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Spreads quickly by seed and cuttings to form dense thickets that exclude native vegetation and are of little value to wildlife. Japanese knotweed (*F. japonica*) is the most common species in our area. Knotweed is extremely difficult and expensive to control, and repeated chemical treatments are usually necessary.

### **Pale Swallow-wort, *Cynanchum rossicum*; Black Swallow-wort, *C. louiseae***

*Occurrence in FL:* widespread in a few areas, especially north-central Finger Lakes. A good candidate for early detection and rapid response.

Long-lived, perennial, twining herbaceous vines that tolerate a wide range of light and moisture conditions. Invades fields, hedgerows, successional shrub lands, and woods. Pale swallow-wort is especially common and competitive on alkaline, limestone-associated soils. Either species can form extensive patches that crowd out native plant species, vines climb into shrubs and trees, and in open fields it can displace grassland bird habitat. Seeds are easily dispersed by wind and can be inadvertently carried to new areas by muddy boots, tires, etc. Seeds are polyembryonic, with up to four embryos per seed, which greatly increases the potential for establishment. Prevention from uninfested areas should be a priority. Herbicides are typically required for effective control; seed pods can be collected to inhibit seed dispersal.



### **WOODY VINES**

#### **Asian Bittersweet, *Celastrus orbiculatus***

*Occurrence in Finger Lakes:* patchy, usually isolated individuals.

Deciduous woody perennial plant which grows as a climbing vine and a trailing shrub. Often seen in hedgerows, forest edges, and woods. Can live in both sunny and shady sites. Tends to climb over and smother other vegetation. The abundance of showy red-orange fruits make this plant extremely popular for use in floral arrangements, and the bright colored fruits and capsules are the easiest way to pick out the vine in the field. Oriental bittersweet can be confused with the native American bittersweet (*Celastrus scandens*), which is becoming



uncommon, so it is critical to make a correct identification before treatment. It is relatively easy to control infestations of non-native bittersweet since it is not especially widespread. Best treatment is to cut near the base of the vines and treat fresh cuts with a herbicide to prevent re-sprouting.

### **SOURCES OF INFORMATION**

1. [www.na.fs.fed.us/fhp/invasive\\_plants/index.shtm](http://www.na.fs.fed.us/fhp/invasive_plants/index.shtm)
2. [www.invasive.org/species.cfm](http://www.invasive.org/species.cfm)
3. [www.nps.gov/plants/alien/fact.htm](http://www.nps.gov/plants/alien/fact.htm)
4. [www.fingerlakesnativeplantsociety.org/](http://www.fingerlakesnativeplantsociety.org/)
5. [www.invasiveplantatlas.org/index.html](http://www.invasiveplantatlas.org/index.html)



# Afoot in the Field:

## A Resource for Conservation Landowners in the Finger Lakes Region

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Living in this part of the world with a rather humid, temperate climate, we become accustomed to seeing lush green vegetation across our landscape during the summer. Whether it is the forests covering our hillsides, meadows with dense flowers and grasses, brushy old fields with impenetrable thickets, wetlands full of vegetation, or stream corridors lined with thickly vegetated banks, we are used to seeing plants everywhere. Of this profusion of vegetation, the typical person on the street may know only a few basic plants; the average landowner and outdoorsperson can recognize many; foresters and land managers can usually identify still more; and of course botanists and ecologists know most all of them rather intimately. There is certainly satisfaction in learning to identify new species - the organisms that share the world around us and make up various ecological communities.



courtesy of <http://invasivespecies.blogspot.com/>

But when it comes to non-native species that are invading and diminishing the quality of our natural habitats, it can seem like a curse to recognize them. I have noticed, in fact, that as I have come to know more and more non-native invasive plants (NNIPs) over the past several years, my blood pressure rises and I begin to feel uneasy and depressed when I spend time in areas that are overrun with them. Conversely, I feel relaxed and full of hope for the world when I spend time in a pristine environment that is largely unblemished by NNIPs or other human-induced problems. Learning about NNIPs is learning that just because an area is full of prolific plants and flowers and berries does not always mean that it is natural and healthy - indeed, in our area, green is *not* always good.

