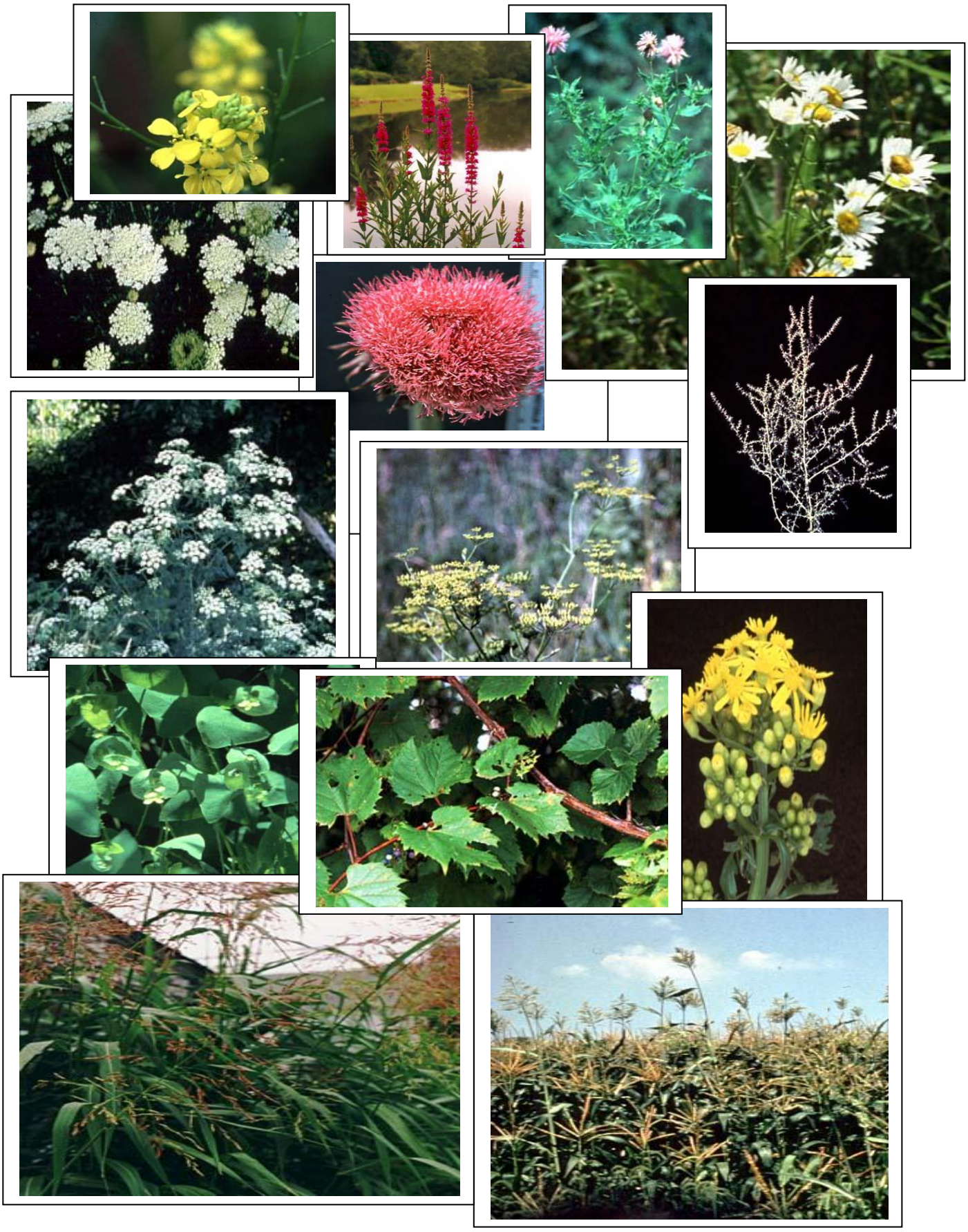


IDENTIFYING OHIO'S NOXIOUS WEEDS

Identifying Noxious Weeds of Ohio

What is a noxious weed?

