

Identification of Non-native Plants in Alaska



Alaska Natural Heritage Program
Alaska Center for Conservation Science
UNIVERSITY of ALASKA ANCHORAGE

3211 Providence Drive
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Spring 2015

Suggested citation:

Flagstad, L., Cortes-Burns, H., and Greenstein, C. 2015. Identification of Non-native Plants in Alaska. Alaska Natural Heritage Program, University of Alaska Anchorage. 219 pp.

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Financial support from:



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Alaska Natural Heritage Program


Our mission is to provide the scientific basis for effective biological conservation in Alaska.

The Alaska Natural Heritage Program (AKNHP) collects, synthesizes and validates information on plant and animal and species of conservation or invasion concern, as well as their habitats. AKNHP is part of a network of Heritage Programs in all 50 states and Conservation Data Centres in Canada and Latin America. 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 of Sciences.





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| Species and Ecology Information Birds, Mammals, and Amphibians Rare Plants Non-Native Plants Vegetation Maps Rare Ecosystems and Plant Associations Aquatic Ecology Rapid Ecoregional Assessments | Explore the ranges and occurrences of animal species in Alaska  | Explore the occurrences of rare plant species in Alaska  | Explore distributions of non-native plant species in Alaska  |

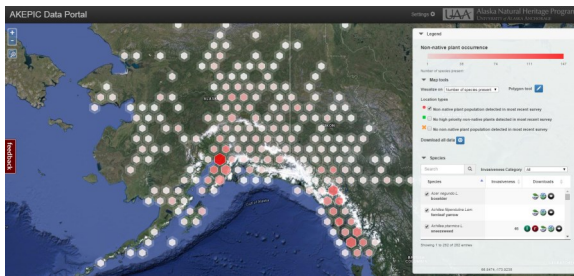
Alaska Exotic Plant Information Clearinghouse



The Alaska Exotic Plants Information Clearinghouse (AKEPIC: <http://aknhp.uaa.alaska.edu/botany/akepic/>) is a database and mapping application that provide geospatial information for non-native plant species in Alaska and neighboring Canadian Territories. These products are the result of an ongoing cooperation among the U.S. Forest Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, Department of Natural

Resources Plant Material Center and AKNHP 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. AKNHP administers the mapping application, database and website associated with the project. These data are primarily intended to support the identification of problem species and infestations, thus promoting early detection and rapid response across Alaska.

AKEPIC Data Portal

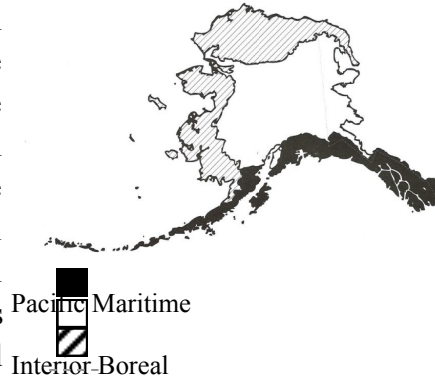


The records of non-native plants stored in AKEPIC can be queried by species or location and downloaded in text, tabular, spatial and open layers formats (<http://aknhp.uaa.alaska.edu/maps/akepic/php>). Species biographies and invasiveness rank documents have been developed for

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.

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 equally 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 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 ecoregions of Alaska: arctic-alpine, interior boreal and Pacific maritime (Nowacki et al. 2001). Species are then assigned a rank between zero and 100, where a rank of 100 indicates an extremely invasive species (Carlson et al. 2008).

| | |
|--|--|
| 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 negative impacts to agriculture, fish and wildlife or public health |

Integrated pest management:

Effective pest management may be achieved through a combination of methods that work better together than separately. Approaches for managing pests are often grouped in the following categories.

Prevention: develop procedures that minimize the introduction of non-native plants propagules to novel environments.

Inventory: learn how to correctly identify plant species and characterize their habitats. 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.

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.

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

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

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

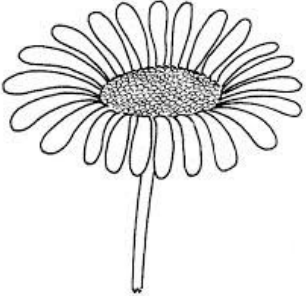

How to Use this Guide

The species described in this guide are organized by family. While the focus is on non-native species, some native species that could be confused with non-natives are also described.

In this guide, **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**. Common and scientific names for all species are listed in the index on page X.

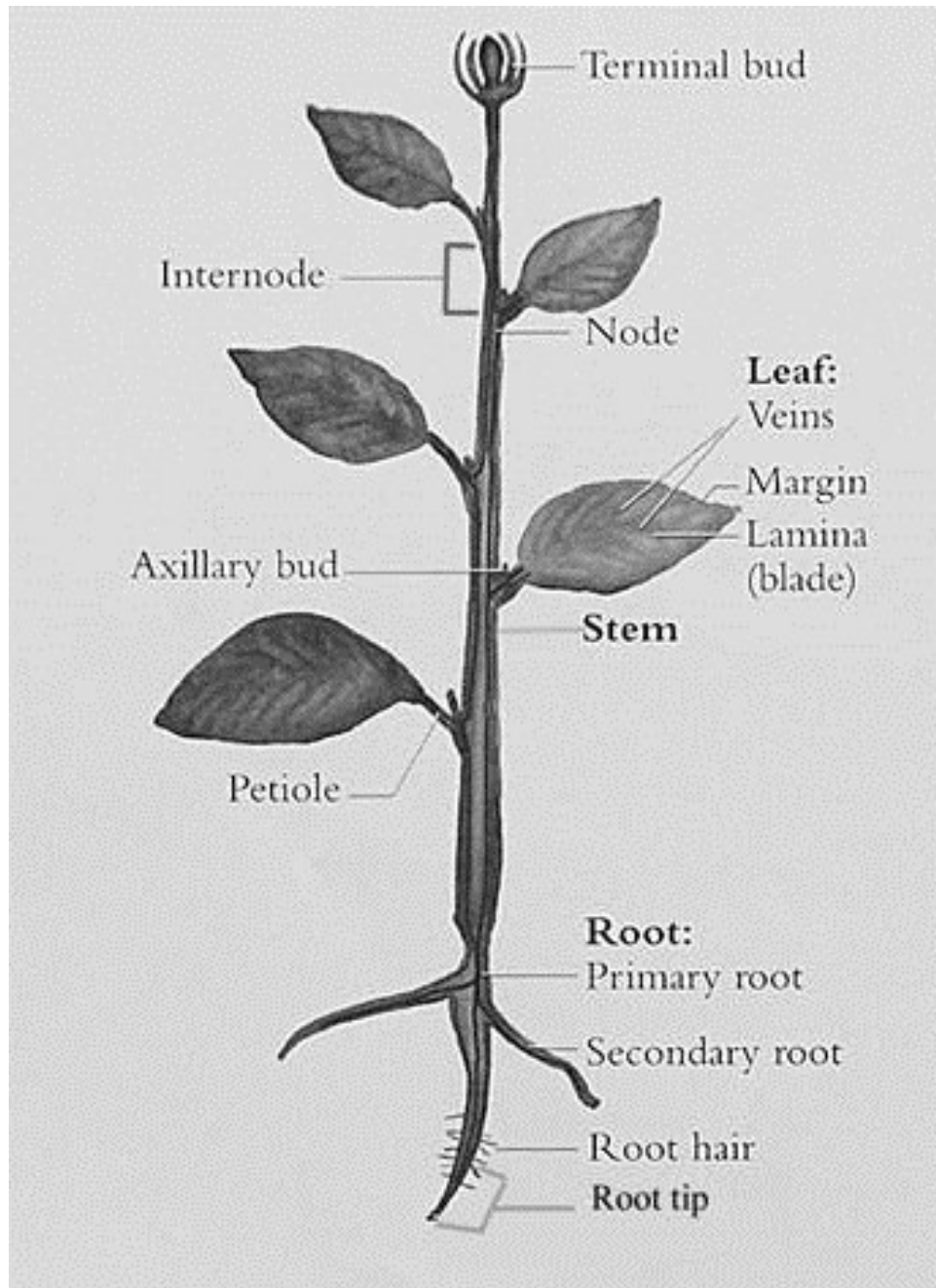
Modified keys for the Asteraceae and Poaceae are included at the end of their respective sections, and more specific keys for well-represented genera are sometimes included within the body of the text. However, please note that this document should not be used as the sole basis for plant identification or natural resource management decisions. A list of Alaska-specific field guides and technical flora is provided on page Y.

An example species' description is illustrated below:

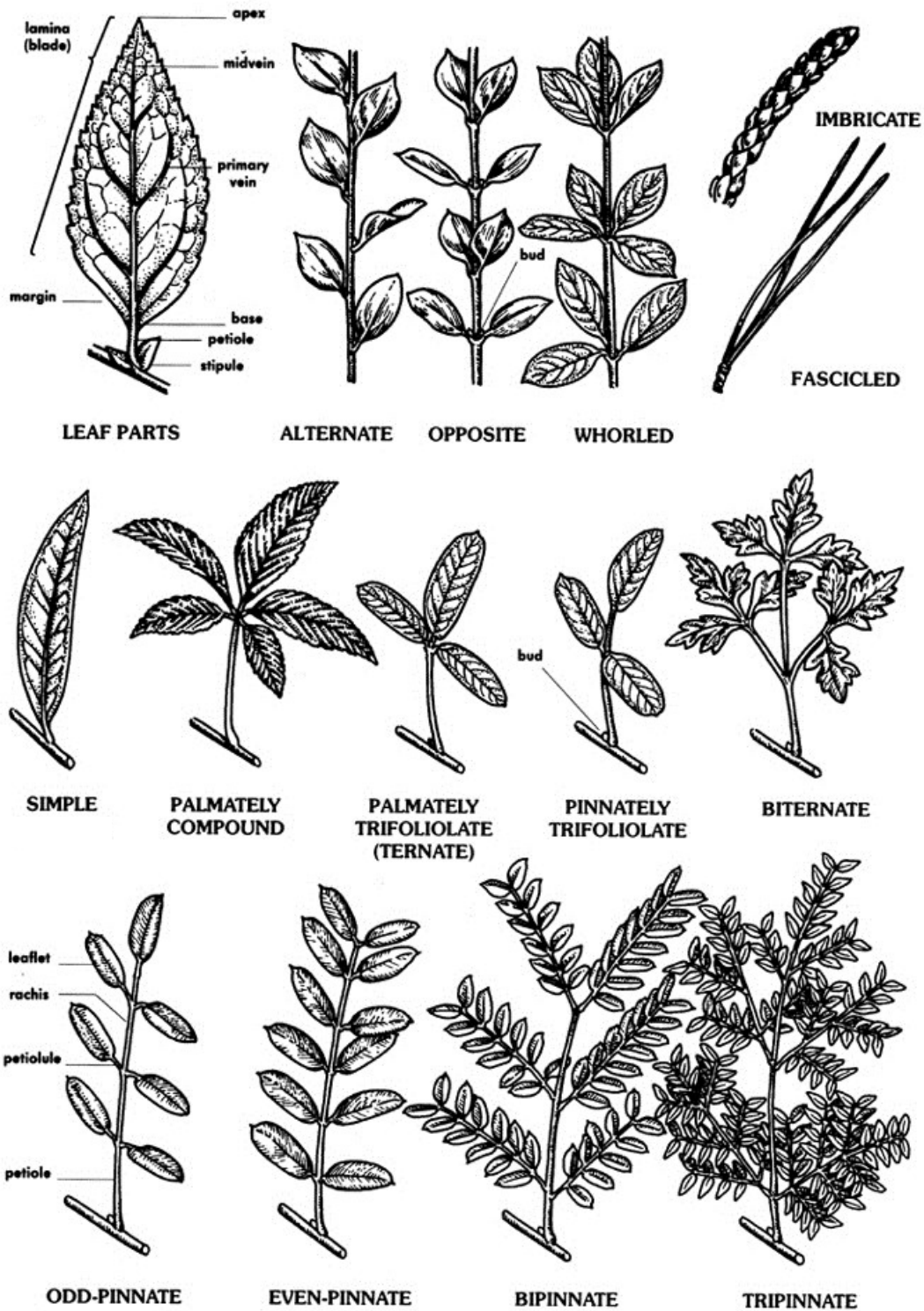
| COMMON FAMILY NAME (SCIENTIFIC FAMILY NAME) | |
|---|--------------------------------|
| Common Name • <i>Genus epithet</i> <i>syn. Synonym synonym</i> | |
| Invasiveness Rank: # points (see p 6) | Species Code: USDA Plants Code |
| General Information: Longevity (Annual, Perennial, etc) Height in cm or m Other general descriptions | |
| Description: Roots <ul style="list-style-type: none"> • Relevant characteristics Stems <ul style="list-style-type: none"> • Relevant characteristics Leaves <ul style="list-style-type: none"> • Relevant characteristics Inflorescence <ul style="list-style-type: none"> • Relevant characteristics Fruits <ul style="list-style-type: none"> • Relevant characteristics | |
| Habitat: description of common habitats Distribution: List of ecoregions; specific localities, if known Remarks: any additional information, e.g., distinguishing features, similar native species , relevant subspecies, taxonomic disputes, etc. | |
|   | |
| Page # | |

General Plant Morphology

Before identifying plants, it is important to understand basic plant morphology: the parts of a plant and their arrangement on the plant. A simple confusion between terminology can lead to incorrect identification. This section will serve as a reference for plant parts and help define terminology used throughout this guide.

