

CLEAR THE FIELD

SOLITAIRE GAME
CHALLENGING
1 PLAYER

OBJECT

Remove as many invasive species as possible from the playing field.

WILDCARDS

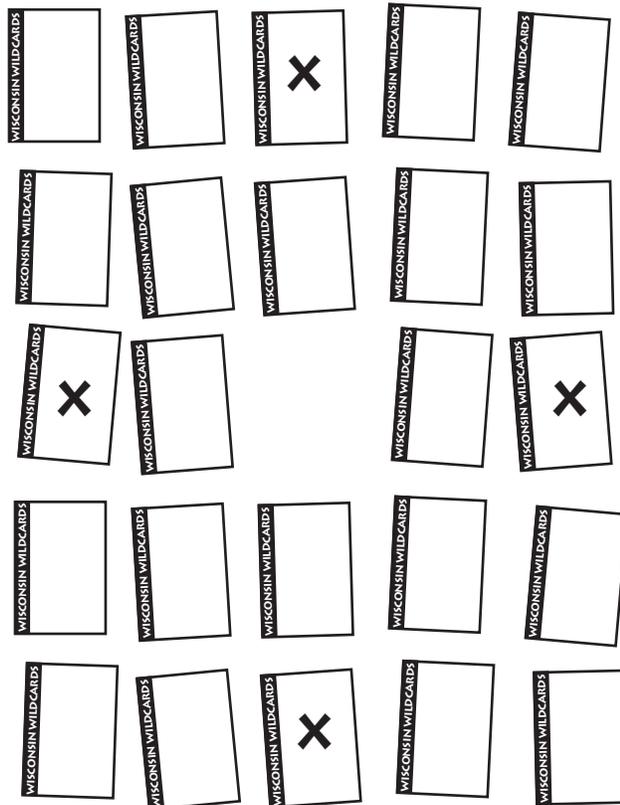
24 **Alien Invaders: Plants** (It doesn't matter if there are duplicates or uneven numbers of different cards!)

