



Prohibited Weeds Booklet



Table of Contents

Introduction.....	4
Apiaceae Parsley family	5
<i>Conium maculatum</i> Poison hemlock	5
Asteraceae Sunflower family	6
<i>Arctium minus</i> Common burdock/Lesser burdock	6
<i>Artemisia absinthium</i> Absinth wormwood	7
<i>Carduus acanthoides</i> Plumeless thistle	8
<i>Carduus nutans</i> Musk thistle	9
<i>Centaurea diffusa</i> Diffuse knapweed	10
<i>Centaurea moncktonii</i> Meadow knapweed	11
<i>Centaurea solstitialis</i> Yellow starthistle	12
<i>Centaurea stoebe</i> subsp. <i>micranthos</i> Spotted knapweed	13
<i>Centaurea virgata</i> subsp. <i>squarrosa</i> Squarrose knapweed	14
<i>Chondrilla juncea</i> Rush skeletonweed	15
<i>Cirsium arvense</i> Canada thistle/Creeping thistle	16
<i>Crupina vulgaris</i> Common crupina	17
<i>Jacobaea vulgaris</i> Tansy ragwort	18
<i>Leucanthemum vulgare</i> Oxeye daisy	19
<i>Onopordum acanthium</i> Scotch thistle	20
<i>Pilosella aurantiaca</i> Orange hawkweed	21
<i>Pilosella caespitosa</i> Yellow hawkweed	22
<i>Rhaponticum repens</i> Russian knapweed	23
<i>Sonchus arvensis</i> Perennial sowthistle	24
<i>Tanacetum vulgare</i> Common tansy	25
<i>Tripleurospermum inodorum</i> Scentless chamomile	26
Boraginaceae Borage family	27
<i>Cynoglossum officinale</i> Houndstongue	27
<i>Echium vulgare</i> Viper's bugloss/Blueweed	28
Brassicaceae Mustard family.....	29
<i>Berteroa incana</i> Hoary alyssum	29
<i>Hesperis matronalis</i> Dame's rocket	30
<i>Isatis tinctoria</i> Dyer's woad	31
<i>Lepidium spp.</i> Hoary cress/Whitetop	32
<i>Lepidium latifolium</i> Perennial pepperweed	33
<i>Rorippa austriaca</i> Austrian fieldcress	34
Caprifoliaceae Honeysuckle family	35
<i>Dipsacus fullonum</i> Common teasel	35
<i>Dipsacus laciniatus</i> Cutleaf teasel	36
<i>Knautia arvensis</i> Field scabious/Bluebuttons	37

Convolvulaceae Morning glory family38
Convolvulus arvensis Field bindweed38

Euphorbiaceae Spurge family39
Euphorbia virgata Leafy spurge39

Fabaceae Legume family40
Lespedeza cuneata Sericea lespedeza40

Hypericaceae St. Johnswort family.....41
Hypericum perforatum St. Johnswort41

Lythraceae Loosestrife family42
Lythrum salicaria Purple loosestrife42

Plantaginaceae Plantain family43
Linaria dalmatica Dalmatian toadflax43
Linaria vulgaris Yellow toadflax44

Poaceae Grass family.....45
Aegilops cylindrica Jointed goatgrass45
Avena fatua Wild oats46
Bothriochloa bladhii Caucasian bluestem47
Bothriochloa ischaemum Yellow bluestem48
Elymus repens Quackgrass49
Panicum miliaceum Wild proso millet50
Sorghum halepense Johnsongrass51
Taeniatherum caput-medusae Medusahead52
Ventenata dubia Ventenata/Wiregrass53

Ranunculaceae Buttercup family54
Ranunculus acris Tall buttercup54

Rosaceae Buttercup family55
Potentilla recta Sulfur cinquefoil55

Scrophulariaceae Figwort family56
Verbascum thapsus Common mullein56

Solanaceae Nightshade family57
Hyoscyamus niger Black henbane57
Solanum carolinense Horsenettle58
Solanum rostratum Buffalobur59

Zygophyllaceae Caltrop family60
Tribulus terrestris Puncturevine60

Glossary61

Selected References63

Common Name Index73

Taxonomic family Etymologies.....75

Introduction

North American Invasive Species Management Association



The NAISMA Certified Weed Free Products program is the only program in North America that provides land managers with assurance that noxious weeds will not be spread through the movement of forage, hay, mulch, gravel or compost brought into the property. Weed Free Products maintains a list of standards, provides guidelines, and ensures uniform training and participation. This booklet is intended to aid inspectors in the accurate identification of the weed species currently included on the NAISMA Weed Free Products Prohibited Weeds List. Key features of each species are described, and various images are included depicting diagnostic stages and traits. Additional resources are included for each species as quick links, and the references utilized to compile each species page are included at the end of this booklet. A glossary is also provided to define some of the botanical terms used throughout this guide.

For additional information on the NAISMA Weed Free Products program, visit the

[NAISMA Weed Free Products program website](#)
Questions on this program should be directed to
assistant@naisma.org

Poison Hemlock

Conium maculatum Apiaceae



Key Features

- Biennial forb (sometimes annual)
- Long, stout, whitish-yellow taproot
- Typically rosette first year
- Leaves ≤ 18 " long, 2–3 times compound, fern- like leaflets glossy dark green, finely divided, with prominent veins on undersides, toothed
- Stem leaves alternate, smaller
- 2nd-year stems 3–6 ft tall, branched, hollow, ridged, covered in purple spots or splotches
- Flowers spring to summer in 3" umbel clusters, further divided into umbellets
- 15 flowers per umbellet, each with 5 white petals
- Fruits split into 2 single-seed structures that are oval, flattened on one side, ribbed



Additional Resources

[University of Idaho Identification](#)
[Video Penn State Extension](#)



Key Features

- Annual to short-lived perennial forb
- Thick, fleshy taproot Rosette first year
- 3–5 ft tall second year
- Stems grooved, hollow, purplish at maturity
- Leaves densely hairy beneath, with wavy margins
- Rosette leaves ≤ 2 ft long, stalked, heart-shaped
- Stem leaves alternate, smaller, ovate
- Flower heads in clusters at stem tips or leaf axils, throughout summer
- Each flower head ≤ 1 " diameter with 20–40 pinkish-purple florets
- Bracts needle-like with tiny teeth, strong hook
- Seeds brown with short-lived pappus



Additional Resources

[Michigan State University Plant & Pest Diagnostics](#)

[Ohio State University Weed Guide](#)

Absinth Wormwood

Artemisia absinthium Asteraceae



Key Features

- Long-lived, semi-woody perennial forb
- Taproot
- Rosette first year
- 1–5 ft tall subsequent years
- Few to several branched flowering stems
- Rosette leaves 2–5" long, divided 2–3 times into deeply lobed leaflets
- Stem leaves alternate, smaller, lobed
- Stems and leaves covered in fine grayish hairs
- Dense inflorescences at stem tips in midsummer
- Flower heads nodding, hairy, up to 1/8" diameter, with 40–70 yellowish florets
- Seeds tiny, teardrop-shaped
- Plants give off sage-like odor when crushed

Additional Resources

[Wisconsin DNR Factsheet](#) [Washington State Noxious Weed Control Board](#)

Plumeless Thistle

Carduus acanthoides Asteraceae



Key Features

- Biennial (sometimes winter annual) forb
- Fleshy taproot
- Rosette first year
- Stems 3–5 ft tall second year, branched, with bristly hairs and spiny wings along entire length
- Leaves ≤ 8 " long; margins white, wavy, spiny
- First basal leaves not deeply lobed; later leaves very deeply lobed, almost to midrib
- Stem leaves alternate, smaller, lightly clasp stem
- Flower heads at stem tips, spring through fall
- Each flower head ≤ 1 " diameter with 30–100 magenta florets
- Bracts needle-like, may have cobwebby hairs
- Seeds tan with very long white pappus



Additional Resources

[NAISMA Factsheet](#) [University of Idaho](#)
[Identification Video](#)



Key Features

- Biennial (sometimes winter annual) forb
- Thick, fleshy taproot
- Rosette first year
- Stems 4–6 ft tall second year, stout, branched, with spiny wings lower but not upper stems
- Leaves dark green, hairless, waxy, coarsely lobed, margins white and spiny
- Basal leaves ≤ 20 " long; stem leaves alternate, smaller, lightly clasp stem
- Flower heads solitary at stem tips, spring–summer
- Each flower head ≤ 3 " diameter with 100–1000 magenta florets, nodding at maturity
- Bracts wedge-shaped, purple at maturity
- Seeds brown with very long white pappus



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho Identification Video](#)

Diffuse Knapweed

Centaurea diffusa

Asteraceae



Key Features

- Biennial to short-lived perennial forb
- Long taproot
- Rosette first year
- One to a few branched stems second year, 1–3½ ft tall, ridged, covered in small hairs
- Rosette leaves gray-green, covered in small hairs, 4–8" long, deeply divided into elliptic lobes that may resemble leaflets
- Stem leaves alternate, smaller, less divided
- Flower heads at stem tips, summer to fall
- Each flower head urn-shaped, $\leq \frac{1}{3}$ " across with 10–15 white (sometimes pink) florets
- Bracts fringed in spines; terminal longest
- Seeds dark brown with very short white pappus



Additional Resources

[NAISMA Factsheet](#)

[University of Idaho Identification Video](#)

Meadow Knapweed

Centaurea x moncktonii
(=*Centaurea pratense*)

Asteraceae



Key Features

- Variable appearance; hybrid of black (*C. nigra*), brown (*C. jacea*), sometimes Tyrol knapweed (*C. nigrescens*) so may closely resemble any parent species, or combine characteristics randomly
- Perennial forb with clustered roots
- Rosette first year or a few years
- One to several branched stems subsequent year, 1–3½ ft tall, ridged, covered in small hairs
- Rosette leaves ≤6" long, tapered both ends, small hairs, undivided or only slightly lobed
- Stem leaves alternate, smaller, less lobed
- Flower heads at stem tips, summer to fall
- Each flower head ≤1" wide, 20–40 pink florets
- Bracts vary from dark brown with stiff, comblike fringe to light brown with papery margins
- Seeds gray-brown with no pappus or only short row of fine hairs



Additional Resources

[NAISMA Factsheet](#)

[University of Idaho Identification Video](#)



Key Features

- Winter annual forb
- Slender, deep taproot
- One to many stems, most 1–3 ft tall, upright, rigid, winged, multiple spreading branches
- Rosette leaves 2–6" long, irregularly lobed
- Stem leaves alternate, attach by wings that run down stems, often narrow with smooth margins
- Stems, leaves, and wings densely covered with matted hairs, giving gray-green appearance
- Yellow flower heads at branch tips, summer
- Each head $\leq \frac{3}{4}$ " across, 10–80 florets
- Bracts hairy, with one long central spine ≤ 1 " long, two or more pairs short side spines
- Two seed types: long-plume tan, plumeless brown



Additional Resources

[NAISMA Factsheet](#) [University of Idaho](#)
[Identification Video](#)

Spotted Knapweed

Centaurea stoebe subsp.
micranthos
(= *Centaurea maculosa*)

Asteraceae



Aleksandr Levon,
iNaturalist.org CC BY-NC 4.0



Travis McMahon, MIA
Consulting



Travis McMahon, MIA
Consulting

Key Features

- Perennial forb
- Deep, stout taproot
- Rosette first year or a few years
- One to several branched stems subsequent year, 1–3½ ft tall, ridged, covered in small hairs
- Rosette leaves gray-green, covered in small hairs, 4–8" long, deeply divided into elliptic lobes that may resemble leaflets
- Stem leaves alternate, smaller, less divided
- Flower heads at stem tips, summer to fall
- Each flower head urn-shaped, ≤¼–½" wide with 20–50 pink florets
- Bracts triangular, tips dark brown, fringed margins
- Seeds streaked brown-white, bristly white pappus



Travis McMahon, MIA
Consulting



Travis McMahon, MIA
Consulting

Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Squarrose Knapweed

Centaurea virgata
subsp. *squarrosa*

Asteraceae



Key Features

- Perennial forb with long taproot
- Rosette first year or a few years
- One to several branched stems subsequent year, 1–3½ ft tall, ridged, covered in small hairs
- Rosette leaves gray-green, covered in small hairs, 4–8" long, deeply divided into elliptic lobes that may resemble leaflets
- Stem leaves alternate, smaller, less divided
- Flower heads at stem tips, summer to fall
- Each flower head urn-shaped, ≤¼" across with 4–8 lavender florets
- Bracts fringed in spines; terminal spine longest, curved strongly backward
- Seeds dark brown with bristly white pappus



Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video



Key Features

- Perennial forb
- Brittle taproots, sometimes creeping lateral roots
- One or more stems 1–4 ft tall, spreading ascending branches, wiry, rigid, may be leafless
- Upper stems hairless; bases with many stiff, golden-red downward-pointing hairs
- Rosette leaves 2–5" long, hairless, deeply lobed
- Stem leaves (if present) smaller, alternate, very narrow, smooth or toothed margins
- Stems and leaves exude milky sap when damaged
- Flower heads at stem tips, leaf axils, late summer
- Each head ½" wide with 9-12 yellow ray florets
- Flower head bracts gray-green, may appear waxy
- Seeds tan, ribbed, with long white pappus



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)



Key Features

- Perennial forb
- Extensive creeping lateral roots
- Stems 1–4 ft tall, slender, grooved, branched near tips; may be finely hairy but not spiny
- Leaves $\leq 5''$ long, downy on undersides, margins lobed, prickly, ruffled
- Stem leaves alternate, smaller
- Clusters of flower heads throughout summer
- Each flower head $\leq \frac{1}{2}''$ diameter with 20–90 white to deep lavender florets
- Flower head bracts not spiny
- Male, female florets (similar) on separate plants
- Female florets produce small brown seeds topped by fine white pappus

Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video



Key Features

- Winter annual forb
- Long, slender taproot
- Early basal leaves ≤ 2 " long, unlobed with tiny teeth on margins, wither back as plants bolt
- Stem leaves alternate, < 3 " long, deeply lobed, with tiny teeth on margins, covered in stiff hairs
- Stems rigid, 1–3 ft tall, branched in upper half
- Flower heads in clusters at stem tips, late spring to early summer
- Each flower head slender, urn-shaped, $\leq 3/4$ " long with ≤ 5 pinkish-purple florets
- Bracts not spiny, turn purple at maturity
- Seeds dark brown, barrel-shaped, with stiff black ring of pappus



Additional Resources

[University of Idaho](#)

[Identification Video](#)

[Washington State Noxious](#)

[Weed Control Board](#)

Tansy Ragwort

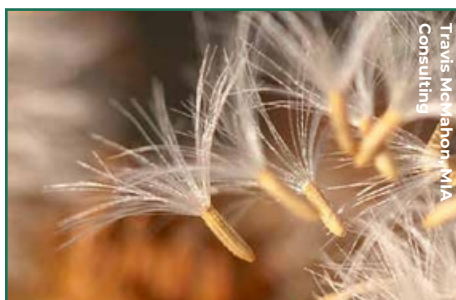
Jacobaea vulgaris
(= *Senecio jacobaea*)

Asteraceae



Key Features

- Biennial, winter annual, or short-lived perennial
- Rosette 1st year or 1st winter, fleshy fibrous roots
- One to many stems, most 1–3 ft tall, rigid, furrowed, hairless or lightly cottony, may be reddish near base, branched in upper halves
- Rosette leaves 3–8" long, stalked, ruffled margins
- Stem leaves deeply lobed, rounded teeth, alternate, smaller, clasp stem
- Yellow flower heads in clusters 20–300 at branch tips, summer to fall
- Each head ½–1" across, 12–15 ray florets at periphery, 50–100 tube-like disc florets in center
- Tops of flower head bracts tipped in black
- Seeds brown, cylindrical, with long white pappus



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Oxeye Daisy

Leucanthemum vulgare
(=*Chrysanthemum leucanthemum*)

Asteraceae



Key Features

- Perennial forb with short, creeping lateral roots surrounded by extensive fibrous roots
- Rosette first year
- One to several stems 1–3 ft tall, minimally branched, lightly ribbed, sparse hairs
- Rosette leaves 2–4" long, spoon-shaped, narrow stalks, lobes or rounded teeth on margins, hairless
- Stem leaves smaller, alternate, stalkless
- Flower heads solitary at branch tips in summer
- Each head 1–3" across, daisy-like with 15–30 white ray florets around periphery, few hundred yellow, tube-like disc florets in center
- Bracts green in center, edged in brown
- Seeds cylindrical, ribbed, no pappus



Additional Resources

[University of Idaho](#)

[Identification Video](#)

[Washington State Noxious](#)

[Weed Control Board](#)





Key Features

- Biennial to short-lived perennial forb
- Thick, fleshy taproot
- Rosette first year
- Stems 7–8 ft tall second year, stout, branched, woolly hair and spiny wings along entire length
- Leaves gray-green with woolly hairs, margins with wavy teeth and yellow spines
- Basal leaves ≤2 ft long; stem leaves alternate, smaller, extend onto stems as wings
- Flower heads at stem tips, summer to fall
- Each flower head globe-shaped, ≤2" diameter, with ≤150 purplish florets
- Bracts needle-like, orange-tipped, cobweb hairs
- Seeds mottled brown with white pappus



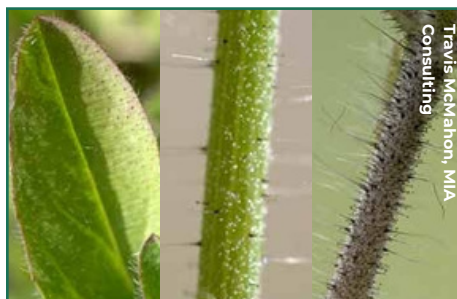
Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Orange Hawkweed

Pilosella aurantiaca
(= *Hieracium aurantiacum*)

Asteraceae



Key Features

- Perennial forb
- Fibrous roots, short stout rhizomes, stolons
- One to many stems, ≤ 2 ft tall, mostly unbranched, leafless but possibly 1 or 2 small leaves midway
- Most leaves in basal cluster, leaves oblong, ≤ 6 " long, with prominent midvein
- Stems and leaves covered with stiff hairs that can be simple, dark and glandular, and/or star-shaped
- Stems and leaves exude milky sap when damaged
- Clusters of ≤ 12 flower heads at stem tips in summer
- Each flower head ≤ 1 " diameter with ≤ 50 orangish-red florets
- Seeds brown, ribbed, with long white pappus



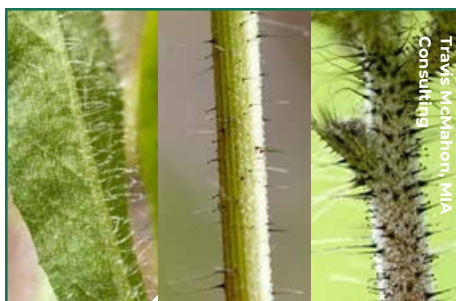
Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Yellow Hawkweed

Pilosella caespitosa
(= *Hieracium pratense*)

Asteraceae



Key Features

- Perennial forb
- Fibrous roots, short stout rhizomes, stolons
- One to many stems, ≤ 2 ft tall, mostly unbranched, leafless but sometimes 1 or 2 small leaves at midway point
- Most leaves in basal cluster, leaves lance-shaped, ≤ 6 " long, with prominent midvein
- Stems and leaves covered with stiff hairs that can be simple, dark and glandular, and/or star-shaped
- Stems and leaves exude milky sap when damaged
- Clusters of 5 to several flower heads at stem tips in summer; each flower head ≤ 1 " diameter with ≤ 30 yellow florets
- Seeds brown, ribbed, with long white pappus



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho Identification Video](#)

Russian Knapweed

Rhaponticum repens
(= *Acroptilon repens*)

Asteraceae



Key Features

- Perennial forb
- Extensive creeping lateral roots
- Stems one to several, 1-3 ft tall, branched, light green, ridged, covered in woolly hairs that wear off throughout growing season
- Rosette leaves ≤4" long, gray-green, woolly, toothed or lobed, die back as plant bolts
- Stem leaves alternate, smaller, less toothed
- Flower heads solitary at stem tips, summer to fall
- Each flower head urn-shaped, ½" wide with 15-35 pink-purple florets (may be white or blue)
- Bracts oval, green base, papery tips and margins
- Seeds cream-colored, initially with white pappus, but pappus falls off at maturity



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Perennial Sowthistle

Sonchus arvensis

Asteraceae



Key Features

- Perennial forb with creeping lateral roots
- Rosette first year; rosette leaves ≤12" long, rubbery, prickly margins; lobed, toothed, or neither
- Two to many stems, 2–5 ft tall, hollow, branched, crowded leaves at base
- Stem leaves sparse, alternate, smaller, stalkless, clasp stem with 2 rounded lobes at base
- Stems and leaves exude milky sap when damaged
- Clusters of flower heads at stem tips in summer; each flower head 1–2" across with 30–100 yellow florets
- Two subspecies in North America: one with glands on flower bracts and stems, one without
- Seeds brown, ribbed, with long white pappus



Additional Resources

[University of Idaho](#)

[Identification Video](#)

[USDA Forest Service Leaflet](#)



Key Features

- Perennial forb
- Thick creeping, lateral root system
- Rosette first year
- Several stems 2–5 ft tall second year, often weakly woody near base and branched near tip
- Leaves dark green, ≤ 12 " long, deeply pinnately lobed into 4–10 pairs toothed lobes or leaflets
- Stem leaves alternate, smaller, clasp stem
- Flower heads in flat-topped clusters at stem tips in late summer
- Each flower head button-like, $\leq \frac{1}{2}$ " diameter with ≤ 100 tubular yellow florets
- Bracts overlap, green edged with brown
- Seeds ribbed, conical, without pappus



Additional Resources

[Wisconsin DNR Factsheet](#)
[Washington State Noxious Weed Control Board](#)

Scentless Chamomile

Tripleurospermum inodorum
(= *Matricaria perforata*)

Asteraceae



Key Features

- Annual forb
- Shallow fibrous root system
- Stems ½–3 ft tall, multiple branches, smooth or slightly hairy, ribbed, green but reddish with age
- Leaves very finely divided into numerous narrow leaflets, fern-like appearance
- Stem leaves ¾–3" long, alternate
- Flower heads solitary at branch tips in summer
- Each head 1¼–1¾" across, daisy-like with 10–24 white ray florets around periphery, few hundred yellow, tube-like disc florets in center
- Flower head bracts overlapping, green in center, thin and dry (often brown) along margins
- Seeds brown, with 3 distinct ridges, no pappus



Additional Resources

NAISMA Factsheet
Washington State Noxious
Weed Control Board

Houndstongue

Cynoglossum officinale

Boraginaceae



Key Features

- Biennial forb
- Taproot
- Rosette first year 1–4 ft tall second year
- Stems ridged, hairy Leaves roughly hairy, elliptic
- Rosette leaves ≤ 12 " long, stalked
- Stem leaves alternate, smaller, stalkless
- Flowers in fiddleneck clusters, early to late summer
- Each flower $\frac{1}{4}$ – $\frac{1}{2}$ " across, 5 red-purple petals
- Nutlet fruits covered in tiny barbed hooks



Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video



Key Features

- Biennial or short-lived perennial forb
- Thick, deep taproot
- Rosette first one or two years
- One to several stems 1–3 ft tall second or third year, erect or sprawling, spotted
- Rosette leaves $\leq 9''$ long, lance-shaped, stalked
- Stem leaves alternate, smaller, stalkless
- Stems and leaves covered in stiff, bristly hairs; stem hairs dark and swollen at base ≤ 20 flowers in fiddleneck clusters summer or fall
- Lobed and folded bracts beneath cluster
- Each flower $\frac{1}{2}$ – $\frac{3}{4}''$ across, 5 fused purple- blue petals, dark pink protruding stamens
- Fruits rough-coated nutlets



Additional Resources

[University of Idaho](#)

[Identification Video](#)

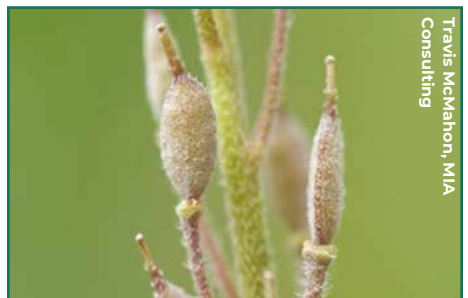
[Washington State Noxious](#)

[Weed Control Board](#)



Key Features

- Annual to short-lived perennial forb
- Taproot
- Rosette leaves ≤ 3 " long, stalked, oblong, with smooth to wavy margins
- Stem leaves alternate, smaller, stalkless 1–10 bolting stems, 1–2½ ft tall, branched near tips
- Stems and leaves covered with gray, star-shaped hairs
- White flowers in clusters, late spring
- Each flower $\leq \frac{1}{2}$ " across with 4 deeply notched petals
- Pod fruits, $\leq \frac{1}{3}$ " long, hairy, oval, somewhat flattened, with short beak



Additional Resources

[University of Idaho](#)

[Identification Video](#)

[University of Wisconsin](#)

[Factsheet](#)



Key Features

- Biennial or short-lived perennial forb
- Shallow taproots with fibrous roots
- Rosette first year 2–4 ft tall second year
- Stems single or sparsely branched, base hairy
- Leaves lance-shaped, ≤6" long, with short hairs on both surfaces
- Rosette leaves stalked, margins smooth or toothed
- Stem leaves alternate, stalkless, shallowly toothed
- Flower clusters at stem tips spring to midsummer
- Each flower $\frac{3}{4}$ –1" across with 4 rounded petals, white to deep lavender
- Fruits narrow, stalked pods $1\frac{1}{2}$ –4" long
- Brown seeds in two rows with papery partition

Additional Resources

[Bugwood Wiki](#)

[University of Wisconsin Factsheet](#)



Key Features

- Biennial forb (sometimes winter annual or short-lived perennial)
- Very long taproot
- Typically rosette first year
- Rosette leaves $\leq 4"$ long, stalked, oblong, slightly wavy margins, thick white midvein, bluish-green, may be covered in fine hairs
- Stem leaves alternate, smaller, stalkless, may feel rubbery, often toothed, hairs on margins or midvein
- Flowers in clusters at branch tips, late spring
- Each flower $\leq \frac{1}{4}"$ across with 4 yellow petals
- Fruits teardrop-shaped, $\leq \frac{2}{3}"$ long, hanging, green at first but purple-black at maturity, contain 1 seed



Additional Resources

[University of Idaho](#)

[Identification Video](#)

[Washington State Noxious](#)

[Weed Control Board](#)

Hoary Cress

Lepidium spp.
(=*Cardaria* spp.)

