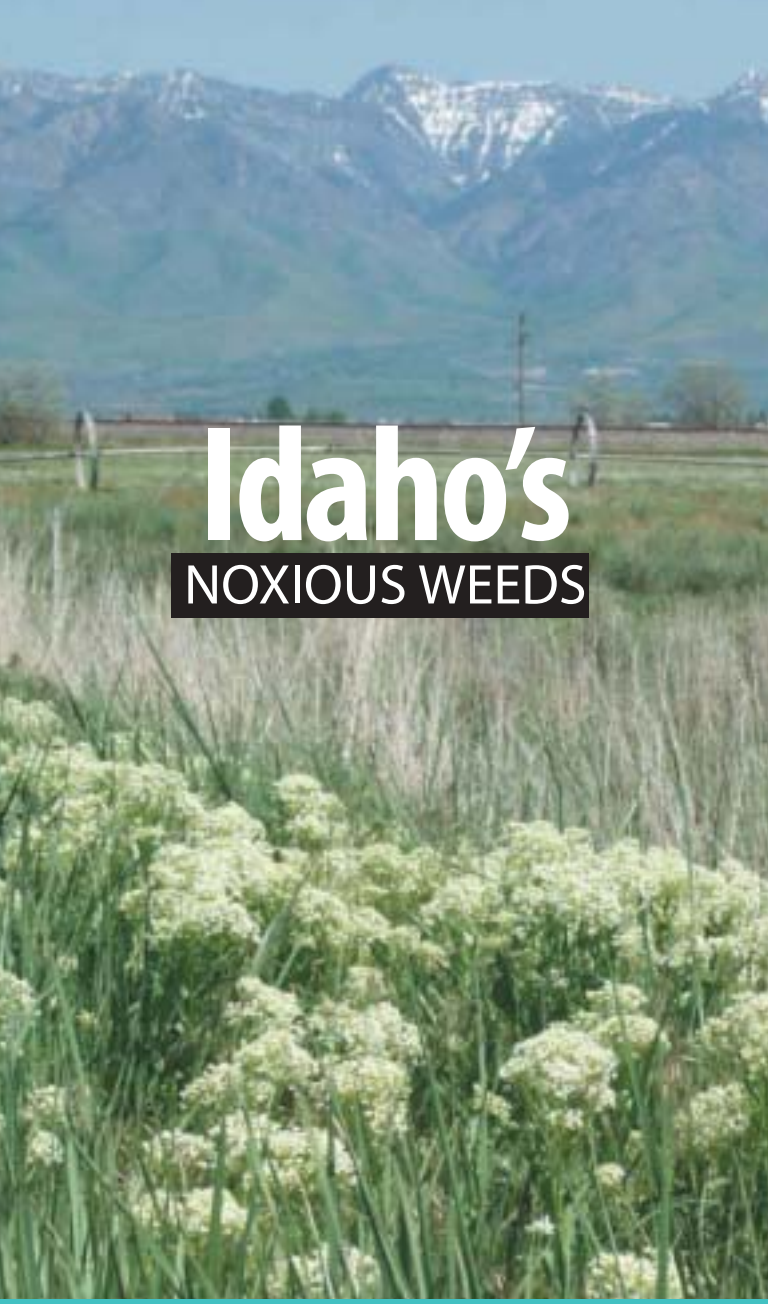


Idaho's NOXIOUS WEEDS

Includes Pictures of Rosettes and Seedlings, Habitat, and Updated Distribution Maps

Official State List

University of Idaho Extension

Front cover: Hoary cress growing south of Preston, Idaho.

Back cover: A newly designated noxious weed, Eurasian watermilfoil, is an aquatic plant that hitchhikes on boats or hides in aquatic ornamental plant containers. When it invades lakes, lake shore property values often decline significantly since the plant interferes with recreational boating and fishing.

Eurasian Watermilfoil **ALERT!**

STOP

Watercraft & pond owners

Preserve our pristine lakes and rivers. Always inspect your boat and trailer at the boat dock before and after recreating. Remove plants attached to your boat or trailer and discard in a trash container.

Idaho's Noxious Weeds

Includes Pictures of Rosettes and Seedlings, Habitat, and Updated Distribution Maps

New Features in This Edition

Information on Idaho's Newest Noxious Weed, Eurasian Watermilfoil, and a Comprehensive Control Guide

Timothy S. Prather, Sandra S. Robins, Don W. Morishita, Larry W. Lass, Robert H. Callihan, and Timothy W. Miller

Department of Plant, Soil and Entomological Sciences
College of Agricultural and Life Sciences
University of Idaho • Moscow, Idaho

In cooperation with the
Idaho Weed Coordinating Committee
Idaho State Department of Agriculture • Boise, Idaho

University of Idaho
College of Agricultural and Life Sciences

Contents

Noxious Weeds: The Cancer of Our Land

Controlling and managing noxious weeds in Idaho requires understanding the problem, and that begins with detection and identification of noxious weeds. This booklet has been designed to help educate Idaho's citizens about our weeds.

Weeds cost millions of dollars to our state by:

- degrading wildlife habitat,
- choking streams and waterways,
- crowding out beneficial native plants,
- creating fire hazards in our forests and rangelands,
- poisoning and injuring livestock and humans, and
- fouling recreation sites.

The spread of noxious weeds may signal the decline of entire watersheds. They severely impact the beauty and biodiversity of natural areas and cause widespread economic losses. Weeds are problems for urban as well as rural areas, and for private, state, and federal lands. Noxious weed species spare no segment of society—rancher, gardener, and outdoor recreationist alike—and when unmanaged, they spread rapidly, unceasingly, and silently.

I hope this booklet is useful to you in your efforts to identify and control the state's 36 designated noxious weeds.

For more information on Idaho's noxious weed management program and how you can become more involved in stopping the spread of invasive weeds visit our web site at www.agri.state.id.us/animal/weedintro.htm or call 1-888-IDWEEDS

Patrick A.Takasugi, Director
Idaho State Department of Agriculture

Introduction to Idaho's Noxious Weeds

Timothy S. Prather

Invasive Plants in Idaho

Idaho has about 300 exotic species present within the state. All but two of Idaho's noxious weeds were introduced from other continents. Both toothed spurge (page 68) and buffalobur (page 4) are native to the Great Plains. Most of our lands not in production agriculture are free of serious weed problems but weeds continue to encroach, particularly in areas with a history of disturbance or those recently disturbed.

Conservative estimates indicate nearly 4,000 species are adapted to temperate climates that have characteristics as potential invaders. Species previously unreported have been found each year over the past decade. Recognition and mapping invaders is the first step in dealing with them.

Several scientists who focus on the ecological effects of global change consider invasive species the most serious threat, more serious than global warming or ozone depletion. While global warming and ozone depletion have serious implications, they are reversible. Once a noxious weed species is widely distributed it is virtually impossible to remove it, making their effect on the environment permanent.

Eradication of new infestations is the most economical method for management of invasive plants. Analysis of eradication programs shows that individual infestations must be under 100 acres to have a reasonable chance for eradication. Early detection, therefore, is imperative to successful management of invasive plants. Early detection for noxious weeds considers current location of a species and potential avenues for movement. Focusing survey efforts to areas of high likelihood of occurrence makes best use of limited resources.

Impacts to Natural Systems

Our state's 36 noxious weeds include species that are able to make significant modification to the landscape. These include plants such as purple loosestrife (page 48) that change stream velocity, which increases siltation. Other species such as spotted knapweed (page 62) can accelerate erosion. Perennial pepperweed (page 40) is successful at depositing salt on the soil surface from below-ground alkaline water, which leads to the elimination of all salt-sensitive species.

Not all species that significantly impact our environment are listed as noxious, however. Areas within the British Isles are seeing reductions in native species because they have lost their pollinators to *Impatiens glandulifera's* nectar. Japanese knotweed is creating monocultures along many of our streams in Idaho where it decreases diversity and also lacks the bank stabilizing root system of native riparian species. Downy brome (cheatgrass) increases fire frequency which, in turn, changes sagebrush-grass communities to grasslands dominated by annuals.

The Noxious Weed Story

• **What are they?** Noxious weeds are plant species that have been designated "noxious" by law. The word "noxious" simply means deleterious, and all listed weeds are deleterious by definition. Idaho has hundreds of weed species, however, only 36 are designated noxious by Idaho law as of 2001.

In Idaho, the director of the Idaho State Department of Agriculture makes the legal designation of noxious. The director considers the counsel of the Noxious Weed Advisory Board in the designation of noxious species. Currently, the department uses the following criteria for designation of a noxious weed:

1. It must be present in but not native to Idaho.
2. It must be potentially more harmful than beneficial to Idaho.
3. Eradication must be economically and physically feasible.
4. The potential adverse impact of the weed must exceed the cost of control.

The Idaho Noxious Weed Law (Title 22, Chapter 24, Idaho Code) specifies that individual counties may declare other species noxious and require control of such species if a county ordinance to do so is enacted by the county commissioners. Federal law also designates certain species noxious, prohibiting movement of those species by interstate commerce. Idaho and U.S. seed laws also designate some species noxious, but these laws only regulate commerce with seed containing noxious weed seeds and do not prohibit growth or propagation.

• **What is the purpose of the Idaho Noxious Weed Law?** The purpose of the Idaho Noxious Weed Law is to protect lands within the state from invasion by noxious weeds.

