Invasive Plant Inventory, Monitoring, and Mapping Protocol

Allegheny National Forest
August 26, 2002

Garlic mustard *Alliaria petiolata*

Description: Originally form Europe, garlic mustard is a cool season biennial herb in the mustard family (Brassicaceae). The leaves are stalked, alternate, triangular to heart-shaped, coarsely toothed, and give off an odor of garlic when crushed. First-year plants appear as a rosette of scallop edged, kidney-shaped leaves close to the ground. Rosettes remain green through the winter and develop into mature flowering plants the following spring. Flowering plants of garlic mustard reach from 2 to 3-1/2 feet in height and produce buttonlike clusters of small white flowers, each with four petals in the shape of a cross. Fruits are slender capsules 1 to 2.5 inches long that produce a single row of oblong black seeds with ridged seed coats. The seeds are viable for up to 6 years, with a single plant producing over 500 seeds.

Habitat and Distribution: Garlic mustard grows in rich moist upland forests and on wooded streambanks. It is shade tolerant and readily invades disturbed areas such as roadsides and trail edges. Garlic mustard cannot tolerate acidic soils, including undrained peat or muck. Distribution covers much of the eastern and midwestern U.S.

Methods of Reproduction and Dispersal: Reproduction is primarily by seed. Seeds are dispersed in late summer but do not germinate until the second spring due to their long dormancy period (20 months).

Ecological Threat: Garlic mustard is one of the few invasive plants that dominate the understory of forested areas by growing during early spring when native species are dormant. Prolific seed production and lack of natural predators allow it to quickly dominate the herbaceous layer. Dispersal of the tiny seeds is primarily through human activities and other animals. In stands dominated by garlic mustard, studies have shown that total perennial cover declines by 33-46%. Garlic mustard is also thought to exhibit allelopathic properties (the ability of a plant to inhibit growth of neighboring plants through chemical release) which enhances its prolific spread.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Plant Conservation Alliance: www.nps.gov/plants/index.htm

Purple Loosestrife *Lythrum salicaria*

Description: Originally from Europe, purple loosestrife is an erect perennial herb in the loosestrife family, with a square, woody stem and opposite or whorled leaves. Leaves are lance-shaped, stalkless, smooth margined, and heart-shaped or rounded at the base. Plants are usually covered by dense velvety hairs. Loosestrife plants grow from four to ten feet high, depending upon conditions, and produce a showy display of magenta-colored flower spikes throughout much of the summer. Flowers have five to seven petals. Mature plants can have from 30 to 50 stems arising from a single rootstock.

Habitat and Distribution: Purple loosestrife is capable of invading many wetland types, including freshwater wet meadows, tidal and non-tidal marshes, river and stream banks, pond edges, reservoirs, and ditches. According to the U.S. Fish and Wildlife Service, purple loosestrife now occurs in every state except Florida.

Methods of Reproduction and Dispersal: Purple loosestrife has an extended flowering season, generally from June to September, which allows it to produce large quantities of seed. The flowers require pollination by insects, for which it supplies an abundant source of nectar. A mature plant may have as many as thirty flowering stems capable of producing an estimated two to three million, minute seeds per year. Seeds remain viable in the seed bank for a number of years and can germinate over a wide range of environmental conditions. Purple loosestrife also readily reproduces vegetatively through underground stems at a rate of about one foot per year. Many new stems may emerge vegetatively from a single rootstock of the previous year.

Ecological Threat: Purple loosestrife adapts readily to natural and disturbed wetlands. As it establishes and expands, it outcompetes and replaces native grasses, sedges, and other flowering plants that provide a higher quality source of nutrition for wildlife. The highly invasive nature of purple loosestrife allows it to form dense, homogeneous stands that restrict native wetland plant species, including some federally endangered orchids, and reduce habitat for waterfowl. Plants are very resilient to management and can withstand cutting, crushing, and burning.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
USDA Plants Profile http://plants.usda.gov
Invasive Plants of Canada: http:// infoweb.mafi.com/~ehaber/ipcan.html

Glossy or Smooth Buckthorn *Rhamnus frangula*
Common Buckthorn *Rhamnus cathartica*

Description: Originally from Europe, glossy and common buckthorns are deciduous shrubs or small trees with thorny branches. Plants can grow to 20-25 feet high, and produce abundant black fruit that are eaten and dispersed by birds. Their bark is gray to brown with prominent, often elongate, lighter-colored lenticels. Cutting a branch of either species exposes a yellow sapwood and a pinkish to orange heartwood.