Ohio law has identified several weeds as "Noxious Weeds" since they are especially problematic, toxic, invasive, harmful and compete aggressively with other cultivated plants, crops and habitats. A Noxious Weed must possess one or more of the following characteristics:

- aggressive competition with cultivated plants
- toxicity to livestock
- natural habitat degradation
- threat to public health, safety or navigation

Ohio has several laws governing weed control and grants authority to county and township officials to regulate and remove noxious weeds on both private property and public roadways. Local government authorities may issue a written notice to property owners to have such weeds removed within a designated timeframe or else the local government may remove the weeds and assess the costs to the property owners tax bill.

Ohio's Noxious Weed List **(revised effective Nov. 2010)**

1. Apple of Peru
2. Canada thistle
3. Cressleaf groundsel
4. Giant hogweed
5. Japanese knotweed
6. Johnson grass
7. Kochia
8. Kudzu
9. Mare's tail
10. Mile-a-minute weed
11. Musk thistle
12. Oxeye daisy
13. Palmer amaranth
14. Poison hemlock
15. Purple loosestrife
16. Russian Thistle
17. Shatter cane
18. Wild carrot
19. Wild grapevines
20. Wild mustard
21. Wild parsnip

How to control or eradicate a noxious weed?

Noxious weeds are especially difficult to control and remove, hence the term "noxious." These weeds may have spiny thorns or deep roots or rhizome root systems that continue to grow and spread even after removal of the top of the plant. Generally a triple combination of hand tilling, digging roots and chemical herbicidal treatments will be necessary to remove the plants. Unfortunately, dormant seeds may have already been released into the soil proving having to start all over during the next growing season. With diligence, effort and patience, the noxious plants can be removed.

Ohio's Noxious Weeds

The definition of "noxious weeds" means any plant designated a prohibited noxious weed by the director of Agriculture.

Noxious Weeds are problematic weeds. They posses one or more of the following attributes:

aggressive competition with cultivated plants
toxicity to livestock
natural habitat degradation
threat to public health, safety or navigation
resistant to herbicides

The federal Noxious Weed Law (1974) controls the importation of weed species into the United States. Most states, counties and municipalities have their own noxious weed laws as well. The goal of this study guide is to aid the would-be Industrial Vegetation applicator in the identification of Ohio's noxious weeds.

Ohio currently has a list of twenty (20) noxious weeds they are as follows

Common Name	Plant Name
Apple of Peru	*Nicandra physalodes*
Canada thistle	*Cirsium arvense* L. (Scop.)
Cressleaf groundsel	*Senecio glabellus*
Giant hogweed	*Heracleum mantegazzianum*
Grapevines	*Vitis.spp* when growing wild in groups of 100 or more.
Johnson Grass	*Sorgum halepense* L. (Pers.)
Kochia	*Bassia scoparia*
Marestail	*Conyza canadensis*
Mile-A-Minute weed	*Polygonum perfoliatum*
Musk thistle	*Carduus nutans*
Oxeye daisy	*Chrysanthermum leucanthemum* var. pinnatifldum
Palmer amaranth	*Amaranthus palmeri*
Poison hemlock	*Conium maculatum*
Purple loosestrife	*Lythrum salicaria*
Russian thistle	*Salsola Kali* var. tenuifolia
Shatter cane	*Sorghum bicolor*
Wild carrot	*Daucus carota* L.
Wild mustard	*Brassica kaber* var. pinnatiflda
Wild parsnip	*Pastinance sativa*