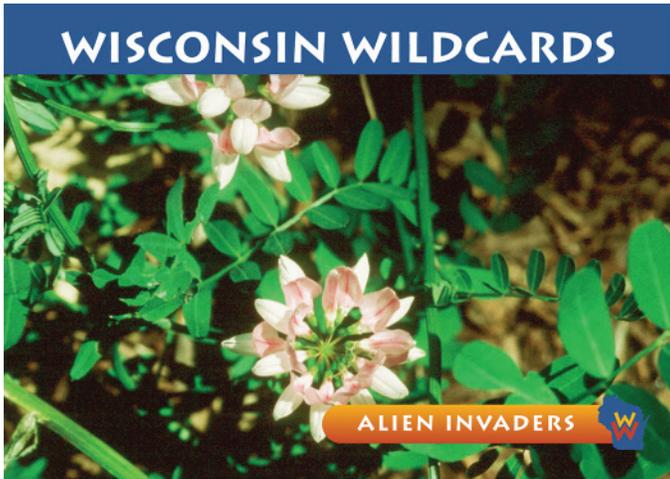
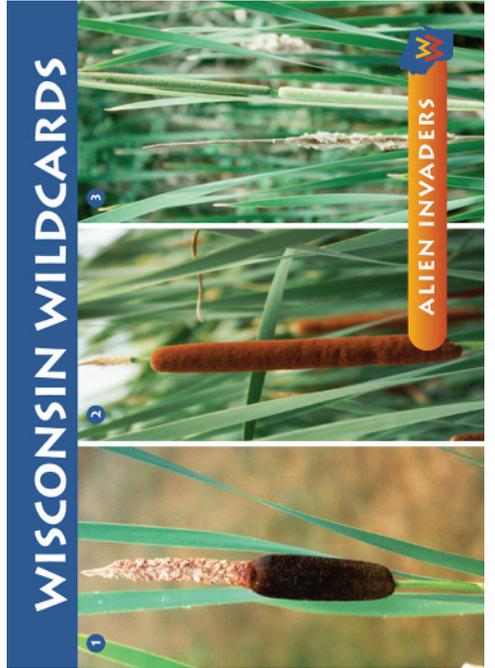
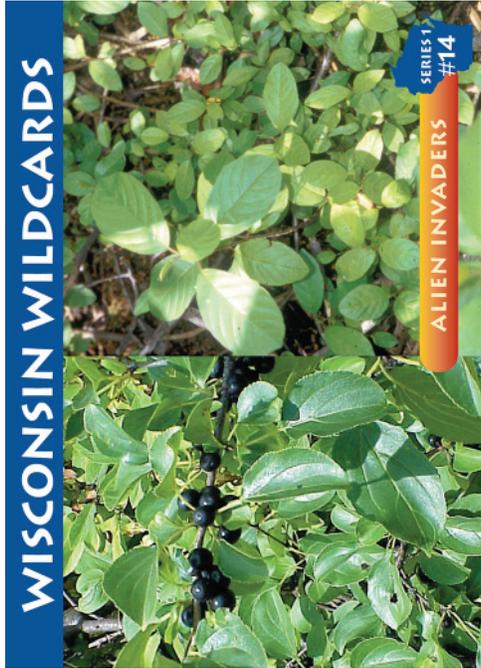
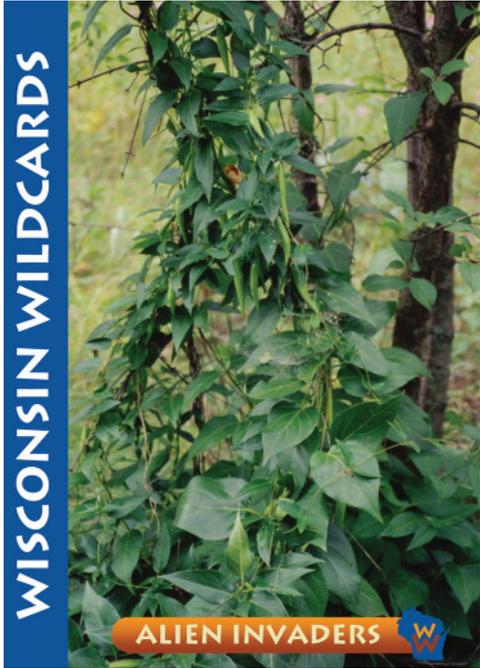
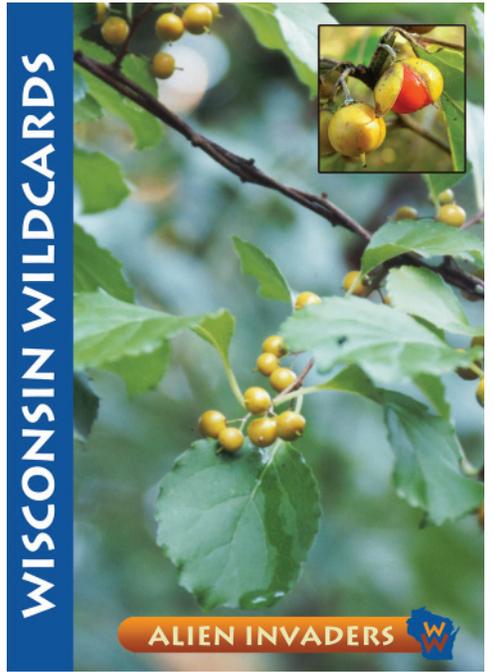
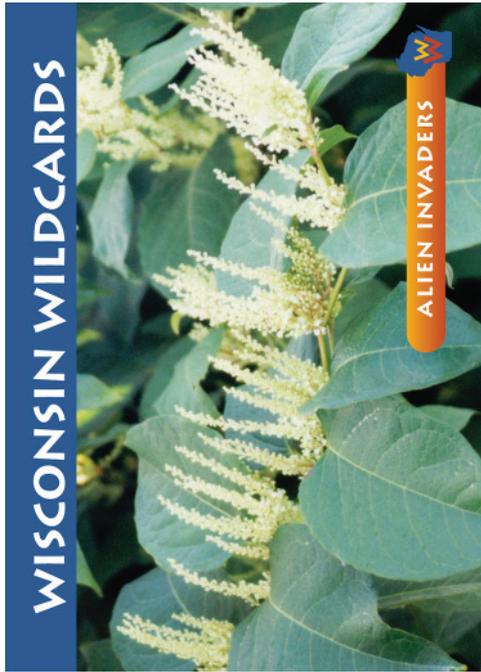
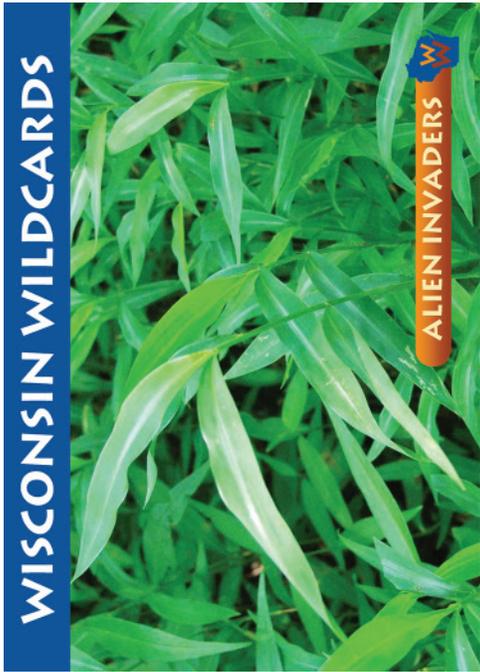
DEAL

