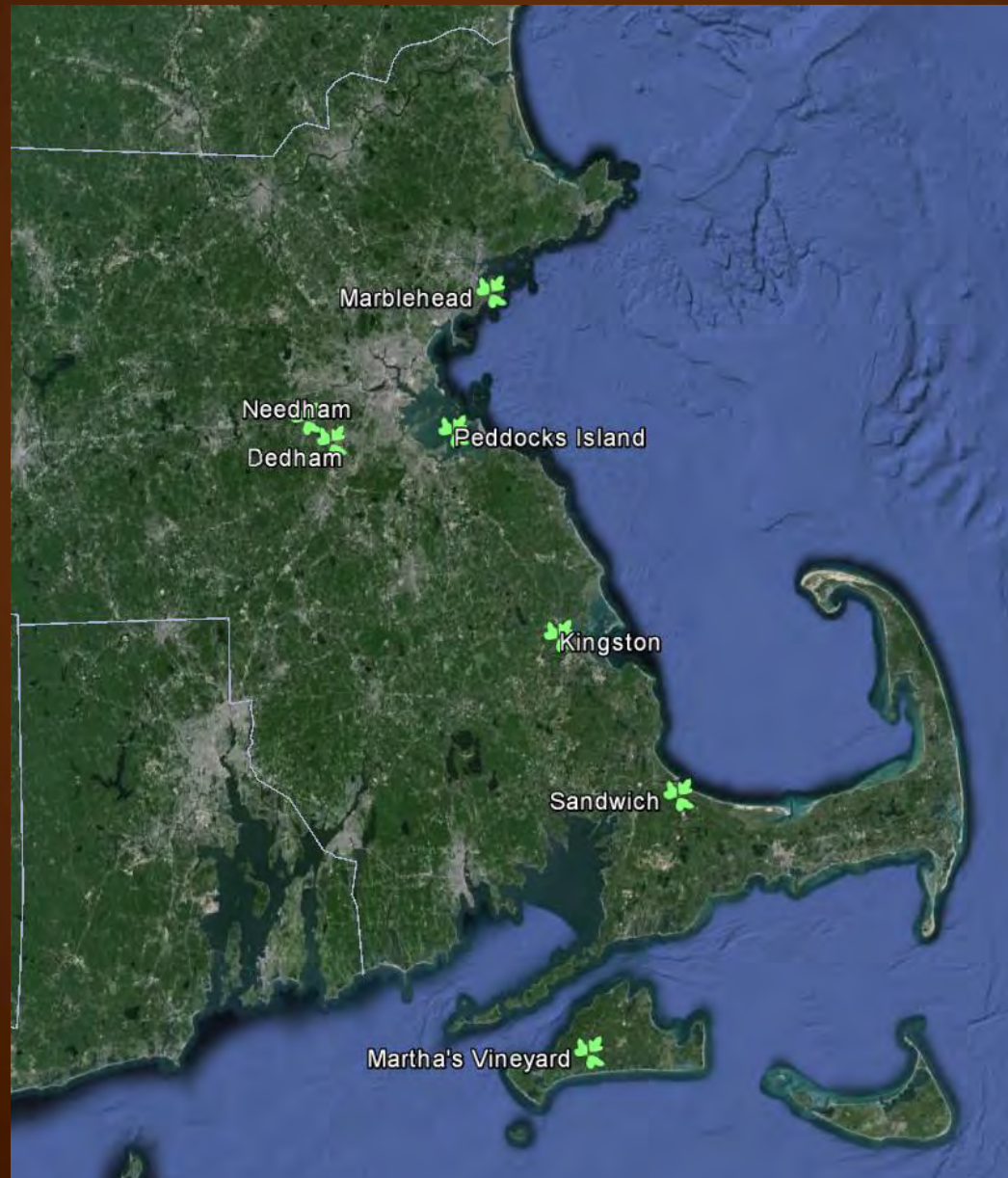
- When invasive plants are bad here in New England, we call them “The Kudzu of the North,” but we actually have kudzu here!
- A legume, trifoliate leaves
- Semi-woody, rapidly growing perennial vine
- Reproduces primarily by runners and rhizomes
- Will cover large areas of land, smothering every plant in its path