• **What does the law require?** The Idaho Noxious Weed Law requires landowners to eradicate noxious weeds on their land, except in special management zones. Legally, this requires prevention of their above-ground growth for at least 2 years, although the seeds of most will last much longer. The counties are required to enforce that law, and the State of Idaho is required to ensure that counties do so.

The Idaho Noxious Weed Law has many other provisions. The law may be found in the Idaho Code, available at libraries, city and county courthouses, the Idaho State Department of Agriculture, and from county weed superintendents.

How to Manage Noxious Weeds

The procedure to control noxious weeds depends on the species of weed, the habitat, the surrounding environment, and the availability of equipment, materials, and personnel. Compliance with the Idaho Noxious Weed Law requires intensive management. The law specifies that control must be for eradication, prevention, or restoration. None of these objectives can be met without effort, money, and time.

Eradication and restoration require that weeds be killed. Their very nature makes that difficult, for they are invaders by nature and do not succumb to control except at great cost. That is one reason why they

are designated noxious. Vegetation produced by noxious weeds can be destroyed by chemical, mechanical, or other means. The Idaho Noxious Weed Law does not specify how noxious weeds must be controlled, only that they must be controlled. The decision as to how is left to the landowner.

Control recommendation for many weeds in varying circumstances in Idaho are published jointly by the colleges of agriculture of Idaho, Oregon, and Washington in the PNW Weed Management Handbook. This book is revised annually and provides current information on biological control agents, herbicide use, and other helpful information for difficult-to-control weeds. It is a good resource for preparing and comparing management strategies. Application of all herbicides is controlled by law, and that law is detailed on the label of each herbicide container.

A feature of this booklet is an attached Idaho Noxious Weeds Control Guide. This guide is inserted into a pocket in the back cover. While the guide is updated annually, you must apply herbicides according to your label on the container. Always read the label. Consider this booklet a guide. It is not a recommendation.

Persistently applied mechanical control can keep weed growth eliminated until the plants no longer continue to regrow. To accomplish this with perennial weeds requires that the mechanical procedure be used every few days, depending on the weed, growing conditions, and the chosen control procedure. This normally costs a great deal of time, money, and other resources, and is not without its special hazards and environmental consequences.

Biological control of weeds is the suppression of weeds with living organisms that in some way feed on or otherwise suppress the weeds. Biological control used alone does not result in compliance with the Idaho Noxious Weed Law, although it may in some circumstances reduce the effort required to comply with the Idaho Noxious Weed Law.

What To Do About New Weeds

1. If you know them, report them.

Please report plants that are new to an area even if you don't need help with them. We need to map Idaho's weeds to plan our strategy. Your reports are important.

2. If you don't know them, request identification.

• **What to send:** Plants are identified by flowers, fruits, seedlings, leaves, rosettes, stems, roots, and habitat. Send plants that have as many of these plant identifiers as possible. Several plants are better than one plant.

• **How to send it:** Place the plant specimen in a plastic bag between dry paper towels without pressing or adding moisture and close the bag. Store it in a refrigerator until mailing or bringing it in. If mailing your specimen, mail early in the week so it won't sit in a mailbox over the weekend.

• **Where to send it:** Bring or mail specimens to your nearest University of Idaho county extension educator's or weed superintendent's office. For more information about weeds in Idaho, please visit the UI's Erickson Weed Diagnostic Laboratory web site (**http://uidaho.edu/weeds**).

If the weed is new to the area or appears different from other known weeds it is important to send a specimen into the University of Idaho for verification and inclusion in the Erickson Weed Herbarium Records.

3. After you document them, get rid of them.

- **If a weed is new to the area:** Record its position to enable adequate reexamination of the site later. This is extremely important: Do this before you remove the weed!
- **If no flowers or seeds are present:** Pull the weed and place it off the ground to dry out.
- **If flowers or seeds are present:** Pull the weed carefully to prevent seeds from falling. Place the weed in a plastic bag or container to retain seeds. Dispose of weeds by burning them or taking them in closed garbage bags to a sanitary landfill.

Erickson Diagnostic Laboratory
Plants may be submitted for identification to the Lambert C. Erickson Weed Diagnostic Laboratory in the University of Idaho College of Agricultural and Life Sciences. The laboratory taxonomist identifies hundreds of plants each year, some of which are new to the region or state. The service is free. Contact your UI county extension educator for submission forms.

Leafy spurge continues to move within the state. It has dramatically increased along the Weiser River in recent years. Controlling small infestations such as this one protects adjacent grazing land.

Additional copies of this booklet, annual BUL 816 supplement control guides, and the PNW Weed Management Handbook are available from

Agricultural Distribution
PO Box 442240
University of Idaho
Moscow, Idaho 83844-2240
208/885-7982
email (agpubs@uidaho.edu)

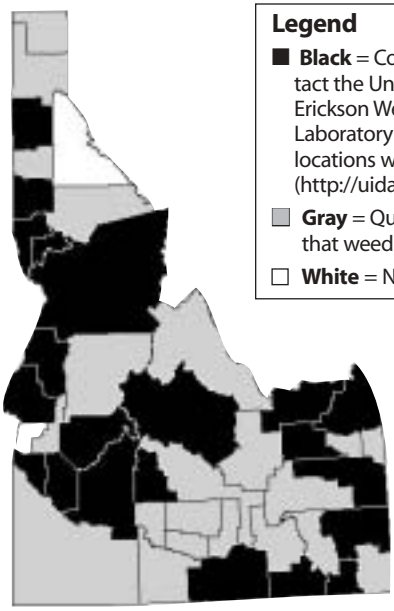
You may find Idaho's Noxious Weeds and other publications on the *Resources for Idaho* web site (http://info.ag.uidaho.edu).

For questions and comments concerning noxious weeds, contact the weed superintendent in your county, the University of Idaho Department of Plant, Soil and Entomological Sciences, or the Idaho State Department of Agriculture (**www.agri.state.id.us/animal/weedintro.htm**). For more information about weeds in Idaho, please visit the UI's Erickson Weed Diagnostic Laboratory web site (**http://uidaho.edu/weeds**) or the Idaho Weed Control Association web site (**www.idahoweedcontrol.org**).

Descriptions of Idaho's 36 Noxious Weeds

In the following pages, you will find for each of Idaho's 36 noxious weeds:

- Common, scientific, and family names.
- Background, including region of origin, habitat, and means of spread.
- Description with key identification features.
- Color photographs, including closeups of key identification features.
- A map of Idaho showing confirmed (solid pattern) and reported in questionnaire survey to counties (gray pattern).



Black Henbane

Hyoscyamus niger

Flowers have deep purple centers and veins. Leaves are coarsely toothed to shallowly lobed and pubescent. The plant has a pungent odor.

Black Henbane
(henbane, hog's bean)

Solanaceae, the nightshade family

Background: Black henbane is a Mediterranean native that was introduced as an ornamental and medicinal plant in the 17th century. It spreads by seeds and is found in a variety of environmental conditions. Black henbane is narcotic and poisonous to humans. Livestock avoid it unless other forage is not available. Two alkaloids in black henbane tissues (hyoscyamine and scopolamine) are useful sedative/anti-spasmodic drugs when used under controlled conditions.

Description: Black henbane is an annual or biennial plant that grows up to 3 feet tall. Rosette leaves are oblong with petioles nearly as long as the leaves. Rosette leaves are covered with glandular hairs, and the leaf margin is entire and may be wavy. Veins in the leaf are conspicuous on the lower side of the leaf. The entire plant is covered with greasy hairs. Leaves are up to 8 inches long and 6 inches wide, shallowly lobed, and heavy scented. Flowers are borne on spikes from the leaf axils from May until September. They are showy, five lobed, up to 2 inches across, and greenish yellow in color with deep purple veins and throats. The calyx forms a 1-inch, urn-shaped "fruit" that has a thickened lid that pops off at maturity and spills the black seeds.

Habitat: Pastures, fencerows, roadsides, and waste areas. Black henbane is found in well-drained soils that have been disturbed. Soil texture ranges from sandy to silt loam soils.

Distribution: Black henbane is found in the northern U.S. and southern Canada.

Buffalobur

Solanum rostratum

Spines on stems, leaves, and flowers make the plant untouchable. Leaves are deeply lobed and up to 5 inches long.

Buffalobur

Solanaceae, the nightshade family

Background: Buffalobur is native to the Great Plains region of the U.S. It is a drought-tolerant species that can grow in a wide variety of environmental conditions. Buffalobur spreads exclusively by seeds, which are enclosed within the spiny calyx.

Description: Buffalobur is an annual, with spiny leaves, flowers, and stems that grow up to 2 feet tall. Even leaves of seedlings have spines, and they are deeply lobed; some lobes are nearly to the midvein. Leaves are deeply lobed like a watermelon leaf, and are up to 5 inches long. Flowers are borne from midsummer until frost, are 1 inch across, five petalled, and bright yellow in color. One of the anthers in each flower is longer than the other four. The fruit is a dry berry that is overgrown by the calyx, forming a bur-like fruit. Seeds are black, flat, and wrinkled.

Habitat: Meadows, dry rangeland, pastures, lawns, cultivated fields, roadsides, and waste areas. While the plant is physically imposing, it is not very competitive and survives in disturbed, dry areas.

Distribution: Buffalobur is widely scattered throughout the West.

Canada Thistle

Cirsium arvense

Numerous flower heads are small, urn-shaped, and the bracts are spineless. Leaves are wavy margined and spiny. Flowers are purple to lavender, occasionally white.