•**Common buckthorn:** Leaves are green, smooth, oblong, slightly toothed, and opposite in arrangement. Flowers from May through June and fruit ripens August through September

•**Glossy buckthorn:** Leaves are green, glossy, elliptical, round-toothed, hairy on the underside, and alternate in arrangement. Flowers from late May until the first frost and produces fruit from early July through September.

Methods of Reproduction and Dispersal: Both buckthorns are characterized by long distance dispersal ability, prolific reproduction by seed, and wide habitat tolerance. Under full sun conditions, they can begin to produce seed a few years after establishment. Fruit production may be delayed for 10 to 20 years in shaded habitats. The abundant fruits are eaten birds, thus encouraging long-distance dispersal. Seedlings establish best in high light conditions, but can also germinate and grow in the shade. The exotic buckthorns have very rapid growth rates and resprout vigorously after they have been cut. Typical of several non-native understory shrub species, buckthorns leaf out very early and retain their leaves late in the growing season, thereby shading out native wildflowers.

Habitat and Distribution: Both species are tolerant to stress and drought, and can grow with very little soil. They have become naturalized in the northern U.S.. Common buckthorn is a problem species mainly in the understory of southern oak, oak-beech, maple, and riparian woods, prairies, and savannas. It aggressively competes with local flora, mainly on well-drained soils. Glossy buckthorn is an aggressive invader of wet soils. It has become a problem in wetlands as varied as acidic bogs, calcareous fens, and sedge meadows. It is capable of growing both in full sun and in heavily shaded habitats. The species is not confined to wetlands, however, and grows well in a wide variety of upland habitats, including old fields and roadsides. Neither species is adversely affected by nutrient-poor soils.

Ecological Threat: Invasive, especially in calcareous soils where they replace woodland wildflowers and can change the structure of the plant community. They thrive in disturbed habitats, and establish in suitable natural areas. Plants invade selectively cut or grazed woods, and impede natural succession by forming dense monotypic thickets. Although their aggressively invasive growth patterns have created problems in many areas, exotic buckthorns are still legally sold and planted as ornamentals.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Wisconsin Dept. of Nat. Res.: www.dnr.state.wi.us

Common Reed *Phragmites australis*

Description: Native to North America, common reed is a tall perennial wetland grass ranging in height from three to 13 feet. Horizontal stems (rhizomes) give rise to annual erect shoots that support broad sheath-like leaves up to 2 feet long. Leaves are arranged alternately along the top half of the stem and are stiff and sharp, due to a high content of cellulose and silica. In mid-summer common reed produces a large, silky inflorescence that grows at the tops of the stems and drape to one side. A typical inflorescence may be one to two feet long, and several inches wide.

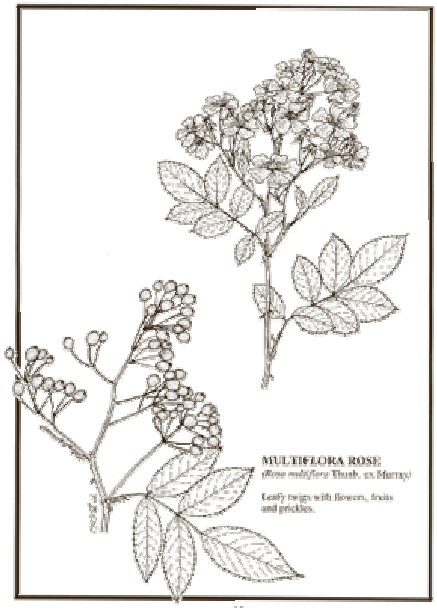
Habitat and Distribution: Common reed thrives in sunny wetland habitats. It is commonly found in the moist soil of shallow brackish and freshwater marshes. It also grows along riverbanks and lakeshores, and can form floating mats in deeper waters. This species is prevalent in the disturbed and degraded soils found along roadsides, ditches and dredged areas. High salinity limits its growth. Distribution is widespread throughout the U.S.

