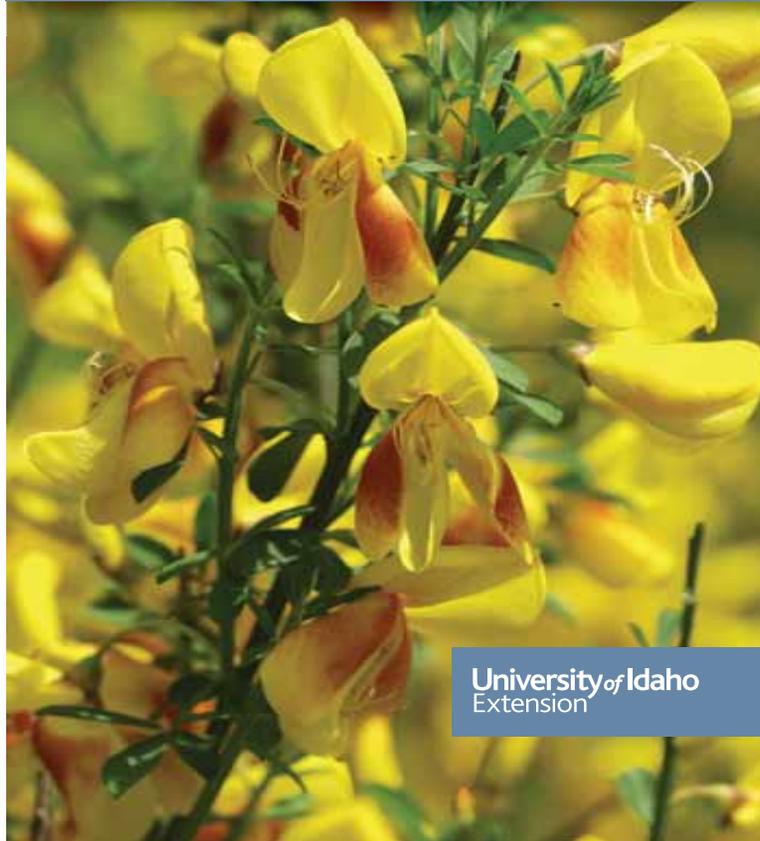




# Idaho's Noxious Weeds

4TH EDITION



University of Idaho  
Extension

# IDAHO'S NOXIOUS WEEDS

4TH EDITION

by Timothy Prather, Sandra Robins,  
and Don Morishita

University of Idaho Extension  
Moscow, Idaho

THE AUTHORS—**Timothy Prather**, Extension Weed Specialist;  
**Sandra Robins**, Taxonomist; and **Don Morishita**, Extension Weed Specialist;  
all in the University of Idaho Department of Plant, Soil, and Entomological  
Sciences.

The authors gratefully acknowledge the contributions of the authors of  
previous editions: Larry Lass, Robert Callihan, and Timothy Miller.

© 1994, 1999, 2002, 2008 by the University of Idaho  
All rights reserved. First edition 1994. Fourth edition 2008

12 11 10 09 08      1 2 3 4 5

TO ORDER COPIES, please contact  
Educational Publications Warehouse  
University of Idaho  
P.O. Box 442240  
Moscow, ID 83844-2240  
(208) 885-7982

**University of Idaho**  
Extension

Issued in furtherance of cooperative extension work in agriculture and home  
economics, Acts of May 8 and June 30, 1914, in cooperation with the U.S.  
Department of Agriculture, Charlotte V. Eberlein, Director of University of  
Idaho Extension, University of Idaho, Moscow, Idaho 83844. The University  
of Idaho provides equal opportunity in education and employment on the  
basis of race, color, national origin, religion, sex, sexual orientation, age, dis-  
ability, or status as a disabled veteran or Vietnam-era veteran, as required by  
state and federal laws.

## Contents

### INTRODUCTION

Impacts to our natural systems .....	1
What are noxious weeds? .....	1
Categories of noxious weeds .....	1
Submitting weeds for identification.....	3
How to use this guide .....	4

### IDAHO'S NOXIOUS WEEDS

Black henbane ( <i>Hyoscyamus niger</i> ) .....	6
Bohemian knotweed ( <i>Polygonum X bohemicum</i> ).....	8
Brazilian elodea ( <i>Egeria densa</i> ) .....	10
Buffalobur ( <i>Solanum rostratum</i> ).....	12
Canada thistle ( <i>Cirsium arvense</i> ) .....	14
Common crupina ( <i>Crupina vulgaris</i> ) .....	16
Dalmatian toadflax ( <i>Linaria dalmatica</i> ssp. <i>dalmatica</i> ).....	18
David's spurge ( <i>Euphorbia davidii</i> ) .....	20
Diffuse knapweed ( <i>Centaurea diffusa</i> ) .....	22
Dyer's woad ( <i>Isatis tinctoria</i> ) .....	24
Eurasian watermilfoil ( <i>Myriophyllum spicatum</i> ) .....	26
Field bindweed ( <i>Convolvulus arvensis</i> ).....	28
Giant hogweed ( <i>Heracleum mantegazzianum</i> ).....	30
Giant knotweed ( <i>Polygonum sachalinense</i> ).....	32
Hoary alyssum ( <i>Berteroa incana</i> ) .....	34
Houndstongue ( <i>Cynoglossum officinale</i> ) .....	36
Hydrilla ( <i>Hydrilla verticillata</i> ).....	38
Japanese knotweed ( <i>Polygonum cuspidatum</i> ).....	40
Johnsongrass ( <i>Sorghum halepense</i> ) .....	42
Jointed goatgrass ( <i>Aegilops cylindrica</i> ) .....	44
Leafy spurge ( <i>Euphorbia esula</i> ).....	46
Matgrass ( <i>Nardus stricta</i> ).....	48
Meadow knapweed ( <i>Centaurea nigrescens</i> ).....	50
Mediterranean sage ( <i>Salvia aethiopsis</i> ) .....	52
Milium ( <i>Milium vernale</i> ).....	54

Musk thistle ( <i>Carduus nutans</i> ) .....	56
Orange hawkweed ( <i>Hieracium aurantiacum</i> ) .....	58
Oxeye daisy ( <i>Leucanthemum vulgare</i> ) .....	60
Parrotfeather milfoil ( <i>Myriophyllum aquaticum</i> ) .....	62
Perennial pepperweed ( <i>Lepidium latifolium</i> ).....	64
Perennial sowthistle ( <i>Sonchus arvensis</i> ).....	66
Plumeless thistle ( <i>Carduus acanthoides</i> ).....	68
Poison hemlock ( <i>Conium maculatum</i> ).....	70
Policeman's helmet ( <i>Impatiens glandulifera</i> ).....	72
Puncturevine ( <i>Tribulus terrestris</i> ).....	74
Purple loosestrife ( <i>Lythrum salicaria</i> ).....	76
Rush skeletonweed ( <i>Chondrilla juncea</i> ).....	78
Russian knapweed ( <i>Acroptilon repens</i> ).....	80
Saltcedar ( <i>Tamarix</i> sp.).....	82
Scotch broom ( <i>Cytisus scoparius</i> ).....	84
Scotch thistle ( <i>Onopordum acanthium</i> ).....	86
Silverleaf nightshade ( <i>Solanum elaeagnifolium</i> ).....	88
Skeletonleaf bursage ( <i>Ambrosia tomentosa</i> ).....	90
Small bugloss ( <i>Anchusa arvensis</i> ).....	92
Spotted knapweed ( <i>Centaurea stoebe</i> ssp. <i>micranthos</i> ).....	94
Squarrose knapweed ( <i>Centaurea virgata</i> var. <i>squarrosa</i> ).....	96
Syrian beancaper ( <i>Zygophyllum fabago</i> ).....	98
Tall hawkweed ( <i>Hieracium piloselloides</i> ).....	100
Tansy ragwort ( <i>Senecio jacobaea</i> ).....	102
Vipers bugloss ( <i>Echium vulgare</i> ).....	104
Water hyacinth ( <i>Eichhornia crassipes</i> ).....	106
White bryony ( <i>Bryonia alba</i> ).....	108
Whitetop ( <i>Cardaria draba</i> ).....	110
Yellow devil hawkweed ( <i>Hieracium glomeratum</i> ).....	112
Yellow hawkweed ( <i>Hieracium caespitosum</i> ).....	114
Yellow starthistle ( <i>Centaurea solstitialis</i> ).....	116
Yellow toadflax ( <i>Linaria vulgaris</i> ).....	118
GLOSSARY.....	120
PHOTO CREDITS .....	123

## Introduction

### IMPACTS TO OUR NATURAL SYSTEMS

Idaho's 57 noxious weeds include species that make significant modifications to the landscape. Purple loosestrife can change stream velocity, which increases siltation. Species such as spotted knapweed can accelerate soil erosion. Salt cedar deposits salt on the soil surface from below-ground alkaline water, which leads to the elimination of all salt-sensitive species. Areas within the Czech Republic are seeing reductions in native species because they have lost their pollinators to the nectar of Policeman's helmet, another Idaho noxious weed. Bohemian knotweed is creating monocultures along many Idaho streams, where it lacks the bank stabilizing root system of our native riparian species.

### WHAT ARE NOXIOUS WEEDS?

Idaho's noxious weeds are plant species that have been designated "noxious" by law in the Idaho Code (title 22, chapter 24, "Noxious Weeds"). The weed law is implemented using administrative rules. These rules are contained in IDAPA (Idaho Administrative Procedures Act) 02, title 06, chapter 22, "Noxious Weed Rules." Both the law and rules can be found on the Idaho State Department of Agriculture Noxious Weed Program web site at <http://www.agri.state.id.us/Categories/PlantsInsects/NoxiousWeeds/weedlaws.php>.

### CATEGORIES OF NOXIOUS WEEDS

The administrative rules put noxious weeds into categories that can affect how they are managed. Within this guide, each species is labeled as to its category within the administrative rules.

**Statewide early detection and rapid response (EDRR).** Plants in this category must be reported to the Idaho State Department of Agriculture (ISDA) within 10 days after being identified at the

University of Idaho or by another qualified authority approved by the ISDA director. Eradication of these weeds must begin in the same season they are found.

**Statewide control.** Plants in this list may already exist in some parts of the state. In some areas of the state control or eradication is possible, and a plan must be written that will reduce infestations within 5 years.

**Statewide containment.** Plants in this category exist in the state. New or small infestations can be reduced or eliminated, while established populations may be managed as determined by the weed control authority, which usually is the county weed program.

For more information about weeds in Idaho, please visit the UI's Erickson Weed Diagnostic Laboratory web site (<http://uidaho.edu/weeds>).

## WEED IDENTIFICATION

Submit weeds and suspected weeds to the Erickson Weed Diagnostic Laboratory at the University of Idaho:

1. **If you know the weed**, report it. If a weed has not been reported in your area before, please send us location information and either the plant itself or pictures that would allow us to identify the plant. We need to map Idaho's weeds to plan our strategy. Your reports are important.
2. **If you don't know the plant**, 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 identifiers as possible. Several plants are better than one.

