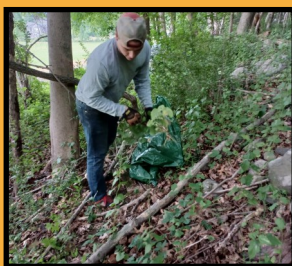




INVASIVE PLANTS

OF LINCOLN AND ITS WATERSHEDS

IDENTIFICATION, CONTROL AND NATIVE ALTERNATIVES



INVASIVE PLANTS

OF LINCOLN AND ITS WATERSHEDS

This brochure focuses on our region's most invasive plants

Invasive plants are introduced, non-native species that spread aggressively and alter all types of ecosystems including forests and wetlands. Many introduced plants become “naturalized” and get along with native plants, however invasive species form monocultures inhospitable to native plants. This upsets a natural balance of flora and fauna that took thousands of years to achieve.

Massachusetts was one of the first states to prohibit the sale, transport, and propagation of certain plant species determined to be invasive. These plants also may not be purchased out-of-state and transported into MA. A list of plant species designated as invasive can be found at <https://www.mass.gov/service-details/invasive-plants>.

Invasive plants are a threat to functioning, resilient ecosystems because they:

- Grow rapidly and spread quickly, usually by producing many seeds or through aggressive root systems.
- Thrive under most conditions and are projected to do better in a changing climate.
- May leaf out first in spring and/or drop leaves late in fall.
- Lack the natural checks on their population that are found in their native land.



Japanese Knotweed taking over

Join the watch: prevention and early detection is key

This brochure is intended to help community members understand the challenges posed by invasive plants, provide resources and guidance for identification and removal, and to inspire with success stories.

- Watch your step! Invasive plant seeds can travel to new locations on shoes, clothing, and recreational equipment.
- Keep your eyes open! Download free apps such as “Seek” or “iNaturalist” to help identify plant species.
- Visit cisma-suasco.org for great information and local updates.

NATIVE PLANTS

AND THEIR ECOSYSTEM FUNCTIONALITY

Native plant communities have evolved with local wildlife and are integral to a healthy ecosystem, providing food and shelter to many species.

Identify areas with existing native plants and “release” them by clearing away nearby invasives. When purchasing plants, opt for native, straight species over cultivars. Ask your nursery how their plants are sourced and if pesticides (such as neonicotinoids) were used in production. Adding native plants to fill in an area where plants were removed helps prevent recolonization by invasive plants.



Left: Planting Staghorn Sumac in a newly cleared forest edge area.

Right: A Monarch caterpillar on a Swamp Milkweed. Monarch butterflies exclusively lay eggs on milkweed species. Without those plants, there are no monarchs.

Pollination Systems

Native pollinators are one of many critical players in a healthy ecosystem. Native plants rely on pollinators to help them reproduce, providing nectar and pollen as a reward for visits. Many species of pollinators are in decline, mostly due to habitat loss and pesticide use. Native plantings are one important way to restore ecosystem functionality.

Resources

Local organizations such as The Lincoln Garden Club and Native Plant Trust are great resources for native plant landscaping. Visit Lincoln Land Conservation Trust's (LLCT) website to learn more about pollinator habitat initiatives in Lincoln.

WHAT CAN WE DO?

Where to Get Started

- Early detection and removal is most effective.
- Pick your battles. Containment may be the best option.
- Revisit worked sites for a few years to check for re-sprouts.
- Network. There are people out there to help.
- Education. Help get the word out!

Contact the LLCT or Lincoln Conservation Department to participate in volunteer workdays. Most towns have staff willing to help landowners identify invasive plants on their property. Invite them to yours.



Some fundamentals:

- Repeated cutting after a plant has leafed out will weaken it.
- Covering a cut patch with black plastic will block photosynthesis.
- Cutting flower heads and stripping off berries will interfere with seed production and impede seed dispersal.
- Remember to dispose of mature seeds/berries with care. Collect in black plastic and “cook” in the sun or burn. Compost young plants before flowers develop.
- Due to their impact on the environment, consider herbicides as a last resort. Herbicides, by MA law, must be applied by someone licensed by the state, unless applied by a private property owner.

