



FRESHWATER WETLAND RESTORATION

Rhode Island Department of Environmental Management



MANAGEMENT OF INVASIVE PLANTS IN RHODE ISLAND WETLANDS

INVASIVE PLANTS IN WETLANDS

Invasive plants are non-native species that are characterized by aggressive growth patterns, often outcompeting native plants for space, light, nutrients, and water. Invasives lack the natural restraints that control their native counterparts. Disturbances caused by development, erosion, flooding, or other activities can leave wetland areas open to invasions.¹ Populations of invasive plants generally form thick stands and spread rapidly. Invasives can destroy natural habitat and cause extinction of local plants and animals, thereby lowering biological diversity and weakening the health of wetland ecosystems. As invasive plants begin to dominate, they can alter native ecosystem processes, including changes in erosion and sedimentation rates and changes in water and moisture levels, which degrade the functions and values of wetlands.²

Common examples of invasive plants in Rhode Island freshwater wetlands include: Glossy Buckthorn (*Frangula alnus*); Multiflora Rose (*Rosa multiflora*); Japanese Barberry (*Berberis thunbergii*); Oriental Bittersweet (*Celastrus orbiculatus*); Japanese Knotweed (*Polygonum cuspidatum*); Reed Canary Grass (*Phalaris arundinacea*); Purple Loosestrife (*Lythrum salicaria*); and Common Reed (*Phragmites australis*).

MANAGEMENT AND CONTROL OF INVASIVE PLANTS

The primary purpose of removing invasive plants is to restore natural vegetation and to improve wildlife habitat; however invasive species can easily spread if improper control methods are used. And in some cases, removal of invasive species may not actually be the most desirable or beneficial option.

Management of invasive species requires a long term commitment and will generally necessitate several years of monitoring and maintenance. It can be extremely difficult to completely eradicate invasive species from a site, but early detection of invasive plants with rapid response to the problem will enhance success.

There are several methods available for controlling invasive plant species, including mechanical methods, herbicide treatments, and combination methods. Mechanical methods include hand pulling, cutting, pulling with tools, mowing, grazing, covering, brush hogging, and bulldozing. Some methods for applying herbicides include foliar application (such as wipe-on, backpack sprayer, spray bottle, cut and spray, boom application, or injection), basal bark application, and pre-emergent application in newly planted areas. In selecting control methods, you should consider the target species, the size of the infestation, the amount of vegetation that should be retained, and the resources available.³ Often multiple methods will be required to treat invasive species at the site.

Invasive plant control in riparian and wetland areas should be approached with caution for a number of reasons: 1.) Proximity to water makes chemical contamination of surface and ground water much harder to avoid or impossible to control; 2.) Riparian and wetland areas are critical habitat for a large number of wildlife

species. Although certainly not intended, invasive plant control can inadvertently disturb or destroy habitat; 3.) Mechanical removal of invasive plants can lead to erosion and resulting siltation of the waterway.⁴

SPECIAL CONSIDERATIONS FOR INVASIVE PLANT MANAGEMENT PROJECTS

As you plan your invasive plant management project, be sure to consider and address the following questions:

- Investigating and Mitigating the Source:** Why have invasive plants established in the area? Are there ways to change site conditions in order to prevent or mitigate re-establishment in the future?
(Example: *Phragmites* commonly grows in areas where there has been an accumulation of sediment deposits from stormwater flows. Could the flows be re-directed or sediments filtered before they are discharged?)
- Size and Location of Impacted Area:** Are invasive species present in multiple areas of the wetlands? Are the impacted areas owned by more than one entity? An invasive management project may require consideration of the entire wetland or wetland complex, which may involve coordinating with multiple property owners. Removing invasive species in small isolated areas of larger impacted wetlands may not be an effective solution.
- Appropriateness of Proposed Control Method:** Is the proposed removal method the best alternative available for the situation, taking into account all conditions or any limitations?
- Storage:** If the invasive plants will be removed and stored, where will the storage area be located?
(Seeds or plant fragments may be viable for considerable lengths of time and could result in spreading or re-colonization if they are not transported and stored properly.)
- Seasonal Considerations:** Are the project timelines appropriate?
(Examples: Herbicides are generally applied to *Phragmites* in the fall after the seed heads have formed, approximately after August 15 and prior to the frost. Mulching generally takes place in the winter approximately before March 31. If planting is proposed, no soil disturbance is allowed from May 15 to September 15 to safeguard against disruption of potential turtle nesting areas.)
- Monitoring and Maintenance:** Is a monitoring plan in place? When and for how long will the site be monitored? Who will be responsible for the monitoring and maintenance? Are there written agreements in place? If new native plants will be planted, who will maintain them (including watering, weeding, mulching, staking, protecting from mowing, etc.) until they are established?

RESOURCES

Please refer to DEM's list of Wetland Restoration Resources for sources of additional information about restoration, native plants, and invasive plant management.

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^{1, 2, 3, 4} Citizen's Guide to the Control of Invasive Plants in Wetland and Riparian Areas. Alliance for the Ches-