Identification of Non-Native Plants in Alaska





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Who is the Alaska Natural Heritage Program?

The Alaska Natural Heritage Program (AKNHP) collects, synthesizes and validates information on Alaska's animal and plant species of concern and their habitats, and invasive species. We provide this information to government, business, land managers, scientists and the public. The Alaska Natural Heritage Program is part of NatureServe, and our data are linked to similar programs in all 50 states, most Canadian provinces, and many Latin American countries. AKNHP was established in 1989 by the Nature Conservancy and in 1993 became part of the University of Alaska Anchorage, residing in the College of Arts and Sciences.

What is the AKEPIC Project?

The Alaska Exotic Plants Information Clearinghouse (AKEPIC) is a database and mapping application that provides geospatial information for non-native plant species in Alaska and neighboring Canadian Territories (http:// aknhp.uaa. alaska.edu/botany/akepic). These products are the result of an ongoing cooperation between the United States Forest Service, National Park Service, Bureau of Land Management, Fish and Wildlife Service, Department of Natural Resources Plant Material Center and Alaska Natural Heritage Program in support of the Alaska Committee for Noxious and Invasive Plants Management (CNIPM) and the Strategic Plan for Noxious and Invasive Plants Management in Alaska. The Alaska Natural Heritage Program administers the mapping application, database and website associated with this project. These data are primarily intended to support identification of problem species and areas requiring particular attention, thus promoting early detection and rapid response across Alaska and neighboring Canadian Territories. Additionally, these data are used in a variety of research and modeling activities.

The record locations of non-native plants stored in AKEPIC can be queried by species or location and downloaded in text, tabular, spatial and open layers formats (<u>http://aknhp.uaa.alaska.edu/maps/akepic/php</u>). Species biographies and invasiveness rank documents have been developed for the more abundant or aggressive plant taxa currently tracked as non-native to Alaska. Species biographies profile the taxonomy, biology, ecological impacts, potential invasiveness, legal listings, distribution and feasibility of control of or for a given taxon; invasiveness rank documents quantify the potential invasiveness of a given species on natural areas following the methods outlined in Carlson et al. 2008.

AKEPIC homepage: http://aknhp.uaa.alaska.edu/botany/akepic



AKEPIC mapping application: http://aknhp.uaa.alaska.edu/maps/akepic.php



Alaska Natural Heritage Program

Concepts of Invasiveness

Second only to the direct loss of habitat, invasion of non-native species into intact ecosystems is the primary cause of biodiversity loss. The establishment of invasive non-native species can negatively impact ecosystem function, the economy and human health. However, **not all non-native species are equal-ly harmful**.

An **invasiveness ranking system** for non-native plants has been developed to evaluate the potential impacts of non-native plants to natural areas in Alaska so that the limited resources available for managing invasive species may be directed towards the most threatening species. The system is designed to be a robust, transparent and repeatable procedure that evaluates the ecosystem impacts, biological attributes, distribution and feasibility of control of a given species. Species that are not known to occur in Alaska undergo a climate screening procedure, which evaluates the potential for a species to establish in the three ecogeographic regions of Alaska: arctic-alpine, interior boreal and Pacific maritime. Species are then **assigned a rank between zero and 100**, where a rank of 100 indicates an extremely invasive species.

Native	Plants that live or grow naturally in a particular region
Non-native, exotic, alien, non-indigenous	Plants whose presence in a given area is due to the accidental or intentional introduction by humans
Naturalized	Non-native plants that reproduce consistently in their new environment and sustain populations over many life cycles without direct intervention by humans
Invasive	Non-native plants that produce viable offspring in large numbers and have the potential to establish and spread in natural areas
Weed	Any plants, native or non-native, whose presence is undesirable to people at a particular time or place
Noxious weed	A plant species that has been legally defined as harmful and unwanted because of its potentially neg- ative impacts to agriculture, fish and wildlife or public health

Weedy definitions:

In this report, non-native species are highlighted in red, native species are highlighted in green, and species whose nativity to Alaska is unclear are highlighted in orange







Pacific maritime



interior boreal



Alaska-Canada border _ _ _ _ _ _ _

Invasive plant management

We may be able to avoid the major loss of biodiversity and ecosystem function that invasive plants have caused in many of the lower 48 states by taking the following steps:

1. **Inventory:** learn how to correctly identify plant species and collect baseline information on non-native plants. The information gathered can be used to document changes in a region's flora over time, and/or to develop informed and site-specific weed prevention, control and management programs.

2. **Prevention:** develop procedures that minimize the introduction of new nonnative plants into the state.

3. Early Detection and Rapid Response (EDRR): enables land managers to identify incipient populations of invasive plants and eradicate them before they begin to spread, thus reducing environmental impacts and minimizing management costs.

4. **Monitoring:** monitor infestations to detect changes in population size and vigor, and prioritize infestations for control.

5. **Control:** control infestations by implementing one or a combination of the following methods:

- Manual (hand pulling)
- Barrier (tarping, mulching)
- Mechanical (mowing, tilling)
- Cultural (prescribed fire, flooding)
- Biological (intentional introduction of biological control agents)
- Chemical (herbicides)

Specimen collection

Collect plants that you think could be non-native species, unless there are just a few individuals comprising the population or a collecting permit is required. Collect the entire plant, including roots, flowers and fruits if possible. To preserve the specimen, press plants as soon as possible following collection (Ziploc-style bags can be used to carry plants until you are able to put them in a press). Instructions for collecting herbarium specimens are available at: <u>http://www.uaf.edu/museum/collections/herb/projects/reports/instructions-forplant-co/</u>

Alternatives to collecting:

- Take detailed photos of the plant's flowers, fruits, seeds and general habitat
- Describe the specimen with detailed notes, including the date, location, population size, disturbance type, associated species and general habitat

The **correct identification of non-native species is essential** for the accurate characterization of infestations and quantifying the success of control efforts, as well as for understanding the introduction, establishment and spread of invasives.



Introduction



- Stipules
- Petiole
- Blade



Leaf arrangements

- Basal
- Cauline (growing on stem)
- Alternate
- Opposite
- Whorled



Cauline & opposite



Alternate



Whorled



Basal + whorled = rosette

Plant morphology

Introduction

Leaf types

- Simple
- Pinnately compound
- Palmately compound



Simple



Pinnately compound



Palmately compound

Flowers

- Sepals (collectively referred to as the calyx)
- Petals (collectively referred to as the corolla)
- Stamens = anthers + filaments (male reproductive parts)
- Pistil = ovary + style + stigma (female reproductive parts)



Sunflower Family (Asteraceae)

Flower head (inflorescence) composed of many small flowers (florets), e.g. sunflower

Types of inflorescences:

- Ray florets
- Disc florets –
- Combination of ray and disc florets





Introduction to the Sunflower Family



Introduction to the Sunflower Family

Heads with only ray flowers:

Crepis tectorum ———— Hieracium aurantiacum — Hieracium umbellatum —









Heads with only disc flowers:

Cirsium arvense — Matricaria discoidea Tanacetum vulgare





Heads with both disc and ray flowers:

Leucanthemum vulgare



Some helpful terminology for plant parts in the Sunflower Family

Pappus: A modified calyx forming a crown of awns, scales, hairs or bristles at the summit of the achene; may be absent on some members of the family.

Achene: A small, dry, hard, single-seeded fruit, similar in appearance to a seed; it may be flat or cylindrical.

Pappus

Achene

http://www.plantzafrica.com

Involucre: Whorls of bracts (small modified leaves) that enclose the flower; may be overlapping or not.



Receptacle: The expanded portion of the flower stalk that bears the organs of a flower; where the flowers attach. It may be flat, dome-shaped or convex.



ntsavana.com

Common dandelion • *Taraxacum officinale* syn. *Taraxacum officinale* ssp. *officinale*

Invasiveness Rank: 58 points

Species Code: TAOF

Description:

Stems

- Unbranched (unlike *Leontodon* and *Hypochaeris*)
- Flowering stalks are leafless and hollow

• All leaves are basal and lobed

Inflorescence

- Single (unlike Leontodon and Hypochaeris)
- Involucral bracts are
 - NOT distinctly horned (unlike most native dandelions)
 - Outer rows are reflexed or spreading (unlike most native dandelions)
 - NOT blackish-green (unlike some native dandelions)

Fruits

- Straw-colored achenes
- White pappus (unlike *Hypochaeris* radicata)

Habitat: disturbed areas

• **Distribution:** widespread and abundant across the state; recorded in all three of Alaska's ecogeographic regions. The south-westernmost record is from Aniakchak National Monument and Preserve, the easternmost populations are on the Alaska-Canada border, and the north-westernmost populations are on the Dalton Hwy on the north side of Brooks Range





Rock dandelion • Taraxacum laevigatum

syn. Taraxacum erythrospermum, Taraxacum scanicum

Invasiveness Rank: not	yet ranked	Species Code: TALA2

Description:

Inflorescence

 Involucral bracts have horns or tubercles (swelling/projection) below the tip

Fruits

• Brick-red achenes are small (3 mm)

Habitat: roadsides, waste places, lawns

Distribution: only recorded in the Yukon Territory to date (along streets in Dawson and on the Alaska Highway east of Watson Lake)





WATCH OUT!



Non-native dandelions can grow side by side with native ones

For example, non-native *Taraxacum officinale* was found growing among native *Taraxacum ceratophorum* at this pullout on the Richardson Highway

Horned dandelion • *Taraxacum ceratophorum* syn. *Taraxacum officinale* ssp. *ceratophorum*

Description:

Small plants Inflorescence

- Involucral bracts mostly have horns or tubercles below the tip (unlike *T. officinale*)
- Outer rows of involucral bracts are generally appressed (unlike *T.* officinale)

Habitat: meadows, moist places in the mountains, disturbed sites, roadsides



Distribution: widespread across the state, including remote places like the Aleutians and the Arctic Coastal Plain

Other native dandelions • *T. alaskanum, T. kamtschaticum, T. phymatocarpum, T. trigonolobum,* etc.

Description:

Small plants Inflorescence

• Involucral bracts are blackish-green or horned (unlike non-native *T. officinale*)

Fruits

• Not brick-red (unlike *T. laevigatum*)

Habitat: meadows and moist places in mountains (coastal or interior), alpine slopes, tundra



Yellow ray flowers

Hairy cat's ear • *Hypochaeris radicata*

Invasiveness Rank: 44 points Species Code: HYRA3

Description:

Stem

- Branched
 - Lacking leaves but with scale-like bracts
- Milky juice

Leaves

- Perennial, basal rosette
- Deeply lobed, lobes rounded

Inflorescence

- Usually multiple
- Receptacle chaffy (with tiny scales or bracts)
- Involucral bracts are not distinctly hairy
- White pappus

Fruits

• Achenes have long, slender beaks

Habitat: roadsides, lawns, pastures, waste places

- Pacific maritime: throughout southeast Alaska; within south-central Alaska it is only reported from Katmai and Kodiak
- Interior boreal: only recorded in Slana and Anchorage



Yellow ray flowers



Fall dandelion • Leontodon autumnalis

syn. Leontodon autumnalis var. pratensis

Invasiveness Rank: 51 points

Species Code: LEAU2

Description:

Stem

- Usually branched
- Milky juice

Leaves

- Perennial, basal rosette
- Deeply toothed with acute lobes, especially the terminal lobe (unlike *Hypochaeris radicata*)

Inflorescence

- Usually multiple
- Naked receptacle
- Hairy bracts
- Yellowish-white or tan pappus

Fruits

Beakless achenes

Habitat: roadsides, pastures, disturbed sites in lowland and montane zones

- Pacific maritime: less common than *Hypochaeris radicata* in the southeast; found in Cordova
- Interior boreal: Kenai Peninsula; along the Parks Hwy; in the vicinity of Chena Hot Springs
- Arctic-alpine: sparsely distributed to the north; west to Dillingham and Bethel



Yellow ray flowers



Species Code: TRDU

Yellow salsify • *Tragopogon dubius*

Invasiveness Rank: 50 points

Description:

Biennial or perennial, 0.3-0.9 m tall Stem

- Hollow and swollen below the flower head
- Milky juice

Leaves

• Grass-like, about 9 cm long

Inflorescence

 Involucral bracts are longer than the flowers (about 3.8 cm long)

Fruits

Fruiting head is globe-shaped,
 6.4 cm to 10.2 cm across

Habitat: roadsides, waste areas, steep slopes prone to geomorphologic disturbance

Distribution:

Pacific maritime: Knik Arm on the Glenn Hwy; Turnagain Arm; Soldotna (Kenai Peninsula); in southeast AK only on Prince of Wales and in Sitka Interior boreal: Yukon Territory on the road between Haines and Haines Jct and on the Alaska Hwy by Watson Lake







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Yellow ray flowers

Traits of Sonchus species in Alaska:

All *Sonchus* (sowthistle) species in Alaska are non-native. They resemble a giant dandelion but are distinguished from other ray-flowered asters by having:

- A leafy stem often with multiple flowering heads (unlike *Taraxacum* species.)
- Leaves with a prickly margin (unlike Crepis species and Hieracium species)

In this guide Sonchus species are divided into two groups:

- Woody sowthistles with large flower heads (2.5-5 cm across)
- Non-woody sowthistles with small flower heads (<2.5 cm across)



Woody sowthistles with large flower heads (2.5-5 cm across)

Perennial sowthistle • Sonchus arvensis

Invasiveness Rank: 73 points

Description:

Perennial (woody stems) Roots

Extensive rhizomes

Stem

Glandular hairs on flower stalks
 and upper part of the stem

Leaves

- Clasping at the base
- Basal lobes are ear-shaped and small

Inflorescence

- Large (2.5-5 cm across)
- On each floret, the ligule is approximately equal in length to its closed tubular section
- Pappus mostly >1 cm long

Fruits

- 4-5 ribbed
- Dark brown

Habitat: roadsides, disturbed sites, old home sites, coves and beaches

Distribution:

- Pacific maritime: scattered throughout
- Interior boreal: northernmost records on the Dalton and Elliot Hwys near Livengood; also in the vicinity of Delta



Yellow ray flowers



subspecies arvensis has yellow, stalked, glandular hairs on flower stalks and stems below flower heads

subspecies *uliginosus* has stalkless, glandular hairs

Species Code: SOAR2

Species Code: SOOL

Non-woody sowthistles with small flower heads (<2.5 cm across)

Annual sowthistle • Sonchus oleraceus

Invasiveness Rank: 46 points

Description:

Annual or biennial (soft, hollow stems) Leaves

- Clasping stem
- Margin sparsely prickly
- Basal lobes pointed; terminal lobe sharply triangular
- Upper surface bluish-green

Inflorescence

- Small (<2.5 cm across)
- Yellow glandular hairs sometimes present on flower stalks and bracts
- On each floret, the ligule is approximately equal in length to its closed tubular section
- Pappus mostly <1 cm long

Fruits

- 2-4 ribbed
- Dark brown

Habitat: highly disturbed sites and roadsides

- · Pacific maritime: discrete populations in southeast Alaska
- Interior boreal: Anchorage and in the vicinity of Houston; northernmost records in Denali National Park and along the Parks Hwy



Yellow ray flowers



Spiny sowthistle • Sonchus asper

	• • • • • • • • • • • • • • • • • • • •
Invasiveness Rank: 46 points	Species Code: SOAS

Description:

Annual or biennial (soft, hollow stems) Leaves

- Clasping stem
- Margin very prickly
- Often without lobes; if lobed, basal lobes are recurved and clasping the stem, and the terminal lobe is broadly triangular
- Upper surface dark green and glabrous

Inflorescence

- Small (<2.5 cm across)
- Yellow glandular hairs sometimes present on flower stalks and bracts
- Ligules of ray florets are shorter than their tubes
- On each floret, the ligule is shorter than its closed tubular section
- Pappus mostly <1 cm long

Fruits

- 3 ribbed
- Strongly compressed
- Straw to reddish-brown colored

Habitat: highly disturbed sites, roadsides, mining areas

- Pacific maritime: in and south of Kake; Kodiak
- Interior boreal: Anchorage and one unconfirmed infestation south of Cantwell on the Parks Hwy



Wall lettuce • Mycelis muralis

Invasiveness Rank: 31 points

Species Code: MYMU

Description:

Annual or biennial 60-90 cm tall Roots

• Fibrous

Stems

- Erect
- Branched toward the top
- Glabrous to glaucous
- Exudes milky juice when broken

Leaves

- Basal and lower stem leaves are 6-18 cm long and 2-8 cm wide, smooth, pinnately lobed, clasping at base
- Middle and upper stems leaves are smaller and few

Inflorescence

Consists of 5 yellow, strap-shaped ray florets

Fruit

• Achenes are black or brown with a white pappus

Habitat: associated with natural or anthropogenic disturbances

Distribution: Pacific maritime, widespread in southeast Alaska







Yellow ray flowers

Traits of *Crepis* and *Hieracium* species in Alaska: Similarities between *Crepis* species (hawksbeards) and *Hieracium* species (hawkweeds):

- Ray flowers only
- Leafy stems (unlike *Taraxacum* species)
- Leaves are not prickly (unlike *Sonchus* species)
- Flowers are yellow (unlike most native species with the aforementioned three traits)

Differences between Crepis species and Hieracium species:

- Crepis species have involucral bracts in two distinct rows that do not overlap
- Hieracium species have overlapping bracts of multiple lengths It is best NOT to use common names with these species to avoid confusion!



Crepis tectorum

Bract comparison



Hieracium umbellatum



Crepis tectorum

Smooth leaf margins



Hieracium aurantiacum

Yellow ray flowers

Narrowleaf hawksbeard • Crepis tectorum

Invasiveness Rank: 56 points

Species Code: CRTE3

Description:

Winter annual, 0.3-0.9 m tall Leaves

- Some form a basal rosette
- Stem leaves have extensions at
 the base that appear to clasp the stem

Inflorescence

- Involucral bracts arranged in two rows (see previous page)
- Involucral bracts are densely hairy on the inside

Habitat: disturbed sites including forest clearings, abandoned fields, agricultural fields, pastures and roadsides

Distribution: widespread across the state; occurs in all three ecogeographic regions





Native hawksbeards • Crepis nana, Crepis elegans

Description:

- Native *Crepis* species are much smaller and more slender than *Crepis tectorum*
- Involucral bracts are not hairy on the inside

Habitat: gravelly sites

- *Crepis elegans* is found at low to mid elevations in the Pacific maritime ecogeographic region (east and south of Anchorage), and in the interior boreal region (with emphasis on the eastern interior). There are a few collections from the Brooks Range.
- Crepis nana has a similar distribution as C. elegans but can grow at higher elevations and occurs in the arctic and in western Alaska. It has not been recorded in southeast Alaska.







In this book, *Hieracium* species are divided into the following categories:

- Yellow-flowered Hieracium species with leafy stems
- Yellow-flowered *Hieracium* species with leafless and branched stems
- Yellow-flowered *Hieracium* species with leafless and unbranched stems
- Orange-flowered *Hieracium*

Yellow-flowered Hieracium species with leafy stems

Narrowleaf hawkweed • Hieracium umbellatum syn. *Hieracium scabriusculum*

Invasiveness Rank: 51 points

Species Code: HIUM

Description:

Generally >30 cm tall Roots

- No stolons
- Stems
 - Leafy

Leaves

- No basal rosette
- Ovate to lanceolate
- Not densely hairy

Inflorescence

- Large (1-2 cm)
- Few heads per stalk
- Involucral bracts
 - Multiple lengths (not in two rows, unlike Crepis tectorum)
 - Dark green to black
 - Not densely hairy (unlike many native *Hieracium* species)

Habitat: roadsides, forest edges and openings

- Pacific maritime: common in southeast Alaska up to the vicinity of Gustavus, Kenai Peninsula and Anchorage
- Interior boreal: scattered populations along Knik Arm and north to Denali National Park; vicinity of Fairbanks to Prospect Creek; at the start of the Taylor Hwy, near Tetlin Jct.