Place 24 cards on the table. See diagram.

PLAY

Pick up one of the cards marked with an "X." Put it in the empty space in the center and remove the card that you jumped. Then, continue jumping any other card over another into an empty space, removing the card you jump each time. You can jump up, down, and sideways, but not diagonally. If you can finish with only one card left, you rule with cards. Now, get out there and remove some **real** invasive species!





ORIENTAL BITTERSWEET

Celastrus orbiculatus

BASIC ID

This woody vine has rounded leaves and fruits appear in clusters of 2-4 in leaf axils. When ripe, the yellow outer membrane splits exposing a reddish-orange fruit. Stems can reach up to 4" in diameter. Native bittersweet has longer, tapered leaves and larger clusters of red fruits at the end of stems.

FACTS

Native to Asia, this vine starts by smothering the ground layer vegetation and climbs trees, sometimes pulling them down. It can be found in grasslands, roadsides, and forests and can hybridize with American bittersweet posing genetic risk.

MANAGEMENT

- Apply herbicide to cut stems
- Hand pull seedlings or small infestations
- Apply foliar herbicide after first hard frost
- Monitor for regrowth

FOR MORE INFORMATION
<http://dnr.wi.gov/invasives>

Photo: Elizabeth J. Czarapata,
Debbie Maurer (insert)
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PUB-FR-479 2011



JAPANESE KNOTWEED

Polygonum cuspidatum

BASIC ID

This herbaceous perennial has hollow, bamboo-like stems, heart-shaped leaves and greenish-white flowers. It forms large clones that range in height from 4' to 10' and can cover several acres. It spreads vegetatively through long rhizomes.

IMPACTS

Originally from Japan, this plant invades stream banks, lakeshores, wetlands, grasslands, and woodlands. Emerging early and growing tall, it prevents sunlight from reaching native plants.

MANAGEMENT

- Small stands—cut repeatedly over many years
- Large stands—spray new foliage with herbicide

FOR MORE INFORMATION

www.dnr.state.wi.us/org/land/er/invasive

Photo: Elizabeth Czarapata
Recycled paper



ER-106V 2003



JAPANESE STILT GRASS

Microstegium vimineum

BASIC ID

This annual grass looks like a delicate bamboo and can grow up to 3' tall and form dense mats. The stripe of silvery hairs along the midrib of the upper leaf is distinctive. 1"-3" flower spikes appear in September and it sets seed by October.

FACTS

This native of Asia has high seed potential and prefers moist soils in disturbed areas such as floodplains, riverbanks, roadsides, and moist woodlands where the seeds are easily dispersed by water. This presents a major threat to native riparian and forest vegetation.

