Forest Hero! Network
Invasive Plants FAQ

What are Invasive species?
- Not native to the place where you find them
- Cause harm to the local economy, the environment, and/or human health

Why Do We Need to Step In?
When a number of different plants live together, they compete. They compete for sunlight, water, nutrients, and even for space. Our native Vermont plants have evolved within a community and have a long list of other species they normally struggle against. Our native plants have competing plants to contend with, animals that eat them, and diseases and parasites that infect and invade them. Invasive plants escape all or most of these things when they leave their own communities, which is what makes them so successful at invading our landscapes.

What Impacts Do Invasive Plants Have?
Invasive plants cause harm to the things we value

<u>To the Environment</u>
Displacement of native plants
- E.g. Garlic mustard vs. multitudes of spring ephemerals

Disruption of the food chain
- When invasive plants out compete and displace native plant species it has a cascading effect on all trophic levels in the food chain. When native plant populations decline the quantity and diversity of insect species also decline as many native insects will not eat invasive plants. Insects are an important food source for many secondary consumers such as birds, which are a food source for tertiary consumers such as hawks and other birds of prey.

Loss of local pollinators
- Many local native pollinators (such as bees and other insects) are specialists. When invasive plant species replace the native species they depend on for pollen, populations decline and the overall diversity of pollinators decline.

Disrupted breeding and nesting
- Invasive honeysuckle species create an "ecological trap" for many species of nesting birds, especially rare and uncommon birds. In the early spring, invasive honeysuckle grows leaves before our native shrubs which gives them the illusion of being healthy and ideal nesting habitat. The strongest birds build their nests in this "ideal" habitat, but often face higher rates of nest predation compared to nests built in native shrubs. This is thought to be due to several factors, including a decrease in average nest height of nests built in invasive shrubs. This makes the nests more accessible to ground predators such as raccoons and snakes. Many invasive shrubs also lack thorns that often deter predators. Another reason there is increased nest predation in invasive plants is that many invasive shrubs have more sturdier branches at lower heights that make it easier for predators to access the nests.

River System Health:
- Invasive plants, such as Japanese knotweed, outcompete and displace native riparian plants. Although Japanese knotweed has a deep, extensive root system, its coarser roots do not stabilize banks as well as the finer roots of native trees, shrubs, and grasses. Consequently, streams and rivers infested with Japanese knotweed are more prone to erosion in times of flooding.

Food sources become scarce
- Displacement of native plants means normal sources of food for wildlife become less abundant.

- For example, migrating birds need to bulk up on nutrient rich berries in the fall such as dogwood, elderberry, and maple leaf viburnum. Unfortunately, invasive buckthorn berries also ripen in the fall and mature trees produce hundreds of berries. Buckthorn berries, roots, and leaves are rich in anthroquinone which is turned into emodin, a laxative, in the gut of many birds. When birds eat the anthroquinone laden berries, they have not only wasted valuable time foraging for these nutrient-poor berries, but the chemicals in the buckthorn berries also prevent them from absorbing nutrients from other berries because of the laxative effect.

Reduced populations and local extinctions

- When invasive black swallow-wort moves into an area Monarch butterfly populations are negatively impacted. Monarch butterflies depend on plants in the milkweed family to complete their life cycle, as they are the only plants the caterpillars can eat. Swallow-wort, which is native to Europe, is also in the milkweed family so sometimes Monarchs will lay their eggs on swallow-wort. Unfortunately, Monarch caterpillars cannot eat swallow-wort.
- The West Virginia White butterfly is listed as a species of special concern in Vermont. This butterfly emerges early in the spring and depends on rich woods host plants such as toothwort to complete its life cycle. Garlic mustard plants exude a similar chemical attractant to that of native toothworts and that similarity can confuse the West Virginia White butterfly into laying its eggs on garlic mustard instead of toothwort. When the eggs hatch, the caterpillars feed on the toxic leave of the garlic mustard and die. This can have a significant impact on the already rare West Virginia White butterfly population.

<u>To Our Economy</u>

Impacts on local industry:

- Invasive shrubs and trees are quick growing and are often shade tolerant. They can take over entire forest understories, shading out and outcompeting native plants. When this happens, forest regeneration is stunted which can have a negative impact on the forestry, logging and maple sugaring industries in Vermont.
- Future generations of native tree species desirable for lumber and firewood are impacted.
- Future generations of native sugar maple trees used to make maple syrup are impacted.
- Running and maintaining sap lines through a dense invasive understory is very difficult.
- Invasive plants are costly to remove.

Impacts on recreational fishing:

- Streams infested with invasive Japanese knotweed are more susceptible to erosion during floods. When loosened soil settles on stream beds it alters important spawning habitat for native brook trout and Atlantic salmon.

Impacts on hunting:

- Most invasive plant species are not a good source of food for wildlife. For example, honeysuckle is not a preferred food source for deer. Areas with lots of honeysuckle will not attract an abundance of deer.

<u>To Human Health</u>

Phototoxic reaction caused by Wild Parsnip:

- Wild parsnip contains furocoumarins in its sap, chemicals that when combined with skin and ultraviolet light can cause what's known as phytophotodermatitis – painful blisters or rash.