**How to send.** Place the plant specimen in a closed plastic bag between dry paper towels. Do not press on the plant or add moisture to the bag. Store the bag in a refrigerator until mailing or bringing it in. If you are mailing your specimen, mail it early in the week so it won't sit in a mailbox over the weekend.

**Where to send.** Erickson Diagnostic Laboratory, College of Agricultural and Life Sciences, 875 Perimeter Drive, P.O. Box 442339, Moscow ID 83844-2339. You may also bring specimens to your nearest University of Idaho Extension office or to your county weed superintendent's office.

The laboratory's taxonomist identifies hundreds of plants each year, some of which are new to the region or state. The service is free. Contact the UI Extension educator in your county for submission forms.

## HOW TO USE THIS GUIDE

The 57 weeds in this book are arranged alphabetically by weed common name. For weeds that have more than one common name, the book uses the name in Idaho's official noxious weed list.

The description for each weed includes the following:

**Weed name and family.** Common and scientific names for the weed and its plant family

**Category.** The official category of an Idaho's noxious weed—early detection rapid response (EDRR), containment, or control. The category appears in a color-coded bar directly below family name. Maroon (reddish) signifies EDDR, gold containment, and blue control.

**Poison.** A poison symbol (skull and crossbones) in the category bar denotes weeds that are poisonous.

**Background.** A summary of important information about the weed, including an indication of the distance seeds or other plant parts move. This dispersal distance can help you determine the size of the treatment area. This section also contains the length of time seeds survive.

**Description.** Life history, height, and other overall features of the weed. Subsections follow that describe roots, leaves, flowers and seeds.

**Habitat.** Where the weed is most likely to occur.

**Similar plants.** Plants that can be confused with the weed and ways to distinguish among them.

**Idaho distribution map.** Shows counties in which the weed is present.

**Photographs.** Captions lead you to important distinguishing features of each weed.

**Leaf shape.** The general outline of the weed's leaves, minus leaf margin detail (such as a saw-like leaf edge) appears at bottom right. If a plant has more than one leaf shape, both are included, with "R" designating a rosette leaf and "S" a stem leaf.

## LEAF SHAPE OUTLINES OF IDAHO'S NOXIOUS WEEDS

 Elliptic or oval	 Palmately lobed
 Entire	 Pinnately dissected
 Even pinnate	 Pinnately lobed
 Heart-shaped	 Pinnately twice lobed
 Lanceolate	 Round
 Linear	 Sagittate
 Lobes backward	 Scalelike
 Lobed with a large tip	 Spatulate
 Oblong	 Triangular
 Odd pinnate	 Trifoliolate
 Paired leaflets	 Twice pinnate



## Black henbane

*Hyoscyamus niger*

Solanaceae, the nightshade family

CATEGORY: Control



### BACKGROUND

- Native to the Mediterranean; introduced as an ornamental and medicinal plant
- Pungent odor
- Toxic to humans and animals
- Reproduces by seed
- Disperses short distances (less than 5 yards)
- Seed longevity not reported

**DESCRIPTION:** Annual or biennial up to 3 feet tall

**Roots:** Thick, fleshy taproot

**Leaves:** Alternate, gray-green, oblong to lance-shaped, coarsely toothed to pointed pinnately lobed with prominent veins, covered with short glandular hairs

**Flowers:** Funnel-shaped, 5-lobed, off-white with deep purple centers and veins; solitary in leaf axils; flower stem coiled

**Seeds:** Egg-shaped capsule contains numerous brown to gray, flattened, and deeply pitted seeds

**HABITAT:** Roadsides, fields, and disturbed areas

**SIMILAR PLANTS:** None



**Flowers** have deep purple centers and veins. Seedling leaves are oblong to lance-shaped with stalks. Leaves are coarsely toothed to shallowly lobed and pubescent. Calyxes on fruiting stem contain the seed capsule.





## Bohemian knotweed

*Polygonum X bohemicum*

Polygonaceae, the buckwheat family

**CATEGORY:** Control

### BACKGROUND

- Introduced from Asia as a garden ornamental
- Hybrid between giant and Japanese knotweeds
- Reproduces by rhizomes and stem fragments, occasionally by seed
- Disperses by stem and root fragments moving in water
- Crowns live more than 5 years, seeds at least 4 years

**DESCRIPTION:** Clumping perennial with hollow stems; up to 12 feet tall

**Roots:** Long creeping rhizomes up to 18 feet long

**Leaves:** Egg-shaped with pointed tip; leaf base flat across to heart-shaped; twigs zig-zag; purple-spotted stems with sheathing membranous stipules

**Flowers:** Erect, upright panicle contains numerous small white flowers

**Seeds:** Glossy; brown to dark brown

**HABITAT:** Disturbed moist sites and wetland and riparian areas

**SIMILAR PLANTS:** Japanese knotweed flowers are drooping; giant knotweed has larger, more elongated leaves with a heart-shaped base



**Flowers** tend to be erect, not drooping. Leaf base is slightly to very heart-shaped.





## Brazilian elodea

*Egeria densa*

Hydrocharitaceae, the waterweed family

CATEGORY: EDRR

### BACKGROUND

- Introduced from South America for aquarium use
- Forms dense stands or subsurface mats
- Reproduces vegetatively by stolons and stem fragments; does not develop stem turions (specialized buds)
- Disperses by means of floating fragments
- Stolon longevity not reported

**DESCRIPTION:** Submerged aquatic perennial with slender branched stems

**Roots:** Slender; certain nodes develop roots on the stems

**Leaves:** Linear to oblong;  $\frac{3}{4}$ -  $1\frac{3}{4}$  inch long and  $\frac{1}{8}$ - $\frac{1}{4}$  inch wide; margins finely toothed; in whorls of 4-6

**Flowers:** 3 white petals and yellow center; flowers float at the water surface, attached at the base of the leaf whorls with threadlike flower stalks 1-4 inches long

**Seeds:** Not produced in western U.S.

**HABITAT:** Canals, rivers, ponds, lakes, and reservoirs

**SIMILAR PLANTS:** Common elodea has 2-3 leaves per whorl; hydrilla has 5-8 whorled flowers in leaf axils; Brazilian elodea is typically larger



**Flowers float** on water. Leaves occur in closely spaced whorls of 4-6 along the stem.





## Buffalobur

*Solanum rostratum*

Solanaceae, the nightshade family

CATEGORY: Control

### BACKGROUND

- Native to the Great Plains region of the U.S.
- Contaminant of bird seed
- Disperses by tumbling in the wind; seeds attach to animals or equipment
- Seed longevity not reported

**DESCRIPTION:** Annual with yellow spines and star-shaped hairs; up to 2 feet tall

**Roots:** Taproot

**Leaves:** Wavy lobed to the midrib and covered with starlike hairs; spiny midribs and leaf stalks

**Flowers:** Bright yellow, 1 inch across, with 5 petals

**Seeds:** Berries enclosed in a spiny bur; seeds black, flat, and wrinkled

**HABITAT:** Pastures, dry rangeland, roadsides, disturbed areas, and under bird feeders

**SIMILAR PLANTS:** Perennial horse nettles and nightshades



**Spines on stems, leaves, and flowers** make the plant untouchable. Seedling leaves have deeply lobed margins and prominent veins. Berries are enclosed in a spiny bur.





## Canada thistle

*Cirsium arvense*

Asteraceae, the sunflower family

**CATEGORY:** Containment

### BACKGROUND

- Native to Eurasia; introduced as a contaminant in crop seed
- Disperses by wind-carried seed (up to 1,000 yards) and creeping roots
- Seed longevity unknown

**DESCRIPTION:** Erect perennial with spiny leaves; up to 3 feet tall

**Roots:** Vertical and creeping horizontal roots may be 20 feet deep and 15 feet across

**Leaves:** Basal rosette and stem leaves oblong to lance-shaped, shallow-lobed, and toothed with spiny margins; upper leaf surface dark green, smooth; lower leaf surface light green with woolly hairs

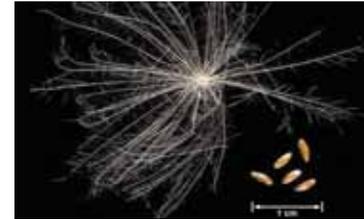
**Flowers:** Numerous clustered flower heads; purplish-pink disk flowers

**Seeds:** Tan achenes with feathery bristles

**HABITAT:** Roadsides, cultivated fields, pastures, and rangelands

**SIMILAR PLANTS:** Bull thistle has stiff hairs on the upper leaf surface

14



**Flowers are purple** to lavender, occasionally white. First seedling leaves are oblong to egg-shaped. Leaves are wavy margined and spiny. Flower heads are numerous, small, and urn-shaped, and the bracts are spineless.

15





## Common crupina

*Crupina vulgaris*

Asteraceae, the sunflower family

**CATEGORY:** Control

### BACKGROUND

- Native to the Mediterranean region
- Reproduces by seed
- Disperses by means of floating seed and by rodents that cache seeds
- Seeds live less than 2 years

**DESCRIPTION:** Winter annual up to 3 feet tall; develops large infestations on rangelands

**Roots:** Fibrous

**Leaves:** Rosette and stem leaves pinnately lobed; lobes narrow and opposite; covered with short stiff hairs. Rosette leaves die as flowering starts

**Flowers:** Pink to purple disk flowers; cylindrical to urn-shaped flower heads borne on branch tips; bracts below flowers lance-shaped with entire margin

**Seeds:** Black-brown, cylindrical achene with a ring of black, bristly hairs at the point of attachment

**HABITAT:** Canyon grasslands, rangelands, and forests

**SIMILAR PLANTS:** Diffuse knapweed bracts have fringed or comblike margin with a spiny tip



**Flowers are pink to purple** in a compact, elongated head. Cotyledons (first leaves) have a distinctive bright purple midrib. Leaves are alternate and pinnately lobed.