Methods of reproduction and Dispersal: Common reed spreads rapidly through prolific seeds and underground root systems called rhizomes. Rhizomes can live for 3 to 6 years and grow horizontally underground for 3 feet or more before rising vertically to become an above-ground shoot. Rhizome fragments are dispersed by water, animals, and construction equipment.

Ecological Threat: Although common reed is a native American plant its invasive characteristics can rapidly replace other desirable vegetation. Invasive stands can quickly replace desirable wetland species such as wild rice, cattails, and native wetland orchids. Monocultures as large as 7,000 acres have been documented.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
University of Fl. Center for Aquatic and Invasive Plants: http://aquat1.ifas.ufl.edu
Invasive Plants of the Southern Tier: USFS Region 9 by Carol Estes Mortensen

Multiflora Rose *Rosa multiflora*



Description: Originally from Asia, mulitflora rose is a large spreading shrub that reaches heights of up to 15 feet. Branches are arching and covered with numerous sharp thorns. Leaves are alternate on the stem and compound with 5 to 7 toothed leaflets. Flowering occurs in the late spring with showy white or pink blossoms occurring in clusters along branches. By autumn the flowers have developed into small, red, oval, hard fruits (rose hips) that remain on the plant throughout the winter.

Habitat and Distribution: Multiflora rose has a wide tolerance for various soil, moisture, and light conditions. It occurs in dense woods, prairies, along stream banks and roadsides and in open fields and pastures. It occurs extensively throughout the northeastern U.S.

Methods of Reproduction and Dispersal: Individual plants may produce up to 500,000 seeds per year. The majority of seedlings emerge near the parent plant from which the seeds fell. In addition, many species of birds and mammals feed on the hips, dispersing the seeds widely. The canes are also capable of rooting when in contact with soil.

Ecological Threats: Multiflora rose spreads quickly, forming impenetrable thickets that exclude native plant species. It invades areas that have been subjected to land disturbance, and impedes natural succession. Studies have show that it is highly competitive for soil nutrients, and it has lowered crop yields in adjacent field plantings.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Wisconsin Dept. of Nat. Res: www.dnr.state.wi.us
Missouri Vegetation Management manual: http://www.conservation.state.mo.us/nathis/exotic/vegman/index.htm

Honeysuckles *Lonicera spp.*

While there are some native, noninvasive honeysuckles, many of the honeysuckles that we frequently encounter are species that were introduced, have become naturalized and exhibit invasive characteristics. Among the invasive honeysuckles in the northeast are: Japanese honeysuckle (L. japonica), amur honeysuckle (L. maackii), morrow's honeysuckle (L. morrowii), tatarian honeysuckle (L. tatarica), and bell's honeysuckle (L. x bella). Most invasive honeysuckles are originally from Asia.

Description: Deciduous shrubs reaching heights of up to 20 feet. Leaves are opposite and oval, usually with soft hairs covering the top and or underside. Most nonnative species leaf out before native honeysuckles, making it easy to differentiate the groups. Flowers are white, yellow, or pink with long narrow petals. Fruits are bright red or orange fleshy berries that are readily dispersed by birds.

Habitat and Distribution: Non-native honeysuckles are relatively shade intolerant. They typically occur in forest edges, pastures, abandoned fields, disturbed woodlots, and other open and disturbed habitats. Morrow's honeysuckle is known to invade fens, bogs, and lakeshores. Honeysuckles are widespread throughout 24 of the eastern states.

