

# Non-Native, Invasive Organisms Create Problems in Connecticut

Non-native, invasive organisms have been recognized by the Connecticut Council on Environmental Quality as the second largest threat to Connecticut's natural habitats (second only to habitat loss caused by sprawling land development). Non-native organisms invade natural areas (forests, meadows, rivers, and wetlands), pastures, and croplands. Different invasive organisms have created a variety of problems. In many natural areas, invasive plants have crowded out native plants. This is a problem for rare native plants and for wildlife that depend on specific types and patterns of native plant cover.



*Japanese Knotweed invading brook on both banks.*

- ❑ **Non-Native Organism** refers to a living thing (plant, animal, fungus, or other type of life) that has been introduced from another place to exist among types of organisms with which it was not previously found.
- ❑ **Invasive Organism** refers to an organism that has characteristics that allow it to become both quickly established and abundant in new areas.
- ❑ **Native Organism** refers to plants, animals, or other organisms that are a part of the balance of nature that has developed over hundreds or thousands of years in a particular region (and excludes organisms known to have been intentionally brought in by people).

## Non-Native, Invasive Organisms Disrupt Nature's Balance

Groups of native plants and animals can be disrupted when an invasive, non-native organism creates change. Places where these organisms are likely to be disruptive are locations where native plants and animals do not have natural defenses against new organisms. Examples of natural defenses include animals that eat the new organisms or plants/animals that have resistance to a new disease because it is similar to a disease to which they are already resistant. Climate can also be a defense with cold winters keeping some invasive, non-native organisms under control.

## Disruptions By Non-Native Insects and Fungi

The Gypsy Moth and the Hemlock Woolly Adelgid are examples of non-native insects that have invaded Connecticut. Gypsy Moths eat the leaves of trees, and can leave them completely bare in the middle of the summer. This is a particular problem with oaks, whose acorns are valuable food for wildlife. The Hemlock Woolly Adelgid (an aphid-like insect) recently invaded Connecticut and is killing Hemlock trees in yards and in the state's forests. Healthy Hemlocks stay green year round, and are especially important for sheltering wildlife in the winter.



*Egg cases of Hemlock Woolly Adelgid.*

Dutch Elm Disease and Chestnut Blight are examples of non-native fungi that caused major disruptions in the United States. Dutch Elm Disease killed American Elm trees in forests and along many city streets.

# Chestnut Blight: An Example of How a Single Non-Native, Invasive Organism Changed the Forests of Eastern North America Forever

In 1904, Chestnut Blight Fungus was discovered to be infesting native American Chestnut trees in New York City. Chestnut Blight Fungus (which is not native to North America) is believed to have been introduced accidentally on various Asian Chestnut trees brought to the vicinity of New York City and other places beginning in 1876. The blight spread all over the eastern United States and killed just about every mature American Chestnut tree in the country.

The loss of the American Chestnut was a major disruption to the forests of Connecticut. Before the blight, American Chestnut trees grew 70 to 90 feet tall and were the most common forest tree in much of the state. Chestnut trees were a valuable source of lightweight, strong, and easy-to-work-with wood for lumber and split fence rails. And, the nuts of American Chestnut were an important food for both wildlife and people.

Today, you may still see Chestnut sprouts in the forest because American Chestnut has an unusually strong ability to sprout from its root collar. Sprouts usually grow from 5 to 20 feet tall. Generally, the sprouts are killed by the blight before they are large enough to make nuts.

*The loss of American Chestnut trees is a severe example of what can happen when a non-native organism that is good at spreading is introduced to an area where native plants and animals have no resistance because it is something they never had to deal with before.*



*Chestnut leaves in front of clump of dead sprouts.*

## Plants Are The Most Commonly-Seen Non-Native Organisms

Of the 6,271 non-native organisms considered to be established in the United States in 1993 by the U.S. Office of Technology Assessment, almost two-thirds were plants. Those non-native plants that are also *invasive* cause problems when they start growing in places where people wish to manage the land in a way that helps keep the balance among existing plants and animals. This might be in natural areas, pastures, or croplands.



*Purple Loosestrife*



*Japanese Knotweed*



*Honeysuckle flowers and fruit*



*Asiatic Bittersweet leaves and ripe fruit.*

## How Non-Native, Invasive Plants Spread

Humans may intentionally plant non-native plants for agricultural, horticultural, or wildlife benefits. Non-native plants may also be transported unintentionally with other plants or in soil. Seeds (or sometimes roots or branches that can sprout) can also be carried by wind, water, birds, or other types of animals.