The problem is growing. Aggressive invaders are expanding their ranges. New invasives arrive, some spreading gradually, some quickly. Competition from crowding NNIPs and over-browsing by deer can be a one-two punch for native wildflowers and forest tree regeneration in our region. Where deer are over-abundant, they may actually facilitate invasions of NNIPs by feeding on native plant species and avoiding the non-natives. A changing climate may prove to make NNIP invasions still worse. On the positive side, agencies, organizations, and educators are working to raise public awareness about the impacts and what can be done to slow the spread of NNIPs and reduce the importation of new ones. Resources are now being applied to the problem on a variety of fronts. Research has made gains in assessing and applying

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many types of control efforts. Purple loosestrife, for example, is a NNIP that is no longer as widespread as it used to be because of a successful campaign by researchers and government agencies to identify and release a "biological control" for it. Biological controls are organisms (usually insects) that have been studied and released into a new environment to feed on, or otherwise limit, a non-native problem species.

Across our region there are many NNIPs that will probably always be a part of our landscape and we will need to get used to seeing and dealing with them. Biological controls, however, are being researched, and landowners and land managers can be effective in protecting high quality natural areas from being invaded and degraded by NNIPs and, in some areas, controlling NNIPs and restoring sites to a more natural condition.

This issue of *Afoot in the Field* is meant to be an introductory sampler for landowners interested in learning more about non-native problem plants, highlighting those species that you might be seeing on your property already, or could see in the future. Ithaca College intern Will Horwath has assembled brief profiles on a number of NNIPs in the Finger Lakes Region, some already common and some gaining ground. You are probably already familiar with some of these plants and may have done your fair share of cursing at shrubs like multi-flora rose, honeysuckle, privet, autumn olive, buckthorn, and barberry, as you see parts of your property become more choked and less accessible. Others, like swallow-wort and Japanese knotweed, are perhaps more insidious from an ecological point of view, and harder to eradicate from a site. I encourage you to explore some of the internet resources listed in this issue to learn more about these and other NNIPs.

Learning to tell the "bad green things" from the "good green things" is of course the first step. After that, it makes sense to get a good handle on the problem - understanding what is going on both on your property and in the surrounding landscape - and then make decisions regarding what might or might not be practical and effective in terms of control. Only a handful of NNIPs currently have biological controls, so most problem plants have to be treated manually (ex. pulling), mechanically (ex. mowing), or through the careful use of herbicides. Making the decision to attempt a control project is necessarily followed by making a decision as to how to go about it. In many cases, a combination of approaches will be the most effective. Sometimes, use of herbicides cannot be avoided to achieve adequate control at a reasonable cost. Fortunately, many herbicides today are safer than those used in the past, when applied properly. Herbicide treatments can usually be applied specifically to individual problem plants or cut stumps rather than being broadcast widely, thereby minimizing impacts to nearby native plants and animals and preventing pollution of water resources. Always consult a professional when in doubt about properly using herbicides!



*Land Trust volunteers and their "haul" after removing Asian Bittersweet at the Ellis Hollow Preserve.*

## HERBACEOUS PLANTS

### Garlic Mustard, *Alliaria petiolata*

*Occurrence in FL:* common and widespread

Biennial herb with stalked, triangular, coarsely-toothed leaves and white flowers with four petals that resemble a cross. Proper identification is important, as this plant can be confused with other native wildflowers. Occurs in moist, shaded soil in forests, floodplains, and roadsides. Poses a threat to native plants due to competition for light, soil, space, and nutrients. Garlic mustard is also a threat to the rare native West Virginia white butterfly (*Pieris virginiensis*) because garlic mustard invasions cause local extirpations of native toothwort (*Dentaria sp.*) wildflowers (both in the mustard family) that are the primary food source for the caterpillar, and chemicals in garlic mustard also appear to be toxic to the eggs of the butterfly. Garlic mustard stems can easily be hand-pulled prior to going to seed.



### Giant Hogweed, *Heracleum mantegazzianum*

*Occurrence in FL:* isolated occurrences, not yet common

Large biennial plant in the carrot family that can grow 15 to 20 feet tall. Found mostly along roadsides and disturbed areas. Easily confused with cow parsnip and angelica. Giant hogweed can outcompete native plants due to size and rapid growth, but the biggest problem with this plant is that it contains substances in its sap called furocoumarins that can cause a skin reaction known as photodermatitis. Photodermatitis causes skin to become sensitive to sunlight, which can lead to severe swelling and blisters, and, in eyes, cause temporary or permanent blindness. If exposed to giant hogweed sap, cover skin immediately to protect from sunlight, then wash thoroughly with soap and water. New occurrences of giant hogweed should be reported to the NYSDEC.

### Purple Loosestrife, *Lythrum salicaria*

*Occurrence in FL:* common in wetlands and along roadside ditches

Erect, perennial herb with attractive purple flowers. Known to invade many wetland types including freshwater wet meadows, tidal and non-tidal marshes, river and stream banks, pond edges, reservoirs, and drainage ditches. Dense homogeneous stands of loosestrife outcompete native wetland plant species and are generally unsuitable as cover, food, or nesting sites for a wide range of native wetland animals. Biological control of purple loosestrife in recent years has proven effective and is a notable success story. Testing and release of two leaf-feeding beetles, a root-boring weevil, and a flower-feeding weevil has resulted in loosestrife populations becoming much less dense and widespread in many places.



