What Makes A Plant Invasive?

Not all **non-native plants** become a problem. Those that do share many characteristics.

They:

- Produce abundant viable seeds. For example, each garlic mustard plant can produce hundreds to thousands of seeds.
- Produce seeds that germinate and leaves that leaf out early in the spring, and they keep their leaves late into the fall, allowing them to photosynthesize earlier and later than native plants. For example, Norway maple seedlings can be 6 inches tall before native maples sprout, and buckthorns keep their leaves into November, long after native plants have lost theirs.
- Have few pests or diseases. Non-native plants did not arrive in Vermont with the accompanying pests and diseases that kept them in check in their native environments.
- May produce chemical**s** that make it difficult for other plants to grow nearby.
- Invade a wide variety of soil types, moisture regimes and light conditions. Invasives are typically generalists and can be difficult to kill.
- Often produce monocultures over large areas so few other species can reproduce and grow. For example, wild chervil, Japanese knotweed, and goutweed are just a few invasives that spread quickly and cover large areas, eliminating the diversity of species that once grew on that site.
- Reproduce both sexually and asexually (through a rhizomatous root system), making it easier for them to spread far and wide.

Where do invasives come from?

Human-caused alterations to the Vermont landscape over the past few hundred years have increased opportunities for **invasive plants** to further establish. **Invasive terrestrial plants** arrive through many vectors, or pathways, including ship ballast, "wildlife" plantings, roadways and the horticultural industry. They often get a foothold in areas with soils that have been disturbed in the following ways: road building, grading and maintenance, residential development, forestry activities, grazing, ditching, mowing and erosion control, Recreationalists can escalate the spread of invasives by inadvertently carrying seeds on their clothing, bike wheels and other recreational equipment. Natural disturbances, such as floods and landslides, provide other avenues for invasive species to establish.

Frequently Asked Questions: Invasive Plants

What are Invasive Exotic Plants?
Invasive exotic plants are non-native plants that invade and alter both natural and managed areas. When invasive, exotic plants reach new areas where they are free from their natural predators they persist and proliferate to the detriment of native plants and animals. It's important to remember that not all non-native plants are invasive and not all invasive plants are non-native.

Where do they come from?
Most invasive plants come from other continents and countries, but some are native to other regions of the United States.

How do they get here?
Ornamental Plant Trade: Horticulturalists and gardeners alike take delight in finding rare, new plants to display in their gardens. Very few of these exotic plants move and invade outside of their landscaped setting, but the few that do cause great harm to our natural world.

Accidental Importation: Some plants arrive accidentally in air or water cargo. Purple loosestrife is thought to have arrived in North America by seeds stuck to livestock. Boaters can carry bits of Eurasian milfoil on their boat from one lake to another and hikers can move garlic mustard seeds along trails on their boots and clothes.

Agricultural Operations: Some of Vermont's most important agricultural crops, such as red clover, are exotic plants. Plants like reed canary grass, however, are invasive exotics that were brought to the US as hay for livestock.

Conservation Plantings: Conservation organizations have also been responsible for the spread of some exotic plant species. Bush honeysuckles were once planted in restoration projects because ecologists believed them to be good habitat and food for wildlife. Research now suggests that honeysuckle berries are nutritionally deficient for wildlife and predation increases on bird's nests built in honeysuckles.

Aquarium Trade: Many of Vermont's worst aquatic invasive exotic plants were once prevalent in the aquarium trade. Aquaculturalists who improperly dispose of their aquarium plants into rivers, lakes and streams can inadvertently release invasive plants into our waters.

How do they behave in their native habitats?
In their native habitats these species are often found in small, well-behaved populations. This is because they occur with other organisms, such as other plants, insects and diseases, that keep the plant's population in balance. When humans import these plants from their native environment we do not bring along all the other organisms that keep the plant's populations in check in the new area.

Doesn't the addition of a non-native species increase biodiversity?
Yes – if you are only concerned with the number of species in the short term. Invasive exotic plants will become a "new" species in an area but may also decrease the number of native species found there as well. Purple loosestrife, now common in many Vermont wetlands, will out-compete rare, native wetland plants that are only found in Vermont or northern New England. Local biodiversity may increase at the first arrival of these plants but then plummet once the invasive exotics replace the native plants. When this happens, global biodiversity will decrease at the loss of the rare plant.

Plants move around naturally – Isn't their arrival part of a natural cycle?
It is true that plants' populations will expand or contract in their native ranges as local climates change. This movement usually occurs slowly, over periods of thousands of years. Plants and animals will also have time to adapt and change. We are concerned about the invasions that humans have caused. When we bring non-native plants quickly and in large numbers, from far away geographic areas the result is the decrease of our own native biodiversity which does not have time to adapt to these rapid changes.

Why should we care?
Following habitat destruction, invasive species are the second leading cause of biodiversity loss around the world. Forty-two percent of threatened and endangered plants and animals in the United States are directly harmed by the presence of invasive organisms. International, federal, state and municipal governments spend billions of dollars each year to control and rectify the harm caused by invasive plants.

VERMONT INVASIVES

www.vtinvasives.org