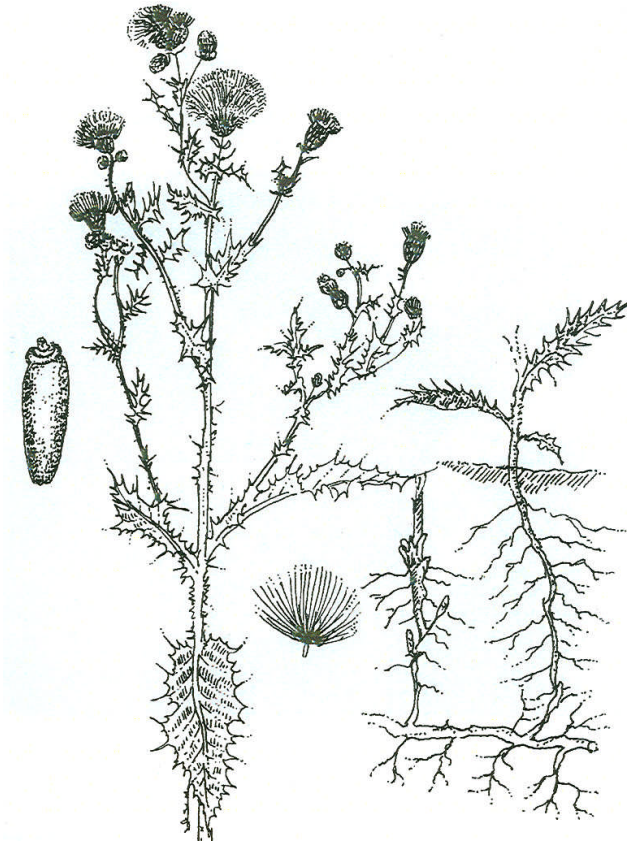
Apple of Peru

Description: is an annual weed in the tomato family reproducing only by seed. This weeds continuously (spring, summer, and fall) in agriculture fields if sufficient moisture is available.
Life Cycle: hardy annual
Habitat: soybean and vegetable fields
Flower: pale violet bell-shaped flower
Fruit: enclosed in papery inflated calyxes
Leaves: jagged full leaves
Stem: branching
Root: short taproot
The problem is…. a prolific seed producer. Large, persistent seed-banks quickly accumulate in the soil due to seed dormancy. Very competitive with soybeans and vegetable crops also has a low sensitivity to most commonly used herbicides.

Apple of Peru, Richard Old, Bugwood.org

Apple of Peru seed, USDA-NRCS database

Canada Thistle



Description: is an herbaceous perennial in the aster family.
Life cycle: perennial with creeping roots
Habitat: it grows in barrens, glades, meadows, fields, pastures, and waste places. It does best in disturbed upland areas but also invades wet areas with fluctuating water levels such as stream bank sedge meadows. It can also be found in clay to gravely soils.
Flower: lavender flowers
Fruit: white feathery pappus
Leaves: 3-8 inches long, alternate wit spiny, crinkled margins; lower leaves are lobed.
Stem: grooved and hairy with age not spiny; branched at apex.
Root: creeping root system allows this weed to spread aggressively. Hand-pulling and cultivation are often ineffective control mechanisms because new plants sprout from root pieces that snap off.
The problem is….is a highly invasive thistle that prevents the coexistence of other plant species through shading, competition for soil resources and possible through the release of chemical toxins poisonous to other plants.

Canada thistle flower, Richard Old, Bugwood.org

Canada thistle, Mary Ellen Harte, Bugwood.org

Cressleaf Groundsel

Description: is a member of the Aster/Composite family.
Life Cycle: winter annual
Habitat: wet woods, swamps, stream banks, pastures roadsides and fields.
Flower: yellow individual flowers in a cluster
Fruit: white pappus
Leaf: alternate, deeply divided with wide round-toothed lobes
Stem: succulent, smooth and hollow
Root: fibrous
The problem is…..toxic to grazing livestock. This plant contains compounds called pyrrolizidine alkaloids (PA's). These compounds metabolize in the liver to other compounds that are toxic. Poisonings result from consuming significant quantities of the weed.

Cressleaf groundsel, Arlyn W. Evans, Memphis TN

Giant Hogweed

Description: is an herb in the carrot family (Apiaceae), growing 15 to 20 feet in height.
Life cycle: biennial
Habitat: along railroads, roadsides, rights-of-ways, vacant lots, streams, rivers, uncultivated or waste lands and agriculture areas.
Flower: small white floret
Fruit: large elliptic dry fruit
Leaf: leaflets may expand to five feet in breadth.
Stem: hollow stalks and stems
Root: tap root
The problem is….an aggressive competitor. It out-competes native plant species because of its size, rapid growth and heavy seed production. It contains a substance within its sap that makes the skin sensitive to ultra violet light which is a public health hazard. Large watery blisters usually appear 15 to 20 hours after contact with the sap and sunlight.