Canada Thistle
(creeping thistle)

Asteraceae (= Compositae), the aster family

Background: Canada thistle is an invader from Eurasia. It was introduced to Canada probably as a crop seed contaminant before 1800. It is an aggressive weed that spreads by both seed and an extensive root system. The deep roots grow horizontally and send up shoots along their length, forming dense colonies. Even seedlings develop an extensive creeping root system within 2 to 4 months after emergence. Canada thistle is a dioecious plant so a plant has either male flowers or female flowers, and the flower difference may lead to confusion in identification. It is one of Idaho's most widespread and damaging noxious weeds.

Description: Canada thistle is a perennial plant that can grow up to 5 feet tall. Early rosette leaves have an egg to rounded spatula shape that may have wavy margins. The petiole is winged and the wing tapers toward the base. The petiole is at least two times longer than cotyledons. The teeth on the leaf margin end in a weak prickle. Several leaves above the cotyledons resemble the first leaves but they are larger. Upper leaf surfaces are covered with stiff hairs. Seedlings initially develop a deep taproot. Creeping roots develop in about 2 to 4 months. Seedlings sometimes initiate stems early and have poorly developed rosettes. Leaves are wavy margined to lobed, up to 6 inches long, and armed with yellowish spines. Stems are single, branched near the top, ridged, and hollow. Flower heads are borne in midsummer, 1/2 inch in diameter, and are not particularly spiny. Flowers are purple to lavender, occasionally white, with male and female flowers borne on separate plants. Seeds are slender, tan, 1/8 inch long, and bear fine plumes.

Habitat: Cultivated fields, riparian areas, pastures, rangeland, forests, lawns, gardens, roadsides, and waste areas.

Distribution: Canada thistle is found in the northern U.S. and southern Canada.

Common Crupina

Crupina vulgaris

Flowers are pink to purple in a compact, elongated head. Cotyledons exhibit a bright purple midrib that makes the early stage of this plant distinctive. Leaves are alternate and finely dissected.

Common Crupina

Asteraceae (= Compositae), the aster family

Background: Common crupina is a native of the eastern Mediterranean region. Although it was introduced to North America (and first discovered in Idaho) less than 30 years ago, it has spread to over 60,000 acres in Idaho and moved into Oregon, Washington, and California. It is usually found on dry south-facing slopes and pastures. It spreads by seed.

Description: Common crupina is a winter annual that grows up to 3 feet in height. Cotyledons are 1/2 to 1 inch long and exhibit a bright purple midrib that makes the early stage of this plant distinctive. The first rosette leaves are entire with toothed margins. Subsequent rosette leaves are lobed, becoming pinnately divided. Rosette leaves die as flowering starts. Leaves are simple and up to 6 inches long, entire near the base of the plant, lobed on the lower stem, and finely dissected on the upper stem. Up to five cylindrical seed heads are borne on branch tips in midsummer. Flowers are pink to purple and are followed by dark seeds about the size of a kernel of wheat with a ring of black, bristly hairs at the point of attachment.

Habitat: Canyon grasslands, rangelands, and forests.

Distribution: Common crupina is found only in the Pacific Northwest.

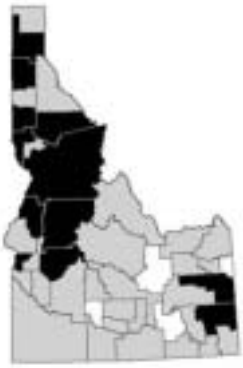
Dalmatian Toadflax

Linaria dalmatica ssp. *dalmatica*

(scientific name synonym = *Linaria genistifolia* ssp. *dalmatica*)

Young plants have sessile leaves that are egg- to lance-shaped. Bright yellow flowers with long spurs are easily mistaken for snapdragon. Leaves are bluish-green and clasp the stem.

Dalmation Toadflax



Scrophulariaceae, the figwort family

Background: Dalmatian toadflax is native to the Mediterranean region. Plants were introduced as ornamentals in the last half of the 1800s. Dalmatian toadflax spreads both by seeds and creeping lateral roots.

Description: Dalmatian toadflax is a perennial that grows up to 4 feet tall. Young plants have sessile leaves about 1 inch long that are egg to lance shaped. Waxy green to bluish green leaves are egg shaped, 1 to 3 inches long, and clasp the stem. Flowers are 1 inch long (excluding the 1/2-inch spur), yellow, often tinged with orange or red, but the exposed corolla below the opening to the throat is white (yellow toadflax is orange just below the throat opening). Flower shape is similar to that of snapdragon. Plants flower from midsummer to fall. Seeds are produced in a 1/2-inch pod and are irregularly wing angled. Large plants can produce nearly 1/2 million seeds.

Habitat: Arid rangelands, pastures, railways, and waste areas.

Distribution: Dalmatian toadflax is primarily a weed of the Intermountain West and California, but a population also exists in the Great Lakes region.

Diffuse Knapweed

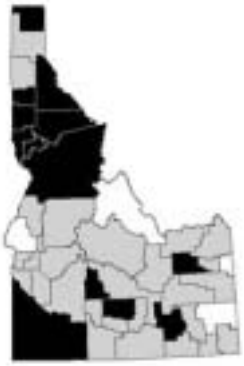
Centaurea diffusa

Flowers are generally white, sometimes pink to lavender in color. Each floral bract is tipped with a long, slender spine and is fringed with smaller spines. Rosette leaves are pinnately divided and up to 6 inches long.

Diffuse Knapweed

(tumble knapweed, bushy knapweed)

Asteraceae (= Compositae), the aster family



Background: Diffuse knapweed is a native of Eurasia, introduced into the U.S. in the early 1900s. It spreads by seed, aided by the tumbling of windblown mature plants, and it grows under a wide range of conditions.

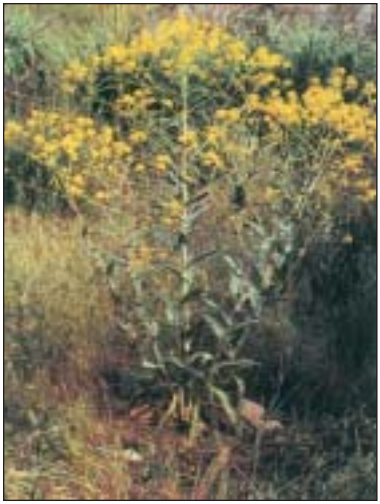
Description: Diffuse knapweed is an annual, biennial, or short-lived perennial that can grow to a height of 3 feet, with a single, much-branched stem that gives the plant a bushy appearance. Cotelydons are spatulate or oval. Rosette leaves are pinnately divided and up to 6 inches long; stem leaves are entire and smaller. Tips of each branch have a 1/3-inch wide, white, or sometimes pinkish flower head that appears from midsummer to fall. Bracts surrounding the flower are yellowish green with a light brown, comb like margin. The upper part of each bract narrows into a short, stiff spine. Seeds are brown to gray in color and are tipped by plumes that fall off at maturity.

Habitat: Riparian areas, sandy river shores, gravel banks, rock outcrops, rangelands, pastures, roadsides, and waste areas.

Distribution: Diffuse knapweed is widespread in the Pacific Northwest and has been noted in Illinois, Iowa, Massachusetts, Nebraska, Nevada, and Rhode Island.

Dyer's Woad

Isatis tinctoria



Leaves have white midribs and clasp stem at base. Fruits are teardrop shaped and are purplish brown at maturity.

Dyer's Woad

Brassicaceae (= Cruciferae), the mustard family

Background: Dyer's woad was introduced into North America from Europe, probably late in the 17th century. It was cultivated as a source of blue dye and has since naturalized as a weed present in dry areas of our region. Dyer's woad spreads primarily by seed.

Description: Dyer's woad can be a winter annual, biennial, or short-lived perennial. Cotyledons are ovate (triangle with round-edges), approximately 3/4 inch long with a stalk one-third as long as the leaf. First basal leaves are elliptic to obovate (inverted triangle with round edges). Basal leaves arise from a thick taproot, are lightly pubescent, have long petioles, and are up to 8 inches long. Stem leaves clasp the stem and are lance shaped, not pubescent, and shorter than the lower leaves. Leaves all have a prominent whitish midvein. Stems are up to 4 feet tall and bear 1/4-inch wide, yellow flowers in flat-topped clusters during May and June. Fruits are teardrop shaped, 3/4 inch long, purplish brown at maturity, pendulous, and each contains a single seed.

Habitat: Rangelands, forest lands, cultivated fields, pastures, and disturbed sites.

Distribution: Dyer's woad is occasionally found in the eastern U.S., but it is in the West where it is a serious weed.

Eurasian Watermilfoil

Myriophyllum spicatum

Eurasian watermilfoil (bottom left) has more leaf pair divisions (12 or more) and often has a flatter leaf tip than Northern watermilfoil (bottom right). The flowering stem is a pink flowering spike up to 8 inches long and is held erect above the water.

Eurasian Watermilfoil
(spike watermilfoil)

Haloragaceae, the watermilfoil family

Background: Eurasian watermilfoil is a native of Europe, Asia, and northern Africa. Reports suggest that it was introduced to the United States in the late 1800s, but was first documented in the eastern United States in the 1940s. Eurasian watermilfoil forms very dense mats of vegetation on the water's surface, interferring with water recreation and inhibiting waterflow. It spreads rapidly, mostly by fragmentation of plant parts.