Brassicaceae



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Key Features

- Complex of 3 very closely related species
- Perennial forbs with extensive lateral roots
- Rosette leaves ≤ 4 " long, stalked, gray-green, hairy, smooth or toothed margins
- Stem leaves alternate, smaller, less hairy, stalkless with 2 basal lobes clasping the stem
- Several stems, 1–2 ft tall, gray-green, hairy
- White flowers in clusters at branch tips, spring
- Each flower $\leq \frac{1}{4}$ " across with 4 white petals
- Pod fruits $\leq \frac{1}{8}$ " long
 - *L. draba*: upside-down heart-shaped
 - *L. appelianum*: inflated, slightly hairy globes
 - *L. chalepense*: round, flattened
- Each pod with 2 small reddish-brown seeds



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Mel Harte, Bugwood.org CC BY 3.0 US

John M. Randall, TNC, Bugwood.org CC BY 3.0 US

Additional Resources

[NAISMA Factsheet](#)

[University of Idaho](#)

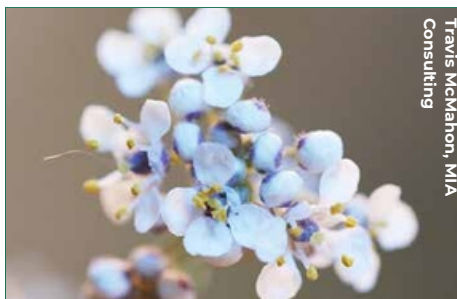
[Identification Video](#)

Perennial Pepperweed *Lepidium latifolium* Brassicaceae



Key Features

- Perennial forb
- Taproots and creeping lateral roots
- Leaves grayish-blue-green with obvious midvein, finely toothed margins
- Rosette leaves ≤ 12 " long, spoon-shaped to elliptic, with long leaf stalks
- Stem leaves alternate, smaller, stalkless
- Few to several stems, 2–6 ft tall
- Plants vary from tall/thin to short/very branched
- White flowers in large clusters at branch tips, late spring to summer
- Each flower $\leq \frac{1}{8}$ " across with 4 white petals
- Fruits very small, round, flattened pods
- Seeds oval, 2 per pod



Additional Resources

[University of Idaho](#)
[Identification Video](#) [New Hampshire DES](#)
[Environmental Factsheet](#)

Austrian Fieldcress

Rorippa austriaca

Brassicaceae



Key Features

- Perennial forb
- Creeping lateral roots
- Rosette leaves $\leq 6"$ long, stalked, oblong, thick white midvein, toothed margins, may be lobed but most often not
- Stem leaves alternate, smaller, stalkless, margins toothed or smooth, sometimes two lobes where clasp the stem
- Stems ≤ 3 ft tall, branched at top, sparsely hairy
- Flowers in clusters at branch tips, summer
- Each flower $\leq \frac{1}{3}"$ across with 4 yellow petals
- Fruits (often not produced) spherical with beak; contain small, reddish-brown seeds

Additional Resources

[University of Wyoming](#)
[Factsheet Washington State](#)
[Noxious Weed Control Board](#)

Common Teasel

Dipsacus fullonum

Caprifoliaceae



Key Features

- Biennial to short-lived perennial forb
- Stout taproot
- Rosette first or more years
- Rosette leaves lance-shaped, $\leq 12''$ long, wrinkled, rounded-toothed margins, midvein with prickles
- Second year or later stems bolt ≤ 7 ft tall
- Stems hairless, grooved, with sharp prickles
- Stem leaves opposite, smaller, form cups where they clasp the stem, trapping water
- Cylindrical seedheads $\leq 4''$ long in midsummer, each with 250–1500 flowers that bloom in rings
- Each flower tubular, 4 lavender lobes, spiny bract
- Long subtending bracts extend longer than head
- Seeds ribbed, conical



Additional Resources

Iowa State University
Factsheet Washington State
Noxious Weed Control Board



Key Features

- Biennial to short-lived perennial forb
- Stout taproot
- Rosette first or more years
- Rosette leaves ≤ 12 " long, wrinkled, pinnately lobed, jaggedly toothed margins, midvein prickles
- Second year or later stems bolt ≤ 7 ft tall
- Stems hairless, grooved, with sharp prickles
- Stem leaves opposite, smaller, form cups where they clasp the stem, trapping water
- Cylindrical seedheads ≤ 4 " long in midsummer, each with 250–1500 flowers that bloom in rings
- Each flower tubular, 4 white lobes, spiny bract
- Subtending bracts don't extend longer than head
- Seeds ribbed, conical



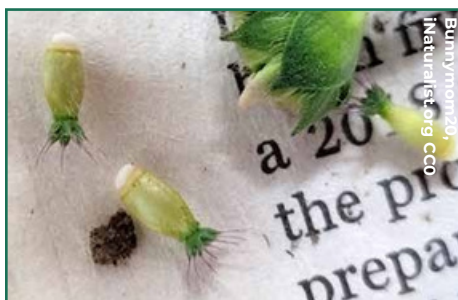
Additional Resources

[Midwest Invasive Plant Network](#)
[Factsheet Minnesota Factsheet](#)



Key Features

- Perennial forb
- Woody, branched taproot with short lateral roots
- Leaves and stems sparsely to densely covered in stiff, non-prickly hairs
- First rosette leaves oblong, 3–8" long, stalked, smooth margins
- Stem leaves opposite, stalkless, smaller, deeply pinnately lobed, but uppermost may be unlobed
- One to a few stems, 2–4 ft tall, may be branched near tips
- Flower heads solitary on leafless stem and branch tips, summer through fall
- Each head $\leq 1\frac{1}{2}$ " across with ≤ 100 pink florets Fruits nut-like, cylindrical, hairy



Additional Resources

[Montana State University Factsheet](#) [Wisconsin DNR Factsheet](#)



Travis McMahon, MIA
Consulting



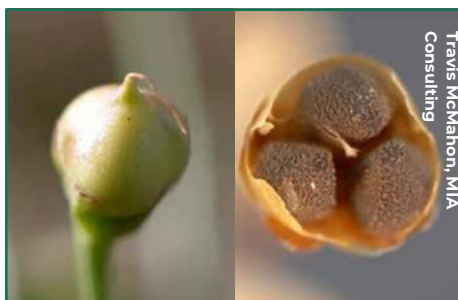
Travis McMahon, MIA
Consulting



Travis McMahon, MIA
Consulting



Travis McMahon, MIA
Consulting



Travis McMahon, MIA
Consulting

Key Features

- Twining, trailing perennial vine
- Extensive creeping lateral roots
- Stems ≤ 6 ft long, twisted, green, slender
- Leaves alternate, $\leq 2\frac{1}{2}$ " long, arrowhead-shaped with lobes at base
- Flowers on stalks from leaf axils, early summer through fall
- Each flower ≤ 1 " across, 5 petals completely fused, giving bell or funnel shape, have two small bracts $\frac{1}{2}$ –1" below flower
- Flowers typically white, but may be pinkish
- Fruits egg-shaped capsules, $< \frac{1}{2}$ " long, each with 1–4 dark brown, roughly pitted seeds

Additional Resources

[University of Idaho](#)

[Identification Video](#)

[Washington State Noxious](#)

[Weed Control Board](#)

Leafy Spurge

Euphorbiavirgata
(=*Euphorbia esula*)

Euphorbiaceae



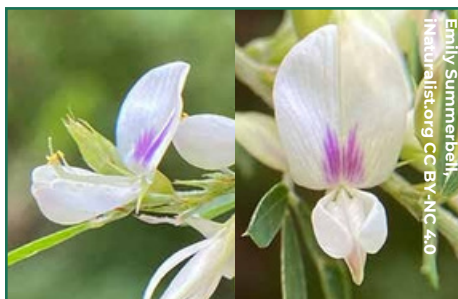
Key Features

- Perennial forb
- Extensive creeping lateral roots
- Stems thickly clustered, ≤3 ft tall, hairless, yellowish-green, branched only near tips
- Leaves alternate, 1–3" long, smooth margins, deep midvein, bright green, may turn red in fall
- Stems and leaves exude milky sap when damaged
- Flowers in umbel clusters at stem tips in summer
- Each flower lime green, tiny, lacks true petals and sepals, enclosed by large yellow-green bracts that resemble petals
- Glands in flowering structure produce nectar
- Fruits 3-chamber capsules with 3 smooth, oval, mottled gray seeds



Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video

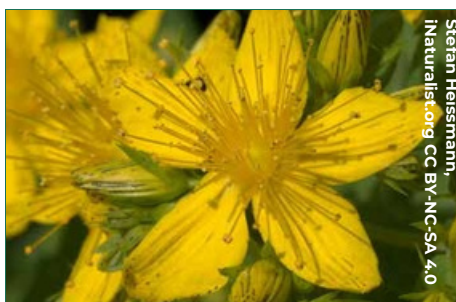


Key Features

- Perennial forb, appearing shrub-like but dies back annually
- Stout taproot
- Numerous major stems 2–5 ft tall, green, strongly ridged, with lines of white hairs, small branches
- Lower stems become brown and woody, losing most hairs
- Leaves alternate, stalked, compound with 3 leaflets
- Each leaflet oblong, $\leq \frac{3}{4}$ " long, green on top, white beneath with flattened hairs, fine point at tip 1–4 flowers in leaf axils, early fall, each $\frac{1}{3}$ " long, boat-like with upper banner and lower keel, white with purple patch near banner base
- Fruits small, oval, flat, hairy, 1-seeded pods

Additional Resources

Missouri Department of Conservation Factsheet North Carolina Forest Service Factsheet



Key Features

- Perennial forb
- Taproot, sometimes lateral roots
- Few to numerous stems 1–3 ft tall, many upward-facing branches, hairless, black glands on 2 ridges, reddish hue turning rust color in fall
- Leaves ≤ 1 " long, hairless, oblong, opposite, stalkless, smooth or weakly wavy margins
- Leaves with tiny transparent glands throughout, and small black glands near margins
- Flower clusters at branch tips in summer
- Each flower $\frac{3}{4}$ " across, 5 yellow petals with small black glands, numerous yellow stamens
- Fruit sticky, 3-celled, capsule $\leq \frac{1}{2}$ " long
- Seeds dark brown, cylindrical, pitted

Additional Resources

Michigan State University Plant & Pest Diagnostics Washington State Noxious Weed Control Board



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Key Features

- Long-lived perennial forb
- Spreading, woody root system
- Numerous stems 2½–8 ft tall, squarish with 4–6 sides, smooth or covered in downy hairs, slender branches, evenly spaced nodes
- Stem leaves 2–5" long, smaller up the stem, lance-shaped, smooth-margined, heart-shaped or rounded bases, stalkless
- Leaves may appear whorled, opposite, or alternate
- Flowers in long spikes summer to fall
- Each flower $\leq \frac{3}{4}$ " across, 5–7 crumpled magenta or purple petals, yellow center
- Fruits capsules $\leq \frac{1}{4}$ " long, 100+ tiny tan seeds