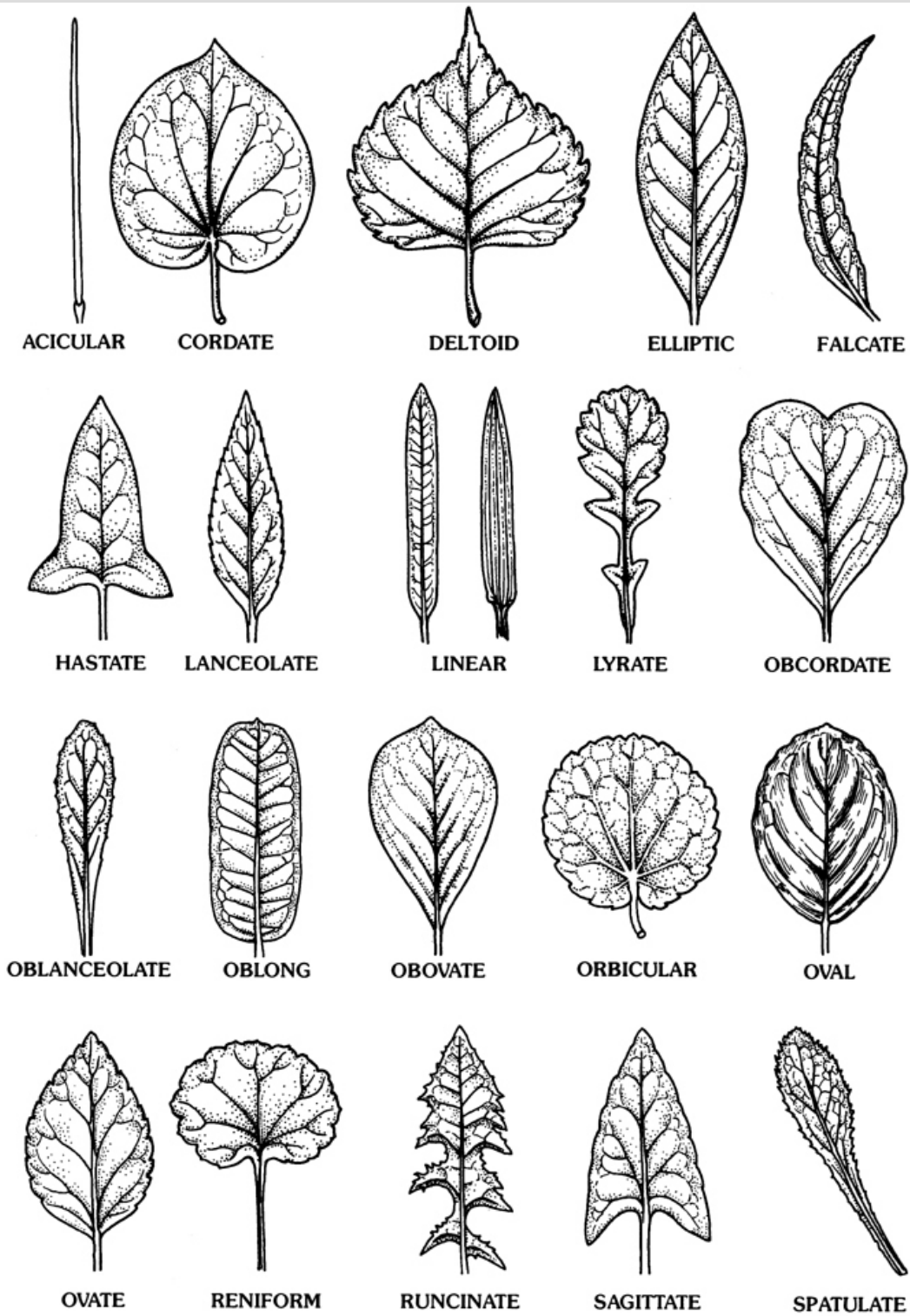


Leaf morphology and arrangement:



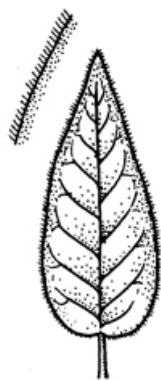
as published in Swink, F. and G. Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.

Leaf shapes:

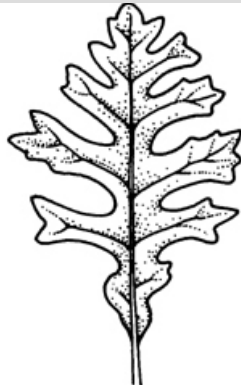


as published in Swink, F. and G. Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.

Leaf margins:



CILIAE



CLEFT



CRENATE



CRENULATE



DENTATE



DENTICULATE



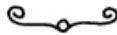
ENTIRE



INCISED



INVOLUTE



LACERATE



LACINATE



LOBED



PINNATIFID



REVOLUTE



SERRATE



DOUBLY SERRATE



SERRULATE

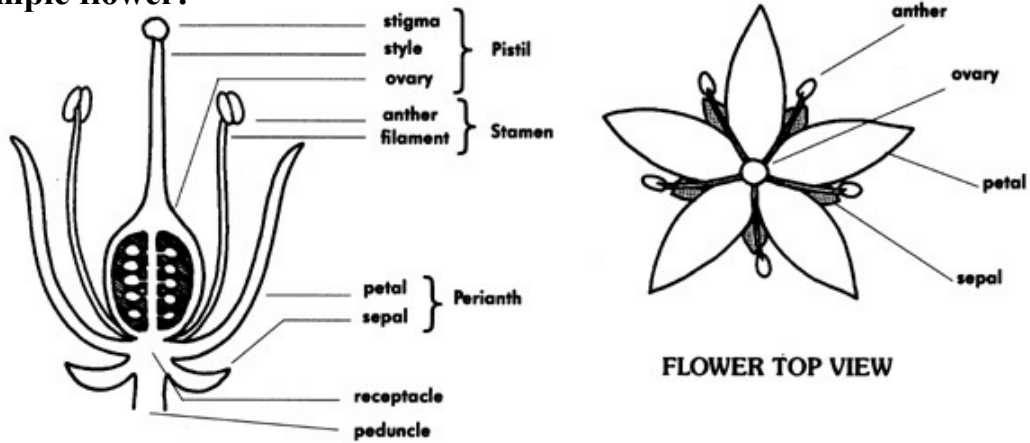


SINUATE

as published in Swink, F. and G. Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.

Flower Morphology:

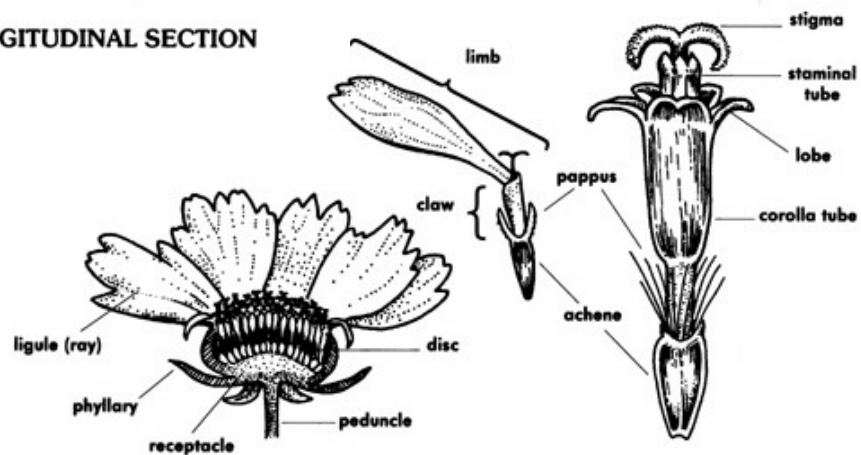
Simple flower:



FLOWER LONGITUDINAL SECTION

FLOWER TOP VIEW

Sunflower:

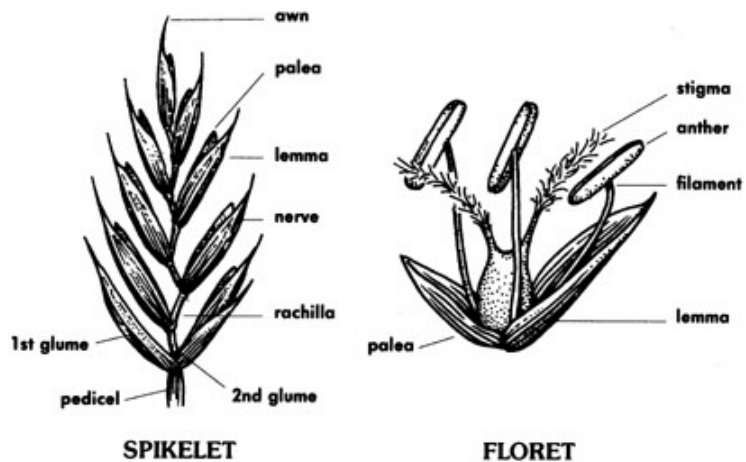


COMPOSITE INFLORESCENCE

RAY FLOWER

DISK FLOWER

Grass florets:



SPIKELET

FLORET

modified from Swink, F. and G. Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.

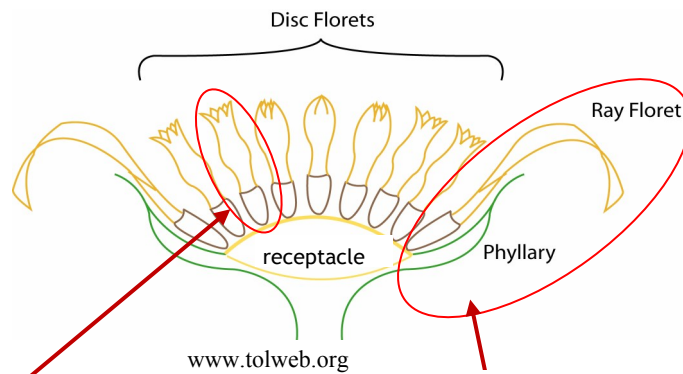
SUNFLOWER FAMILY (ASTERACEAE)

Sunflower Family (Asteraceae)

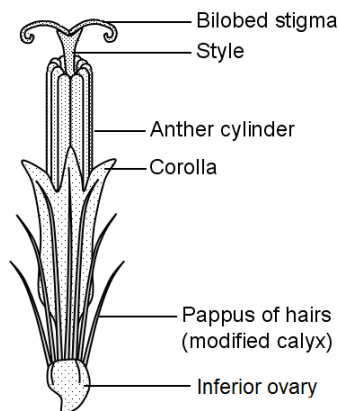
Sunflowers are easily recognized by their inflorescence (**flower head**), which is often confused as being a single flower. Closer inspection reveals that the flower head is actually composed of many small flowers (**florets**) attached to the flat top part of the stem (**receptacle**).



There are two types of florets: **disc florets** and **ray florets**

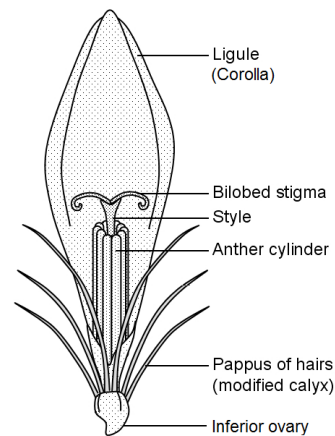


Disc floret:



- have regular symmetry
- have tubular, 5-lobed corollas

Ray floret:



- have irregular symmetry.
- have tubular corollas with long projections called **ligules**

INTRODUCTION TO THE SUNFLOWER FAMILY

SUNFLOWER FAMILY (ASTERACEAE)

Flowering head types

Sunflowers can be divided into three groups depending on the type of florets that make up the flowering head.

Ligulate Head

Flower head with only **ray florets**:



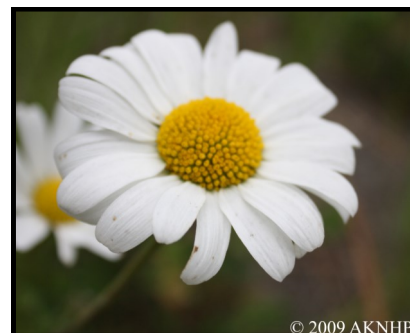
Discoid Head

Flower head with only **disc florets**:



Radiate Head

Flower head with both **ray** and **disc florets**:



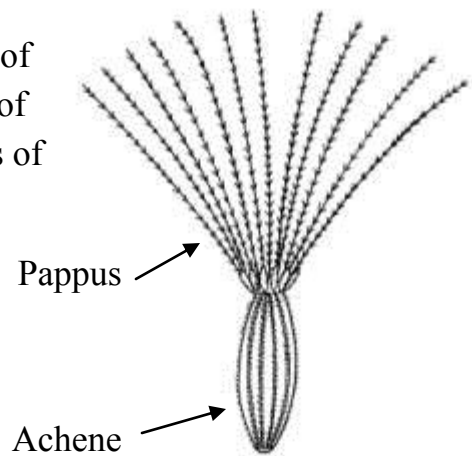
INTRODUCTION TO THE SUNFLOWER FAMILY

SUNFLOWER FAMILY (ASTERACEAE)

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.

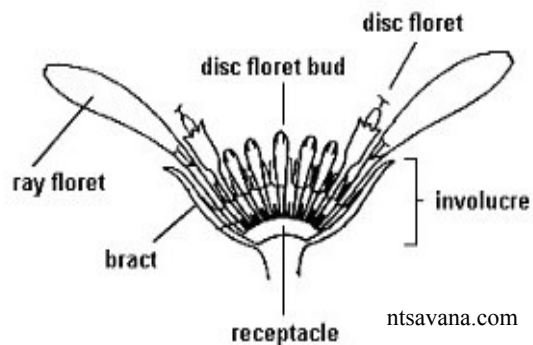


<http://www.plantzafrica.com>

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.



INTRODUCTION TO THE SUNFLOWER FAMILY

SUNFLOWER FAMILY (ASTERACEAE)

Common dandelion • *Taraxacum officinale*

Invasiveness Rank: 58 points

Species Code: TAOF

General Information:

Perennial
5-50 cm tall

Description:

Stems

- Unbranched (unlike non-native *Leontodon* and *Hypochaeris*)
- Flowering stalks leafless and hollow
- All leaves 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



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Rock dandelion • *Taraxacum erythrospermum*

Invasiveness Rank: not yet ranked

Species Code: TAER3

General Information:

Perennial
5-50 cm tall

Description:

Inflorescence

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

Fruits

- Brick-red achenes 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)

Remarks: Non-native dandelions can grow side by side with native ones (*T. ceratophorum*). Pictured below: *Taraxacum officinale* grows among native

T. ceratophorum at a



ceratoph-
pullout

YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

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

General Information:

Perennial
15-45 cm tall

Description:

Small plants
Inflorescence

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

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

General Information:

Perennial
Usually ≤ 15 cm

Description:

Small plants
Inflorescence

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

Fruits

- Brown to olivate, not brick-red like *T. erythrospermum*

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



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Hairy cat's ear • *Hypochaeris radicata*

Invasiveness Rank: 44 points

Species Code: HYRA3

General Information:

Perennial

15-30 cm tall

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 not distinctly hairy
- White pappus

Fruits

- Achenes with long, slender beaks

Habitat: roadsides, lawns, pastures, waste places

Distribution:

- 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

SUNFLOWER FAMILY (ASTERACEAE)

Fall dandelion • *Leontodon autumnalis*

Invasiveness Rank: 51 points

Species Code: LEAU2

General Information:

Perennial
10-40 cm tall

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

Distribution:

- 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



SUNFLOWER FAMILY (ASTERACEAE)

Yellow salsify • *Tragopogon dubius*

Invasiveness Rank: 50 points

Species Code: TRDU

General Information:

Biennial or perennial
30-90 cm tall

Description:

Stem

- Hollow and swollen below the flower head
- Milky juice

Leaves

- Linear, about 9 cm long

Inflorescence

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

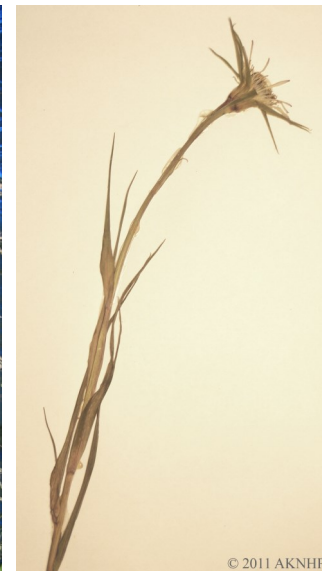
Fruits

- Fruiting head is globe-shaped, (6.4 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



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Perennial sowthistle • *Sonchus arvensis*

Invasiveness Rank: 73 points

Species Code: SOAR2

General Information:

Perennial
Woody stems
0.6-1.2 m tall

Description:

Roots

- Extensive rhizomes

Stem

- Glandular hairs on flower stalks and upper part of the stem

Leaves

- Clasping at the base
- Basal lobes 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 vicinity of Delta

Remarks: There are two subspecies of *Sonchus arvensis*:

- *S. arvensis* ssp. *arvensis* has yellow, stalked, glandular hairs on stalks and stems below flower heads
- *S. arvensis* ssp. *uliginosus* has stalkless, glandular hairs



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Annual sowthistle • *Sonchus oleraceus*

Invasiveness Rank: 46 points

Species Code: SOOL

General Information:

Annual or biennial
Soft, hollow stems
≤ 1.5m

Description:

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

Distribution:

- 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

SUNFLOWER FAMILY (ASTERACEAE)

Spiny sowthistle • *Sonchus asper*

Invasiveness Rank: 46 points

Species Code: SOAS

General Information:

Annual or biennial

Soft, hollow stems

0.3-1.2m tall

Description:

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

Distribution:

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



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Wall lettuce • *Mycelis muralis*

Invasiveness Rank: 31 points

Species Code: MYMU

General Information:

Annual or biennial

60-90 cm tall

Description:

Roots

- Fibrous

Stems

- Erect
- Branched toward the top
- Glabrous to glaucous
- Milky juice

Leaves

- Basal and lower stem leaves 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 black or brown with white pappus

Habitat: associated with natural or anthropogenic disturbances

Distribution: Pacific maritime, widespread in southeast Alaska



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Distinguishing *Crepis* species from *Hieracium* species:

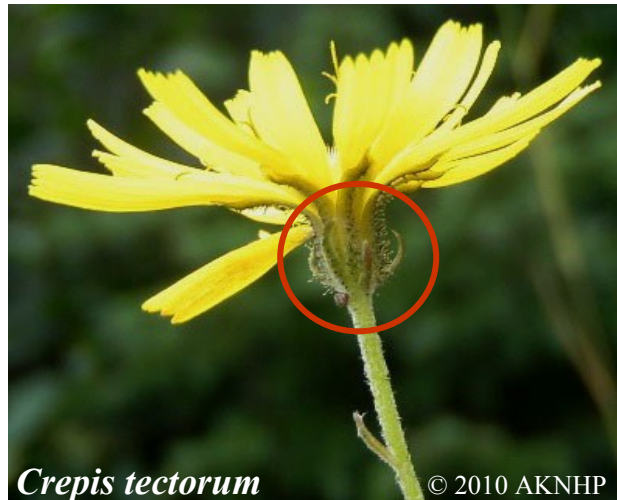
Similarities between *Crepis* species and *Hieracium* species in Alaska:

- 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 traits)

Differences between *Crepis* species and *Hieracium* species in Alaska:

- *Crepis* species with involucre bracts in two distinct rows that do not overlap

Bract comparison



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Narrowleaf hawksbeard • *Crepis tectorum*

Invasiveness Rank: 56 points

Species Code: CRTE3

General Information:

Winter annual
0.3-0.9 m tall

Description:

Leaves

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

Inflorescence

- Involucral bracts arranged in two rows (see previous page)
- Involucral bracts 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



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

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



Distribution:

- *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.



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Narrowleaf hawkweed • *Hieracium umbellatum* syn. *Hieracium scabriusculum*

Invasiveness Rank: 51 points

Species Code: HIUM

General Information:

Perennial
≥ 30 cm tall

Description:

Roots

- No stolons

Stems

- Leafy

Leaves

- Lacking basal rosette
- Ovate to lanceolate
- Not densely hairy

Inflorescence

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



Habitat: roadsides, forest edges and openings

Distribution:

- 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 Prospect Creek; at the Taylor Hwy, Jct. Fairbanks to the start of near Tetlin



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Meadow hawkweed • *Hieracium caespitosum*

Invasiveness Rank: 79 points

Species Code: HICA10

General Information:

Perennial
≥ 30 cm tall

Description:

Roots

- Stolons with short white hairs
- Rhizomes

Stems

- Leafless or sometimes with 1-2 leaves on stem

Leaves

- Basal rosette
- Ovate to lanceolate

Inflorescence

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

Habitat and distribution: roadsides, forest edges and openings in Anchorage (Interior boreal) and in Valdez, as well as along Knik Arm and the Kenai Peninsula (Pacific



Mouseear hawkweed • *Hieracium pilosella*

Invasiveness Rank: 63 points

Species Code: HIPI

General Information:

Perennial
≥ 30 cm tall

Description:

Roots

- Stolons

Stems

- Sticky hairs
- Not branched
- No leaves on stems

Leaves

- Basal rosette
- Sticky hairs

Inflorescence

- Solitary or rarely 2-3 heads



YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Native hawkweeds • *Hieracium triste* and *Hieracium gracile*

General Information:

Generally ≥ 30 cm tall

Description:

Generally <30 cm tall

Roots

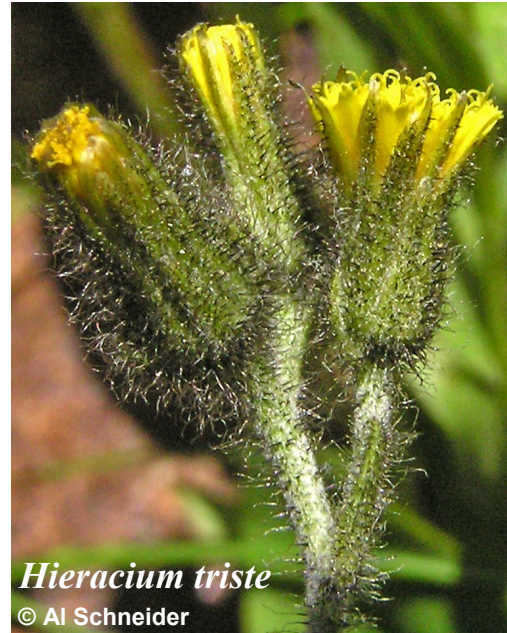
- No stolons (unlike *H. pilosella* and *H. caespitosum*)

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 often densely hairy



Hieracium triste

© Al Schneider

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

Distribution:

- *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,

rec-



Hieracium gracile

© Walter Siegmund

with some populations recorded in western Alaska.

YELLOW RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Orange hawkweed • *Hieracium aurantiacum*

Invasiveness Rank: 79 points

Species Code: HIAU

General Information:

Perennial

Up to 30 cm

Forms dense mats

Description:

Stem

- Dark-colored hairs

Roots

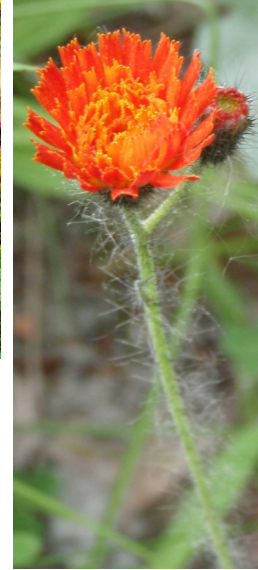
- Rhizomes and stolons

Leaves

- Basal rosette
- No leaves on stems
- White hairs

Inflorescence

- Orange



Habitat: one of the few non-native plants able to establish in organic soils and/or in

Orange agoseris • *Agroseris aurantiaca*



The only other orange-flowered aster in Alaska

Similarities:

- Both with ray florets
- Both with orange florets (but turning purple in older *A. aurantiaca* plants)
- Stems leafless (occasional exceptions in *H. aurantiacum*)
-

Differences:

- *H. aurantiacum*: >1 flowering heads per stalk, distinct long black hairs along stem and 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 it could potentially co-occur with *A. aurantiaca* in southeast Alaska
- *A. aurantiaca*: alpine meadows, moist open woodlands,

ORANGE RAY FLOWERS

SUNFLOWER FAMILY (ASTERACEAE)

Common tansy • *Tanacetum vulgare*

Invasiveness Rank: 60 points

Species Code: TAVU

General Information:

Perennial,
Up to 1.2 m tall

Description:

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

Remarks: 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

SUNFLOWER FAMILY (ASTERACEAE)

Pineappleweed • *Matricaria discoidea* syn. *Matricaria matricarioides*

Invasiveness Rank: 32 points

Species Code: MADI6

General Information:

Annual

<30 cm tall

Description:

Leaves

- Divided several times into narrow segments
- Strong odor when crushed, similar to chamomile

Inflorescence

- Cone-shaped flowers
- Greenish-yellow

Habitat: compacted soils of roadsides, farmyards and waste areas

Distribution: all three ecogeographic regions

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



SUNFLOWER FAMILY (ASTERACEAE)

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*Aster*
- Bracts in a single row*Erigeron*

Leafy stems; ray florets yellow or orange

- At least basal stem leaves opposite*Arnica*
- All leaves alternate
 - Flower heads small and numerous; involucre bracts imbricate or in multiple overlapping rows*Solidago*
 - Flower heads large and few; involucre bracts in a single row*Senecio*

Differences between non-native *Senecio* species and similar-looking native *Senecio* species:

Most native *Senecio* spp. have a basal rosette of leaves. Only *S. pseudo-arnica*, *S. sheldonensis*, and *S. triangularis* lack basal leaves; these plants are restricted to south-coastal and southeast Alaska and are large, distinctive plants.

Most non-native *Senecio* species:

- Are annual plants with basal leaves withering before or soon after flowering so that they may appear to lack a basal rosette
- Have no ray florets, or if they are present, they are <2 mm long and often coiled

Stems and leaves are hairy:

- 1a. With viscid, sticky hairs*S. viscosus*
- 1b. Hairy but not with viscid, sticky hairs

YELLOW RAY AND DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Tansy ragwort • *Senecio jacobaea*

Invasiveness Rank: 63 points

Species Code: SEJA

General Information:

Biennial or short-lived perennial
1.2-1.8 m tall

Description:

Roots

- Taproot

Stems

- Short woolly hairs

Leaves

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

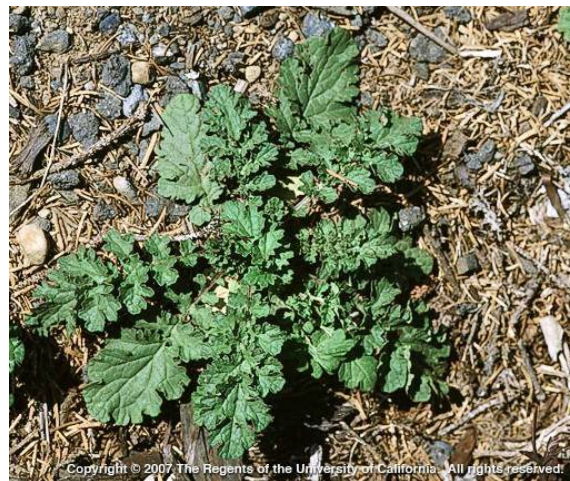
Inflorescence

- 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



YELLOW RAY AND DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Common groundsel • *Senecio vulgaris*

Invasiveness Rank: 36 points

Species Code: SEVU

General Information:

Annual

Up to 60 cm tall

Description:

Roots

- Taproot

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+ involucre bracts with black tips
- Only yellow disc florets; no 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

SUNFLOWER FAMILY (ASTERACEAE)

Woodland ragwort • *Senecio sylvaticus*

Invasiveness Rank: 41 points

Species Code: SESY

General Information:

Annual
Up to 0.8m tall

Description:

Roots

- Fibrous taproot

Stems

- Abundant curly hairs (not glandular)

Leaves

- Abundant curly hairs
- Pinnately divided once or twice

Inflorescence

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

Habitat: disturbed sites

Distribution: only recorded in Anchorage and along the Klondike Hwy



Sticky groundsel • *Senecio viscosus*

Invasiveness Rank: not yet ranked

Species Code: SEVI2

General Information:

Annual
Up to 0.5m tall
Foul-smelling
Viscid, sticky hairs

Description:

Roots

- Taproot

Stems

- Glandular hairs

Leaves

- Pinnately dissected to pinnatifid
- Glandular hairs

Inflorescence

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

Habitat: disturbed sites, especially in open sand or gravel sites

Distribution: only recorded near Haines and in Seward

YELLOW RAY AND DISC FLORETS



SUNFLOWER FAMILY (ASTERACEAE)

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

Invasiveness Rank: 61 points

Species Code: LEVU

General Information:

Perennial
0.3-1.2m tall

Description:

Leaves

- <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



Shasta daisy • *Leucanthemum xsuperbum*

Invasiveness Rank: not yet ranked

Species Code: LEMA8

General Information:

Annual
Up to 0.9m tall
This is a hybrid of *Leucanthemum maximum*
and *Leucanthemum lacustre*, cultivated as a
garden plant

Description:

Stems

- Unbranched

Leaves

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



WHITE RAY AND YELLOW DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Mayweed chamomile • *Anthemis cotula*

Invasiveness Rank: 41 points

Species Code: ANCO2

General Information:

Annual

15-60 cm tall

Description:

Leaves

- Foul smelling when crushed
- Glandular-dotted

Inflorescence

- Receptacles papery or bristly at the middle



Habitat: waste areas, roadsides

Distribution:

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

Remarks: May superficially resemble *Arcanthemum arcticum* and/or *Chrysanthemum integrifolium* — native species that differ in leaf shape



WHITE RAY AND YELLOW DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Arctic daisy • *Chrysanthemum integrifolium* *syn. Hulteniella integrifolia* (Richardson) Tzvelev

General Information:

Perennial
Up to 20cm tall
Cespitose

Description:

Stems

- Soft-pubescent

Leaves

- Linear
- Mostly basal

Inflorescence

- Heads solitary
- Involucral bracts white-pubescent

Habitat: Gravelly slopes, solifluction soil

Distribution:

- Arctic Alpine: Brooks Range and north to coast
- Interior boreal: Seward Peninsula, White



Arctic daisy • *Arctanthemum arcticum*

General Information:

Perennial
Up to 30cm tall
Low growing

Description:

Leaves

- Triangular to wedge-shaped, densely hairy at the base
- Fleshy



Habitat and distribution: coastal marshes, rocky shores

WHITE RAY AND YELLOW DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Scentless chamomile • *Tripleurospermum inodorum* syn. *Tripleurospermum perforata*

Invasiveness Rank: 48 points

Species Code: TRIN11

General Information:

Annual

≥ 0.9m tall

Description:

Leaves

- Narrowly dissected
- Odorless when crushed

Inflorescence

- Receptacles naked
- Involucral bracts with 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



False mayweed • *Tripleurospermum maritimum*

General Information:

Annual, biennial, or perennial

0.1-0.6m tall

Description:

Inflorescence

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

Habitat and distribution: seashores in northwestern and arctic Alaska



WHITE RAY AND YELLOW DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Creeping thistle, Canada thistle • *Cirsium arvense*

Invasiveness Rank: 76 points

Species Code: CIAR4

General Information:

Perennial

0.3-1.2 m tall

Description:

Roots

- Extensive creeping rhizomes

Stem

- Not winged (unlike *C. vulgare*)

Leaves

- Lobes spiny
- Hairless above and hairless or hairy below

Inflorescence

- Narrow (1 cm), unlike native *Cirsium* species)
- Purplish-pink
- Involucral bracts with 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 FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Bull thistle • *Cirsium vulgare*

Invasiveness Rank: 61 points

Species Code: CIVU

General Information:

Biennial,
0.9-1.5 m tall

Description:

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 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 FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Native thistles • *Cirsium* species

Description:

Stems

- Not winged (unlike *C. vulgare*)

Inflorescence

- >1 cm across (unlike *C. arvense*)
- Involucral bracts with spiny points but no distinct spines (unlike *C. vulgare*)

Habitat and distributions:

- *C. kamtschaticum*: meadows; Aleutians
- *C. foliosum*: meadows; Yukon, 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

PURPLISH DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

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

Invasiveness Rank: 86 points

Species Code: CEST8

General Information:

Biennial or perennial
0.3-1.2 m tall

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



Habitat: highways, waterways, railroads, pipelines

Distribution:

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

Remarks: Non-native *Centaurea* species in Alaska species lack spiny leaves unlike *Cirsium* species. There are no native species of knapweed in Alaska.



