Vermont Woodlands Association

Herbaceous Invasives of the Northeast and Beyond

IDENTIFYING IMAGES	NAME (DISTRIBUTION)	COMMON IDENTIFICATION FACTS	EFFECTS ON NATIVE SPECIES	Treatment (Always re-treat as necessary and follow the pesticide label)
	**Common Reed**  *Phragmites australis*	Common reed is a tall perennial wetland grass ranging in height from 3 to 20 ft. Its cane-like stems support broad sheath-type leaves. Large dense, featherlike, grayish purple flower plumes, 5 to 16 inches long, are produced in late June to September. The plant turns tan in the fall and most leaves drop off, leaving only the plume-topped shoot. The root system is comprised of rhizomes, reaching to 6 ft. deep, that spread and form large colonies by giving rise to roots and tough vertical stalks. Common reed thrives in sunny wetland habitats. It is particularly prevalent in disturbed or polluted soils with alkaline and brackish waters, but will tolerate highly acidic conditions.	Typically invades wetlands and excludes native plants. It is transported to new sites by water, wind, as a contaminant in fill-dirt, or on the soles of footwear. It spreads quickly to form dense thickets that exclude native vegetation and greatly alter natural ecosystems. Once established, populations are extremely persistent.	• Mechanical Control o Hand cut stems at the end of July before the flowers produce seed. After cutting, lay a sheet of black plastic over the area and monitor. • Chemical Control o Apply herbicides to foliage in May when stems are 3 feet tall and again in mid-summer. Apply last round in fall if needed. o Cut stem and drip in herbicide. Done between August and September.
	**Garlic Mustard**  *Alliaria petiola*	Garlic mustard is a cool weather biennial herb in the mustard family. It has stalked, triangular to heart-shaped, coarsely toothed leaves that give off a garlic odor when crushed. First-year plants appear as rosettes of green leaves close to the ground that remain green through winter and develop into mature flowering plants the following spring. Plants reach from 2 – 3 ½ ft. in height and produce button-like clusters of small, white, cross-shaped flowers. In May, seeds are produced in erect slender pods and become shiny black when mature.	Once introduced to an area, garlic mustard outcompetes native plants by aggressively monopolizing light, moisture, nutrients, soil, and space. It has been shown to prevent or reduce mycorrhizal colonization of native herbaceous ground layer plants and trees in eastern deciduous forests. It is estimated that 70-90% or more of herbaceous native ground layer plant species form associations with arbuscular mycorrhizal fungi (AMF). Loss of the mycorrhizal association can reduce growth, reproductive success, and competitiveness of plant species.	• Mechanical Control o Hand pull plants in the spring before they flower. Pull slowly, grasping plants at the stem base. Make sure you remove the “S”-shaped tap root. Put all plant parts into a plastic bag to decompose. • Chemical Control o Spray herbicide on remaining green leaves in the late fall when all other plants are dormant.
	**Giant Hogweed**  *Heracleum mantegazzianum*	Giant hogweed is a biennial or perennial herb in the carrot family that grows 15 to 20 ft. in height. It has stout dark reddish-purple stems and spotted leaf stalks, both stems and leaf stalks are hollow with sturdy bristles, and compound leaves with three leaflets expanding up to 5 ft. in width. The inflorescence, up to 2 ½ ft. in diameter, is a broad flat-topped umbel composed of small white florets that produce large elliptic dry fruits. After flowering, it produces up to 1500 large, flattened, elliptic, dry seeds per flower head. Giant hogweed poses a public health hazard. It contains a substance within its sap that makes skin sensitive to ultra-violet light, resulting in severe burns to affected areas. Swelling and severe, large, painful, watery blisters usually appear 15 to 20 hours after contact with the sap and sunlight.	Because of its size and rapid growth, giant hogweed aggressively out-competes native plant species, reducing the amount of suitable wildlife habitat. It dies back during winter, leaving bare ground that can lead to increased soil erosion.	• Mechanical Control o Manual and mechanical control methods include root cutting, cutting the plant, covering the soil, mowing, plowing, and removing the umbels (flower heads). Except for root cutting, manual control will not cause immediate death of the plant. All other methods will need two to three treatments per year for several years to deplete the root reserves and kill the plants. • Chemical Control o Apply the herbicide to foliage between March and early June when hogweed leaves are green and actively growing. A follow-up treatment, in July or August, may be needed for the plants that did not die from the first herbicide application.
	**Japanese Knotweed**  *Polygonum cuspidatum*	Japanese knotweed is an upright herbaceous perennial that can grow to over 10 ft. in height. Stems are smooth, stout, surrounded by a membranous sheath at the base above each joint, and swollen at joints where the leaf meets the stem. Leaves are broadly oval to somewhat triangular and pointed at the tip. Minute greenish-white flowers occur in branched sprays in summer, followed later in the season by small winged fruits.	It is transported to new sites by water, wind, as a contaminant in fill-dirt, or on the soles of footwear. It spreads quickly to form dense thickets that exclude native vegetation and greatly alter natural ecosystems. Japanese knotweed poses a significant threat to riparian areas, where it can survive severe floods and rapidly colonize scoured shores and islands. Once established, populations are extremely persistent.	• Mechanical Control o Hand pull young plants; remove all roots and runners to prevent re-sprouting. o Cut all stems and cover with black plastic. • Chemical Control o Apply herbicides to foliage in May when stems are 3 feet tall and again in mid-summer. Apply last round in fall if needed. o Cut stem and drip in herbicide. Done between August and September.
	**Purple Loosestrife**  *Lythrum salicaria*	Purple loosestrife invades fields, marshes, and bogs. It is easy to see in the summer when the showy purple blooms are present. Purple loosestrife is an erect perennial herb growing to a height of 3-10 ft. Mature plants can have 1 to 50 4-sided stems that are green to purple and often branching, making the plant bushy and woody in appearance. Leaves are opposite or whorled and lance-shaped. Plants are usually covered by a downy pubescence. Magenta colored flowers with 5 to 7 petals bloom from June to September.	As the leaves decompose in water, they secrete high levels of tannic acid. High mortality rates in American toad tadpoles have been a result of this highly acidic environment. Purple loosestrife does not support as many insect species as native plants. Birds can no longer find the food sources or quality nesting habitat that they once could find in wetlands that lacked loosestrife. Loosestrife outcompetes native species.	• Mechanical Control o Hand pull slowly to remove all of the roots. o Break off flower heads before they go to seed. o Put pulled/discarded vegetation in plastic garbage bag to decompose. • Chemical Control o The controlled release of the Galerucella spp. beetle has shown to be effective and has no known negative ecological side effects. Herbicide use can be effective but must be labeled for wetland use.
	**Wild Chervil**  *Anthriscus sylvetris*	Wild chervil is a biennial or short-lived perennial in the carrot family. It grows 3 to 4 ft. on average but can grow over 6 ft. in height. Stems are hollow-branched and hairy, especially near the base. Fern-like leaves are nearly hairless and pinnately compound with leaf bases surrounding the stem. Leaves form a basal rosette the first year. White flowers, that bloom from late May to early July of the second year, have 5 petals produced in umbels at the top of stems. Each flower produces 2 joined shiny brown seeds with small antenna-like structures at the top. Chervil is lacking the unique curved bracts at the base of each umbel which is found on wild carrot. This plant may irritate the skin of some individuals so use caution when coming into contact with it.	Wild chervil propagates by both seed and by lateral budding at the top of the root. It competes aggressively with forage crops for light, water, and nutrients and often kills off the surrounding native vegetation by shading it. It is particularly damaging to forage crops but has not been a problem in cultivated or tilled fields.	• Mechanical Control o Tap roots are up to 6 feet deep so pulling is extremely difficult. Mowing before seed set will eliminate propagation but have no impact on vegetative spread from root buds. Mowing can deplete root reserves if done repeatedly before seed set. • Chemical Control o There has been limited research evaluating herbicide use on wild chervil, though a study done in 1997 in Nova Scotia showed good control when there was a combination of pre-bloom mowing and herbicide application.
	**Wild Parsnip**  *Pastinaca sativa*	Wild parsnip is an upright herbaceous plant in the carrot family, growing 4 or more ft. in height. Seedlings emerge from February through April, from rosettes, and grow vegetatively for one or more years before they form an aerial shoot (bolt) and flower. Rosettes bear upright leaves averaging 6 inches in height. Leaves are pinnately compound and leaflets are oval to oblong, hairless with saw-toothed edges, and arranged in pairs along the stalk. Hundreds of small yellow flowers are produced on each plant and bloom from June to mid-July. Large yellow seeds are round, flat, and slightly ribbed. Wild parsnip contains a chemical called psoralen which causes humans to develop a skin irritation from contact with its leaves. This reaction is enhanced upon exposure of the effected skin area to sunlight.	During much of July, wild parsnip is one of the dominant yellow-flowered weeds in many roadsides and other rights-of-way, fence rows, and poorly managed pastures. Plants are most abundant in sites dominated by perennial grasses that are mowed once or twice annually.	• Mechanical Control o Any operation that results in severing of the root below the root crown will kill wild parsnip plants. This can be done by hand pulling plants or by slicing below the crown with a shovel. Mowing plants is effective at preventing seed production if conducted at the appropriate time (bolting to flower bud stage), but if flowers or fruit (seeds) are present, mowing may facilitate further spread of this species. • Chemical Control o If possible, plan on spring or fall herbicide applications to rosette plants as results are typically the best and damage to desirable plants can be minimized.