MANAGEMENT

- Hand pull small populations or mow when blooming before seeds set.
- Herbicide application

FOR MORE INFORMATION
<http://dnr.wi.gov/invasives>

Photo: Luke Flory, Indiana University
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PUB-FR-478 2011



CAT-TAILS

Typha species

BASIC ID

These perennial aquatic plants can grow up to 10'. *Typha latifolia* (1), the broad-leaved cat-tail, has pale green leaves about 3/4" wide. Leaves of *T. angustifolia* (3), the non-native narrow-leaved cat-tail, are deeper green and about 1/4" wide. *T. x glauca* (2) is a hybrid, blending the characteristics of *T. latifolia* and *T. angustifolia*. For the non-native species there is a gap between the upper male and lower female spike.

IMPACTS

Only *Typha latifolia* is native here. All species can be aggressive because of their abundant seeds and rhizomes, but the non-native species present the greatest threat. They can dominate shorelines, ditches and wetlands and crowd out other plants important to fish and wildlife.

MANAGEMENT

- Fluctuate water levels
- Cut, graze, or burn and apply selective herbicides

FOR MORE INFORMATION

www.dnr.state.wi.us/org/land/er/invasive

Photo: (R) Kelly Kearns
(M, L) Elizabeth Czarapata
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ER-106X 2003



COMMON BUCKTHORN & GLOSSY BUCKTHORN

Rhamnus cathartica & *Rhamnus frangula*

BASIC ID

Both shrubs can reach 20' tall and have dark bark with silvery marks called lenticels. Common has dull, green, toothed-edged leaves and female plants have dark fruits in fall and winter. The Glossy's leaves are untoothed and shiny on top.

HISTORY

Native to Eurasia, both were introduced in North America as ornamentals. Well-established and spread by seed in WI, they form dense thickets in southern woodlands.

MANAGEMENT

Cut and apply herbicide to trunk in late summer through late winter.

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives/>

Photos: (L) Joanne Kline,
(R) Kelly Kearns, WI DNR
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FR-218n 2008



BLACK SWALLOW-WORT

Vincetoxicum nigrum

BASIC ID

This perennial vine can twine 3'-6' high with dark green, oval shaped leaves with pointed tips. Small purple flowers have five triangular petals and bloom in June. Slender seed pods (1.5"-3") that are similar to other milkweeds release silky filaments when ripe.

FACTS

Native to Europe, this vine is found in forests, prairies, open fields, and along roadsides where it blankets native plants. This plant can potentially harm monarch populations that lay their eggs on the vine; but larvae cannot survive.

MANAGEMENT

- Remove all seed pods before they open and then burn or landfill to prevent seed release.
- Apply foliar herbicide recommended for swallow-wort.
- If hand dug, all roots must be removed.
- Monitor for continued growth for several years.

FOR MORE INFORMATION
<http://dnr.wi.gov/invasives>

Photo: Elizabeth J. Czarapata
Printed on Recycled Paper

PUB-FR-475 2011



DAME'S ROCKET

Hesperis matronalis

BASIC ID

This showy, short-lived perennial has large, loose clusters of fragrant white, pink or purple 4-petaled flowers that bloom from May-July on 2'-3' stalks.

HISTORY

Native to Eurasia, and used as a garden plant, it can escape into the wild and spread rapidly by seed. It thrives in woodlands, roadsides and open areas.

MANAGEMENT

- Check "wildflower" mixtures before planting
- Pull plants or cut flower heads after they bloom
- Prevent plants from going to seed
- Prescribed burns
- Apply a broadleaf herbicide

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives/>
Photo: Joanne Kline, WI DNR
Funded by USDA-CSREES, grant 2006-45060-03702
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CROWN VETCH

Coronilla varia

BASIC ID

This perennial legume has 2-6' long stems with light pinkish-purple to white flowers. It blooms in summer, and produces long, narrow seedpods.

