

MASSACHUSETTS INVASIVE PLANT SPECIES: EARLY DETECTION PRIORITIES

MASSACHUSETTS INVASIVE PLANTS ADVISORY GROUP

March 16, 2011

PURPOSE

Early detection and rapid response (EDRR) is a central component of any statewide strategic management plan for invasive species. The concept of EDRR is to control small populations of known or suspected invasive plants before they become widespread environmental problems. The strategy first requires a list of the target, or priority, species. The early detection species should be those which present a substantial threat, but with early discovery and swift control can be eradicated or reduced to negligible populations.

Consistent with its Strategic Plan to implement an early detection and rapid response plan for the Commonwealth, the Massachusetts Invasive Plants Advisory Group (MIPAG) has charged a subcommittee of its members to develop a list of Early Detection (ED) plant species. Tasks included establishment of criteria for selecting plants and compiling the Early Detection species list.

Note: the Early Detection Priorities list is only one reference, and can serve as a guide for institutions to develop management priorities. Failure to appear on any early detection list in no way suggests that a given plant species is not an ecological threat, or that a plant should not be removed from the landscape.

CRITERIA FOR EARLY DETECTION IN MASSACHUSETTS

- MIPAG Classification. To be considered for evaluation as an Early Detection Species, plant must be evaluated and classified by MIPAG as Invasive (I), Likely Invasive (LI), or Potentially Invasive (PI).¹

MIPAG recognizes that many other non-native plants in Massachusetts warrant close scrutiny as possible future invasive species. All MIPAG lists are dynamic and should be consulted often.

- Ecological Threat. An early detection species should present a significant environmental threat to an ecosystem, such as rapid spread and/or capacity to disrupt or destroy natural ecosystems. Severe ecological threat would typically signify an *urgent* need for rapid response, and may warrant special allocation of resources for its eradication e.g. Mile-A-Minute Vine (*Persicaria perfoliata*).

To be listed on the Early Detection Species list, a species has to meet both the MIPAG Classification and Ecological Threat criteria above and one of the three next criteria:

- Limited Prevalence in Massachusetts. An early detection species is one whose occurrence in the Commonwealth is sufficiently low that it can be eradicated or reduced to acceptable levels in the focus area.

¹ MIPAG's species list can be found at the website: <http://massnrc.org/mipag>

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- Partial Containment Potential. This criterion addresses plant species that, if targeted, could be successfully reduced to acceptable levels in the focus area and/or certain habitats of Massachusetts, and thus could demonstrate benefit to the Commonwealth as a whole. Examples include Broadleaved Pepperweed (*Lepidium latifolium*), which could potentially be isolated to coastal areas, and Water Chestnut (*Trapa natans*), which has been successfully removed from several water bodies in the Commonwealth.
- Public Health Threat. If a species presents a sufficiently significant public health threat, it is listed for Early Detection. Public health threat typically signifies an *urgent* need for rapid response, and warrants special allocation of resources for its eradication e.g. Giant Hogweed (*Heracleum mantegazzianum*).

EARLY DETECTION PRIORITIES TABLE

For each plant listed, the table includes its MIPAG classification status, its documented distribution (as of date shown), focus area for early detection and rapid response efforts; and additional comments specific to that plant.

The early detection plant species are classified into two categories:

- **CATEGORY 1:** plants that should be reported and eradicated if found anywhere in Massachusetts (following notes in focus area column), and
- **CATEGORY 2:** plants that should be reported and eradicated if found in the specific focus areas listed. A species in this category is either considered a threat in the focus area and unlikely to occur elsewhere or in some areas may exceed practical rapid response but still could be effectively eradicated in the identified Focus Areas (e.g. *Lepidium latifolium*).

LIST STATUS

MIPAG will evaluate the list annually based on current reports and will make any necessary changes. Some species populations may expand to the point that they are no longer of “limited regional prevalence”, and thus may be removed from the list. Alternatively, some species may be controlled to the point that they no longer need to be listed.

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CATEGORY 1: Report and eradicate anywhere in Massachusetts

SPECIES	STATUS	SITES	CURRENT DISTRIBUTION (as of 30 NOV 2010)	FOCUS AREA FOR EARLY DETECTION & RAPID RESPONSE	COMMENTS
<i>Arthraxon hispidus</i> Hairy joint grass	PI	1	Franklin County (historic)	Statewide	Not currently known in MA; last collected in Deerfield in 1973. Co-occurring with Japanese stilt-grass farther south. Likely to invade northward; Annual grass
<i>Butomus umbellatus</i> Flowering rush	LI	2	Essex County Middlesex County	Statewide	Can disperse by seed or vegetatively by bulbils; the vegetative (non-flowering) form may be more common than thought and easily overlooked; Aquatic perennial herb
<i>Carex kobomugi</i> Japanese sand sedge	PI	1	Barnstable County (historic)	Statewide (Primarily Southeastern Massachusetts, the Cape and Islands)	Principle concern is for coastal dunes and sandy areas; historically known from an abandoned gravel pit in Falmouth; last collected in 1973; Perennial sedge
<i>Egeria densa</i> Brazilian waterweed	LI	5	Essex County Middlesex County Norfolk County Plymouth County Worcester County	Statewide	Confused with <i>Hydrilla</i> and native <i>Elodea</i> spp. but has larger, nickel-sized flowers; Submerged aquatic
<i>Glyceria maxima</i> Tall mannagrass, Reed mannagrass	LI	2	Essex County	Statewide	Principle concern is for invasion in low shrub-swamps and other wetlands; Perennial grass

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CATEGORY 1: Report and eradicate anywhere in Massachusetts (cont.)