Travis McMahon, MIA Consulting



Gary L. Piper, WSU, Bugwood.org CC BY-3.0 US

Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video

Dalmatian Toadflax *Linaria dalmatica* Plantaginaceae



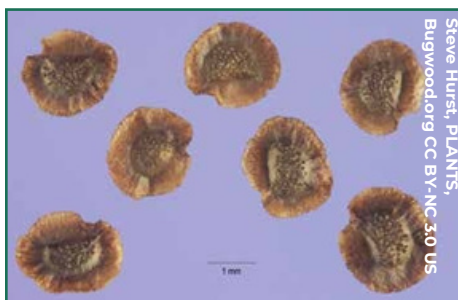
Key Features

- Perennial forb
- Taproot with extensive creeping lateral roots 1–25 erect succulent stems, 1–4 ft tall, often branched near tips
- Many plants also with a few to several prostrate, non-flowering stems
- Leaves alternate, blue-green, thick, waxy, wedge-shaped, clasp stem, 1–2" long and wide
- Flowers bright yellow in spiked clusters from leaf axils, summer through fall
- Each flower $\frac{3}{4}$ –1½" long with upper and lower lip and long spur, with fuzzy orangish throat
- Fruits round capsules with 60–300 pyramidal, rough-textured seeds



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)



Key Features

- Perennial forb
- Taproot with extensive creeping lateral roots
- Few to many erect stems, 1–3 ft tall
- Mature stems woody and reddish at base, greener and succulent near tip
- Leaves alternate, lance-shaped, pointed at both ends, 1–2" long, with obvious midvein on underside
- Flowers pale yellow in spiked clusters at stem tips, summer through fall
- Each flower $\frac{3}{4}$ –1½" long with upper and lower lip and long spur, with fuzzy orangish throat
- Fruits round capsules with 10–250 flat, winged seeds

Additional Resources

NAISMA Factsheet
University of Idaho
Identification Video



Key Features

- Winter annual grass
- Fibrous roots
- Seeds often germinate while still attached to joints of previous year's growth
- A few to ≤ 50 flowering stems, ≤ 2 ft tall
- Leaves alternate, ≤ 4 " long, blades flat, evenly spaced fine hairs along margins; some leaves also hairy across blade surface
- Ligules short, membranous
- Auricles short, hairy
- Seed heads in cylindrical spikes 1–5" long, late spring to early summer
- Spikelets in joints along seed head, cylindrical, hard, with long awns, break apart at maturity



Additional Resources

[University of Idaho
Identification Video](#)
[Washington State Noxious
Weed Control Board](#)



Key Features

- Tufted spring annual grass
- Fibrous roots
- Few flowering stems, 1½–4" tall
- Leaves alternate, ≤15" long, blades flat, <½" wide, twisted, surface rough, may have scattered hairs
- Ligule membranous, pointed, sometimes torn
- Does not have auricles
- Seed heads in spring, ≤12" long, pyramid- shaped, loose, drooping, wiry branches
- Spikelets with 2 large, ribbed glumes enclosing 2 or 3 florets; florets often hairy at their base
- Lemma of each floret ends in awn ≤1½" long, dark, twisted and bent at maturity



Additional Resources

[BYUI](#)

[Identification Video](#)

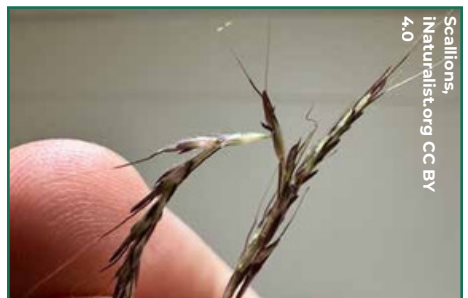
[Virginia Tech Weed Profile](#)





Key Features

- Warm-season, tufted perennial grass
- Fibrous roots, short rhizomes, stolons
- Several flowering stems, 1–3' tall, slender, purple nodes often with ring of shorthairs
- Leaves alternate, ≤12" long, blades flat or folded, 1/4–1/2" wide, thick midvein, may have long sparse hairs at base
- Ligule short, membranous; no auricles
- Seed heads in early summer, ≤6" long, pyramid- shaped when open, green to reddish-purple
- Branches slender, sometimes re-branching
- Spikelets in pairs; stalked spikelet male or sterile; stalkless spikelet fertile with lower floret sterile, upper fertile with lemma awn ≤3/4" long, twisted



Additional Resources

Mid-Atlantic Herbaria
Consortium Missouri
Department of Conservation
Factsheet



Key Features

- Warm-season perennial grass, bunchgrass to sod-forming, fibrous roots, rhizomes, stolons
- Several flowering stems, 1–3' tall, slender, purple nodes smooth or with ring of short hairs
- Leaves alternate but mostly basal, ≤10" long, blades flat or folded, ¼–½" wide, thick midvein, long sparse hairs especially near base
- Ligule short, membranous; no auricles
- Seed heads in early summer, ≤4" long, fan-shaped when open, green to reddish-purple
- Spikelet bases with dense, long silky hairs
- Spikelets in pairs; stalked spikelet male or sterile; stalkless spikelet fertile with lower floret sterile, upper fertile with lemma awn $\leq \frac{2}{3}$ " long, twisted



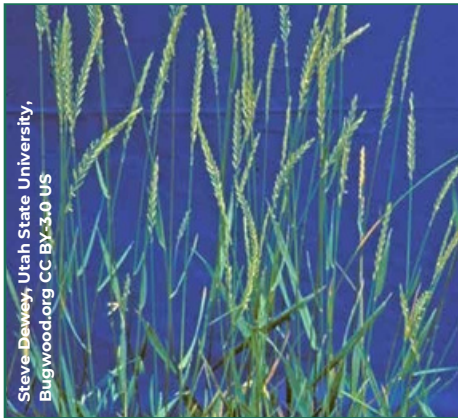
Additional Resources

[Invaders of Texas Factsheet](#)
[Missouri Department of Conservation Factsheet](#)

Quackgrass

Elymus repens
(= *Agropyron repens*)

Poaceae



Key Features

- Creeping, rhizomatous, perennial grass
- Several flowering stems, 2–3' tall, unbranched, maybe waxy, nodes hairless
- Leaves alternate, ≤8" long; blades typically flat, 1/3" wide, surface rough, hairless or with short, sparse hairs on upper surface; sheaths hairless or with soft hairs
- Ligule very short, membranous; auricles slender
- Seed heads on narrow, erect spikes, ≤8" long, summer; spikelets ascending, alternating on either side of central stem
- Each spikelet with 3–7 florets
- Lemmas vary from awnless to having awns ≤1/2" long



Additional Resources

Michigan State University Plant & Pest Diagnostics
Washington State University Hortsense



Key Features

- Tufted summer annual grass with fibrous roots
- Few flowering stems, 1-3½" tall
- Leaves alternate, ≤12" long, blades flat, <¾" wide, with scattered stiff hairs (especially near base), margins rough, sheaths densely hairy
- Ligule ring of dense hairs; no auricles
- Seed heads in summer, 3-9" long, drooping, may be open and pyramid-shaped, but often branches held compact by enclosing leaf sheath
- Spikelets <¼" long, oval, solitary at branch tips, each with ribbed, unawned glumes and 1 sterile and 1 fertile floret
- Seeds of crop forms yellow-tan; weedy forms with brown or black seeds



Additional Resources

[Cornell CALS Weed Profile](#)
[USDA NRCS Plant Guide](#)



Key Features

- Clumping perennial grass with fibrous roots and creeping rhizomes
- Several flowering stems, 2–7' tall, waxy, unbranched
- Leaves alternate, $\leq 2'$ long, blades $\leq 1\frac{1}{4}"$ wide, thick white mid vein, hairless but few sparse hairs near base
- Ligule membranous, hairy fringe; no auricles
- Seed heads summer to fall, $\leq 1\frac{1}{2}'$ long, pyramid- shaped when open, green to reddish- purple
- Branches slender, re- branching, spikelets outer half
- Spikelets in 2s or 3s; stalked spikelets male or sterile; stalkless spikelets fertile; lemmas of fertile florets may have bent, twisted awns $\leq \frac{1}{2}"$ long



Additional Resources

[University of Illinois Identification](#)
[Video Virginia Tech Weed Profile](#)



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Key Features

- Tufted winter annual grass
- Fibrous roots
- One to several flowering stems, 1–2 ft tall, slender, hairless
- Leaves alternate, ≤ 4 " long, blades flat and green when young, becoming tightly rolled; blades/sheaths may or may not have fine hairs
- Ligule short, blunt, membranous
- Auricles tiny
- Seed heads in spikes ≤ 2 " long (minus awns), late spring
- Spikelets 2 per node, each produces 1 floret
- Glumes awn-like, ≤ 1 "; lemmas with awns ≤ 4 " long, covered with tiny barbs, twist and spread as drying



Travis McMahon, MIA Consulting

Additional Resources

[Washington State Noxious Weed Control Board USDA NRCS Plant Guide](#)



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Key Features

- Tufted winter annual grass
- Fibrous roots
- Few flowering stems, 6–12" tall, slender, tiny hairs beneath purplish nodes
- Leaves alternate, ≤ 3 " long, blades flat, $< \frac{1}{8}$ " wide, and green when young, but become tightly rolled
- Ligule membranous, $\leq \frac{1}{4}$ " long, often frayed
- Does not have auricles
- Seed heads in spring, ≤ 8 " long, pyramid-shaped, wiry branches; branches with 1–5 spikelets
- Ribbed glumes beneath spikelets
- Each spikelet with 2–3 florets; lemmas of upper florets twisted/bent awn; lower floret awn straight

Additional Resources

Montana State University
Factsheet Washington State
Noxious Weed Control Board



Thurman Johnson, iNaturalist.org CC BY-NC 4.0

Travis McMahon, MIA Consulting



Travis McMahon, MIA Consulting

Tall Buttercup

Ranunculus acris

Ranunculaceae



Key Features

- Perennial forb
- Fibrous roots and a short, stout rhizome
- Basal leaves ≤ 3 " long, stalks ≤ 8 " long, palmately compound with 3–5 leaflets; each leaflet divided 2–3 times into narrow, toothed segments
- Stem leaves alternate, more sparse, often with shorter stalks and fewer leaflets
- One to several stems 1–3 ft tall, hollow, branched
- Stems, leaf stalks, and leaves variably hairy
- Flowers on hairy stalks at branch tips in summer
- Flowers $\leq 1\frac{1}{4}$ " across, 5–8 glossy yellow or whitish petals, numerous stamens
- Fruits 1-seeded, brown, flattened, teardrop-shaped, with prominent beak



Additional Resources

Montana State University
Factsheet USDA NRCS Plant Guide



Anne-mowa, iNaturalist.org
CC BY-NC 4.0



Travis McMahon, MIA
Consulting



Alexey P. Seregin,
iNaturalist.org CC BY-NC 4.0

Key Features

- Perennial forb with a woody taproot
- Rosette leaves stalked, palmately compound, 5–7 leaflets; each leaflet ≤ 3 " long, tip wider than base, toothed margins, die back as plant bolts
- Stem leaves alternate, smaller, sometimes fewer leaflets, shorter/no leaf stalks at stem top
- One to several stems 1–2 ft tall
- Stems and leaf stalks with long stiff hairs over short hairs and glands
- Flat-topped flower clusters at branch tips in early summer
- Each flower $\frac{1}{2}$ –1" across, 5 white to pale yellow heart-shaped petals
- Seeds round, brown, lighter net-like ridges



Anne-mowa, iNaturalist.org
CC BY-NC 4.0



Ken Chamberlain, OSU,
Bugwood.org CC BY-NC 3.0 US

Additional Resources

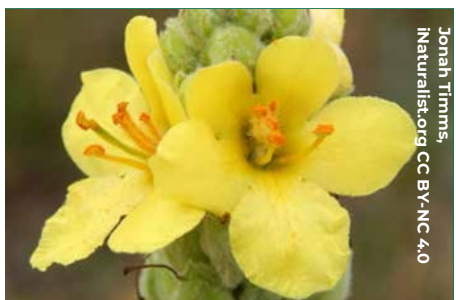
[Bugwood Wiki](#) [Washington State Noxious Weed Control Board](#)

Common Mullein *Verbascum thapsus* Scrophulariaceae



Key Features

- Biennial (typical) to short-lived perennial forb
- Thick, deep taproot
- Rosette first year
- Flowering spike $\leq 6\frac{1}{2}$ ft tall second year, may be branched near top
- Leaves elliptic, bluish-green, densely covered with soft white hairs, smooth or wavy margins
- Rosette leaves 3–20" long
- Stem leaves alternate, smaller
- Flowers densely arranged around spike throughout summer, each only open 1 day
- Flowers ≤ 1 " across, 5 yellow petals, hairy stamens
- Fruits egg-shaped capsules with numerous tiny, brown, wingless seeds