IMPACTS

Native to Eurasia and Northern Africa, it has been planted along road and waterways as a bank stabilizer. It spreads rapidly via creeping stems and seeds to adjacent grasslands and grows in dense patches, reducing native species.

MANAGEMENT

- Burn in late spring and then pull, spray, or mow
- Mow in late spring and early fall for several years consecutively
- Apply herbicide specific to legumes or broad-leaf plants

FOR MORE INFORMATION

www.dnr.state.wi.us/org/land/er/invasive

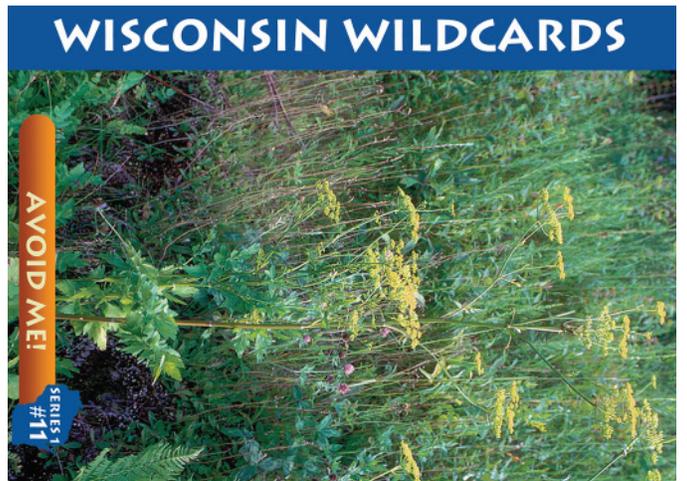
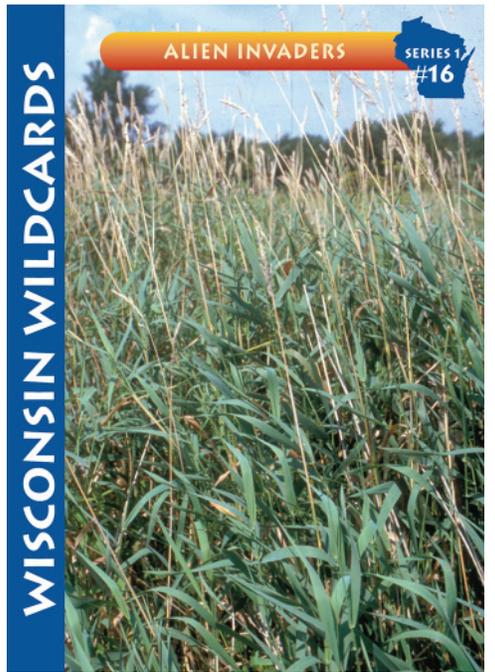
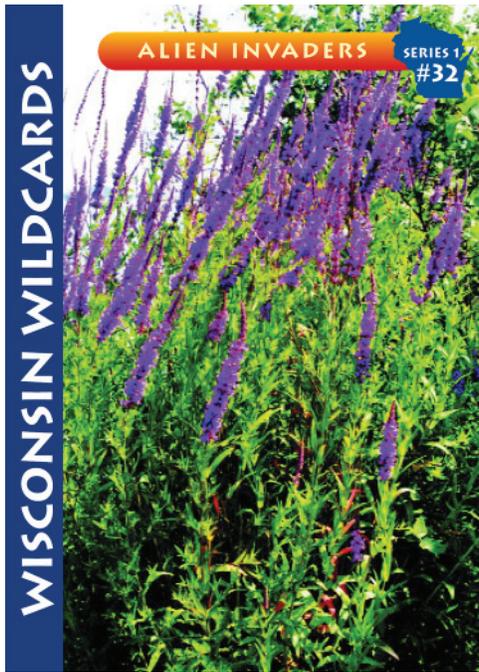
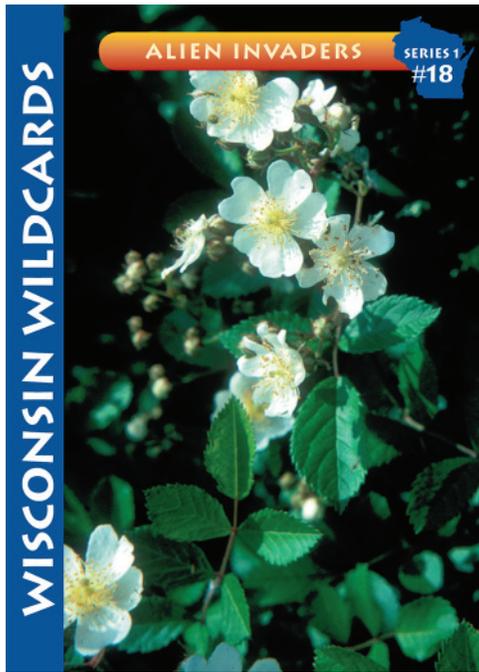
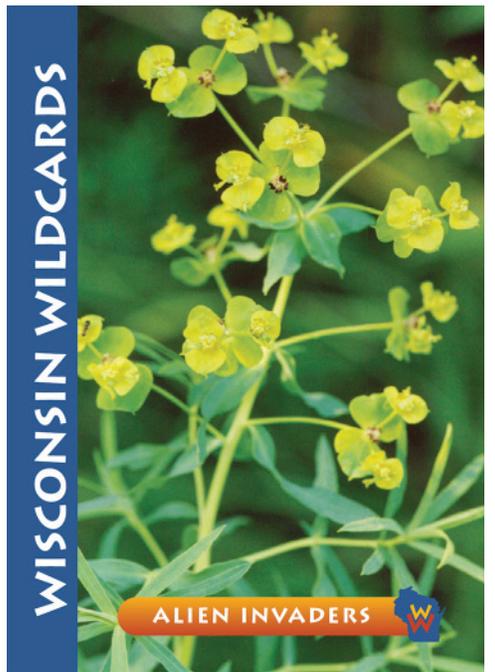