Invasives chart created by Sam Schneski,
Windham and Windsor County Forester.
Vermont Department of Forests, Parks and Recreation.
www.vtfpr.org
www.vermontwoodlands.org

Sources:
- Invasive.org. “Invasive Species 101 - An introduction to Invasive Species”, http://www.invasive.org/101/index.cfm, (February 28, 2009)
- New England Wildflower Society. “Plant Identifier New England: Woody Plants”, http://flora.newenglandwild.org:8080, (2009)
- The National Park Service Plant Conservation Alliance. “Plant Conservation Alliances Alien Plant Working Group, Least Wanted Alien Plant Invaders of Natural Areas: Fact Sheet”, http://www.nps.gov/plants/alien/fact.htm, (April 19, 2010)
- The Nature Conservancy. “Spreading the Word About Invasive Plants, New Wise on Weeds! Program in Vermont” http://www.nature.org/wherewework/northamerica/states/vermont/volunteer/art21110.html, 2010)
- United States Fish and Wildlife Service: National Wildlife Refuge System. “Managing Invasive Plants: Concepts, Principles, and Practices”

Safe Chemical Application:
- ***Develop an integrated plant management approach:*** Use chemical control as only ONE piece of your prevention and management strategy.
- ***The label found on the herbicide container is the law:*** It indicates the concentrations to use, what protective clothing to wear, how to apply the product, and what environmental and human health hazards are associated with the chemical.
- ***Use aquatic formulations within ten feet of water:*** Contact VT DEC at 802-241-3761 for more information.
- ***You need to be certified to apply herbicides on land that you do not own.***
- ***Hire a contractor to manage large infestations:*** For a list of certified contractors, contact the Vermont Department of Agriculture at 802-828-3482.
From: www.nature.org/vemont/weeds.