

Overcoming Invasive Species Problems Through Habitat Restoration

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Multiflora rose (*Rosa multiflora*)
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Diverse ecosystems support a wide variety of animal and plant life. These systems often provide habitats for species that cannot be found elsewhere. One of the greatest threats to our fish and wildlife resources is the loss of these habitats. When native vegetation is cleared for development the loss is obvious, but the loss is not as evident when a nonindigenous species invades a site. By displacing native plants and animals invasive species can reduce biodiversity, thereby degrading natural habitat. Thus, controlling invasive species is, in its very nature, habitat restoration.

The U.S. Fish & Wildlife Service (Service) has two habitat restoration programs available in New Jersey: the Coastal program, and the Partners for Fish and Wildlife program. Both are designed to restore important fish and wildlife habitats through partnerships with government agencies, conservation groups, tribes, and private landowners. The Service works with its partners to restore wetlands, streams, river corridors, grasslands, estuarine marshes and other important fish and wildlife habitats. Restoration efforts often involve controlling invasive species, reestablishing natural hydrology, and reintroducing native vegetation.

Three of the invasive species that the Partners for Fish and Wildlife and Coastal programs contend with in New Jersey are common reed (*Phragmites australis*), multiflora rose (*Rosa multiflora*), and purple loosestrife (*Lythrum salicaria*). A nonnative variety of *Phragmites*, Haplotype M, has been expanding into low marsh habitat, displacing species such as smooth cordgrass (*Spartina alterniflora*), saltmeadow cordgrass (*S. patens*), and

common threesquare (*Schoenoplectus pungens*). Multiflora rose has invaded pastures and forest edges as well as wood lots and rights-of-way. Native to Asia, it was introduced in North America in the 1700s and widely planted as a "living fence" in the 1950s and 1960s. Purple loosestrife is a perennial wetland plant of Eurasian origin that was brought to North America as an ornamental in the early 1800s. Loosestrife readily colonizes in freshwater marshes, open stream margins, and floodplains, where it alters biogeochemical and hydrological processes. Furthermore, the plant out-competes native wetland species, replacing them with extensive monotypic stands. These invasive plant species can be controlled through a variety of techniques.

At this time the most effective and economical technique available to control *Phragmites* is aerial application of glyphosate-based herbicide to the mature stands during late summer/early fall in combination with a prescribed burn and hydrologic alterations. Areas are then restored by either planting native seedlings or being allowed to reseed naturally.

Multiflora rose can be controlled through the use of glyphosate-based herbicide followed by removal of the plant material and planting native trees and shrubs in areas from which multiflora rose has been removed. There are numerous native plants that provide food and shelter for wildlife as well as aesthetic views. Some of the species that can be used to revegetate areas from which multiflora rose has been removed are shrubs such as southern arrowwood (*Viburnum dentatum*), red chokeberry (*Pyrus arbutifolia*), dogwoods (*Cornus* spp.), and spicebush (*Lindera benzoin*); and trees such as black cherry (*Prunus serotina*), green ash (*Fraxinus pennsylvanica*), oaks (*Quercus* spp.), and maples (*Acer* spp.).

Purple loosestrife can also be controlled through integrated pest management. Although herbicides can be used effectively, biological control is also available. *Galerucella pusilla* and *G. calmariensis*, two species of beetle that feed on the leaves and stems of purple loosestrife, can reduce plant densities by 50 percent within one year of introduction. Although *Galerucella* beetles do not eliminate stands of loosestrife, they do control its population, allowing native species to re-colonize an affected wetland.



Invasive species control may require many different tools. Selecting the right tools is often site-dependent and can vary greatly from one site to another; nevertheless, invasive species problems can be overcome through integrated and adaptive management of habitat restoration projects. Further degradation of the habitat is a direct consequence of doing nothing.

To find out more about controlling invasive species on your property please call Private Lands staff at 609/646 9310 extension 22 or 46.



Golden loosestrife beetle (*Galerucella pusilla*)
Norman E. Rees, USDA ARS, www.invasive.org



Purple loosestrife (*Lythrum salicaria*)
Photo: John and Karen Hollingsworth/USFWS



Purple loosestrife (*Lythrum salicaria*) in a wetland at Montezuma NWR, NY