## Dalmatian toadflax

*Linaria dalmatica* ssp. *dalmatica*  
Scrophulariaceae, the figwort family

**CATEGORY:** Containment

### BACKGROUND

- Introduced from Europe as a garden ornamental
- Produces nearly ½ million seeds
- Disperses short distances by means of wind-blown seed, particularly on snow, and by means of creeping roots
- Seeds live up to 10 years

**DESCRIPTION:** Perennial; erect stems up to 4 feet tall with creeping roots and snapdragonlike flowers

**Roots:** Vertical and creeping lateral roots

**Leaves:** Waxy, bluish-green, egg- to lance-shaped with tips tapering to a point; sessile, with base clasping the stem

**Flowers:** Bright yellow; 1-2 inches long including spur; throat and lower lip often tinged orange or red; racemes elongate at the tips

**Seeds:** Black to dark brown, ridged, and irregularly angled

**HABITAT:** Arid rangelands, pastures, and roadsides

**SIMILAR PLANTS:** Yellow toadflax has linear leaves



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





## David's spurge

*Euphorbia davidii* (formerly toothed spurge)  
Euphorbiaceae, the spurge family

CATEGORY: Control



### BACKGROUND:

- Native to the North American central plains
- Latex causes blisters and dermatitis in livestock and humans
- Disperses short distances by seed (less than 5 yards)
- Seed longevity not reported

**DESCRIPTION:** Annual up to 3 feet tall; stems with sparse to dense hairs branch and curve upwards

**Roots:** Taproot

**Leaves:** Opposite, ovate to lance-shaped, to 3 inches long; margins coarsely toothed; sparsely hairy; often dotted with a few purplish-red spots

**Flowers:** Small inconspicuous flowers cluster at the base of leaves

**Seeds:** Green, 3-sided seed capsule up to ¼ inch in diameter contains gray, oval-shaped, rough and bumpy seeds

**HABITAT:** Cultivated fields, gardens, roadsides, and disturbed areas

**SIMILAR PLANTS:** Toothed spurge stems are not hairy



**Small fruits grow** in clusters at the base of toothed leaves. Leaf margins are dentate or serrate.





## Diffuse knapweed

*Centaurea diffusa*

Asteraceae, the sunflower family

CATEGORY: Containment

### BACKGROUND

- Native to Eurasia
- Fire stimulates seed germination
- Disperses by tumbling long distances in the wind
- Seed longevity not reported

**DESCRIPTION:** Annual, biennial, or short-lived perennial up to 3 feet tall; a single stem gives the plant a bushy appearance

**Roots:** Sturdy taproot

**Leaves:** Lower stem leaves up to 6 inches long and pinnately lobed; upper leaves linear

**Flowers:** White, pink, or sometimes purple disk flowers; bracts below the flower yellowish green with a light brown, comblike margin and short, stiff, central spine

**Seeds:** Gray to dark brown; tipped by plumes that fall off at maturity

**HABITAT:** Rangeland, pastures, sandy river shores, gravel banks, and disturbed sites

**SIMILAR PLANTS:** Squarrose knapweed central spine on bract below flower is curved downward; diffuse knapweed central spine is not bent

22



23



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





## Dyer's woad

*Isatis tinctoria*

Brassicaceae, the mustard family

**CATEGORY:** Control

### BACKGROUND

- Introduced from Europe as a source of blue dye
- Reproduces by seed
- Thought to disperse medium to long distances given the distances between patches in southeastern Idaho
- Seed longevity not reported

**DESCRIPTION:** Biennial, winter annual, or short-lived perennial; up to 3½ feet tall

**Roots:** Long taproot up to 3 feet deep

**Leaves:** Bluish-green with pale midvein; basal rosette leaves lance-shaped with rounded tip, slightly wavy margin, and base tapering to the stalk; stem leaves alternate, sessile, lanceolate, with base clasping the stem

**Flowers:** Flat-topped clusters of bright yellow, 4-petaled flowers

**Seeds:** Fruit pendulous, purplish-brown at maturity, teardrop shaped; one yellowish to orangish-brown seed per fruit

**HABITAT:** Rangeland, forest, pastures, cultivated fields, roadsides, and disturbed sites

**SIMILAR PLANTS:** None



**Fruits are teardrop-shaped** and purplish brown at maturity. Rosette leaves are elliptic to lance-shaped with the base tapering to the stalk. Leaves have white midribs and clasp the stem at their base.





## Eurasian watermilfoil

*Myriophyllum spicatum*

Haloragaceae, the watermilfoil family

**CATEGORY:** Control

### BACKGROUND:

- Introduced from Eurasia as an aquarium plant
- Forms dense subsurface or surface mats
- Disperses by means of floating stem fragments, by rhizomes, and possibly by waterfowl
- Seed longevity not reported

**DESCRIPTION:** Submerged aquatic perennial; stems to 13-22 feet long, branching near the water surface; finely dissected featherlike leaves

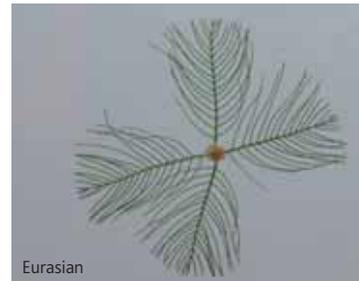
**Roots:** Rhizomes

**Leaves:** Dark green to brown, pinnately dissected, to 1¼ inch long; generally with more than 12 leaflet pairs per leaf in whorls of 4 around the stem

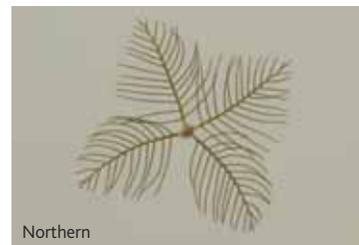
**Flowers:** Erect flowering spike up to 6 inches long; pinkish inconspicuous male and female flowers in whorls around the stem

**HABITAT:** Ponds, lakes, streams, canals, and ditches

**SIMILAR PLANTS:** Northern watermilfoil generally has fewer than 12 leaflet pairs and develops turions (specialized buds)



Eurasian



Northern

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





## Field bindweed

*Convolvulus arvensis*

Convolvulaceae, the morning glory family

CATEGORY: Containment

### BACKGROUND

- Eurasian native that has naturalized in North America
- One of the most noxious weeds in agriculture
- Disperses by means of creeping roots and for short distances by seed
- Seeds remain viable for up to 50 years

**DESCRIPTION:** Perennial vine with deep creeping roots and twining stems up to 6 feet long; forms dense mats or climbs over other plants

**Roots:** Lateral creeping roots to 9 feet deep

**Leaves:** Alternate, arrowhead-shaped, dull green, to 2 inches long; sometimes covered with whitish powder

**Flowers:** White or pinkish, funnel-shaped, in leaf axils

**Seeds:** Dark gray-brown with irregular bumps

**HABITAT:** Cultivated fields, pastures, lawns, roadsides, and disturbed sites

**SIMILAR PLANTS:** Wild buckwheat is an annual with pointed leaves and papery leaf sheaths



**Flowers** are white or pinkish and funnel-shaped, leaves are arrowhead-shaped, and stems are twisted. Seedlings have ovate cotyledons (first leaves) with a notched tip. Stems twine around other plants.





## Giant hogweed

*Heracleum mantegazzianum*

Apiaceae, the carrot or parsley family

CATEGORY: EDRR



### BACKGROUND

- Native to southwestern Asia; introduced as an ornamental
- Sap causes photodermatitis that causes blistering
- Disperses less than 1 foot from new crowns on roots; seeds move in water and attach to animals
- Seeds remain viable for 10 years

**DESCRIPTION:** Biennial or perennial up to 15 feet tall with purple-blotched stems covered with white hairs

**Roots:** Tuberous

**Leaves:** 5 feet long to 2½ feet wide; pinnately compound with 3 deeply lobed and toothed leaflets

**Flowers:** White, compound; flat-topped umbel 2½ feet across

**Seeds:** Elliptic to ovate, flattened, with winged ribs, covered with short hairs

**HABITAT:** Riparian areas and disturbed moist sites

**SIMILAR PLANTS:** Cow parsnip, a widespread native, lacks purple blotches on stems and leaf stalks and has fewer flower rays



**White flowers** form a flat-topped umbel. Three-lobed leaves can be 5 feet long. Stems have purple blotches.





## Giant knotweed

*Polygonum sachalinense*

Polygonaceae, the buckwheat family

**CATEGORY:** Control

### BACKGROUND

- Introduced from Japan and Sakhalin Island as a garden ornamental
- Hybridizes with Japanese knotweed
- Reproduces by seed, rhizomes, and stem fragments that root at the nodes
- Disperses by means of floating stem and rhizome fragments and short distances by seed
- Seed longevity not reported

**DESCRIPTION:** Clumping perennial with hollow stems; up to 12 feet tall

**Roots:** Long, creeping rhizomes up to 18 feet long

**Leaves:** Broadly lance-shaped, 6-12 inches long, with a heart-shaped base

**Flowers:** Panicles in the leaf axils with numerous small white flowers

**Seeds:** Glossy; brown to dark brown

**HABITAT:** Moist sites, wetlands, and riparian areas

**SIMILAR PLANTS:** Bohemian and Japanese knotweeds have smaller leaves; Japanese knotweed has flat leaf bases



Flowers are small, white, and grow where the leaf attaches to the stem. Leaves are heart-shaped and up to 12 inches long.





## Hoary alyssum

*Berteroa incana*

Brassicaceae, the mustard family

CATEGORY: Containment



### BACKGROUND

- Native to Europe; introduced about 1900 to North America
- Poisonous to horses, causing leg swelling, fever
- Lacks dispersal adaptations but possibly moved by animals; reportedly disperses long distances
- Seed longevity not reported

**DESCRIPTION:** Annual to short-lived perennial with multiple stems from the base; up to 2 feet tall; covered all over with grayish-green, star-shaped hairs

**Roots:** Taproot

**Leaves:** Alternate, linear-elliptic, with entire margins; upper leaves sessile

**Flowers:** 4 white, deeply notched petals per flower; flower stalk elongates during fruiting

**Seeds:** Seedpods flattened and oval

**HABITAT:** Roadsides, disturbed areas, and canyon grass-land to wet meadows

**SIMILAR PLANTS:** None



**White flowers** with 4 notched petals appear to have 8 petals. Seedling leaves are oblong to oval. Plant is grayish-green. Stem leaves attach at the leaf base.





## Houndstongue

*Cynoglossum officinale*

Boraginaceae, the borage family

CATEGORY: Containment



### BACKGROUND

- Native to Europe; introduced through crop seed
- Toxic to livestock, attacking the liver and producing neurological effects
- Reproduces by seed
- Hooked hairs on seed attach to animals, allowing long-distance dispersal
- Seeds live less than 5 years

**DESCRIPTION:** Biennial or short-lived perennial up to 3 feet tall

**Roots:** Taproot

**Leaves:** Basal leaves forming the first year are narrowly lance-shaped, 4-8 inches long, hairy, and rough; upper stem leaves alternate, narrowly lance-shaped

**Flowers:** Reddish-purple, 5-lobed, in upper leaf axils

**Seeds:** 4 egg-shaped seeds, or nutlets, with hooked prickles

**HABITAT:** Open disturbed moist places, roadsides, pastures, and wet grasslands

**SIMILAR PLANTS:** None



**Flowers point down** and are reddish-purple. Leaves are lance-shaped and hairy. Seeds are clustered in sets of 4 and have hooked prickles.