SPECIES	STATUS	SITES	CURRENT DISTRIBUTION (as of 30 NOV 2010)	FOCUS AREA FOR EARLY DETECTION & RAPID RESPONSE	COMMENTS
<i>Heracleum mantegazzianum</i> Giant Hogweed	I	35	Berkshire County Franklin County Hampden County Hampshire County Middlesex County Norfolk County Suffolk County Worcester County	Statewide	Federal Noxious Weed; currently being eradicated under the direction of the Department of Agriculture; Biennial or short lived perennial herb
<i>Hydrilla verticillata</i> Hydrilla	LI	2	Barnstable County Plymouth County	Statewide	Easily confused with <i>Egeria</i> and native <i>Elodea</i> spp.; Submerged aquatic
<i>Myriophyllum aquaticum</i> Parrotfeather	LI	2?	Norfolk County	Statewide	Internet sales poses problems; Submerged aquatic
<i>Nymphoides peltata</i> Yellow floating heart	LI	3	Hampden County Middlesex County Worcester County	Statewide	Floating-leaved perennial aquatic herb
<i>Persicaria perfoliata</i> syn.: <i>Polygonum perfoliatum</i> Mile-a-minute vine	I	6	Barnstable County Essex County Franklin County Norfolk County Plymouth County Suffolk County	Statewide	Easily recognized, even without flowers or fruits by triangular leaves, curved prickles on stems and petioles, the presence of a flanged ochreate stipule; blue, succulent fruits; Once established this species spreads rapidly; annual herbaceous vine

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CATEGORY 1: Report and eradicate anywhere in Massachusetts (cont.)

SPECIES	STATUS	SITES	CURRENT DISTRIBUTION (as of 30 NOV 2010)	FOCUS AREA FOR EARLY DETECTION & RAPID RESPONSE	COMMENTS
<i>Pueraria montana</i> ssp. <i>lobata</i> Kudzu	LI	6	Barnstable County Bristol County Essex County Middlesex County Plymouth County Suffolk County	Statewide	Woody vine
<i>Senecio jacobaea</i> Tansy Ragwort, Stinking Willie; Stinking Billy	LI	4	Essex County Suffolk County Worcester County	Statewide	Wind dispersed but possibly also dispersed by people; injurious to livestock; biennial herb
<i>Trapa natans</i> Water Chestnut	I	52	Berkshire County Bristol County Essex County Franklin County Hamden County Hampshire County Middlesex County Suffolk County Worcester County	Statewide (Any small or newly established population where little or no seed drop has occurred)	Even though this species has a high number of occurrences in Massachusetts, it is easily recognized and all occurrences can be treated. Should be eradicated at newly established sites in Massachusetts; Annual aquatic with both floating and submerged leaves

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CATEGORY 2: Report and eradicate from focus areas in Massachusetts

SPECIES	STATUS	SITES	CURRENT KNOWN DISTRIBUTION (as of 30 NOV 2010)	FOCUS AREA FOR EARLY DETECTION & RAPID RESPONSE	COMMENTS
<p><i>Cynanchum rossicum</i> Syn.: <i>Vincetoxicum rossicum</i> Pale swallowwort</p>	LI	7	Hampden County Hampshire County Middlesex County Norfolk County Plymouth County Worcester County	Berkshire County Dukes County Essex County Nantucket County	Can only be reliably identified in flower (May to July); often confused with <i>C. louiseae</i> (Black swallowwort); appears to jump over substantial spatial gaps on equipment and cars; extensive in lower Connecticut River Valley; Kills Monarch Butterfly caterpillars; Perennial herbaceous vine
<p><i>Lepidium latifolium</i> Broadleaved pepperweed; Tall pepperweed</p>	LI	14	Essex County Hampden County Middlesex County Norfolk County Plymouth County Suffolk County Worcester County	Western MA, Southeastern MA Barnstable County Bristol County Dukes County Essex County Middlesex County Nantucket County Norfolk County Plymouth County Suffolk County	Principle concern is with coastal areas and habitats; seems to be primarily spreading along highways and interstates; Perennial herb

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CATEGORY 2: Report and eradicate from focus areas in Massachusetts (cont.)

<p><i>Microstegium vimineum</i> Japanese stilt-grass</p>	<p>LI</p>	<p>35</p>	<p>Berkshire County Dukes County Franklin County Hampden County Middlesex County Nantucket County Norfolk County Worcester County</p>	<p>Berkshire County, Franklin County Hampshire County Northern Worcester County Essex County Cape Cod & Islands</p>	<p>This grass can be difficult to identify but efforts to report it are necessary to slow spread to other areas that are not currently infested; Annual grass</p>
<p><i>Rorippa amphibia</i> Water yellowcress</p>	<p>LI</p>	<p>10</p>	<p>Worcester County</p>	<p>Drainage basins other than the Blackstone River drainage basin</p>	<p>Common in Blackstone River drainage where it should be controlled; Perennial herb</p>