

Biological Control of Mile-a-Minute Weed (MAM) in CT

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Identifying MAM, *Persicaria perfoliata* (L.) H. Gross (*Polygonum perfoliatum*)

Origin: Asia
Family Polygonaceae

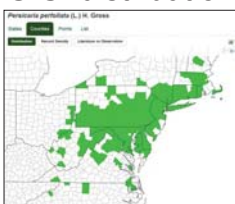
- Triangulate leaves
- Recurving barbs
- Blue fruit when ripe
- Saucer-shaped leaves encircling stem (ocrea)



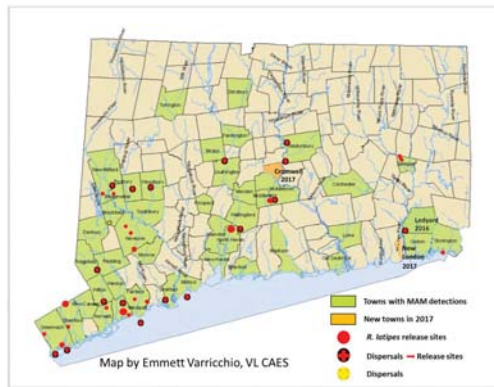
Tolerates beach conditions!



U.S. distribution



Distribution of MAM, location of weevil release sites and dispersal 2009-2017 in CT



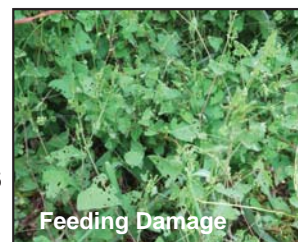
- First confirmed in Greenwich, 2000
- Annual vine with exponential growth
- Colonizes disturbed soil, forest openings, wetlands; persistent seed bank (6-7 yrs) is a challenge
- Threat to forest regeneration
- Out competes native plants
- Dispersed by man, birds, wildlife, water



EDDMapS. 2016. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at <http://www.eddmaps.org/>; last accessed July 28, 2016.

Rhinoncomimus latipes (Coleoptera:Curculionidae)

- Adults feed on youngest leaves, flowers and buds of MAM and are very host specific; in time reduces overall fruiting
- Eggs are laid on undersides of leaves and on the stem, preferentially on plant capitula (flower heads) of MAM
- Larvae hatch, bore into first node in stem and enter stem to feed and develop; cannot develop on other related species
- Mature larvae leave the stem and drop to soil to pupate
- New adults emerge from the soil as black adults which turn orange with feeding; Generation time is approx. 26 days; >2 generations in Connecticut
- Adults overwinter and can live >1yr
- Adults fly and readily disperse to find new MAM populations



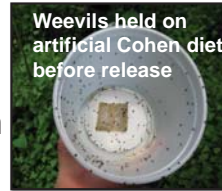
Origin: Central China; introduced into the US by the USDA Forest Service and University of Delaware in 2004



R. latipes Releases in CT 2009 - 2017 and Field Assessments



- Weevils reared & supplied by NJDA PABIL (& URI)
- 500-1000 adults released per site at a central location
- Monitoring over time for weevil survival and dispersal, activity and MAM damage, reduction in fruits