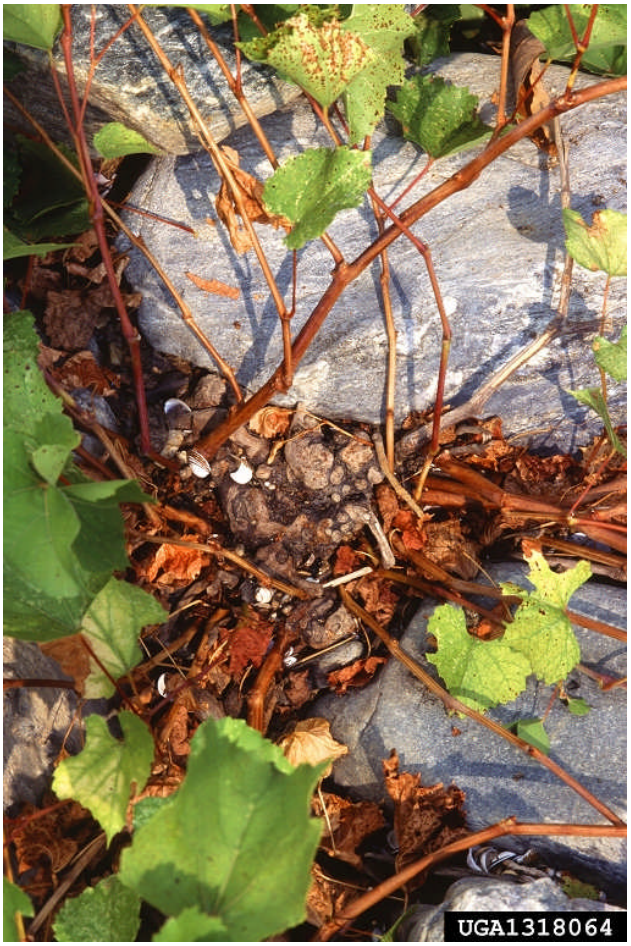
Giant hogweed, Donna R. Ellis, Bugwood.org

Giant hogweed, Thomas B. Denholm, N.J. DA, Bugwood.org

Giant hogweed, USDOT

Grapevines (Wild)

Life cycle: wood perennial
Habitat: woods, abandoned sites
Fruit: small grapes in cluster (if abandoned no fruit)
Leaf: large rounded lobed leaves
Stem: Green and smooth in young plants, but later becomes brown and woody, twisting with peeling bark. Look for woods or green tendrils which can coil around other vegetation.
The problem is…these stout vines can smother trees and forest vegetation. Grapevines are only considered a noxious weed if they are growing in groups of 100 or more and are not maintained (pruned, sprayed, or cultivated) for two consecutive years.



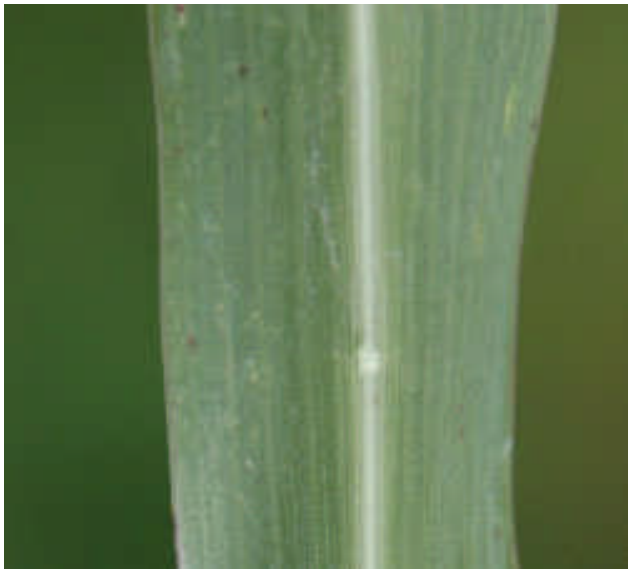
Grape vines (wild), Scott Bauer USDA, Bugwood.org

Johnsongrass

Description: A tall rhizomatous grass in the Grass family (Poaceae) that grows in dense clumps or nearly solid stands that can reach up to 8 feet in height.
Life cycle: perennial
Habitat: occurs in crop fields, pastures, abandoned fields, rights-of-way, forest edges, ditches and wetlands. It thrives in open, disturbed, rich, bottom ground, particularly in cultivated fields.
Flower: large, loosely branched, purplish, hairy panicles.
Leaf: smooth lanceolate with a white mid vein
Stem: smooth, pink to rusty red near the base
Root: fibrous. Rhizomes are found close to the soil surface. They are stout with purple spots and scales at the nodes.
The problem is…. It spreads aggressively and can form dense colonies, displacing native vegetation and restricting tree seedling establishment.