Yellow ray flowers



Yellow-flowered *Hieracium* species with leafless and branched stems

Meadow hawkweed • Hieracium caespitosum

Invasiveness Rank: 79 points	Species Code: HICA10

Description:

Generally >30 cm tall Roots

- Stolons with short white hairs
- Rhizomes

Stems

Leafless or sometimes with 1-2 leaves on stem

Leaves

- Basal rosette
- Ovate to lanceolate

Inflroescence

- 7+ flowering heads
- Involucral bracts are hairy and glandular

Habitat: roadsides, forest edges and opening

Distribution:

- Pacific maritime: Valdez, along Knik Arm and the Kenai Peninsula
- Interior boreal: Anchorage





Yellow ray flowers

Yellow-flowered *Hieracium* species with leafless and unbranched stems

Mouseear hawkweed • Hieracium pilosella

Invasiveness Rank: 63 points	Species Code: HIPI

Description:

Generally <30 cm tall Roots

Stolons

Stems

- Sticky hairs
- Not branched
- No leaves on stems

Leaves

- Basal rosette
- Sticky hairs

Inflorescence

• Solitary or rarely 2-3 heads

Habitat and distribution: landscaped areas on the Kenai Peninsula and along roadsides on Prince of Wales Island; southeast Alaska



Yellow ray flowers

Native hawkweeds • Hieracium species

Description:

Generally <30 cm tall Roots

• No stolons (unlike *H. pilosella* and *H. caespitosum*)

Leaves

- Basal rosette of long stalked leaves
- Stems with 2-3 reduced linear leaves (unlike *H. umbellatum*)

Inflorescence

- Small (<1 cm, unlike *H. umbellatum*)
- 2-10 globular flower heads (rarely 1)
- Involucral bracts are often densely hairy



Habitat: high elevations, rocky slopes, stream sides, subalpine meadows

- *H. triste*: predominantly recorded in the Pacific maritime ecogeographic region (southeast and south-central to the Aleutian Islands), but also known from western Alaska and the Alaska Range
- *H. gracile*: merged into *H. triste* by some authors, but otherwise distinguished by the presence of glandular hairs and by red (instead of black) achenes. Found in alpine environments, mainly in the Pacific maritime ecogeographic region, with some populations recorded in western Alaska.
Orange-flowered hawkweed

Orange hawkweed • Hieracium aurantiacum

Invasiveness Rank: 79 points

Description:

Perennial; forms dense mats Roots

Rhizomes and stolons

Leaves

- Basal rosette
- No leaves on stems
- Black hairs, also on stems

Inflorescence

• Orange (see following page)

Habitat: one of the few non-native plants able to establish in organic soils and/or in sub-alpine habitats; meadows, rangelands, pastures, forest borders, roadsides, disturbed areas, waste places

Distribution: Pacific maritime and interior boreal





There is only one other orange-flowered aster in Alaska, *Agoseris aurantiaca*

Similarities:

- Both only have ray florets
- Both can have orange florets (but turning purple in older *A. aurantiaca* plants)
- Stems are leafless (with the occasional exception in *H. aurantiacum*)

Differences:

- *H. aurantiacum*: >1 flowering heads per stalk, distinct long black hairs along stem and leaves, runners
- *A. aurantiaca*: single flowering head per stalk, hairless or with few hairs, no runners, rare to Alaska

Habitat and distributions:

- *H. aurantiacum*: disturbed sites and adjacent areas; in other parts of the world this species invades alpine areas, so this species could potentially co-occur with *A. aurantiaca* in southeast Alaska!
- *A. aurantiaca*: alpine meadows, moist open woodlands, glacial till; only known from southeast Alaska



Rare, native Agoseris aurantiaca

Orange ray flowers

Common tansy • Tanacetum vulgare syn. Chrysanthemum vulgare

Invasiveness Rank: 60 points

Species Code: TAVU

Description:

Perennial, up to 1.2 m tall Stem

- Woody
- Purplish-red

Leaves

- Twice-divided into narrow, toothed segments
- Strong odor when crushed

Inflorescence

• Numerous, button-like flower heads

Habitat: roadsides, ditches, streams; beach meadows in Haines

Distribution: Pacific maritime and interior boreal; northernmost infestation is near Prospect Creek, south of Coldfoot; westernmost populations are in King Salmon and Kodiak; easternmost is in Glennallen



For descriptions of yellow-flowered *Senecio sylvaticus* and *Senecio vulgaris*, which can resemble *Tanacetum vulgare*, see "Yellow ray and disc florets" section

Yellow disc flowers

Pineappleweed • Matricaria discoidea syn. Matricaria matricarioides

Invasiveness Rank: 32 points Species Code: MADI6

Description:

Annual, <30 cm tall Leaves

- Divided several times into narrow segments
- Strong odor when crushed, similar to chamomile
- Similar in appearance to yarrow (*Achillea*) but leaves are less feathery and produce a different scent

Inflorescence

- Cone-shaped flowers
- Greenish-yellow

Habitat: compacted soils of roadsides, farmyards and waste areas

Distribution: all three ecogeographic regions





For descriptions of yellow-flowered *Senecio sylvaticus* and *Senecio vulgaris*, which can resemble *Matricaria discoidea*, see "Yellow ray and disc floret" section

Ragworts and Groundsels • *Senecio* species

Description:

Stems

Leafy

Leaves

Alternate

Inflorescence

- Generally have disc and ray florets; sometimes rays are greatly reduced
- Ray florets are yellow

Differences between Senecio spp. and similar-looking native genera		
 Leafy stems; ray florets pink, purple, red, blue, or white Bracts in multiple rows Bracts in a single row Leafy stems; ray florets yellow or orange At least basal stem leaves are opposite All leaves are alternate Flower heads are small and numerous; involucral bracts imbricate or in multiple overlapping rows Flower heads are large and few; involucral bracts in a single row 	Aster Erigeron Arnica Solidago Senecio	
Differences between non-native <i>Senecio</i> spp. and similar-looking native <i>Senecio</i> spp.		
Most native <i>Senecio</i> spp. have a basal rosette of leaves. Only <i>S. pse sheldonensis,</i> and <i>S. triangularis</i> lack basal leaves; these plants are resouth-coastal and southeast Alaska and are large, distinctive plants.	<i>udo-arnica, S.</i> estricted to	
 Most non-native Senecio spp. Are annual plants with basal leaves withering before or soon after that they may appear to lack a basal rosette Have no ray florets, or if they are present, they are <2 mm long an Stems and leaves are hairy: With viscid, sticky hairs Hairy but not with viscid, sticky hairs 2-6 involucral bracts with black tips 	flowering so d often coiled S. viscosus S. vulgaris	

- 0 or 1-5+ involucral bracts with green tips...... S. sylvaticus

Tansy ragwort • Senecio jacobaea

Invasiveness Rank: 63 points	Species Code: SEJA

Description:

Biennial or short-lived perennial 1.2-1.8 m tall

Roots

- Taprooted
- Stems
 - Short wooly hairs

Leaves

- Short wooly hairs
- Lower leaves wither soon after flowering (no distinct basal rosette)
- Pinnate, deeply dissected 1-3 times

Inflorescence

- 10-13 ray florets, 6-12 mm long
- Involucral bracts with black or green tips

Habitat: roadsides, disturbed places

Distribution:

- Pacific maritime: Kodiak, southeast Alaska
- Interior boreal: Anchorage





Common groundsel • Senecio vulgaris

Invasiveness Rank: 36 points

Species Code: SEVU

Description:

Annual Roots

Taprooted

Stems

 Glabrous or with sparse short hairs

Leaves

- Glabrous or with sparse short hairs
- Deeply lobed to toothed

Inflorescence

- 8-20 per stem
- 2-6+ involucral bracts with black tips
- Only yellow disc florets; no ray florets (included here with other Senecio species for comparison; Senecio typically have yellow ray florets)

Habitat: roadsides, disturbed sites

Distribution:

- Pacific maritime: predominantly southeast but also in Cordova, Kenai Peninsula and Kodiak
- Interior boreal: along the Richardson, Glenn and Parks Hwys; Anchorage, Mat-Su Valley, Delta Junction and Fairbanks
- Northern and westernmost infestation is near Unalakleet



Yellow ray and disc florets



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Sticky groundsel • Senecio viscosus

Invasiveness Rank: not yet ranked

Species Code: SEVI2

Description:

Annual Foul-smelling Has viscid, sticky hairs Roots

Taprooted

Stems

Glandular hairs

Leaves

- Pinnately dissected to pinnatifid
- Glandular hairs

Inflorescence

- 1-30 per stem
- Black-tipped bracts
- ±13 Ray florets, usually reflexed



Distribution: only recorded near Haines and in Seward





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Woodland ragwort • Senecio sylvaticus

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Invasiveness Rank: 41 points	Species Code: SESY

Description:

Annual

Roots

• Fibrous taproots

Stems

• Abundant curly hairs (not glandular)

Leaves

- Abundant curly hairs
- Pinnately divided one or two times

Inflorescence

- 12-24 per stem
- Involucral bracts are green-tipped or minutely black
- Ray florets may be absent or 1-8 and very short (1-2 mm)

Habitat: disturbed sites

Distribution: only recorded in Anchorage and along the Klondike Hwy





Oxeye daisy • *Leucanthemum vulgare* syn. *Chrysanthemum leucanthemum*

Invasiveness Rank: 61 points Species Code: LEVU

Description:

Leaves

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- <10 cm long
- Spoon-shaped
- Coarsely or irregularly toothed
- May be withered by flowering time

Inflorescence

- White ray florets
- Yellow disc florets

Habitat: roadsides, meadows, clear cuts, disturbed sites

Distribution: all three ecogeographic regions; north to Coldfoot, west to Nome







White ray and yellow disc florets

Shasta daisy • Leucanthemum xsuperbum

Invasiveness Rank: not yet ranked	Species Code: LEMA8

Description:

Hybrid of *Leucanthemum maximum* and *Leucanthemum lacustre* Cultivated as a garden plant

Stems

• Unbranched

Leaves

- Lance-shaped with shallow dentate margins
- Up to 20 cm long

Habitat and distribution: mainly in southeast Alaska, some records in Anchorage



Arctic daisy • Arctanthemum arcticum syn. Chrysanthemum arcticum

Description:

Low growing Leaves

- Triangular to wedgeshaped, densely hairy at the base
- Fleshy

Habitat and distribution: coastal marshes, rocky shores



Chrysanthemum integrifolium is another similar looking native species but only has linear leaves

White ray and yellow disc florets

Mayweed chamomile • Anthemis cotula

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Invasiveness Rank: 41 points	Species Code: ANCO2

Description:

Leaves

- Foul smelling when crushed
- Glandular-dotted

Inflorescence

• Receptacles are papery or bristly at the middle

Habitat: waste areas, roadsides

Distribution:

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- Pacific maritime: southeast, Kenai Peninsula
- Interior boreal: Anchorage





White ray and yellow disc florets

Scentless chamomile • Tripleurospermum inodorum syn. Tripleurospermum perforata

Invasiveness Rank: 48 points

Species Code: TRIN11

Description:

Leaves

- Narrowly dissected
- Odorless when crushed

Inflorescence

- Receptacles are naked
- Involucral bracts have light brown, narrow, scarious margins

Habitat: roadsides, lawns, waste areas, irrigation ditches, shorelines, streams, pond edges

Distribution: all three ecogeographic regions; Seward Peninsula is the northern and western limit







False mayweed • *Tripleurospermum maritimum*

Description:

Inflorescence

- White ray florets fall off early
- Receptacles are naked
- Involucral bracts have dark brown, broad, scarious margins

Habitat and distribution: seashores in northwestern and arctic Alaska



White ray and yellow disc florets

Thistles with narrow heads (less than 1 cm across)

Creeping thistle, Canada thistle • Cirsium arvense

Invasiveness Rank: 76 points Species Code: CIAR4

Description:

Perennial

Roots

 Forms colonies through extensive creeping rhizomes

Stem

• Not winged (unlike *C. vulgare*)

Leaves

- Lobes are spiny
- Hairless above and hairless or hairy below

Inflorescence

- Narrow (1 cm, unlike native *Cirsium* species)
- Purplish-pink
- Involucral bracts have spiny points but no spines (unlike C. vulgare)

Habitat: roadsides, forest edges, forest openings

Distribution:

- Pacific maritime: primarily in this region; southeast Alaska, Kenai Peninsula, Kodiak
- Interior boreal: few records from Anchorage, Girdwood, near Portage and near Palmer



Purplish disc flowers



Thistles with broad heads (much greater than 1 cm across)

Bull thistle • Cirsium vulgare

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Invasiveness Rank: 61 points	Species Code: CIVU

Description:

Biennial, 0.9-1.5 m tall Roots

• Deep, fleshy taproot

Stems

• Spiny wings (unlike native *Cirsium* species)

Leaves

• Prickly hairs above, cottony below

Inflorescence

- Large heads, up to 3.8 cm across (unlike *C. arvense*)
- Involucral bracts are spine-tipped
- Dark purple flowers

Habitat: roadsides, disturbed sites

Distribution: similar distribution to *C. arvense* but more restricted (primarily in the Pacific maritime region with only a minor presence in the interior boreal region)



Purplish disc flowers

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Native thistles • Cirsium species

Description:

Stems

- Not winged (unlike *C. vulgare*) Inflorescence
 - >1 cm across (unlike *C. arvense*)
 - Involucral bracts have spiny points but no distinct spines (unlike C. vulgare)

Habitat and distributions:

- C. kamtschaticum: meadows; Aleutians
- *C. foliosum*: meadows; Yukon and potentially to Haines and Skagway, tip of southeast AK
- *C. edule*: wet meadows, woods; Yukon and potentially to Haines and Skagway, tip of southeast AK



Cirsium edule



Cirsium kamtschaticum



Cirsium foliosum

Traits of Centaurea species in Alaska:

- Centaurea species lack spiny leaves (unlike Cirsium species)
- There are no native species of knapweed in Alaska

Spotted knapweed • Centaurea stoebe syn. *C. biebersteinii, C. maculosa*

syn. C. Diedersteinin, C. maculosa

Invasiveness Rank: 86 points

Description:

Biennial or short-lived perennial Stem

Sandpapery texture

Leaves

- Sandpapery texture
- Lower leaves are irregularly lobed
- Upper leaves are entire

Inflorescence

- Purple, occasionally white
- Involucral bracts are black-tipped and not spiny



Species Code: CEST8

Habitat: highways, waterways, railroads, pipelines

Distribution:

- Pacific maritime: southeast, Kenai, Kodiak, Turnagain Arm, Valdez
- Interior boreal: Anchorage





Purplish disc flowers

Perennial cornflower • Centaurea montana

Invasiveness Rank: 46 points Species Code: CEMO

Description:

Perennial

Roots

• Stolons, forms clumps

Leaves

• Entire, lanceolate

Inflorescence

• Outermost florets are large and blue-purple

Habitat: garden escapee; roadsides, disturbed areas, woodlands

Distribution: Pacific maritime and interior boreal; similar distribution to *C. stoebe* but more restricted





Garden cornflower • Centaurea cyanus

Invasiveness Rank: not yet ranked Species Code: CECY2

Description:

Annual 0.2-1 m tall Stems

• Usually a single erect stem

Somewhat wooly

Leaves

- Loosely grey-wooly
- Basal leaves linear-lanceolate, 3-10 cm long, margins mostly entire
- Stem leaves are linear and entire

Inflorescence

- Usually blue, sometimes white or purple
- 1-2.5 cm

Habitat: garden escapee; grasslands, woodlands, forests, roadsides, disturbed sites

Distribution: only two known occurrences in Anchorage and Kodiak



There are no native species of *Centaurea* in Alaska. However, *Centaurea* species resemble native *Saussurea* species (saw-worts).

Saussurea species can be distinguished from Centaurea species by their:

- Unbranched stems (*C. montana* may also be unbranched or sparsely branched; *C. stoebe* is usually branched)
- Linear to lance-shaped leaves that are not lobed, toothed, or pinnately divided leaves (although *Centaurea montana* leaves are ovate to lanceolate and are also not pinnately divided)
- Pappus is a long, feathery plume (*Centaurea* species' pappus is of stiff bristles)
- Heart shaped leaves in S. americana

Habitat and distributions:

- S. americana: southeast Alaska
- S. angustifolia: dry places on tundra and in the mountains
- S. nuda: seashores, alpine meadows; western Alaska
- S. viscida: arctic-alpine and interior boreal



Saussurea angustifolia



Key to yellow-flowered asters of disturbed habitats in Alaska







Key to yellow-flowered asters of disturbed habitats in Alaska

Grass morphology

Stems (culms)

- Mostly hollow and cylindrical
- Interrupted at intervals by swollen nodes
- Rarely branching
- Some grasses have rhizomes (spreading below ground) or stolons (spreading along the soil surface) giving rise to new shoots (tillers)



Leaves

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Blade: upper portion of the leaf that opens out, is flat, and has parallel veins



Sheath: lower portion of the leaf that encloses and protects young shoots





http://www.turf.uiuc.edu

Ligule: small membranous flap of tissue at the junction of the sheath and blade; sometimes just a fringe of hairs or absent

overlapping



Inflorescence structure



Spike (spikelets are not stalked)







Spikelets and florets

Floret: flower subtended by two bracts, the palea (inner) and lemma (outer) One or more florets are arranged on an axis (the rachilla)

Glumes: the two sterile bracts at the base of each spikelet

First glume – lower bract

Second glume – upper bract

Spikelet: all of the florets above a pair of glumes

Spikelets can be arranged as large spikes (spikelets without stalks), or panicles (spikelets with stalks)

Awns: bristle-like extension arising from lemmas or glumes; on some species



How to distinguish grasses from sedges and rushes

Remember the rhyme...

Sedges have edges, rushes are round, grasses have nodes all the way to the ground

General morphology

- Stems have swollen nodes, hollow stems between nodes and are round in cross-section
- · Leaves are linear, simple, entire, and have parallel veins
- Leaves have an open sheath and a ligule (appendage) at the junction of the sheath and blade
- Inflorescence consist of florets arranged in a panicle or spike
- Flowers are usually small and inconspicuous

Grasses (Poaceae)

- Stem is hollow and round in cross-section
- Leaves are 2-ranked
- Sheath is open with a ligule



Sedges (Cyperaceae)

- Stem is triangular in cross section –
- Leaves are 3-ranked
- Sheaths form a closed tube around the stem



Rushes (Juncaceae)

- Stems are round and solid
- Leaves are 3-ranked
- Sheaths are closed





Introduction to the Grass Family

Reed canarygrass • *Phalaris arundinacea*

Invasiveness Rank: 83 points Species Code: PHAR3

Description:

Roots

Conspicuous creeping rhizomes

Leaves

- Broad, ≥1 cm wide
- Spread from stem at right angles

Inflorescence

- Dense
- 2+ florets per spikelet (2 sterile, 1 fertile; sterile florets may resemble tufts of hair at the base of the fertile floret)
- Glumes are boat-shaped and have a prominent nerve (unlike *Calamagrostis* glumes, which are not awned and are narrow)
- Lemmas do not have awns and lack a tuft of hairs at the base (unlike *Calamagrostis*)

Habitat: stream banks, wet meadows; potentially native genotypes exist at hot springs in Alaska

Distribution: Pacific maritime and interior boreal; westernmost infestation is in Dillingham, northernmost infestation is in Fairbanks; outliers in Cordova and near Kennecott



Inflorescence a panicle

Bluejoint • Calamagrostis canadensis

Description:

Leaves

- Ligules 3-6 mm long Inflorescence
 - Nodding panicles
 - 1 floret per spikelet
 - Lemmas have a short awn and a diagnostic tuft of hairs at the base



Habitat: most open lowland habitats

Distribution: abundant in all three ecogeographic regions



Slough grass • Beckmannia syzigachne

Description:

Inflorescence

- Panicle
- More or less interrupted
- Spikelets are flattened and arranged in two rows along one side of the stem
- Spikelets have one flower and form distinct clusters

Habitat: wet ground

Distribution: all three ecogeographic regions



Inflorescence a panicle

Orchard grass • **Dactylis glomerata**

Invasiveness Rank: 53 points Species Code: DAGL

Description:

Perennial Grows in tufts 0.5-1 m tall Inflorescence

- Panicle 3-15 cm long
- Spikelets in dense, one-sided clusters
- Spikelets 5-9 mm long with 3-6 flowers
- Glumes and lemmas both keeled
- Lemmas have a short, sharp, slender point or a short awn

Habitat: meadows, roadsides

Distribution: interior boreal, including few occurrences in Anchorage and one outlier in Glennallen



Traits of Bromus species in Alaska:

- Spikelets are large and resemble a flattened cigar
- 2+ florets per spikelet
- Glumes are shorter than the first floret
- Lemmas are bifid (have two teeth at the tip), awnless, or with apical awn

Smooth brome • Bromus inermis ssp. inermis

syn. Bromopsis inermis

Invasiveness Rank: 62 points	Species Code: BRINI

Description:

Perennial Roots

Rhizomes

Leaves

- Sheath closed with a small v-shaped notch-
- Ligules 1-2 mm long and brownish at the base (could be confused with *Calamagrostis* canadensis before flowering, but *C.* canadensis has ligules 3-6 mm long)



Inflorescence

- Lemmas are smooth or very faintly hairy on nerves and at the base
- Lemmas may or may not have awns; if present are <2 mm long

Habitat: roadsides, meadows, open woods, forest clearcuts

Distribution: all three ecogeographic regions; west to the Seward Peninsula, north to Coldfoot, and south to the King Salmon area



Cheatgrass • Bromus tectorum

Invasiveness Rank: 78 points

Description:

Annual Leaves

Ligules 5-6 mm long

Inflorescence

- Lemmas pubescent
- Lemmas have long awns, ≥1 cm

Habitat: roadsides, dry slopes, river banks

Distribution:

- Pacific maritime: Juneau
- Interior boreal: along the Parks Hwy, Nenana, Chena Hot Springs, Anchorage, Elmendorf Air Force Base







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Pumpelly's brome • Bromus inermis ssp. pumpellianus syn. Bromus pumpellianus, Bromopsis pumpelliana

Description:

Inflorescence

- Lemmas have short awns (1-6 mm) (shorter than *Bromus tectorum*, longer or similar to those of *Bromus inermis* ssp. *inermis*)
- Lemmas are distinctly hairy (unlike Bromus inermis ssp. inermis)

Habitat: open lowland habitats

Distribution: widespread across Alaska





Native Bromus inermis ssp. pumpellianus may hybridize with non-native Bromus inermis ssp. inermis
Traits of Poa species in Alaska:

- There are many *Poa* species that are native to Alaska that can grow in disturbed sites alongside their non-native counterparts
- All Poa species have leaves with a boat-shaped blade tip and are abruptly contracted at the tip
- This is a difficult group to key out



Species Code: POPR

Kentucky bluegrass • Poa pratensis ssp. pratensis

syn. Poa angustifolia

Invasiveness Rank: 52 points

Description:

Perennial 30-100 cm tall (typically taller than *P. pratensis* ssp. *irrigata*) Grows in tufts Roots

• Strongly rhizomatous, mat-forming

Stems

• Smooth, not glaucous

Leaves

- Not glaucous (unlike *P. pratensis* ssp. *irrigata*)
- Soft, flat or folded
- 2-4 mm wide
- Often numerous basal leaves

Inflorescence

- Panicle 10-35 cm long
- Panicle branches are more or less scabrous
- Several to many spikelets per branch
- Spikelets crowded, each 3-6 mm long and with 3-5 flowers
- 3-5 inflorescence branches per node, with the lowermost branches in whorls of 4-5 (unlike *P. pratensis* ssp. *irrigata,* which has 1-2)
- Anthers 1-2 mm long
- Tuft of hair at the base of the lemma

Habitat: disturbed sites; lawns, waste areas; drier sites than *P. pratensis* ssp. *irrigata*

Distribution: widespread across Alaska; all three ecogeographic regions





Spreading bluegrass • Poa pratensis ssp. irrigata

Invasiveness Rank: 52 points	Species Code: POPR

Description:

8-30 cm tall (typically shorter than *P. pratensis* ssp. *pratensis*) Roots

• Strongly rhizomatous, mat-forming

Leaves and stems

- Somewhat glaucous (unlike *P. pratensis* ssp. *pratensis*)
- Leaf blades are flat

Inflorescence

- 1-2 branches per node (less than *P. pratensis* ssp. *pratensis*)
- Panicle branches are more or less scabrous
- Panicles have few spikelets per branch
- Glumes are somewhat glaucous
- Anthers 1-2 mm long
- Tuft of hair at the base of the lemma

Habitat: disturbed sites; lawns, waste areas; wet, sandy ground

Distribution: widespread across Alaska; all three ecogeographic regions





Inflorescence a panicle

Distinguishing between native and non-native *Poa pratensis* species:

- Native subspecies of *Poa pratensis* have smooth flower stalks
 - Poa pratensis ssp. alpigena
 - Poa pratensis ssp. colpodea
- Non-native subspecies have somewhat hairy (scabrous) flower stalks
 - *P. pratensis* ssp. *pratensis*
 - P. pratensis ssp. irrigata

Invasiveness Rank: 52 points

Species Code: POTR2

Description:

Perennial 30-80+ cm tall Grows in tufts Roots

• Does not have rhizomes

Stems

Stems decumbent or bent abruptly at the nodes making a knee

Leaves

- 3-5 together at the base
- Blades are flat, scabrous, 1.5-4 mm wide
- Ligules on upper leaves 3-5 mm long

Inflorescence

- Loose panicle with scabrous branches
- Spikelets have 2-3 flowers
- Glumes are narrow, the first glume is claw-like, short, and has one nerve; the second glume is longer with 3 nerves
- Lemmas have 5 nerves and a distinct tuft of cobweb hairs at the base
- Anthers 1-2 mm long

Habitat: waste areas, roadsides, yards

Distribution: Pacific maritime





Invasiveness Rank: 46 points

Species Code: POAN

Description:

Annual or biennial 2-20 cm tall Grows in tufts Stems

- Ascending
- Smooth

Leaves

- Basal leaves are light green or yellowish-green, soft, smooth, flat or folded, and much shorter than stems
- 1-2 stem leaves (most leaves are basal)
- Sheaths are smooth and hyaline

Inflorescence

- Spikelets purple to green to yellowish-green
- Spikelets have 3-6 flowers
- Glumes are narrow, acute, unequal, and boat-shaped
- Lower glumes have 1 nerve, upper glumes have 3 nerves
- Lemmas have 5 nerves
- No tuft of hairs at the base of the lemma
- Anthers <1 mm long

Habitat: lawns, waste areas, roadsides

Distribution: widespread across Alaska; all three ecogeographic regions



 Opened and the second and th

Canada bluegrass • Poa compressa

Invasiveness Rank: 39 points Species Code: POCO

Description:

Perennial 15-60 cm tall Bluish-green Roots

• Slender, creeping rhizomes

Stems

- Wiry, smooth and flattened
- Ascending or bent abruptly at the nodes making a knee

Leaves

- Short and 1-4 mm wide
- Ligules are 1 mm long

Inflorescence

- Stiff panicle, 3-10 cm long
- · Panicle often has short, paired branches
- Spikelets are crowded, each with 3-6 flowers
- Glumes are rounded at the apex
- No tuft of hairs at the base of the lemma
- Anthers 1-2 mm long

Habitat: roadsides, lawns, waste areas

Distribution: Pacific maritime and interior boreal; widespread in southern Alaska; reported but uncommon elsewhere





		E	E	U	Gr	ass Famil	y (Poacea	e)
	Panicle/flowers	3-5 branches per node; anthers 1-2 mr long; tuft of hairs at the base of the lemma	1-2 branches per node; anthers 1-2 mr long; tuft of hairs at the base of the lemma	Anthers 1-2 mm long, tuft of hairs at base of lowest lemma; first glume narrow, curved, acute; prominent nerv	Anthers <1 mm long, no tuft of hair at base of lemma, first glume is clawlike and half as long as second, distinct nerve	Anthers 1-2 mm long, no hairs at base of lemma		
	Leaves/stems	Not glaucous	Somewhat glaucous	Scabrous; ligules on upper leaves 3-5 mm long	Light or yellowish green, soft and much shorter than stems; mostly basal	Short; ligules 1 mm long; culms conspicuously flat- tened	0	
S	Stems ascending/ decumbent/ geniculate*	Ascending to decumbent	Ascending to decumbent	Decumbent or geniculate	Ascending	Ascending or geniculate	ding elsewhere	
a specie	Height (cm)	30-100	8-30	30-80	2-20	15-60	ect or ascen making a kr	
f some <i>Po</i> ;	Longevity	Perennial	Perennial	Perennial	Annual or biennial	Perennial	liquely upward at the base, ere	
Comparison o		Poa pratensis ssp. pratensis (Kentucky bluegrass)	Poa pratensis ssp. <i>irrigata</i> (spreading bluegrass)	Poa trivialis (rough bluegrass)	Poa annua (annual bluegrass)	Poa compressa (Canada bluegrass)	* Ascending: growing ob Decumbent: lying down Geniculate: bent abrupt	
			Inflores	scence a p	anicle			79

Characteristics of Elymus species:

- 1-2 spikelets per node
- All spikelets have 2 glumes
- Spikelets have 2+ flowers

Quackgrass • Elymus repens

syn. Agropyron repens

Invasiveness Rank: 59 points	Species Code: ELRE4

Description:

Roots

Extensive creeping rhizomes

Leaves

- Constricted at the tip
- Ligule is short (<1 mm) and papery
- Auricles are pointed and about 3 mm long

Inflorescences

- Glumes have narrow hyaline margin and are abruptly awned
- Lemmas have no awns, or awns are as long as the lemma (similar to some native *Elymus* species)
- Spikelets glabrous (not distinctly hairy)
- Anthers are 4-5 mm long (unlike native *Elymus* species)

Habitat: disturbed bare ground, roadsides; also able to invade undisturbed grassy habitats

Distribution: all three ecogeographic regions; northernmost occurrence is in Coldfoot, westernmost occurrence is on the Seward Peninsula



Richard Old, XID Services Inc., Bugwood.org

Siberian wildrye • Elymus sibiricus

Invasiveness Rank: 53 points

Species Code: ELSI

Description:

Grows in clumps or with runners (unlike *E. repens*) 70-120 cm tall Inflorescence

- Spikelets long (<30 cm) and drooping
- More than one spikelet per node (unlike *E. trachycaulus*)
- Lemmas have long awns, 1-3 cm (unlike *E. repens*)
- Lemmas spreading (upright in *E. glaucus*)

Habitat: eroding river banks, clearings, roadsides, waste places, sandygravelly soils

Distribution: limited distribution within the Pacific maritime and interior boreal ecogeographic regions; northernmost occurrence is on the Steese Hwy close to Chatanika



Alaskan wheatgrass • *Elymus alaskanus* Slender wheatgrass • *Elymus trachycaulus*

Description:

Roots

No rhizomes

Inflorescence

- Awns of lemmas are shorter than the lemma body (similar to some *E. repens*)
- Anthers 1-2 mm (unlike *E. repens*, in which they are longer)

Habitat: naturally or anthropogenically disturbed sites, river bars, meadows, roadsides

Distribution: widespread across Alaska



Elymus trachycaulus

Traits of Hordeum species in Alaska:

- 3 spikelets per node but the two lateral ones are often reduced to awns
- Each spikelet has one flower
- All spikelets have 2 glumes

Foxtail barley • Hordeum jubatum

Invasiveness Rank: 63 points

Species Code: HOJU

Nativity of this species is disputed. It is considered native by the USDA PLANTS database and the Flora of North America. Judging from herbarium records (UAM 2010), foxtail barley is most likely to have been present in eastern interior Alaska prior to European contact. However, it appears to have spread dramatically in the last half century. It is considered a nuisance weed due to the ability of awns to become lodged in the noses and mouths of animals.

Description:

Perennial Leaves

• No auricles (unlike *H. vulgare* and *H. murinum* ssp. *leporinum*)

Inflorescence

- Turn purple to tawny and disarticulate at maturity
- Awns of lemmas are 1-6 cm long

Habitat: waste places, roadsides, river banks, lake shores, wetlands

Distribution: widespread across Alaska in all three ecogeographic regions







Inflorescence a spike

Common barley • *Hordeum vulgare*

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Invasiveness Rank: 39 points	Species Code: HOVU

Description:

Annual Leaves

• Well-developed auricles, <6 mm (unlike *H. jubatum* and *H. brachyantherum*)

Inflorescence

- Do not disarticulate at maturity (unlike *H. jubatum* and *H. murinum* ssp. *leporinum*)
- Awns are absent on sterile florets
- Awns of lemmas, when present, are long, 3-18 cm (typically longer than *H. murinum* ssp. *leporinum* and *H. brachyantherum*)

Habitat: disturbed roadsides, agricultural fields; contaminant of straw

Distribution:

- Interior boreal: near Anchorage, Palmer, Healy, Delta, Fairbanks
- Arctic-alpine: western Alaska at checkpoints along the Iditarod Trail



Leporinum barley • Hordeum murinum ssp. leporinum

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Invasiveness Rank: 60 points	Species Code: HOMUL

Description:

Annual Leaves

> Well-developed auricles, <8 mm (unlike *H. jubatum* and *H.* • brachyantherum)

Inflorescence

- Spikelets disarticulate at maturity (unlike *H. vulgare*)
- Lemmas <2 mm wide (narrower than *H. vulgare*) •
- Awns of lemmas are long, 2-4 cm (typically shorter than H. vulgare) •

Habitat: associated with areas of human disturbance

Distribution: interior boreal only; restricted to locations in the Mat-Su Valley and Talkeetna area





Meadow barley • Hordeum brachyantherum

Description:

Perennial

Leaves

• Does not have auricles (unlike *H. vulgare* and *H. murinum* ssp. *leporinum*)

Inflorescence

Awns of lemmas are <1 cm long (typically shorter than non-native species)

Habitat: meadows, upper shorelines; often weedy

Distribution: mainly Pacific maritime but sporadic in interior boreal regions



A comparison of some *Hordeum* species

	Longevity	Auricles	Length of awns on Iemmas	Do awns disarticulate at maturity?
<i>Hordeum jubatum</i> foxtail barley	Perennial	None	1-6 cm	Yes
Hordeum vulgare common barley	Annual	<6 mm	Absent or 3-18 cm	No
Hordeum murinum ssp. leporinum leporinum barley	Annual	<8 mm	2-4 cm	Yes
Hordeum brachyantherum meadow barley	Perennial	None	<1 cm	Yes

Timothy grass • *Phleum pratense*

Invasiveness Rank: 54 points Species Code: PHPR3

Description:

Leaves

• Sheath of the upper leaf on the stem is not inflated (unlike native *P. alpinum*)

Inflorescence

- Long, cylindrical, spike-like panicle (native *P. alpinum* has a shorter, ovoid panicle)
- Glumes have awns (unlike *Alopecurus* species)

Habitat: meadows and roadsides

Distribution: widespread across all three ecogeographic regions; northern and westernmost infestations are on the Seward Peninsula; also recorded near Dillingham and Fairbanks





Similarities between Alopecurus and Phleum species:

- Spikelets have stalks but are so short that the inflorescence looks spikelike
- 1 floret per spikelet

Differences between Alopecurus and Phleum species:

- *Alopecurus*: glumes do not have awns; awn emerges from center of lemma, resembling a horn
- Phleum: glumes have awns, resembling two horns



Meadow foxtail • *Alopecurus pratensis*

Invasiveness Rank: 52 points Species Code: ALPR3

Description:

Stems

Erect

Inflorescence

- Long, cylindrical, spike-like panicle (native A. alpinus is shorter and ovoid)
- Glumes are not wooly, and do not have awns (unlike *Phleum* species)
- Lemma is awned from the middle
- Anthers 2-4 mm long (*A. aequalis* and *A. geniculatus* have anthers 1-1.5 mm long

Habitat: meadows and roadsides

Distribution: Pacific maritime and interior boreal ecogeographic regions; northernmost occurrence is in Coldfoot, westernmost occurrence is on the Kenai Peninsula



Inflorescence a spike

Water foxtail • Alopecurus geniculatus

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Invasiveness Rank: 49 points	Species Code: ALGE2

Description:

Grows in tufts Stems

- Decumbent (unlike erect stems of *A. pratensis*) Inflorescence
 - Short, cylindrical, spike-like panicle, <3 cm long
 - Lemmas have bent or twisted awns that may exceed the lemma tip by 2-4 mm
 - Glumes have no awns (unlike *Phleum* species)
 - Anthers are 1-2 mm long and yellow-violet

Habitat: meadows, stream banks, shores, shallow water

Distribution: scattered throughout all three ecogeographic regions





http://wilde-planten.nl

Inflorescence a spike



Alopecurus aequalis (water foxtail) is a similar looking native species. It can potentially co-occur with *A. geniculatus*, as it grows in similar habitats. Native *A. aequalis* can be distinguished by:

- Awns of lemmas do not exceed the lemma tip, or exceed the tip only slightly by <2.5 mm (longer in *A. geniculatus*)
- Anthers are 0.5-1 mm long (longer in A. geniculatus)

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Traits of Lolium species in Alaska:

- No species native to Alaska
- Panicle is a spike
- Only one spikelet per node
- Spikelets are missing the first glume, with the exception of the terminal spikelet

Perennial ryegrass • Lolium perenne

syn. Lolium perenne ssp. perenne

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Invasiveness Rank: 52 points Species Code: LOPEP
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Description:

Annual to perennial Leaves

Young shoots have folded leaf blades
Inflorescence

- Lemmas do not have awns, or have very short awns, <1 mm
- Glumes equal to or shorter than spikelet
- ≤10 florets per spikelet

Habitat: roadsides, waste places

Distribution: scattered throughout the Pacific maritime and interior boreal regions





Inflorescence a spike

Italian ryegrass • Lolium multiflorum

syn. Lolium perenne ssp. multiflorum

Invasiveness Rank: 41 points

Species Code: LOPEM2

Description:

Annual to short-lived perennial Leaves

• Young shoots have rolled leaf blades Inflorescence

- Lemmas have awns >1 mm long
- Glumes equal to or shorter than spikelet
- 10-20 florets per spikelet

Habitat: roadsides, waste places

Distribution: scattered throughout Pacific maritime and interior boreal regions





Lolium perenne readily hybridizes with *Lolium multiflorum* and hybrids may exhibit a range of characteristics from both species making it difficult to distinguish these two species in the field.

Common ryegrass (*Lolium* species) is a commercial mixture of ryegrass species frequently used in revegetation projects, which is comprised mostly of *Lolium multiflorum* but usually contains a substantial percentage of *Lolium perenne* and *Lolium multiflorum x perenne* hybrids.



Key to grasses of disturbed habitats in Alaska

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Key to grasses of disturbed habitats in Alaska



Legume Family (Fabaceae)

- Family includes herbs, shrubs, vines and trees; only herbs and shrubs are represented in Alaska
- Roots have nitrogen-fixing bacterial nodules
- Leaves are compound
- Flowers are composed of 5 sepals, 5 petals, 10 stamens and 1 style
- Fruit is a legume (e.g. peanuts, beans, peas, lentils, alfalfa)

Parts of the legume flower



Types of compound leaves

Trifoliate: 3 leaflets



Pinnate: leaflets arranged like a feather



Palmate: leaflets radiate from a central point



Pinnate with tendrils and/or stipules



Tendrils: modified, thread-like,

Stipules: leaf-like appendages at the base of the leaf



Introduction to the Legume Family

White sweetclover • Melilotus albus

syn. Melilotus alba, Melilotus officinalis

Invasiveness Rank: 81 points

Species Code: MEAL2

Description:

Biennial 1-1.5 m tall Leaves

- Compound with 3 leaflets
- Toothed margin extends twothirds the way down the leaf (unlike *Medicago* species which are toothed only at the tip; see following pages for comparison)

Inflorescence

White, fragrant

Habitat: human and naturally disturbed areas with fine grained mineral soil, such as roadsides and roadside dust shadows, waste areas, glacial river bars and recently burned habitats.



Distribution: all three ecogeographic regions Gravel bars on the Stikine River (Tongass National Forest), Nenana and Matanuska Rivers in south central Alaska; intersection of the Yukon River and Dalton Highway. Northern limit is Coldfoot; western limit is Galena and near Dillingham.



Trifoliate leaves, inflorescence elongate

Yellow sweetclover • Melilotus officinalis

syn. Melilotus albus, Melilotus alba

Invasiveness Rank: 69 points

Species Code: MEOF

Melilotus albus and *M. officinalis* are sometimes lumped together under the accepted name of *M. officinalis* (PLANTS Database). Morphologically, these species are differentiated by flower color only. However, because *M. alba* appears to be more invasive in Alaska, particularly within riparian zones, we treat the species separately.

Description:

Annual or biennial 1-1.5 m tall Leaves

- Compound with 3 leaflets
- Toothed margin extends two-thirds the way down the leaf (unlike *Medicago* species which are toothed only at the tip; see following page for comparison)

Inflorescence

Yellow

Habitat: similar to *M. albus* but is not known to colonize river bars or burned areas

Distribution: similar range as *M. albus* but much less common; not yet recorded in western Alaska



Trifoliate leaves, inflorescence elongate

Differences between Melilotus and Medicago species:				
	Leaves	Inflorescence	Pods	Growth habit
<i>Melilotus</i> species	Leaflets are toothed for two-thirds of their length	Elongated	Ovoid	Erect
<i>Medicago</i> species	Elongate leaflets are toothed only at the tip (<i>M. sativa</i> subspecies) (<i>R. sativa</i> subspecies)	Short	Coiled or curved	Semi-erect, often creeping

Yellow alfalfa • Medicago sativa ssp. falcata syn. Medicago falcata

Invasiveness Rank: 64 points

Species Code: MESAF

Description:

Perennial, but plants escaped from cultivation behave as annuals

Stems

• Decumbent or erect

Leaves

Trifoliate and toothed at the tip
Inflorescence

- Yellow
- Globular clusters
- 10-13 mm diameter

Fruits

- Pods are sickle-shaped or nearly straight
- 2-5 seeds per pod



Habitat: roadsides, waste places, near cultivated fields

Distribution: few populations in the Pacific maritime and interior boreal regions. Absent from southeast Alaska. Present around Fairbanks, the vicinity of Tok, Gakona, Fort Yukon, Anchorage, and Mat-Su Valley.



Alfalfa • Medicago sativa ssp. sativa

syn. Medicago sativa

Invasiveness Rank: 59 points	Species Code: MESAS

Description:

Annual or perennial <1 m tall Stems

Decumbent or erect

Leaves

- Trifoliate and toothed at the tip
- Inflorescence
 - Purple
 - Globular clusters
 - <1 cm diameter

Fruits

Pods are spirally coiled loosely 2-3 times –

Habitat: roadsides, disturbed sites, near cultivated fields

Distribution: few locations in Pacific maritime and interior boreal regions, including Anchorage, Fort Yukon, Dalton Hwy south of Prospect Creek, southeast and south coastal Alaska.



Black medick • Medicago Iupulina

Invasiveness Rank: 48 points Species Code: MELU

Description:

Stems

Hairy and trailing

Leaves

 Leaflets are broad and round (unlike the elongate leaflets of other *Medicago* species; leaves similar to *Trifolium* species but are different in that the apical leaflet has a distinctly longer stem than the lateral two)

Inflorescence

- Yellow
- In globular clusters 16 mm wide and 6 mm tall (smaller than flowers of *Medicago sativa* ssp. *falcata*)

Fruits

• Pods are ridged, 1-seeded and black when ripe

Habitat: roadsides, lawns, cultivated crops

Distribution: scattered across the Pacific maritime and interior boreal regions, including Gulkana, Anchorage, Kenai Peninsula, and the southeast



Trifoliate leaves, inflorescence globular
White clover • Trifolium repens

Invasiveness Rank: 59 points Species Code: TRRE3

Description:

Stems

Creeping and rooting at nodes

Leaves

Leaflets often have v-shaped marks, but not always

Inflorescence

White to pinkish-white

Habitat: waste areas, lawns, ditches, disturbed sites

Distribution: widespread across the state in all three ecogeographic regions









Trifoliate leaves, inflorescence globular

Alsike clover • *Trifolium hybridum*

Invasiveness Rank: 57 points

Species Code: TRHY

Description:

Stems

• Upright and does not root at nodes (unlike *T. repens*)

Inflorescence

• White to pinkish

Habitat and distribution: similar to *Trifolium repens*



Red clover • Trifolium pratense

Invasiveness Rank: 53 points	Species Code: TRPR2

Description:

Leaves

- 3 leaflets immediately below the flowering head (unlike *T. repens* and *T. hybridum*)
- Leaflets often have v-shaped marks, but not always

Inflorescence

Reddish-pink flowers

Habitat: cultivated fields, roadsides, lawns, gardens, meadows

Distribution: Pacific maritime and interior boreal regions



Bird's foot trefoil • Lotus corniculatus

Invasiveness Rank: 65 points

Species Code: LOCO6

Description:

Leaves

- Divided into 5 oval-linear leaflets
- Center 3 leaflets are large ("fake" trefoil)
- Lower 2 leaflets resemble stipules

Inflorescence

 Yellow globular clusters on a long stalk

Fruits

 Pods are brown-black, cylindrical, and resemble a bird's foot



Habitat: in other states *Lotus corniculatus* is known to occur on pastures, roadsides, wetlands, disturbed grasslands, and riparian areas

Distribution:

- Pacific maritime: southeast Alaska in logged areas and along roads
- Interior boreal: recorded along the Dalton Hwy and in Anchorage







Crownvetch • Coronilla varia

syn. Securigera varia

• Invasiveness Rank: 68 points

Species Code: SEVA4

Description:

Leaves

Pinnately compound with a terminal • leaflet

Inflorescence

• Pink-white

Fruits

Pods are linear -

Habitat: roadsides; used for revegetation outside of Alaska

Distribution: interior boreal; Fairbanks and along greenbelts in Anchorage





Pinnate leaves, inflorescence globular 112

Bird vetch • Vicia cracca ssp. cracca

Invasiveness Rank: 73 points

Species Code: VICRC

Description:

Perennial Stems

- Climbing or trailing
- Not winged (unlike native *Lathyrus* species)

Leaves

- 8-10 pairs of leaflets
- Branched tendrils (unlike Coronilla varia)

Inflorescence

- Blue-violet
- Dense, one-sided clusters of 20-50 flowers

Fruits

Seed pot is not constricted

Habitat: roadsides, forest edges and openings, thickets

Distribution: all three ecogeographic regions









Pinnate leaves, inflorescence elongate or in leaf axil

Winter vetch • Vicia villosa

Invasiveness Rank: 53 points	Species Code: VIVI

Description:

Similar to *Vicia cracca* ssp. *cracca*, but *V. villosa* can be distinguished by the following characteristics:

- Plant is very hairy
- Flowers can be distinctly two-toned (purple and white, red and white)