Additional Resources

[Bugwood Wiki](#) [University of Wisconsin Weed Identification Page](#)



Key Features

- Annual or biennial forb
- Fleshy white taproot
- Typically rosette first year, 1–3 ft tall second year
- All leaves gray-green, coarsely toothed with shallowly lobed margins, white midveins
- Rosette leaves $\leq 8''$ long, stalked
Stem leaves alternate, smaller, stalkless
- Leaves and stems covered in glandular hairs
- Flowers in fiddleneck clusters, mid to late summer
- Each flower $\leq 2''$ across, 5 petals fused at base, off-white with dark purple veins
- Urn-shaped fruits contain hundreds of flat, brown, pitted seeds



Additional Resources

[University of Idaho Identification](#)
[Video Montana State University](#)
[Factsheet](#)



Key Features

- Perennial forb
- Taproot with extensive creeping lateral roots
- Plants 2–3 ft tall, branching occasionally
- Leaves alternate, ≤ 6 " long, with irregular lobes and wavy margins
- Sharp spines $\leq \frac{1}{2}$ " long on stems, leaf stalks, undersides (and sometimes top sides) of leaf veins
- Tiny star-shaped hairs cover leaves and stems
- White to violet flowers in clusters at stem tips, early summer to fall
- Each flower $\leq \frac{3}{4}$ " across, 5 petals fused at base, 5 thick yellow stamens
- Fruit round berry, $\frac{1}{2}$ " across, green but yellow at maturity, with several yellow, flattened seeds

Additional Resources

[Iowa State University Factsheet](#)
[Michigan State University Plant & Pest Diagnostics](#)



Key Features

- Annual forb
- Taproot with fibrous roots
- Plants $\leq 2\frac{1}{2}$ ft tall, often branched
- Leaves alternate, ≤ 5 " long, with deep irregular lobes and wavy margins
- Sharp yellow spines $\leq \frac{1}{2}$ " long on stems, leaf stalks, leaf veins
- Tiny hairs cover plant, including flowers
- Yellow flowers in clusters of 3–10 at stem tips, mid to late summer
- Each flower ≤ 1 " across, 5 petals fused at base 4 upper stamens yellow, straight; 5th stamen lower, maroonish, curved
- Fruit spiny berry with 50–120 tiny brown seeds

Additional Resources

[University of Idaho Identification Video](#)
[Washington State Noxious Weed Control Board](#)



Key Features

- Prostrate summer annual forb
- Slender, deep taproot
- Stems $\leq 3\frac{1}{2}$ ft long, radiate outward from single point, hairy, may be reddish-brown
- Leaves opposite, compoundly divided 4–8 pairs elliptical leaflets
- Each leaflet $\frac{1}{4}$ – $\frac{1}{2}$ " long, dark green, hairy on margins and midveins
- Flowers in leaf axils throughout growing season
- Each flower $< \frac{1}{2}$ " across with 5 yellow wedge-shaped petals
- Fruits $\frac{1}{2}$ " across, green at first; become woody, brown, break into 5-angled burs, each with 1–5 seeds and 2 large spines resembling goat head



Additional Resources

[NAISMA Factsheet](#)
[University of Idaho](#)
[Identification Video](#)

Glossary

Below are select botanical terms used throughout this booklet. These terms and more are also described visually in a [Basic Plant Identification Video](#) created by the University of Idaho.

Term	Definition
alternate	Where leaves appear singly at stem nodes, on alternate sides of the stem
annual species	A plant that sprouts, flowers, and dies within a period of one year from germination
awn axil	A hair- or bristle-like appendage extending from florets of many grasses
banner	The angle between the upper side of a leaf or stem and the stem or branch that supports it
basal	The upper petal of a pea flower (plant family Fabaceae)
biennial	Located at the base of a plant or plant part
bolting	A plant that flowers and dies between its first and second years and does not flower in its first year
bract	Plant stage at which the flower stalk begins to grow
capsule	A leaf, often modified or reduced, which subtends a flower or an inflorescence
elliptical	A pod or seed vessel made of two or more cells, that becomes dry and splits open to release mature seeds
erect	Shaped like a flattened circle, symmetrical, tapering equally both to the tip and the base
fibrous root system	Grows upright and vertical as opposed to prostrate (spreading on the ground)
floret	Formed by numerous thin, moderately branching roots
flower head	One of the small, closely clustered flowers forming the head of a composite flower in the sunflower family (Asteraceae)
forb	Herbaceous plant (does not have solid woody stems)
glandular	Having glands (group of specialized cells which produce and secrete a specific substance)
glume	A bract (leaf-like structure) below a spikelet in the inflorescence of grasses (Poaceae) or the flowers of sedges (Cyperaceae). There are two other types of bracts in the spikelets of grasses: the lemma and palea
hybrid	The offspring of two parents of different species

Glossary

Term	Definition
inflorescence	Group or cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches
lateral root	Roots that extend horizontally from the primary root and serve to anchor the plant securely in the soil
leaflet	A leaf-like part of a compound leaf. Though it resembles an entire leaf, a leaflet is not attached to the main plant stem or branch as a leaf is, but rather on the leaf stalk, nor does it have an axillary bud at the point of attachment
ligule	A thin outgrowth at the junction of leaf and leafstalk of many grasses and sedges and some other species
lobed	A leaf with shallow or deep, at least somewhat rounded segments, as in a thistle rosette leaf
margin	In plants, the edge of a leaf. Margins typically fall within a handful of categories and are useful in plant identification
membranous	Thin and transparent
node	Plant stage at which the flower stalk begins to grow
opposite	In plants, where leaves appear in twos at stem nodes, on opposite sides of the stem
ovate	Shaped like an egg, with the base wider than the tip
pappus	A tuft of hairs, scales, or bristles at the base of an achene in flowers of the sunflower family (Asteraceae)
perennial	A plant that lives more than two years
prostrate	Grows flat along the ground as opposed to growing erect (upright)
rhizome	A modified stem of a plant that grows horizontally underground, often sending out roots and shoots from its nodes
root crown	Part of a root system from which a stem arises; where a plant's stem meets the roots
rosette	A compact, circular, and normally basal cluster of leaves

Glossary

Term	Definition
seed head	Synonym for capitulum or flower head of a plant in the sunflower family (Asteraceae). The seed head consists of a receptacle and florets
sepals	Parts of a flower that enclose the petals; they are typically green and leaf-like though many variations exist
sheath	A tubular or rolled part of an organ (e.g., the lower part of the leaf in most grasses)
shrub	A woody plant of relatively low height, having several stems arising from the base, and lacking a single trunk; a bush
spiked flowers	Cluster of stalk-less flowers that grow on an upright stem of a plant
stalk	In plants, the slender attachment or support of a leaf, flower, or fruit
stamen	Male reproductive part of a flower, located near the flower center and resembling a capped thread
stolon	Stem which grows at the soil (or water) surface or just below ground that forms adventitious roots at nodes and new plants from buds (also called runner)
subshrub	A low shrub; an undershrub, typically less than two feet tall
succulent	Having thick fleshy leaves or stems adapted to storing water
terminal	In plants, the growing tip of a stem or branch or the end leaflet in a compound leaf
toothed	In plants, leaf margin that is regularly incised, similar to a saw
umbel	An inflorescence which consists of a number of short flower stalks which spread from a common point, somewhat like umbrella ribs. They can be simple or compound (the single flowers are replaced by many smaller umbels called umbellets)
whorled	In plants, where multiple leaves or flowers radiate outward from a single stem node
winged	A membranous expansion of tissue extending beyond the normal outline of a structure
winter annual	A plant that germinates in autumn, lives through winter, and produces seed and dies in the following season

Selected References

PRIMARY REFERENCES

- CABI (2024) Invasive Species Compendium. <https://www.cabi.org/ISC> [Accessed 6 June 2024].
- Cal-IPC (2024) The California Invasive Plant Council Plant Inventory. <https://www.cal-ipc.org/plants/inventory/> [Accessed 1 June 2024].
- DiTomaso, J.M., Kyser, G.B., Oneto, S.R., Wilson, R.G., Orloff, S.B., Anderson, L.W., Wright, S.D., Roncoroni, J.A., Miller, T.L. & Prather, T.S. (2013) Weed control in natural areas in the Western United States. University of California Weed Research and Information Center, Davis, California, 544 pp.
- Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico [Online]. 25+ vols. New York and Oxford. <http://beta.floranorthamerica.org>. [Accessed 6 June 2024].
- GISD (2024) Global Invasive Species Database, Species Profiles. <http://www.iucngisd.org/gisd/> [Accessed 1 June 2024].
- GRIN (2024) National Genetic Resources Program, Germplasm Resources Information Network (GRIN). United States Department of Agriculture, Agriculture Research Service. <https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch.aspx> [Accessed 6 June 2024]
- POWO (2024) Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. <http://www.plantsoftheworldonline.org/> [Accessed 6 June 2024].
- Winston, R.L., Randall, C.B., De Clerck-Floate, R., McClay, A., Andreas, J. & Schwarzländer, M. (2014) Field Guide for the Biological Control of Weeds in the Northwest. FHTET-2014-08. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia, 338 pp.
- Winston, R.L., Randall, C.B., Blossey, B., Tipping, P.W., Lake, E.C. & Hough-Goldstein, J. (2017) Field Guide for the Biological Control of Weeds in Eastern North America. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. FHTET-2016-04, 334 pp.

ADDITIONAL REFERENCES BY SPECIES

Apiaceae, Parsley family

***Conium maculatum*, Poison hemlock**

Goeden, D., Constance, L., Turner, C.E. & McHenry, J. (1989) Element Stewardship Abstract for *Conium maculatum*.

The Nature Conservancy, Arlington, Virginia. 9 pp.

Mitich, L.W. (1998) Poison-hemlock (*Conium maculatum* L.). Weed Technology 12, 194–197.

https://extension.illinois.edu/sites/default/files/poison_hemlock_fact_sheet.pdf

Asteraceae, Sunflower family

***Arctium minus*, Common burdock/Lesser burdock**

Gross, R.S., Werner, P.A. & Hawthorn, W.R. (1980) The Biology of Canadian Weeds: 38. *Arctium minus* (Hill) Bernh. and A. Lappa L. Canadian Journal of Plant Science, 60(2), 621–634.

<https://doi.org/10.4141/cjps80-089>

Mink, J.N., Holmes, W.C., Singhurst, J.R., & Treuer-Kuehn, A. (2018) *Arctium minus* (Asteraceae) historical review,

ecological consequences, and addition to Texas flora. Journal of the Botanical Research Institute of Texas, 12(2), 713–720.

http://www.illinoiswildflowers.info/weeds/plants/cm_burdock.htm#:~:text=Common%20Burdock%20

Selected References

***Artemisia absinthium*, Absinth wormwood**

Carey, J.H. (1994) *Artemisia absinthium*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/artabs/all.html>

Maw, M.G., Thomas, A.G. & Stahevitch, A. (1985) The Biology of Canadian Weeds: 66. *Artemisia absinthium* L.

Canadian Journal of Plant Science 65, 389–400.

<https://cdnsiencepub.com/doi/10.4141/cjps85-054>

https://wiki.bugwood.org/Artemisia_absinthium

<https://kingcounty.gov/en/legacy/services/environment/animals-and-plants/noxious-weeds/weed-identification/absinth-wormwood> <https://www.nwcb.wa.gov/weeds/absinth-wormwood#:~:text=Absinth%20wormwood%20is%20an%20herbaceous,has%20a%20gray%20Dgreen%20appearance>

***Carduus acanthoides*, Plumeless thistle**

Randall, C.B., Andreas, J.E. & Milan, J. (2024) Introduced Thistles: History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-8-INTRODUCED THISTLES-P.

Winston, R.L., Hansen, R., Schwarzländer, M., Coombs, E.M., Randall, C.B. & Lym, R. (2008) Biology and Biological Control of Exotic True Thistles. FHTET-2007-05. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 157 pp.

***Carduus nutans*, Musk thistle**

Randall, C.B., Andreas, J.E. & Milan, J. (2024) Introduced Thistles: History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-8-INTRODUCED THISTLES-P.

Winston, R.L., Hansen, R., Schwarzländer, M., Coombs, E.M., Randall, C.B. & Lym, R. (2008) Biology and Biological Control of Exotic True Thistles. FHTET-2007-05. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 157 pp.

***Centaurea diffusa*, Diffuse knapweed**

Randall, C.B., Andreas, J.E., & Milan, J. (2023) Knapweeds (*Centaurea* spp.): History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-34-KNAPWEEDS-P.