## Hydrilla

*Hydrilla verticillata*

Hydrocharitaceae, the waterweed family

CATEGORY: EDRR

### BACKGROUND

- Native to Asia; introduced as an aquarium plant
- Considered the most problematic aquatic plant in the U.S.
- Reproduces by specialized buds in leaf axils, tubers attached to roots, and above- and belowground stems
- Disperses by means of buds floating with the current; tubers provide for short-distance dispersal
- Seed longevity not reported

**DESCRIPTION:** Submerged aquatic perennial with slender branched stems up to 25 feet long; forms dense stands or subsurface mats

**Roots:** Slender; develop at certain nodes

**Leaves:** Sessile; linear to lance-shaped;  $\frac{1}{4}$ -1 inch long and  $\frac{1}{16}$ - $\frac{1}{4}$  inch wide; in whorls of 5-8; leaf margins saw-toothed

**Flowers:** 3 white petals; attached to base of leaf

**Seeds:** Elliptic, smooth, and brown; fruit is constricted between seeds

**HABITAT:** Canals, rivers, ponds, lakes, and reservoirs

**SIMILAR PLANTS:** Brazilian elodea has 4-6 leaves per whorl; common elodea has 2-3 leaves per whorl and flowers that float at the surface



**Leaves** occur in whorls of 4-8; the leaf margin is saw-toothed. Flowers and specialized buds occur where the leaf attaches to the stem. Small, rounded tubers can start new plants (bottom photo, lower left)





## Japanese knotweed

*Polygonum cuspidatum*

Polygonaceae, the buckwheat family

**CATEGORY:** Control

### BACKGROUND

- Introduced from Japan and China as an ornamental
- Hybridizes with giant knotweed
- Reproduces by rhizomes and stem fragments that root at the nodes
- Disperses by means of floating stem and rhizome fragments and short distances by seed
- Crown lives more than 5 years, seeds likely at least 4 years

**DESCRIPTION:** Clumping perennial with hollow stems; up to 9 feet tall

**Roots:** Long, creeping rhizomes up to 18 feet long

**Leaves:** Broadly egg-shaped with pointed tip and flat base; twigs zig-zag; purple-spotted stems have sheathing membranous stipules

**Flowers:** Drooping panicle at the leaf axils with numerous small white flowers

**Seeds:** Glossy; brown to dark brown

**HABITAT:** Disturbed moist sites, wetlands, and riparian areas

**SIMILAR PLANTS:** Bohemian knotweed has erect flowers; giant knotweed has larger, more elongated leaves with a heart-shaped base



**Drooping clusters** of white flowers grow where the leaf attaches to the stem. Leaf base is straight.





## Johnsongrass

*Sorghum halepense*  
Poaceae, the grass family

CATEGORY: Control



### BACKGROUND

- Native to the Mediterranean; introduced as a hay and pasture grass
- Potentially poisonous to livestock; can produce toxic levels of hydrocyanic acid
- Tenth most noxious weed in the world
- Disperses by means of creeping rhizomes and rhizomes spread by harvesting equipment
- Seeds live at least 2 years

**DESCRIPTION:** Coarse, tufted perennial grass up to 6 feet tall

**Roots:** Fibrous rhizomes with brown scales at the nodes

**Leaves:** Bright green, up to 1 inch wide, with scabrous margins and a prominent whitish midvein; sheath is open; ligules membranous with a hairy fringe

**Flowers:** Large, open, pyramid-shaped panicles up to 12 inches long; spikelets mature to dark reddish or purplish brown

**Seeds:** Reddish brown to black; oval shaped

**HABITAT:** Cultivated fields, pastures, ditches and canal banks, and roadsides

**SIMILAR PLANTS:** Shatter cane is an annual without rhizomes



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





## Jointed Goatgrass

*Aegilops cylindrica*

Poaceae, the grass family

**CATEGORY:** Containment

### BACKGROUND

- Native to southern Europe and western Asia
- Readily hybridizes with its close relative, wheat
- Reproduces by seed
- Harvesting and grain transport equipment disperse seeds
- Seeds remain viable at least 5 years

**DESCRIPTION:** Winter annual grass with spikelets that resemble winter wheat; up to 4 feet tall

**Roots:** Fibrous

**Leaves:** Flat blades about ½ inch wide and 4 inches long with evenly spaced fine hairs along the margins and down the sheath opening; ligule short and membranous; auricles short and hairy

**Flowers:** Cylindrical spikes; spikelets in a series of joints with uppermost joints tipped by straight awn

**Seed:** Reddish to light brown, resembling grains of winter wheat; seed often attached to seedling

**HABITAT:** Wheat fields, pastures, rangeland, roadsides, and fencerows

**SIMILAR PLANTS:** Winter wheat spikes do not break apart between the nodes

44



**Seed head** is a narrow, cylindrical spike that contains 2-12 spikelets (joints). Hairs extend outward from the leaf edges, and hair also appears below the collar.

45





## Leafy spurge

*Euphorbia esula*

Euphorbiaceae, the spurge family

CATEGORY: Containment



### BACKGROUND

- Native to Eurasia
- Milky sap toxic to humans and livestock
- One of the most tenacious weeds in the U.S.
- Reproduces by seed and from creeping roots
- Disperses less than 15 feet by expelled seeds; survives ingestion in sheep for potential long-distance dispersal
- Seeds remain viable for at least 8 years

**DESCRIPTION:** Erect perennial up to 2½ feet tall with roots exceeding 20 feet in depth; contains milky white sap

**Roots:** Long, creeping horizontal and long vertical; new shoots can develop from pinkish root buds

**Leaves:** Nearly opposite or in whorls; linear to narrowly lance-shaped; sessile; up to 4 inches long

**Flowers:** A pair of showy, yellowish-green, heart-shaped bracts enclose small flower clusters

**Seeds:** Egg-shaped to oblong, with yellowish appendage near the end of attachment; contained in 3-chambered capsule

**HABITAT:** Rangeland, pastures, roadsides, and riparian areas

**SIMILAR PLANTS:** Young yellow toadflax does not produce milky latex



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





## Matgrass

*Nardus stricta*

Poaceae, the grass family

**CATEGORY:** Control

### BACKGROUND

- Native to eastern Europe
- Not palatable to most livestock
- Eliminates other vegetation within each dense tuft
- Disperses medium to long distances in spring or fall when animal hooves break mat fragments
- Seeds remain viable for up to 2 years

**DESCRIPTION:** Slow-growing perennial bunchgrass with tufts 3 feet or more across and stems up to 8 inches tall

**Roots:** Fibrous

**Leaves:** Tightly folded blades bend at a right angle to the stem; ligule short and membranous; auricles lacking

**Flowers:** Slender spikes; straw-colored spikelets tipped by short, straight awns occur on one side of the stem

**HABITAT:** Wet meadows

**SIMILAR PLANTS:** Sometimes confused with young fine-leaved bunchgrasses and tufted sedges



**Spikelets** occur along 1 side of the stem. Tuft of crowded stems grows at ground level. The leaf blade bends at nearly a right angle to the stem.





## Meadow knapweed

*Centaurea nigrescens*

Asteraceae, the sunflower family

**CATEGORY:** Control

### BACKGROUND

- Native to Europe
- Used as a forage in Oregon in the 1950s
- Hybrid from black knapweed and brown knapweed
- Dispersal not reported, likely similar to spotted knapweed
- Seed longevity not reported

**DESCRIPTION:** Bushy perennial up to 3½ feet tall

**Roots:** Sturdy taproot

**Leaves:** Basal rosette leaves entire, toothed, or lobed and up to 4 inches long; stem leaves narrow, lance-shaped, sessile, and covered with short stiff hairs

**Flowers:** Pink to reddish-purple disk flowers; flower head solitary at end of stem and up to ¾ inch wide; tan to dark-brown bracts subtend flower head; bract margins a comblike fringe to a blunt ruffle

**Seeds:** Tan achene with fine hairs

**HABITAT:** Wet meadows, pastures, forest openings, roadsides, and waste areas

**SIMILAR PLANTS:** Similar to black and brown knapweeds, whose bracts are not spiny and have comblike margins



**Broad flower heads** are free of spines. Early basal rosette leaves are lance-shaped, entire. Multiple branching stems support pink to reddish-purple solitary flowers. Stem leaves are covered with short, stiff hairs.





## Mediterranean sage

*Salvia aethiopis*  
Lamiaceae, the mint family

**CATEGORY:** Control

### BACKGROUND

- Introduced from Europe, possibly as an alfalfa seed contaminant
- Flowering stems disperse long distances in the wind
- Seed longevity not reported

**DESCRIPTION:** Biennial or short-lived perennial up to 2 feet tall with crushed leaves smelling like sage

**Roots:** Taproot with fibrous lateral roots

**Leaves:** Gray-green, ovate to triangular, lobed or deeply toothed, and up to 12 inches long on stalks nearly as long; leaf surfaces and stems covered with fine, white woolly hairs

**Flowers:** Irregular, whitish to pale yellow, in whorls of 5-10; flowering stems branch near the top into broad panicles

**Seeds:** 4 egg-shaped, smooth brown nutlets per flower

**HABITAT:** Dry areas, rangelands, and sagebrush communities

**SIMILAR PLANTS:** Rosettes of common mullein do not smell like sage



Leaves are gray-green with woolly white hairs. Flowers are white to pale yellow and arranged like a candelabra.





## Milium

*Milium vernale*

Poaceae, the grass family

**CATEGORY:** Containment

### BACKGROUND

- Native to southern Europe and western Asia
- Problem weed in winter wheat
- Reproduces exclusively by seed
- Disperses as a contaminant in grain
- Seed longevity not reported

**DESCRIPTION:** Winter annual grass up to 2½ feet tall

**Roots:** Fibrous

**Leaves:** Flat; to ¼ inch wide and 4 inches long; veins and margins appear roughened; ligules membranous, to ¼ inch long; auricles lacking

**Flowers:** Open panicle up to 8 inches long; 1 awnless spikelet, up to ⅛ inch long, on the tip of each panicle branch

**Seeds:** Single, hard, and shiny

**HABITAT:** Cultivated fields and pastures

**SIMILAR PLANTS:** None



**Shiny seeds** are shed before winter wheat matures.





## Musk thistle

*Carduus nutans*

Asteraceae, the sunflower family

CATEGORY: Control

### BACKGROUND

- Native to Eurasia; introduced as an ornamental
- Reproduces by seed
- Seeds disperse in wind as far as 50 yards
- Seeds remain viable for at least 10 years

**DESCRIPTION:** Biennial or winter annual with prickly leaves and prickly winged stems; up to 5 feet tall

**Roots:** Long taproot

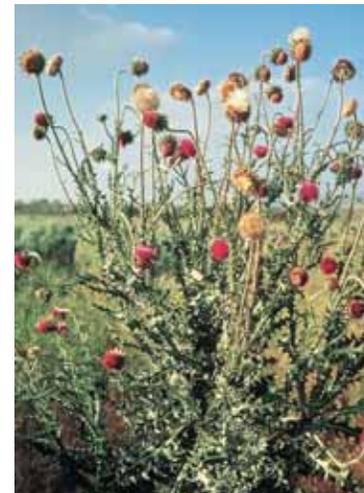
**Leaves:** Basal leaves up to 12 inches long, oval to elliptic, deeply lobed, with prickly toothed margins; stem leaves alternate, reduced, smooth to sparsely hairy

**Flower:** Purple to pink disk flowers, 1½-3 inches in diameter, solitary at the stem tips, often nodding; spine-tipped bracts subtend the flowerhead

**Seeds:** Yellowish-brown, ⅜-inch long, with hairlike plume

**HABITAT:** Rangeland, pastures, stream banks, and roadsides

**SIMILAR PLANTS:** Canada thistle is a perennial with creeping roots, Scotch thistle has receptacles that are pitted and not covered with bristles, and plumeless thistle has a spiny winged stem below the flower head



**Large showy flowers** are flat, nodding, and surrounded by numerous bracts. Shiny seeds have hairlike plumes. Seedling leaves are oblong to elliptic with prickly toothed margins. Leaves extend onto the stem, giving it a winged appearance.