PURPLISH DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Perennial cornflower • *Centaurea montana*

Invasiveness Rank: 46 points

Species Code: CEMO

General Information:

Annual

0.3-0.6m tall

Description:

Perennial

Roots

- Stolons, forms clumps

Leaves

- Entire, lanceolate

Inflorescence

- Outermost florets 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



PURPLISH DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Garden cornflower • *Centaurea cyanus*

Invasiveness Rank: not yet ranked

Species Code: CECY2

General Information:

Annual

0.2-1 m tall

Description:

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 (1.0-2.5 cm across)

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

Distribution: only two known occurrences in Anchorage and Kodiak



PURPLISH DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)

Remarks on *Saussurea* species in Alaska:

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 (Pappus of *Centaurea* spp. is comprised of stiff bristles)
- Heart shaped leaves in *S. americana*

Habitat and distributions:

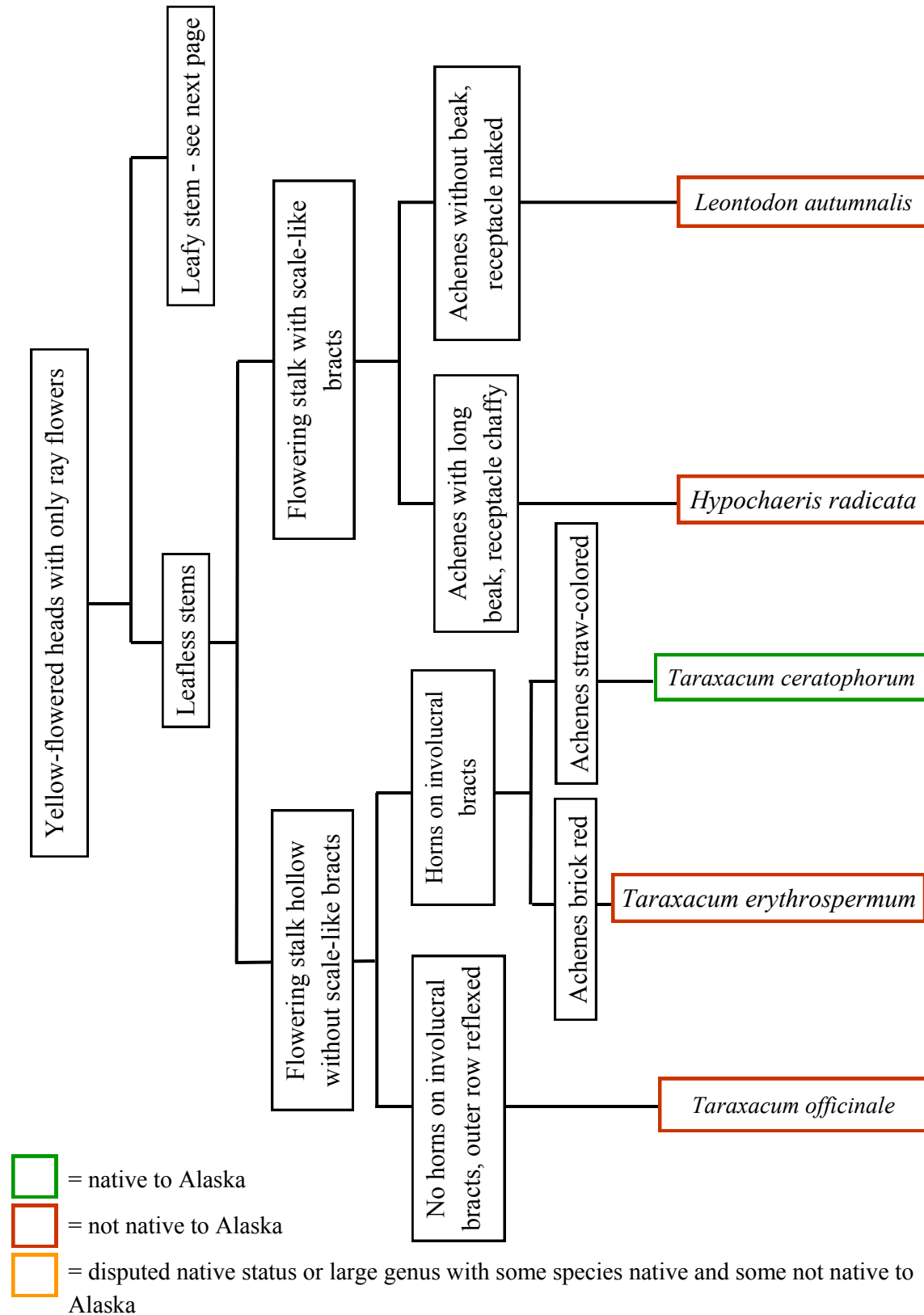
- *S. americana*: southeast Alaska
- *S. angustifolia*: dry places on tundra and in the mountains
- *S. nuda*: seashores, alpine meadows; western Alaska
- *S. viscida*: arctic-alpine and interior boreal



Saussurea angustifolia

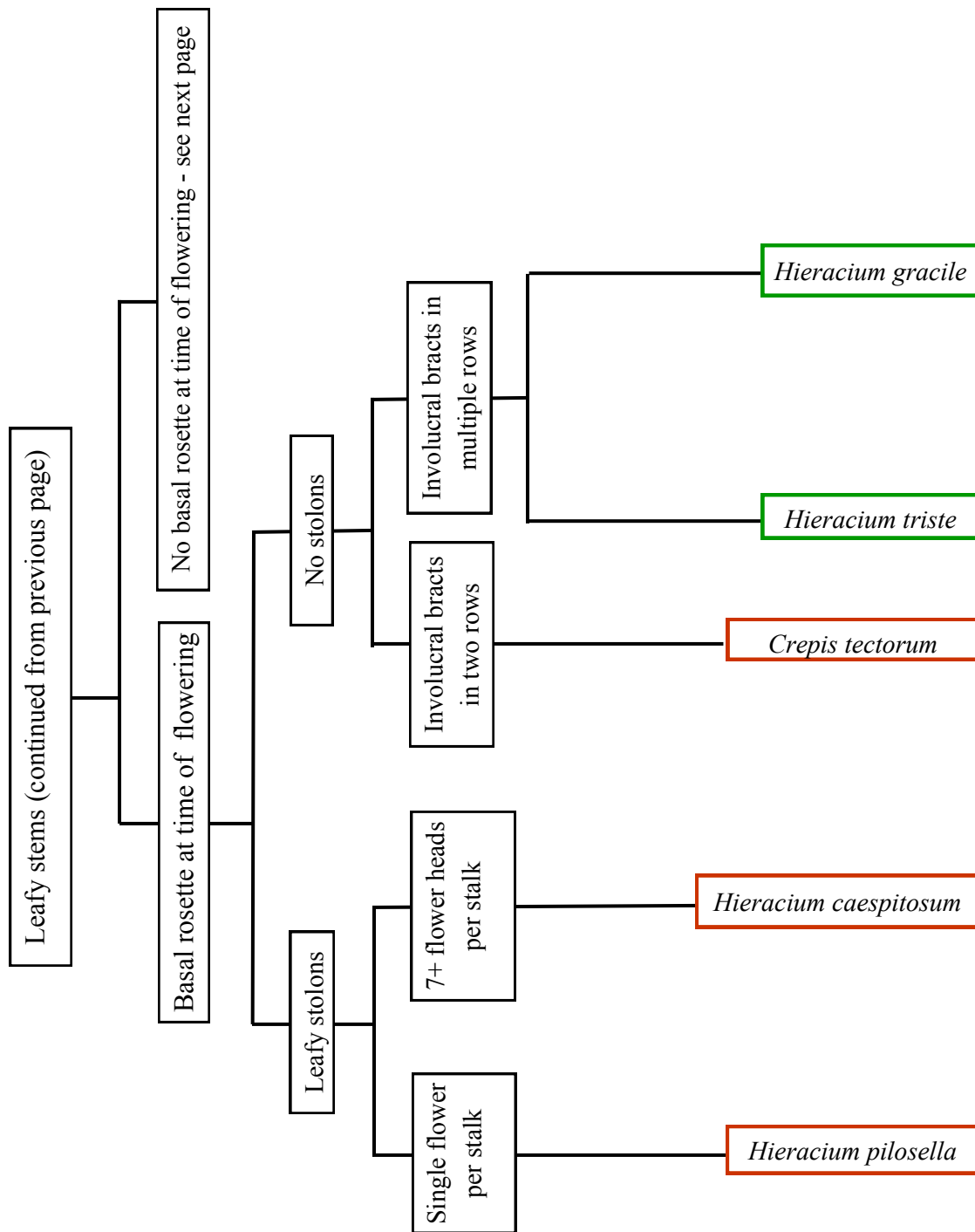
PURPLISH DISC FLORETS

SUNFLOWER FAMILY (ASTERACEAE)



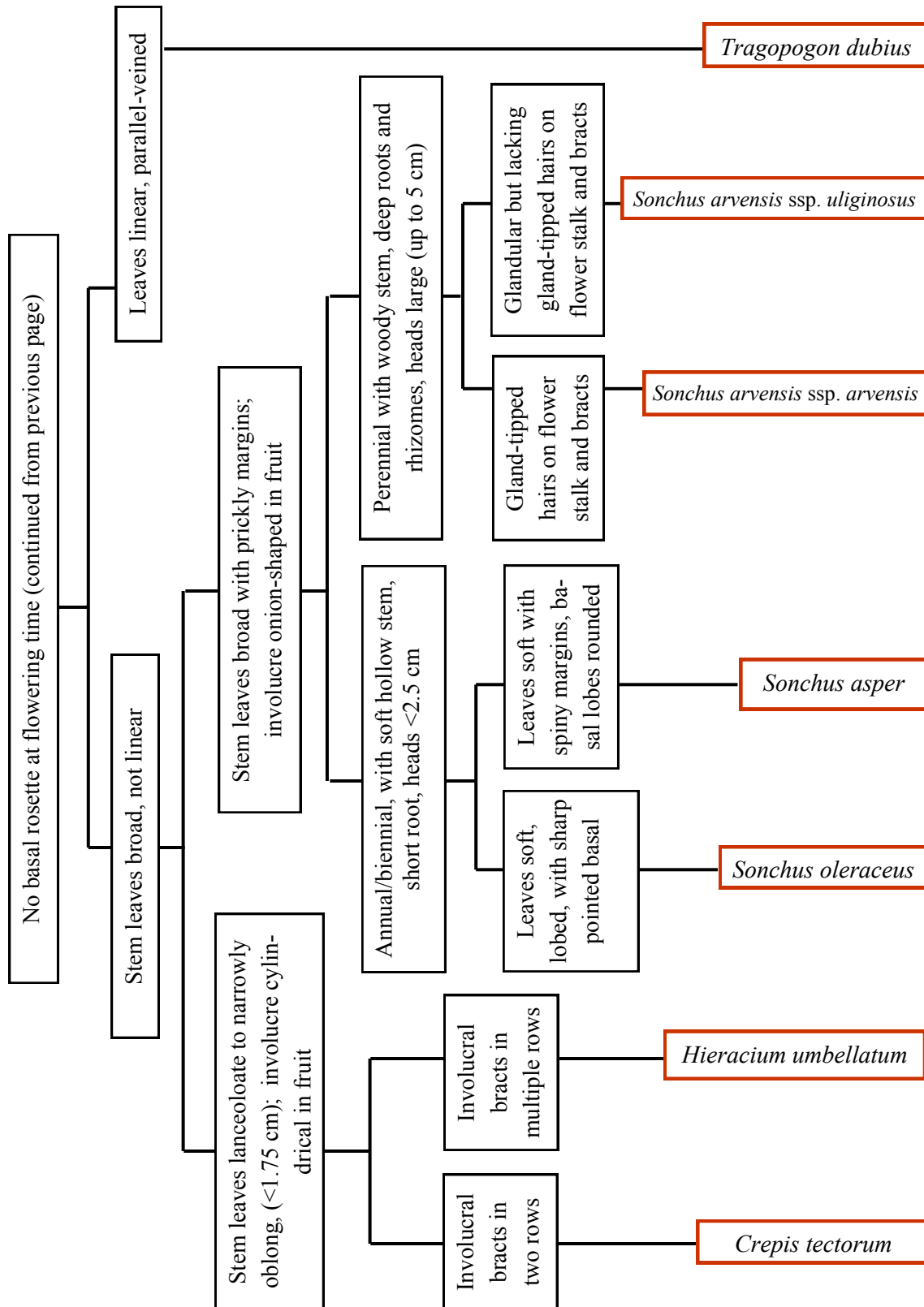
KEY TO YELLOW-FLOWERED ASTERS OF DISTURBED HABITATS IN AK

SUNFLOWER FAMILY (ASTERACEAE)



KEY TO YELLOW-FLOWERED ASTERS OF DISTURBED HABITATS IN AK

SUNFLOWER FAMILY (ASTERACEAE)



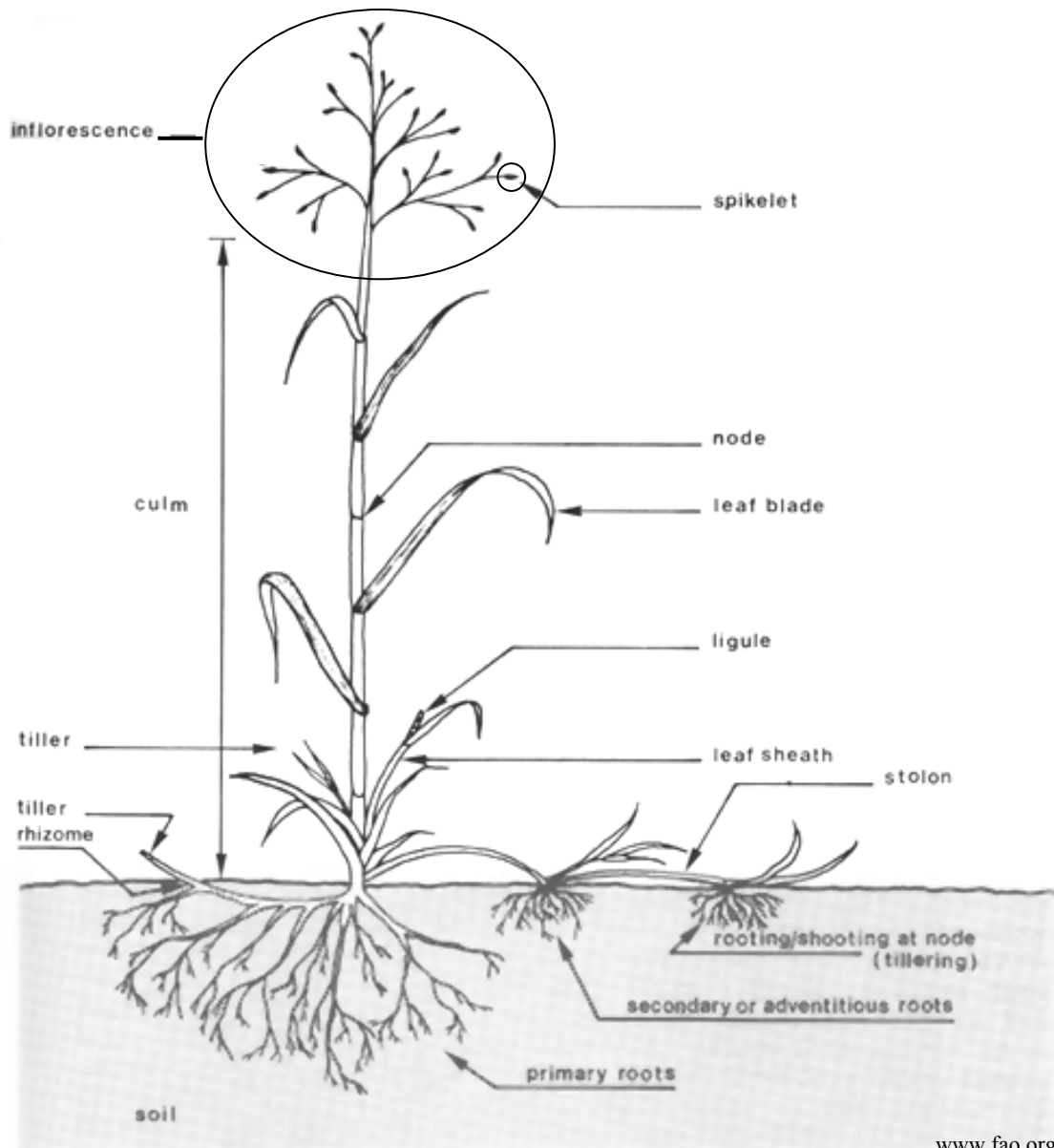
KEY TO YELLOW-FLOWERED ASTERS OF DISTURBED HABITATS IN AK

Grass Family (Poaceae)