Habitat and distribution: reported from one site in Anchorage and a community garden in Juneau



Garden vetch • Vicia sativa ssp. nigra syn. Vicia angustifolia

Invasiveness Rank: not yet ranked

Species Code: VISAN2

Description:

Perennial Smooth to hairy Leaves

- Pinnate with 5-7 pairs of leaflets per leaf
- Leaflets rounded or with a shallow notch, and with a needle-like tip
- Tendrils are well-developed and branched
- Stipules are 3-8 mm long, deeply toothed or arrow-shaped

Inflorescence

- In the leaf axils (not hanging) -
- Longer or equal to the length of leaflets
- Style is densely bearded at the tip

Habitat: disturbed ground, yards, roadsides

Distribution: low elevations; Fairbanks, Dawson and the Yukon Territory



Pinnate leaves, inflorescence elongate or in leaf axil

Giant vetch • Vicia gigantea

- Inflorescence is shorter than the compound leaf (unlike *Vicia cracca* ssp. *cracca*)
- Only found in southeast Alaska





American vetch • Vicia americana

- Flowers are on all sides of the raceme (unlike *V. cracca* ssp. *cracca*, which is one-sided)
- Only found in southeast and south coastal Alaska (Wrangles, Talkeetna Mountains)





Pinnate leaves, inflorescence elongate or in leaf axil

Marsh pea • Lathyrus palustris

Description:

Stems

• Winged

Leaves

- 2-3 pairs of leaflets
- Tendrils

Habitat and distribution: wet meadows, moist forest understories, disturbed sites; Pacific maritime and interior boreal regions



Description:

Stems

• Winged

Leaves

- · Leaflets are broadly ovate
- Sometimes has tendrils

Habitat and distribution: sandy soils along the coast





Alpine sweetvetch • Hedysarum alpinum

Description:

Stems

• Erect, not climbing or trailing

Leaves

- Pinnate with a terminal leaflet (no tendril)
- Leaflets broadly lanceolate or oblong

Fruits

Pod is constricted between seeds

Habitat: roadsides, rocky slopes, gravel bars, spruce forests

Distribution: Pacific maritime and interior boreal regions



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Species Code: CAAR18

Siberian pea shrub • Caragana arborescens

Invasiveness Rank: 74 points

Description:

Shrub <3 m tall Leaves

- 8-12 leaflets per leaf
- Leaflets oblong to elliptic
- Spiny stipules

Inflorescence

- Yellow
- Borne singly

Habitat and distribution: ornamental; planted in towns and villages throughout south central and interior Alaska





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Scotch broom • Cytisus scoparius

Invasiveness Rank: 69 points

Species Code: CYSC4

Description:

Perennial Evergreen shrub Stems

- Strongly 5-angled
- Green

Leaves

 Lower leaves trifoliate, upper leaves simple (unlike Caragana arborescens, which has pinnately compound leaves)

Inflorescence

- Bright yellow
- 1-3 in leaf axils

Fruits

- Pods are dark brown to black
- Pods are flat with hairy margins

Habitat: found mostly in urban settings and along roadsides

Distribution: southeast Alaska; Funny River Road and Kasilof Transfer Station on the Kenai Peninsula





Shrubs with bright yellow, mostly single flowers

Bigleaf lupine • Lupinus polyphyllus ssp. polyphyllus

Invasiveness Rank: 71 points

Species Code: LUPOP2

The nativity of this species is disputed:

- ITIS 2003 and USDA PLANTS Database 2003 report it is native in the Pacific Northwest, British Columbia, and extreme southeast Alaska
- Hultén 1968 and Welsh 1974 report it is introduced to Alaska
- Several collections have been made in remote locations where introduction by humans is unlikely, including the Copper River Delta, Glacier Bay National Park, near Yakutat Bay and Katalla

Description:

Leaves

- Palmately compound
- 10-18 leaflets per leaf (more than native lupines)
- Basal leaves are 15-20 cm in diameter (larger than native lupines) and have long stalks

Inflorescence

- Blue to violet
- Long, dense clusters up to 40 cm tall
- Fragrant

Fruits

• Hairy pods up to 5 cm long



Distribution: Pacific maritime and interior boreal ecogeographic regions; Fairbanks to the Kenai Peninsula, Glennallen and vicinity, Copper River Delta, southeast Alaska





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Palmate leaves



Arctic lupine • *Lupinus arcticus* Nootka lupine • *Lupinus nootkatensis*

Description:

Leaves

- Leaves have a smaller diameter than L. polyphyllus
- <10 leaflets per leaf, fewer than *L. polyphyllus*
- L. arcticus:
- The basal leaf petiole is two times as long as the diameter of the compound leaf
- Found on dry and damp slopes, gravel bars, solifluction soils, roadsides, and mountainous areas
- Found in all three ecogeographic regions but is most common in the interior boreal region
- L. nootkatensis:
- The basal leaf petiole is not longer than the diameter of the leaf
- Found on dry slopes and gravel bars
- · Found only in the Pacific maritime ecogeographic region

Non-native Lupinus polyphyllus (larger leaves) Native Lupinus nootkatensis (smaller leaves)



122 Palmate leaves



"Other Families" included in this section:

- Apiaceae Carrot Family
- Balsaminaceae Touch-me-not Family
- Boraginaceae Borage Family
- Campanulaceae Bellflower Family
- Caprifoliaceae Honeysuckle Family
- Caryophyllaceae Pink Family
- Chenopodiaceae Goosefoot Family
- Clusiaceae St. Johnswort Family
- Convolvulaceae Morning Glory Family
- Euphorbiaceae Spurge Family
- Geraniaceae Geranium Family
- Halagoraceae Watermilfoil Family
- Hydrocharitaceae Tape-grass Family
- Lamiaceae Mint Family
- Lythraceae Loosestrife Family
- Plantaginaceae Plantain Family
- Polemoniaceae Phlox Family
- Ranunculaceae Buttercup Family
- Rosaceae Rose Family
- Urticaceae Nettle Family
- Violaceae Violet Family

Species Code: HEMA17

Giant hogweed • Heracleum mantegazzianum

Invasiveness Rank: 81 points

Description:

Biennial or perennial 3-4.5 m tall (unlike native *H. maximum*, which is usually <1.8 m) Typically die after flowering Stems

- Hollow
- Reddish spots
- Bristles

Leaves

Compound (unlike native *H. maximum*, which has palmately lobed leaves)

Inflorescence

- Umbels up to 76.5 cm in diameter (unlike native *H. maximum*, which has umbels 20-30 cm in diameter)
- Flowers are small and white

Fruits

• Flat, oval, dry

Habitat: damp locations, along rivers and streams, disturbed areas including waste places and roadsides

Distribution: Pacific maritime; only one population known in Kake, which appears to have been eradicated





Ornamental jewelweed • *Impatiens glandulifera*

Invasiveness Rank: 82 points

Species Code: IMGL

Description:

0.9-1.8 m tall Entire plant has purple or reddish tinge Stems

Hollow

Leaves

- Mostly opposite or whorled
- Serrated margins
- Oblong to egg-shaped

Inflorescence

- White, pink, red or purple
- 4-5 mm long spur on flowers

Fruits

• Dehisce explosively (ripe seeds shoot out when touched)

Habitat: riparian areas, wetlands, beach meadows; escapes from gardens

Distribution: few sites in the Pacific maritime and interior boreal regions; Kenai, Anchorage, Juneau, Skagway, Haines; in and

near Fairbanks and Salcha



Touch-me-not • Impatiens noli-tangere

Description:

Smaller than *I. glandulifera* Leaves

- Egg-shaped
- Opposite or alternate
- Coarsely toothed

Inflorescence

- Yellow-orange with brown spots
- Lower sepal has a 6-10 mm long spur

Fruits

• Dehisce explosively (ripe seeds shoot out when touched)

Habitat: moist forests and stream banks

Distribution: Pacific maritime and interior boreal regions







Touch-me-not Family (Balsaminaceae)

Key to some commonly found small, blue-flowered species		
 Alternate leaves and round stems Annual or biennial, fruit has nutlets with hooked prickles 2 rows of prickles on nutlet 1 row of prickles on nutlet 	Boraginaceae Lappula L. squarrosa L. occidentalis	
 Perennial Up to 10 cm tall, nutlets have jagged prickles on the main of the table of the table of the table of t	argins <i>Eritrichium</i> <i>Myosotis</i> I appressed in one <i>M. scorpioides</i> <i>M. asiatica</i>	
 Opposite leaves 5 petals and sepals, 2 stamens, fruit is a capsule with seeds 	Veronica (Plantaginaceae)	
• 4 or 5 petals, 4 or 5 stamens, fruit is a nutlet, stem square or a	ngledLamiaceae	

European stickseed • Lappula squarrosa

syn. Lappula myosotis

Invasiveness Rank: 44 points	Species Code: LASQ

Description:

Annual or biennial; bristly herb Leaves

- Narrowly lanceolate to oblanceolate
- Hairy

Inflorescence

5 small, pale blue petals

Fruits

 Nutlets with 2 distinct rows of prickles

Habitat: mostly wet areas; roadsides, waste areas, cultivated fields



Distribution: frequent throughout Pacific maritime and interior boreal regions; northernmost infestation in Circle, westernmost in Anchorage, easternmost along the Alaska Hwy east of Northway Jct. In southeast Alaska, it has only been reported from Gustavus.



Native Lappula occidentalis (flatspine stickseed) has only 1 row of prickles and occurs on mesic to dry sites in alpine and subalpine meadows across Alaska

Species Code: MYSC

European forget-me-not • *Myosotis scorpioides*

syn. Myosotis palustris, Myosotis scorpioides var. palustris

Invasiveness Rank: 54 points

Description:

perennial 15-60 cm tall Entire plant has inconspicuous, scattered, short, stiff, appressed hairs Roots

- Fibrous roots
- Rhizomes and stolons

Stems

- Decumbent to ascending
- Mostly unbranched

Leaves

- Lower leaves oblanceolate, with narrow base and little to no stalk
- Upper leaves oblong, elliptical, or lance-shaped, 1.5-8 cm long, 7-20 mm wide; with short appressed hairs or nearly smooth

Inflorescence

- Spikes of flowers lax, coiled, narrow, about equal in length to the leafy part of the stem; no bracts
- Calyx teeth are 2-4 mm long, equally broad and long
- Pedicels are 1-2 times as long as the calyx
- Sky blue, rarely white, fused at the base into a tube that spreads flat toward the 5 lobes at the tip
- Floral tube of the corolla is longer than calyxes (unlike native *M. laxa*, in which they are the same length)
- Flower is 3-5 mm long, 4-10 mm wide (wider than native *M. laxa*)
- Calyx has appressed hairs that are not hooked

Fruits

- Smooth, 4-parted nutlet, narrowly egg-shaped
- Black, smooth, shiny
- 2-2.5 mm long

Habitat: mostly wet locations, meadows, ditches, pond edges, swamps; escapes cultivation

Distribution: Pacific maritime and interior boreal, including Denali National Park and throughout Anchorage





Field forget-me-not • Myosotis arvensis

syn. Myosotis scorpioides var. arvensis

Invasiveness Rank: not yet ranked

Species Code: MYAR

Description:

Biennial or annual

10-40 cm tall

Entire plant with short, soft, hairs that are straight and appressed or spreading, some of which are hooked

Roots

• Fibrous roots

Stems

- Unbranched or with several branches (thinner branches than *M. sylvatica*)
- Flacid (unlike *M. sylvatica*)

Leaves

- Lower leaves oblanceolate, stalked, in loose rosette
- Upper leaves lanceolate, not stalked; 1-6 cm long, 3-16 mm wide Inflorescence
 - Spikes of flowers lax, coiled, narrow, about equal in length to the leafy part of the stem; no bracts
 - Pedicels are equal to or longer than the calyx (unlike *M. stricta* and *M. discolor*)
 - Blue-grey, sometimes white, fused at the base into a tube that divides into 5 lobes at the tip
 - Calyx constricted in fruit (unlike *M. sylvatica*)
 - Flower is 2-5 mm long, 2-4 mm wide
 - Calyx has short stiff hairs, and short, coarse, hooked hairs

Fruits

- Smooth, 4-parted nutlet, eggshaped
- Dark brown, smooth, shiny
- 1.5 mm long
- Narrow margin all around, acute at tip (unlike native *M. asiatica*)

Habitat and distribution: roadsides, waste places, lowlands; moist to mesic; not yet reported in Alaska



Wood forget-me-not • Myosotis sylvatica

Invasiveness Rank: not yet ranked Species Code: MYSY

Description:

perennial

15-45 cm tall

Entire plant with spreading hairs, some of which are hooked Roots

• Fibrous roots and short rhizome

Stems

- Unbranched or with few branches (less than *M. arvensis*)
- Lax (unlike native *M. asiatica*) but not flaccid (unlike *M. arvensis*)

Leaves

- Lower leaves egg or spoon shaped, somewhat stalked, in basal rosette
- Upper leaves lance-shaped to oblong, without stalks; 5-12 cm long, 2-12 mm wide

Inflorescence

- Spikes of flowers in lax coils; no bracts
- Pedicels are 1.5-2 times longer than calyx
- Bright blue, rarely white; fused at the base into a tube that spreads flat toward the 5 lobes at the tip
- Flower is 3-5 mm long, 5-10 mm wide, with 5 yellow bulges at the throat
- Floral tube of sepals has short, curly, hooked hairs
- Calyx is open in fruit (unlike *M. arvensis*)

Fruits

- Smooth, 4-parted nutlet, egg-shaped
- Dark brown, smooth, shiny
- 1.5-2 mm long
- Narrow margin all around, acute at tip (unlike native *M. asiatica*)

Habitat and distribution: lower elevations, grasslands, shrublands, open forests, disturbed sites; mesic sites; not yet reported in Alaska



Common forget-me-not • Myosotis discolor

Invasiveness Rank: not yet ranked Species Code: MYDI

Description:

Annual

8-50 cm tall

Erect and slender

Lower portions with spreading hairs, upper portions with appressed hairs, some of which are hooked

Roots

Fibrous roots

Stems

• Branched or unbranched

Leaves

- Lower leaves oblanceolate, somewhat stalked; 1-4 cm long, 2-8 mm wide
- Upper leaves oblong to linear, mostly without stalks, with straight hairs

Inflorescence

- Spikes of flowers in lax coils, several to many flowers, about equal in length to the leafy part of the stem; may have 1-2 bracts near the base
- Calyx teeth are 2-4 mm long, equally broad and long
- Pedicels are shorter than the calyx, 1-3 mm long
- Start out yellow or white, turning blue later; fused at the base into a tube that divides into 5 lobes at the tip
- Flower is 3-5 mm long, 1-2 mm wide
- Floral tube of sepals has short, spreading, hooked hairs; flower lobes have short appressed hairs

Fruits

- Smooth, 4-parted nutlet, eggshaped
- Black to dark brown, smooth, shiny

Habitat and distribution: roadsides,

ditches, disturbed sites; moist to mesic areas; not yet reported in Alaska



Blue forget-me-not • Myosotis stricta

Invasiveness Rank: not yet ranked

Species Code: MYST2

Description:

annual

<20 cm tall

Entire plant with short, soft, spreading unequal hairs, some of which are hooked

Roots

• Fibrous roots

Stems

Often branched near the base, sometimes unbranched

Leaves

- Lower leaves oblanceolate, 1-3 cm long, 4-8 mm wide
- Upper leaves oblong to elliptical; 2 cm long, 7 mm wide

Inflorescence

- Spikes of flowers lax, coiled, narrow clusters; some flowers nearly reach the stem base; with leafy bracts
- Pedicels shorter than calyx, not reflexed
- Blue, fused at the base into a tube that flares into 5 lobes at the tip
- Flower is 3-5 mm long, 1-2 mm wide
- Floral tube of sepals has hooked hairs, lobes have appressed hairs

Fruits

- Smooth, 4-parted nutlet, egg-shaped
- Brown, smooth, shiny

Habitat and distribution: meadows, ditches, disturbed sites; mesic to dry areas; not yet reported in Alaska



Small-flowered forget-me-not • *Myosotis laxa*

Description:

Short-lived perennial, sometimes annual 10-40 cm tall

Hairs are inconspicuous, straight, appressed

Roots

• Fibrous roots

Stems

• Weak, slender, often decumbent

Leaves

- Lower leaves oblanceolate
- Upper leaves oblong to lance-shaped; 1.5-8 cm long, 3-15 mm wide Inflorescence
 - Spikes of flowers in lax coils; about equal in length to the leafy part of the stem; may have a few bracts at the base
 - Pedicels usually longer than calyx
 - Blue, fused at the base into a tube that flattens out into 5 lobes at the tip
 - Floral tube of the corolla is equal in length to calyxes (unlike *M. scorpioides*, in which the corolla is longer)
 - Flower is 3-7 mm long, 2-5 mm wide (narrower than *M. scorpioides* and *M. sylvatica*
 - Calyx has appressed hairs lacking hooks

Fruits

- Smooth, 4-parted nutlet, egg-shaped
- Brown to black, smooth, shiny

Habitat: meadows, ditches, pond edges, swamps; moist to wet areas



Borage Family (Boraginaceae)

Spring forget-me-not • Myosotis verna

Description:

Annual

5-40 cm tall

Entire plant with short, coarse, spreading to appressed hairs, some of which are hooked

Roots

Fibrous roots

Stems

• Branched or unbranched

Leaves

- Lower leaves oblanceolate, somewhat stalked
- Upper leaves oblong to linear and mostly without stalks; 1-5 cm long, 2-10 mm wide

Inflorescence

- Spikes of flowers in narrow, lax coils; about equal in length to the leafy part of the stem; may have a few leafy bracts at the base
- Pedicels often shorter than calyx
- Petals inconspicuous, white, fused at the base into a tube that flares into 5 lobes at the tip
- Flower is 4-7 mm long, 1-2 mm wide
- Floral tube of sepals covered with short, hooked hairs; lobes with stiff ascending hairs
- Flower are asymmetric, with two longer lobes and three shorter lobes

Fruits

- 4-parted nutlet, egg-shaped
- Brown, commonly with pale stippling

Habitat: meadows, grasslands, shrub lands, forest openings; moist to dry areas



Asian (alpine) forget-me-not • Myosotis asiatica syn. Myosotis alpestris ssp. asiatica

Description:

Perennial

3-50 cm tall

Tufted, erect clumps

Entire plant covered with spreading or appressed hairs arising from base, some of which are hooked

Roots

• Fibrous roots

Stems

· Branched several to many times, forming erect clumps

Leaves

- Lower leaves stalked, oblanceolate to elliptical; 5-13 cm long, 2-12 mm wide
- Several stem leaves, without stalks, oblong to lance-shaped, <6 cm long, becoming smaller toward the top of the plant
- Often withered leaves at the base

Inflorescence

- Flowers in coiled, short clusters
- Calyx teeth are longer than they are broad
- Pedicels are equal in length to the calyx
- Blue, occasionally white; fused at the base to form a flat tube with 5 lobes at the tip; 4-10 mm wide, 2-5 mm long; 5 yellow bulges at the throat of the flower
- Calyx has ascending to spreading hairs, hooked or straight

Fruits

- Smooth, 4-parted nutlet, egg-shaped
- Black, smooth, shiny
- 1-2 mm long
- Narrow margin on upper half, obtuse at tip (unlike *M. arvensis* and *M. sylvatica*, which have a margin all around and acute tip)

Habitat and distribution: alpine and subalpine meadows across Alaska; streambanks, rocky slopes, forest openings; mesic to dry sites; higher

elevations than non-native *M.* sylvatica



Key to *Myosotis* species

Adapted from Illustrated Flora of British Columbia

- 1. Calyces with appressed hairs, lacking hooks
 - 2. Corollas 2-5 mm wide, the tube equal to the calyces...... *M. laxa*
 - 2. Corollas 5-10 mm wide, the tube longer than calyces..... M. scorpioides
- 1. Calyces with spreading hairs, some of which are hooked
 - 3. Corollas 4-10 mm wide

3. Corollas 1-3 mm wide

- 5. Calyces asymmetric, 2 lobes longer than other 3...... *M. verna*
- 5. Calyces symmetric, all 5 lobes equal
 - 6. Fruiting stalks equal to or longer than calyces...... M. arvensis
 - 6. Fruiting stalks shorter than calyces
 - 7. Corollas blue, tube equal to calyces...... M. stricta
 - 7. Corollas yellow, aging blue, tube surpassing calyces

...... M. discolor

Common comfrey • Symphytum officinale

Invasiveness Rank: 48 points

Description:

Coarse, stiff-hairy perennial Roots

Taproot

Stems

- Hairy
- Winged

Leaves

- Bases broadly winged
- Large basal leaves with stalk
- Cauline leaves become smaller and stalkless toward the top of the plant

Inflorescence

- Leafless, branched cluster
- 5-parted
- Blue to cream colored
- Nodding
- Tubular bell-shaped
- Tube is much longer than the lobes
- Stalks have spreading hairs

Fruits

• Black, smooth, shiny nutlet

Habitat: disturbed areas, such as roadsides and abandoned gardens

Distribution: Pacific maritime; throughout southeast Alaska to Glacier Bay and on the Kenai Peninsula





Species Code: SYOF

Rampion bellflower • Campanula rapunculoides

Invasiveness Rank: 64 points

Species Code: CARA

Description:

Perennial 0.4-1 m tall Roots

Creeping rhizomes

Stems

- Branched
- Reddish

Leaves

- Alternate
- Irregularly toothed

Inflorescence

- Bell-shaped, 2-3.5 cm
- Blue to purple
- Nodding
- One-sided with many flowers



Habitat: abandoned gardens

Distribution: Pacific maritime and interior boreal regions, including Anchorage and around Juneau

Native Campanula species can be distinguished by:

- Flowers are smaller or borne singly
- Inflorescence is not one-sided

Tatarian honeysuckle • Lonicera tatarica

Invasiveness Rank: 66 points

Species Code: LOTA

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www.uwgb.edu

Description:

Shrub Stems

• Finely branched

Leaves

- Opposite
- Hairless
- Oval-oblong
- Entire margins
- Round bases

Inflorescence

- Pink to white
- <2.5 cm long
- Tubular
- Flowers in pairs

Fruits

- Fruit is an orange-red berry (unlike *L. involucrata*)
- Seeds are yellow and flattened

Distribution: one documented location in Juneau in a botanical garden



Bearberry honeysuckle • Lonicera involucrata

Description:

Shrub Stems

Finely branched

Leaves

• Often hairy on the underside Inflorescence

- Yellow
- Tubular
- Flowers in pairs
- Large green-purple bracts

Fruits

- Fruit is a purple-black berry (unlike *L. tatarica*)
- Fruit is cupped by two pairs of purple maroon bracts

Habitat: moist forests, clearings, swamps, thickets, stream sides

www.lawyernursery.com

Distribution: Pacific maritime region, in Haines and southern southeast Alaska



Traits of Cerastium species in Alaska:

- Sepals and petals are not fused
- Petals are white and lobed or shallowly cleft (unlike *Stellaria* species, which are deeply bifid)
- Leaves are narrowly ovate and do not have stipules
- Flowers have 5 styles

Big chickweed • Cerastium fontanum ssp. vulgare

Syn. Ocrastiani fontanam SSp. tima	
Invasiveness Rank: 36 points	Species Code: CEFOV2

Description:

Biennial or perennial Stems and leaves

• Hairy

Inflorescence

- Petal tips have two lobes
- Petals are equal to or slightly longer than sepals
- Sepals are hairy; hairs are not longer than the sepal tip

Habitat: roadsides, waste places, gardens, fields

Distribution: all three ecogeographic regions; western limit is around Bethel, and it has not been reported from the Arctic Coastal Plain



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Pink Family (Caryophyllaceae)

Sticky chickweed • Cerastium glomeratum

Invasiveness Rank: 36 points Species Code: CEGL2

Description:

Very similar to *C. fontanum* ssp. *vulgare*, but can be distinguished by: Stems and leaves

Have gland-tipped hairs

Inflorescence

- Glandular hairs and long white hairs on sepals that exceed the sepal tip
- Petals equal to or slightly longer than sepals

Habitat: similar habitat as C. fontanum

Distribution:

- Pacific maritime: Kenai Peninsula; in the vicinity of Haines and Prince of Wales
- Interior boreal: Anchorage, Mat-Su, and the Sourdough Creek campground along the Gulkana River



There are many native *Cerastium* species in Alaska. They can be distinguished from non-native species because their petals are always longer than their sepals.