ER-106R 2003

Photo: Kelly Kearns, WI DNR

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LEAFY SPURGE

Euphorbia esula

BASIC ID

This perennial has stems 6"-36" tall, with bluish-green leaves and yellow-green flowers. It has a milky white sap that can cause dermatitis.

IMPACTS

Native to Eurasia, leafy spurge can dominate native grasslands and pastures. It prefers sunlight and dry, light soils but can occur in a wide variety of sites. It is toxic to cattle.

MANAGEMENT

- Hand-pulling is not effective because the entire root system, which can reach 15 feet deep, must be removed
- Apply specific herbicides repeatedly over many years
- Biological control via insects and goats

FOR MORE INFORMATION

www.dnr.state.wi.us/org/land/er/invasive

Photo: Elizabeth Czarapata

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ER-106T 2003

EXOTIC BUSH HONEYSUCKLES

Tartarian Honeysuckle *Lonicera tatarica*
Morrow's Honeysuckle *Lonicera morrowii*
Bella Honeysuckle *Lonicera x bella*

BASIC ID

All of these multi-stemmed shrubs (3'-10' tall) have shallow roots, oval leaves and fragrant pink, white or yellow flowers. They produce orange or red berries with seeds that are spread by birds.

HISTORY

Native to Eurasia, honeysuckles have been widely planted as ornamentals. They form dense thickets in forests and can thrive in edges and sunny areas.

MANAGEMENT

- Pull or dig up with a leverage tool
- Cut and apply herbicide to stump in fall or winter

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives/>

Photo: Joanne Kline, WI DNR

Funded by USDA-CSREES, grant 2005-45060-03346

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FR-218o 2009

GARLIC MUSTARD

Alliaria petiolata

BASIC ID

This cool-season, biennial herb grows 12"-40" tall, has triangular shaped leaves with toothed edges and smells of garlic when crushed. It has clusters of small flowers with 4 petals. First year plants are low rosettes with rounded leaves.

HISTORY

An invasive European species, it prefers forested areas. Rapidly spread by seed, it is a serious problem in forests in eastern and southern WI and is spreading elsewhere.