# Effects of Non-Native, Invasive Plants

A non-native, invasive plant can crowd out and smother native plants. This happens if the plant gets into an area of native plants where there are few natural controls on invading plants. Some examples of non-native, invasive plants that smother native plants are:

- ▶ Asiatic Bittersweet
- ▶ Multiflora Rose
- ▶ Japanese Barberry
- ▶ Autumn-Olive
- ▶ Japanese Knotweed, and
- ▶ Several non-native, shrubby Honeysuckles



*The native plants in this forest understory have been smothered by Japanese Barberry.*

In water, Purple Loosestrife crowds out native plants and creates areas where there is a mostly thick cover of Purple Loosestrife instead of many different types of plants mixed in with areas of open water.

In cases when non-native, invasive plants become established at forest edges, they can create problems. Invasive plants may spread into the forest or adjacent open land and take up space that would otherwise be available to native plants.

When an invasive plant that smothers other plants starts growing at a forest edge, it reduces the variety of wildlife foods in a type of location important for wildlife.

Forest edges are especially important places for wildlife because the extra sunlight at a forest edge causes plants to make more flowers than they do in the forest shade. And, flowers ultimately produce important wildlife foods such as seeds, nuts, berries, etc. At forest edges, small infestations of non-native, invasive plants can have large effects on wildlife.

## Typical Characteristics of Invasive Plants

- ▶ Grow rapidly
- ▶ Reproduce at a young age
- ▶ Have a high reproductive rate (by seeds or by vegetative spreading)
- ▶ Able to grow in poor soil conditions (for example, dry or compacted soils)
- ▶ Grow well in full sunlight
- ▶ Tolerate a wide range of environmental conditions
- ▶ Have seeds that are easily carried long distances (by wind, animals, or water)
- ▶ Become invasive outside their native range when natural controls are not present; **natural controls** include:
  - ◆ Competition from other plants
  - ◆ Animals that feed on leaves or seeds
  - ◆ Diseases that limit growth or seed production
  - ◆ Harsh weather conditions in native range

## Where Are Non-Native, Invasive Plants A Problem?



*Autumn Olive*

The changes caused by non-native, invasive plants are problems in areas where groups of native plants and animals are still found. This includes much of Connecticut outside of cities. While the presence of invasive plants is clearly a cause for concern in natural areas, it may be less obvious that there is a need to avoid having these plants in areas which are close enough to a natural area for seeds to be carried in by birds or in other ways. Finally, non-native, invasive plants might be considered NOT a problem in certain situations where the presence of any kind of plant life is preferable to no plants at all.