Johnsongrass, Kim Starr, Bugwood.org

Johnson grass rhizomes, Richard Evans, Bugwood.org


Johnsongrass prominent white mid-vein, Kim Starr, Bugwood.org

Kochia

Description: An erect, profusely bushy and branched with fine-textured foliage. Plants are blue-green to gray-green but take on a reddish or purplish coloration later in the season.
Life cycle: annual
Habitat: dry-land, crops, pastures, and waste areas.
Flower: small, green, inconspicuous flowers
Fruit: small bladder-like utricles
Leaf: simple, sessile, alternate, linear to lanceolate, and hairy to almost smooth, with entire, hairy margins
Stem: erect, much-branched, round, often re-tinged, usually with soft hairs above.
The problem is…. (animal health) Kochia can accumulate high nitrate concentrations under certain conditions. Caution should be exercised when grazing or feeding harvested hay containing a large amount of Kochia. It has been linked to photosensitivity in livestock as well.

Kochia flowers and leaves, A. J. Scott Bugwood.org

Kochia plant, A. J. Scott, Bugwood.org

Kochia plant with reddish coloration A. J. Scott, Bugwood.org

Marestail or Horseweed

Description: an erect plant reaching 6 ½ ft. in height. Mature plants have leaves that are entirely without petioles.
Life cycle: annual
Habitat: agronomic crops, pastures, orchards, fallow fields, waste areas and roadsides.
Flower: many inconspicuous flower heads occur at the top of the central stem. Individual flowers are 5 mm in diameter with white or slightly pink ray flowers and yellow disk flowers.
Leaf: mature plants have leaves that are entirely without petioles. Leaves are 4 inches long, 10 mm wide, crowded along stem. Leaves become progressively smaller up the stem.
Stem: erect, solid, hairy, reaching 6 ½ ft in height
Root: short taproot with a secondary fibrous root system.
The problem is….marestail is competitive, can interfere with harvest, reduce crop yield and is somewhat resistant to herbicides.

Mature marestail plant, James H Miller, Bugwood.org

Marestail flower, Mary Ellen Harte, Bugwood.org

Marestail leaves, Mary Ellen Harte, Bugwood.org

Mile-a-Minute Weed

Description: Mile-a-minute weed is an herbaceous, trailing vine in the buckwheat family. Reddish stem are armed with downward pointing hoods or barbs.
Life cycle: annual
Habitat: right-of ways, edges of woods, wetlands. stream banks, roadsides and uncultivated open fields.
Flower: small, white and general inconspicuous
Fruit: attractive, metallic blue and segmented, segment contains black or reddish-black seed.
Leaf: light green colored leaves
Stem: reddish in color with barbs
Root: tap root
The problem is: grows rapidly, scrambling over shrubs and other vegetation, blocking the foliage of covered from light. It is a threat to forest regeneration and infests recreational and residential areas.

Mile-a-minute foliage and fruit, Leslie Mehroff, Bugwood.org

Mile-a-minute weed, Leslie Mehroll, Bugwood.org

Musk Thistle

Description: an aggressive, herb in the aster family with showy flowers.
Life cycle: biennial
Habitat: grows in neutral to acidic soils. It invades open natural areas, meadows, grassy bald, disturbed areas, old pastures, roadsides, waste places, ditch banks, old fields and old pastures.
Flower: large disk-shaped showy red-purple flower heads which contain hundreds of tiny individual flowers are 11/2 to 31/2 inches in length. Flower heads will droop to a 90-degree angle from the stem when mature hence an alternate name, nodding thistle. Each plant may product thousands of straw colored seeds.
Leaf: spiny dark green coarsely lobed leaves with a smooth waxy surface and a yellowish to white spine at the tip.
Stem: multi branched spiny stems from 1 ½ to 6 feet tall.
Root: single tap root
The problem is….invasive nature of this aggressive plant can lead to severe degradation of native grasslands and meadows because grazing animals on native vegetation giving the thistle a competitive advantage.