Please note that any invasive species control, including chemical application, within 100-ft of wetlands or 200-ft of year-round flowing streams requires review and approval by the Conservation Commission. Please contact 781-259-2612 for more information.

SUCCESS STORIES

Lincoln Conservation and LLCT Staff lead coordinated efforts to control invasive plants on conservation land and support landowners working to improve their own properties. For example, staff and volunteers conduct:

- Annual Garlic Mustard Removal throughout town. Comprehensive outreach campaigns have continued to raise awareness of Garlic Mustard's negative impacts on native vegetation.
- Annual removal of Water Chestnut in Fairhaven Bay and Beaver Pond. The infestation, which originally needed large equipment to manage, can now be held in check with hand pulling from kayaks over the course of a few days in the summer.
- Lincoln participated in a regional effort to raise and disperse *Galerucella* beetles to control the purple loosestrife population along the Sudbury river.



For the Annual Garlic Mustard Pull, LLCT and Town Conservation Staff table at the Transfer Station. The Lincoln Garden Club provides paper bags to the community, which can be dropped off at the DPW.

Staff and volunteers pull water chestnut at Beaver Pond and Fairhaven Bay. It makes for a fun day out on the water too!



INVASIVE HERBS AND GRASSES

Garlic Mustard

Alliaria petiolata

When it spreads to adjacent forest, roots release a chemical that impedes tree health and growth. Garlic odor when crushed. Pulls easily; best pulled before seeds form in late May. Photos of early spring seedlings and flowers.



Black Swallow-wort

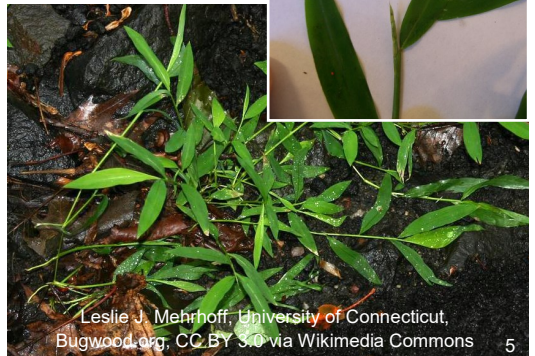
Cynanchum louiseae

Member of the milkweed family with pods that release seed parachutes to the wind. Monarch butterflies lay their eggs on the plant but eggs / caterpillars do not survive. Remove entire plant and root by digging, do not leave pods behind. Dispose of in trash.

Japanese Stiltgrass

Microstegium vimineum

Invasive annual grass, thrives in shady environments and forms dense mats in the forest understory. Smooth leaves and a central silver stripe help differentiate it from most native grasses. Before seed formation in autumn, pull, cut, or mow.



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, CC BY 3.0 via Wikimedia Commons

NATIVE HERBS AND GRASSES

Below are a few examples of the hundreds of native herbaceous plants and grasses that you can fill your garden with or find in conservation areas. To find more plant ideas visit the [mass.gov](https://www.mass.gov/page/pollinator-friendly-plants) page on pollinator friendly plants.

Milkweeds

Native Milkweeds like Swamp, Purple, Common and Butterfly Milkweed provide incredible value not only to the famous monarch butterfly, but to many other pollinator species. Milkweeds can grow aggressively, so make sure you have space for them, but they will reward you with beautiful flowers year after year.



Swamp Milkweed, Butterfly Weed



Big Bluestem

Grasses

There are numerous native grasses that provide interest and wildlife value in a variety of habitats. Indian Grass, Big Bluestem, Eastern Wild-rye, native sedges and others all offer seeds that are valuable for birds and other native wildlife, and they provide good shelter too. Choose native grasses carefully - some are runners that like to spread!

More Resources

Our native flowering herbs are too numerous to list. You can also check out the Native Plant Trust's website to find specific plants. Some of our native beauties include New England Blazing Star, Cardinal Flower, Bloodroot, Jack-in-the-Pulpit, and many more!