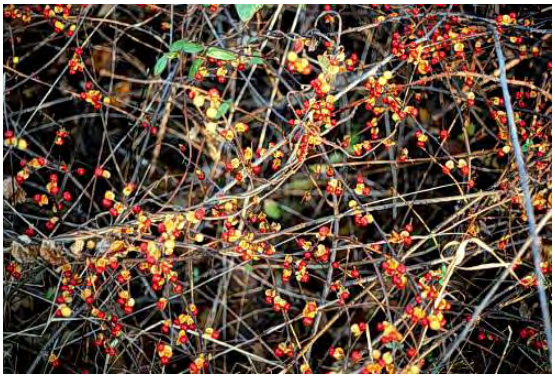
Ecological Threat: Bush honeysuckles can rapidly invade a site by forming a dense shrub layer that suppresses native woody and herbaceous plants. Leaves emerge on honeysuckles during early spring, and foliage remains until November. Infestations of the plants lead to a decrease in available light and a reduction in soil moisture and nutrients. Honeysuckles may also release toxic chemicals into the soil that inhibit the growth of adjacent native plants (allelopathy).

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html

Plant Conservation Alliance: www.nps.gov/plants/index.htm

Invasive Plants of the Southern Tier: USFS Region 9 by Carol Estes Mortensen

Oriental Bittersweet *Celastrus orbiculatus*



Description: Originally from China and Japan, oriental bittersweet is a deciduous woody vine with alternate leaves that are glossy green, round, and toothed. The vine has a twining or trailing growth pattern, with constricting and girdling stems that can reach 4 inches in diameter. Flowers are greenish-yellow in color, and are produced in the leaf axils. In autumn thick yellow capsules open to display a bright red fleshy fruit that persists through most of the winter. It is often confused with American bittersweet which has flowers at stem tips and leaves that are longer and more pointed.

Methods of Reproduction and Dispersal: An extremely invasive plant that reproduces by seeds, above ground stems (stolons), below ground stems (rhizomes) and shoots from the roots (root-suckering). Birds show a preference for the fruits over native bittersweet because they are brighter and more numerous. This leads to increased dispersal of Oriental bittersweet over American bittersweet (*Celastrus scandens)*.

Habitat and Distribution: In the northeastern U.S., exotic Oriental bittersweet appears to be displacing the native American bittersweet, which occurs in similar habitats, through competition and hybridization. It prefers open sites such as road sides, hedgerows, and thickets but also persists in shaded forested areas. Distribution is throughout most of the northeast, south to Georgia and west to Iowa.

Ecological Threat: Dense stands of vines can shade and suppress native vegetation. Its climbing habit kills nearby plants by preventing photosynthesis, constricting stems, and uprooting plants. Once established, it is very difficult to control.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Plant Conservation Alliance: www.nps.gov/plants/index.htm

Japanese knotweed *Polygonum cuspidatum*
Giant Knotweed *Polygonum sachalinense*

Japanese knotweed plant in flower

Description: Originally from Asia the knotweeds are herbaceous perennials with upright jointed stems and alternate thick leaves. Stems are hollow, bamboo-like, and remain upright through the winter giving a woody appearance.

•**Japanese knotweed:** Height of 3-6 feet tall. Leaves are oval to rounded with a flat base. Small greenish-white flowers occur in clusters out of leaf axils in late August to September. Flowers increase in size with maturity.

•**Giant knotweed:** Similar appearance to Japanese knotweed, but taller (up to 12 feet or taller) and larger leaves (up to 1 foot long). Leaves have a heart-shaped base rather than flat. Flowers are smaller than Japanese knotweed and do not increase in size with maturity.

Methods of Reproduction and Dispersal:
Reproduction can be by seed but is primarily by rhizomes, which may reach a length of 40 to 60 feet. These buried rhizomes are very tough and have been known to grow through 2 inches of asphalt. Small fragments of rhizome can be dispersed long distances by water or animals.

Leaves of Giant knotweed

Habitat and Distribution: Giant knotweed shares habitat with Japanese knotweed. Both species are found along stream banks, in moist waste places, neglected gardens, roadsides, and railroad right-of-ways. Japanese knotweed has become naturalized in North America, where it is found from Newfoundland and many parts of the northeastern U.S., and west to California and the Pacific Northwest. Giant knotweed is also found throughout the U.S..