Musk thistle plant, John Bird, Bugwood.org

Musk thistle flower, Mary Ellen Harte, Bugwood.org

Oxeye Daisy

Description: An herbaceous plant in the aster family with numerous stems. The typical plant produces over 500 seeds that spread by wind or animals and remain viable in the seed-bank for 2-3 years.
Life cycle: perennial
Habitat: native grasslands, pastures, fields, disturbed areas, waste areas, open woods, meadows, and roadsides. It is adapted to coarse and medium textured soil, pH 5.2 – 7.
Flower: Solitary flower heads composed of 15-30 white ray florets that surround a compact yellow disc whit a compressed center. Flowers occur singly at the ends of stems and bloom from June to August
Fruit: the fruit is a flat seed, dark gray a maturity with no pappus.
Leaf: Basal leaves a spoon-shaped, broadly toothed, and 2 to 5 inches long and 2 inches wide. Leaves are alternate, smooth, glossy and dark green. Leaf stalks are short and clasp the stem.
Stem: numerous stems 1 to 3 feet tall, slender and erect may emerge from the root crown or upturned rhizome.
Root: shallow, un-branched roots and rhizomes
The problem is….the oxeye daisy has the potential for form dense colonies, decrease overall vascular plant diversity, and modify existing communities. It can quickly replace up to 50% of the grass species in pastures. It is a host for several viral diseases affecting crops as well.

Oxeye daisy flower, Mary Ellen Harte, Bugwood.org

Palmer Amaranth

Description: Dense, compact terminal panicles and relatively tall plants with alternately arranged leaves with peitoles that are longer than the leaves. The leaves of the palmer amaranth are also without hairs.
Life cycle: summer annual
Habitat: native grasslands, pastures, fields, disturbed areas, waste areas, open woods, meadows, and roadsides.
Flower: small, green, inconspicuous flowers are produced in dense, compact, and terminal panicles. Male and female flowers occur on separate plants.
Fruit: single seeded utricle with black to dark brown seed. A plant can produce up to one million seeds.
Leaf: alternate without hairs, and lance-shaped or egg-shaped in outline. Leaves occur on relatively long petioles.
Stem: one central stem occurs from which several lateral branches arise.
Root: taproot
The problem is….this aggressive plant adds to the seed-bank and it is toxic to livestock.

Palmer amaranth terminal panicles, Richard Old, Bugwood.org

Palmer amaranth plants, Richard Old, Bugwood.org

Palmer amaranth seedling, Richard Old, Bugwood.org

Poison hemlock

Description: An herb in the carrot family that grows 3 to 8 feet tall.
Life cycle: biennial
Habitat: grows in dry to most soils and is often found near roadsides. Field borders, hiking trails, railroad tracks, stream banks, irrigation ditches, waste areas, riparian woodlands and open floodplains of rivers and streams.
Flower: flowers are small, white, and borne in umbrella-shaped cluster about 3 inches across
Fruit: ridged and flattened seeds
Leaf: leaves are shinny green
Stem: stems are stout, hollow, ridged and purple spotted
Root: thick, white taproot
The problem is…. All plant parts are poisonous; however, the seeds contain the highest concentration of poison. It contains highly poisonous alkaloids toxic to all classes of livestock and humans. It may act as a pioneer species quickly colonizing disturbed sites and displacing natives.

Poison hemlock red spotted stem, Steve Dewey, Bugwood.org

Poison Hemlock, Steve Dewey, Bugwood.org

Purple loosestrife

Description: is an erect herb in the loosestrife family. Loosestrife plants grow from four to ten feet high, depending upon conditions, and produce showy flowers throughout much of the summer. Mature plants can have from 30 to 50 stems arising from a single rootstock.
Life cycle: perennial
Habitat: invades many wetland types including freshwater wet meadows, tidal and non-tidal marshes, river and stream banks, pond edges, reservoirs, and ditches.
Flower: magenta-colored flower spikes
Fruit: seeds
Leaf: opposite or whorled leaves. Leaves are lance-shaped, stalkless, and heart-shaped or rounded at the base
Stem: square woody stem
Root: tap root with underground stems
The problem is….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 allows it to form dense, homogeneous stands that restrict native wetland plant species and reduce the habitat for waterfowl.