Description: Eurasian watermilfoil is a submersed perennial plant with finely dissected feather-like leaves. The leaves are arranged in whorls of four around the stem at each node and are about 1.2 inches long. The Eurasian watermilfoil leaf generally has 12 or more leaflet pairs. Eurasian watermilfoil lower leaf segments sometimes extend to the leaf tip and the leaf tip appears flat. Northern watermilfoil lower leaf segments do not extend to the tip of the leaf and the leaf tip is more pointed. The leaves rarely extend above the water surface and collapse when removed from the water. The stems may reach lengths of 10 feet of more, and are usually 0.1 inch thick, branching freely at the water's surface. The flower stem is a rigid pink-flowering spike up to 8 inches long that is held erect above the water during flowering from June to August.

Habitat: Horticultural; lakes, ponds, streams, and aquaculture.

Distribution: Eurasian watermilfoil is found throughout the U.S. It is found from Florida to Quebec in the East, and California to British Columbia in the West.

Field Bindweed

Convolvulus arvensis

White funnel-shaped flowers, arrowhead shaped leaves, and twisted stems. Seedlings have ovate shaped cotyledons with a notched tip.

Field Bindweed

(morning glory, creeping jenny, field morning glory, perennial morning glory, small bindweed)

Convolvulaceae, the morning glory family

Background: Field bindweed is an Eurasian native that has thoroughly naturalized itself in North America. It reproduces both from seed and creeping roots and is found in extremely diverse environmental conditions. Seeds can remain viable in soil for 50 or more years. Field bindweed is agriculture's 12th most serious weed species.

Description: Field bindweed is a perennial vine that dies back each year. Cotyledons are dark green and somewhat kidney shaped or at least possessing a notch in the tip. Veins in the cotyledons are white. Young leaves are 1/2 to 1 1/2 inches long, lobed at the base, and resemble a spear point or arrowhead. Leaves are alternate, up to 2 inches long, and arrowhead shaped. Twisted stems are up to 6 feet long, often forming dense mats or climbing nearby vegetation. Flowers are borne in leaf axils from June until September, are white to pink, 1 inch wide, and funnel shaped. A pair of small bracts is found 1/4 to 1 inch below the flower. Seeds are hard, triangular, and borne in groups of four in a capsule.

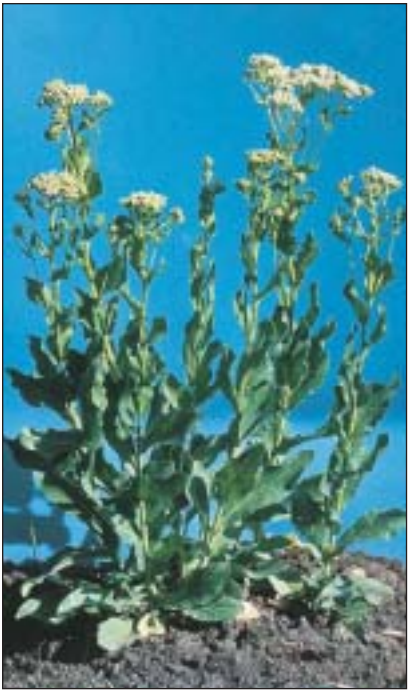
Habitat: Cultivated fields, pastures, meadows, lawns, gardens, roadsides, parking lots, and waste areas.

Distribution: Field bindweed is found throughout the U.S. except for the extreme Southeast, and southernmost Texas, Arizona, and New Mexico.

Hoary Cress

Lepidium draba ssp. *draba*

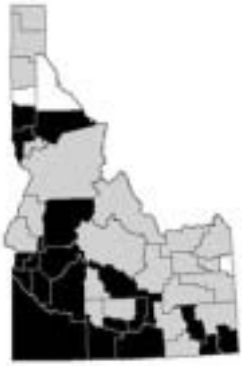
(scientific name synonym = *Cardaria draba*)



Many white flowers with four petals give the plant a white, flat-topped appearance. Leaves are grayish green, arrowhead shaped, and clasp the stem.

Hoary Cress
(whitetop, pepperwort)

Brassicaceae (= Cruciferae), the mustard family



Background: Hoary cress was introduced to the U.S. from Europe late in the 19th century. It was first noted around seaports on the East and West coasts, indicating seed may have been in the soil that was used as ballast for sailing ships. Hoary cress spreads both by seed and creeping roots, living in a wide variety of environmental conditions.

Description: Hoary cress is a perennial that grows up to 2 feet tall. Cotyledons are round to egg-shaped and 0.3 inch long. First leaves are ovate to oblong with a petiole equal or longer in length than the leaf and are longer than the cotyledons. Leaves are grayish green, clasping, lightly pubescent, up to 4 inches long, and are shaped like arrowheads. Flowers are white with four petals, 1/4 inch across, and borne in April and May. These dense flower clusters give the weed a flat-topped appearance early in the season, but this is lost as the stem elongates. Two small, flat, reddish brown seeds are contained in each of the heart-shaped seedpods. Two other species occur in Idaho, lens-podded hoary cress (*C. chalepensis*) and hairy whitetop (*C. pubescens*). These species appear similar, but seedpods are flat and round in lens-podded hoary cress and globe shaped in hairy whitetop. Hairy whitetop leaves generally are smaller than hoary cress with dense hairs.

Habitat: Cultivated fields, pastures, waste areas, and roadsides. Often abundant on irrigated, alkaline soils.

Distribution: Hoary cress is found throughout the U.S., except from southernmost California across to southernmost Mississippi.

Johnsongrass
Sorghum halepense

Plant produces a mass of thick rhizomes. Ligules are membranous, with a short fringe of hairs.

Johnsongrass

Poaceae (= Gramineae), the grass family

Background: Johnsongrass is a Mediterranean species brought to the U.S. as a hay and pasture grass. It spreads by seed in the northern U.S., but in central and southern U.S. it also spreads by rhizomes. Johnsongrass can produce toxic levels of hydrocyanic acid when under moisture stress or after frosts, making it potentially poisonous to livestock. Johnsongrass is the sixth most serious weed in the world.

Description: Johnsongrass is a perennial species over most of its range, but because it normally winter kills in Idaho, it usually acts as an annual here. Seedlings resemble corn, and the stem is flattened at the base. Leaves are up to 1 inch wide, with a prominent whitish midvein. The ligule is short and membranous with a hairy fringe; auricles are lacking. Stems can grow up to 8 feet in height, but our annual specimens will be closer to 3 or 4 feet tall. Large, open panicles are up to 1 foot long and emerge in midsummer. Spikelets are reddish in color, and most are tipped by bent awns. Scaly, finger-thick rhizomes are produced from the crown.

Habitat: Cultivated fields, pastures, banks of ditches, irrigated canals, moist sites, roadsides, and waste areas.

Distribution: Johnsongrass is found throughout the southern two-thirds of the 48 states.

Jointed Goatgrass

Aegilops cylindrica

Jointed goatgrass can be distinguished from wheat by the hairs that extend outward from leaf edges and hair below the collar. Seed head is a narrow, cylindrical spike and contains 2 to 12 spikelets (joints).

Jointed Goatgrass

Poaceae (= Gramineae), the grass family

Background: Jointed goatgrass is a native of southern Europe and western Asia. It is so closely related to wheat that both species can interbreed. It is difficult to distinguish from wheat until spikes appear. It spreads exclusively by seed. Jointed goatgrass grows best in cultivated fields, but it apparently can also invade grasslands.

Description: Jointed goatgrass is a winter annual, but about 5 percent of a population may be spring annuals. Seedlings are similar to wheat but have regularly spaced hairs along the leaf blade margin. The first leaf is often reddish green. The ligule is membranous and shorter than 0.02 inch long. Often the seed is still attached to the seedling, if carefully removed from the soil. Jointed goatgrass seeds are distinctive with part of the flowering stem attached to the seed. Leaves are up to a 1/2 inch wide, and have evenly spaced fine hairs along the leaf edges and down the sheath opening. The ligule is short and membranous; auricles are short and hairy. Stems can grow up to 4 feet tall and are tipped with slender, cylindrical spikes that appear to be a series of joints stacked on top of each other. Reddish to straw-colored spikes emerge in May to June, and uppermost joints are tipped by straight awns. Up to three "seeds" are enclosed in each joint.

Habitat: Wheat fields, rangelands, roadsides, and fencerows.

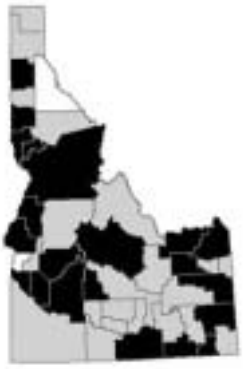
Distribution: Jointed goatgrass is found in all major U.S. winter wheat production regions—from Texas to South Dakota and eastern Montana, and in portions of Idaho, Oregon, Utah, and Washington.

Leafy Spurge
Euphorbia esula

Heart-shaped bracts appear to be a yellowish flower. Stems and leaves exude a milky juice when broken.

Leafy Spurge
(esula spurge)

Euphorbiaceae, the spurge family



Background: Leafy spurge was brought to the U.S. from Eurasia about 1897. A milky latex exists in all parts of the plant that can produce blisters and dermatitis in humans, cattle, and horses and may cause permanent blindness if rubbed into the eye. Protection is needed when handling leafy spurge. It spreads both by seed and creeping roots and grows in many environmental conditions.