Grass morphology

Stems (culms)

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



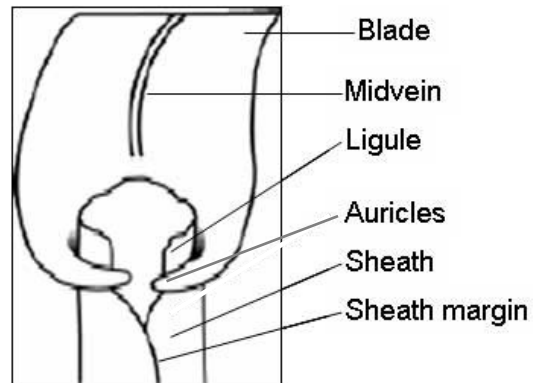
www.fao.org

INTRODUCTION TO THE GRASS FAMILY

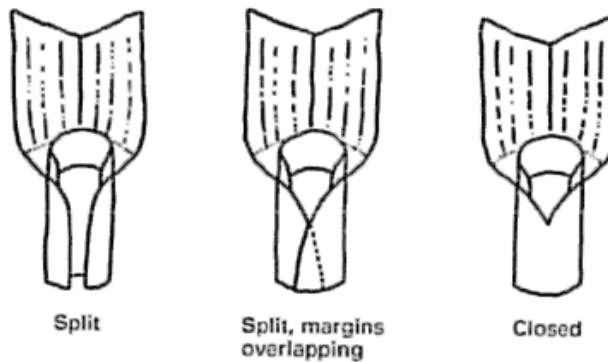
GRASS FAMILY (POACEAE)

Leaves

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

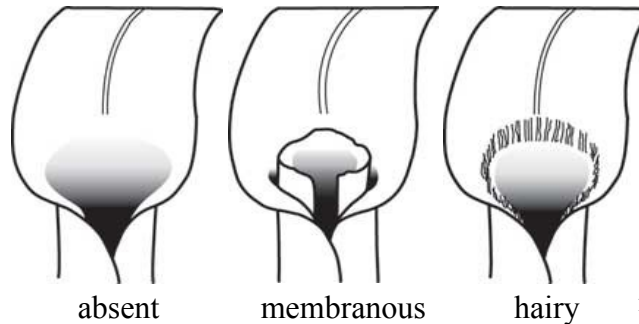


Sheath: lower portion of the leaf that encloses and protects young shoots



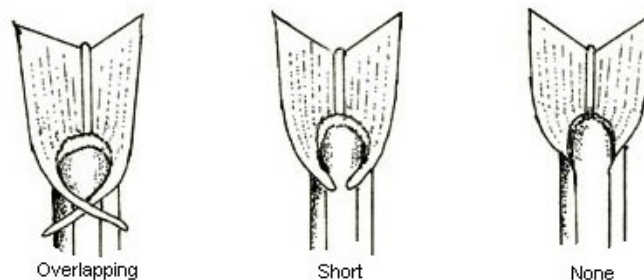
<http://www.turf.uiuc.edu>

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



<http://www.ipm.msu.edu>

Auricle: projections on either side of the ligule



INTRODUCTION TO THE GRASS FAMILY

Flower parts of grasses

Spikelet: all of the florets above a pair of glumes. Single to several florets are inside the spikelet. Spikelets can be attached to the stem (sessile) or with pedicels that branch away from the central axis (stalked).

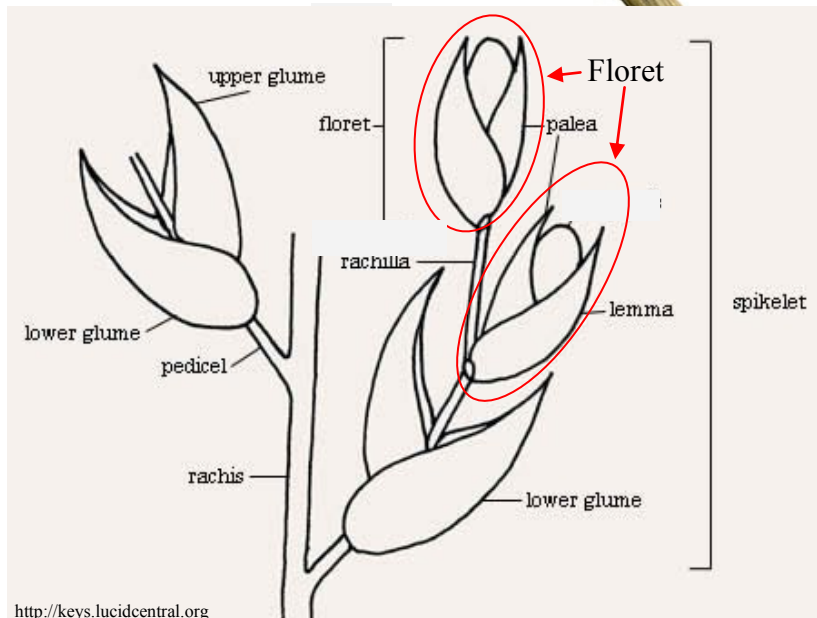
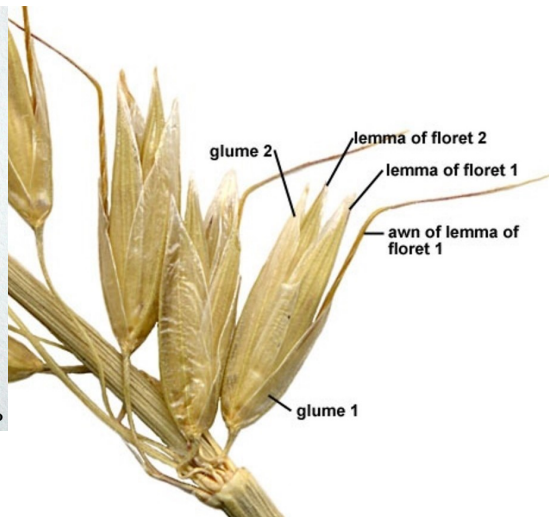
Glumes: the two bracts at the base of each spikelet. They are the outer part of the spikelet and enclose the florets and referred to as the upper and lower glume.

Floret: a single flower within the spikelet. It is subtended by two bracts, the lemma (outer) and palea (inner).

Awns: bristle-like or needle-like extension arising from lemmas or glumes. Not present on all species.



Spikelet



Inflorescence structure

The inflorescence of grasses can be broken down into three types depending on how the spikelets are attached to the stem. The spikelets are either attached directly or indirectly (stalked to the stem with a rachis) and if the rachis branches or not.

Raceme: the spikelets are stalked, attached to the central axis, and not branched.



Panicle: the spikelets are stalked and branching. Depending on the maturity or species the panicle can be an **open panicle** (center) or a **closed panicle** (right).



Spike: the spikelets are not stalked and are attached to the central axis.



GRASS FAMILY (POACEAE)

How to distinguish grasses from sedges and rushes:

"Sedges have edges, rushes are round, grasses have nodes where the leaves are found"

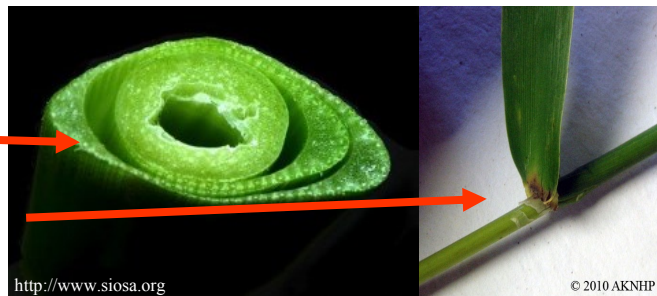
However, note that there are no non-native sedges or rushes in Alaska.

General morphology

- Stems with swollen nodes, hollow stems between nodes with are round in cross-section
- Leaves linear, simple, entire, and with parallel veins
- Leaves with 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

Grasses (Poaceae)

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



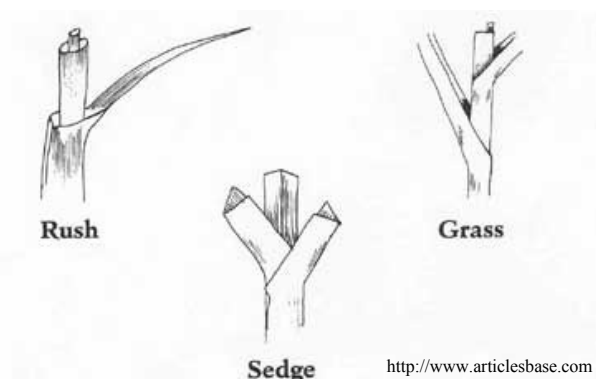
Sedges (Cyperaceae)

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



Rushes (Juncaceae)

- Stems round and solid
- Leaves 3-ranked



INTRODUCTION TO THE GRASS FAMILY

Reed canarygrass • *Phalaris arundinacea*

Invasiveness Rank: 83 points

Species Code: PHAR3

General Information:

Perennial

0.6-1.5m tall

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 boat-shaped and with prominent nerve (unlike *Calamagrostis* glumes, which are not awned and are narrow)
- Lemmas without awns or a tuft of hairs at the base (unlike *Calamagrostis*)



Habitat: stream banks, wet meadows

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

Remarks: Native genotypes potentially exist at four hot springs in interior Alaska



INFLORESCENCE A PANICLE

Slough grass • *Beckmannia syzigachne*

General Information:

Perennial
Up to 1.2m tall

Description:

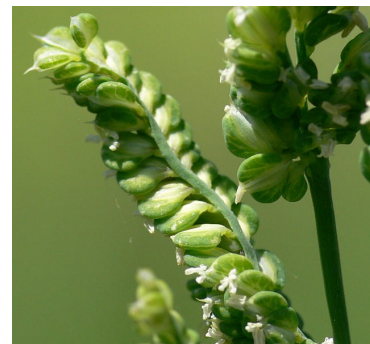
Inflorescence

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



Habitat and

Distribution: wet ground in all three ecogeographic regions



Bluejoint • *Calamagrostis canadensis*

General Information:

Perennial
Up to 1.8m tall

Description:

Leaves

- Ligules 3-6 mm long

Inflorescence

- Nodding panicles
- 1 floret per spikelet
- Lemmas with short awns and diagnostics tuft of hairs at base

Habitat and Distribution:

most open lowland habitats in all three ecogeographic regions

Remarks: This is the most common



INFLORESCENCE A PANICLE

Orchard grass • *Dactylis glomerata*

Invasiveness Rank: 53 points

Species Code: DAGL

General Information:

Perennial

Grows in tufts

0.5-1 m tall

Description:

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 with 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



INFLORESCENCE A PANICLE

GRASS FAMILY (POACEAE)

Traits of *Bromus* species in Alaska:

- Spikelets large and resembling a flattened cigar
- 2+ florets per spikelet
- Glumes shorter than the first floret

Smooth brome • *Bromus inermis*

syn. *Bromus inermis* ssp. *inermis*, *Bromopsis inermis*

Invasiveness Rank: 62 points

Species Code: BRIN2

General Information:

Perennial

0.5-1.1m tall

Description:

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 smooth or very faintly hairy on nerves and at the base
- Lemmas may or may not have awns; if present are ≤ 3 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



INFLORESCENCE A PANICLE

Cheatgrass • *Bromus tectorum*

Invasiveness Rank: 78 points

Species Code: BRTE

General Information:

Annual

Culms up to 0.6m tall

Description:

Leaves

- Ligules 5-6 mm long

Inflorescence

- Lemmas pubescent
- Lemmas with 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



INFLORESCENCE A PANICLE

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

General Information:

Perennial

Culms 0.5-1.2 m tall

Description:

Inflorescence

- Lemmas with awns up to 7 mm; shorter than *Bromus tectorum*, longer than *Bromus inermis*
- Lemmas distinctly hairy (unlike *Bromus inermis*)

Habitat: open lowland habitats

Distribution: widespread across Alaska

Remarks: Native *Bromus. inermis* ssp. *pumpellianus* may hybridize with non-native *Bromus inermis*



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INFLORESCENCE A PANICLE

GRASS FAMILY (POACEAE)

Poa species in Alaska:

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



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*

Kentucky bluegrass • *Poa pratensis* ssp. *pratensis* syn. *Poa angustifolia*

Invasiveness Rank: 52 points

Species Code: POPR

General Information:

Perennial

30-100 cm tall

Grows in tufts

Description:

Roots

- Strongly rhizomatous, mat-forming

Stems

- Smooth, not glaucous

Leaves

- Not glaucous
- Soft, flat or folded

Inflorescence

- 3-5 branches per node, with the lowermost branches in whorls of 4-5
- 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



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

Distribution: widespread across Alaska; all three ecogeographic regions

INFLORESCENCE A PANICLE

Spreading bluegrass • *Poa pratensis* ssp. *irrigata*

Invasiveness Rank: 52 points

Species Code: POPR

General Information:

Perennial

8-30 cm tall (typically shorter than

P. pratensis ssp. *pratensis*)

Grows in tufts

Description:

Roots

- Strongly rhizomatous, mat-forming

Stems

- Somewhat glaucous (unlike *P. pratensis* ssp. *pratensis*)

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*)
- Panicles have 4-8 spikelets per branch (fewer than *P. pratensis* ssp. *pratensis*)
- Glumes are somewhat glaucous

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

Distribution: widespread across Alaska; all three ecogeographic regions



INFLORESCENCE A PANICLE

Rough bluegrass • *Poa trivialis*

Invasiveness Rank: 52 points

Species Code: POTR2

General Information:

Perennial
30-80+ cm tall
Grows in tufts

Description:

Roots

- Lacking rhizomes

Stems

- **Decumbent or bent abruptly at the nodes**

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



Annual bluegrass • *Poa annua*

Invasiveness Rank: 46 points

Species Code: POAN

General Information:

Annual or biennial

2-20 cm tall

Grows in tufts

Description:

Stems

- Ascending
- Smooth

Leaves

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

Inflorescence

- Spikelets purple to green to yellowish-green
- Spikelets with 3-6 flowers
- Glumes narrow, acute, unequal, and boat-shaped
- Lower glumes with 1 nerve, upper glumes with 3 nerves
- Lemmas with 5 nerves
- Lacking 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



INFLORESCENCE A PANICLE

Canada bluegrass • *Poa compressa*

Invasiveness Rank: 39 points

Species Code: POCO

General Information:

Perennial
15-60 cm tall
Bluish-green

Description:

Roots

- Slender, creeping rhizomes

Stems

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

Leaves

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

Inflorescence

- Stiff panicle, 3-10 cm long
- Panicle often with short, paired branches
- Spikelets with crowded, each with 3-6 flowers
- Glumes with rounded at the apex
- Lacking tuft of hairs at the base of the lemma
- Anthers 1-2 mm long

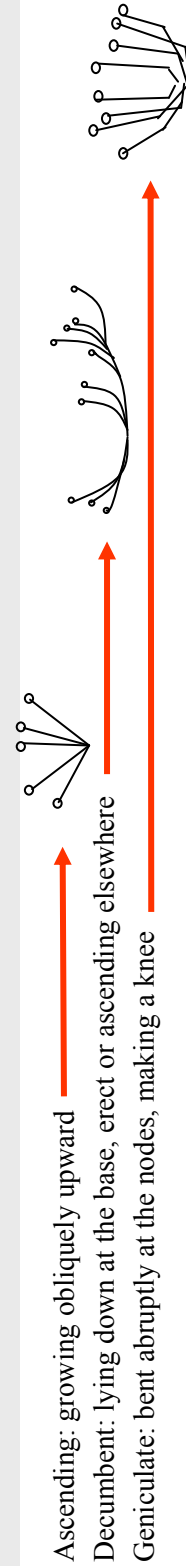
Habitat: roadsides, lawns, waste areas

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



Comparison of select *Poa* species:

| | Longevity | Height (cm) | Growth Form | Leaves / Stems | Panicle / Flowers |
|--|--------------------|-------------|-------------------------|---|---|
| <i>Poa pratensis</i> ssp. <i>pratensis</i> (Kentucky bluegrass) | Perennial | 30-100 | Ascending to decumbent | <ul style="list-style-type: none"> Not glaucous | <ul style="list-style-type: none"> 3-5 branches per node anthers 1-2 mm long; tufts of hairs at base of lemmas |
| <i>Poa pratensis</i> ssp. <i>irrigata</i> (spreading bluegrass) | Perennial | 8-30 | Ascending to decumbent | <ul style="list-style-type: none"> Somewhat glaucous | <ul style="list-style-type: none"> 1-2 branches per node anthers 1-2 mm long; tufts of hairs at base of lemmas |
| <i>Poa trivialis</i> (rough bluegrass) | Perennial | 30-80 | Decumbent or geniculate | <ul style="list-style-type: none"> Scabrous; ligules on upper leaves 3-5 mm long | <ul style="list-style-type: none"> Anthers 1-2 mm long tuft of hairs at base of lowest lemma first glume narrow, curved, acute; prominent nerve |
| <i>Poa annua</i> (annual bluegrass) | Annual or biennial | 2-20 | Ascending | <ul style="list-style-type: none"> Light or yellowish green soft and much shorter than stems; mostly basal | <ul style="list-style-type: none"> Anthers <1 mm long Lacking tuft of hair at base of lemma first glume claw-like and half as long as second, with distinct nerve |
| <i>Poa compressa</i> (Canada bluegrass) | Perennial | 15-60 | Ascending or geniculate | <ul style="list-style-type: none"> Short; ligules 1 mm long culms conspicuously flattened | <ul style="list-style-type: none"> Anthers 1-2 mm long Lacking hairs at base of lemma |



INFLORESCENCE A PANICLE

GRASS FAMILY (POACEAE)

Characteristics of *Elymus* species:

- 1-2 spikelets per node
- All spikelets with 2 glumes

Quackgrass • *Elymus repens* syn. *Agropyron repens*

Invasiveness Rank: 59 points

Species Code: ELRE4

General Information:

Perennial
15-60 cm tall
Bluish-green

Description:

Roots

- Extensive creeping rhizomes

Leaves

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

Inflorescences

- Glumes with narrow hyaline margin and abruptly awned
- Lemmas without awns, or awns are as long as the lemma (similar to some native *Elymus* species)
- Spikelets glabrous (not distinctly hairy)
- Anthers 4-5 mm long (unlike native *Elymus* spp.)



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



<http://www.uni-graz.at>



<http://extension.missouri.edu>



<http://www.ruar.uni-bochum.de>

INFLORESCENCE A SPIKE

Siberian wildrye • *Elymus sibiricus*

Invasiveness Rank: 53 points

Species Code: ELSI

General Information:

Perennial

70-120 cm tall

Grows in clumps or with runners (unlike *E. repens*)

Description:

Inflorescence

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

Habitat: eroding river banks, clearings, roadsides, waste places, sandy-gravelly soils

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



INFLORESCENCE A SPIKE

Alaskan wheatgrass • *Elymus alaskanus*

Slender wheatgrass • *Elymus trachycaulus*

| | |
|--|------------------------|
| Glumes very narrow | <i>E. trachycaulus</i> |
| Glumes rounded with very broad hyaline margin: | |
| • Glumes 3/4 to the same length as the spikelet length | <i>E. trachycaulus</i> |
| • Glumes about 1/2 to 2/3 of spikelet length | <i>E. alaskanus</i> |

General Information:

Perennial

70-120 cm tall

Grows in clumps or with runners (unlike *E. repens*)

Description:

Roots

- No rhizomes

Inflorescence

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

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

Elymus alaskanus



Elymus trachycaulus



GRASS FAMILY (POACEAE)

Traits of *Hordeum* species in Alaska:

- 3 spikelets per node but the two lateral ones are often reduced to awns
- Each spikelet with one flower

Foxtail barley • *Hordeum jubatum*

Invasiveness Rank: 63 points

Species Code: HOJU

General Information:

Perennial

0.2-0.8m tall

Description:

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

Remarks: Nativity of this species is disputed. 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. Regardless of nativity, it is considered a nuisance weed due to the ability of awns to become lodged in animals'

nos-

es and



INFLORESCENCE A SPIKE

Common barley • *Hordeum vulgare*

Invasiveness Rank: 39 points

Species Code: HOVU

General Information:

Annual

1.0-1.5m tall

Description:

Leaves

- With well-developed auricles, <6 mm (unlike *H. jubatum* or *H. brachyantherum*)

Inflorescence

- Does not disarticulate at maturity (unlike *H. murinum* ssp. *leporinum* or *H. jubatum*)
- Awns 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



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GRASS FAMILY (POACEAE)

Leporinum barley • *Hordeum murinum* ssp. *leporinum*

Invasiveness Rank: 60 points

Species Code: HOMUL

General Information:

Annual

Up to 1.1m tall

Description:

Annual

Leaves

- With 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



INFLORESCENCE A SPIKE

GRASS FAMILY (POACEAE)

Meadow barley ● *Hordeum brachyantherum*

General Information:

Perennial
Up to 95 cm tall

Description:

Leaves

- Lacking auricles (unlike *H. vulgare* and *H. murinum* ssp. *leporinum*)

Inflorescence

- Awns of lemmas <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 lemmas | Awns disarticulate at maturity? |
|---|-----------|----------|--------------------------|---------------------------------|
| <i>Hordeum jubatum</i> (foxtail barley) | Perennial | None | 1-6 cm | Yes |
| <i>Hordeum vulgare</i> (common barley) | Annual | <6 mm | Absent or 3-18 cm | No |
| <i>Hordeum murinum</i> ssp. <i>leporinum</i> (leporinum barley) | Annual | <8 mm | 2-4 cm | Yes |
| <i>Hordeum brachyantherum</i> (meadow barley) | Perennial | None | <1 cm | Yes |

INFLORESCENCE A SPIKE

Timothy grass • *Phleum pratense*

Invasiveness Rank: 54 points

Species Code: PHPR3

General Information:

Perennial

Up to 1.5m tall

Description:

Leaves

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

Inflorescence

- Long, cylindrical, spike-like panicle (unlike native *P. alpinum*, which has a shorter, ovoid panicle)
- Glumes with 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



INFLORESCENCE A SPIKE

Meadow foxtail • *Alopecurus pratensis*

Invasiveness Rank: 52 points

Species Code: ALPR3

General Information:

Perennial
30-50 cm tall

Description:

Stems

- Erect

Inflorescence

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

Habitat: meadows and roadsides

Distribution: Pacific maritime and interior boreal ecogeographic regions;



INFLORESCENCE A SPIKE

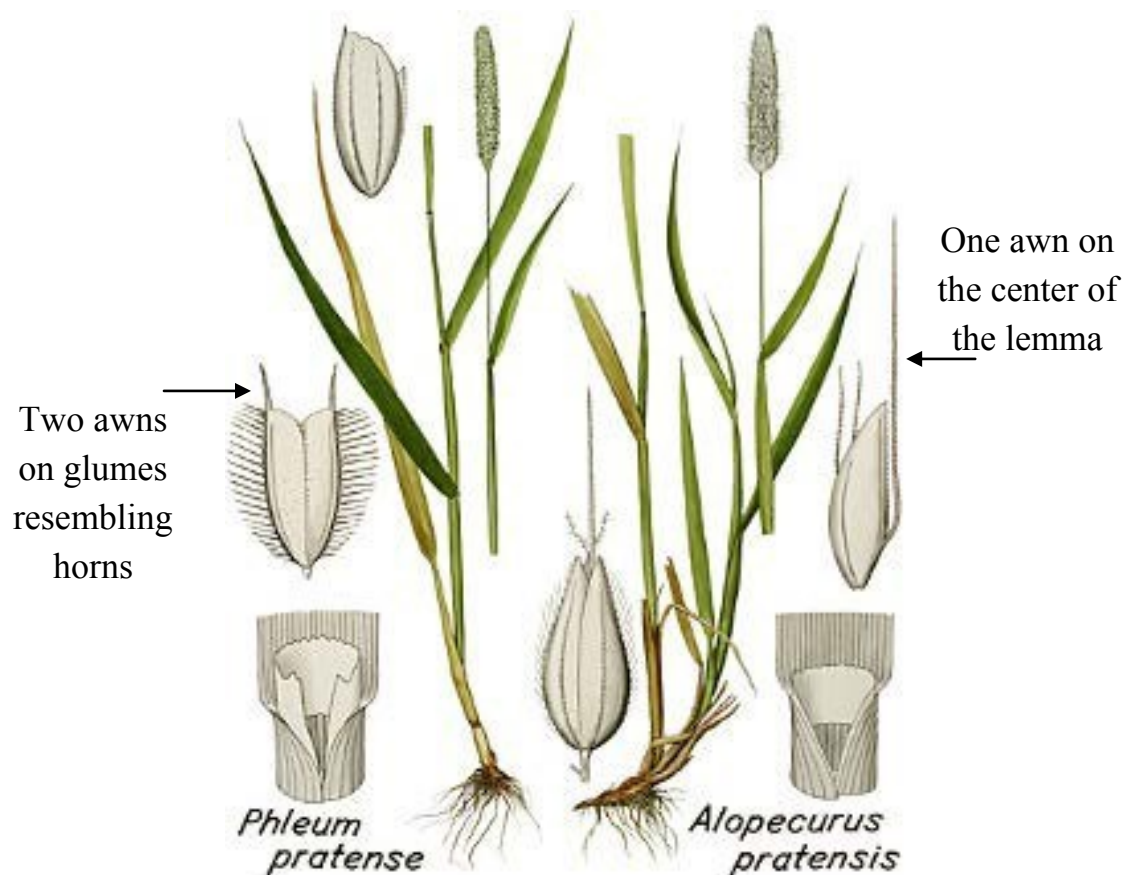
Distinguishing *Alopecurus* species and *Phleum* species:

Similarities between *Alopecurus* and *Phleum* species:

- Spikelets stalked but stalks are so short that the inflorescence appears spike-like
- 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



Water foxtail • *Alopecurus geniculatus*

Invasiveness Rank: 49 points

Species Code: ALGE2

General Information:

Perennial
15-50cm tall
Grows in tufts

Description:

Stems

- Decumbent (unlike *A. pratensis*, which is erect)

Inflorescence

- Short, cylindrical, spike-like panicle, <3 cm long
- Lemmas with bent or twisted awns that may exceed the lemma by 2-4 mm
- Glumes without awns (unlike *Phleum* species)
- Glumes or lemmas pubescent
- Anthers 1-2 mm long and yellow-violet

Habitat: meadows, stream banks, shores, shallow water

Distribution: scattered throughout all three ecogeographic regions



INFLORESCENCE A SPIKE

Water Foxtail • *Alopecurus aequalis*

General Information:

Perennial
15-60 cm tall
Grows in tufts

Description:

Stems

- Erect or decumbent

Inflorescence

- Slender, cylindrical, spike-like panicle 2-7 cm long
- Lemmas with straight or slightly geniculate awns
- Awns barely exceeding glumes (<1.5 mm)
- Glumes or lemmas pubescent
- Anthers up to 0.5 mm long



Habitat: riparian zones, shallow water, newly deposited sediment

Distribution:

- Pacific maritime – southwest to Amchitka Island and throughout
- Interior boreal - north to Fort Yukon and west to the Seward Peninsula

Remarks: *A. aequalis* can potentially co-occur with *A. geniculatus*, as it grows in similar habitats. Native *A. aequalis* can be distinguished by:

- Awns of lemmas not exceed the lemma tip, or exceed the tip only by < 1.5 mm (longer in *A. geniculatus*)



INFLORESCENCE A SPIKE

GRASS FAMILY (POACEAE)

Comparison of *Alopecurus pratensis* and *Alopecurus geniculatus*:

Alopecurus pratensis

Long, cylindrical
inflorescence
(>3 cm)

Lemma with a
straight awn
emerging from the
middle

Erect to geniculate
lower stems

Alopecurus geniculatus

Short, cylindrical
inflorescence
(<3 cm)

Lemma with bent
or twisted awns

Decumbent lower
stems



INFLORESCENCE A SPIKE

Perennial ryegrass • *Lolium perenne*
syn. Lolium perenne ssp. perenne

Invasiveness Rank: 52 points

Species Code: LOPEP

General Information:

Annual to perennial

Up to 0.9m tall

Description:

Leaves

- Young shoots with folded leaf blades

Inflorescence

- Lemmas lacking awns, or with 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

Remarks: There are no native *Lolium* species in Alaska.

•



INFLORESCENCE A SPIKE

Italian ryegrass • *Lolium multiflorum*
syn. Lolium perenne ssp. multiflorum

Invasiveness Rank: 41 points

Species Code: LOPEM2

General Information:

Annual to short-lived perennial
Up to 1.2m tall

Description:

Leaves

- Young shoots with rolled leaf blades

Inflorescence

- Lemmas with 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

Remarks: There are no native *Lolium* species in Alaska.

