

regenerating from small fragments of roots left behind, or by spreading seeds when pulled. Herbicide application is the most common chemical control. It is best to use specific herbicides, rather than broad spectrum chemicals that could also kill desired plants. Chemical use on public recreational lands should be monitored carefully. Biological control might include planting a competitor species, but care must be taken to ensure that the new species isn't a bigger invader. Habitat management is usually the most cost-effective method of control. It might include a combination of mechanical, chemical and biological means. It could include Integrated Pest Management. Since 1997, the Department of Agriculture has been releasing leaf eating beetles (*Galerucella* spp.) into 100 wetland sites to control Purple Loosestrife. They have recently seen a reduction in invasive species and the return of native wetland plants to some of these sites. The final step is to continue to monitor for recurrences or new threats.

## CONCLUSION

Preserving the ecological integrity of the environment around you provides many benefits. By becoming aware, and taking preventative steps, you can make a positive impact on the beauty, diversity and ecological health of your community. To learn more about invasive species visit the websites listed in this brochure. To learn more about management techniques view the Global Invasive Species Programme on-line tool kit at [www.cabi-bioscience.ch/wwwgisp](http://www.cabi-bioscience.ch/wwwgisp). Preventative action and careful control can ensure your community will maintain a beautiful and diverse landscape.

## FOR MORE INFORMATION

### Contacts & References:

The Monmouth County Planning Board  
Environmental Planning Section  
Hall of Records Annex, 2nd Floor  
One East Main Street, Freehold, NJ 07728  
732.431.7460

[www.monmouthplanning.com](http://www.monmouthplanning.com)

Invasive Species Info Gateway

*Provides a variety of information and invasive species profiles*

[www.invasivespeciesinfo.gov](http://www.invasivespeciesinfo.gov)

Plant Conservation Alliance

*Offers extensive online lists of invasive species*

[www.nps.gov/plants/alien/index.htm](http://www.nps.gov/plants/alien/index.htm)

The Nature Conservancy

*Provides lists of native and invasive species*

[www.npsnj.org](http://www.npsnj.org)

New Jersey Native Plant Society

*Offers an article on local invaders*

[www.npsnj.org](http://www.npsnj.org)

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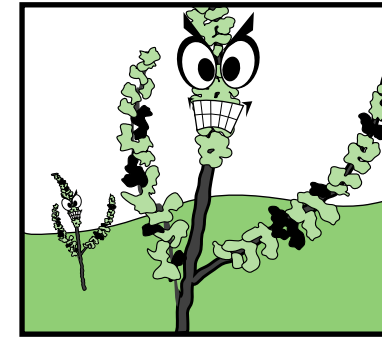
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## MONMOUTH COUNTY PLANNING BOARD'S



## ECO-TIPS:

### MANAGING PLANT INVADERS

## INTRODUCTION

A dangerous pest may be lurking in your community and you have no idea. Over the years, many non-native, exotic species of plants have been introduced into North America. Some were brought over by accident; riding along in a crate or in the ballast water of boats. Many however, were imported for a purpose. Immigrants brought favorite plants from their home countries that they had experience and familiarity with. Some people choose exotic plants to give their landscaping a different look. Exotics are fragile and require a great deal of care to survive, while indigenous plants are better suited to their surroundings.

## WHAT ARE INDIGENOUS SPECIES?

Indigenous species are the native plants that grow naturally in the local environment. They are specifically adapted to the natural climate, soils, and other natural physical features. They need little care and typically, there are factors that control the growth of these plants, such as genetics, natural predators or a climate that limits the growing season.



Non-natives, or exotics, are the plants that have been introduced to new locales, outside their natural habitat, usually through human intervention. There are over a thousand plant species documented in New Jersey that are non-native, and that do not pose a threat. But, sometimes bringing in these non-native species could have dangerous effects on the local ecology.

## WHAT ARE INVASIVE SPECIES?

What makes an exotic plant into an invasive species is the damaging effect it has on the ecosystem when it readily adapts to conditions in the new environs and takes over the landscape. Perhaps in the new location it has no natural predators or the climate does not limit the plants propagation, and it is able to spread unchecked. Some of the invasive species grow so rapidly, like Kudzu (*Pueraria montana*), or mile-a-minute weed (*Polygonum perfoliatum*), that they can create dense mats in a matter of weeks and choke out the native plants, including rare and endangered species. Vines, like the exotic wisterias (including *Wisteria sinensis* and *W. floribunda*), will gird native trees, killing off branches and eventually even the trunks. The vines then use the dead trees to reach higher into the canopy, shading out all plant life below and interfering with photosynthesis. Some, like English Ivy (*Hedera helix*), also harbor a harmful plant pathogen that kills the native trees it grows on, even more rapidly. Other plants are dynamic producers of seed. A single stem of Garlic Mustard (*Alliaria petiolata*) can produce hun-



Kudzu  
(*Pueraria montana*)

dreds of seeds that can scatter up to several yards from the mother plant.

Once the diverse ecosystem is overtaken by an invasive exotic, all that is left is a floral monoculture: a wide-spread patch of a single plant species. Monocultures impact wildlife by reducing opportunities for food and shelter. So much energy goes into rapid growth that they usually offer less nutritional value.

Other plants produce toxins that are unpalatable or dangerous to wildlife. Garlic Mustard is an example. It produces a chemical that is harmful to certain butterfly species.

## WHAT THREATENS OUR AREA?

While all of the plants mentioned so far are invaders in our area, perhaps one of the most widespread threats is the herb called Purple Loosestrife (*Lythrum salicaria*). This invasive species, introduced in the 1800s for medicinal and ornamental purposes, has created monocultures in many of our once diverse wetlands. Another wetland invader, Common Reed (*Phragmites* sp.), is a native to some parts of North America, but is invasive here and almost impossible to eradicate once it takes hold. Multiflora Rose (*Rosa multiflora*) is a tenacious invader that can grow in almost any habitat. Brought from the Orient in 1866, it was promoted during the 1930s as a "living fence" to contain livestock. Now it is



Purple Loosestrife  
(*Lythrum Salicaria*)

designated as a noxious weed in several states including New Jersey.

## MANAGING THE INVADERS

There are four steps to managing invasive species:

1- Prevention, 2 - Early Detection, 3 - Eradication or Control, and 4- Monitoring.

Implementing these four steps into your land management policies will help protect your land from becoming a monoculture.

Prevention begins with landscape plans that avoid non-native and invasive species, including trees and shrubs. Also be sure your seed mixes do not contain prohibited or restricted weed seeds, like bindweed (*Convolvulus* spp.), Canada thistle (*Cirsium arvense*), Bermudagrass (*Cynodon* spp.) and wild garlic or wild onion (*Allium* spp.). The New Jersey Department of Agriculture publishes lists. Make sure that the people that are managing the land are familiar with at least the most common locally invasive species so that early detection can occur.

Once invaders are detected, there are several ways to remove or limit the threat. Mechanical, chemical and biological means should be chosen depending on the level of the threat and the species that has invaded. Mechanical means includes hand or tool pulling individual plants, large scale harvesting or repeated cutting or mowing. Some species respond well to mechanical removal, but others are capable of



Garlic Mustard  
(*Alliaria petiolata*)