Winston, R.L., Schwarzländer, M., Randall, C.B. & Reardon, R. (2010) Biology and Biological Control of Knapweeds, 2nd Edition. FHTET-2010-01. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 149 pp.

***Centaurea xmoncktonii*, Meadow knapweed**

Randall, C.B., Andreas, J.E., & Milan, J. (2023) Knapweeds (*Centaurea* spp.): History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-34-KNAPWEEDS-P.

Winston, R.L., Schwarzländer, M., Randall, C.B. & Reardon, R. (2010) Biology and Biological Control of Knapweeds, 2nd Edition. FHTET-2010-01. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 149 pp.

Selected References

***Centaurea solstitialis*, Yellow starthistle**

Benefield, C.B., DiTomaso, J.M., Kyser, G.B. & Tschohl, A. (2001) Reproductive biology of yellow starthistle: maximizing late- season control. *Weed Science* 49(1), 83–90.

DiTomaso, J.M., Kyser, G.B. & Pitcairn, M.J. (2006) Yellow starthistle management guide. Cal-IPC Publication 2006-03. California Invasive Plant Council, Berkeley, California. 78 pp.

Randall, C.B., Winston, R.L., Jette, C., Pitcairn, M.J. & DiTomaso, J.M. (2017) *Biology and Biological Control of Yellow Starthistle*. 4th Edition. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. FHTET-2016-08.

***Centaurea stoebe* subsp. *micranthos*, Spotted knapweed**

Randall, C.B., Andreas, J.E., & Milan, J. (2023) Knapweeds (*Centaurea* spp.): History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-34-KNAPWEEDS-P.

Winston, R.L., Schwarzländer, M., Randall, C.B. & Reardon, R. (2010) *Biology and Biological Control of Knapweeds*, 2nd Edition. FHTET-2010-01. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 149 pp.

***Centaurea virgata* subsp. *squarrosa*, Squarrose knapweed**

Randall, C.B., Andreas, J.E., & Milan, J. (2023) Knapweeds (*Centaurea* spp.): History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-34-KNAPWEEDS-P.

Winston, R.L., Schwarzländer, M., Randall, C.B. & Reardon, R. (2010) *Biology and Biological Control of Knapweeds*, 2nd Edition. FHTET-2010-01. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 149 pp.

***Chondrilla juncea*, Rush skeletonweed**

Milan, J., Randall, C.B., Andreas, J.E. & Winston, R.L. (2016) *Biology and Biological Control of Rush Skeletonweed*. FHTET-2016-05. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. Sheley, R., Hudak, J. & Grubb, R. (1999) Rush skeletonweed. In: Sheley, R & Petroff, J., Eds. *Biology and management of noxious rangeland weeds*. Oregon State University Press, Corvallis. pp. 308–314.

Winston, R.L., Schwarzländer, M., Gaskin, J. & Crabtree, C. (2009) Rush skeletonweed (*Chondrilla juncea*) management plan for the western United States. FHTET-2009-03. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 123 pp.

***Cirsium arvense*, Canada thistle/Creeping thistle**

Randall, C.B., Andreas, J.E. & Milan, J. (2024) Introduced Thistles: History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-8-INTRODUCED THISTLES-P.

Winston, R.L., Hansen, R., Schwarzländer, M., Coombs, E.M., Randall, C.B. & Lym, R. (2008) *Biology and Biological Control of Exotic True Thistles*. FHTET-2007-05. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 157 pp.
[https://wiki.bugwood.org/Cirsium_arvense#:~:text=Cirsium%20arvense%20is%20an%20erect,f lowers%20 on%20separate%20plants\)%20flowerheads](https://wiki.bugwood.org/Cirsium_arvense#:~:text=Cirsium%20arvense%20is%20an%20erect,f lowers%20 on%20separate%20plants)%20flowerheads)
http://www.illinoiswildflowers.info/weeds/plants/canada_thistle.htm

Selected References

***Crupina vulgaris*, Common crupina**

Garnatje, T., Vilatersana, R., Roché, C.T., Garcia-Jacas, N., Susanna, A. & Thill, D.C. (2002) Multiple introductions from the Iberian peninsula are responsible for invasion of *Crupina vulgaris* in western North America. *New Phytologist* 154, 419–428.
<https://doi.org/10.1046/j.1469-8137.2002.00382.x>

Prather, T.S., Callihan, R.H. & Thill, D.C. (1991) *Common crupina: Biology, management and eradication*. University of Idaho, Moscow, ID, 6pp.

Roché, C.T. & Thill, D.C. (2001) Biology of common crupina and yellow starthistle, two Mediterranean winter annual invaders in western North America. *Weed Science* 49, 439–447.

Stickney, P.F. (1972) *Crupina vulgaris* (Compositae: Cynareae), new to Idaho and North America. *Madroño* 21, 402–402.

***Jacobaea vulgaris*, Tansy ragwort**

Bain, J.F. (1991) The Biology of Canadian weeds. 96. *Senecio jacobaea* L. *Canadian Journal of Plant Science* 71, 127–140.

Szűcs, M., Littlefield, J., Randall, C.B., & Andreas, J.E. (2022) Tansy Ragwort (*Jacobaea vulgaris*): History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2022-21-TANSY RAGWORT-P.

Wardle, D.A. 1987. The ecology of ragwort (*Senecio jacobaea* L.) - a review. *New Zealand Journal of Ecology* 10, 67–76.

Winston, R.L., Randall, C.B., Littlefield, J., Schwarzländer, M., Birdsall, J. & Coombs, E.M. (2011) Biology and Biological Control of Tansy Ragwort. FHTET-2011-02. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 122 pp.

***Leucanthemum vulgare*, Oxeye daisy**

Alvarez, M. (2000) *Leucanthemum vulgare*. In: Bossard, C.C., Randall, J.M. & Hoshovsky, M.C., Eds. *Invasive Plants of California's Wildlands*. University of California Press. pp. 227–230.

Clements, D.R., Cole, D.E., King, J. & McClay, A. (2004) The Biology of Canadian Weeds: 128. *Leucanthemum vulgare* Lam. *Canadian Journal of Plant Science* 84(1), 343–363.
<https://doi.org/10.4141/P02-112>

***Onopordum acanthium*, Scotch thistle**

Randall, C.B., Andreas, J.E. & Milan, J. (2024) Introduced Thistles: History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-8-INTRODUCED THISTLES-P.

Winston, R.L., Hansen, R., Schwarzländer, M., Coombs, E.M., Randall, C.B. & Lym, R. (2008) Biology and Biological Control of Exotic True Thistles. FHTET-2007-05. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. 157 pp.

***Pilosella aurantiaca*, Orange hawkweed**

Moffat, C.E., Ensing, D.J., Gaskin, J.F., De Clerck-Floate, R.A. & Pither, J. (2015) Morphology delimits more species than molecular genetic clusters of invasive *Pilosella*. *American Journal of Botany* 102, 1145–1159. <https://doi.org/10.3732/ajb.1400466>

Stone, K.R. (2010) *Hieracium aurantiacum*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/hieaur/all.html>

Wilson, L., Turner, S., Cesselli, S., Moffat, C. & Ensing, D. (2023) Key to Identification of Invasive and Native Hawkweeds in the Pacific Northwest, Fourth Revision. B.C. Ministry of Forests, Range Branch, Kamloops, British Columbia.

Selected References

***Pilosella caespitosa*, Yellow hawkweed**

Moffat, C.E., Ensing, D.J., Gaskin, J.F., De Clerck-Floate, R.A. & Pither, J. (2015) Morphology delimits more species than molecular genetic clusters of invasive *Pilosella*. *American Journal of Botany* 102, 1145–1159. <https://doi.org/10.3732/ajb.1400466>

Stone, K.R. (2011) *Hieracium caespitosum*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/hieracae/all.html>

Wilson, L., Turner, S., Cesselli, S., Moffat, C. & Ensing, D. (2023) Key to Identification of Invasive and Native Hawkweeds in the Pacific Northwest, Fourth Revision. B.C. Ministry of Forests, Range Branch, Kamloops, British Columbia.

***Rhaponticum repens*, Russian knapweed**

Watson, A.K. (1980) The biology of Canadian weeds. 43. *Acroptilon* (*Centaurea*) *repens* (L.) DC. *Canadian Journal of Plant Science* 60(3), 993–1004.

Zouhar, K. (2001) *Acroptilon repens*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/acrrep/all.html>

***Sonchus arvensis*, Perennial sowthistle**

McWilliams, J. (2004) *Sonchus arvensis*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/sonarv/all.html>

http://www.illinoiswildflowers.info/weeds/plants/per_sowthistle.htm

<https://www.canr.msu.edu/resources/perennial-sowthistle-sonchus-arvensis#:~:text=Erect%2C%20herbaceous%20stem%20up%20to,may%20have%20gland%2Dtip%20hairs>

***Tanacetum vulgare*, Common tansy**

Clasen, B., Moss, N., Chandler, M. & Smith, A. (2011) A preliminary genetic structure study of the non-native weed, common tansy (*Tanacetum vulgare*). *Canadian Journal of Plant Science* 91, 717–723. <https://doi.org/10.4141/cjps10203>

Gucker, C.L. (2009) *Tanacetum vulgare*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/tanvul/all.html>

McClay, A.S. & Gassmann, A. (2013) *Tanacetum vulgare* L., common tansy (Asteraceae). In: P. G. Mason and D. R. Gillespie (Eds), *Biological Control Programmes in Canada 2001–2012*. CAB International, Wallingford, United Kingdom, pp. 378–383.

***Tripleurospermum inodorum*, Scentless chamomile**

Blackshaw, R.E. & Harker, K.N. (1997) Scentless chamomile (*Matricaria perforata*) growth, development, and seed production. *Weed Science* 45(5), 701–705.

McClay, A.S. (2022) Scentless Chamomile (*Tripleurospermum inodorum*): History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2022-35-SCENTLESS CHAMOMILE-P.

Woo, S.L., Harms, V.L., Thomas, A.G., Peschken, D.P., Bowes, G.G., Douglas, D.W. & McClay, A.S. (1991) The Biology of Canadian Weeds. 99. *Matricaria perforata* Méral (Asteraceae). *Canadian Journal of Plant Science* 71(4), 1101–1119.

Selected References

Boraginaceae, Borage family

***Cynoglossum officinale*, Houndstongue**

- de Jong, T.J., Klinkhamer, P.G.L. & Boorman, L.A. (1990) Biological flora of the British Isles. *Cynoglossum officinale* L. *Journal of Ecology* 78, 1123–1144.
- Upadhyaya, M.K., Tilsner, H.R. & Pitt, M.D. (1988) The Biology of Canadian Weeds: 87. *Cynoglossum officinale* L. *Canadian Journal of Plant Science* 68, 763–774. <https://cdnsiencepub.com/doi/10.4141/cjps88-089>
- Zouhar, K. (2002) *Cynoglossum officinale*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/cynoff/all.html>
- Echium vulgare*, Viper's bugloss/Blueweed**
- Klemow, K.M., Clements, D.R., Threadgill, P.F. & Cavers, P.B. (2002) The Biology of Canadian Weeds: 116. *Echium vulgare* L. *Canadian Journal of Plant Science* 82, 235–248. <https://doi.org/10.4141/P01-058>
- http://www.illinoiswildflowers.info/weeds/plants/viper_bugloss.html
- https://keyserver.lucidcentral.org/weeds/data/media/Html/echium_vulgare.htm

Brassicaceae, Mustard family

***Berteroa incana*, Hoary alyssum**

- Warwick, S.I. & Francis, A. (2006) The Biology of Invasive Alien Plants in Canada: 6. *Berteroa incana* (L.) DC. *Canadian Journal of Plant Science* 86, 1297–1309. <https://cdnsiencepub.com/doi/10.4141/P06-030>
- <https://www.minnesotawildflowers.info/flower/hoary-alyssum>
- <https://www.dnr.state.mn.us/invasives/terrestrialplants/herbaceous/hoaryalyssum.html>

***Hesperis matronalis*, Dame's rocket**

- Francis, A., Cavers, P.B. & Warwick, S.I. (2009) The Biology of Canadian Weeds: 140. *Hesperis matronalis* L. *Canadian Journal of Plant Science* 89, 191–206. <https://doi.org/10.4141/CJPS08094>
- <https://ag.colorado.gov/conservation/noxious-weeds/noxious-weed-species-id/dames-rocket>

***Isatis tinctoria*, Dyers woad**

- Farah, K.O., Tanaka, A.F. & West, N.E. (1988) Autecology and population biology of dyers woad (*Isatis tinctoria*). *Weed Science* 36, 186–193. <https://doi.org/10.1017/S0043174500074695>
- Gaskin, J.F., Schwarzländer, M., Gibson, R.D., II, Simpson, H., Marshall, D.L., Gerber, E. & Hinz, H. (2018) Geographic population structure in an outcrossing plant invasion after centuries of cultivation and recent founding events. *AoB PLANTS* 10, ply020. <https://doi.org/10.1093/aobpla/ply020>
- Young, J.A. & Evans, R.A. (1971) Germination of dyers woad. *Weed Science* 19, 76–78.
- Zouhar, K. (2009) *Isatis tinctoria*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/isatin/all.html>

***Lepidium* spp., Hoary cress/Whitetop**

- Francis, A., & Warwick, S.I. (2008) The Biology of Canadian Weeds. 3. *Lepidium draba* L., *L. chalapense* L., *L. appelianum* Al Shehbaz (updated). *Canadian Journal of Plant Science* 88, 379–401.
- Gaskin, J.F. 2006. Clonal structure of invasive hoary cress (*Lepidium draba*) infestations. *Weed Science* 54, 428–434.
- Littlefield, J., Randall, C.B., & Milan, J. (2023) Hoary Cress (*Lepidium draba*): History and Ecology in North America. In: R.L. Winston, Ed. *Biological Control of Weeds in North America*. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-31- HOARY CRESS-P.