Bloodroot, Photo by Marcia Gnagay



Native Bergamot

INVASIVE SHRUBS

Japanese Knotweed

aka False Bamboo

Fallopia japonica

Shrub-like perennial often found on roadsides and river banks. Bulbous roots lack small rootlets that anchor soils. Highly mobile, often transported in fill and extremely difficult to remove once established. Remove entire plant (roots!) as soon as first few stems appear. If established, cut after spring leaf-out to weaken plant. Cut repeatedly.



Burning Bush

a.k.a. Winged Euonymus

Euonymus alatus

Was a popular landscaping shrub. Replace established shrubs with native alternatives. Stems green with corky "wings". Seed bank often builds slowly in the soil, then plants burst forth when soil is disturbed.

Autumn Olive

Elaeagnus umbellata

Dense shrub to 20-ft with red berries and some thorns. Leaves are silvery on the under-side. Forms dense thickets along old fields and roadsides. Manage with routine pulling and cutting. Young plants can be pulled out by their roots.



INVASIVE SHRUBS

Multiflora Rose

Rosa multiflora

Like many of our invasives, this was a plant recommended for wildlife back when we didn't know better. Hardy climber can reach heights over 15-ft. Lots of thorns. Prefers sun; often takes over old fields. Repeated mowing or cutting is recommended, as well as pulling young plants.



February and September



Japanese Barberry

Berberis thunbergii

Small, prickly shrub that can reach great densities if not detected early and removed. Common tick habitat. Young plants easy to pull before too much branching has occurred.

Honeysuckles

Lonicera spp.

Including Morrow's, Tatarian, and hybrids. First spring color in the forest is the green of honeysuckle shrubs in the understory. Leafing out early to get ahead of the competition, they shade out the diversity of groundcover species, outcompete native shrubs and suppress forest regeneration. Easy and gratifying to pull.



NATIVE SHRUBS

There are a variety of native shrubs that offer seasonal interest, are important pollinator or fruit sources, and will not crowd out other vegetation. A few favorites include Red-twig Dogwood, Native Roses, Winterberry Holly, Northern Bush Honeysuckle, Sweet Pepperbush, and Highbush Blueberry.



Red-twig Dogwood



Carolina Rose



Winterberry Holly



Northern Bush Honeysuckle



Maple-leaf Viburnum



Sweet Pepperbush



Lowbush Blueberry



Purple Flowering Raspberry



Mountain Laurel

INVASIVE AND NATIVE VINES

Oriental Bittersweet

Celastrus orbiculatus

Climbing vine can reach 60-ft, choking anything in its path. Seeds and then orange rootlets build in soil, dormant for years. Roots sprout prolifically. Spread by birds and unsuspecting humans. Pull young vines and cut repeatedly. Cut vines can be left hanging in trees, and will rot away in a few years.



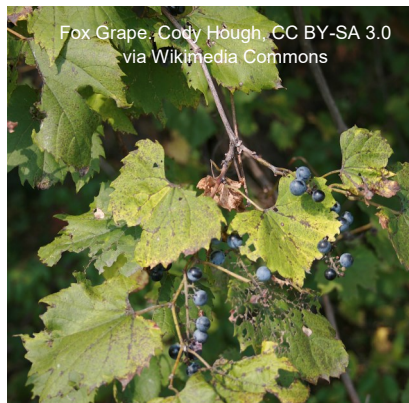
Porcelain Berry

Ampelopsis brevipedunculata

Outcompetes native vegetation in sun or shade. Berries dazzle with blue and purple, however are an inferior food source for wildlife, lacking the nutrients that migrating birds need.

Native Vines

There are many native vines. Fox grape (*Vitis labrusca*), and Virginia Creeper (*Parthenocissus quinquefolia*) are both hardy, native vines whose berries are highly beneficial to wildlife. Virginia Creeper is a host plant for several species of sphinx moth.



INVASIVE TREES

Glossy and Common Buckthorn

Frangula alnus and *Rhamnus cathartica*

Small tree with shiny leaves and white dots (lenticels) on bark. Fruits are a laxative with negative food value for wildlife. Buckthorn grows everywhere: fields, woods, wetlands and roadsides. Remove the entire plant (roots!) because the regrowth is harder to eradicate. Common buckthorn resembles glossy, but with notched leaf edges instead of smooth, and shaggier bark.