Ecological Threat: Japanese and giant knotweed are very aggressive plants that are capable of crowding out all other vegetation, degrading native plant and animal habitat. They are difficult to control because of their extremely vigorous rhizomes that form a deep, dense mat. In addition, plants can resprout from fragments; along streams, plant parts may fall into the water to create new infestations downstream.

Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Washington Dept. of Ecology: www.esy.wa.gov/programs/wq/links/plants.htm
Wayne National Forest: http://www.fs.fed.us/na/morgantown/fhp/palerts/jknot/jknot.htm
Washington State Noxious Weed Control Board: http://www.wa.gov/agr/weedboard/weed_info/gknotweed.html

Musk or Nodding Thistle *Carduus nutans*
Plumeless or Bristly Thistle *Carduus acanthoides*
Bull Thistle *Cirsium vulgare*
Canada Thistle *Cirsium arvense*

Many of the thistles that are abundant and familiar to us are nonnative invasive species that have become problematic in many areas. There are however native thistles (yellow thistle, field thistle, tall thistle, swamp thistle) that occur in smaller populations and are not invasive. Many thistles are difficult to identify to species and therefore careful identification is necessary to distinguish between natives and nonnatives.

Description: Most invasive thistles are originally from Eurasia. Thistles are herbaceous biennials of the aster family.

•**Musk thistle:** Reaches heights of up to 7 feet with a rosette of sharply lobed basal leaves with spiny tips, and a thick spine covered stem except below the flower head. Leaves are increasingly smaller as they extend up the stem. The pink to purple flower head is a cluster of hundreds of individual flowers with rows of broad spine tipped bracts below. The prickly flower head droops, or "nods" at maturity giving the plant its common name.

•**Plumeless thistle:** Often confused with musk thistle but has smaller flower heads that don't droop and the flower stalks are spiny right to the base of the flower head.

•**Bull thistle:** Also a biennial with prickly, winged stems. The leaves are coarse and spiny above with wooly white hairs below. A purple "brush" of flowers emerges from a spiny green ovoid base.

Habitat and Distribution: These thistles are most commonly found in disturbed areas such as pastures, roadsides, waste areas, and ditch banks. They are also a problem in prairies, old fields, and hay fields. Musk thistle is a particularly pervasive weed, reported in 42 states and listed as noxious in 16.

Methods of Reproduction and Dispersal: Thistles are usually biennial, requiring two years to complete their life cycle. During the second year flower heads are produced with up to 100,000 seeds produced per plant. These tiny seeds are dispersed long distances by wind and can remain viable up to 10 years, making it difficult to completely remove the plants from a site.

Ecological Threat: These thistles typically do not pose a great threat to high quality natural areas, although they have been known to invade native and restored grasslands despite the presence of dense, native prairie vegetation. Glade communities are also likely areas for thistle establishment. These species are very aggressive in disturbed areas, and can pose a major problem in buffer and restoration areas. Control of these thistles is important before beginning a prairie restoration.

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Plant Conservation Alliance: http://www.nps.gov/plants/alien/fact/canu1.htm
Invasive Plant Council of New York State: www.ipcnys.org/ipc_twentybt.html
Invasive Plants of the Southern Tier: USFS Region 9 by Carol Estes Mortensen
Wisc. Dept. of Nat. Res.: http://www.dnr.state.wi.us/org/land/er/invasive/factsheets

Autumn Olive *Elaeagnus umbellata*

Description: Native to Asia autumn olive is a medium to large shrub, reaching heights of 20 feet. The leaves, are alternate on the stems, are generally oval in shape, approximately 1-3 inches (2.5-7.5 cm) long, and have a smooth margin. The upper surface of leaves is dark green to grayish-green, and the lower surface is covered with silvery white scales, a conspicuous characteristic that can be seen from a distance. The small light yellow flowers bloom in late April and May after the first leaves have appeared. Flowers and fruits, when present, are borne along twigs. The small (less than 1/4 inch) fleshy fruits range in color from pink to red and are produced in abundance each year. This species is similar to Russian olive but the leaves of Russian olive are longer and more narrow, and are much more silvery in appearance.