Cerastium beeringianum

Traits of Stellaria species in Alaska:

- Stem nodes are swollen
- Opposite leaves
- Sepals and petals are not fused at the base
- Has 5 deeply bifid petals that often appear as 10 petals

Common chickweed • Stellaria media

Invasiveness Rank: 42 points

Description:

Annual, trailing Stems

- Has a line of white hairs on the stem (unlike native Stellaria species)
 - The vascular bundles inside the stem stay intact when the stem is damaged

Leaves

- Opposte
- Ovate
- Membranaceous
- Stalked lower leaves (unlike native Stellaria species, which have sessile leaves)



Habitat: cultivated and disturbed sites

Distribution: widespread throughout all three ecogeographic regions; northernmost location is Arctic Village, westernmost locations are Dillingham, Manokotak and the Seward Peninsula



Native Stellaria species have stalkless lower leaves and lack a line of white hairs on the stem

Pink Family (Caryophyllaceae)

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White cockle • Silene latifolia

syn. Lychnis alba xloveae, Melandrium album

Invasiveness Rank: 42 points

Species Code: SILA21

Silene latifolia and Silene dioica are closely related and often hybridize

Description:

Annual to short-lived perennial <100 cm tall Roots

• Woody taproot

Stems

- Erect or decumbent at base
- Branched
- Have fine hairs

Leaves

- Lanceolate to elliptic
- 3-12 cm long and 0.6-3



- Sparsely hairy on both sides
- Basal leaves wither by the time of flowering
- Stem leaves are stalkless, lower leaves have petioles

Inflorescence

- Unisexual; plants have either all staminate flowers or all pistillate flowers
 - Staminate (male) flowers are 10-veined and tubular
 - Pistillate (female) flowers are 20-veined and ovate, with 5 styles and 4-5 stigmas
- 5 deeply notched petals that may appear as 10
- White, 2.5-3.5 cm diameter
- Pedicels are 1-5 cm long
- Fragrant
- Several to many flowers

Fruits

• Capsules have 4-8 bifid teeth that can appear as 8-10 teeth and are slightly reflexed or spreading at maturity (unlike *S. dioica*, which has teeth that roll backward at maturity)

Habitat: waste lands, roadsides

Distribution: few infestations; Pacific maritime (only from Skagway in the southeast) and interior boreal regions
Red catchfly • Silene dioica

Invasiveness Rank: 42 points

Species Code: SIDI4

Silene latifolia and Silene dioica are closely related and often hybridize

Description:

Perennial <80 cm tall Roots

Slender taproot

Stems

- Ascending but
 decumbent at base
- Branched
- Softly pubescent and more or less glandular

Leaves

- Ovate to elliptic, 3-13 cm long, 1-5 cm wide (unlike *S. latifolia*, which has narrower leaves)
- Has dense, long, soft hairs covering at least the distal portions of the plant (unlike *S. latifolia*, which is more sparsely pubescent)
- Stem leaves are stalkless, lower leaves have petioles
- Softer and thinner than S. latifolia

Inflorescence

- Unisexual; plants have either all staminate flowers or all pistillate flowers
 - Staminate (male) flowers are 10-veined and narrow
 - Pistillate (female) flowers are 20-veined and broad
- 5 styles
- Bright pink, 2-2.5 cm diameter
- Pedicels 0.2-3 cm, usually shorter than the calyx
- Bracts have soft hair
- Several to many flowers

Fruits

- Capsules have 5 bifid teeth
- Capsule is broad, nearly spherical, thin, brittle, and teeth curve backward at maturity (unlike *S. latifolia*)

Habitat: woodlands, hedges, gardens, river banks, open waste places

Distribution: interior boreal, only reported from Anchorage and Palmer



Silene dioica and *Silene latifolia* are closely related and often hybridize. *Silene dioica* can be distinguished by:

- Dense, long, soft hairs covering at least the distal portions of the plant
- A capsule that is broad, nearly spherical, thin, and brittle with teeth that roll backward
- Softer, thinner, usually broader leaves
- Pink flowers

Night flowering Silene • Silene noctiflora

syn. Melandrium noctiflorum

Invasiveness Rank: 42 points

Description:

Annual

Entire plant is densely hairy and outer portions may be sticky <75 cm tall

Roots

Slender taproot

Stems

- Erect
- Few basal braches
- Outer portions are branched

Leaves

- Elliptic, oblanceolate or lanceolate
- 6-14 cm long and 2-4.5 cm wide
- Gradually become smaller toward the branch tips
- 2 leaves per node
- Conspicuously veined
- Hairy on both sides

Inflorescence

- Bisexual (flowers include both male and female parts, unlike *S. dioica* and *S. latifolia*)
- 3 styles
- White, often tinged with pink
- Flowers 2-2.5 cm diameter
- Flowers open at night
- Bracts are leaf-like and narrowly lanceolate
- Pedicels 1/3 to 3 times longer than the calyx

Fruits

- Capsules have 6 long, very narrow teeth (unlike *S. dioica* and *S. latifolia*) that are curved backward at maturity
- Capsules are elliptic, narrow at the mouth and constricted at the base

Habitat: arable and disturbed sites

Distribution: Pacific maritime and interior boreal regions, including Kantishna, Healy, Kenai Peninsula, Anchorage, Skagway and McCarthy areas



Pink Family (Caryophyllaceae)

Bladder campion • Silene vulgaris

Invasiveness Rank: 42 points Species Code: SIVU

Description:

Short-lived perennial Glabarous to glaucous, rarely pubescent 20-80 cm tall Roots

Stout taproot

Stems

- Several to many
- Branched
- Decumbent to erect

Leaves

- Broadly oblong to oblanceolate or lanceolate, rounded at the base
- 2-8 cm long, 0.5-3 cm wide
- Sessile, almost clasping
- 2 leaves per node

Leaves are smaller towards the top of the plant, resembling bracts

Inflorescence

- Some plants have bisexual flowers, others have pistillate unisexual flowers
- 3 styles
- Flowers are 1.5-2 cm in diameter
- Petals are white, or tinged with pink, and twice as long as the calyx
- Calyx is pale green or occasionally purplish
- Pedicles 0.5-3 cm long

Fruits

- Capsules have 6 straight teeth, not contracted at the base or mouth (unlike *S. noctiflora*)
- Venation obscure

Habitat: roadsides, waste ground, gravel pits, shores, arable land

Distribution: Skagway; Dawson and the Yukon Territory





Pink Family (Caryophyllaceae)



Corn spurry • Spergula arvensis

Invasiveness Rank: 32 points	Species Code: SPAR

Description:

Annual Stems

- Branched from the base with branches erect or spreading
- Yellowish-green

Leaves

- Leaves are opposite but appear whorled
- 4 stipules per node (*Spergularia* species have 2 stipules per node)

Inflorescence

- Sepals and petals are free (not fused at the base)
- White
- 5 styles and capsule valves (unlike Spergularia species, which have 3 styles and capsule valves)

Fruits

Capsule with many roundish, dark seeds

Habitat: dry areas, woods, forests

Distribution: Pacific maritime and interior boreal regions; northern and easternmost location is by Chena Hot Springs, westernmost location is in Kodiak



Species Code: CHALA

Lambsquarters • Chenopodium album ssp. album

Invasiveness Rank: 37 points

Description:

Annual Stems

• Often turn reddish as the plant matures

Leaves

- Triangular with irregular lobes
- Green on top and white-mealy on the bottom
- Taste like spinach

Inflorescence

- Clustered in panicles
- Five tiny, greenish sepals

Fruits

 Seeds are black, shiny, circular, flattened, and enclosed in a thin, white, papery envelope

Habitat: disturbed soils in clearings, burns, river bars, waste places, and cultivated soil

Distribution: all three ecogeographic regions





Blite goosefoot • Chenopodium capitatum

Description:

Annual Hairless Succulent Leaves

Triangular

Inflorescence

- Clustered in ball-shaped, sessile heads that form interrupted spikes
- 3-5 fleshy sepals turn red at maturity

Fruits

- Bright red
- Seeds are black and lens-shaped

Habitat: disturbed areas, roadsides, waste areas, cultivated fields

Distribution: interior boreal



Common St. Johnswort • Hypericum perforatum

Invasiveness Rank: 52 points Species Code: HYPE

Description:

Perennial Stems

- Two-sided
- Rust colored

Leaves

- Sessile
- Opposite
- Oval
- Prominent veins
- Transparent dots; appears to be perforated when held up to the light
- · Black, glandular perforations on the margins

Inflorescence

152

- 2 cm across
- Bright yellow with purple dots along the margins
- Form flat-topped clusters
- 5 petals
- Sepals have dark dots
- Many stamens with yellow and purple tips

Habitat: roadsides, gravel pits

Distribution: southeast Alaska; also reported from Anchorage





St. Johnswort Family (Clusiaceae)

Field bindweed • Convolvulus arvensis

Invasiveness Rank: 56 points

Species Code: COAR4

Description:

Perennial forb Roots

• Rhizomes

Stems

• Trailing to twining

Leaves

- Alternate
- More or less arrowhead-shaped

Inflorescence

- Large and showy
- Funnel-shaped
- White-pink
- Borne singly or in pairs

Habitat: disturbed sites, fields, roadsides

Distribution:

- Interior boreal: Fairbanks
- Pacific maritime: Skagway, Haines, Ketchikan and vicinities



There are no native *Convolvulus* species in Alaska. However, when not in flower, this species can be confused with another non-native species, *Polygonum convolvulus* (black bindweed; see Polygonaceae section for description).

Polygonum convolvulus can be distinguished from Convolvulus arvensis by:

- A distinctly heart-shaped leaf base
- Flowers resemble those of knotweeds; they are small and reduced to white bracts

Morning Glory Family (Convolvulaceae)



Leafy spurge • Euphorbia esula

Invasiveness Rank: 84 points

Description:

40-80 cm tall Stems

- Light green
- Hairless
- Milky sap

Leaves

- Hairless
- Oval to lance-shaped
- Bluish-green, turning yellowish or reddish-orange at the end of the season

Inflorescence

- Bright green
- Yellow bracts

Habitat: waste areas, abandoned croplands, roadsides and other disturbed areas

Distribution: not yet recorded in Alaska; present near Dawson in the Yukon Territory



Cushion spurge • Euphorbia epithymoides

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Invasiveness Rank: not yet ranked	Species Code: EUEP

Although not native to Alaska, this ornamental plant is commonly used in gardens and sold in greenhouses. Flowers are brighter yellow and the plant is smaller (25-45 cm tall) than *E. esula*.

This plant has not yet been reported as invasive in Alaska or the Yukon Territory

Species Code: EUES

Traits of the Geraniaceae Family in Alaska:

- 5 petals and 5 sepals
- Mature fruit splits into segments, with one seed per segment, that twist or roll up on a central beak

Traits of *Geranium* species in Alaska:

- Leaves are generally palmate
- 5 sepals roll upwards at maturity and release seeds

Traits of Erodium species in Alaska:

- Pinnate leaves
- 5 sepals twist spirally at maturity; seeds remain attached

Redstem stork's bill • *Erodium cicutarium*

Invasiveness Rank: not yet ranked

Species Code: ERCI6

Description:

Leaves and stems

- Generally reddish
- Swollen nodes
- Leaves are pinnate and mostly basal

Inflorescence

- Umbels on long flower stalks, originating in the leaf axils
- 5 sepals are distinct, bristly, and have a needle-like tip
- 5 petals are red-violet, and have a claw with marginal hairs
- 5 styles are 2.5-5 cm long, persistent and twist spirally at maturity
- 5 carpels with sharp points at the base

Fruits

• Resemble a bird's beak at maturity

Habitat and distribution: has only been reported as a contaminant of nursery trees sold in Anchorage



There are no native species of Erodium in Alaska

Geranium Family (Geraniaceae)

Herb Robert • Geranium robertianum

Invasiveness Rank: 67 points Species Code: GERO

Description:

Annual Distinct unpleasant odor Roots

• Taproot

Stems

Hairy

Leaves

- Egg-shaped to pentagon-shaped
- Light green to reddish
- Palmate
- Lowermost leaves are deeply divided into 5 segments, and each segment is pinnately divided (unlike native *Geranium* species, which have palmate leaves that are not divided to the base)

Inflorescence

- Petals are pink to purple
- Sepals are glandular, hairy, and distinctly bristle-tipped

Fruits

• 5-parted capsules with styles fused to form a central column

Habitat and distribution: along roadsides and in yards in southeast Alaska



Eurasian watermilfoil • *Myriophyllum spicatum*

Invasiveness Rank: 90

Species Code: MYSP2

Description:

Roots

- Long, creeping rhizomes
- Many fibrous roots; develop from plant fragments

Stems

- Branched many times, long (1-2.5 m)
- Form olive-green to reddish mat in water

Leaves

- Submersed leaves 2-4 cm long, feather-like, in whorls of 4, square at the tip, usually 13-16 leaflet pairs per leaf
- Above water leaves 1-3 mm long, with smooth or toothed edges, growing along flower spikes with a leaf beneath each flower; shorter than flowers



· Leaves collapse around the stem when removed from water

Inflorescence

- Male and female flowers borne on separate plants
- Spikes of flowers emerge above water, 4-8 cm long
- Flowers are tiny; 4 petals on male flowers, very small to no petals on female flowers
- Flowers in axils of bracts; small bracts subtending flowers are as long or longer than broad, barely exceeding flowers

Fruits

- Up to 3 mm diameter, divided into 4 chambers
- Outer bottom surface of single seed chamber bumpy or prickly

Habitat: lakes, rivers, ponds Distribution: not yet reported in Alaska

Siberian watermilfoil • Myriophyllum sibiricum

Description:

Similar to *M. spicatum*, but with 6-11 leaflet pairs per leaf more widely spaced, stouter stems, leaves do not collapse when removed from water, produces winter buds, small bracts subtending flowers are broader than long and outer bracts do not exceed flowers, bottom surface of single seed chamber smooth of finely bumpy

Habitat: lakes, rivers, ponds Distribution: widespread throughout Alaska

Native *Myriophyllum sibiricum* and non-native *Myriophyllum spicatum* can be difficult to tell apart and may require DNA analysis to identify. They also hybridize, making identification difficult. The latter grows to the water's surface, then across, shading out other vegetation. Native species do not shade out other vegetation in this manner.

Canadian waterweed • *Elodea canadensis*

Invasiveness Rank: 79 points

Description:

Perennial

Freshwater aquatic forb Dies back in the winter and regenerates from belowground parts in the spring

Leaves and stems

- Dark green, crisp
- Whorls of 3
- 5-17 mm long, 1.8-5 mm wide (wider than E. nuttallii)
- Linear with blunt, rounded tips
- Recurved with minutely toothed margins
- Have bud-like shoots (unlike *E. nuttallii*)

Inflorescence

- Flowering plants are rare
- Solitary flowers arise from leaf axils on long (3-20 cm), thread-like stalks
- Male and female flowers are borne on different plants <u>Male flowers</u>
 - Longer (compared to *E. nuttallii*)
 - Male flower stalk separates from stems before or during flowering (unlike *E. nuttallii* which separates at the bud stage)
 - Consist of three petals and three sepals
 - Petals are white, 3.5-5 mm long and 0.3-0.7 mm wide
 - Sepals are green, elliptic, 3.5-5 mm long and 2-2.5 mm wide
 - Bracts are 6 mm or greater (<4 mm in *E. nuttallii*) <u>Female flowers</u>
 - Flowers are 2.4-2.8 mm long and 1.3-1.7 mm wide
 - Sepals are 2-3 mm long and 1 mm wide
 - Styles are 2.6-4 mm (<2 mm in *E. nuttallii*)

Fruits

158

- Capsules are spindle-shaped, 5-6 mm long, and 2-3.2 mm wide with 5-6 mm long beaks
- Lacking short hairs at base (unlike E. nuttallii)

Habitat: slow-moving or standing freshwater, mostly calcareous; grown as an aquarium plant

Distribution: in the Pacific maritime ecoregion *Elodea* species have been

recorded from Anchorage, the Kenai Peninsula, and Cordova and have been reported but not confirmed from Juneau; in the interior boreal ecoregion *Elodea* is present in Fairbanks



Tape-grass Family (Hydrocharitaceae)



Western waterweed • Elodea nuttallii

Invasiveness Rank: not yet ranked Species Code: ELNU2

Description:

Perennial

Freshwater aquatic forb

Overwinters as sunken prostrate shoots; in the spring it regenerates shoots which grow upward and branch upon reaching the water surface Leaves and stems

- Pale green and flaccid
- Whorls of 3 (however may appear as whorls of 6)
- 4-15 mm long, 1.7 mm wide (unlike *E. canadensis*, which are wider)
- Linear to lanceolate with pointed tips
- Often recurved with undulate margins
- Folded along the midrib
- Leaves lack bud-like shoots (unlike E. canadensis)

Inflorescence

Male flowers

- Male flower stalk separates from stem during the bud stage
- Bracts <4 mm (unlike *E. canadensis*, in which they are longer) <u>Female flowers</u>
- Styles <2 mm (unlike *E. canadensis*, in which they are longer)

Fruits

- Spindle-shaped, 4-4.6 mm
- Short hairs at the base (unlike *E. canadensis*)
- Lack an apical collar (unlike *E. canadensis*)

Habitat: lakes and rivers in still or slowing-moving water; mostly found in calcareous and/or eutrophic water

Distribution: in the Pacific maritime ecoregion *Elodea* species have been recorded from Anchorage, the Kenai Peninsula, and Cordova and have been reported but not confirmed from Juneau; in the interior boreal ecoregion *Elodea* species have been confirmed from Fairbanks



Tape-grass Family (Hydrocharitaceae)

Note on *Elodea* species:

E. nuttallii and *E. canadensis* have been known to form fertile hybrids in natural and laboratory environments (Cook and Urmi-Konig 1985, Ernst-Schwarzenbach 1945). Hybrids between these two species exhibit morphologically intermediate vegetative characteristics and are only distinguishable by their floral structures, which are rarely found. In the absence of floral structures, genetic techniques are often necessary to determine taxonomic identity. Both species share geographic range and are native to most of temperate North America.



