Invasive species have become such a great concern that on Feb. 8, 1999, President Clinton signed Executive Order 13112, which directs the agencies of the executive branch of the federal government to work to prevent and control the introduction and spread of invasive species.

Where do I turn for more information and help?
The RI Natural History Survey (401) 874-5800 • www.uri.edu/offr/nihss • Information about invasive species, Rhode Island’s ecology, biodiversity protection, and extensive links to many related organizations and publications.
The Rhode Island Wild Plant Society (401) 783-5895 • www.riwps.org • List of native plants; official RI Invasive Species Council list of invasive plants; special programs, affiliations & newsletter.

Other Recommended On-Line Resources
URI Home*A*Syst Program, photos of some of Rhode Island’s invasive species: www.uri.edu/ce/wq/photos.html/exotics.html
Connecticut Invasive Plant Working Group includes recommendations for control and management of invasive plants: www.eeb.uconn.edu/cipwg

Other Recommended Publications
The journal of the Natural Areas Association (www.matareas.org) publishes many articles about the ecology and control of invasive species.

The information used to compile this fact sheet was provided by Lisa Gould, Executive Director, Rhode Island Natural History Survey.

Did you know?
If you raise tomatoes in your garden, chances are you will till the soil, periodically add lime, nutrients, and water, and you attempt to control “pests” such as weeds, insects, and woodchucks. It takes a lot of effort to raise a nice crop of tomatoes in a specially designated place on your property, and many people have done so for many years. Have you start- ed to find over the years that tomato plants are growing in the woods, on the side of road, or in other fors- skeds—growing freely with- out any assistance or management? No! Of course not. Because tomatoes, while an introduced species, are non-native.
Oriental Bittersweet, however, is an invasive species that may come to your front door as a decora- tive, seasonal wreath. Through seed and berry dis- persal, this plant can easily establish and grow in your yard and woodland area.
It can take anywhere from 8 years to 388 years (aver- age 147 years) for non- native or introduced species to “become” invasive. Ecologists often refer to the issue of invasive species as “an explosion in slow motion.”

Naturalized species are non-native species considered to be well established and growing without human aid, even though they originated in another area. Most naturalized species are not invasive. Some examples of naturalized species include Asiatic Dayflower, Mouse-eared Chickweed, Deptford Pink, Ring-necked Pheasant, and House Finch.
Native species are species that naturally evolved within a region or ecosystem and are better adapted, more appropriate and ecologically suited to that area. Most native species have natural “enemies” and are balanced through ecosystem conditions and competition. And yes, there are some native species such as poison ivy and green brier that are considered “aggressive” or “pests” by human standards. However, they do not alter the surrounding ecosystem habitat and processes, and they also provide food and cover for local wildlife.

Working for Biodiversity and Protection from Invasive Species

What are invasive species?
Invasive species are organisms that have been introduced into an area where they did not originate or evolve, and that usually have no natural enemies.

The timing of their life cycle is different from native species. In the case of many invasive plants, they break dormancy earlier in the season or keep growing later in the season, as well as flower, fruit, and disperse seed at different times giving them an “unfair” advan- tage for soil nutrients, sunlight, etc.

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What are the characteristics that make a species invasive?
> Rapid growers.
> Mature quickly (have short juvenile periods).
> The timing of their life cycle is different from native species. In the case of many invasive plants, they break dormancy earlier in the season or keep growing later in the season, as well as flower, fruit, and disperse seed at different times giving them an “unfair” advan- tage for soil nutrients, sunlight, etc.
> Produce many fruits, seeds, or off- spring. In the case of many invasive plants, seeds can remain dormant and viable in the soil for many years.
> Disperse and spread fruits, seeds, spores, etc. easily through wind, stormwater runoff, and by birds that feed on the fruits and seeds.
> “Crowd out” other species. In the case of plants they may have dense foliage that shades out other species and dense, shallow root systems that do not allow any “extra room.”
> Some plant species are allelopathic, producing chemicals that inhibit the growth of other plants.