Habitat and Distribution: Autumn olive has nitrogen-fixing root nodules which allow it to thrive in poor soils, such as abandoned fields, pastures, and roadsides. It is rarely encountered in dense forests or on very wet sites. In the eastern and central United States, autumn olive has been planted primarily to provide food and cover for wildlife but also as screens and barriers along highways, to stabilize and revegetate road banks, and to reclaim mine spoil. It has since escaped cultivation and become naturalized in much of the northeast.

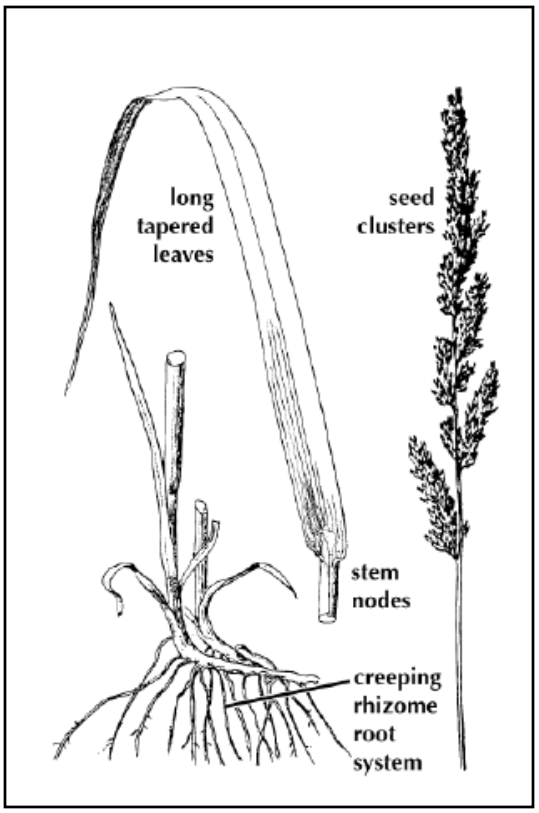
Reproduction and Dispersal: Autumn olive seeds are dispersed by birds over long distances. It also reproduces vegetatively when cut or burned.

Ecological Threat: In addition to its prolific fruiting, seed dispersal by birds, rapid growth and ability to thrive in poor soils, autumn olive resprouts vigorously after cutting or burning. It creates heavy shade which suppresses plants that require direct sunlight.

Virginia Natural Heritage Program: http://www.vnps.org/invasive/inveleag.htm

Illinois Nature Preserves Commission: http://www.inhs.uiuc.edu/edu/VMG/autolive.html

Reed Canary Grass *Phalaris arundinacea*



Description
This perennial grass is a native species but aggressively invasive possibly due to selective cultivation for vigorous growth. This large, coarse grass has erect, hairless stems, usually from 2 to 6 feet tall. The gradually tapering leaf blades are 3 1/2-10 inches long, 1/4-3/4 inch wide, flat, and often harsh on both surfaces. The compact flowers are erect or sometimes slightly spreading and range from 3-16 inches. Single flowers occur in dense clusters in May to mid-June or August and are green or slightly purple at first, then become tan. The species growth form is highly variable. It is extremely difficult, if not impossible, to distinguish the native and non-native ecotypes. Reed canary grass closely resembles orchard grass (*Dactylis glomerata*). It differs from orchard grass in that reed canary grass's leaves are much wider, the inflorescence is more narrow and pointed, and the individual flowers have a different shape. Reed canary grass should be accurately identified before attempting any control measures.

Habitat and Distribution: Common along waterways and in meadows, wet prairies, stream banks, lower valleys, rivers and pond banks, and along drainage ditches. Distributed throughout most of the U.S. except southern states.

Ecological Threat: A very aggressive species that is highly competitive with other plants. It begins growth in early spring, grows vertically for 5-7 weeks, and then begins to spread laterally. It poses a major threat to many wetland areas because of its persistence and rapid growth. It may inhibit growth of other species for 3-5 months, eventually eliminating these species and creating monocultures. It is of particular concern because of the difficulty of selective control.

