MA Department of Conservation and Recreation
Office of Regional Planning
Best Management Practices

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Managing Terrestrial Invasive Plants

Japanese Barberry (*Berberis thunbergii*)

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Goal: Control exotic invasive plants to preserve natural communities, protect rare species, sensitive habitats, and significant cultural landscapes.

Guidelines:

Impacts of Invasive Plants

- Non-native invasive plants are a significant threat to DCR managed conservation lands.
- Invasive plant species are able to grow and reproduce quickly throughout a natural area, disrupting habitats for native plants and food sources for animals dependent on them.
- The Massachusetts Invasive Plant Advisory Group (MIPAG) has identified 35 "invasive" and 31 "likely invasive" plant species that have spread into natural or minimally managed areas in Massachusetts. https://www.massnrc.org/MIPAG/
- Invasive plant species can displace native plants through competition, changing the physical and chemical composition of the sites they occupy, and altering ecological processes and habitat characteristics that are essential for native flora and fauna.
- Invasive plants frequently and quickly colonize disturbed soils where native habitats have been altered and native plants have diminished.

Principles for Managing Invasive Plants

- The most cost-effective method of invasive control is to avoid introducing invasive species to sites, via mowers, other equipment, or our boots.
- It is best to eradicate colonizing populations immediately upon detection before they become fully established or disperse to other locations.
- Once invasive species have become established and expand their coverage, control is substantially more difficult and expensive to implement successfully.
- Encourage volunteer groups to monitor and control invasive plant infestations, with oversight.

Prevention

- Vehicles and any other equipment used on DCR land should be visually inspected and washed in a gravel or paved area, prior to use, if any soil, seeds, or plant materials may be attached.
- Avoid importing new soils or gravel for DCR properties, unless it has been washed or monitored for seeds and invasive plants.
- Monitor properties annually for invasives, especially near boundaries and disturbed areas (e.g., roadsides, trailheads). Eliminate new infestations as soon as observed – manually if possible.
- Do not chip and mulch any fruiting invasive plants or those with seeds onto conservation land.

Guidelines for Prioritization of Invasive Plant Management

- Inventory properties to identify invasive species population sizes and locations.
- Prioritize populations for management based on significance of the resource, aggressiveness of the species, and potential for long-term control.
- Obtain applicable permits before managing invasive plant species near state-listed rare species habitat or wetland resource areas (see MESA and WPA BMPs).
- Prior consultation with the DCR Ecologist and often the State Archeologist is recommended!
- Implement control and document your successes or failures.

Mechanical Control Methods:

- Hand pulling is a good way to deal with young plants and small populations. Use a weeder, trowel, spade, or weed wrench to remove the entire plant and root system.
- Repeated cutting or mowing may be an option when the invasive is in a large patch and the root systems are extensive. Mowing/cutting is needed prior to flowering and multiple times per season.
- Some invasive species (e.g., Goutweed, Bittersweet) have extensive root systems where a small fragment of root will sprout a new plant. For these species, removing all above-ground vegetation and covering the entire population with layers of black plastic held in place may be an option, although the plastic needs to remain in place for a long time (1 to 4 growing seasons).
- Bag and dispose of invasive plants at a licensed landfill or incinerator. Do not dispose of invasive plant materials in Priority Habitat or natural areas.

Chemical Control Methods

- Chemical treatments should only be used when manual removal will not be effective.
- Herbicides must be applied by a licensed applicator on DCR properties. To request herbicide treatments, contact an approved licensed applicator and coordinate with the DCR Ecologist.
- For large woody invasive species, herbicide applied to the cut trunk or stem surface immediately after cutting is an effective method.
- On large infestations, backpack sprayers can be used to spray plant leaves during the growing season. Foliar applications must be carefully targeted to avoid mortality of native species.

Other Techniques for Managing Invasive Plants

- For large infestations, federally approved biological control agents may be an option to control certain invasives. Ecology Program approval is required prior to the release of a biological control agent.
- Prescribed fire or burning can be used to control or eliminate populations of certain woody invasives. The Bureau of Fire Control must approve burn plans for DCR properties.

Other Resources

- Massachusetts Invasive Plant Advisory Group (MIPAG) provides guidance for invasive plant management. http://www.massnrc.org/mipag/docs/GuidanceInvPlantMgmtMIPAG.pdf
- Landowner's Guide to Invasive Plant Management. http://www.thetrustees.org/assets/documents/what-we-care-about/WISP_Invasives_Management.pdf
- Invasive Plant Atlas of New England (IPANE) documents invasives and contains information on the identification of these species. https://www.invasive.org/weedcd/html/ipane.htm
- Invasive Plants of the Eastern United States: Identification and Control covers identification characteristics and control options for invasive plant species. http://www.invasive.org/eastern/
- Species Management Summaries, prepared by The Nature Conservancy, contain information about invasive plant species management. http://wiki.bugwood.org/Invasipedia