Description: Leafy spurge is a perennial weed with roots often exceeding 20 feet in depth. Plants develop from pinkish root buds from any depth. Cotyledons are linear to elliptic, 0.15 to 0.75 inch long. The stem at the soil line is reddish-brown. Young leaves are similar to older leaves, but this feature is nearly opposite when plants are young. Leaves are narrow and up to 4 inches long. Stems grow up to 3 feet in height, and in midsummer are tipped by several pairs of showy, yellowish green, heart-shaped bracts (each up to 1/3 inch across), which enclose a small flower. Stems and leaves exude a milky latex when broken. Ripe seed capsules rupture when touched, throwing seeds as far as 15 feet.

Habitat: Rangeland, pastures, roadsides, waste areas, and riparian sites.

Distribution: Found throughout the West.

Matgrass
Nardus stricta

Tuff of crowded stems at ground level. Leaf blade bends at nearly a right angle to the stem.

Matgrass

(wirebent, moor matgrass)

Poaceae (= Gramineae), the grass family

Background: Matgrass is native to eastern Europe. It reproduces mostly through transport of tufts in mud clinging to the hooves of grazing animals. It is a coarse-textured grass that is not palatable to most livestock, and it eliminates other vegetation within each dense tuft. Matgrass is generally found in seasonally saturated mountain meadows.

Description: Matgrass is a slow-growing perennial bunchgrass, with tufts reaching 3 feet across or more. Seedlings have not been described and would be difficult to find. Small clumps of matgrass can be confused with young fine-leaved bunchgrasses and tufted sedges. Removing the plant from soil exposes the thick sheath through which the leaves arise, with a few leaves per sheath. Leaves are up to 1/4 inch wide but appearing narrower because blades are tightly folded along the midrib. The blade spreads at nearly a right angle to the stem. The ligule is short and membranous; auricles are lacking. Stems grow up to 8 inches tall and are tipped by inconspicuous slender spikes that emerge in midsummer and bear all spikelets on one side of the stem. Spikelets are tiny and straw colored and tipped by short, straight awns. Tufts are tightly rooted and hard to remove.

Habitat: Wet meadows.

Distribution: Matgrass is found in a few places in the northeast U.S. The only confirmed western locations are in Latah and Idaho counties in Idaho, and in Klamath County, Oregon.

Meadow Hawkweed

Hieracium caespitosum

(scientific name synonym = *Hieracium pratense*)

Bright yellow dandelion-like flowers. Plants produce a basal rosette of leaves. Stems are nearly leafless.

Meadow Hawkweed
(yellow hawkweed)

Asteraceae (= Compositae), the aster family

Background: Meadow hawkweed was introduced to the U.S. from Europe. This weed reproduces by seed, stolons, rhizomes, and root buds and generally inhabits moist grasslands.

Description: Meadow hawkweed is a perennial weed with shallow, fibrous roots. Leaves are hairy, up to 6 inches long, spatula shaped, and almost exclusively basal. Stolons are extensive, creating a dense mat of hawkweed plants that practically eliminates other vegetation. Stems are bristly and usually leafless, although occasionally a small leaf appears near the midpoint. Stems can reach a height of 3 feet and bear up to 30 1/2-inch flower heads near the top. Flowers are yellow and appear from late May to June. Stems and leaves exude milky juice when broken. Seeds are black, tiny, and plumed.

Habitat: Meadows, rangelands, pastures, and borders of forests.

Distribution: Meadow hawkweed is found in northern Idaho, northeast Oregon, and coastal and eastern Washington.

Meadow Knapweed

Centaurea debeauxii ssp. *thuillieri*

(scientific name synonym = *Centaurea pratensis*)

Many branched stems with pink to reddish purple solitary flowers. Broad flower-heads are free of spines.

Meadow Knapweed

Asteraceae (= Compositae), the aster family

Background: Meadow knapweed is a native of Europe and can grow in a wide range of environmental conditions. It is believed that meadow knapweed is a fertile hybrid resulting from crossbreeding black knapweed (*C. nigra*) and brown knapweed (*C. jacea*). It spreads primarily by seed.

Description: Meadow knapweed is a perennial plant up to 3 1/2 feet tall. Basal leaves are up to 4 inches long, slender, have a petiole, and may be entire, toothed, or lobed. Stem leaves usually don't have a petiole and are much smaller. Stems are many branched and tipped by a solitary flower head up to 1 inch wide. Flowers are pink to reddish purple and are produced from midsummer through fall. Flower head bracts are 1/4 inch wide, and the tips range from a comb-like fringe to a blunt ruffled edge. Bract tips range from tan to dark brown or, rarely, black. Seeds are brown to gray in color and are tipped by plumes that fall off at maturity.

Habitat: Mesic meadows, pastures, openings in forested areas, roadsides, and waste areas.

Distribution: Meadow knapweed is found from British Columbia to northern California.

Milium

Milium vernale

Milium sheds shiny seeds before winter wheat matures.

Milium

(early millet, spring milletgrass)

Poaceae (= Gramineae), the grass family

Background: Milium is a native of southern Europe and western Asia first observed in North America in 1987. It has been found in winter wheat and pastures, as well as areas near those fields. Milium spreads exclusively by seed. It has been a serious problem in winter wheat in Europe, and it is a threat to Idaho's winter wheat industry as well.

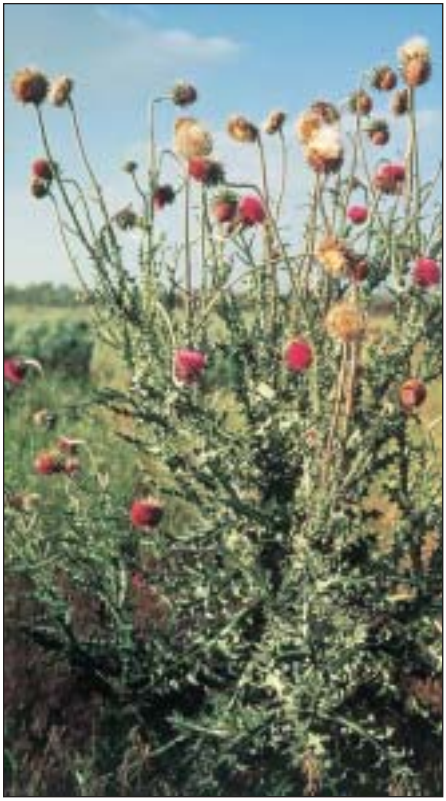
Description: Milium is a winter annual grass that grows up to 2 1/2 feet tall. Leaves are up to 1/4 inch wide and 4 inches long, with veins and margins appearing roughened. Stems of plants in dense stands are weak and spindly, requiring adjacent vegetation to hold them upright. Ligules are 1/4 inch long and membranous; auricles are lacking. Panicles are open and up to 8 inches long, approximately 25 percent of the plant's mature height. Spikelets are solitary on the tip of each panicle branch, 1/8 inch long, awnless, and contain a single hard, shiny seed. Seed heads appear in May, and seeds mature in June. The glumes (chaffy bracts that surround the seed) remain attached to the plant after the seeds fall.

Habitat: Cultivated fields and pastures.

Distribution: Milium is widespread in Eurasia; in North America, it has been confirmed in only one area (within a 3-by-7 mile area) in Idaho County.

Musk Thistle

Carduus nutans



The large showy flowers are flat, nodding, and surrounded by numerous bracts. The leaves extend onto the stem, giving it a winged appearance.

Musk Thistle

Asteraceae (= Compositae), the aster family

Background: Musk thistle, a native of Eurasia, was probably introduced into the U.S. as an ornamental in the early 20th century. It spreads by seeds, often forming nearly impenetrable stands. It can grow under a wide range of environmental conditions.

Description: Musk thistle is a biennial or winter annual that can grow up to 8 feet tall. Cotyledons are 0.3 to 0.6 inch long, oblong in shape with the leaf tip usually squared. Almost no petiole is on cotyledons. The first leaf pair is nearly opposite, but next leaves are alternate and form a rosette. Leaves are oval to elliptic with shallow lobes and sparse sharp points. Color of young leaves is pale green, and they are waxy. Leaves are up to 10 inches long, dark green with a light green midrib, and spiny and deeply lobed. Solitary, lightly spiny, and nodding flower heads develop at the stem tips in midsummer, and grow to a diameter of 1 1/2 to 3 inches. Blossoms are deep rose to violet or sometimes white in color. Seeds are 3/16 inch long, shiny, yellowish brown, and have a hairlike plume.

Habitat: Rangeland, pastures, meadow, forests, stream banks, roadsides, and waste areas. It prefers moist, bottomland soil, but can be found on drier uplands.

Distribution: Musk thistle is widely though sparsely present in North America.

Orange Hawkweed

Hieracium aurantiacum

Flowers are bright red-orange in color, the only orange-flowered hawkweed. Plants produce a basal rosette of leaves. Stems are bristly and mostly leafless.

Orange Hawkweed

(king devil, red devil, devil's paintbrush)

Asteraceae (= Compositae), the aster family

Background: Orange hawkweed is native to Europe. Distribution of this weed has likely been assisted by flower enthusiasts due to its beauty. Orange hawkweed spreads by seeds, stolons, and rhizomes, and generally inhabits moist grasslands.