Increase in deer ticks:

- Studies have shown that areas with a heavy barberry infestation have higher densities of deer ticks carrying Lyme disease compared to other habitats. This is because Barberry infestations form thorny, impenetrable thickets, an ideal habitat for the white footed mouse, a carrier of Lyme disease.

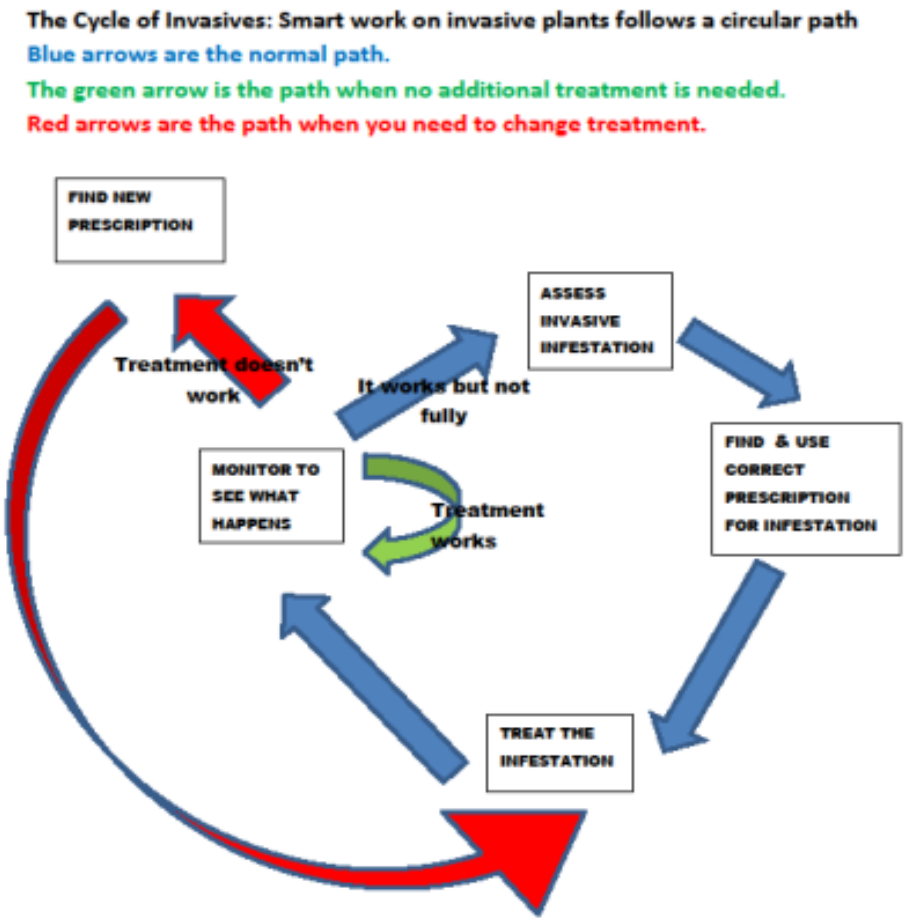
How did invasive plants get here?
Invasive plants were brought here by people. In some cases, this was an accident, (e.g. common reed seeds/rhizomes in ship's ballast) but in most instances people transported invasive plants here on purpose (though not will mal-intent). Most invasive plants were brought here as ornamental or garden plants. They tend to be attractive, low maintenance, and pest/insect resistant – all desirable characteristics for garden plants! Once here, they have a variety of dispersal techniques including wind, wildlife, and people.

What can we do? {Taking Action!}
<u>Create and implement a dynamic action plan</u>
Design restoration efforts around having the greatest impact on each target plant

- Work should be customized to reflect the best way to eliminate or control each species. This depends on many variables including the life cycle of the plant.
- The best methods of control can change from month to month, so action plans need to be dynamic and flexible.
- The best methods often include using multiple methods of control (Integrated Pest Management).

Monitoring and Evaluation: Multiple treatments are typically needed when managing invasive plants. Monitoring is an extremely important part of any invasive management plan.

- It is important to evaluate and document the effectiveness of each treatment
- Monitor the area for new invasive plants
- Seeds can lay dormant in the soil for many years (seed bank)
- Follow-up treatments as necessary
- Restoration plantings



Spread the word, not the plant!
Outreach Ideas:

- Tabling at local events such as:
  - The Vermont Flower Show (March)
  - Addison County Fair and Field Days
  - GreenWorks
    - Generally offered a free table to display at February and July meetings
    - Chance to talk with folks from the landscaping/horticulture industry
- Get creative and create your own opportunities to talk with the public about invasive plants
  - E.g. Dump and donuts (a table at your local transfer station, entice people to talk to you with donuts, and free printed resources on invasive plants)
- Give a talk at a local library
  - E.g. The Waterbury Public Library is looking for a speaker in April to talk about invasive plants
- Organize a workday in your community
- Work with local scout or school groups
- Work collaboratively with your local Conservation Commission
- Send out seasonal invasive updates through Front Porch Forum

Why bother doing this work at all?
You Are Making a Difference!!!
The work we do makes a difference in our forests, parks, and natural lands. It makes a difference in our Vermont economy, it makes a difference to fish and wildlife, and it makes a difference in our ability to enjoy the outdoors of our great state. Thank you for the work you are doing!