Selected References

***Lepidium latifolium*, Perennial pepperweed**

Anonymous (2017) Field guide for managing perennial pepperweed in the Southwest. USDA Forest Service, Southwestern Region, Albuquerque, NM, 8 pp.

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd563037.pdf

Zouhar, K. (2004) *Lepidium latifolium*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/leplat/all.html>

***Rorippa austriaca*, Austrian fieldcress**

Hansen, B. (2013) Australian fieldcress, *Rorippa austriaca* (Crantz) Besser. In: B. A. Meador, T. Collier, S. L. Miller, and S. Burnett (Eds), Wyoming Weed Watchlist Field Guide. University of Wyoming Extension, Laramie, WY, pp. 56–58. Price, R. (2022) California pest rating proposal for *Rorippa austriaca* (Crantz) Besser, Australian fieldcress, Austrian yellowcress. California Department of Food and Agriculture, Sacramento, CA, 7pp.

WSNWCB (undated) *Rorippa austriaca*: Written Findings of the Washington State Noxious Weed Control Board. Washington State Noxious Weed Control Board, Olympia, WA, 3pp.

Caprifoliaceae, Honeysuckle family

***Dipsacus fullonum* and *D. laciniatus*, Common and cutleaf teasel**

Dudley, M.P., Parrish, J.A.D., Post, S.L., Helm, C.G. & Wiedenmann, R.N. (2009) The effects of fertilization and time of cutting on regeneration and seed production of *Dipsacus laciniatus* (Dipsacaceae). *Natural Areas Journal* 29, 140–145. <https://doi.org/10.3375/043.029.0206>

Gucker, C.L. (2009) *Dipsacus fullonum*, *D. laciniatus*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/dipsapp/all.html>

Rector, B.G., Harizanova, V., Sforza, R., Widmer, T. & Wiedenmann, R.N. (2006) Prospects for biological control of teasels, *Dipsacus* spp., a new target in the United States. *Biological Control* 36, 1–14. <https://doi.org/10.1016/j.biocontrol.2005.09.010>

Shaw, P.J.A. & Shackleton, K. (2011) Carnivory in the teasel *Dipsacus fullonum* — The effect of experimental feeding on growth and seed set S. Joly (Ed). *PLoS ONE* 6, e17935. <https://doi.org/10.1371/journal.pone.0017935>

***Knautia arvensis*, Field scabious/Bluebuttons**

Varga, S., Soulsbury, C.D. & John, E.A. (2022) Biological Flora of Britain and Ireland: *Knautia arvensis*. *Journal of Ecology* 110(8), 1970–1992. <https://doi.org/10.1111/1365-2745.13938>
<https://www.minnesotawildflowers.info/flower/field-scabious>

Convolvulaceae, Morning glory family

***Convolvulus arvensis*, Field bindweed**

Andreas, J.E., Winston, R.L. & DesCamp, W.C. (2021) Field and Hedge Bindweed: Identification and Biological Control. Washington State University Extension Publication FS344E. Washington State University. 6 pp.

Jacobs, J. (2007) Ecology and Management of Field Bindweed (*Convolvulus arvensis* L.). USDA NRCS Montana Invasive Species Technical Note No. MT-9. 9 pp.

Morishita, D.W., Callihan, R.H., Eberlein, C.V. McCaffrey, J.P. & Thill, D.C. (2005) Field Bindweed: Biology and Management. Pacific Northwest Extension Publication PNW580. Washington State University.

Selected References

Euphorbiaceae, Spurge family

Euphorbia virgata, Leafy spurge

Bourchier, R., Hansen, R., Lym, R.L., Norton, A., Olson, D., Randall, C.B., Schwarzländer, M., & Skinner, L. (2006) Biology and Biological Control of Leafy Spurge. USDA Forest Service, Forest Health Enterprise Technology Team, Morgantown, West Virginia. FHTET-2005-07.

Milan, J., West, N.M., Bourchier, R.S., & Randall, C.B. (2024) Spurges (*Euphorbia* spp.): History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-40- SPURGES-P.

Fabaceae, Legume family

Lespedeza cuneata, Sericea lespedeza

Gucker, C. (2010) *Lespedeza cuneata*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/lescun/all.html>
http://www.illinoiswildflowers.info/weeds/plants/silky_bushclover.htm
<https://www.ncforestservice.gov/publications/Forestry%20Leaflets/LS16.pdf>

Hypericaceae, St. Johnswort family

St. Johnswort

Campbell, M.H., & Delfosse, E.S. (1984) The Biology of Australian Weeds. 13. *Hypericum perforatum* L. The Journal of the Australian Institute of Agricultural Science 50(2): 63–73.

Crompton, C.W., Hall, I.V., Jensen, K.I.V. & Hildebrand, P.D. (1988) The Biology of Canadian Weeds. 83. *Hypericum perforatum* L. Canadian Journal of Plant Science 68: 149–162.

Mitich, L. (1994) Common St. Johnswort. Weed Technology 8, 658–661.

Winston R.L., Schwarzländer, M., Randall, C.B. & Reardon, R. 2010. Biology and Biological Control of Common St. Johnswort. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. FHTET-2010-05.

Lythraceae, Loosestrife family

Purple loosestrife

Blossey, B. (2002) Purple Loosestrife. In: Van Driesche, R., Lyon, S., Blossey, B., Hoddle, M. & Reardon, R., Eds. Biological Control of Invasive Plants in the Eastern United States. FHTET-2002-04. USDA Forest Service, Forest Health Enterprise Technology Team, Morgantown, West Virginia. pp. 149–157.

Blossey, B. (2023) Purple Loosestrife (*Lythrum salicaria*): History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2023-28-PURPLE LOOSESTRIFE-P.

Blossey, B., Randall, C.B. & Schwarzländer, M. (2015) Biology and Biological Control of Purple Loosestrife. FHTET-2015-03, 2nd Ed. USDA Forest Service, Forest Health Enterprise Technology Team, Morgantown, West Virginia. 124 pp.

Mitich, L.W. (1999) Purple loosestrife, *Lythrum salicaria* L. Weed Technology 13(4), 843–846.

Plantaginaceae, Plantain family

Linaria dalmatica, Dalmatian toadflax

Sing, S.E. De Clerck-Floate, R.A., Hansen, R.W., Pearce, H., Randall, C.B., Toševski, I. & Ward, S.M. (2016) Biology and Biological Control of Dalmatian and Yellow Toadflax. FHTET-2016-01, 3rd Ed. USDA Forest Service, Forest Health Assessment and Applied Sciences Team, Morgantown, West Virginia.

Selected References

Zouhar, K. (2002) *Linaria* spp. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/linspp/all.html>

***Linaria vulgaris*, Yellow toadflax**

Sing, S.E. De Clerck-Floate, R.A., Hansen, R.W., Pearce, H., Randall, C.B., Toševski, I. & Ward, S.M. (2016) Biology and Biological Control of Dalmatian and Yellow Toadflax. FHTET-2016-01, 3rd Ed. USDA Forest Service, Forest Health Assessment and Applied Sciences Team, Morgantown, West Virginia.

Zouhar, K. (2002) *Linaria* spp. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/linspp/all.html>

Poaceae, Grass family

***Aegilops cylindrica*, Jointed goatgrass**

Anonymous (2017) Field guide for managing jointed goatgrass in the Southwest. USDA Forest Service, Southwestern Region, Albuquerque, NM, 9 pp.

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd563031.pdf Donald, W.W. & Ogg, A.G. (1991) Biology and control of jointed goatgrass (*Aegilops cylindrica*), a review. Weed Technology 5, 3–17. <https://doi.org/10.1017/S0890037X00033170>

Mallory-Smith, C., Kniss, A.R., Lyon, D.J. & Zemetra, R.S. (2018) Jointed goatgrass (*Aegilops cylindrica*): a review. Weed Science 66, 562–573. <https://doi.org/10.1017/wsc.2018.29>

***Avena fatua*, Wild oats**

Beckie, H.J., Francis, A. & Hall, L.M. (2012) The Biology of Canadian Weeds: 27. *Avena fatua* L. (updated). Canadian Journal of Plant Science 92, 1329–1357. <https://doi.org/10.1139/CJPS2012-005>

Mariotte, P., Spotswood, E.N., Farrer, E.C. & Suding, K.N. (2017) Positive litter feedbacks of an introduced species reduce native diversity and promote invasion in Californian grasslands. Applied Vegetation Science 20, 28–39. <https://doi.org/10.1111/avsc.12291>

<http://www.illinoiswildflowers.info/grasses/plants/oats.html>

***Bothriochloa bladhii*, Caucasian bluestem**

Hickman, K.R., Harms, K. & White, A. (2018) Field guide for managing yellow and Caucasian (Old World) bluestems in the Southwest. USDA Forest Service, Southwestern Region, Albuquerque, NM, 14pp.

Sumadijaya, A. & Veldkamp, J.F. (2009) Notes on *Bothriochloa* Kuntze (Graminea: Andropogoneae) in Malesia. Reinwardtia 12, 415–417.

<https://doi.org/10.14203/reinwardtia.v12i5.78> https://kswildflower.org/grass_details.php?grassID=2

<https://keys.lucidcentral.org/keys/v3/AusGrass/key/AusGrass/Media/Html/BOTHRIOC/BOTBLA.HTML>

***Bothriochloa ischaemum*, Yellow bluestem**

Hickman, K.R., Harms, K. & White, A. (2018) Field guide for managing yellow and Caucasian (Old World) bluestems in the Southwest. USDA Forest Service, Southwestern Region, Albuquerque, NM, 14pp.

Sumadijaya, A. & Veldkamp, J.F. (2009) Notes on *Bothriochloa* Kuntze (Graminea: Andropogoneae) in Malesia.

Reinwardtia 12, 415–417. <https://doi.org/10.14203/reinwardtia.v12i5.78>

https://kswildflower.org/grass_details.php?grassID=58

Selected References

***Elymus repens*, Quackgrass**

Batcher, M.S. (2002) *Elymus repens*. The Nature Conservancy, Arlington, VA, 11pp.