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Brazilian waterweed • Egeria densa

Invasiveness Rank: not yet ranked Species Code: EGDE

Description:

Perennial

Grows underwater or sometimes floating

Spread vegetatively and reproduces from stem fragments Roots

• Fibrous; sometimes with white roots along the stem

Stems

• <3 m long, 1-3 mm diameter

Leaves

- Recurved
- Usually in whorls of 4 or sometimes 3-8, tightly spaced
- Bright to dark green
- 2-4 cm long, 2-5 mm wide
- Minutely toothed edges

Inflorescence

- Single-flowered
- Fragrant
- White with yellow center
- Three 7-9 mm long petals
- Flowers borne on slender stalks <6-8 cm long, emerging from the base of whorls; flowers float on water surface

Fruits

 Does not produce fruit or seeds in Alaska (reproduces vegetatively); only male plants have been observed outside of its native range (Brazil)

Habitat: shallow waters of lakes, ponds, sloughs, streams; aquarium plant

Distribution: not yet reported in Alaska but known to live temporarily under ice



Hydrilla • Hydrilla verticillata

Invasiveness Rank: 80 Species Code: HYVE3

Description:

Perennial

Spreads vegetatively from tubers, stem fragments, and turions (scaly overwintering buds)

Roots

- Fibrous rhizomes
- Small, peanut-like tubers on roots (unlike other similar-looking freshwater species)

Stems

• Branched

Leaves

- Linear, 6-20 mm long, 1-5 mm wide
- · Bright green with reddish midrib that usually has small spines
- Sharply toothed, visible without magnification (unlike other similarlooking freshwater species)
- Usually 5 leaves per whorl, sometimes 3-10

Inflorescence

- Single-flowered
- Female flowers have 3 white-translucent petals, 1-5 mm long, 4-8 mm wide, attached by a thin stalk to the stem tip
- Male flowers borne in leaf axils; detach and float freely

Fruits

• Spindle-shaped, 5-6 mm long; uncommon

Habitat: lakes, rivers, ponds, ditches; fresh or brackish waters; aquarium plant

Distribution: Not yet reported in Alaska



	Regrows from:	Leaves per node	Leaf shape	Leaf length	Leaf width	Leaf color/texture	
Elodea canadensis anadian waterweed ot reported from AK)	belowground parts	whorls of 3	Linear blunt/ rounded tips	5-17 mm	1.75-5 mm	dark green crisp minutely toothed recurved	
Elodea nuttallii Nestern waterweed	sunken pros- trate shoots	whorls of 3, but may appear as 6	linear/lanceolate pointed tips	4-15 mm	usually <1.75 mm	pale green flaccid undulate margins folded along midrib recurved	portmet individual con
yriophyllum spicatum Eurasian watermilfoil Iot reported from AK)	rhizome	whorls of 3-5, nodes 1+ cm apart	pinnate with >12 pairs of leaflet segments; flimsy	<2.5 cm	feathery	reddish-brown	
NATIVE <i>yriophyllum sibiricum</i> syn. <i>M. spicatum</i> ssp. <i>excalabances</i>) siberian watermilfoil	short rhizome	whorls of 3-4, nodes 1+ cm apart	pinnate with <12 pairs of leaflet segments; stiffer than Eurasian wa- termilfoil	>3 cm	feathery	purplish	inifeliweeviloeque. com
<i>Egeria densa</i> 3razilian waterweed)	roots at nodes; slender roots	whorls of 4-8, most often 4	Linear with acute tip	1-4 cm	2-5 mm	bright green	
Hydrilla verticillata (hydrilla)	tubers	whorls of 3-10, most often 5	Linear with acute tip	0.5-2 cm	2-4 mm	has large teeth along margin and midvein	

A comparison of freshwater aquatic forbs

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Other Families

Splitlip hempnettle • Galeopsis bifida Bristlestem hempnettle • Galeopsis tetrahit

Invasiveness Rank: 50 points

Species Code: GABI3, GATE2

Description:

Stems

- Square
- Swollen below nodes
- Bristly

Leaves

- Opposite, decussate
- Ovate
- Margins are broadly serrated
- Leaf base is wedge-shaped

Inflorescence

- In leaf axils
- Purplish-pink or white
- Pubescent
- Middle lobe is notched



Habitat: disturbed sites, roadsides, forests; moist soil

Distribution: widespread in all three ecogeographic regions; the Seward Peninsula hosts the westernmost and northernmost infestations

Some experts treat these as separate species (e.g. USDA Plants Database, www.itis.gov), while others consider them varieties of *G. tetrahit* (e.g. Hitchcock et al. 1984)

Traits used to distinguish between G. bifida and G. tetrahit

- Galeopsis bifida has smaller flowers than Galeopsis tetrahit
- Galeopsis bifida has a cleft in the lower petal lip (unlike G. tetrahit)

However, in Alaska intergradations of these traits have been observed among plants and even among flowers on a single plant

Other differences between these plants have been claimed, but there is no consensus among experts on their validity

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White deadnettle • *Lamium album*

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Invasiveness Rank: 40 points	Species Code: LAAL

Description:

Leaves

- Soft (not stinging, unlike similar-looking native Urtica dioica)
- Ovate; rounded to heart-shaped base, tapering to a point
 - Coarsely and/or doubly toothed

Inflorescence

- White
- Consist of two lips with a wide-open "mouth" between them; the upper lip is hooded and hairy, and the lower lip is broad and flat

Habitat: waste places, fields, forest edges

Distribution: Pacific maritime and interior boreal, including, Skagway, Glacier Bay National Park, southeast Alaska and Anchorage





Stinging nettle • Urtica dioica

Description:

Causes stinging pain when touched on the leaves or stem Leaves

- Serrated (more so than similar-looking Lamium album)
- Heart-shaped to rounded base

Inflorescence

- Small, greenish, catkin-like clusters
- Prominent stipules 5-15 mm long

Habitat: stream banks, thickets, meadows; disturbed areas with moist, rich soils

Distribution: Pacific maritime and interior boreal



Purple loosestrife • *Lythrum salicaria*

Invasiveness Rank: 84 points

Description:

Annual to perennial Leaves

Opposite
Inflorescence

- Pink
 - Filik
 E notol
 - 5 petalsDense terminal spikes
- Fruits
- Short capsules, 4 mm long

Habitat: moist, wetland habitats; garden escapee

Distribution: planted in Anchorage; Juneau; reported but not confirmed from Fairbanks



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Lythrum salicaria superficially resembles native *Chamerion angustifolium* (fireweed). However, *Chamerion angustifolium* has the following characteristics:

- 4 petals per flower (Lythrum salicaria has 5)
- Long capsules (4-9.5 cm) with plumed seeds
- Grows in comparatively dry sites, disturbed and burned areas, and natural meadows throughout Alaska

Loosestrife Family (Lythraceae)

Species Code: LYSA2

Common eyebright • Euphrasia nemorosa

Invasiveness Rank: 42 points

Description:

Small, 10-40 cm tall Hairy, annual Partly parasitic on the roots of other plants Stems

Often branched

Leaves

- Small
- Deep green

Inflorescence

- Small
- White
- Open, trumpet-shaped
- Lower lip is divided, with purple lines and a yellow blotch

Habitat: disturbed sites, including trails and roadsides

Distribution: Pacific maritime and interior boreal; recorded from Dyea







Traits of native Euphrasia species in Alaska:

Euphrasia mollis and *Euphrasia disjuncta* are native to Alaska. They can be distinguished from non-native *Euphrasia nemorosa* by their corolla which is white with purple lines, a lavender upper lip, and no yellow blotch.

Habitat: grassy heaths, wet meadows, moist river gravel, bogs, open woods; chalky and acidic soils

Distributions:

- E. mollis: coastal southern Alaska including islands; subalpine meadows
- E. disjuncta: continental Alaska and the Yukon; open soil
- 168 Orobanchaceae

Species Code: EUNE3

Common plantain • Plantago major

Invasiveness Rank: 44 points Species Code: PLMA2

Description:

Annual, biennial or perennial Leaves

- Ovate •
- 3-5 prominent parallel ribs; the vascular bundles of these veins stay intact when the leaves are damaged
- Smooth margins
- Basal rosette only

Inflorescence

- Small and clustered in spikes
- Greenish-white, turning brown

Fruits

- Ovate capsule that splits around the middle
- >6 seeds per capsule

Habitat: cultivated fields, lawns, roadsides, waste areas, open woods and valleys; mid-montane locations

Distribution: widespread across all three ecogeographic regions





Most botanists specializing in northern floras think there were, or still are, native populations of *Plantago major* (Oldham pers. comm.)

Plantain Family (Plantaginaceae)

Gι	uide t	o Plantago species	
•	Leav	es linear and somewhat fleshy	<i>Plantago maritima</i> ssp. <i>juncoides</i> (goose tongue)
	•	Leaves are glabrous and almost linear Found along seashores and coastal mars Mostly found in the Pacific maritime region	hes n
•	Leav	es lance-shaped to oval	
	• E	sase of leaves are distinctly heart-shaped, + seeds per capsule	<i>Plantago major</i> (common plantain)
	• E	Base of leaves are not heart-shaped	Generally native, with the exception of non-native <i>P. lanceolata</i> , which is uncommon and can be distinguished by slender petioles, somewhat hairy leaves, a thin root and bracts with a slender appendage; grows in waste places
		Jative <i>Plantago macrocarpa</i> (seashore planta Stout root Leaves glabrous or almost glabrous Found in wet areas, beaches South coastal Alaska	in)
		 Jative Plantago canescens (grey pubescent p Leaves are erect and narrowly lance-shap Leaves are hairy to ciliate on both sides 2-4 seeds per capsule Found on grassy slopes, rocky outcrops, a Interior boreal and arctic-alpine regions 	plantain) bed and open soil

Yellow toadflax • Linaria vulgaris

Invasiveness Rank: 69 points

Species Code: LIVU2

Description:

<1 m tall Leaves

- Linear to narrowly lance-shaped
- Bluish-green

Inflorescence

- Many small, snapdragon-like flowers arranged in spikes
- Light yellow with an orange throat
- Long, straight spurs, nearly as long as the corolla

Habitat: roadsides, waste places

Distribution: very common in the interior boreal region and common in the Pacific maritime region; northernmost infestation is in Coldfoot, westernmost infestations are from Dillingham and near Aniak







There are no native species in Alaska that have similar flowers

Plantain Family (Plantaginaceae) 171

Dalmation toadflax • *Linaria dalmatica*

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Invasiveness Rank: 58 points	Species Code: LIDA

Description:

Similar to L. vulgaris, but has egg-shaped leaves

Distribution: not yet recorded in Alaska, but present on the Alaska Highway at the Yukon-British Columbia border



A comparison of Linaria species

	Leaves	Flowers	Flower throat	Longevity	Distribution
<i>Linaria</i> <i>vulgaris</i> (yellow toadflax)	linear 2.5-5 cm x 1-5 mm not clasping	yellow 1.5-3.5 cm	orange	perennial	Widespread in Alaska
<i>Linaria</i> <i>dalmatica</i> (dalmation toadflax)	egg-shaped to lan- ceolate 3-6 cm x 10-20 mm clasping at base	yellow 3-5 cm	white or orange- yellow	perennial	Canada
<i>Linaria</i> <i>maroccana</i> (Moroccan toadflax)	linear 4 cm long	usually purple 2-3.8 cm	small whitish patch	annual	Anchorage
<i>Linaria</i> <i>pinifolia</i> (pineneedle toadflax)	linear to elliptic 2-4 cm long	purple 1.5-1.8 cm	yellow with pur- ple veins	annual	Anchorage



Linaria moroccana

Purple foxglove • Digitalis purpurea

Invasiveness Rank: 51 points

Description:

Leaves

- Soft and hairy
- Lanceolate to egg-shaped
- Toothed

• Basal leaves can be up to 30 cm long Inflorescence

- Purple with purple mottling inside
- Bell-shaped
- Borne on one side of a spike

Habitat: garden escapee

Distribution: Pacific maritime - southeast Alaska



Plantain Family (Plantaginaceae)



Tiny trumpet • Collomia linearis

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Invasiveness Rank: not	yet ranked	Species Code: C	OLI2

Description:

Plant is sticky due to secretions from the seeds Stems

- Slightly hairy
- Simple or branched toward the top

Leaves

- Lance-shaped and narrow
- Alternate

Inflorescence

- Small, 8-15 mm
- Pale purple to white
- 5 short lobes extending from a long tube
- Borne in the axils of upper leaves, forming a dense cluster

Habitat: dry, disturbed sites

Distribution: along roads in the interior boreal ecogeographic region



Distinguishing the Ranunculus genus (buttercups) from the *Geum* (avens) and *Potentilla* (cinquefoil) genera in Alaska:

Diagnostic traits for *Ranunculus* species in Alaska

- Leaves form a sheath at the base
- Sepals look like petals; both are yellow
- · Sepals are deciduous, fall off the flower
- Zero to many petals
- No stipules
- Stamens are inserted in the receptacle, free from the calyx

Diagnostic traits for *Geum* and *Potentilla* species in Alaska

- Yellow petals
- Leafy, green sepals often persist at fruiting
- Always have 5 petals
- Often have stipules
- Stamens are borne on calyx or on rim of hypanthium





Potentilla diversifolia Yellow petals and green sepals (native)



Ranunculus acris Yellow petals and sepals (not native)

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Buttercup Family (Ranunculaceae)

Creeping buttercup • Ranunculus repens

Invasiveness Rank: 54 points Species Code: RARE3

Description:

Perennial Stems

- Leaves all along stem, not just at the base
- Horizontal growth habit due to railing vegetative stems (runners and stolons) that root at nodes

Leaves

 Basal leaves are divided all the way to the petiole into three distinct leaflets (unlike all other non-aquatic buttercups with leafy stems and runners)

Inflorescence

- Few, showy
- Bright yellow
- 5-10 petals 6-10 mm in length (unlike native *R. macounii*, which has petals <6 mm)

Fruits

 Spherical fruiting head (unlike native *R. macounii*, which has an oval fruiting head)

Habitat: disturbed soils, gardens, croplands; semi-aquatic communities, including swamps, ditches, and margins of ponds and rivers (not aquatic like some native *Ranunculus* species)

Distribution: Pacific maritime and interior boreal regions; westernmost locations are by Lake Iliamna and in Kodiak, northernmost location is in the vicinity of Healy



Tall buttercup • Ranunculus acris

Invasiveness Rank: 54 points Species Code: RAAC3

Description:

Biennial to short-lived perennial Tall

Stems

• Erect, no runners (unlike *R. repens* and some native species, which are trailing and have runners)

Leaves

- Basal leaves are deeply lobed (unlike native tall, erect, *Ranunculus* species, which have basal leaves that are kidney-shaped, round, or 3-parted)
- Basal leaves have soft hairs on both sides (unlike native, erect *Ranunculus* species that also have deeply lobed basal leaves but no hairs on the leaves)
- Basal leaves are divided into 3-5 parts (*R. repens* leaves are divided into 3 separate leaflets)

Inflorescence

- Large, 1.5-3 cm across (many native *Ranunculus* species have small flowers, <1.5 cm across)
- Stalked
- 5 shiny yellow petals and 5 sepals

Fruits

• Fruit has a short, straight beak, about 0.5 mm (many native *Ranunculus* species have a beak that is long, slender or hooked)

Habitat: grasslands, woodlands; occasionally sand dunes

Distribution: common in the Pacific maritime region; few infestations in the interior boreal region, including in the vicinity of Chena Hot Springs, Talkeetna, and the Mat-Su Valley





Lady's mantle • Alchemilla mollis

Invasiveness Rank: 56 points

Species Code: ALMO12

Description:

Perennial 20-80 cm tall Leaves

- Densely hairy on stems and leaves
- Grey-green
- Circular and palmately lobed with 9-11 lobes
- Each lobe has 15-19 inwardly curved, slightly pointed teeth
- <10 cm wide

Inflorescence

- Loose, spreading cymes at the ends of stems
- Petals absent
- Sepals yellow-green, star-shaped
- <6 mm wide

Fruits

• Hips are sparsely hairy and contain small, ovoid seeds

Habitat: disturbed sites, roadsides

Distribution: Pacific maritime - southeast Alaska only



European bird cherry • Prunus padus

Invasiveness Rank: 74 points

Species Code: PRPA5

Description:

Tree Purple-grey bark Leaves

- Long stalks on leaves
- Obovate
- Sharply serrated
- Two greenish glands at the top of the petiole, not always easily
 visible (similar to *P. virginiana*)

Inflorescence

- Whitish
- Clusters of long, showy, terminal spikes

Fruits

- Black, ovoid
- Toxic; known to have killed moose calves in Anchorage

Habitat: ornamental that escapes cultivation and spreads quickly in undisturbed forests. Along riverbanks, it forms single-species stands, replacing native trees and shrubs. Spreading into subalpine areas in Anchorage. A few have been founding growing in muskeg.

Distribution:

- Pacific maritime: Juneau (Jensen Arboretum)
- Interior boreal: abundant in Anchorage, localized infestations in or near Palmer, Talkeetna, Fairbanks, Delta Junction, and Fort Yukon







Rose Family (Rosaceae)


Other Families

Chokecherry • Prunus virginiana

Invasiveness Rank: 74 points Species Code: PRVI

Traits that distinguish *Prunus virginiana* from *Prunus padus*:

- When the trees are in flower the hypanthium of *Prunus virginiana* is hairless; in *P. padus* it is pubescent
- In the summer the foliage of *P. virginiana* turns dark red;
 P. padus stays green throughout the growing season

Habitat: ornamental that escapes cultivation; similar habitat as *P. padus*

Distribution: only recorded in Anchorage and Palmer



Sweet cherry • Prunus avium

syn. Cerasus avium

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Invasiveness Rank: not yet ranked	Species Code: PRAV

Description:

Tree Peeling, red-brown bark Leaves

- Alternate
- Oval and pointed
- Finely serrated
- Green on top and somewhat downy beneath
- 2 conspicuous red glands at the top of the petiole (see image under *P. padus* description)

Inflorescence

Loose cluster of 2-6 flowers

Fruits

• Yellow, turning dark red

Habitat and distribution: ornamental that may escape cultivation; reported from Sitka



Rose Family (Rosaceae)

Other Families

European mountain ash • Sorbus aucuparia

Invasiveness Rank: 59 points Species Code: SOAU

Description:

Tree

Stems

 Young twigs, winter buds and branches of inflorescence are whitishpubescent

Leaves

- Compound, 11-15 leaflets per leaf
- Leaflets are white-hairy beneath

Inflorescence

• Clusters of many small, white flowers

Fruits

• Bright, deep orange

Distribution: planted as an ornamental in south central Alaska

- Pacific maritime: throughout southeast and south coastal Alaska, including the Kenai Peninsula and west to Manokotak (near Dillingham)
- Interior boreal: few instances; one in Palmer and at McKinley Park



Native Sorbus species are shrubs Non-native Sorbus aucuparia is a tree



Other Families

Himalayan blackberry • Rubus armeniacus

syn. Rubus discolor

Invasiveness Rank: 77 points Species Code: RUDI2

Description:

Shrub

Stems

- Thick, up to 2 cm wide
- Clambering to erect, then trailing and rooting at the nodes
- Thorns are stout, recurved, <1 cm long (unlike *R. idaeus*, which has smaller, prickly thorns)

Leaves

- Most often 5 leaflets, with 3 leaflets in floral shoots (unlike *R. spectabilis*, which always has 3 leaflets)
- White-hairy underneath
- Lightly toothed (unlike *R. spectabilis*, which has serrated margins)

Fruits

Fruit is solid on the inside, like other blackberries; not hollow like raspberries

Habitat and distribution: roadsides and

disturbed areas in southeast Alaska; reported from Ketchikan and Sitka



This species is distinctly different from native *Rubus* species because it has much bigger leaves and is taller than native species

Rose Family (Rosaceae)

Rugosa rose • *Rosa rugosa*

Invasiveness Rank: 72 points

Description:

Shrub 1.2-1.8 m tall Forms dense thickets Tolerates salty environments Roots

Spreads by extensive woody rhizomes

Stems

- Twigs are stout and covered in thick, straight, sharp thorns
- Young stems are green, later turning brown

Leaves

- Alternate
- Pinnately compound with 5-9 ovate to elliptical leaflets
- Leaflets are 5-13 cm long, including the petiole
- Obvious stipules at the base of the petiole
- Dark green, glabrous, and wrinkled on top; slightly waxy and pubescent underneath
- Serrated margins

Inflorescence

- 4-9 cm across
- White or pink
- Single or double flowered varieties

Fruits

• Fruit is a rose hip that is fleshy, shiny and deep red

Habitat: In northern Europe (Denmark, Finland, Norway) this salt-tolerant species has escaped cultivation and is invading coastal habitats, where it can colonize dune environments and replace native vegetation

Distribution: southeast Alaska; greenbelts in Anchorage





Shared traits between native *Rosa* species and non-native *Rosa* rugosa:

- Form thickets
- Spread from extensive rhizomes

Distinguishing characteristics of native Rosa species:

Rosa acicularis (prickly rose)

- Small flowers, 3.5-5 cm across
- Underside of leaflets are sparsely hairy
- Thin, needle-like thorns

Distribution: south central, interior, and part of arctic alpine Alaska

Rosa nutkana (Nootka rose)

- Few short, flattened thorns
- No thorns on upper parts
- Distribution: southeast Alaska

Rosa woodsii (Wood's rose)

- Leaflets are glabrous on both sides
- Pedicles are glabrous
- Pairs of thorns mostly at the base of leaves and stems

Johnny-jumpup • Viola tricolor

Invasiveness Rank: 34 points Species Code: VITR

Description:

Annual or biennial

Stems

• Branched from the base

Leaves

- Elongate
- Roundly-toothed

Inflorescence

- Purple and yellow on the same flower; usually darker at the top
- 5-parted
- Borne singly from leaf axils

Fruits

- Capsule with 3 valves
- Dark brown seeds

Habitat: garden escapee

Distribution: Pacific maritime and interior boreal regions



Knotweed and Dock Family (Polygonaceae)

Common characteristics of Polygonaceae genera:

- Membranaceous sheaths where the leaf meets the stem
- Alternate, simple leaves
- · Flowers are small, perfect and regular
- Flowers borne in spike-like racemes, panicles or axillary clusters
- No petals, but with 3-6 sepals that sometimes resemble petals, referred to as tepals (tepals are defined as modified leaves making up the outer part of a flower; this term is often used when petals and sepals are indistinguishable)
- Fruit is an achene

Additional characteristics shared by Fallopia and Rumex species:

- Leafy stems
- Leaves are entire
- Flowers do not have involucral bracts



Knotweeds (membranaceous sheath at the leaf base) 189

Differences between Fallopia and Rumex species

Fallopia species (knotweeds):

- Perennial or annual
- Mostly terrestrial, few aquatic
- Swollen joints
- 5 sepals often resemble petals;sepals are the same size and join at the base
- Achenes are lense-shaped or triangular







Rumex species (docks, sorrels):

- Mostly perennial •
- Some aquatic
- Glabrous
- Flower consists of 6 segments; at maturity, the inner 3 enlarge to form valves enclosing the achene
- Achenes are 3-angeled
- Sometimes the achene includes a grain-like tubercle



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Knotweeds (membranaceous sheath at the leaf base)

Japanese knotweed • Fallopia japonica syn. Polygonum cuspidatum

Invasiveness Rank: 87 points

Description:

Perennial Up to 2.7 m tall Roots

• Long, creeping rhizomes

Stems

- Bamboo-like stems
- Zig-zag pattern

Leaves

- 5-15 cm long
- Leaf base is flat or tapering (unlike *F. sachanlinensis*, in which they are heart-shaped)



Species Code: FAJA2

- Lower leaf surface has minute hairs along the veins, less than 0.1 mm (unlike *F. sachalinensis*, which has long wavy hairs along veins)
- Hairs are blunt-tipped and scabrous

Inflorescence

- Greenish-white
- In leaf axils and at the end of stems
- 6 tepals, outer 3 are winged (unlike *Persicaria wallichii*, which has no wings)

Fruit

- 3-sided
- Black, shiny

Habitat: moist habitats, waste places, right-of-ways, old homesites, neglected gardens

Distribution: throughout southeast Alaska, Kodiak



Knotweeds (membranaceous sheath at the leaf base) ¹⁹¹

Giant knotweed • **Fallopia sachalinensis** syn. Polygonum sachalinense

Invasiveness Rank: 87 points

Species Code: FASA3

Description:

Perennial 2-4 m tall Roots

Rhizomes

Stems

- Thick and less mottled relative to F. japonica and F. xbohemica
- Clustered, erect, sparingly branched
- Glabrous, glaucous

Leaves

- Ovate-oblong
- 15-30+ cm long, 7-25 cm wide
- Leaf bases are heart-shaped (unlike *F. japonica*, which are flat or tapering)
- Lower leaf surface has long, wavy hairs along veins, 0.2-0.6 mm (unlike *F. japonica* and *F. xbohemica*, which have hairs <0.1 mm)
- Petiole 1-4 cm long

Inflorescence

- In axils, panicle-like, 3-8 cm
- Greenish-white
- Outer 3 tepals have wings (unlike *Persicaria wallichii*, which has no wings)

Fruit

Brown, shiny, smooth

Habitat: disturbed sites

Distribution: only 2 known occurrences in Alaska – near Ketchikan and in Kodiak



¹⁹² Knotweeds (membranaceous sheath at the leaf base)

Bohemian knotweed • *Fallopia xbohemica* syn. *Polygonum xbohemicum*

Invasiveness Rank: 87 points

Species Code: POBO10

Description:

Hybrid of *F. japonica* and *F. sachalinensis* Perennial 1.5-2.5 m tall

Roots

Rhizomes

Stems

- Clustered, erect, branched many times
- Glabrous, glaucous

Leaves

- Ovate, bases are flat to heart-shaped
- 5-25 cm long, 2-10 cm wide
- Petioles 1-3 cm long
- Lower leaf surface is covered with fine, soft hairs along the veins



• Hairs are very short (<0.1 mm), with a triangular base and an acute tip (unlike *F. japonica*, in which hairs are blunt-tipped and scabrous; unlike *F. sachalinensis*, in which hairs are long and wavy)

Inflorescence

- At the ends of branches or in axils; erect or spreading, resembling a panicle or raceme, 4-12 cm long
- Greenish-white, white to pink
- Outer 3 tepals are winged (unlike *Persicaria wallichii*, which has no wings)

Fruits

- Dark brown, shiny, smooth
- 2.6-3.2 mm long

Distribution: one population in downtown Anchorage; multiple infestations in and around Juneau



This species is distinguished from its parent species most reliably by the hair along veins on the underside of leaves; these are easiest to see on new leaves.