Description: Orange hawkweed is a perennial weed with shallow, fibrous roots. Cotyledons are elliptical, 0.1 inch in length. The first leaves have long hairs and are slightly larger than cotyledons. Subsequent leaves tend toward a spatula shape. Leaves are hairy, up to 5 inches long, and are almost exclusively basal. Extensive stolons create a dense mat of hawkweed plants that practically eliminates other vegetation. Stems are usually leafless, although occasionally a small leaf appears near the midpoint. Stems may reach a height of 1 foot and bear up to 30 1/2-inch flower heads near the top. Flowers are red to orange and appear in late May to June. Stems and leaves exude a milky latex when cut or broken. Seeds are tiny and plumed.

Habitat: Meadows, rangelands, pastures, and borders of forests.

Distribution: Orange hawkweed is found in many eastern states and also from western Washington to Wyoming.

Perennial Pepperweed

Lepidium latifolium

Tiny white flowers in tight clusters produce pods with two seeds. Leaves are waxy, with a prominent, whitish mid-vein.

Perennial Pepperweed

(broad-leaved peppergrass, tall whitetop, Virginia pepperweed)

Brassicaceae (= Cruciferae), the mustard family

Background: Perennial pepperweed is native to southern Europe and western Asia. It spreads by seed and creeping roots under many different environmental conditions.

Description: Perennial pepperweed grows up to 6 feet tall and has basal leaves that are lance shaped, have long petioles, are up to 12 inches long, and are covered with a waxy layer. Cotyledons are obovate to oblong, without hairs, and have a very short petiole. First leaves are ovate to oblong, slightly longer than cotyledons, and appear opposite. Later rosette leaves alternate and are successively larger. Stem leaves are smaller and have shorter petioles, but don't clasp the stem. Leaves have a prominent, whitish midvein. Flowers are white, less than 1/8 inch wide, and are borne in dense, rounded clusters at the branch tips from early summer until fall. Fruits are roundish, slightly hairy, measure 1/16 inch in diameter, and contain two tiny seeds.

Habitat: Waste areas, wet areas, ditches, roadsides, cropland, and dry habitats.

Distribution: Perennial pepperweed is widely scattered throughout the U.S.

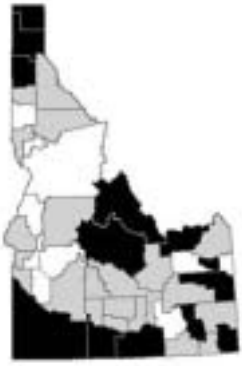
Perennial Sowthistle

Sonchus arvensis

Creeping roots; dandelion-like leaves with prickly edges. The stems are hollow with milky juice.

Perennial Sowthistle
(field milk-thistle)

Asteraceae (= Compositae), the aster family



Background: Perennial sowthistle is a native of western Asia and Europe. It spreads both by seed and creeping roots, and it grows under a wide range of environmental conditions. Plants can be produced from root buds as deep as 2 feet, often resulting in large, dense colonies.

Description: Perennial sowthistle is an erect plant, branching in the upper portion of the plant, growing to 6 feet. Cotyledons are obovate, 0.3 inch long. Rosette leaves are crowded, spatula-shaped to deeply lobed, and dandelion-like shaped up to 10 inches long near the base of the plant. Stem leaves are much reduced, usually not lobed, and scarce; all leaves are prickly toothed along the margins. Stems are hollow, sparsely branched, and up to 6 feet tall. Both leaves and stems exude a milky latex when broken. Yellow, dandelion-like flower heads to 2 inches wide are borne from June until frost. The flower heads and their stems bear coarse, spreading, gland-tipped hairs. Seeds are reddish brown, 1/8 inch long, flattened, ribbed, and tipped with white plumes. The plant has extensive horizontal roots.

Habitat: Cultivated fields, meadows, pastures, lakeshores, gardens, lawns, roadsides, and waste areas. It prefers moist rather than dry conditions.

Distribution: Perennial sowthistle is found throughout the northern U.S., and in parts of California, Texas, Missouri, and North Carolina.

Poison Hemlock

Conium maculatum

White flowers are borne in many umbrella-shaped clusters. Stem is mottled with purple splotches. First year's rosette has fern-like, pinnately divided leaves.

Poison Hemlock

Apiaceae (= Umbelliferae), the parsnip family

Background: Poison hemlock is native to Europe. It contains highly poisonous alkaloids toxic to all classes of livestock and humans. An extract of this species was used to execute Socrates in ancient Greece. It has also accidentally poisoned many who have mistaken it for parsley. Poison hemlock is often found on poorly drained soils, particularly near streams, ditches, and other surface water.

Description: Poison hemlock is a biennial that grows up to 10 feet tall. Even young plants have fern-like leaves that are pinnately divided with up to four divisions. It resembles parsley leading to some poisonings in people. Stems are stout, hollow, ridged, and mottled with purple spots. Leaves are shiny green, three to four times pinnately compound, and clasp the stem at the obvious nodes. Crushed foliage has a disagreeable, mousey odor. Flowers are small, white, and borne in umbrella-shaped clusters about 3 inches across in early summer. Seeds are ridged and flattened, with two seeds borne together. The plant has a thick, white taproot, which when cut longitudinally near the top, reveals thin, horizontal walls through a hollow chamber.

Habitat: Riparian areas, stream banks, ditches, borders of pastures, and cultivated fields.

Distribution: It is found throughout the U.S. except from eastern Montana to northeastern Minnesota and south to Nebraska.

Puncturevine

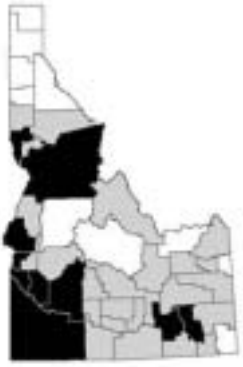
Tribulus terrestris

Yellow flowers mature to produce spiny burs. Seedling leaves are pinnately compound with hairs.

Puncturevine

(goathead, Mexican sandbur, Texas sandbur, ground bur-nut, land caltrop)

Zygophyllaceae, the caltrop family



Background: Puncturevine is a thoroughly naturalized invader from Europe. It spreads by seed and is most often found on sandy, dry, or gravelly sites. Puncturevine produces sharply pointed burs that stick painfully in bare feet and cause bicycle flats, reducing the recreational use of many areas. Even light truck tires can be punctured by seeds.

Description: Puncturevine is a prostrate annual that forms dense mats up to 4 feet across. Cotelydons are 0.2 to 0.6 inch long, olive green, and oblong with a notch in the tip. First leaves are pinnate and covered with numerous hairs on both the leaves and the petioles. Leaves are opposite and pinnately compound with four to eight pairs of oval, hairy, 1/2-inch long leaflets. Stems branch from the base and from leaf axils and are slender and hairy. Flowers are five-petalled, yellow, 1/2 inch wide, and borne singly in leaf axils from midsummer until frost. Fruits are roughly circular, splitting into five sections, each with two large, divergent spines. These tacklike burs contain up to four seeds.

Habitat: Pastures, cultivated fields, roadsides, sidewalks, parks, and waste areas.

Distribution: Puncturevine is found throughout the U.S., except for the northern tier states from Montana to Maine.

Purple Loosestrife

Lythrum salicaria

Purple petals are noticeably crumpled. Stems are square, and much branched, bearing opposite or whorled lance-shaped leaves.

Purple Loosestrife

(spiked willow-herb, long-purples, purple lythrum)

Lythraceae, the loosestrife family

Background: Purple loosestrife is a semi-aquatic plant native to Europe, probably introduced as an ornamental. Valuable riparian habitat is degraded because this weed, which has no wildlife value, rapidly displaces food species. Purple loosestrife spreads both by seed and spreading rhizomes that form dense, woody mats.

Description: Purple loosestrife is a semi-aquatic, hardy perennial that can grow over 8 feet tall. Cotyledons are ovate, about 0.2 inch long with petioles about half the length of the cotyledons. The stem below cotyledons often has purple dots. First sets of leaves are opposite, about 0.25 to 0.3 inch long. Stems are usually four-sided and much branched, bearing opposite or whorled, 4-inch long, lance-shaped leaves. Crowded flower spikes develop at the stem tips in midsummer. Flowers are 1 inch in diameter with six reddish purple, wrinkled petals that appear as if they have been crushed. A single plant may produce over 2.5 million tiny seeds per year.

Habitat: Wetlands, stream banks, and shorelines of shallow ponds.

Distribution: Purple loosestrife is found throughout the northeastern U.S. and in some western states.

Rush Skeletonweed

Chondrilla juncea

Yellow flowers are produced at the ends of the dark green nearly leafless stems. Stiff downward pointing brown hairs grow from the base of the stem. The plant produces a basal rosette of lance-shaped, deeply lobed leaves.

Rush Skeletonweed

Asteraceae (= Compositae), the aster family

Background: Rush skeletonweed is a native of Eurasia. It generally prefers well-drained, light soils. The plant spreads primarily by seed, but roots scattered by cultivation can aid in spread.

Description: Rush skeletonweed is a perennial whose branched stems may be 4 feet tall and superficially appear leafless. Cotyledons are spatulate, sometimes oval. The first leaves have teeth that point toward the petiole and are located at the leaf margin. Early rosette leaves are oblanceolate, sometimes with a purple tinted leaf margin. Basal leaves form a dandelion-like rosette that withers as the flower stem develops. Stem leaves are narrow and up to 4 inches long. The lowest 4 to 6 inches of the stem is covered with coarse brown hairs. Stems and leaves both produce a milky latex. Yellow flower heads are 3/4 inch in diameter and are scattered among the branches from midsummer to fall. The seed is ribbed and bears a soft, white plume.