Purple loosestrife, Steve Dewey, Bugwood.org

Russian thistle

Description: a forb in the goosefoot family that grows 1 to 3 feet in height. The rigid, erect plant is spiny and profusely branched. One plant can produce up to one million seeds.
Life Cycle: annual
Habitat: cultivated, fields, roadsides, railroad right-of ways, pastures, waste areas, irrigated areas, river bottoms, disturbed areas and forests edges
Flower: The small greenish flowers are perfect, auxiliary or in a terminal spike, and lack petals.
Fruit: The fruit is a utricle with one horizontal-positioned seed.
Leaf: Leaves are green alternate, simple, sessile, and net-veined.
Stem: stem becomes woody with age
Root: taproot
The problem is….plants break off and disperse seed over long distances as they are carried along the ground in a tumbleweed-fashion by the wind. They are strongly competitive in semiarid areas and are heavily favored by disturbance.

Russian thistle, Kim Starr, Bugwood.org

Russian thistle flower, Kim Starr, Bugwood.org

Shattercane

Description: Shattercane is a weed sorghum with a broad genetic base. It is believed that natural crossing between diverse sorghum types produced the present day shattercane. There is considerable variation in this species and mature plants may range from 4 to 12 feet.
Life cycle: annual
Habitat: cultivated fields – especially cereal crops
Leaf: 1 to 2 ½ inch wide blades with white mid-veins
Stem: smooth
Root: fibrous root system; often forms brace roots as well
The problem is….aggressive, rapid growth. Competitive with crops it can seriously reduce yields and marketability.

Shattercane, USDA Archive, Bugwood.org

Shattercane seeds, Richard Old, Bugwood,org

Wild Carrot

Description: an erect herbaceous plant in the carrot family growing 2-4 feet in height. Wild carrot produces flowers until it dies with the first frost. One plant can produce 1,000 to 40,000 seeds.
Life cycle: biennial
Habitat: disturbed dry grasslands, fields, meadows, pastures ditches, waste places and railroad and highway rights-of ways.
Flower: flowers are small, 5-petaled, white, and occur in the terminal, umbrella-shaped cluster at the ends of the stems.
Fruit: small brown fruit are dry and ribbed with bristly hairs. Fruits have hooked spines that attach to clothing or animal fur and aid in dispersal.
Leaf: leaves are basal, alternate, pinnately compound with 1 to several finely divided, fernlike leaflets.
Stem: Stems are erect, hairy, hollow, grooved, branched at top and may be reddish at the base.
Root: long slender taproot and fibrous secondary roots.
The problem is….invades open waste ground, competing for resources with native grasses and forbs. It can be a threat to recovering grasslands. Plant leaves cause skin irritation in some people and can cause cows to produce off-tasting milk after eating large quantities.

Wild Carrot, Chris Evans, Bugwood.org

Wild Carrot, Robert L Anderson, Bugwood.org

Wild Mustard

Life cycle: annual
Habitat: wasteland, roadsides, grain and other field crops
Flower: bright yellow flowers bloom during most of the growing season
Fruit: slender, slightly curved, smooth seedpod about 1 inch long; born on the upper branches
Leaf: Alternate, 2-7 inches long. Lower leaves have petioles and are irregularly lobed and toothed with bristly hairs; upper leaves are smaller and may not be lobed; petioles lacking or short
Stem: branched
Root: short taproot
The problem is….seeds live in the soil for many years. Very common in cultivated fields. Cultivation brings seeds to the surface where they germinate.

Wild Mustard

Wild Mustard, Steve Dewey, Bugwood.org

Wild Parsnip

Description: an erect herbaceous plant in the carrot family growing 4 or more feet in height.
Life Cycle: biennial
Habitat: wetlands, roadsides, pastures, and in abandoned fields.
Flower: hundreds of small flowers with 5 yellow or white petals borne in terminal umbels, 2-6 inches across
Seed: large yellow seeds are round, flat and slightly ribbed.
Leaf: leaves are pinnately compound and leaflets are oval to oblong, hairless with saw-toothed edges arranged in pairs along stalk.
Stem: hairy and grooved
Root: fleshy taproot
The problem is….wild parsnip invades and modifies open disturbed habitats. Once an infestation begins, it can spread across an area to for dense stands.

Wild Parsnip, Richard Old, Bugwood.org

Wild Parsnip, Richard Old, Bugwood.org


DEPARTMENT OF AGRICULTURE
STATE OF OHIO