Black bindweed • Fallopia convolvulus

syn. Polygonum convolvulus

Invasiveness Rank: 50 points Species Code: FACO

Description:

Annual Herbaceous and climbing 0.5-1 m Roots

Thin but deep

Stems

Sometimes have a reddish tinge

Leaves

- · Ovate to arrow-shaped, with heart-shaped base
- Backward-pointing basal lobes
- Long petioles
- 2-6 cm long, 1-4 cm wide

Inflorescence

- Small and white or greenish-white
- In racemes or clustered in axils

Fruits

• Triangular achene, 3-4 mm long

Habitat: common in cultivated fields, gardens, orchards; also found in waste areas, thickets, roadsides; occasionally present on riverbanks and in pastures

Distribution: all three ecogeographic regions, but only one population documented from the arctic-alpine region, in Aniak. The northernmost infestation is on the Steese Highway near Chatanika. There is a remote infestation at the Kantishna Roadhouse in Denali National Park





Knotweeds (membranaceous sheath at the leaf base)

Comparison of *Fallopia convolvulus* (black bindweed) and *Convolvulus arevensis* (field bindweed, see description under Other Families)

Roots

- F. convolvulus is an annual with thin but deep roots
- C. arvensis is a perennial with rhizomes

Leaves

- Both have arrow-shaped leaves
- F. convolvulus has heart-shaped leaf bases
- C. arvensis has straight leaf bases

Flowers

- *F. convolvulus* flowers are small and reduced to white bracts, resembling other knotweeds
- *C. arvensis* are large and funnel-shaped

Sheaths

- *F. convolvulus* has membrane-like sheaths where the leaf stalk joins the stem, resembling other knotweeds
- C. arvensis does not have membrane-like sheaths

		Knotweed and Dock Family (Polygonaceae				
	Fruit	dark brown, shiny, smooth, 2-3.5 cm long	brown, shiny, smooth	dark brown, shiny, smooth, 3 mm long	triangular achene	
	Inflorescence	greenish-white at end of branches or in axils erect/spreading 4-12 cm long outer 3 tepals are winged	greenish-white panicle-like, in axils 3-8 cm long outer 3 tepals have wings	greenish-white/pink at ends of branches or in axils erect/spreading 4-12 cm long outer 3 tepals are winged	white to greenish- white in racemes or clustered in axils	
	Under leaf hairs	minute hairs along veins blunt-tipped, sca- brous, <0.1 mm	wavy hairs along veins long (0.2-0.6 mm)	fine, soft, hairs along veins short (<0.1 mm) hairs have triangular base and acute tip	Not hairy	
	Leaves	5-15 cm long leaf base flat or tapered petiole 1-3 cm	15-30+ cm long ovate/oblong leaf base heart-shaped petiole 1-4 cm long	5-25 cm long ovate leaf base flat to heart- shaped petioles 1-3 cm long	ovate to arrow-shaped leaf base heart-shaped 2-6 cm long petioles 0.5-5 cm long	
	Stems	zig-zagged bamboo-like	somewhat mottled clustered, erect sparingly branched glabrous, glaucous	clustered, erect branched many times glabrous, glaucous	climbing sometimes with reddish tinge	
	Roots	rhizomes	rhizomes	rhizomes	no rhizomes	
	Height	2.7 m	2-4 m	1.5-2.5 m	0.5-1 m	
	Longevity	perennial	perennial	perennial	annual	
	10000	Fallopia japonica (Japanese knotweed)	Fallopia sacha- linensis (Giant knotweed)	Fallopia xbohemica (Bohemian knotweed)	Fallopia convolvulus (Black bindweed)	
	100	Knotweeds (me	embranaceo	us sheath at the lea	t base)	

A comparison of *Fallopia* species

Prostrate knotweed • Polygonum aviculare

Invasiveness Rank: 45 points

Species Code: POAV

Description:

Annual

Stems

- Trailing
- <1 m long
- Silvery papery sheaths at leaf bases

Leaves

- Green to bluish-green to gray-green
- Leaves linear to oblong
- Stem leaves are 1-4 times longer than branch leaves; largest leaves are 2.5-6 cm long
- Sessile or with short petiole

Inflorescence

- 3-6 flowers clusters in the axils of reduced upper leaves
- Tepals are reddish brown with white, pink, or red margins
- Tepals resemble petals and are not keeled

Fruits

- Achenes are dull and mostly included within the calyx
- 2.2-3 mm long
- Dark brown

Habitat and distribution: human and naturally disturbed sites in all three ecogeographic regions



Knotweeds (membranaceous sheath at the leaf base)

Leathery knotweed • Polygonum achoreum

Invasiveness Rank: not yet ranked Species Code: POAC3

Description:

Annual 50-70 cm tall Stems

• Prostrate to ascending

Leaves

- Light green or yellowish-green
- Oval, obovate, or elliptic with a rounded tip
- Stem leaves are 1-3 times longer than branch leaves
- Short petiole

Inflorescence

- Clusters in the axils all along the stem
- Tepals are yellow-green with a margin that is occasionally pinkish
- Margins appear keeled (unlike *P. aviculare*)

Fruits

Achenes are dull, triangular

Habitat and distribution: only reported at Clam Cove in the Cook Inlet, and in Eagle on the Yukon River



Fowler's knotweed • Polygonum fowleri

Description:

More erect and shrubby relative to non-native *Polygonum* spp. Annual 5-50 cm tall

Stems

- Branched from the base
- Sometimes zig-zagged
- Prostrate to ascending

Leaves

- Light green or sometimes purple-tinged
- · Elliptic to obovate, somewhat succulent
- 8-30 mm long, 4-15 mm wide
- Middle stem leaves are 1-3 times longer than branch leaves
- Petiole 2-7 mm

Inflorescence

- In axils
- Tepals are green with white to pink margins
- Not keeled

Fruits

- Olive-brown to dark brown, ovate
- Shiny

Habitat: stream banks, and sandy or gravelly seashores

Distribution: south coastal and western Alaska, including southeast Alaska, near Anchorage, in Kodiak, and on the Alaska and Seward Peninsulas



USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 660.

Knotweeds (membranaceous sheath at the leaf base)

Alaska wild rhubarb • Polygonum alaskanum

Description:

Perennial <2 m tall Glabrous

Roots

- Woody rhizome
- Crown has many branches

Stems

Hollow

Leaves

- Sessile or with very short petiole
- Lanceolate to lanceolate-oval
- 5-20 cm long
- Wavy margins
- Dark green above, pale beneath

• Pale brown stipules 1.5-2 cm long Inflorescence

- White
 - Open panicle with many branches

Fruits

• Achenes ovate, triangular in cross-section

Light brown
 Habitat and distribution: common in the interior boreal region along





Knotweeds (membranaceous sheath at the leaf base)



	Achene	dull dark brown	dull triangular	olive-brown/ dark brown ovate	light brown triangular in cross section ovate
	Inflorescence	clustered in axils of reduced upper leaves tepals reddish brown with white/pink/red margins flowers in axils flowers in axils margins appear keeled tepals green with white/pink thargins appear keeled		flowers in axils tepals green with white to pink margins not keeled	open panicle with many branches white
	Leaves	bluish to gray green linear/oblong stem leaves (2.5-6 cm) longer than branch leaves sessile or with short petioles	light or yellowish-green ovate/obovate/elliptic rounded tip 8-30 mm long stem leaves longer than branch leaves short petiole	light green to purplish obovate/elliptic 8-30 mm long middle stem leaves longer than branch leaves somewhat succulent petiole 2-7 mm	dark green above, pale beneath lanceolate 5-20 cm long wavy margins stipules 1.5-2 cm more or less sessile
1	Stems	Trailing <1 m long	prostrate to ascending	erect and shrubby relative to non- natives stems sometimes zig-zagged	wolloh
	Height	prostrate	50-70 cm	5-50 cm	<2 m
	Longevity	annual	annual	annual	perennial
		Polygonum aviculare (prostrate knotweed)	Polygonum achoreum (leathery knotweed)	NATIVE Polygonum fowleri (Fowler's knotweed)	NATIVE Polygonum alaskanum (Alaska wild rhubard)

A comparison of *Polygonum* species

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Knotweed and Dock Family (Polygonaceae)

Himalayan knotweed • Persicaria wallichii

syn. Polygonum polystachyum

Invasiveness Rank: 80 points

Description:

Perennial <1.8 m tall Roots

• Creeping rhizomes

Stems

- Ribbed
- Red-brown
- Erect and branching

Leaves

- Alternate
- Lance-shaped
- 9-22 cm long
- Long-tipped (unlike the three nonnative *Fallopia* spp., which are indistinctly-tipped)
- Leaf bases are flat or heartshaped
- Membranaceous sheaths are redbrown and 1-4 cm long

Inflorescence

- Wide and spreading
- White-pink (unlike the three non-native *Fallopia* spp., which have greenish-white tepals)
- 6 tepals without wings (unlike the three non-native *Fallopia* spp., which have wings on the outer three tepals)

Habitat: moist sites, disturbed sites, roadsides, fields, waste areas; in the

Pacific Northwest it is known to establish in areas disturbed by river action or flooding

Distribution: southeast Alaska in the vicinities of Ketchikan, Metlakatla, and Canada's Queen Charlotte Islands (also known as the Haida Gwaii)





Species Code: PEWA18

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Knotweeds (membranaceous sheath at the leaf base)

Curlytop knotweed • Persicaria lapathifolia syn. Polygonum lapathifolium

Invasiveness Rank: 47 points Species Code: POLA4

Description:

Annual 10-20+ cm tall Stems

- Ascending or decumbent
- Branch near the base
- Sheath margins are smooth and glabrous

Leaves

- Lanceolate to elliptic
- 2-6+ cm long
- Hairy underneath
- Scabrous margins

Inflorescence

- Arching or nodding, at the ends of branches or in axils
- Tepals are greenish to pale pink to whitish

Fruits

• Achenes are lens-shaped, light brown, shiny

Habitat: wet lake edges

Distribution: southeast Alaska, Kodiak, Kenai Peninsula, Anchorage, Mat-Su Valley, Talkeetna



Spotted ladysthumb • Persicaria maculosa

syn. Polygonum persicaria

Invasiveness Rank: 47 points	Species Code: POPE3

Description:

Annual 30-100 cm tall Stems

- Erect to ascending
- Sheath margins have bristly hairs

Leaves

- Often have dark spots on top
- Lanceolate to elliptic to oblong
- 3-15 cm long

Inflorescence

- Erect spikes at the ends of branches or in axils
- Tepals are deep pink to purplish, 2.5 mm long

Fruits

- Achenes 3-angled or lens-shaped
- 2.5-3 mm long

Habitat: waste places

Distribution: Kodiak, Kenai Peninsula, Anchorage, Mat-Su Valley, north of Talkeetna along the Parks Highway



Knotweeds (membranaceous sheath at the leaf base)

	Knotweed and Dock Family (Polygonace				
	Achene	3-angeled, brown, dull 2-2.5 mm long	lens-shaped light brown shiny	3-angled or lens-shaped 2.5-3 mm long	
	Inflorescence	wide/spreading white-pink	arching/nodding at the ends of branches or in axils greenish to pale pink/white	erect spikes at the ends of branches or in axils deep pink to purplish	
	Leaves	lanceolate bases flat or heart-shaped have a distinctly long tip 9-22 cm long hairy underneath	lanceolate/elliptic bases wedge-shaped 2-6+ cm long hairy underneath scabrous margins	lanceolate/elliptic/oblong bases tapered or wedge- shaped 3-15 cm long often have dark spots on top smooth or with short stiff hairs	
cies	Stems	ed-brown ibbed erect and branching sheaths are red-brown and 1-4 cm long	ascending to decumbent oranch at base sheaths are smooth and glabrous	erect/ascending sheath margins have bristly nairs	
aria spe	Roots	creeping rhizomes			
Persic	Height	1.8 m	20 cm	30-100 cm	
arison of	Longevity	perennial	annual	annual	
A compé		Persicaria wallichii (Himalayan knotweed)	Persicaria Iapathifolia (Curlytop knotweed)	Persicaria maculosa (Persicaria maculosa)	
	Knoty	veeds (mem	branaceous shea	ath at the leaf base	205

Common sheep sorrel • Rumex acetosella

Invasiveness Rank: 51 points Species Code: RUAC3

Description:

Leaves

 Basal leaves are arrow-shaped and narrow with lateral lobes pointing upwards or outwards

Inflorescence

- Reddish loose panicle
- Male and female flowers on separate plants

Fruits

• Three valves surrounding the fruit are not longer than the fruit

Habitat: roadsides, cultivated areas, waste places; shows up in relatively remote areas

Distribution: common in Pacific maritime and interior boreal regions; also present in southwest Alaska



Docks (fruits enclosed by 3 valves)



Garden sorrel • Rumex acetosa ssp. alpestris

Description:

Roots

Short rhizome

Leaves

 Basal leaves are arrow shaped and broad and have downward pointing triangular lobes (unlike *R. acetosella*, which has narrow leaves with upward or outward pointing lobes)

Flowers

Male and female flowers on separate plants

Fruits

- Wine-colored
- Net-like veining
- 2-2.5 mm long

Habitat and distribution: most alpine meadows in western Alaska

Grassleaf sorrel • *Rumex graminifolius*

Description:

Leaves

 All leaves are narrowly linear, although a few may be faintly arrowshaped

Fruit

• Valves enclosing the fruit are up to twice the length of the fruit

Habitat and distribution: sandy places in tundra in western Alaska; rare



Docks (fruits enclosed by 3 valves)

Curly dock • Rumex crispus

Invasiveness Rank: 48 points

Species Code: RUCR

Description:

Leaves

- Lanceolate
- Tapered at the base
- Wavy margins

Inflorescence

Large terminal clusters

Fruits

- Reddish with white tubercles
- Valves are not toothed

Habitat and distribution: disturbed sites; all three ecogeographic regions but mostly in southeast Alaska, Kenai Peninsula, Anchorage





Dooryard dock • Rumex longifolius

Invasiveness Rank: 48 points

Species Code: RULO2

Description:

Leaves

- Basal leaves are stalked
- Truncated or heart-shaped at the base, broadest at the middle
- Sometime with wavy margins

Inflorescence

Large terminal clusters

Fruits

- Do not have tubercles
- Valves are not toothed

Habitat and distribution: waste places;

scattered locations in Pacific maritime and interior boreal regions







MCCXV.

Bitter dock • *Rumex obtusifolius*

Invasiveness Rank: 48 points Species Code: RUBO	• • • • • • • • • • • • • • • • • • • •	
	Invasiveness Rank: 48 points	Species Code: RUBO

Description:

Leaves

- Heart-shaped base
- Wavy margins

Inflorescence

- Distinct small whorls
- Fruits
- Some have tubercles
- Valves are distinctly toothed

Habitat and distribution: agricultural areas, disturbed sites, riparian areas; only recorded from the southeast





E. P. 1999. Rumex obtasifolins

Broad-leaved Dock. delta-intkey.com

Docks (fruits enclosed by 3 valves)

Arctic dock • Rumex arcticus

Description:

Perennial

<50-100 cm tall (only 10 cm tall in the Arctic) Roots

Stout rhizome

Stem

• Unbranched or just a few upright branches

Leaves

- Dark green to reddish-purple
- Most leaves are basal and have long petioles
- Oblong to oval to lanceolate with square or wedge-shaped bases
- 7-30 cm long, 2-5 cm wide

Inflorescence

- Simple or short-branched panicle
- Flowers small, reddish

Fruit

- Achenes 3-4 mm long
- No tubercle

Habitat: wet areas, snow beds

Distribution: common in western and northern Alaska



Western dock • Rumex occidentalis syn. Rumex fenestratus

Description:

Perennial 1+ m tall

Roots

Taproot

Stems

Yellowish-green to reddish

Leaves

- Mostly basal with long petioles
- Oblong to lanceolate with heart-shaped bases
- Crisped margins
- 30 cm long

Inflorescence

- Very large panicle with erect branches
- Pedicles 5-7 mm long

Fruits

- Reddish brown
- No tubercles

Habitat: marshy areas; common bordering boreal or alpine areas; not found in the Arctic







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Docks (fruits enclosed by 3 valves)

		R			
EDIIT SCALE	Margins are entire 3 tubercles	Distinctly toothed Usually 1 tubercle	Margins are entire Tubercles are usu- ally absent	Margins are entire No tubercles	Margins are entire No tubercles
	Dense	Usually loose and widely spaced in whorls	Usually dense	Interrupted	Dense to interrupted
RASAL LEAVES	Tapered bases Strongly wavy margins	Broad Heart-shaped bases Margins entire Flat	Rounded to truncate base Margins entire	Often very purple Flat, obtuse tip Tapered base Margins entire	Acute tip Heart-shaped or rounded base Margins are entire
	CURLY DOCK rumex crispus	BITTER DOCK rumex obtusifolius	DOORYARD DOCK rumex longifolius	ARCTIC DOCK Rumex arcticus (native)	WESTERN DOCK Rumex occidentalis Syn. R. fenestratus (native)

Alaska Natural Heritage Program, UAA • Identification of Non-Native Plants in Alaska • Draft

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A comparison of five large Rumex species

Photos credits

R. crispus: http://www.botany.hawaii.edu, G.D. Carr

R. obtusifolius: http://www.discoverlife.org *R. longiflolius:* http://www.plant-identification.co.uk, Carl Farmer

R. arcticus: http://nature.ca

R. occidentalis ©2011 AKNHP

Mustard Family (Brassicaceae)

Mustard Family (Brassicaceae)

- Annual or perennial herbs
- Alternate simple leaves, lobed
- Often have a basal rosette
- Often have hairs
- Seed pods and flowers borne in racemes
- Flowers have 4 petals and 4 sepals arranged in a cross
- Fruit is pod-like and open from the base toward the apex
- Fruit can be siliques (long and narrow) or silicles (length is less than 3 times the width), all with membranaceous partitions





Mustard Family (Brassicaceae)

Seed pods

Siliques — longer than broad



Silicles — length is less than 3 times the width





Introduction to Mustard Family
Types of hairs

<u>Simple</u>

<u>Glandular</u>





Forked

Stellate (star-shaped)





Shepherd's purse • Capsella bursa-pastoris

Invasiveness Rank: 40 points Species Code: CABU2

Description:

Annual or winter annual Has a mix of simple and other types of hairs Leaves

- Slightly to deeply lobed
- Basal rosette is composed of entire to dissected leaves
- Stem leaves are clasping and arrow-shaped at the base

Inflorescence

• White

Fruits

- Heart-shaped silicles
- Silicles are almost as long as they are broad

Habitat: roadsides, cultivated fields, waste areas

Distribution: common in the Pacific maritime and interior boreal regions; northernmost occurrence is in Arctic Village





Field pennycress • Thlaspi arvense

Invasiveness Rank: 42 points

Species Code: THAR5

Description:

Annual Strong odor No hairs Stem and Leaves

- Yellowish-green
- Basal leaves are lanceolate, simple, entire to lobed
- Stem leaves are arrow-shaped

Inflorescence

- White
- Clustered in racemes at the end of branches

Fruits

- Silicle with broad wings
- Circular with a notch at the top, resembling a penny

Habitat: roadsides, fields, waste places, lawns, gardens, railroad tracks, stream banks, bluffs, thickets, slopes, floodplains, woods

Distribution: somewhat common in the Pacific maritime





Flowers white, fruit short



Common peppergrass • Lepidium densiflorum

Invasiveness Rank: 25 points

Species Code: LEDE

Nativity of this species is uncertain:

Considered native to Alaska by ITIS 2003, USDA PLANTS Database 2003 Considered introduced in Alaska by Hultén 1968

Description:

Annual or winter annual 10-60 cm tall Leaves

- Basal rosette
- Stem leaves are toothed or deeply lobed

Inflorescence

- No petals, or petals are shorter than sepals
- Green-white
- Inconspicuous
- <4 mm wide
- 2 stamens

Fruits

- Heart-shaped to round silicles
- Silicles have narrow wings
- About 3 mm long
- Contain two seeds
- Densely arranged along the stem

Habitat: roadsides, cultivated fields, waste areas



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Distribution: Interior boreal and Pacific maritime regions; northernmost record is Arctic Village, southernmost is the Kenai Peninsula

Differences between L. densiflorum and L. latifolium L. densiflorum has 2 stamens L. latifolium has 6 L. densiflorum inflorescence a single raceme or of sparsely branched racemes L. latifolium inflorescence is a dense pyramid-shaped cluster L. densiflorum is 10-60 cm tall L. latifolium is 50-200 cm tall

Broadleaved pepperweed • *Lepidium latifolium*

Invasiveness Rank: 71 points

Species Code: LELA2

Description:

Perennial 0.5-2 m tall Roots

• Widely spreading, thick rhizomes

Stems

• Numerous, simple, erect, branching at the ends

Leaves

- Oblong, elliptic-ovate or lanceolate with wedge-shaped base
- Margins entire or serrated
- 2-30 cm long, 6-8 cm wide
- 1-9 cm petiole on lower leaves; stems leaves are smaller and lack petioles

Inflorescence

- Dense clusters in pyramid-shaped panicles
- White, small (1.5 mm)
- Petals are white and twice the length of sepals (sepals <1 mm)
- 6 stamens

Fruits

- Silicle contains 2 seeds
- Not winged

Habitat: disturbed sites, roadsides, ditch banks; also found in a variety of natural habitats ranging from wetlands to dry flats and hillsides

Distribution: Only reported from Anchorage





Garlic mustard • Alliaria petiolata

Invasiveness Rank: 70 points

Species Code: ALPE4

Description:

Biennial < 1 m tall Strong garlic odor when crushed Stems

Unbranched

Leaves

- Basal leaves are kidneyshaped
- Stem leaves are heartshaped
- 5-10 cm wide

Inflorescence

- White
- Fruits
- Siliques
- 2-4.5 cm long, 0.7-2 mm wide

Habitat: roadsides, abandoned fields, open forest, clearcuts

Distribution: Juneau





There are other white flowered mustards in Alaska. However, unlike *Allaria petiolata*, none have large, well-developed and toothed stem leaves, or a garlic scent.