Northern Prairie Wildlife Research Center**:** http://www.npwrc.usgs.gov/resource/othrdata/explant/phalarun.htm
King County Natural Resources and Parks: http://dnr.metrokc.gov/wlr/waterres/smlakes/reed.htm
Invasive Plants of the Southern Tier: USFS Region 9 by Carol Estes Mortensen
Illinois Nature Preserves Commission: http://www.inhs.uiuc.edu/edu/VMG/rcanarygr.html

Spotted knapweed *Centaurea maculosa*

Description: Native to Europe spotted knapweed is a biennial or short-lived perennial herb that ranges between 1-3 feet in height, with erect branches that are roughly ridged. Leaves are divided into narrow feather-like segments, with basal rosette leaves measuring approximately 6 inches long. Solitary thistle-like flowers form on the tips of branches. Flowers are typically purple-pink, though cream-colored flowers do occur. A single plant can produce 25,000 seeds that are viable for up to 8 years.

Habitat and Distribution: Like most invasive plants, spotted knapweed rapidly colonizes disturbed sites such as roadsides, pastures, and parking areas. Due to its thick deep taproot, it is able to grow on dry, gravelly, sandy sites. An early successional species, it favors open areas and is not tolerant of shade. Distribution is widespread and problematic throughout much of the U.S.

Methods of Reproduction and Dispersal: A single plant can produce between 400 and 25,000 tiny seeds. These tiny seeds are easily dispersed by humans, wildlife, and vehicles over long distances.

Ecological Threat: Spotted knapweed rapidly colonizes disturbed areas, leading to a decline in native vegetation. Chemicals present in kanpweed's foliage and roots are effective at retarding the root growth of surrounding plants (allelopathy). The thick taproot is highly efficient at drawing up water and nutrients from the soil, making them unavailable to other plants. At the same time the deep tap root is a poor soil anchor, and studies have shown higher erosion on infested sites. It is unpalatable to grazing animals and has few natural predators.

Virginia Native Plant Society: http://www.dcr.state.va.us/dnh/fscema.pdf

Conservation New England: http://omega.cc.umb.edu/~conne/jennjim/centaurea.html

Wild Ones - Michigan Chapters: http://www.for-wild.org/michigan/spottedknapweed.html

Japanese barberry *Berberis thunbergii*

Description: Native of Japan this dense, thorny shrub grows 2 to 3 feet tall with abundant red berries. Leaves are semi-evergreen, grow in alternate clusters, and range in color from from burgandy to bright green. Yellow flowers bloom in May, are about one third of an inch wide, and are solitary or in small clusters of 2-4 blossoms. The bright-red fruits mature in mid-summer and hang from the bush during autumn and into winter. The berries are small, oblong, and found singly or in clusters. Several cultivars of this species are sold as ornamentals.

Methods of Reproduction and Dispersal: The plant reproduces from prolific seeds, rhizomes, and layering. Seeds have a germination rate as high as 90%. Birds and rabbits are known to eat the seeds and distribute the species. Branches root freely when they touch the ground; thus allowing single plants to become quite large. Japanese barberry competes poorly with grasses and may succumb to drought conditions.

Habitat and Distribution: Japanese barberry prefers well-drained soils, although it has been found in wet, calcareous situations, (specifically in a black ash swamp).It grows mainly in woodlands under closed canopy. It is shade tolerant, and extensive populations can establish in a short time under forest cover.

Ecological Threat: This plant is often sold as an ornamental but can escape cultivation and become a problem in wooded areas because its dense cover shades out native understory herbs. In areas with alkaline soil, it can become a dominant in open pastures. Cows and deer only browse early spring growth, and established plants have no natural predators to keep it under control.

Invasive Plant Council of New York State: http://www.ipcnys.org/ipc_twentyjb.html
Wisconsin Dept. of Nat. Res.: http://www.dnr.state.wi.us/org/land/er/invasive/factsheets/