# Connecticut Invasive Plant Working Group List of Plants Considered Widespread and Invasive in Connecticut

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Common Name	Latin Name	Growth Form	Habitat*
Asiatic Bittersweet .....	<i>Celastrus orbiculatus</i> Thunb. ....	Vine .....	Uplands
Autumn Olive .....	<i>Elaeagnus umbellata</i> Thunb. ....	Shrub .....	Open
Belle Honeysuckle .....	<i>Lonicera x bella</i> Zabel .....	Shrub .....	Uplands, Wetlands
Black Locust .....	<i>Robinia pseudoacacia</i> L. ....	Tree .....	Uplands
Black Swallow-wort .....	<i>Cynanchum louiseae</i> Kartesz & Gandhi .....	Herbaceous or Vine .....	Uplands
(Common) Buckthorn .....	<i>Rhamnus cathartica</i> L. ....	Shrub .....	Uplands
Common Reed .....	<i>Phragmites australis</i> (Cav.) Trin. ex Steud. ....	Grass-like .....	Uplands, Wetlands
Cottonweed .....	<i>Froelichia gracilis</i> (Hook.) Moq. ....	Herbaceous Plant .....	Open Areas
Curly-leaved Pondweed .....	<i>Potamogeton crispus</i> L. ....	Water Plant .....	Rivers, Lakes
Cypress Spurge .....	<i>Euphorbia cyparissias</i> L. ....	Herbaceous Plant .....	Open Areas
Dame's Rocket .....	<i>Hesperis matronalis</i> L. ....	Herbaceous Plant .....	Uplands
European (Glossy) Buckthorn ...	<i>Frangula alnus</i> Mill. ....	Shrub .....	Uplands (Wetlands)
(True) Forget-me-not .....	<i>Myosotis scorpioides</i> L. ....	True Forget-me-not .....	Water Scorpion-grass
Garlic Mustard .....	<i>Alliaria petiolata</i> (Bieb.) Cavara & Grande .....	Not Woody .....	Uplands
Japanese Barberry .....	<i>Berberis thunbergii</i> DC. ....	Shrub .....	Uplands (Wetlands)
Japanese Honeysuckle .....	<i>Lonicera japonica</i> Thunb. ....	Vine .....	Uplands, Wetlands
Japanese Knotweed .....	<i>Polygonum cuspidatum</i> Sieb. & Zucc. ....	Not Woody .....	Uplands, Wetlands
Japanese Stilt Grass .....	<i>Microstegium vimineum</i> (Trin.) A. Camus .....	Grass .....	Uplands
Morrow's Honeysuckle .....	<i>Lonicera morrowii</i> A. Gray .....	Shrub .....	Uplands, Wetlands
Multiflora Rose .....	<i>Rosa multiflora</i> Thunb. ....	Shrub .....	Uplands
Narrowleaf Bittercress .....	<i>Cardamine impatiens</i> L. ....	Not Woody .....	Uplands
Purple Loosestrife .....	<i>Lythrum salicaria</i> L. ....	Not Woody .....	Wetlands
Spotted Knapweed .....	<i>Centaurea biebersteinii</i> DC. ....	Not Woody .....	Open
(European) Swallow-wort .....	<i>Cynanchum rossicum</i> (Kleoe.) Borhidi .....	Herbaceous or Vine .....	Uplands
Tree-of-Heaven .....	<i>Ailanthus altissima</i> (Mill.) Swingle .....	Tree .....	Uplands
(True) Watercress .....	<i>Nasturtium officinale</i> R. Br. ....	Not Woody .....	Wetlands
Winged Euonymus .....	<i>Euonymus alata</i> (Thunb.) Sieb. ....	Shrub .....	Uplands
Yellow Iris .....	<i>Iris pseudacorus</i> L. ....	Herbaceous Plant .....	Wetlands

\***Lakes** includes lakes, ponds, and human-made impoundments

\***Open** includes fields, grasslands, sand barrens, dry meadows

\***Rivers** includes any running water

\***Uplands** is a general term for all places not associated with rivers, lakes, or wetlands

\***Wetlands** include bogs, fens, floodplains, floodplain forest, marshes, pond shores, stream shores, swamps, wet meadows

For more information on the  
Connecticut Invasive Plant Working Group,  
visit their site at  
[www.hort.uconn.edu/CIPWG/](http://www.hort.uconn.edu/CIPWG/)

# Some Management Concerns Related to Non-Native, Invasive Plants

Invasive plants create problems for land managers and homeowners. People managing tracts of land where they want native species must maintain constant lookout for invasive plants. People interested in using dollars wisely for the purchase of conservation land should consider the costs of invasive plant management before they make purchases of lands with invasive plant problems. People planning for ecologically sound landscaping around homes and public spaces need to be aware of invasive plant issues.

## What is NRCS in Connecticut Doing About Non-Native, Invasive Plants?

NRCS in Connecticut has developed an invasive plant tool kit and offers educational materials and seminars on invasive plant awareness, management, and field identification for towns, land trusts, and other interested groups. Through the Wildlife Habitat Incentives Program (WHIP), NRCS offers technical and financial assistance to towns and private landowners for invasive plant management.

NRCS works in partnership with a variety of other groups working on invasive plant issues. NRCS is an active member of the Connecticut Invasive Plant Working Group (CIPWG), whose 2001 list of widespread and invasive plants is included in this brochure (widespread means found across Connecticut -- but not necessarily in large numbers). Plants included on the CIPWG lists of *Non-Native, Invasive and Potentially Invasive Vascular Plants in Connecticut* are plants that invade natural habitats such as forests, meadows, and wetlands. Weeds of roadsides or agricultural fields are not included in the CIPWG lists.

For more information from NRCS on invasive plants, visit  
[www.ct.nrcs.usda.gov/plants.html](http://www.ct.nrcs.usda.gov/plants.html)

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