## Orange hawkweed

*Hieracium aurantiacum*

Asteraceae, the sunflower family

**CATEGORY:** Control

### BACKGROUND

- Native to Europe; introduced as an ornamental
- Reproduces by seeds and vegetatively by aboveground stems and rhizomes
- Seeds disperse at least 250 yards in the wind
- Seed longevity not reported; likely short-lived (several years)

**DESCRIPTION:** Perennial with hairy stems and leaves, orange dandelionlike flowers, and white milky sap

**Roots:** Fibrous roots, rhizomes, and stolons

**Leaves:** Basal leaves hairy, oblong-elliptic to lance-shaped; stems covered with black hairs, leafless, occasionally with a small leaf near the midpoint

**Flowers:** Orange, in dense to open clusters; bracts covered with glandular and black hairs subtend the flowers

**Seeds:** Dark brown to black; ribbed with white plumes

**HABITAT:** Meadows, rangelands, pastures, open forest, and disturbed sites

**SIMILAR PLANTS:** Yellow hawkweed is difficult to distinguish without flowers



Flowers are bright red-orange, the only orange-flowered hawkweed. Seedling leaves are oval to elliptic with bases tapering to the stalk. Bristly, mostly leafless stems arise from a basal rosette of leaves.





## Oxeye daisy

*Leucanthemum vulgare*

Asteraceae, the sunflower family

**CATEGORY:** Containment

### BACKGROUND

- Introduced from Europe as a garden ornamental
- Spread as a contaminant of grass and legume seed and in commercial wildflower packets
- Reproduces by seed and vegetatively from rhizomes
- Disperses short distances, likely less than 4 yards
- Most seeds die after 6 years but some survive to 39 years

**DESCRIPTION:** Perennial with numerous stems arising from the base; up to 3 feet tall

**Roots:** Shallow, creeping rhizomes

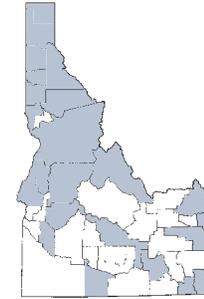
**Leaves:** Basal leaves stalked, spatula-shaped, with toothed to deeply lobed margins; upper leaf stalks are short and clasp the stem

**Flowers:** Solitary daisylike flower heads with white ray flowers and yellow disk flowers

**Seeds:** Dark brown to black achenes with ribs

**HABITAT:** Grasslands, meadows, pastures, and roadsides

**SIMILAR PLANTS:** None



White ray flowers (outer petals) surround inner yellow disk flowers. Leaves at the plant base are spatula-shaped and lobed.





## Parrotfeather milfoil

*Myriophyllum aquaticum*

Haloragaceae, the watermilfoil family

**CATEGORY:** Control

### BACKGROUND

- Introduced from South America as an aquarium plant and pond ornamental
- Develops colonies that form large subsurface or surface mats
- Floating stem fragments establish new plants; potentially long-distance dispersal
- Seed longevity not reported

**DESCRIPTION:** An emersed perennial with stems up to 15 feet long

**Roots:** Creeping rhizomes; fibrous roots at nodes on stem fragments

**Leaves:** Light gray-green, pinnately dissected in a featherlike pattern, with 13 leaflet pairs or more; in whorls of 5-6 around the stem; flower spike stems lie parallel to the water surface

**Flowers:** Inconspicuous, translucent white, in the axils of the upper submerged and emersed leaves

**Seeds:** Fruits not known to develop on introduced plants

**HABITAT:** Ponds, lakes, rivers, canals, and ditches

**SIMILAR PLANTS:** Northern watermilfoil has 13 or fewer leaflet pairs, flower spike stem that remains slender and erect near the water surface, and turions



**Flowers** occur in the axils of the leaves. Rhizomes at nodes allow the plant to form mats. Leaves are gray-green in whorls of 5 or 6. Leaves appear featherlike.





## Perennial pepperweed

*Lepidium latifolium*

Brassicaceae, the mustard family

**CATEGORY:** Containment

### BACKGROUND

- Native to southern Europe and western Asia
- Reproduces by seed and creeping roots
- Disperses long distances when adjacent to water
- Seed longevity not reported but likely short-lived

**DESCRIPTION:** Perennial to 6 feet tall; creeping roots

**Roots:** Long, creeping rhizomes to a depth of 9 feet

**Leaves:** Green to gray-green, waxy, with a prominent whitish midvein; basal leaves up to 12 inches long, stalked, and larger and wider than stem leaves; stem leaves alternate, sessile, oblong to lance-shaped, with saw-toothed margins

**Flowers:** Numerous small, white, 4-petaled flowers in dense clusters at the branch tips; inflorescences pyramid-shaped to rounded on top

**Seeds:** Pods flattened, round to ovate, slightly hairy, 1/16-inch in diameter; seeds reddish brown and oval-shaped with a shallow groove and rough surface

**HABITAT:** Riparian areas, meadows, flood plains, cropland, irrigation ditches, and roadsides

**SIMILAR PLANTS:** None



**Tiny white flowers** occur in tight clusters. Basal leaves are stalked and lance-shaped.





## Perennial sowthistle

*Sonchus arvensis*

Asteraceae, the sunflower family

CATEGORY: Control

### BACKGROUND

- Native of western Asia and Europe
- Disperses short distances by means of creeping roots and 10 yards by seed
- Seeds remain viable for at least 3 years

**DESCRIPTION:** Erect perennial up to 6 feet tall branching in the upper portion of the plant; white milky sap

**Roots:** Rhizomes

**Leaves:** Lower leaves entire to deeply lobed, with prickly toothed margins; upper leaves have basal clasping lobes that are rounded

**Flowers:** Yellow dandelionlike flowers cluster at stem tips; flower heads smooth or with gland-tipped hairs

**Seeds:** Reddish-brown achene is slightly flattened, ribbed, traverse wrinkled, and tipped with white plumes

**HABITAT:** Cultivated fields, riparian areas, meadows, pastures, gardens, roadsides, and disturbed sites

**SIMILAR PLANTS:** Spiny sowthistle and annual sowthistle are both annuals with a taproot; annual sowthistle's upper leaves have pointed basal clasping lobes



**Dandelionlike leaves** have prickly edges. Roots are creeping.





## Plumeless thistle

*Carduus acanthoides*

Asteraceae, the sunflower family

CATEGORY: Containment

### BACKGROUND

- Introduced from Eurasia
- Hybridizes with musk thistle
- Disperses within a few yards of the parent
- Seed longevity not reported

**DESCRIPTION:** Biennial up to 4½ feet tall

**Roots:** Long, thick taproot

**Leaves:** Basal leaves elliptic to lance-shaped, pinnately lobed, with prickly toothed margins; stem leaves smaller, alternate, hairy and prickly; stems spiny and winged

**Flowers:** Purple disk flowers, ½-1 inch in diameter, singly or clustered on flower stalks

**Seeds:** Glossy golden to brown achenes with stripes

**HABITAT:** Pastures, grasslands, and roadsides; drier sites than musk thistle

**SIMILAR PLANTS:** Musk thistle flowers are larger and lack the spiny winged stem below the flower head

68



69



Flowers are purple in flower heads up to 1 inch across. Leaves are pinnately lobed and prickly. Stems are winged and spiny.





## Poison hemlock

*Conium maculatum*  
Apiaceae, the carrot family

CATEGORY: Containment



### BACKGROUND

- Introduced from Europe as a garden ornamental
- Highly toxic to humans and animals
- Seeds fall within 3 yards of parent; disperses long distances in water
- Seed longevity is about 3 years

**DESCRIPTION:** Erect biennial up to 9 feet tall with fernlike leaves and hollow stems mottled with purple spots; has a disagreeable musty odor

**Roots:** Thick, white taproot

**Leaves:** First-year basal rosette leaves shiny green, triangular, 2-3 times dissected or pinnately lobed, compound, to 12 inches long; upper stem leaves similarly shaped but shorter

**Flowers:** Small, white, in umbrella-shaped clusters about 3 inches across

**Seeds:** Fruit grayish brown, flattened, and ridged; separated into 2 halves, each with one seed

**HABITAT:** Roadsides, pastures, fields, ditches, riparian areas, and disturbed, often moist, sites

**SIMILAR PLANTS:** Western water hemlock lacks purple spots and streaking on stems



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





## Policeman's helmet

*Impatiens glandulifera*

Balsaminaceae, the impatiens family

CATEGORY: EDRR

### BACKGROUND

- Native to Himalayan region of Asia; introduced as a garden ornamental
- Considered invasive in the British Isles, whose climate is similar to the Pacific Northwest's
- Seed pods eject seeds as far as 15 feet; seeds from plants near water disperse long distances
- Seeds remain viable at least 2 years

**DESCRIPTION:** Herbaceous annual 6-10 feet tall with smooth, hollow stems tinged purple or reddish

**Roots:** Shallow, fibrous taproot

**Leaves:** Opposite, oblong to egg-shaped, sharply toothed, often in whorls of 3

**Flowers:** Orchidlike, white or pink to purple, in clusters from the leaf axils

**Seeds:** Black, large ( $\frac{1}{8}$ - $\frac{1}{4}$  inch)

**HABITAT:** River edges, wetlands, and riparian areas

**SIMILAR PLANTS:** None



**Flower shape** resembles a British police helmet. Flower color ranges from white to all shades of pink to purple. Seed capsules explode when moist. Toothed leaves attach to the stem in pairs and are sometimes whorled.