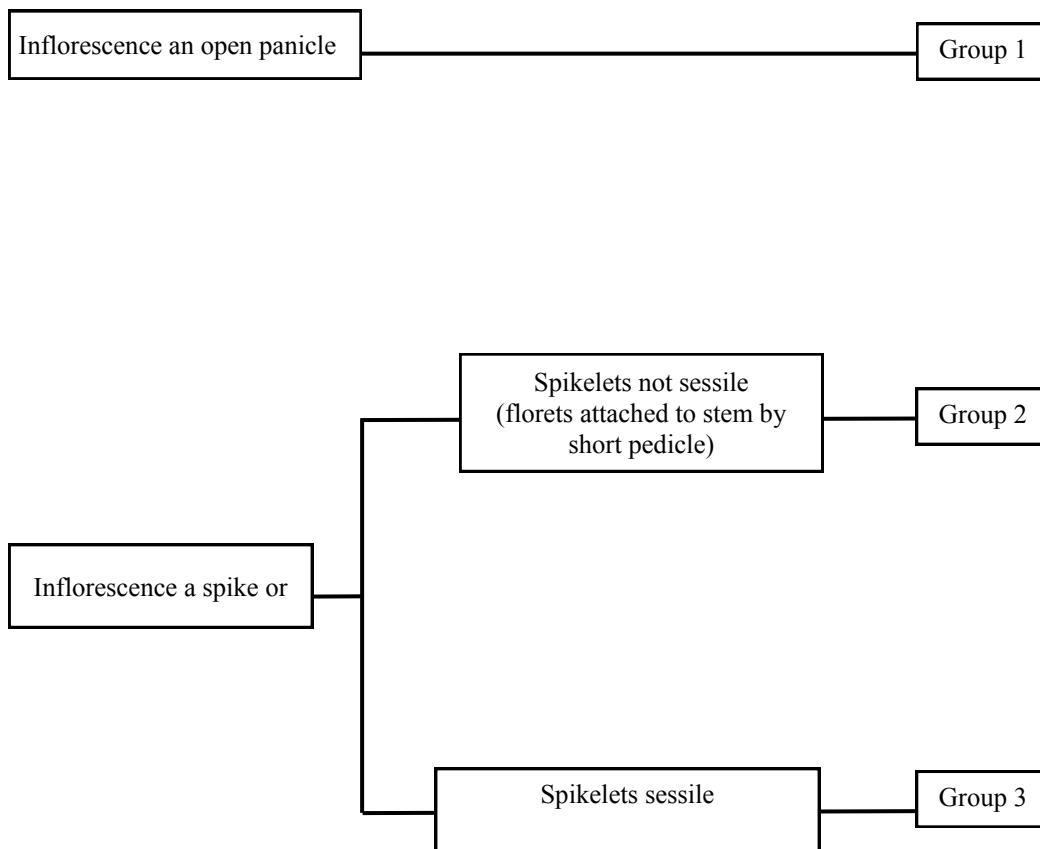
Lolium perenne readily hybridizes with *Lolium multiflorum* and hybrids may exhibit a range of characteristics from both species making identification difficult.

Common ryegrass (*Lolium* species) is a commercial mixture of ryegrass species frequently used in revegetation projects, which is comprised mostly of *Lolium*



INFLORESCENCE A SPIKE

GRASS FAMILY (POACEAE)



= native to Alaska



= not native to Alaska

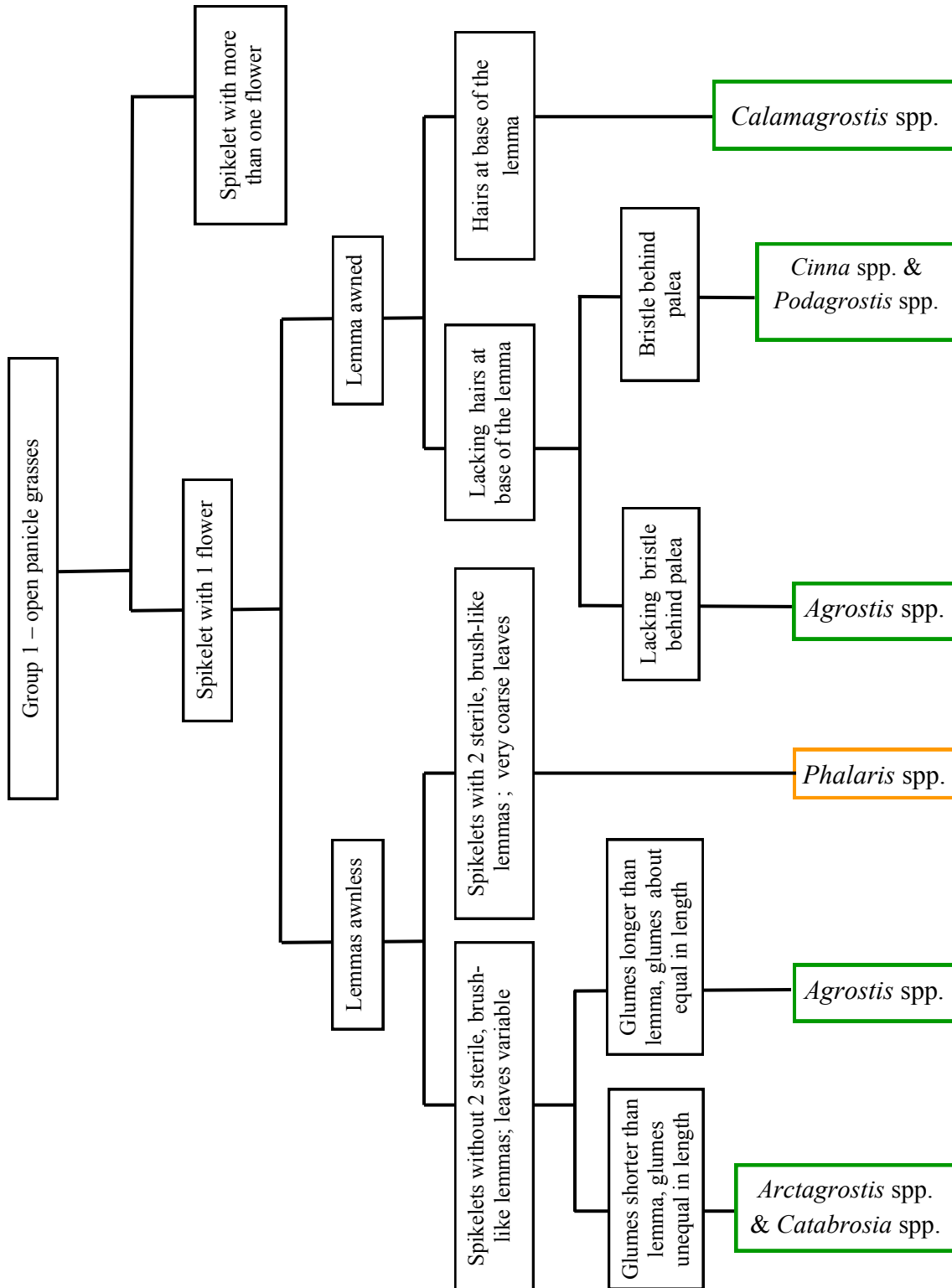


= disputed native status OR large genus with some species native and some not native to Alaska

KEY TO GRASSES OF DISTURBED HABITATS IN ALASKA

Adapted from Hultén 1968

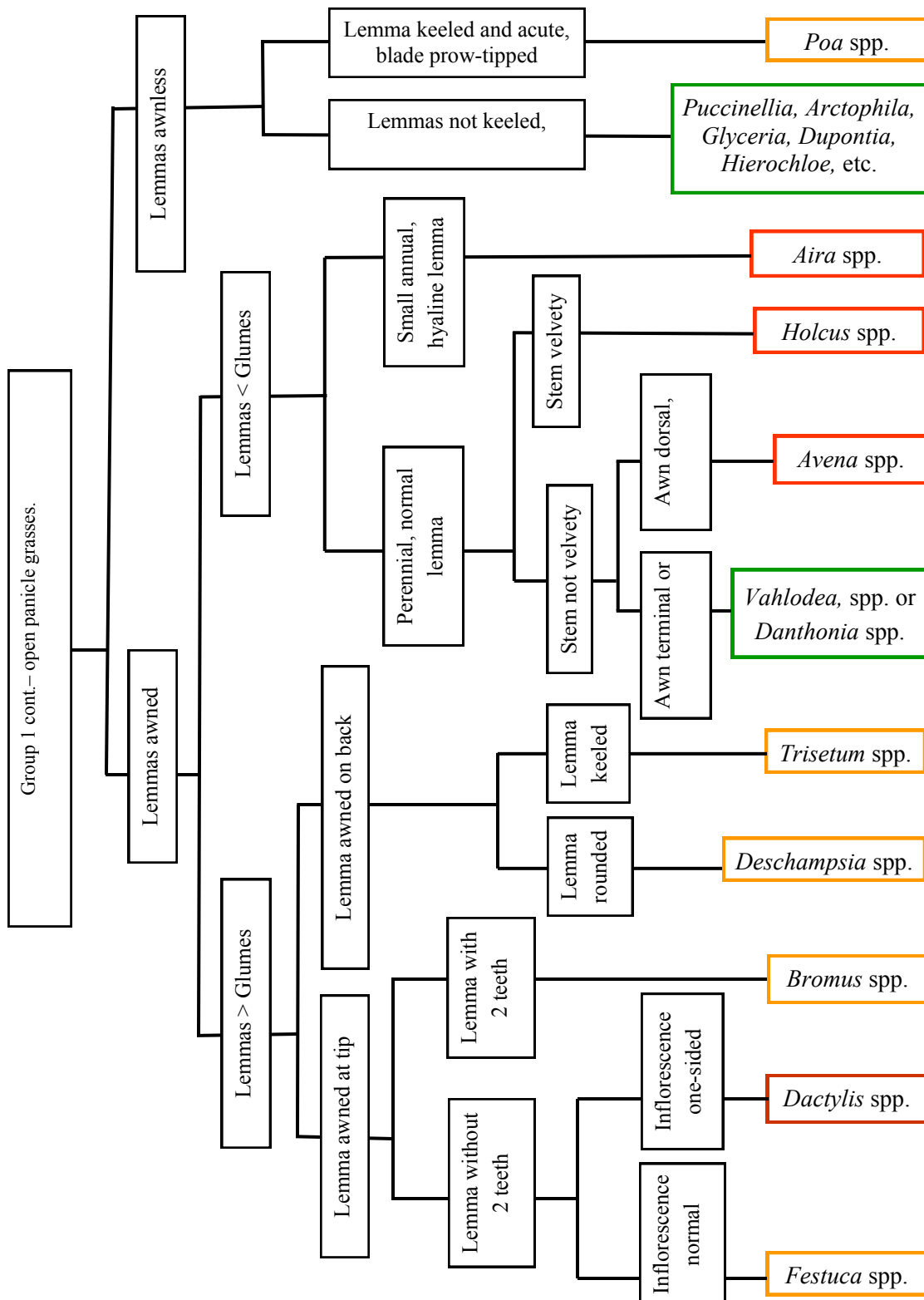
GRASS FAMILY (POACEAE)



KEY TO GRASSES OF DISTURBED HABITATS IN ALASKA

Adapted from Hultén 1968

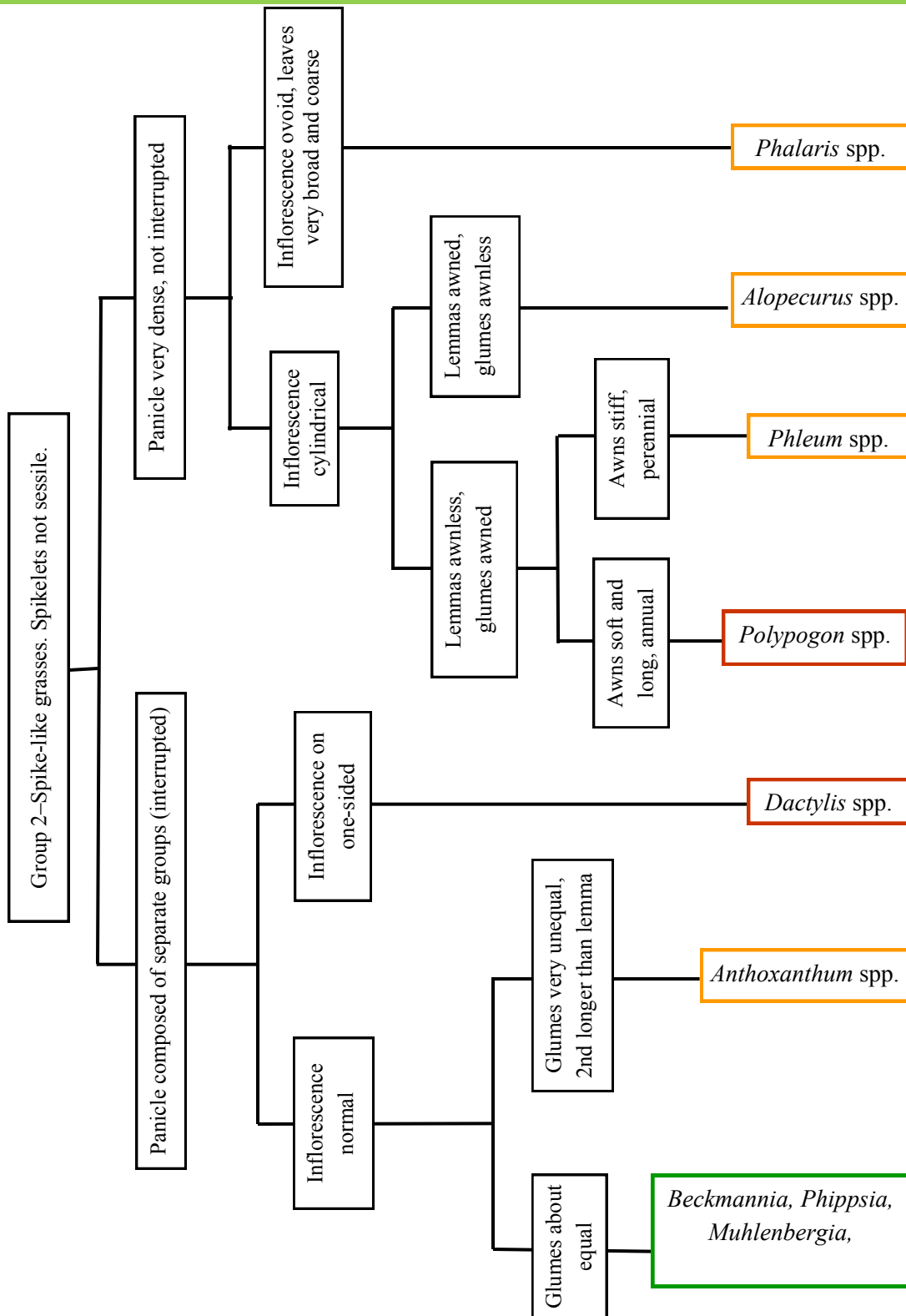
GRASS FAMILY (POACEAE)



KEY TO GRASSES OF DISTURBED HABITATS IN ALASKA

Partial key to Alaska grasses, part 2; consult Hultén (1968) or Welsh (1974) for more information