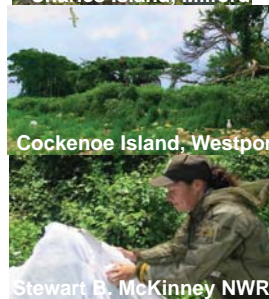


CT Releases 2014-2017



Progress in 2015-2017

- 46 CT towns (27%) with confirmed reports of MAM to date in 2016 (www.mam.uconn.edu/)
- Expanded biological control: 52,124 weevils released in 24 towns (47 sites) in CT from 2009-2017.
- 1 new site, Glastonbury Meadows + augmentation in Mohegan State Forest, Sprague in 2017. Released in 3 new towns in 2015 (Wallingford, Glastonbury and Southbury), and 3 new towns in 2016 (Ledyard (US Naval Submarine Base of New London), Milford, Middletown).
- Incredible off shore dispersal (3-4 miles over LIS) of weevils and MAM to islands was recorded in 2015 and 2016. Three bird sanctuaries on islands received weevils in 2016, partnering with US Fish and Wildlife, Towns of Westport, Greenwich & CT Department of Energy & Environmental Protection.
- Weevils have successfully overwintered every year, including the most severe winter of 2015; survived severe flooding, drought, storms, variable winters, site interference from mowing, tree felling, vegetation clearance, herbicide treatments. Weevils continue to spread near and far to MAM infestations, 14-29 miles from nearest earlier release sites in 2014-2016.
- Multiple generations of weevils have been observed at sites & surrounds in 2015 and 2016
- MAM germination very delayed in 2017 (late April) as in 2014, and 2016 due to cool spring. Drought heavily impacted MAM germination in 2016. Early feeding by weevils on MAM seedlings. In 2016 weevil activity was variable at sites; there was very late maturation of fruit, reduction of MAM at some sites. Extended severe drought, competition from natives also possibly limiting MAM growth and seed set. Intensive scouting + GIS mapping in adjacent areas around release sites have shown little or no spread of MAM.



Many thanks to cooperators 2009-2017

Emmett Varicchio, Liz Young, Zach Donais, Christine Grant (CAES)
 Jasmine Brown, Nicole Gabelman, Andrew Brown, Mary Conklin, Logan Senack (UConn)
 Cyndi Detweiler, Jenni Desio, Tom Dorsey, Mark Mayer, NJDA Phillip Alampi BIL
 Lisa Tewkesbury, URI
 Kathleen Nelson; Mad Gardeners, Inc.; Ann Astarita (Newtown Conservation Commission)
 Aleksandra Moch; Environmental Analyst; Lisette Henrey, Conservation Commission, Pat Sesto, Town of Greenwich; Karen Dixon; Audubon Greenwich
 Rob Sibley; Town of Newtown
 Tim Currier & Annie Stiefel; Sticks & Stones Farm, Newtown
 Peter Picone & Lori Lindquist; CT Dept. of Energy and Environmental Protection
 Ken Ruel and Joe Adkins; Spectra Energy
 Doug Pistawka, Jerry Altieri; Eversource; Doug Palmer
 Tony Girardi; Rookrimmon Country Club, Stamford
 Mrs. Jean Whittingham, Stamford; Mr. Albert Gilbert, Bridgewater
 Alicia Mozian, Conservation Director; Lynne Krynicki; Mike Aitkenhead, Wakeman Town Farm, Marine Police, Town of Westport
 Dave Mahoney; Beardsley Zoo
 Alton Blodgett, James Gilbert; Cathy Osten, Town of Sprague
 Milan Bull; Connecticut Audubon
 Summit Auto; Fairfield
 Ellen Waff and the Independence Day School, Middlefield
 Kathy Weinberger, Terra Firma, Stonington
 James Casey, Michael McCourtney; Stratford Development; Brian Carey, Town of Stratford
 Kisey Snow, Ridgefield Conservation Comm., Terry McManus, Jill Kelley, Ben Oko
 Mary Tyrell, Town of Woodbury
 Russell Wheeler, Roxbury
 Joe Blank, Ani Adishian, Greenwich
 Pat and Sheldon Corrow, Southington
 Ray Purtell and Greg Foran, Town of Glastonbury
 Mark Austin, Ed Edelson, Town of Southbury
 Carol Haskins, Pomperaug River Watershed Coalition
 Kris Vagos, U.S. Fish and Wildlife, Stewart B. McKinney National Wildlife Refuge
 Denise Page, Michael Biffel, CB & I
 Tracey McKenzie, Naval Submarine Base, New London
 Tim Rosa, Stephen Roth, SBA Communications Corporation
All photos by Carole Cheah except where stated



Funding Support 2009 - 2017

USDA APHIS PPQ
 USDA Forest Service
 Northeastern Area State Private Forestry
 Forest Health Technology Enterprise Team

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