## Puncturevine

*Tribulus terrestris*

Zygophyllaceae, the caltrop family

CATEGORY: Containment



### BACKGROUND

- Introduced from the Mediterranean region
- Stout-spined burs injure humans and animals and puncture bicycle tires
- Potentially toxic to livestock
- Disperses medium to long distances, lodging in feet of animals or tires
- Seeds can survive about 20 years

**DESCRIPTION:** Prostrate summer annual with branched, reddish-brown stems up to 3 feet long; forms dense mats

**Roots:** Slender taproot

**Leaves:** Opposite, to 2 inches long; even pinnately lobed; leaflet oblong; 3-7 leaflet pairs per leaf

**Flowers:** Bright yellow with 5 petals; solitary in leaf axils

**Seeds:** Fruits are gray to yellowish tan, roughly circular burs that split into 5 sections, each with 2 stout, divergent spines

**HABITAT:** Disturbed sites, pastures, cultivated fields, roadsides, and walkways

**SIMILAR PLANTS:** None

74



75



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





## Purple loosestrife

*Lythrum salicaria*

Lythraceae, the loosestrife family

**CATEGORY:** Containment

### BACKGROUND

- Native to Europe; introduced to the U.S. as an ornamental
- New shoots grow from the woody crown in spring
- Seeds disperse up to 10 feet; seeds from plants adjacent to water disperse long distances with currents
- Seed longevity is at least 3 years

**DESCRIPTION:** Semi-aquatic perennial with showy pinkish-purple flower spikes; up to 8 feet tall; stems branched and square or 5-angled

**Roots:** Spreading rhizomes

**Leaves:** Lance-shaped with smooth margins, sessile, mostly opposite or whorled

**Flowers:** Bright pinkish-purple spikes; petals with wrinkled margins

**Seeds:** Numerous, reddish brown capsules that are oval to triangular and flattened

**HABITAT:** Wetlands, stream banks, canals, ditches, and pond edges

**SIMILAR PLANTS:** Other garden loosestrife species



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





## Rush skeletonweed

*Chondrilla juncea*

Asteraceae, the sunflower family

**CATEGORY:** Containment

### BACKGROUND

- Introduced from southern Europe
- Disperses long distances in canyons, likely 1-5 miles
- Seeds survive fewer than 5 years

**DESCRIPTION:** Perennial or biennial up to 3 feet tall with wiry branched flower stems; lower stems have dense, bristly, downward-pointing hairs; milky sap

**Roots:** Taproot and lateral roots

**Leaves:** Basal rosette leaves lance-shaped, shallow lobed, with a pointed terminal lobe and lateral lobes opposite and usually pointing backward toward the leaf base; stem leaves bractlike, often lacking

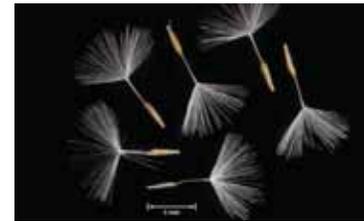
**Flowers:** Bright yellow, strap-shaped, in axils or at the ends of branches

**Seeds:** Pale to dark-brown ribbed achene

**HABITAT:** Roadsides, rangelands, pastures, and grain fields

**SIMILAR PLANTS:** Chicory and dandelion have similar rosette leaves, but chicory rosette leaves have lateral lobes that point outward or forward and rush skeletonweed rosette leaves are reddish

78



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

79





## Russian knapweed

*Acrotilon repens*

Asteraceae, the sunflower family

CATEGORY: Control



### BACKGROUND

- Native to the Caucasus in southern Russia and Asia
- Toxic to horses; can cause chewing disease
- Spreads by seeds and from shoots arising from creeping roots
- Disperses less than 3 yards
- Seeds can survive at least 9 years

**DESCRIPTION:** Branched perennial up to 3 feet tall with clusters of pink to lavender-blue flowers and creeping roots

**Roots:** Dark brown to black; vertical and horizontal

**Leaves:** Basal and lower stem leaves bluish-green, oblong, pinnately lobed, and up to 6 inches long; upper stem leaves narrow, lance-shaped to linear, with or without short fine hair

**Flowers:** White, pink, or lavender-blue disk flowers on branch tips; flower head urn-shaped; bract ovate with a green base, pointed tip, and papery margin

**Seeds:** Ivory or pale-gray achenes tipped by plumes that fall off at maturity

**HABITAT:** Cultivated fields, irrigation ditches, pastures, roadsides, and disturbed areas

**SIMILAR PLANTS:** Other knapweeds lack dark creeping roots and have differently shaped bracts



**Flower heads** consist of greenish to straw-colored bracts with transparent tips and pink to lavender disk flowers. Early rosette leaves are elliptical to lance-shaped with wavy margins.





## Saltcedar

*Tamarix* sp.

Tamaricaceae, the tamarisk family

**CATEGORY:** Containment

### BACKGROUND

- Native to Eurasia; introduced as landscape plants
- Exudes salt from foliage
- Root and stem fragments float on water for medium to long-distance dispersal; seeds disperse at least 100 yards in light wind
- Seeds remain viable less than 1 year

**DESCRIPTION:** Shrub or small tree up to 24 feet tall

**Roots:** Long taproot with lateral roots

**Leaves:** Small, scalelike, gray-green, overlapping along the stem

**Flowers:** Pale or dark pink with 5 distinct petals; inflorescence paniclelike

**Seeds:** Capsule with tuft of long hair

**HABITAT:** Streambanks, lake margins, wetlands, moist rangelands, and saline environments

**SIMILAR PLANTS:** Other saltcedar hybrids



**Flowers are pale to dark pink with 5 petals. Scalelike leaves overlap the stem.**





## Scotch broom

*Cytisus scoparius*  
Fabaceae, the pea family

CATEGORY: Control



### BACKGROUND

- Native to Europe; introduced as a landscape ornamental and planted for erosion control
- Toxic to humans and livestock
- Seeds disperse up to 30 feet
- Seeds remain viable at least 3 years, likely much longer

**DESCRIPTION:** Perennial shrub up to 10 feet tall with yellow, pealike flowers

**Roots:** Deep, branched taproot

**Leaves:** Mostly compound with 3 leaflets, sometimes a single leaf on stems; stems dark green and strongly 5-angled or ridged

**Flowers:** Pale yellow to maroon-red, pealike, 1-inch long, singly or paired in leaf axils

**Seeds:** Pods flattened, dark brown, smooth, hairy along the margins, to 2 inches in length; seeds brown to black and oval shaped

**HABITAT:** Pastures, borders of forest, lawns, roadsides, and disturbed sites

**SIMILAR PLANTS:** Other brooms lack 5-angled stems; gorse has thorns

84



**Yellow pealike flowers** appear on dark-green, strongly angled stems with tiny leaves. Seedling leaves have 3 leaflets. Stem edges are strongly angled. Seed pods are flat with hairy margins.

85





## Scotch thistle

*Onopordum acanthium*

Asteraceae, the sunflower family

**CATEGORY:** Containment

### BACKGROUND

- Native to Europe; introduced as an ornamental
- Seeds disperse less than 9 feet
- Seeds survive at least 39 years

**DESCRIPTION:** Erect biennial up to 8 feet tall with spiny leaves and spiny-winged stems; covered with woolly gray hairs

**Roots:** Thick taproot

**Leaves:** Rosette leaves large—to 2 feet long and 1 foot wide; rosette and stem leaves alternate, broadly oval-shaped, spiny, and toothed to shallowly lobed

**Flowers:** Purple or occasionally white disk flowers; globe-shaped flower head up to 2 inches in diameter in groups of 2 or 3 on branch tips; spine-tipped bracts covered with short and a few cobwebby hairs

**Seeds:** Egg-shaped achenes mottled brown to black with rough ridges

**HABITAT:** Rangeland, dry pastures, roadsides, railroad rights of ways, riparian areas, and disturbed areas

**SIMILAR PLANTS:** Other spiny thistles have flower head receptacles that lack bristles

86



87



**Large globe-shaped heads** remain upright at maturity. First seedling leaves are oval to oblong. Rosette leaves are covered with white hair, giving them a blue-green color.





## Silverleaf nightshade

*Solanum elaeagnifolium*

Solanaceae, the nightshade family

CATEGORY: Control



### BACKGROUND

- Native to the central U.S.
- Toxic to humans and livestock
- Seed dispersal not reported; disperses short distances by means of creeping roots
- Seeds remain viable for at least 5 years

**DESCRIPTION:** Perennial with creeping roots; up to 3 feet tall

**Roots:** Creeping; horizontal roots and vertical roots

**Leaves:** Gray-green, covered with minute star-shaped hairs, lance-shaped, margins wavy, to 5 inches long; stems with yellowish prickles

**Flowers:** Bluish to lavender or occasionally white petals; bright yellow anthers cluster in the center of the star-shaped, 5-lobed flower up to 1 inch across

**Seeds:** Yellow to orange berry; seeds oval, flattened, and yellowish to orange-brown

**HABITAT:** Roadsides, cultivated fields, and disturbed sites

**SIMILAR PLANTS:** Buffalobur, an annual, has deeply lobed leaves



Flowers are white to purple with yellow anthers. First seedling leaves are lance-shaped to elliptical and covered with hairs. White hairs give leaves a silvery to gray-green cast. Lance-shaped leaves have wavy margins.





## Skeletonleaf bursage

*Ambrosia tomentosa*

Asteraceae, the sunflower family

**CATEGORY:** Control

### BACKGROUND

- Native to the Great Plains region
- Seed dispersal distance not known; plants disperse short distances with creeping roots
- Seed longevity not reported

**DESCRIPTION:** Perennial with creeping roots; up to 2 feet tall

**Roots:** Creeping

**Leaves:** Lance-shaped, coarsely toothed, and deeply lobed; upper leaf surface covered with gray, short stiff hairs; lower leaf surface covered with white, short, dense hairs

**Flowers:** Inconspicuous, greenish yellow, clustered in leaf axils

**Seeds:** Light brown bur with up to 10 short spines; fruits are 2 seeded

**HABITAT:** Cultivated fields, pastures, prairies, and disturbed sites

**SIMILAR PLANTS:** None



**Flowers mature** to become clusters of spiny burs. Deeply lobed leaves have a silvery green lower surface covered with fine hairs.





## Small bugloss

*Anchusa arvensis*

Boraginaceae, the borage family

**CATEGORY:** Control

### BACKGROUND

- Native to Europe
- Problematic in cultivated fields
- Dispersal not reported
- Seed longevity not reported

**DESCRIPTION:** Winter annual 6-24 inches tall

**Roots:** Taproot

**Leaves:** Basal rosette is withered at flowering stage; stem leaves alternate, lance-shaped, 1-2 inches long, with wavy margins and bristly hairs arising from small bumps

**Flowers:** Funnel-shaped; blue with a distinct curve in the whitish tube; in clusters at the tip of a coiled flower stem

**Seeds:** 4 nutlets per flower, each nutlet producing a seed; nutlet base has a thickened rim; 250 seeds per plant

**HABITAT:** Roadsides, disturbed areas, pasture, and cultivated fields

**SIMILAR PLANTS:** Common bugloss, a perennial, has linear leaves, hairs without swollen bases, and a floral tube without a curve



**Flowers are blue**, funnel-shaped, and clustered at the tip of the stem. Nutlet base has a thickened rim. Seedling leaves are elliptic to oval and covered with hairs. Bristly hairs on leaves arise from a small bump on the leaf.