Left and Center: Glossy Buckthorn. Right: Common Buckthorn, Photo by Paul Wray; Iowa State University



Norway Maple

Acer platanoides

Grows large; broad leaves secrete milky sap if stem is broken. Yellow foliage in late fall separates it from native red maple and sugar maple. Outcompetes sugar maples in part because it's not sensitive to a warming climate. Quickly forms monocultures when it seeds along roads or in forest, shading out other plants. Often planted in the past as street or shade trees.

INVASIVE AND NATIVE TREES

Tree-of-Heaven

Ailanthus altissima

Deciduous tree up to 80-ft in height with large compound leaves. Can be distinguished from native sumac and walnut by its generally smooth-edged leaves and pungent smell. Like garlic mustard, Tree-of-Heaven produces toxins in the soil that inhibit the growth of other plants. Pull young trees, cut or girdle older specimens and watch for resprouting of the cut trunk.



Plant Image Library from Boston, USA,
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Luis Fernández García, CC BY-SA 2.1 ES
via Wikimedia Commons

Beware!
Tree-of-Heaven
bark can
cause skin
irritation on
contact.



Native Trees

There are hundreds of native trees and large shrubs that have incredible ecosystem value. Staghorn sumac (shrub) and black walnut (tree) are look alikes for Tree-of-Heaven. Black walnut nuts are edible, and staghorn sumac has striking fall colors. Other alternatives include Red Maple (*Acer rubrum*), Red Oak (*Quercus rubra*), or Eastern Redbud (*Cercis canadensis*). Oaks in particular support a large number of native insect species.

Eastern Redbud Tree. Photo by Mark Hanson

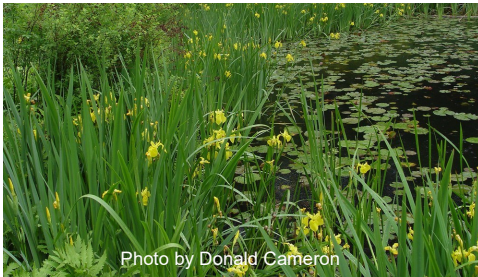
WETLAND AND AQUATIC INVASIVES

Residents should contact the Conservation Department and seek professional help for management of aquatic invasives. However, new infestations may be manageable with homeowner effort. As a reminder, any work done within 100-ft of wetland resource areas or 200-ft of a perennial stream requires review and approval by the Conservation Commission.

Purple Loosestrife

Iris pseudacorus

Wetland invasive with purple flowers. Forms dense colonies along pond and stream shorelines and in wet meadows. Blooms in late summer.



Yellow Iris

Lythrum salicaria

Similar to purple loosestrife, can grow in dense colonies in wet areas and along shorelines, outcompeting all other water-loving plants.

Water Chestnut

Trapa natans

Found in rivers and lakes. Triangular, deeply toothed leaves and rosette shape are distinctive. Easy to pull. Plants can be deposited on the shore above the high water line to desiccate. Remember to clean your boat thoroughly after leaving a water body - water chestnut and other aquatic invasives can hitch a ride on equipment and spread to new waterbodies.



Phragmites and Eurasian Watermilfoil are present in Lincoln, but require larger, regional efforts to manage. Please reach out to the Lincoln Conservation Department or LLCT if you notice a new population.

EARLY DETECTION

There are many invasive species not mentioned in this publication, as well as many “species of concern” which are not yet formally listed as invasive or are not yet fully established in the area. For the most updated list of invasive plants, visit the Massachusetts Invasive Plants Advisory Group (MIPAG) website. If you have a question about a plant you have seen, please contact the Lincoln Conservation Department or LLCT. The following are a few of the known nuisance plants that can be found in Lincoln or in our watershed:



Wall Lettuce is listed as likely invasive.



Mile-a-Minute is listed as invasive.



Lesser Celandine (left), Cow Parsley (center), and Gray Willow (right) are all listed as invasive.

For information, or to request a brochure, contact us:

Lincoln Conservation Department

<https://www.lincolntown.org/245/Conservation>

781-259-2612

conservation@lincolntown.org

Lincoln Land Conservation Trust

<https://lincolnconservation.org/>

781-259-9251

llct@lincolnconservation.org



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