MANAGEMENT

- Hand pull before flowering or pull and bag up when flowering
- Apply herbicides in early spring or late fall
- Prevent any plants from going to seed

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives/>

Photo: Joanne Kline, WI DNR

Funded by USDA-CSREES, grant 2005-45060-03346

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FR-218m 2009

REED CANARY GRASS

Phalaris arundinacea

BASIC ID

This large, coarse grass reaches 2'-9" tall, has wide 3"-10" flat leaf blades that taper at the ends. It forms dense stands.

HISTORY

Native to Eurasia and N. America, vigorous varieties of this perennial have been planted in wetlands for decades. It spreads by seeds and underground stems and can blanket an area. It prefers disturbed areas and moist soils.

MANAGEMENT

- Prescribed burns followed by herbicide
- Mowing in spring and fall followed by herbicide

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives/>

Photo: WI DNR

Funded by USDA-CSREES, grant 2006-45060-03702

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FR-218p 2009

PURPLE LOOSESTRIFE

WHAT IS IT? This 3'-7' tall plant looks like a spike with tiny purple flowers. It likes to grow in wetlands, along lakeshores, waterways, and roadsides, and in other moist areas.

WHAT'S THE PROBLEM?

Originally from Europe and Asia, this plant can grow so thick that it crowds out our native plants. Dense stands of purple loosestrife make it unsuitable for a wide variety of native wetland animals and wildlife.

MANAGEMENT

- Hand pulling
- Herbicides
- Biological control by *Galerucella* beetles

WILD! One plant can produce over 2 MILLION seeds! It is able to resprout from broken stems that fall to the ground or into the water.

Photo: University of Minnesota Sea Grant

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PUB-WT-740-2002



MULTIFLORA ROSE

Rosa multiflora

BASIC ID

Multiflora rose has wide arching canes that grow 5'-12" tall with abundant 1/2"-1 1/2" white blossoms. Compound leaves have a pair of fringed leaf-like appendages at the base, which native roses lack. In shade it may be much shorter and less robust. Native roses have pink flowers.

FACTS

Introduced from Japan, this species was encouraged for wildlife plantings and erosion control. It has since become a serious problem in pastures, grasslands, and woodlands of southern WI.

MANAGEMENT

- Prescribed burns
- Pull with tractor and chains
- Apply herbicide
- Biological controls

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives>

Photo: Dick Bauer, WI DNR

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PUB-FR-218r 2011



WILD PARSNIP

Pastinaca sativa

BASIC ID

The first year's rosette has 6"-18" compound leaves. The flower stalks are hollow, grooved, and grow about 4'. Umbrella-like clusters of yellow flowers form large seeds (.25") that are flat on one side and have four curved ribs on the other.

FACTS

Native to Eurasia, this plant spreads by seed in open habitats. CAUTION! If plant juices come in contact with the skin in the presence of sunlight, a painful burn or blistering can occur resulting in a skin discoloration for several months.

MANAGEMENT

- WEAR PROTECTIVE CLOTHING!
- Cut entire root below the ground
- Prescribed burn with spot herbicide follow up
- Mow to remove flower heads around July 1

FOR MORE INFORMATION

<http://dnr.wi.gov/invasives>

Photo: WI DNR

Printed on Recycled Paper

PUB-FR-218k 2011



SPOTTED KNAPWEED

Centaurea maculosa (syn. *C. biebersteinii*)

BASIC ID

This biennial or short-lived perennial's flowering stems range from 2' to 4' in height. Small thistle-like, pinkish-purple flower heads occur at the tip of each stem.

IMPACTS

Native to Eurasia, it was introduced accidentally through seed stock. It invades roadsides and fields and can be very invasive in dry prairies, barrens, and dunes. It produces a chemical that kills neighboring plants.

MANAGEMENT

- WEAR LEATHER GLOVES—Pulling with bare hands is believed to cause illness!
- Dig or pull entire root system
- Treat with hot prescribed burns
- Apply herbicide specific to broadleaf or composite plants

FOR MORE INFORMATION

www.dnr.state.wi.us/org/land/er/invasive

ER-106J 2003



Photo: WI DNR
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