## Spotted knapweed

*Centaurea stoebe* ssp. *micranthos*  
Asteraceae, the sunflower family

**CATEGORY:** Containment

### BACKGROUND

- Native to Europe
- Potential allelopathic effects; highly competitive
- Produces up to 25,000 seeds per plant
- Seeds disperse less than 9 feet or long distances if ingested by or attached to animals
- Seeds remain viable for more than 8 years

**DESCRIPTION:** Biennial or short-lived perennial with branched stems; up to 3 feet tall

**Roots:** Sturdy taproot

**Leaves:** Rosette leaves deeply lobed; stem leaves alternate, deeply pinnately lobed, covered with short grayish hairs

**Flowers:** White or pink-purple disk flowers solitary on branch tips; flower head ovoid; bract below flower has comblike fringed margin with black tip

**Seeds:** Dark brown to tan achenes tipped by plumes

**HABITAT:** Rangelands, dry meadows, pastures, roadsides, sandy or gravelly floodplains

**SIMILAR PLANTS:** Other knapweeds with fringed or comblike bracts; meadow knapweed and bachelor's buttons; hoary aster has ray flowers and bracts that bend downward



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





## Squarrose knapweed

*Centaurea virgata* var. *squarrosa*  
Asteraceae, the sunflower family

CATEGORY: EDRR

### BACKGROUND

- Native to eastern Mediterranean area
- Dispersal not reported; likely similar to spotted knapweed
- Seed longevity not reported

**DESCRIPTION:** Perennial; 1½-3 feet tall with woody base

**Roots:** Stout, long taproot

**Leaves:** Basal and lower leaves deeply pinnately lobed; upper leaves linear

**Flowers:** 4-8 rose to purple disk flowers on branched stems; central spine on bract subtending flower curves downward

**Seeds:** Seeds pale brown, 1-4 per head; seed heads fall off at maturity

**HABITAT:** Grasslands; rangeland; dry, disturbed areas; adapted to drought and cold temperatures

**SIMILAR PLANTS:** Diffuse knapweed floral bract tip does not curve downward and its flowers are typically white to cream



**Flowers are** rose to purple. The center spine on the bract curves downward. First seedling leaves are oval to spatula-shaped. Upper stem leaves are linear.





## Syrian beancaper

*Zygophyllum fabago*

Zygophyllaceae, the caltrop family

CATEGORY: EDRR

### BACKGROUND

- Native to the Syrian desert and Mediterranean region
- Disperses short distances via creeping roots; seed dispersal not reported
- Longevity not reported

**DESCRIPTION:** Bushy perennial up to 1½ feet tall with creeping roots and stems that are branched from a woody crown

**Roots:** Stout taproot with creeping lateral roots

**Leaves:** Opposite, compound, with 1 pair of opposite oval leaflets; leaflets succulent, waxy, up to 1 inch long

**Flowers:** Yellow to white or yellow to salmon; with pinkish veins; 5-petaled; up to ¾ inch across, in the leaf axils singly or in pairs

**Seeds:** In oblong, 5-angled, ribbed capsules; seeds gray, up to ⅛ inch in length

**HABITAT:** Deserts, dry grasslands, roadsides, and disturbed areas

**SIMILAR PLANTS:** None



**Oblong capsules** contain the seeds. Paired leaflets give the leaf a Y-shaped appearance.





## Tall hawkweed

*Hieracium piloselloides*

Asteraceae, the sunflower family

CATEGORY: EDRR

### BACKGROUND

- Introduced to the U.S. from Europe
- Dispersal likely similar to orange and yellow hawkweeds (seeds move at least 250 yards in wind)
- Longevity not reported

**DESCRIPTION:** Perennial up to 2 feet tall; contains milky sap (latex) in stems and leaves

**Roots:** Fibrous; lacks stolons and rhizomes

**Leaves:** Basal leaves smooth or very sparsely hairy, narrow, lance-shaped, and tapering to the base; flowering leafless stem

**Flowers:** Yellow, dandelionlike, with ray flowers only; flower stalk is long with open flower clusters

**Seeds:** Achene with tuft of hairs

**HABITAT:** Moist grasslands and meadows to open forest

**SIMILAR PLANTS:** Other yellow-flowered hawkweeds; other invasive hawkweeds have stolons and rhizomes; difficult to distinguish from native hawkweeds



Flowers are yellow, dandelion-like, and arranged in open clusters. Sparsely hairy, almost smooth leaves occur at the base of the stem.





## Tansy Ragwort

*Senecio jacobaea*

Asteraceae, the sunflower family

CATEGORY: Containment



### BACKGROUND

- Introduced from Eurasia
- Toxic to humans and livestock
- Seeds disperse at least 250 yards in wind
- Seeds remain viable for up to 15 years

**DESCRIPTION:** Biennial or short-lived perennial up to 4 feet tall with flowering stems that branch near the top

**Roots:** Taproot and lateral roots

**Leaves:** Dark green and smooth on upper leaf surface and covered with white cobwebby hairs on lower surface; rosette leaf margins ragged/ruffled and toothed to deeply pinnately lobed 1-2 times, to 8 inches long; lower leaves stalked, 8 inches long; upper leaves alternate, small, and without a stalk

**Flowers:** Daisylike with ray and disk flowers; yellow with light brown centers; many heads  $\frac{3}{4}$  inch across; heads in dense, flat-topped clusters on branch tips

**Seeds:** Ribbed light-brown achenes with white hairlike plume

**HABITAT:** Pastures, riparian areas, forests, roadsides

**SIMILAR PLANTS:** Common tansy flowers lack showy yellow ray petals; common groundsel has toothed, deeply lobed leaves that are smaller than tansy ragwort's



**Yellow daisylike flowers** occur in dense clusters. Leaves are deeply pinnately dissected and appear ruffled.





## Vipers bugloss

*Echium vulgare*

Boraginaceae, the borage family

CATEGORY: Control



### BACKGROUND

- Native to southern Europe; introduced as a garden plant
- Toxic alkaloids cause liver damage; especially toxic to horses and pigs
- Dispersal not reported
- Seeds remain viable at least 3 years

**DESCRIPTION:** Winter annual or biennial up to 3 feet tall

**Roots:** Taproot with lateral roots

**Leaves:** Basal rosette leaves stalked, oval to elliptic; stem leaves alternate, narrowly lance-shaped, covered with bristly hairs with swollen bases

**Flowers:** Purplish-blue, funnel-shaped, at the end of coiled flower stem; threadlike filaments extend from the flower

**Seeds:** 4 nutlets for each flower; nutlets blackish, 3-sided, with wrinkled surface

**HABITAT:** Disturbed sites, roadsides, pastures, and grasslands

**SIMILAR PLANTS:** Small bugloss is shorter and has a distinct curve in the floral tube; common bugloss, a perennial, has linear leaves and hairs without swollen bases



**Purple to blue,** funnel-shaped flowers have showy, long reddish filaments. Basal leaves are oval or elliptic, and stem leaves are lance-shaped.





## Water hyacinth

*Eichhornia crassipes*

Pontederiaceae, the pickerelweed family

**CATEGORY:** EDRR

### BACKGROUND

- Introduced from South America as an aquatic ornamental
- Considered one of the most serious aquatic weeds; difficult to control
- Grows quickly and forms dense mats that produce high quantities of dry matter
- Floating plants move with currents
- Seeds remain viable at least 2 years

**DESCRIPTION:** Free-floating perennial with emergent leaves

**Roots:** Dark, feathery; up to 3 feet long

**Leaves:** Broadly ovate to circular, 4-8 inches in diameter; leaf stalks are bulbous and spongy

**Flowers:** Showy; in a single spike of 8-15 flowers with 6 petals each

**Seeds:** Egg-shaped, ribbed, in membranous capsules

**HABITAT:** Canals, ponds, lakes, reservoirs, and still and slow-moving water

**SIMILAR PLANTS:** None



**Flowers are lavender**, showy, and have 6 petals. Roots are black and feathery. Free-floating plants have ovate to circular leaves with spongy, bulbous leaf stalks.





## White bryony

*Bryonia alba*

Cucurbitaceae, the cucumber family

CATEGORY: Containment



### BACKGROUND

- Native to Europe
- All parts of the plant are poisonous, but especially the root
- Disperses long distances by birds; check areas where birds perch
- Longevity not reported

**DESCRIPTION:** Climbing perennial vine up to 50 feet in length with tendrils

**Roots:** Thick, fleshy; resembling a large turnip

**Leaves:** Palmately 5-lobed, triangular, up to 5 inches long; rough to the touch

**Flowers:** Greenish-white, 5-petaled, 1/2 inch across, in clusters in the leaf axils

**Seed:** Spherical berry, 5/16 inch in diameter, green turning to black when mature

**HABITAT:** Power poles, fence rows, and trees

**SIMILAR PLANTS:** Resembles kudzu and native clematis in its growth habit



**Flowers are white**, tinged with green, and have 5 petals. Berry can be green, turning black when mature. Stems have tendrils. Leaves are 5-lobed and triangular.





## Whitetop

*Cardaria draba*

Brassicaceae, the mustard family

CATEGORY: Containment

### BACKGROUND

- Introduced from Eurasia
- Disperses short distances by creeping roots; seeds disperse long distances in flowing water
- Seeds remain viable for about 4 years

**DESCRIPTION:** Perennial up to 2 feet tall

**Roots:** Creeping horizontal roots and vertical roots; vertical roots can reach to depths of 6 feet

**Leaves:** Alternate, gray-green, lance-shaped, surfaces sparsely to densely hairy, margins entire or toothed; lower leaves are stalked; upper leaves have 2 lobes clasping the stem

**Flowers:** Numerous, white, 4-petaled, ¼-inch across; in dense, nearly flat-topped to rounded clusters at the top of each stem

**Seeds:** In upside-down heart-shaped, often 2-lobed pods; seeds small, flat, reddish brown, 2 per pod

**HABITAT:** Cultivated fields, rangeland, pastures, roadsides, and disturbed sites

**SIMILAR PLANTS:** Lens-podded whitetop has flat, round seed pods; hairy whitetop has globe-shaped seed pods and generally smaller leaves covered with dense hairs



**Numerous white flowers** give the plant a white, flat-topped appearance. First seedling leaves are ovate to oblong with slightly wavy margins. Leaves are grayish green, arrowhead-shaped, and clasp the stem.