Flowers white, fruit long

Lyrate rockcress • Arabis lyrata

Description:

Leaves

- Basal leaves are lyre-shaped and oblong
- Stem leaves do not have stalks

Fruits

- Siliques slightly flattened
- 2-3.5 cm long, 1.25-1.5 mm wide

Habitat: sandy and rocky slopes, open areas

Distribution: interior boreal and Pacific maritime regions; common along the coast





Ball mustard • Neslia paniculata

Invasiveness Rank: not ranked	Species Code: NEPA3

Description:

Annual < 0.8 m tall Stems

- Branched many times
- Has star-shaped hairs

Leaves

- Arrow-shaped
- Clasping

Inflorescence

• Small, yellow

Fruits

- Silicles are a roundish, pitted pod, with a network of veins
- One seed per pod (unlike weedy *Rorippa* species found in Alaska, which have more seeds per pod)

Habitat: fields, grassy mountain slopes, plains, roadsides, cultivated fields

Distribution: Anchorage, Kenai Peninsula



Flixweed • Descurainia sophia

Invasiveness Rank: 41 points

Description:

Annual, winter annual, or biennial < 1 m tall Stems

- Numerous branches
- Star-shaped or tree-like hairs
- Hairs never have glands

Leaves

- Grayish-green
- Divided into narrow segments
- Tripinnate

Inflorescence

Yellow

Fruits

- Silique
- Siliques do not overtop developing flowers
- Inside of siliques, the septum has longitudinal bands

Habitat: roadsides, waste places, disturbed sites, railroads, hillsides, mountain slopes, stream banks, fields, lawns, pastures

Distribution: arctic-alpine and interior boreal regions



Species Code: DESO2



Northern tansymustard • Descurainia sophioides

Description:

Very similar to *D. sophia*, but

- Hairs may or may not have glands and may or may not be tree-shaped
- Leaves are bipinnate
- Siliques overtop developing flowers
- Septum inside of siliques does not have longitudinal bands

Habitat: gravel bars, disturbed soil, roadsides

Distribution: arctic-alpine and interior boreal regions



Mustard Family (Brassicaceae)

Dog mustard • Erucastrum gallicum

syn. Brassica erucastrum

Invasiveness Rank: not yet ranked

Description:

Annual 0.3-1.2 m tall Simple hairs Leaves

- Deeply pinnately lobed
- Inflorescence
 - Yellow, sparse
 - Lowermost flowers and seed pods are in the axils of small leaves

Fruits

- 2.5-5 cm long
- More or less 4-sided

Habitat: roadsides, waste places, disturbed sites, railroads, fields, gardens

Distribution: Pacific maritime









Field mustard • Brassica rapa

Invasiveness Rank: 50 points

Description:

Winter annual or biennial 0.3-1.2 m tall Stems and leaves

- Smooth and green
- Lower leaves < 30 cm long with a large terminal lobe and smaller lateral lobes
- Upper leaves are small, clasping, and are not lobed
- Underside of leaves are hairy

Inflorescence

- Deep yellow
- 6-11 mm long
- When open, flowers equal or overtop buds

Fruits

- Siliques are 3.8-6.4 cm long
- Borne on long pedicles
- Pods do not have hairs
- Pods have a conspicuous beak 13-19 mm long and round in cross-section

Habitat: cultivated fields, abandoned cabins, roadsides; beaches and other naturally disturbed sites along the coast

Distribution: interior boreal and Pacific maritime regions





Species Code: BRRA

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Rapeseed • Brassica napus

Invasiveness Rank: 47 points

Species Code: BRNA

Description:

Similar to *B. rapa* Inflorescence

- Gold to cream-colored to pale yellow
- Petals are broadly egg-shaped, 10-16 mm long and 6-9 mm wide
- When open, flowers do not overtop buds

Habitat: abandoned gardens, old home sites, roadsides, waste areas

Distribution: Fairbanks, urban areas in southcentral Alaska, Rohn Cabin on the Iditarod Trail







Brassica napus is an important oil (rapeseed or canola oil) and vegetable crop (rutabaga) that easily escapes cultivation. In temperate North America it is a widespread and naturalized weed.

Rorippa species Barbarea species

Description:

Weedy but native species All hairs are simple and glandular Stems

Barbarea species have angled edges
Inflorescence

Yellow

Fruits

- Silique 3-5 times longer than broad
- Rorippa species have siliques shorter than 6 cm

Habitat: roadsides, moist areas; very common

Distribution: arctic-alpine and interior boreal regions



Rorippa islandica



Barbarea orthoceras







appressed to stem;

< 6.5 cm long

Rorippa (2 yellowflowered native spp.)

Siliques not awl-

shaped or

Partial key to mustards of disturbed habitats; consult Hultén (1968) or Welsh (1974) for more information Key to mustards of disturbed habitats in Alaska

See next page

Hairs are forked or star -shaped, sometimes mixed with simple



Partial key to mustards of disturbed habitats; consult Hultén (1968) or Welsh (1974) for more information

Mustard Family (Brassicaceae)

Recommended Floras and Field Guides

Regional floras

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Good reference; included all non-natives at the time he wrote the book and most natives growing on disturbed sites.

Cody, W. Flora of the Yukon Territory. Keys often use better diagnostic traits to separate genera and species than Hultén.

Douglas, G.W., G.B. Straley, D. Meidinger, and J. Pojar. 1998. Illustrated Flora of British Columbia. Vol. 1-8. British Columbia: Ministry of Environment, Lands and Parks, Ministry of Forests.

Good for weed identification; very good for Asteraceae family.

Regional field guides

Johnson, D., L. Kershaw, and A. Mackinnon. 1995. Plants of the Western Boreal Forest and Aspen Parkland.

Includes many exotics with good habitat descriptions and notes about nativity and distribution, good for South-central and Interior Alaska.

Pojar, J. and A. Mackinnon. 1994. Plants of the Pacific Northwest Coast. Includes many exotics with good habitat descriptions and notes about nativity and distribution. Good for Southeast Alaska.

Guide to botanical terminology

Harris, J.G. and M.W. Harris. 2001. Plant Identification Terminology: An Illustrated Glossary. *Great pictorial explanations of botanical terminology - this will help you decipher the floras.*

Non-native plant field guides

Royer, F. and R. Dickinson. 1999. Weeds of the Northern US and Canada. *Perhaps is the best, especially in combination with Weeds of the West.*

Whitson, T.D. (ed), et al. 2005. Weeds of the West. Botanical descriptions of weeds in the western U.S. with emphasis on agricultural contaminants.

Guide to Weeds in British Columbia. Available online: http://www.weedsbc.ca/ pdf/GuidetoWeeds.pdf *Habitat descriptions and notes about nativity and distribution.*

[AKEPIC] Alaska Exotic Plants Information Clearinghouse. 2005. Invasive Plants of Alaska.

Alaska-specific, non-native plant guide book. Provides 'user-friendly' plant descriptions including some diagnostic traits, and covers the known or expected ecological impacts of key invasives in Alaska.

DiTomaso, J.M. and E.A. Healy. 2007. Weeds of California and Other Western States. University of California Agriculture and Natural Resources. Oakland, CA. 1808 pp.

A two-volume set with supplemental CD of plant images.

Everman, W.A, C.L. Sprague, S.A. Gower and R.J. Richardson 2010. An IPM Pocket Guide for Weed Identification in Field Crops. *Who doesn't love a pocket guide? Great images of seedlings.*

Morgan, V. and M. Sytsma. 2009. Introduction to Common Native & Potential Invasive Freshwater Plants in Alaska. Prepared for the Alaska Department of Fish and Game. Available online: http://aknhp.uaa.alaska.edu/botany/akepic/publications

Field guide for identifying freshwater plants in Alaska.

On-line resources - general botany

eFloras

A compilation of floras including, in part, the Flora of North America. http://www.efloras.org/

USDA PLANTS Database

Standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and Canada. http://plants.usda.gov/

ITIS (Integrated Taxonomic Information System) Taxonomic information on plants, animals, fungi, and microbes of North America and the world. http://www.itis.gov/

Arctos

A multi-institution database, which includes collections of the University of Alaska Museum Herbarium (ALA). Provides information for most of ALA's plant specimens (includes native and non-native species). http://arctos.database.museum/home.cfm

Alaska Plant Materials Center

Provides testing, production, development and distribution of materials to resource industries to meet environmental requirements and includes development of a native seed industry. http://www.plants.alaska.gov/

Cooperative Extension Service

The Alaska Integrated Pest Management Program addresses the public need for pest management education within the state. General educational outreach services provided include evaluation and identification of insect, plant and disease specimens, recommendation of control options to reduce pest problems and site visits to examine tree disorders and invasive plants in the field.

http://www.uaf.edu/ces/ipm

Panarctic Flora Checklist

A collaborative and ongoing effort to establish a unified list of accepted names for arctic vascular plants, with annotations to highlight and explain taxonomic disagreements.

http://nhm2.uio.no/paf/

On-line resources - non-native specific

AKEPIC (Alaska Exotic Plant Information Clearinghouse) Includes publications, species biographies, invasiveness ranking documents and the non-native species tracking list for Alaska http://aknhp.uaa.alaska.edu/botany/akepic/

AKEPIC Data Portal

An interactive, web-based mapping system for over 100,000 record locations of non-native plant species in Alaska and the Yukon Territory http://aknhp.uaa.alaska.edu/maps/akepic.php

EDDMapS (Early Detection and Distribution Mapping System) Displays the distribution of invasive species in the U.S., including Alaska. http://www.eddmaps.org/alaska/

CNIPM (Alaska Committee for Noxious and Invasive Plant Management) Aims to heighten awareness of problems associated with non-native invasive plants and to bring about greater statewide coordination, cooperation and action to halt the introduction and spread of undesirable plants. http://www.uaf.edu/ces/cnipm/

Invasive.org

Information and images of invasive and exotic species of North America; based at The University of Georgia's Center for Invasive Species and Ecosystem Health. www.invasive.org

What's Invasive! Use this app on your Android or iPhone to help locate invasive species. http://whatsinvasive.com/

Center for Invasive Plant Management Promotes ecologically sound management of invasive plants by facilitating collaboration and partnerships among scientists, educators, and land managers; based at Montana State University. http://www.weedcenter.org/

Invaders Database System Exotic plant names and weed distribution records for five states in the northwestern United States; based at the University of Montana. http://invader.dbs.umt.edu/

On-line resources - non-native specific (continued)

US Forest Service – Forest Health Protection

Invasive Plants program works to protect Alaska's forest and tree resources from damaging outbreaks of insects, diseases and invasive plants. http://www.fs.fed.us/r10/spf/fhp/

AACD (Alaska Association of Soil and Water Conservation Districts) Actively supports 12 statewide Soil and Water Conservation Districts. The Invasive Plant Program coordinates the districts efforts to combat invasive weeds.

http://www.alaskaconservationdistricts.org/index.htm

Cooperative Weed Management Areas

Groups of federal, state, and local land managers, as well as individuals, who work together to protect Alaska from the threat of noxious, invasive weeds. Anchorage: http://www.weedwar.org/about/CWMA.htm Fairbanks:http://www.fairbankssoilwater.org/resources_CWMA.html Kenai Peninsula: http://www.kenaiweeds.org/about-cwma.php Kodiak: n-icoordinator@ak.net Juneau: http://www.juneauinvasives.org/ Mat-Su: http://www.alaskaconservationdistricts.org/UpSu/usswcdhome.htm Salcha/Delta: http://www.salchadeltaswcd.org/

Alaska Department of Fish and Game

Information on invasive plant species considered 'high priority threats.' http://www.adfg.state.ak.us/special/invasive/invasive.php

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Alopecurus pratensis	90	Bromus inermis ssp. pumpellianus	72
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Glossary

Achene	A small, dry, hard, single-seeded fruit, similar in appearance to a seed whose outer covering does not burst when ripe.
Alien	See Non-native.
Alternate	Leaves occurring one at a node.
Annual	A plant that produces seed and dies within one year of
Anther	The pollen-bearing organ of a flower, situated at the tip of the stamen.
Apical	Situated at the tip.
Appressed	Pressed close or flat against another organ.
Articulate	Jointed; has nodes or joints or places where separation naturally takes place
Attenuate	Gradually tapering to a very slender point.
Auricles	A claw-like appendage at the base of the leaf blade or at the apex of the leaf sheath, especially in grasses.
Auriculate	With a small projecting lobe or appendage at the base of an organ; ear-shaped.
Awn	A stiff, bristle-like appendage, usually at the end of a structure.
Basal	Situated at, or pertaining to the base.
Biennial	A plant requiring two years to complete its life cycle.
Bifid	Deeply two-cleft or two-lobed, usually from the tip.
Blade	The leaf of a plant, especially a grass; the flat or expanded portion of a leaf.
Bract	A modified leaf, growing at the base or on the stalk of a flower; usually differing from other leaves in shape or color.
Calyx	The usually green outer whorl or series of whorls surrounding the flower petals.
Cauline	Of or pertaining to the stem.
Carpel	A simple pistil, or one member of a compound pistil; a modified leaf forming the ovary or, in a compound ovary, part of the ovary.
Ciliate	Fringed with regularly arranged hairs on the margin.
Clasping	Wholly or partially surrounding the stem.
Cleft	Cut or split about half-way to the middle or base.
Compound	Made up of two or more similar parts (e.g. a compound leaf with multiple leaflets).
Corolla	All of the petals of a flower.
Crisped	Irregularly curled.
Culm	The stem of a grass plant.
Cuneate	Wedge-shaped; narrowly triangular.
Decumbent	A plant that has its base lying on the ground and a stem that grows upward.

Decussate	Arranged along the stem in pairs, with each pair at right angles to the pair above or below.
Dehisce	To split or burst open, discharging pollen or seeds.
Dentate	Coarsely toothed.
Disarticulate	Separating at maturity at a joint.
Disc florets	I ne regular tubular flowers on the neads of the Asteraceae
Entine	tamily.
Entire	Not tootned, notched of divided; refers to the continuous, smooth
	margins of some leaves.
EXOTIC	See Non-native.
Faicate	Scytne-snaped, curved sideways and flat, tapering upwards,
	asymmetrical.
FIDROUS ROOTS	A root system with all branches of approximately equal
	thickness, as in the grasses and other monocots.
Fliament	A single flower in a based of many flowers
Fiorel	A single nower in a nead of many nowers.
Geniculate	Bent abruptly at an angle, like a knee.
Giume	A charry of memoranous bract at the base of a grass
	inflorescence of spikelet, the first glume refers to the lower bract,
Olehania	the second glume to the upper bract.
Glabrous	Having a smooth, even surface, without hairs.
Glaucous	Having a whitish or blueish waxy coating.
Giandular	Having secreting organs or glands.
Hastate	Arrownead-snaped.
Hyaiine	I nin, dry and transparent or translucent.
Hypanthium	A cup-snaped extension of the normal axis usually formed from the
	union of the basal parts of the caryx, corolla and the stamens,
lateraele	The part of the stem that lies between two nodes or isists on a
Internode	The part of the stem that lies between two hodes of joints on a
	piditi. Evotio planta that produce viable offensing in large numbers and
Invasive	Exolic plants that produce viable onspring in large numbers and
	A where of leaves or breats that analysis of flower or
involucre	A whon of leaves of bracts that enclose a nower of
Irrogular	Describes a flower in which acts of argons differ in size, shane ar
irregular	Describes a nower in which sets of organs differ in size, shape of
Kaal	Siluciule.
Reel	A central huge along the back of any organ of a plant, the lowest, fused petels of a butterfly abapted flower
Lommo	The lower, and larger, of two membraneus breats englasing the
Lemma	flower in grasses
Liquia	A stran-shaped plant part. The flattened part of the ray floret in
Liguic	many members of the Asteraceae family In grasses and
	sedges the membranous appendage arising from the inner
	surface of the leaf at the junction with the leaf sheath
Margin	The outer edge of the leaf: may be toothed wayy entire etc.
margin	The outer ouge of the loar, may be toothed, wavy, churc, etc.

Glossary

Native Naturalized	Plants that live or grow naturally in a particular region. Exotic plants that reproduce consistently in their new
	without direct intervention by humans
Nerve	A prominent vein or rib of a leaf or other organ
Node	A knob or joint of a stem from which leaves, roots, shoots or flowers may arise.
Non-native	Plants whose presence in a given area is due to accidental or intentional introduction by humans.
Noxious wee	d A plant species that has been defined as undesirable by legal statute.
Obovate	Reversed ovate, having the distal end broader.
Opposite	Leaves or bracts occurring two at a node on opposite sides of the stem. Flower parts that occur one in front of another.
Ovary	The part of the pistil that contains the ovules (the structure that develops into the seed).
Palea	The inner of the two bracts enclosing a grass flower.
Palmate	Leaves divided into lobes arising from a common center.
	Palmately compound leaves have multiple leaflets arising from a
	common center.
Panicle	A branched inflorescence
Pappus	A modified calyx seen in the Asteraceae family, forming a crown
	of awns, scales or bristles at the summit of the achene.
Pedicle	The stalk of a single flower or inflorescence.
Peduncle	A flower stalk supporting a cluster of flowers, or a single flower when the pedicel is very long.
Perennial	A plant that lives three or more years.
Petaloid	Resembling a petal.
Petiole	The slender stalk or stem of a leaf.
Pinnate	Divided in a feathery manner, having leaflets arranged on each
	side of a central stalk.
Pinnatifid	Pinnately cleft.
Pistil	The female reproductive unit of a flower.
Pubescent	Covered with soft hair or down.
Raceme	An inflorescence with flowers borne along a more or less
	elongated axis with the younger flowers nearest the top.
Rachis	The main axis of a structure.
Ray floret	The strap-shaped flower in the Asteraceae family; multiple ray florets extend outward from the center of a flower head.
Receptacle	The more or less expanded portion of the flower stalk that bears the organs of a flower or the collected flowers of a head as in Asteraceae.
Recurved	Bent backward in a curve.
Regular	Radially symmetrical.

Rhizome	A subterranean, horizontal root-like stem sending out leaves and shoots from its upper surface and roots from its lower surface
Rosette	A group of organs, such as leaves, clustered and crowned around a common point of attachment.
Sagittate	Arrowhead-shaped, with the basal lobes directed downward.
Scabrous	Rough to the touch due to the presence of short, stiff hairs.
Scarious	Thin, dry, membranous and more or less translucent; not areen.
Sepals	The petal-like structures that subtend the petals of most
•	flowers; any of the leaf divisions of the calyx
Sessile	Attached directly, without a supporting stalk as a leaf without a petiole.
Sheath	A protective covering; the lower part of a leaf enveloping the stem.
Silicle	A short fruit of the mustard family that is not more than three times as long as wide.
Silique	A long, narrow fruit of the mustard family that is more than four
	times long as wide.
Simple	Of only one part, not divided into separate segments.
Spike	An elongate inflorescence with stalkless flowers
Spikelet	A subdivision of a spike, as in the spikelets of grasses.
Stamens	The male reproductive organ in a flower; situated immediately within the petals and composed of the filament and the anther.
Standard	Upper petal of a butterfly-shaped flower.
Stellate	Star-shaped.
Stigma	The part of the pistil that receives the pollen.
Stipules	Appendages at the base of a petiole or leaf.
Stolon	A stem which grows horizontally along the surface of the soil
	and is able to root at the tip and develop a new plant.
Style	The usually stalk-like portion of the pistil connecting the stigma
5	and ovary.
Succulent	Fleshy and full of juice.
Taproot	The main root axis from which smaller root branches arise, as
•	in many dicots (compare fibrous roots).
Tepal	A division of the perianth of a flower that has an indistinguish-
- 1	able calvx and corolla.
Tomentose	A covering of short, matted or tangled, soft, wooly hairs.
Trifoliate	With three leaves or leaflets.
Truncate	The apex or base squared at the end as if cut off.
Tubercle	A small tuber-like swelling or projection.

- Tufted Arranged in a dense cluster.
- Villous With long, soft, somewhat wavy hairs.
- Viscid Glutinous, sticky or gummy to the touch.
- Weed Any plant, native or exotic, whose presence is undesirable to people in a particular time or place.

Winter annual A plant that germinates in the fall, overwinters as a seedling, and in the spring and summer flowers, produces seed and dies.

- Whorled When three or more leaves are arranged at the same level on a stem.
- Wing Any membranous or thin expansion bordering or surrounding an organ.

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