Biological Control of Mile-a-Minute Weed (MAM) in CT
Carole Cheah¹ and Donna Ellis²
Assisted by Emmett Varrasschio 2015-2017
¹The Connecticut Agricultural Experiment Station; ²University of Connecticut
Identifying MAM, Persicaria perfoliata (L.) H. Gross (Polygonum perfoliatum)

Distribution of MAM, location of weevil release sites and dispersal 2009-2018 in CT

- Triangulate leaves
- Recurring barbs
- Blue fruit when ripe
- Saucer-shaped leaves encircling stem (ocrea)
- Tolerates beach conditions

U.S. distribution

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

**Rhinoncomimus latipes**
(Coleoptera: Curculionidae)

- Federally screened for biological control; first introduced in CT in July 2009
- Adult weevils feed on youngest leaves, flowers and buds of MAM and are very host specific; in time, feeding may delay and reduce overall fruiting and maturation
- 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; 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 CT
- Adults overwinter and can live >1yr
- Adults fly and readily disperse to find new MAM populations, even dispersing to off shore islands in Long Island Sound

**Origin:** Central China; introduced into the US by the USDA Forest Service and University of Delaware in 2004
R. latipes Releases in CT 2009 - 2018 and Field Assessments

Progress in 2015-2018

- 52 CT towns (31.3%) with confirmed reports of MAM to date in 2018 (www.mam.uconn.edu); 5 new in 2018
- Expanded biological control: 56,124 weevils released in 25 towns (49 sites) in CT from 2009-2018:
  - 1 new site and town, Washington, with augmentations in Westport and Sheffield Island, Norwalk (2018);
  - Glastonbury Meadows + augmentation in Mohegan State Forest, Sprague (2017). Three new towns in 2016 (Ledyard (US Naval Submarine Base of New London), Milford, Middletown). Three new towns in 2015 (Wallington, Glastonbury and Southbury). Weevil releases are dependent on availability from NJDA PABIL. In 2017, 200+ weevils were collected from established sites on the mainland for a late fall release on Sheffield Island, USFW NWR.
- Heavy rains and one of the hottest summers on record in 2018 favored abundant MAM growth and extensive expansion but weevil activity and damage was negatively impacted across most sites. Climate impacts to be explored.
- 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 are observed yearly. New weevils were seen in mid-late Sep. 2018.
- MAM germination very delayed (late April) in 2018, as in 2014, 2016 & 2017 due to cool springs. 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, with or without weevil activity in 2018. Extended severe drought, competition from natives possibly limited MAM growth and seed set in 2016 but not so in 2017 and 2018. Weevil damage was disappointing very light in 50% of sites in 2018.

2018 weevil damage

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