### Knotweed, *Fallopia sp.* (several)

*Occurrence in FL:* becoming common along streams and roadsides, often in patches.

Herbaceous perennial that can grow over 10 feet tall; stems have hollow segments and are often incorrectly referred to as "bamboo". Tolerates a wide range of shade, temperature, salinity, and flood/drought conditions.

# Conservation Landowner Profile:

## Jack Lowe

Jack and Janet Lowe live in Ithaca but spend time at their country property and cabin in Cayuga County. They purchased the 86-acre property bordering Bear Swamp Creek in 1979, and donated a conservation easement to protect it in 2008. Theirs was the 58th easement accepted by the Finger Lakes Land Trust, and the first in Cayuga County. The Lowes have been members of the Land Trust since its founding in 1989.



**Q: Please relate the story of how you came to own your land in the Town of Niles (Cayuga County), and why you bought it.**

A: Janet and I had been looking for some land that had woods, fields and a stream. An agent helped us find our parcel which we carved out of a 350 acre farm. We wanted a mixture of habitat for wildlife viewing and this piece in New Hope had it all.

**Q: Part of your land borders Bear Swamp Creek and its associated wetlands. When you bought your land did you realize**

**you were buying part of a much larger natural system, or is that something you came to realize and appreciate with time?**

A: We certainly knew that we were part of a larger natural system. We were aware that we were close to bordering on the Bear Swamp State Forest.

**Q: Right now your land is the only property with a conservation easement on it for miles around. Do you think there is a good chance that other landowners in the area would also consider placing a conservation easement on their property?**

A: The land that our neighbors own on each side of us is the remainder of the farm that we cut up. We know that they have been in contact with the Finger Lakes Land Trust.

**Q: Please tell us about what kinds of land management activities you engage in, and in particular how you've been fighting back against the encroachment of non-native invasive plants on your property.**

A: We have not done much to date except for starting a rotation of mowing the open fields in the fall after the meadow birds are gone. This has resulted in knocking down a lot of Buckthorn and Multi Flora Rose. I hope to do each field in our Zone A every two or three years.

## Non-Native Invasive Plants in the Finger Lakes

Compiled by Will Horwath, with notes by FLLT staff

The following profiles of non-native invasive plants are representative of the commonly encountered problem plants in the Finger Lakes Region. Each species has its own biological characteristics, distribution, impact on native communities, and control methods. Some of these unique factors are described below, and more information can be obtained from the various internet sites listed at the end.

### TREES

#### Norway Maple, *Acer platanoides*

*Occurrence in Finger Lakes:* scattered, common in urban/suburban areas; increasing near forests.

Large deciduous tree; can be distinguished from other maples because the leave stems and twigs have milky sap. Shade tolerance allows it to encroach beneath the forest canopy. Forests with Norway maples tend to suffer losses in diversity of native wildflowers because of shade and shallow root growth. Reproduces readily by seed. Control options include pulling seedlings, cutting, and girdling.



#### Tree of Heaven, *Ailanthus altissima*

*Occurrence in FL:* patchy; common in limited areas

Rapidly growing deciduous tree; thrives in poor soils and can tolerate pollution. Can form thickets and dense stands that can quickly take over a site. Produces toxins that inhibit establishment of other species. If trees are cut down, chemical treatment will be necessary to prevent aggressive re-sprouting. Compound leaves can be easily confused with staghorn sumac, walnut, ash, and hickory, but *Ailanthus* leaflets are the only ones with smooth (toothless) edges.

### SHRUBS

#### Multiflora Rose, *Rosa multiflora*

*Occurrence in FL:* common and widespread

Thorny, perennial shrub; tolerance for various soils, moisture, and light conditions. Occurs in pastures and fields, roadsides, along streams, and in woods. Extremely prolific and can form impenetrable thickets that exclude native plants.



#### Bush Honeysuckles, *Lonicera sp.* (several)

*Occurrence in FL:* widespread

Bush honeysuckles are deciduous shrubs with opposite oval leaflets and red or orange berries, and the branches spread out widely and may reach 15 feet tall. Native honeysuckles (which are generally uncommon compared to non-native honeysuckles), by contrast, are typically less stout and more vine-like. Non-native honeysuckles also tend to have hollow stems, whereas native honeysuckles have

solid stems. Bush honeysuckles are mostly shade-intolerant and commonly inhabit fields, roadsides, and forest edges. They can rapidly invade and form dense thickets that rob light and soil nutrients from native plants; they also leaf out early in the season and remain green late in the season. Roots tend to be shallow and smaller plants can be easily pulled up by hand.