THREE TO LOOK OUT FOR

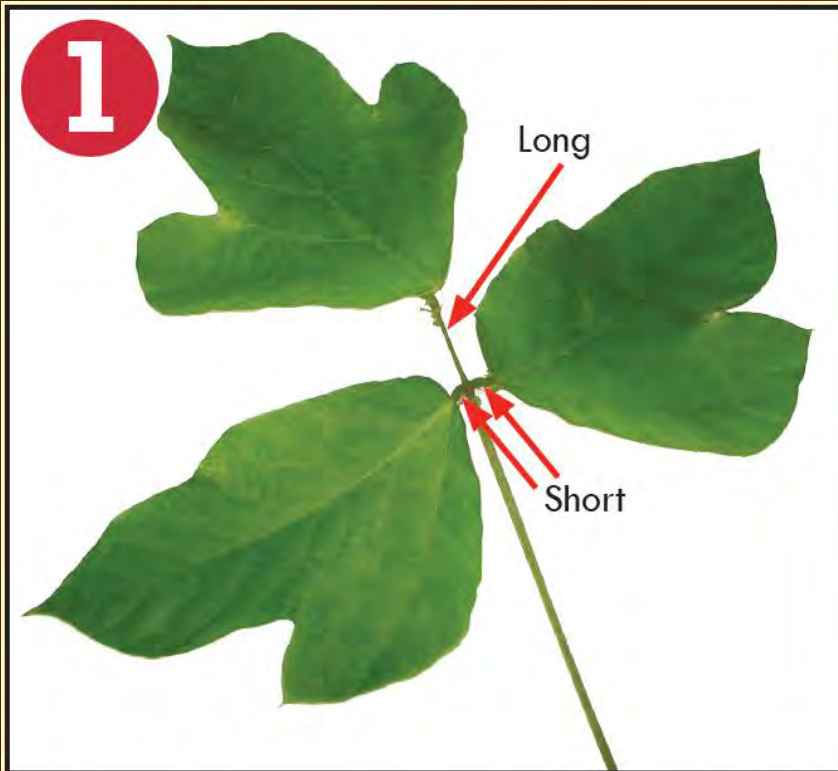
3) Kudzu

- ◉ Native to Eurasia
- ◉ Introduced to USA in late 1800s
- ◉ Touted as a ground cover to combat soil erosion
- ◉ Sometimes planted as an ornamental
- ◉ Found in Connecticut in 1978
- ◉ Discovered in Mass. in the 1980s

KUDZU: Distribution



KUDZU: Identification



“Tri-foliolate” leaves divided into 3 separate lobes (or sometimes unlobed). Top leaflet has much longer petiole (stem) than the two side leaflets.



Long, brown hairs. Paired “stipules” found on the petiole (stem) of each leaflet

KUDZU: Identification



Spikes of purple,
grape-scented
flowers



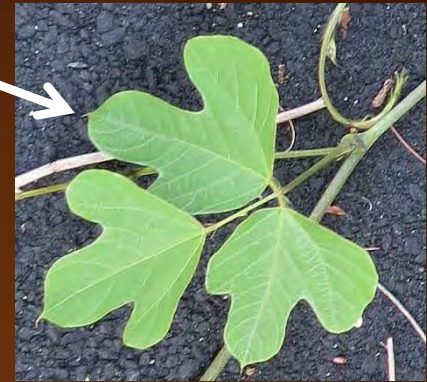
Fuzzy brown
seed pods

KUDZU: Identification

Similar species include:

- Hog Peanut (*Amphicarpaea bracteata*)
- Poison Ivy (*Toxicodendron radicans*)
- Boston Ivy (*Parthenocissus tricuspidata*)
- Poison Oak (*Toxicodendron rydbergii*)
- Tick-trefoil (*Desmodium* spp.)
- Blackberry (*Rubus* spp.)
- Box Elder (*Acer negundo*)

YES!



Leaf shapes of other plants (these **do not** need to be reported):



NO



NO



NO



NO



NO



NO



NO

KUDZU: Management

- Goal in Massachusetts: Management towards Eradication
 - Sites under treatment in Needham, Marblehead, Boston Harbor Islands
 - Can be managed with a combination of hand removal, mechanical removal, and herbicide application (glyphosate or triclopyr)

KUDZU: NEEDHAM, MA - 2011



KUDZU: NEEDHAM, MA - 2012



KUDZU: NEEDHAM, MA - 2014



ACKNOWLEDGEMENTS

- ◉ Thank you to Cynthia Boettner (Silvio Conte National Wildlife Refuge, USFWS) for the MIPAG background info
- ◉ Photo credits include: IPANE/EDDMapS, Les Mehrhoff, Irina Kadis, bugwood.org, Naja Kraus DEC/NY, John Burns, USDA/APHIS-PPQ
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