What are some other commonly used terms?
Protection from Invasive Species
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What are some specific examples of how non-native, invasive species have been or continue to be introduced?
> Through the trading and importing of plants and seeds that have been used for agricultural crop production and ornamental landscaping. A few of the many landscape plants include Oriental Bittersweet, Japanese Honeysuckle, and Multiflora Rose. Other organisms, such as insects and plant diseases, can be contained within these “foreign” plants and is the
method by which Dutch Elm Disease and the Chestnut Blight were brought to the US.

Through our methods of transportation. Everything from the ballastwater of ships, sheep wool, packing crates, and car tires can travel many miles over a relatively short time and provide a perfect means for “hitchhikers.” The large red seaweed Grateloupia doryphora, and Asian Shore Crab, which now grow throughout Narragansett Bay were “introduced” via ballast water.

Through the release or escape of exotic or aquarium plants. Fanwort is an example of an aquarium plant that has become invasive in RI.

Through construction and the moving of soil and other “fill.” The soil from one area can potentially contain and introduce seeds and organisms to another area. Furthermore, common forms of erosion and sediment controls on construction sites include staked hay bales, which are often imported from Canada. It is believed that Nodding Thistle came to RI this way.

Why, exactly, are invasive species such a big concern?

Loss of biodiversity and basic ecological processes. The ecosystems of the world consist of millions of animals, plants, protists, fungi, bacteria, and viruses that interact with the physical environment. Each ecosystem has its own combination of organisms. Non-native invasive species usually alter the natural succession or function of an ecosystem over the long term. This happens because native species are out-competed or overtaken by an invasive species, which often leads to one or more new species becoming extinct in that ecosystem.

Some animal species include the Norway Rat, Rock Dove, House Sparrow, European Starling, Mute Swan, Monk Parakeet, Japanese Shore Crab, and Green Crab.

Some plant species include Purple Loosestrife, Multiflora Rose, Autumn Olive, Glossy Buckthorn, Japanese Honeysuckle, Asian Bittersweet, and many others.

What can I do to make a difference?

Invasive species are a serious problem that is not going to disappear—many of them are here to stay. Attempts at controlling or eradicating the problem can be a daunting prospect, both financially and due to the intensity of labor required. But there are some things that each of us can do at the individual level, the biggest being to prevent further introduction of non-native species.

Use the Record of Woodland Area Plans and Activities sheet to record actions you plan to take and develop a time frame for accomplishing activities. Refer to the list of contacts and resources listed at the end of this factsheet for specific information and assistance with these activities.

When landscaping or enhancing wildlife habitat in your backyard and woodlands, use native species. Learn which plant species are considered invasive in Rhode Island and the New England region and avoid planting them. Consult with the URI Cooperative Extension Greenshare Sustainable Trees and Shrubs Manual or refer to factsheet Working for Wildlife Habitat for a list of suggested trees, shrubs and other plants.

Learn to identify the non-native and invasive species that may already exist in your backyard and woodlands and the possible control methods and options available. Avoid waiting until the problem appears “serious enough.” Be vigilant and monitor the problem regularly. See the Rhode Island Invasive Species Council list of invasive plants at www.riwps.org.

Minimize land disturbances and soil exposure on your property. These areas are often prime targets for non-native invasive plant species to move in and take over.

When traveling—especially in foreign countries, do not bring plants, seeds, or fruit back home with you.

Be very careful with “exotic” pets. Take extra measures to learn your pet’s behavior and how to prevent or anticipate accidental escapes. In the event that you no longer wish to have this pet, please take it and any artificial habitat features (such as an aquarium) to a proper pet store or other appropriate facility for assistance with placement.

Let never an exotic pet “go free.”

About 60% of invasive species have resulted from horticulture, another 25% resulted from agency and other professional “recommendations” for soil and water conservation, and the remaining 15% were accidental.