Habitat: Roadsides, rangelands, grain fields, and pastures.

Distribution: Rush skeletonweed infests several million acres in the Pacific Northwest and California.

Russian Knapweed

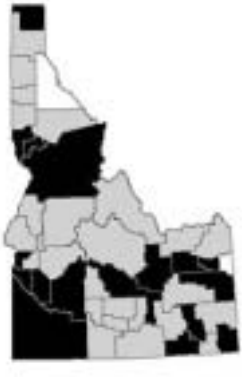
Acroptilon repens

(scientific name synonym = *Centaurea repens*)

Pink to lavender flowers. Greenish bracts with transparent tips on seed head; no spines.

Russian Knapweed
(Turkestan thistle)

Asteraceae (= Compositae), the aster family



Background: Russian knapweed is an invader from the Caucasus in southern Russia and Asia. It spreads both by seeds and from shoots arising from creeping roots. Russian knapweed can produce from 6 to 27 root shoots per square foot, and roots may grow to a depth of 23 feet. Russian knapweed causes chewing disease in horses. It grows under a wide range of environmental conditions.

Description: Russian knapweed is a perennial whose stems are considerably branched and up to 4 feet tall. Cotyledons are ovate to spatulate with small scale-like particles on the lower side of the leaf. First rosette leaves are oblanceolate to elliptic and not lobed. Older rosette leaves are pinnately lobed. Leaves are up to 6 inches long near the base of the plant, entire to few-toothed, and are smaller toward the top of the plant. The flower heads are about 1/2 inch in diameter and are borne on branch tips during summer and fall. The flowers may be white or pink to lavender-blue. Greenish to straw-colored bracts are tipped with a papery, pointed margin. Ivory-colored seeds are tipped by plumes that fall off at maturity. Roots are dark brown to black.

Habitat: Cultivated fields, irrigation ditches, pastures, roadsides, and waste areas.

Distribution: Russian knapweed is found throughout the western U.S.

Scotch Broom

Cytisus scoparius

Yellow pea-like flowers on dark green stems with tiny leaves.

Scotch Broom

Fabaceae (= Leguminosae), the pea family

Background: Scotch broom is native to Europe and was likely introduced as an ornamental. It spreads by seed and inhabits well-drained sites over a wide range of precipitation regimes. Several commercial varieties of Scotch broom are not considered noxious. Check with your local weed control superintendent to determine if your plants are designated noxious.

Description: Scotch broom is a woody perennial species up to 10 feet tall. Leaves are mostly trifoliate with 1/2-inch long, alfalfa-like leaflets. Stems are strongly angled and dark green, with branches that spread only slightly from the main stem. Flowers are bright yellow, pealike, 1 inch in length, and borne in the leaf axils during June. Brown seed pods are smooth (except for hair along the margins), flattened, and contain several beanlike seeds, which are thrown some distance as the pods snap open at maturity.

Habitat: Pastures, borders of forest, lawns, roadsides, and waste areas.

Distribution: Scotch broom is widespread along both coasts and has been sparingly introduced inland.

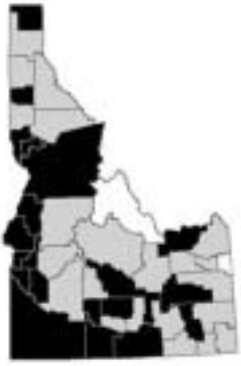
Scotch Thistle

Onopordum acanthium

Large globe-shaped heads remain upright at maturity. Rosette leaves are covered with white hair giving them a blue-green color.

Scotch Thistle
(cotton thistle)

Asteraceae (= Compositae), the aster family



Background: Scotch thistle, Idaho's largest thistle, is a native of Europe and eastern Asia and is probably an escaped ornamental. Scotch thistle stands are dense and practically impenetrable because of the weed's spiny nature and large size. It spreads by seed and generally inhabits moist sites or drainages in dry locations.

Description: Scotch thistle is a biennial that grows up to 8 feet tall. Cotyledons are oval to oblong, 0.6 to 0.8 inch long. Leaves are elliptic or oblanceolate with irregularly spaced sharp teeth. Leaves are covered with woolly hairs. The plant forms a rosette of leaves the first year, and produces a seed stalk the second year. Leaves are large (up to 2 feet long and 1 foot wide) and strongly armed with spines. The blades form conspicuous fringelike extensions down the side of the stem. The entire plant is finely hairy to woolly, giving it a silvery-gray color. Flower heads are borne in midsummer in groups of two or three on branch tips. Flower heads are globe shaped, upright, intensely spiny, and up to 2 inches in diameter. Flowers are purple. Seeds are slender, smooth, and plumed.

Habitat: Rangeland, dry pastures, roadsides, railroad rights of way, waste areas, as well as rivers, streams, canals, or other waterways.

Distribution: Scotch thistle is widely but sparsely distributed in the U.S.

Silverleaf Nightshade

Solanum elaeagnifolium

White hairs give leaves a silver cast; flowers are white to purple with yellow anthers. Lance-shaped leaves with wavy margins are covered with star-shaped hairs giving it a gray-green color.

Silverleaf Nightshade

(white horsenettle, silverleaf nettle, bullnettle)

Solanaceae, the nightshade family

Background: Silverleaf nightshade is native to the central U.S. The plant spreads by seeds and rhizomes, and grows under a variety of environmental conditions. Berries and foliage are poisonous to livestock.

Description: Silverleaf nightshade is a perennial that grows up to 3 feet tall. Cotyledons are gray-green, lanceolate. First leaves are oblong with wavy margins. The leaf surface is covered with star-shaped hairs giving it a gray-green color. Leaves are lance shaped, somewhat wavy along the edges, an inch or less in width, and up to 5 inches long. Stems are armed with a few yellowish thorns. Both stems and leaves are covered with downy hairs, giving the plant a silvery appearance. Flowers are about 1 inch wide with five bluish to lavender or occasionally white petals, surrounding five bright yellow anthers clustered in the center. Flowers are borne from midsummer until frost. Fruits are smooth, orange-yellow to dark colored, many-seeded berries. The plant has extensive horizontal rhizomes from the crown.

Habitat: Roadsides, cultivated fields, and disturbed sites.

Distribution: Silverleaf nightshade is found throughout the central U.S. and occasionally in the West.

Skeletonleaf Bursage

Ambrosia tomentosa

(scientific name synonym = *Franseria discolor*)

Flowers mature to become clusters of spiny burs. Leaves are deeply lobed with a silvery-green lower surface covered with fine hairs.

Skeletonleaf Bursage

(bur ragweed, silverleaf, povertyweed)

Asteraceae (= Compositae), the aster family

Background: Skeletonleaf bursage is native to the Great Plains region. It spreads both by seed and creeping roots, keeping primarily on, but not limited to, dry or poorly drained sites.

Description: Skeletonleaf bursage is a creeping perennial up to 3 feet tall. Leaves are alternate, up to 5 inches long, and very deeply lobed with coarsely toothed margins. The lobes are reduced in size from leaf base to tip. The upper leaf surface is greenish gray and may have rough hairs; the lower surface is white with short, dense hairs. Flower heads are 1/4 inch wide and are produced from June through August. Each head contains inconspicuous yellow flowers that are either male or female (not both). Fruits are two-seeded, light brown burs with up to 10 short spines. The plant has extensive horizontal roots.

Habitat: Cultivated fields, pastures, prairies, and waste areas.

Distribution: Skeletonleaf bursage occurs from the desert Southwest to Wisconsin and Illinois.

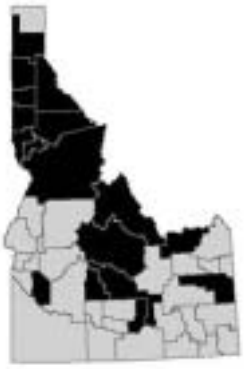
Spotted Knapweed

Centaurea stoebe ssp. *micranthos*

(scientific name synonym = *Centaurea biebersteinii* and *Centaurea maculosa*)

Flower heads are surrounded by black, triangular tipped bracts. Rosette leaves are deeply lobed.

Spotted Knapweed



Asteraceae (= Compositae), the aster family

Background: Spotted knapweed, native to Europe, has thoroughly established itself in North America. In Idaho the weed is widely spread and has moderate shade tolerance. Each plant produces up to 25,000 seeds that are dispersed by wind, animals, and people. Seeds may remain viable for 8 years.

Description: Spotted knapweed is a biennial or short-lived perennial. Cotyledons are spatulate to oval, about 1 inch long. Young leaves are covered with soft hairs and slightly lobed, becoming pinnately lobed in older leaves. Mature plants may be 3 feet in height and are much branched. The weed forms a basal rosette the first year with leaves up to 6 inches long. Both basal and stem leaves are pinnately divided. Flower heads are abundant, 1/2 inch wide, and generally solitary on branch tips. Flowers are pink to purple, or occasionally white, and appear from midsummer to fall. Each stiff flower head bract has a dark comblike fringe resembling a black spot at the tip. Seeds are dark brown to tan and are tipped by plumes that fall off at maturity.

Habitat: Rangelands, dry meadows, pastures, upland rocky areas, roadsides, and the sandy or gravelly floodplains of streams and rivers.

Distribution: Spotted knapweed is found in the Northeast and north central U.S. as well as along the Pacific Coast and east through Montana.