**Japanese Barberry, *Berberis thunbergii*; European Barberry, *B. vulgaris***

*Occurrence in FL:* common and widespread

Commonly used as an ornamental landscaping plant. Compact, spiny, deciduous shrubs with shallow and tough roots; prefers well drained soils. Broken stems, especially near roots, are yellow. Shade-tolerant and can become widespread in woods. Usually small to medium sized clusters of stems can be pulled up by hand (wear gloves though - they have prickles!).

**Autumn Olive, *Elaeagnus umbellata*; Russian Olive, *E. angustifolia***

*Occurrence in FL:* common widespread

Deciduous shrub or small tree with rather dull, scattered thorns; can grow to 20 feet tall. Leaves are dark green on top and silver-white on the underside, oval shaped with wavy margins. Grows well on a variety of soils and commonly invades roadsides, fields, and also penetrates within woods. Prolific fruiter and exhibits rapid growth that suppresses native plants. Has the potential to become one of the most problematic shrubs in the Northeast. If shrubs are cut, chemical treatment of sprouts will usually be necessary.



**Privet, *Ligustrum sp.* (several)**

*Occurrence in FL:* common and widespread

Shrub in the olive family that can grow 10-12 feet tall. Grows well in low nutrient soils; commonly invades roadsides, fields, and young woods. Aggressive plant forms dense thickets that can out-compete native plants.

**Common Buckthorn, *Rhamnus cathartica*; Alder Buckthorn, *R. frangula***

*Occurrence in FL:* common and widespread

Shrub or small tree that can grow over 20 feet tall. Twigs are often tipped with a spine. When cut, the inner bark is yellow and the heartwood is pink to orange. Prefers lightly shaded areas including young or open woods, woods edges, and fields. Can form dense thickets that crowd and shade out native plants.



The key to deciding how much time, money, and energy to spend on battling NNIPs on your property is having a sense of how to prioritize and determine where and how you can be most effective. The first step is to identify the most important natural communities that are not yet impacted by NNIPs and set up monitoring and defense of those critical areas - watching regularly and keeping out the plants that don't belong. Also, a lot of attention these days is being placed on "early detection, rapid response", which is to say that priority should be given to those situations where you can detect the earliest stages of a new infestation and more easily remove the few individual plants that have colonized a site. This is far more effective and efficient than trying to tackle a problem after it has grown to large proportions.

Where you already have NNIPs on your property, but are not yet too widespread to deal with, the best approach for effective control is to work from the inside out. Start at the interior of the area where the NNIPs are the most sporadic and scattered and the natural habitat is of the highest quality, and then work your way back out toward the edges where they become more dense. You may reach a point where further control is not worth the effort and cost, but you can more easily defend the interior area where the best habitat is. And what if your property is already overrun? It's a tough call and the answer depends on how much of a native plant purist you are and the resources that are available to you. In some old fields and young woods that are choked with non-native invasive shrubs it may be all you can do to keep a few trails open, let alone combat NNIPs in a large area, but in other places a successful restoration effort may be worth a significant investment.

It is a fanciful notion that someday all NNIPs will be eradicated and our treasured native species will no longer suffer from imported competition. Most NNIP species will continue to naturalize to some degree, and we will need to get used to seeing them as part of the plant assemblage across our landscape - even if it pains us to admit it. Hopefully research on biological controls for some of the worst NNIPs will make significant gains, being the most powerful weapon for keeping NNIPs in check. But it also doesn't mean that we shouldn't keep up our defenses where our defenses can be effective. Working at it steadily, we can maintain and protect a suite of natural areas in good ecological condition.



Chris Olney, Director of Stewardship

*The Finger Lakes Land Trust is a membership-supported, not-for-profit land conservation organization dedicated to protecting the lands that define the character of the Finger Lakes region. Since its founding in 1989, the Land Trust has protected over 12,000 acres of the area's forests, farms, lakeshore, and gorges. Afoot in the Field is a newsletter provided by the Land Trust for landowners in the Finger Lakes who own properties that are permanently protected with a conservation easement, or who are otherwise committed to, or interested in, land conservation and wildlife habitat protection and improvement. For more information about the Finger Lakes Land Trust and its conservation programs visit [www.fllt.org](http://www.fllt.org) or call our Ithaca office at 607-275-9487.*