## Yellow devil hawkweed

*Hieracium glomeratum*

Asteraceae, the sunflower family

CATEGORY: EDRR

### BACKGROUND

- Introduced to the U.S. from Europe
- Increases with overgrazing
- Dispersal likely similar to orange and yellow hawkweeds (seeds move at least 250 yards in wind); short-distance dispersal by root buds

**DESCRIPTION:** Perennial up to 2 feet tall; broken stems and leaves exude milky juice

**Roots:** Fibrous; lacks stolons and rhizomes

**Leaves:** Basal leaves with short stiff hairs on both sides and a flowering leafless stem; leaves narrow, lance-shaped and tapering to the base

**Flowers:** Yellow ray flowers similar to dandelion's

**Seeds:** Achene with tuft of hairs

**HABITAT:** Moist grasslands, open fields, mountain meadows, and forest clearings

**SIMILAR PLANTS:** Other yellow-flowered hawkweeds; yellow and orange hawkweeds have stolons and rhizomes; difficult to distinguish from native hawkweeds and tall hawkweed, which lack stolons



**Yellow flowers** are arranged in dandelionlike heads. Leaves have short stiff hairs, giving the leaves a rough texture. Leaves occur only at the base of the flowering stem.





## Yellow hawkweed

*Hieracium caespitosum*

Asteraceae, the sunflower family

**CATEGORY:** Control

### BACKGROUND

- Native to Europe; introduced as an ornamental
- Seeds disperse more than 250 yards; short-distance dispersal by means of rhizomes, stolons, and root buds
- Longevity not reported

**DESCRIPTION:** Perennial up to 2 feet tall; hairy with yellow, dandelionlike flowers; contains a white milky sap

**Roots:** Fibrous roots; also has rhizomes and stolons

**Leaves:** Basal rosette hairy, oblong-elliptic to lance-shaped, with smooth margins; stems covered with black hairs, leafless, occasionally with a small leaf near the midpoint

**Flowers:** Yellow, in dense to open clusters; bracts below flowers covered with glandular and black hairs

**Seeds:** Dark brown to black, ribbed, tipped with white hairlike plumes

**HABITAT:** Meadows, rangelands, pastures, and open forest

**SIMILAR PLANTS:** Other yellow hawkweeds; native hawkweeds lack stolons



**Bright-yellow dandelionlike** flowers occur on nearly leafless stems. Plants produce a basal rosette of leaves.





## Yellow starthistle

*Centaurea solstitialis*

Asteraceae, the sunflower family

CATEGORY: Containment



### BACKGROUND

- Native to the Mediterranean region and Asia
- Toxic to horses, causing “chewing disease”
- Seeds disperse less than 5 yards unless attached to animals
- Seeds remain viable up to 12 years

**DESCRIPTION:** Winter annual with winged stems; up to 6 feet tall

**Roots:** Taproot to soil depths of 6 feet

**Leaves:** Grayish to bluish-green; basal rosette leaves deeply lobed to the midvein, lobes pointed with toothed to wavy margins, terminal lobe triangular, upper and lower surfaces covered with fine, cobwebby and short, stiff hairs; stem leaves alternate, mostly linear or narrowly oblong; lower stem leaves sometimes lobed

**Flowers:** Bright yellow disk flowers; bracts with sharp, long spines subtend the flowers; flower heads solitary on stem tips

**Seeds:** Glossy achenes of 2 types: tipped with plume and not plumed

**HABITAT:** Canyon grasslands, rangelands, pastures, cultivated fields, roadsides, and disturbed sites

**SIMILAR PLANTS:** None

116



**Flowers have yellowish spines** at the base of the flower head. First seedling leaves are oblong to spatula-shaped. Basal rosette leaves are entire when young, pinnately lobed when older. Stem and leaves are dull green and covered with fine woolly hairs. Leaves extend down the stem, making it appear winged.

117





## Yellow toadflax

*Linaria vulgaris*

Scrophulariaceae, the figwort family

CATEGORY: Containment



### BACKGROUND

- Introduced from Europe as a garden ornamental
- Produces a poisonous glucoside that may be harmful to livestock
- Disperses short distances by means of creeping roots, less than 9 feet from seeds
- Longevity not reported

**DESCRIPTION:** Perennial up to 3 feet tall with erect stems, creeping roots, and showy flowers

**Roots:** Vertical and creeping lateral roots

**Leaves:** Linear, up to 2 inches long, sessile, nearly opposite to mostly spreading

**Flowers:** Elongated inflorescence; flowers bright yellow, sometimes whitish, up to 1½ inch long including spur, throat often hairy and tinged orange

**Seeds:** Black to dark brown, flat, circular, with a papery wing

**HABITAT:** Rangeland, pastures, cultivated fields, gardens, and roadsides

**SIMILAR PLANTS:** Leafy spurge contains milky latex sap; Dalmatian toadflax has egg- to lance-shaped leaves that clasp the stem



**Snapdragonlike flowers** are orange and yellow. Leaves are pale green, alternate, narrow, and pointed.



## Glossary

**Achene**—one-seeded fruit that develops from a single ovary and does not split open to disperse the seed.

**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**—flower structure in which pollen forms.

**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 the 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 the leaf base around the stem.

**Collar**—in grasses, the point where the leaf leaves the stem, resembling a shirt collar.

**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.

**Disk flower**—tiny tubular flowers in the central portion of the flower head of certain composite plants, such as the daisy.

**Dissected**—deeply and repeatedly divided into smaller parts.

**Elliptic**—narrowly oval, broadest at the middle and narrower at the two ends.

**Entire**—not toothed or otherwise cut.

**Glumes**—the two bracts surrounding a grass spikelet.

**Head**—a group of flowers borne tightly together.

**Inflorescence**—a group or cluster of flowers arranged on the stem; a flower cluster.

**Irregular flower**—a flower with petals that are not uniform in shape but usually grouped to form upper and lower “lips.”

**Lanceolate**—lance-shaped; much longer than wide.

**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**—leaves having cuts into the leaf edge; deeper 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.

**Nutlets**—a small nut; one of the lobes or sections of the mature fruit.

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

**Ovate**—egg-shaped in outline.

**Palmate**—lobed or divided from a common point, like the fingers of a hand.

**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.

**Ray flower**—a straplike flower at the edge of a flower head of certain composite plants, such as the daisy; each ray flower resembles a single petal.

**Rhizome**—a creeping, underground stem.

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

**Sagittate**—arrowhead-shaped, with basal lobes directed downward.

**Sheath**—the extension of leaf tissue surrounding a stem.

**Spatulate**—like a spatula in shape, with a rounded blade gradually tapering to the base.

**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.

**Subtend**—to underlie so as to enclose or surround: flowers subtended by leafy bracts.

**Succulent**—fleshy and juicy.

**Taproot**—a thick, central root with minimal branching.

**Trifoliate leaf**—a leaf made of three leaflets; cloverlike.

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

## Photo credits

Photographs courtesy of the University of Idaho unless otherwise noted  
© 2007 THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

From DiTomaso, J. M., and E. A. Healy. 2007. *Weeds of California and Other Western States*. Publication 3488. University of California Division of Agriculture and Natural Resources

Black henbane fruiting stem. J. M. DiTomaso. page 7

Black henbane seedling. J. M. DiTomaso. page 7

Black henbane seeds. J. K. Clark. page 7

Buffalobur seedling. J. M. DiTomaso. page 13

Buffalobur seeds. J. K. Clark. page 13

Canada thistle rhizomes. J. K. Clark. page 15

Canada thistle seeds. J. O'Brien. page 15

Common crupina C040-02. page 17

Common crupina seeds. J. M. DiTomaso. page 17

Dalmatian toadflax seeds. J. K. Clark. page 19

Diffuse knapweed leaves and stem. J. M. DiTomaso. page 23

Diffuse knapweed seeds. J. O'Brien. page 23

Johnsongrass florets. J. K. Clark. page 42

Johnsongrass inflorescence. J. M. DiTomaso. page 43

Jointed goatgrass embedded spikelets. J. M. DiTomaso. page 44

Jointed goatgrass inflorescences. J. M. DiTomaso. page 45

Jointed goatgrass collar and sheath. J. M. DiTomaso. page 45

Mediterranean sage seeds. J. O'Brien. page 53

Musk thistle seedling. J. M. DiTomaso. page 57

Musk thistle seeds. J. O'Brien. page 57

Oxeye daisy seeds. J. O'Brien. page 61

Perennial sowthistle seeds. J. O'Brien. page 67

Plumeless thistle seeds. J. O'Brien. page 69

Poison hemlock seeds. J. O'Brien. page 71

Rush skeletonweed seeds. J. O'Brien. page 79

Scotch broom seedlings. Courtesy of Jim McHenry. page 85  
Scotch broom seeds. J. O'Brien. page 85  
Scotch thistle seeds. J. O'Brien. page 87  
Silverleaf nightshade fruit. J. M. DiTomaso. page 89  
Silverleaf nightshade seedling. J. K. Clark. page 89  
Squarrose knapweed flower heads. J. M. DiTomaso. page 96  
Squarrose knapweed plant. J. M. DiTomaso. page 97  
Squarrose knapweed leaves and stem. J. M. DiTomaso. page 97  
Squarrose knapweed seedling. J. M. DiTomaso. page 97  
Squarrose knapweed seeds. J. O'Brien. page 97  
Syrian beancaper fruit and leaves. J. M. DiTomaso. page 99  
Tansy ragwort seeds. J. O'Brien. page 103

© 2003 THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

From DiTomaso, J. M., and E. A. Healy. 2003. *Aquatic and Riparian Weeds of the West*.  
Publication 3421. University of California Division of Agriculture and Natural Resources

Brazilian elodia cross section of leaf. J. K. Clark. page 11  
Brazilian elodia stem section. J. K. Clark. page 11  
Giant hogweed plant. King County Noxious Weed Program. pages 30, 31  
Giant hogweed leaves. King County Noxious Weed Program. page 31  
Giant hogweed stem. King County Noxious Weed Program. page 31  
Hydrilla cross section of stem. J. K. Clark. page 38  
Hydrilla stem with tubers. J. K. Clark. page 39  
Hydrilla stem with turions. J. K. Clark. page 39  
Parrotfeather stem section with flowers. J. M. DiTomaso. page 63  
Water hyacinth flower. J. M. DiTomaso. page 106  
Water hyacinth infestation. J. M. DiTomaso. page 107  
Water hyacinth whole plant and roots. J. M. DiTomaso. page 107  
Water hyacinth basal region of leaf. J. M. DiTomaso. page 107

Courtesy of LATAH COUNTY WEED CONTROL

White bryony flowers. page 108  
White bryony on tree. page 109  
White bryony leaves. page 109



INCLUDES ALL THE WEEDS ON  
IDAHO'S OFFICIAL NOXIOUS WEEDS LIST

**Color photographs** accompany descriptions of the weeds, their biology, and their habitat.

**Idaho maps** show each weed's distribution by county.

**NEW** **Leaf shape** illustrations

**NEW** **Poison symbol** for poisonous weeds

**NEW** **Color-coding** to indicate each weed's noxious weed category (statewide control, statewide containment, statewide early detection and rapid response)

**NEW** **Ways to distinguish** among easily confused plants

**University of Idaho**  
Extension  
[www.extension.uidaho.edu](http://www.extension.uidaho.edu)

\$5.00