Syrian Beancaper

Zygophyllum fabago

Paired leaflets give the leaf a Y-shaped appearance.

Syrian Beancaper

Zygophyllaceae, the caltrop family

Background: Syrian beancaper is native to the Syrian desert and eastward to the Mediterranean Sea. It spreads by seed and in some conditions by creeping roots. It is well suited to dry environments.

Description: Syrian beancaper is a perennial that may act like an annual in regions with harsh winters. Leaves are somewhat succulent, opposite, and compound, each having two oval, 1-inch leaflets. Stems are smooth, thickened, and up to 1 1/2 feet tall, giving the plant a bushy appearance. Flowers are borne singly or in pairs from the leaf axils, salmon to yellow or white with pinkish veins, and up to 3/4 inch across. Flowering occurs from April to June. Seed pods are oblong, up to 1 1/2 inch long, five-angled, and ribbed; each contains several oval, 1/2-inch long, gray seeds. Buds on horizontally spreading, brownish orange roots germinate to form dense patches.

Habitat: Deserts, dry grasslands, and waste areas. It grows in open, rocky areas and gravelly soils.

Distribution: Syrian beancaper has been reported in several western states.

Tansy Ragwort

Senecio jacobaea

Yellow daisy-like flowers in dense clusters. Leaves are deeply pinnately dissected and appear ruffled.

Tansy Ragwort

Asteraceae (= Compositae), the aster family

Background: Tansy ragwort is an Eurasian weed first reported in Oregon in 1922. It spreads primarily by seed—a single tansy ragwort plant may produce up to 150,000 seeds, which may remain viable for up to 15 years. All parts of this weed are poisonous. It causes liver damage to cattle and horses, while sheep are affected to a lesser extent.

Description: Tansy ragwort is a biennial or short-lived perennial. Cotyledons are oval, about 0.1 inch long. Cotyledon leaf tips are flattened to slightly notched. First leaves are oval with wavy margins and twice as long as cotyledons. Flower stalks develop the second year, growing up to 6 feet tall, with many branches near the top. Stem leaves are two to three times pinnate with blunt tips and blades that attach directly to the stalk. Numerous yellow, 1-inch wide, daisy-like flower heads with golden or light brown centers form at the tip of each branch from midsummer to fall. Seeds are tiny and are tipped by hair-like plumes that carry seeds in the wind for long distances.

Habitat: Roadsides, pastures, and forested areas recently harvested for timber.

Distribution: Widespread on the coast and Cascade mountains of Washington and Oregon.

Toothed Spurge

Euphorbia dentata

Small fruits grow in clusters at base of toothed leaves. Leaf margins are dentate or serrate. Stems contain a milky juice.

Toothed Spurge

Euphorbiaceae, the spurge family

Background: Toothed spurge is native to the Great Plains region. It spreads by seed and grows under a wide range of environmental conditions. A milky latex exists in all parts of the plant that can produce blisters and dermatitis in humans, cattle, and horses and may cause permanent blindness if rubbed into the eye. Protection is needed when handling toothed spurge.

Description: Toothed spurge is an annual up to 3 feet tall. Leaves are up to 3 inches long, ovate to linear, coarsely toothed, mostly opposite, hairy, and often dotted with a few purplish red spots. Stems are many branched and generally curve upwards. Both stems and leaves exude a milky latex when broken. The inconspicuous flowers are borne in late summer, followed by three-sided, turban-shaped, 1/4-inch, smooth, green fruits. Seeds are rough, bumpy, oval, and gray.

Habitat: Cultivated fields, gardens, roadsides, and waste areas.

Distribution: Toothed spurge is widely established from Massachusetts to Virginia and west to Arizona, but limited to Idaho County in Idaho.

Yellow Starthistle

Centaurea solstitialis

Yellow thistle-like flowers with yellowish spines at the base of the flower head. The stem and leaves are dull green color and covered with fine woolly hairs. The leaves extend down the stem, giving it the appearance of being winged. The basal rosette leaves are entire when young. Older leaves are pinnately lobed.

Yellow Starthistle

(St. Barnaby's thistle, cotton-tip thistle)

Asteraceae (= Compositae), the aster family

Background: Yellow starthistle originated in the Mediterranean area and Asia. It spreads exclusively by seed, which may lie dormant for as long as 10 years. It causes "chewing disease" and death in horses. Yellow starthistle will grow wherever downy brome (cheatgrass) grows. It has spread in some canyons of Idaho at the rate of 60 percent per year.

Description: Yellow starthistle is a winter annual, maturing from 2 to 72 inches tall. Cotyledons are about 1/4 inch long and oblanceolate. First leaves are generally without lobes but pinnately lobed in older rosette leaves. Leaf surface has cotton-like hairs on older rosette leaves. A rosette of deeply lobed leaves up to 8 inches long forms after seed germination in the fall. Stem leaves up to 4 inches long develop in early spring, their blades forming fringelike extensions down the side of the stem. Yellow flower heads develop at the tips of branched stems from late spring until fall. Flower head bracts bear stiff, sharp thorns that are 3/4 inch long. Seeds are tan with white and brown mottling, 1/8 inch long. Both plumed and unplumed seeds are borne in each flower head. Plumed seeds are not highly windborne; unplumed seeds not at all.

Habitat: Canyon grasslands, rangelands, pastures, edges of cropland, roadsides, and disturbed areas.

Distribution: Yellow starthistle is widely scattered throughout the U.S. but is a severe problem only in the West.

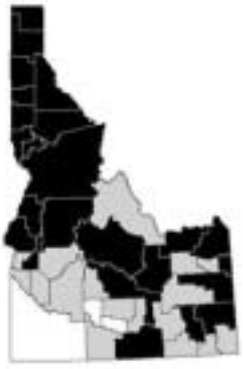
Yellow Toadflax

Linaria vulgaris

Orange and yellow snapdragon-like flowers. Leaves are pale green, alternate, narrow, and pointed at both ends.

Yellow Toadflax
(butter-and-eggs)

Scrophulariaceae, the figwort family



Background: Yellow toadflax is likely an escaped ornamental brought to this country from Europe in the mid to late 1800s. It spreads both by seed and roots. This weed contains a poisonous glucoside that may be harmful to livestock.

Description: Yellow toadflax is a perennial with narrow, nearly opposite, 2-inch long leaves. Stems are smooth, generally unbranched, and up to 3 feet tall. The showy snapdragon-like flowers are about 1 inch long (excluding the 1/2-inch spur), yellow with an orange throat and are borne in summer and fall. Seed is produced in brown, globe-shaped capsules. Seeds are round, dark colored with notched, papery collars that act as wings in spreading the seed. Cotyledons are lanceolate, from 0.15 to 0.4 inch long. Leaves are nearly opposite and 2 inches long. Stems are smooth, generally not branched.
Habitat: Grasslands, cultivated fields, gardens, roadsides, and waste areas.

Distribution: Yellow toadflax is found throughout the U.S.

Glossary

Alternate—leaves that are arranged singly up the stem; not opposite each other.

Annual—plant that germinates, flowers, seeds, and dies during one growing season.

Anther—structure in a flower in which pollen is formed.

Auricle—lobelike structure at the collar of a grass leaf.

Awn—slender bristle at the tip of grass seed structures.

Axil—the angle formed between a leaf and a stem.

Basal—at the base of a plant or plant part.

Biennial—plant that germinates in one growing season, then flowers, seeds, and dies during a second.

Bract—leaflike structure at the base of flowers or leaves.

Calyx—all the flower leaves together, normally green in color.

Clasping leaves—leaves that appear to wrap around the stem at their base.

Compound leaves—leaves with two or more distinct leaflets.

Cotyledons—the first leaflike structures that appear after germination; seed leaves.

Crown—the structure formed where leaves, stems, and roots grow together.

Dissected—deeply and repeatedly divided into smaller parts.

Entire—not toothed or otherwise cut.

Glumes—the two bracts surrounding a grass spikelet.

Head—a group of flowers borne tightly together.

Leaflets—leaflike structures within a compound leaf.

Ligule—the structure at the collar of a grass leaf between the sheath and the stem.

Linear—long, narrow, and slender.

Lobed—a cut into a leaf from the edge toward the center; greater than toothed, but not quite compound.

Margin—the edge of a leaf.

Membranous—thin and flexible, usually not green.

Midrib—the center and usually most prominent vein on a leaf.

Nodding—a flower that is not pointed upward, but bent downward or sidewise to the stem.

Opposite—leaves situated directly across the stem from each other.

Ovate—egg shaped in outline.

Panicle—a much-branched inflorescence.

Perennial—plant that lives for more than two growing seasons.

Petiole—a leaf stalk.

Pinnate—with two rows of leaflets, like a feather.

Plume—a hairlike or featherlike structure, often on a seed.

Pubescence—the hairs on a leaf, stem, or flower.

Rhizome—a creeping, underground stem.

Rosette—a circular, normally basal, clump of leaves.

Sheath—the extension of leaf tissue surrounding a stem.

Simple leaf—one with a blade all in one piece; not compound.

Spike—a narrow, nonspreading inflorescence.

Spikelet—a single or group of floral structures in a grass.

Spur—a hollow appendage on a flower.

Stolon—a creeping stem along the surface of the ground.

Succulent—fleshy and juicy.

Taproot—a thick, central root with minimal branching.

Trifoliate leaf—a leaf made of three leaflets; clover-like.

Whorled—three or more similar structures arranged as spokes on a wheel.

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