Fahleson, J., Okori, P., Åkerblom Espeby, L. & Dixelius, C. (2008) Genetic variability and genomic divergence of *Elymus repens* and related species. *Plant Systematics and Evolution* 271, 143–156. <https://doi.org/10.1007/s00606-007-0623-1>

Snyder, S.A. (1992) *Elymus repens*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <https://www.fs.usda.gov/database/feis/plants/graminoid/elyrep/all.html>

Werner, P.A. & Rioux, R. (1977) The Biology of Canadian Weeds: 24. *Agropyron repens* (L.) Beauv. *Canadian Journal of Plant Science* 57, 905–919. <https://doi.org/10.4141/cjps77-130>

https://www.illinoiswildflowers.info/grasses/plants/quack_grass.htm

***Panicum miliaceum*, Wild proso millet**

Cavers, P.B. & Kane, M. (2016) The Biology of Canadian Weeds: 155. *Panicum miliaceum* L. M. T. Charles (Ed). *Canadian Journal of Plant Science* 96, 939–988. <https://doi.org/10.1139/cjps-2015-0152>

Habiyaremye, C., Matanguihan, J.B., D'Alpoim Guedes, J., Ganjyal, G.M., Whiteman, M.R., Kidwell, K.K. & Murphy, K.M. (2017) Proso millet (*Panicum miliaceum* L.) and its potential for cultivation in the Pacific Northwest, U.S.: A review. *Frontiers in Plant Science* 7, 1961. http://www.illinoiswildflowers.info/grasses/plants/proso_millet.html

***Sorghum halepense*, Johnsongrass**

Paterson, A.H., Kong, W., Johnston, R.M., Nabukalu, P., Wu, G., Poehlman, W.L., Goff, V.H., Isaacs, K., Lee, T.-H., Guo, H., Zhang, D., Sezen, U.U., Kennedy, M., Bauer, D., Feltus, F.A., Weltzien, E., Rattunde, H.F., Barney, J.N., Barry, K., Cox, T.S. & Scanlon, M.J. (2020) The Evolution of an Invasive Plant, *Sorghum halepense* L. ("Johnsongrass"). *Frontiers in Genetics* 11, 317. <https://doi.org/10.3389/fgene.2020.00317>

Rout, M.E., Chrzanowski, T.H., Smith, W.K. & Gough, L. (2013) Ecological impacts of the invasive grass *Sorghum halepense* on native tallgrass prairie. *Biological Invasions* 15, 327–339. <https://doi.org/10.1007/s10530-012-0289-7>

Howard, J.L. (2004) *Sorghum halepense*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <https://www.fs.usda.gov/database/feis/plants/graminoid/sorhal/all.html>

http://www.illinoiswildflowers.info/grasses/plants/johnson_grass.htm

***Taeniatherum caput-medusae*, Medusahead**

Archer, A.J. (2001) *Taeniatherum caput-medusae*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/graminoid/taecap/all.html>

Frederiksen, S. & Bothmer, R.V. (1986) Relationships in *Taeniatherum* (Poaceae). *Canadian Journal of Botany* 64, 2343–2347. <https://doi.org/10.1139/b86-307>

Young, J.A. (1992) Ecology and management of medusahead (*Taeniatherum caput-medusae* ssp. *asperum* Melderis). *Great Basin Naturalist* 52, 245–252.

***Ventenata dubia*, Ventenata/Wiregrass**

Innes, R.J. (2022) *Ventenata dubia*. In: Fire Effects Information System, [Online]. U.S. Dept of Ag, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/graminoid/vendub/all.pdf>

Tortorelli, C.M., Krawchuk, M.A. & Kerns, B.K. (2020) Expanding the invasion footprint:

Selected References

Ventenata dubia and relationships to wildfire, environment, and plant communities in the Blue Mountains of the Inland Northwest, USA L. Fraser (Ed). Applied Vegetation Science 23, 562–574. <https://doi.org/10.1111/avsc.12511>

Wallace, J.M., Pavek, P.L.S. & Prather, T.S. (2015) Ecological characteristics of Ventenata dubia in the Intermountain Pacific Northwest. Invasive Plant Science and Management 8, 57–71. <https://doi.org/10.1614/IPSM-D-14-00034.1>

Ranunculaceae, Buttercup family

Ranunculus acris, Tall buttercup

Jacobs, J., Graves, M. & Mangold, Jane (2010) Ecology and management of tall buttercup (*Ranunculus acris* L.). USDA Natural Resources Conservation Service, Bozeman, MT, 8pp.

Strevey, H.K. (2014) The ecology and integrated management of tall buttercup (*Ranunculus acris* L.). Master's Thesis. Montana State University.

http://www.illinoiswildflowers.info/weeds/plants/tall_buttercup.html#:~:text=Range%20%26%20Habitat%3A%20The%20non%2D,is%20still%20cultivated%20in%20gardens.

Rosaceae, Rose family

Potentilla recta, Sulfur cinquefoil

Werner, P.A. & Soule, J.D. (1976) The Biology of Canadian Weeds: 18. *Potentilla recta* L., *P. norvegica* L., and *P. argentea* L. Canadian Journal of Plant Science, 56(3), 591–603. <https://doi.org/10.4141/cjps76-095>

Zouhar, K. 2003. *Potentilla recta*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/potrec/all.html>

http://www.illinoiswildflowers.info/weeds/plants/su_cinquefoil.htm

Scrophulariaceae, Figwort family

Verbascum thapsus, Common mullein

Gaskin, J.F., Endriss, S.B., Fettig, C.E., Hufbauer, R.A., Norton, A.P. & Sforza, R.F.H. (2021) One genotype dominates a facultatively outcrossing plant invasion. Biological Invasions 23, 1901–1914. <https://doi.org/10.1007/s10530-021-02480-0>

Gross, K.L. & Werner, P.A. (1978) The Biology of Canadian Weeds: 28. *Verbascum thapsus* L. and *V. blattaria* L. Canadian Journal of Plant Science 58, 401–413. <https://doi.org/10.4141/cjps78-062>

Leipzig-Scott, P. (2015) Mullein it over: An examination of the impacts of common mullein (*Verbascum thapsus*) invasion and management. Master's Thesis. Colorado State University.

Solanaceae, Nightshade family

Hyoscyamus niger, Black henbane

Fettig, C.E. & Hufbauer, R.A. (2014) Introduced North American black henbane (*Hyoscyamus niger*) populations are biennial. Invasive Plant Science and Management 7, 624–630. <https://doi.org/10.1614/IPSM-D-14-00015.1>

Fettig, C.E. & Hufbauer, R.A. (2017) Reproductive strategy, performance, and population dynamics of the introduced weed black henbane (*Hyoscyamus niger*). Weed Science 65, 83–96. <https://doi.org/10.1614/WS-D-16-00034.1>

https://www.montana.edu/extension/invasiveplants/documents/publications/extension_publications/black_henbane.pdf <https://www.nwcb.wa.gov/weeds/black-henbane>

Selected References

***Solanum carolinense*, Horsenettle**

Bassett, I.J. & Munro, D.B. (1986) The Biology of Canadian Weeds. 78. *Solanum carolinense* L. and *Solanum rostratum* Dunal. Canadian Journal of Plant Science 66, 977–991.

<https://doi.org/10.4141/cjps86-12>

http://www.illinoiswildflowers.info/prairie/plantx/hrs_nettlex.htm

<https://www.minnesotawildflowers.info/flower/horse-nettle>

***Solanum rostratum*, Buffalobur**

https://www.illinoiswildflowers.info/weeds/plants/buffalo_bur.html#:~:text=in%20Illinois%2C%20Bur%2DBur%20can,spiny%20foliage%2C%20and%20spiny%20fruits

<https://www.minnesotawildflowers.info/flower/buffalo-bur-nightshade>

Zygophyllaceae, Caltrop family

***Tribulus terrestris*, Puncturevine**

Andreas, J.E., Winston, R.L., DesCamp, W.C., Milan, J., Miller, T.W. & Price, J. (2022)

Puncturevine (*Tribulus terrestris*): Biology and Management in the Pacific Northwest. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-IPM-2022-1-PUNCTUREVINE.

Donaldson, S. & Rafferty, D. (2003) Identification and Management of Puncturevine (*Tribulus terrestris* L.). Nevada Cooperative Extension Fact Sheet FS-03-34.

Parker, R. & Boydston, R. (2007) Puncturevine. Pacific Northwest Extension Publication PNW0133.

Common Name Index

A

Absinth wormwood 7
Aster family see Sunflower family
Austrian fieldcress 34

B

Bean family see Legume family
Bindweed family see Morning glory family
Black henbane 57
Bluebuttons 37
Blueweed 28
Borage family 27
Buffalobur 59
Buttercup family 54

C

Cabbage family, see Mustard family
Caltrop family 60
Canada thistle 16
Carrot family see Parsley family
Caucasian bluestem 47
Celery family see Parsley family
Common burdock 6
Common crupina 17
Common mullein 56
Common tansy 25
Common teasel 35
Composite family see Sunflower family
Creeping thistle 16
Crowfoot family see Buttercup family
Cutleaf teasel 36

D

Daisy family see Sunflower family
Dalmatian toadflax 43
Dame's rocket 30
Diffuse knapweed 10
Dyer's woad 31

E

Echium vulgare 28

F

Field bindweed 38
Field scabious 37
Figwort family 56
Forget-me-not family see Borage family

G

Grass family 45

H

Hoary alyssum 29
Hoary cress 32
Honeysuckle family 35
Horsenettle 58
Houndstongue 27

J

Johnsongrass 51
Jointed goatgrass 45

L

Leafy spurge 39
Legume family 40
Lesser burdock 6
Loosestrife family 42

M

Meadow knapweed 11
Medusahead 52
Morning glory family 38
Musk thistle 9
Mustard family 29

N

Nightshade family 57

O

Orange hawkweed 21
Oxeye daisy 19

P

Parsley family 5
Pea family see Legume family
Perennial pepperweed 33
Perennial sowthistle 24
Plantain family 43
Plumeless thistle 8
Poison hemlock 5
Potato family see Nightshade family
Puncturevine 60
Purple loosestrife 42

Q

Quackgrass 49

R

Rose family 55
Rush skeletonweed 15
Russian knapweed 23

S

Scentless chamomile 26
Scotch thistle 20
Sericea lespedeza 40
Spotted knapweed 13
Spurge family 39
Squarrose knapweed 14
St. Johnswort 41
St. Johnswort family 41
Sulfur cinquefoil 55
Sunflower family 6

T

Tall buttercup 54
Tansy ragwort 18

V

Ventenata 53
Viper's bugloss 28

W

Whitetop 32
Wild oats 46
Wild proso millet 50
Wiregrass 53

Y

Yellow bluestem 48
Yellow hawkweed 22
Yellow starthistle 12
Yellow toadflax 44

Taxonomic Family Etymologies

An explanation of the origin and historical development of taxonomic family names used in this booklet. Compiled by Kelly Cooley, CoolPro Solutions.

Taxonomic Family Names	Common Accepted Family Names	Etymologies
Apiaceae Umbelliferae	Parsley Family Carrot Family Celery Family	Family name from Latin genus name within family. <i>Apium</i> (especially liked by bees) referring to flowers. <i>Umbelliferae</i> from Latin <i>umbra</i> / <i>umbrella</i> (shade; shadow) referring to flower arrangement (umbels) in these species that resemble an umbrella.
Asteraceae Compositae	Sunflower Family Daisy Family Aster Family Composite Family	Family name from Greek genus name within family. <i>Aster</i> from Greek <i>astér</i> (star) referring to the flowers. <i>Compositae</i> from Latin <i>compositus</i> (well-arranged, ordered, regular, matching, made up of several parts) referring to disk flowers and ray flowers in these species.
Boraginaceae	Borage Family Forget-Me-Not Family	Family name from Latin genus name within family. <i>Borra</i> (rough hair; short wool) in reference to foliage.
Brassicaceae Cruciferae	Mustard Family Cabbage Family	Family name from Latin genus <i>Brassica</i> (cabbage). <i>Cruciferae</i> from Latin <i>crux</i> (cross) <i>fer</i> (bearing) flowers with 4 equal petals in the shape of a crucifix (cross).
Caprifoliaceae	Honeysuckle Family	Family name from Latin <i>capri</i> (goat) <i>folia</i> (leaves).
Convolvulaceae	Morning Glory Family Bindweed Family	Family name from Latin genus name within family. <i>Convolvo</i> (roll together, up and around) as in a vine.
Euphorbiaceae	Spurge Family	Family name from Latin genus name within family. Named after Euphorbus, Greek physician who 'discovered' plants eventually grouped in this family.
Fabaceae Leguminosae	Legume Family Pea/Bean Family	Family names from Latin <i>faba</i> (bean) <i>legūmen</i> (bean).
Hypericaceae	St. Johnswort Family	Family name from Greek genus name within family. <i>Hyper</i> (above; over) <i>eikon</i> (image; picture).

Taxonomic Family Etymologies

An explanation of the origin and historical development of taxonomic family names used in this booklet. Compiled by Kelly Cooley, CoolPro Solutions.

Taxonomic Family Names	Common Accepted Family Names	Etymologies
Lythraceae	Loosestrife Family	Family name from Greek genus name within family. Lythra (blood; gore) describing loosestrife flowers.
Plantaginaceae	Plantain Family	Family name from Latin genus name within family. Plantago (sole of foot [flat] that may be transplanted).
Poaceae Gramineae	Grass Family	Family name from Greek genus name within family. Poa (fodder). Gramineae is from Latin gramen (grass).
Ranunculaceae	Buttercup Family Crowfoot Family	Family name from Latin rānunculus (little frog) as many species in the family are water-loving plants.
Scrophulariaceae	Figwort Family	Family name from Latin genus name within family. Scrofulae (little pigs) describes swelling of the lymph glands in the neck from disease; at least one plant in this family was thought to cure this in ancient times.
Solanaceae	Nightshade Family Potato Family	Family name from Latin solare (to soothe) sol (sun).
Zygophyllaceae	Caltrop Family	Family name from Greek genus name within family. Zygon (double) phyllon (leaf). Yoked leaves.