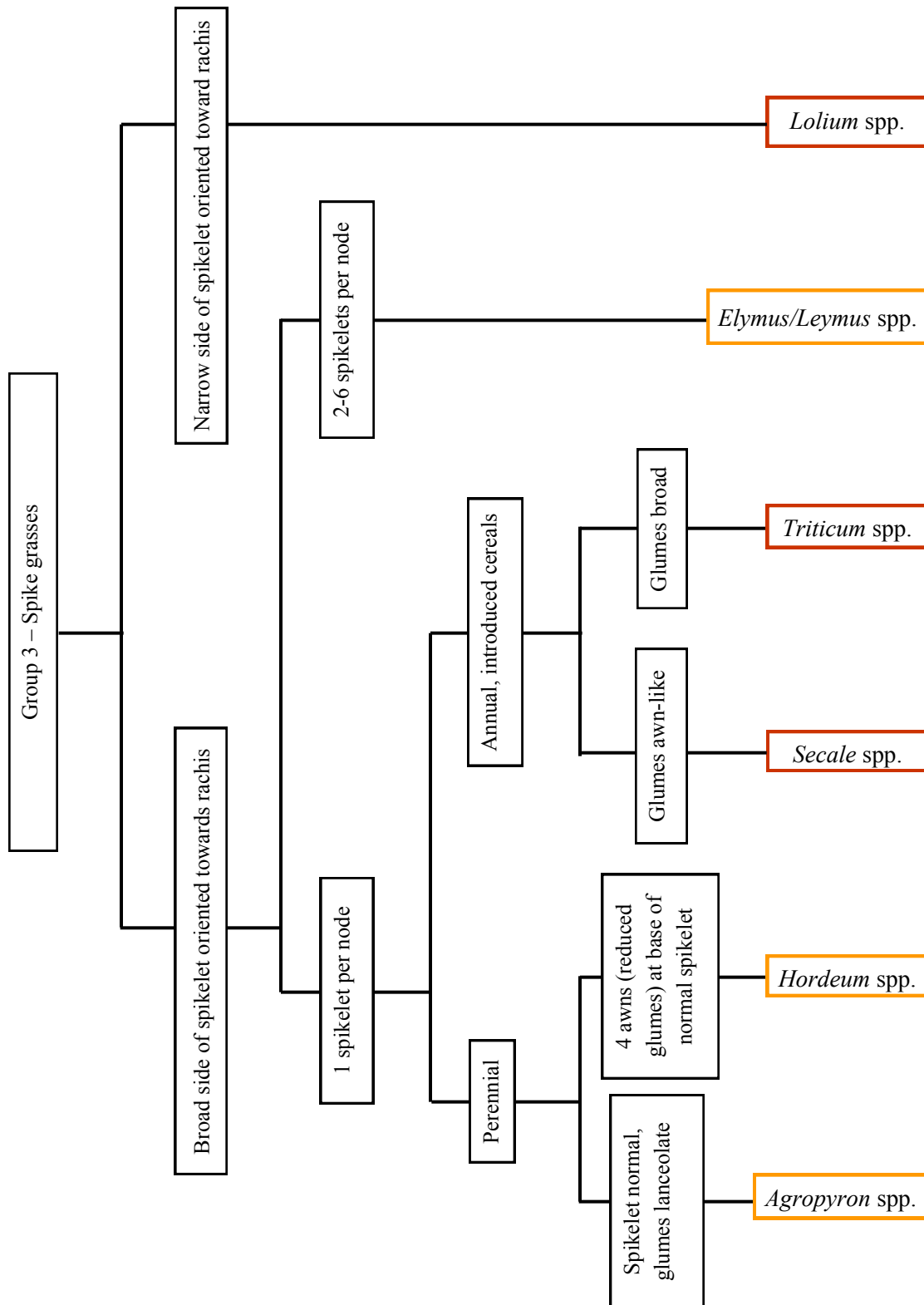
GRASS FAMILY (POACEAE)



KEY TO GRASSES OF DISTURBED HABITATS IN ALASKA

Partial key to Alaska grasses, part 2; consult Hultén (1968) or Welsh (1974) for more information

GRASS FAMILY (POACEAE)



KEY TO GRASSES OF DISTURBED HABITATS IN ALASKA

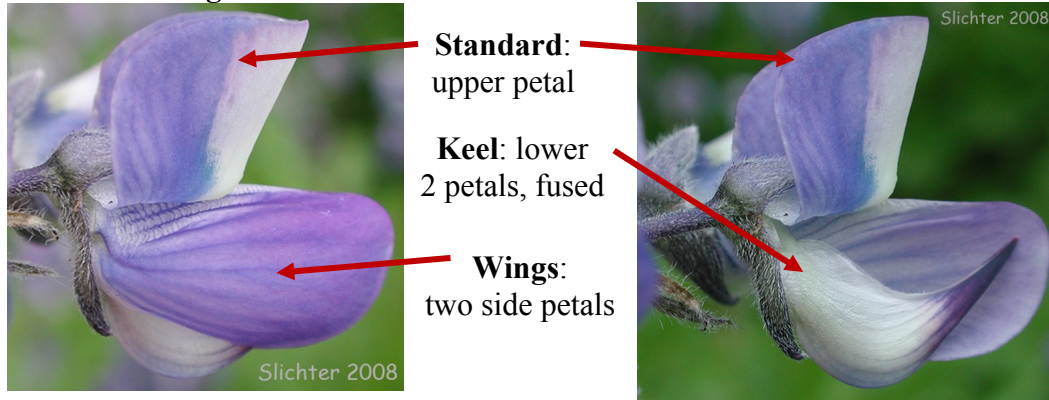
Partial key to Alaska grasses, part 2; consult Hultén (1968) or Welsh (1974) for more information

LEGUME FAMILY (FABACEAE)

Legume Family (Fabaceae)

- Includes herbs, shrubs, vines and trees; only herbs and shrubs represented in Alaska
- Roots with nitrogen-fixing bacterial nodules
- Leaves compound
- Flowers composed of 5 sepals, 5 petals, 10 stamens and 1 style
 - Fruit 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

General Information:

Biennial

1-1.5 m tall

Description:

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 pages for comparison)

Inflorescence

- White, fragrant

Fruit

- Black when ripe



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;



TRIFOLIATE LEAVES, INFLORESCENCE ELONGATE

Yellow sweetclover • *Melilotus officinalis*
 syn. *Melilotus albus*, *Melilotus alba*

Invasiveness Rank: 69 points

Species Code: MEOF

General Information:

Annual or biennial

1-1.5 m tall

Description:

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)

Inflorescence

- Yellow

Fruit

- Yellow-brown when ripe

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

Remarks: *Melilotus albus* and

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



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

Invasiveness Rank: 64 points

Species Code: MESAF

General Information:

Perennial, but plants escaped from cultivation behave as annuals
 Up to 0.9m tall

Description:

Stems

- Decumbent or erect

Leaves

- Trifoliate and toothed at the tip

Inflorescence

- Yellow
- Globular clusters
- 10-13 mm diameter

Fruits

- Pods 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.



TRIFOLIATE LEAVES, INFLORESCENCE GLOBULAR

Alfalfa • *Medicago sativa* ssp. *sativa*
 syn. *Medicago sativa*

Invasiveness Rank: 59 points

Species Code: MESAS

General Information:

Annual or perennial
 <1 m tall

Description:

Stems

- Decumbent or erect

Leaves

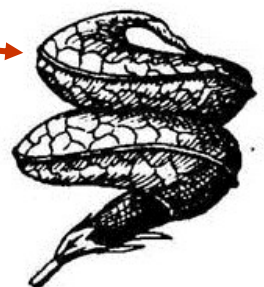
- Trifoliate and toothed at the tip

Inflorescence

- Purple
- Globular clusters
- <1 cm diameter

Fruits

- Pods 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 lupulina*

Invasiveness Rank: 48 points

Species Code: MELU

General Information:

Summer or winter annual

Prostrate stems up to 40cm long

Description:

Stems

- Hairy and trailing

Leaves

- Leaflets 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 leaflets)

Inflorescence

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

Fruits

- Pods ridged, 1-seeded
- Black when ripe

Habitat: roadsides, lawns, cultivated crops



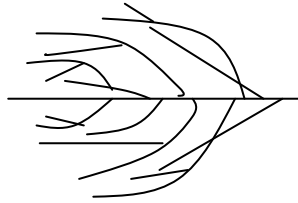
TRIFOLIATE LEAVES, INFLORESCENCE GLOBULAR

LEGUME FAMILY (FABACEAE)

Differences between *Melilotus* and *Medicago* species:

Growth Habit

Erect



Semi-erect,
often creeping



Pods

Ovoid



Coiled or curved



Inflorescence

Elongated



Short



Leaves

Leaflets are toothed for two-thirds of their length



Melilotus
species

Elongate leaflets are toothed only
at the tip (*M. sativa* subspecies)



Medicago
species

TRIFOLIATE LEAVES

LEGUME FAMILY (FABACEAE)

White clover • *Trifolium repens*

Invasiveness Rank: 59 points

Species Code: TRRE3

General Information:

Perennial

Approx. 15 cm tall

Prostrate stems up to 30 cm long

Description:

Stems

- Creeping and rooting at nodes

Leaves

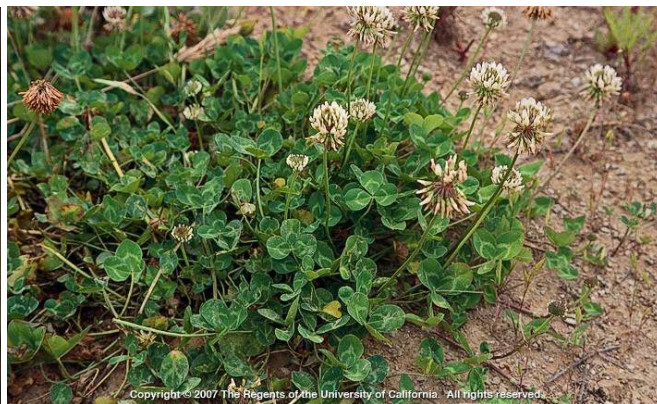
- Leaflets often with V-shaped marks, but not always

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

General Information:

Perennial
15-60 cm tall

Description:

Stems

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

Inflorescence

- White to pinkish



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Habitat and distribution: similar to

Red clover • *Trifolium pratense*

Invasiveness Rank: 53 points

Species Code: TRPR2

General Information:

Perennial
15-60 cm tall

Description:

Stems

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

Leaves

- 3 leaflets immediately below the flowering head (unlike *T. repens* and *T. hybridum*)
- Leaflets often with v-shaped marks

Inflorescence

- Reddish-pink flowers



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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

General Information:

Perennial

0.6-0.9m tall

Description:

Leaves

- Divided into 5 oval-linear leaflets
- Center 3 leaflets are large (appearing as a trifoliate or trefoil leaf)
- Lower 2 leaflets resembling stipules

Inflorescence

- Yellow globular clusters on a long stalk

Fruits

- Pods brown-black, cylindrical, resembling 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



5 LEAFLETS APPEARING AS 3, INFLORESCENCE GLOBULAR

Crownvetch • *Securigera varia*
syn. Coronilla varia

Invasiveness Rank: 68 points

Species Code: SEVA4

General Information:

Perennial

Up to 0.9m tall

Trailing stems up to 2m long

Description:

Leaves

- Pinnately compound with a terminal leaflet

Inflorescence

- Pink-white

Fruits

- Pods linear

Habitat: roadsides; used for revegetation outside of Alaska

Distribution: interior boreal; Fairbanks and along greenbelts in Anchorage



PINNATE LEAVES, INFLORESCENCE GLOBULAR

LEGUME FAMILY (FABACEAE)

Bird vetch • *Vicia cracca* ssp. *cracca*

Invasiveness Rank: 73 points

Species Code: VICRC

General Information:

Perennial

Climbing stems up to 2m long

Description:

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 pod not constricted

Habitat: roadsides, forest edges and openings, thickets

Distribution: all three ecogeographic regions



Winter vetch • *Vicia villosa*

Invasiveness Rank: 53 points

Species Code: VIVI

General Information:

Annual or biennial

0.3-0.9m tall

Description:

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

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

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



PINNATE LEAVES, INFLORESCENCE ELONGATE OR IN LEAF AXIL

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

Invasiveness Rank: not yet ranked

Species Code: VISAN2

General Information:

Perennial

Stems up to 2m long

Description:

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 well-developed and branched
- Stipules 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 densely bearded at the tip

Habitat: disturbed ground, yards, roadsides



PINNATE LEAVES, INFLORESCENCE ELONGATE OR IN LEAF AXIL

Giant vetch • *Vicia gigantea*

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



American vetch • *Vicia americana*

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



LEGUME FAMILY (FABACEAE)

Native Fabaceae genera resembling invasive *Vicia* species:

Lathyrus species

- Winged stem
- Fewer leaflets per leaf, <12
- Leaflets distinctly narrow and long or rounded
- Sometimes has tendrils



Oxytropis species

- No tendrils
- Pod is not constricted between seeds
- Keel is tipped with a sharp point



Hedysarum species

- Erect stems
- No tendrils
- Pod is constricted between seeds



Astragalus species

- Erect stems
- No tendrils
- Pod is not constricted between seeds
- Keel is not tipped with a sharp point



PINNATE LEAVES, INFLORESCENCE ELONGATE OR IN LEAF AXIL

LEGUME FAMILY (FABACEAE)

Marsh pea • *Lathyrus palustris*

General Information:

Perennial

Vine stems 45-120 cm long

Description:

Stems

- Winged

Leaves

- 2-3 pairs of leaflets
- Tendrils



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

Beach pea • *Lathyrus japonicus*

General Information:

Perennial

Stems 15-30 cm long

Description:

Stems

- Winged

Leaves

- Leaflets are broadly ovate
- Sometimes with tendrils



Habitat and distribution: sandy soils along

Alpine sweetvetch • *Hedysarum alpinum*

General Information:

Perennial

20-70 cm tall

Description:

Stems

- Erect, not climbing or trailing

Leaves

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

Fruits

- Pod constricted between seeds



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

Distribution: Pacific maritime and interior boreal regions

PINNATE LEAVES, INFLORESCENCE ELONGATE OR IN LEAF AXIL

Siberian pea shrub • *Caragana arborescens*

Invasiveness Rank: 74 points

Species Code: CAAR18

General Information:

Shrub
<3 m tall

Description:

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



SHRUBS WITH BRIGHT YELLOW, MOSTLY SINGLE FLOWERS

Scotch broom • *Cytisus scoparius*

Invasiveness Rank: 69 points

Species Code: CYSC4

General Information:

Perennial, evergreen shrub
2-4m tall

Description:

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 dark brown to black
- Pods 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

General Information:

Perennial

0.4-1.0m tall

Description:

Leaves

- Palmately compound
- 10-18 leaflets per leaf (more than native lupines)
- Basal leaves 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

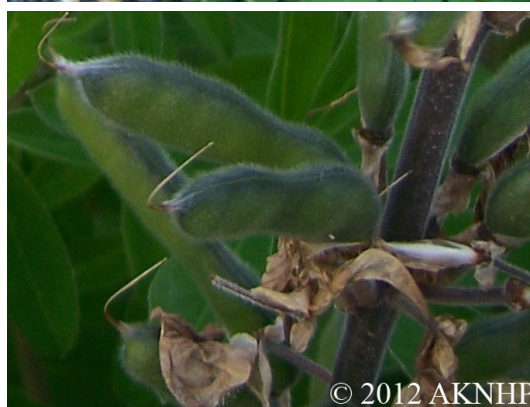
Fruits

- Hairy pods up to 5 cm long

Habitat: meadows, gravel bars, shaded forest understories, disturbed sites, roadsides

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

Remarks: The nativity of this species is suspect. Alaska-specific flora consider it introduced to Alaska; however, 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.



PALMATE LEAVES

Arctic lupine • *Lupinus arcticus*

Nootka lupine • *Lupinus nootkatensis*

Description:

Leaves

- Leaves with 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

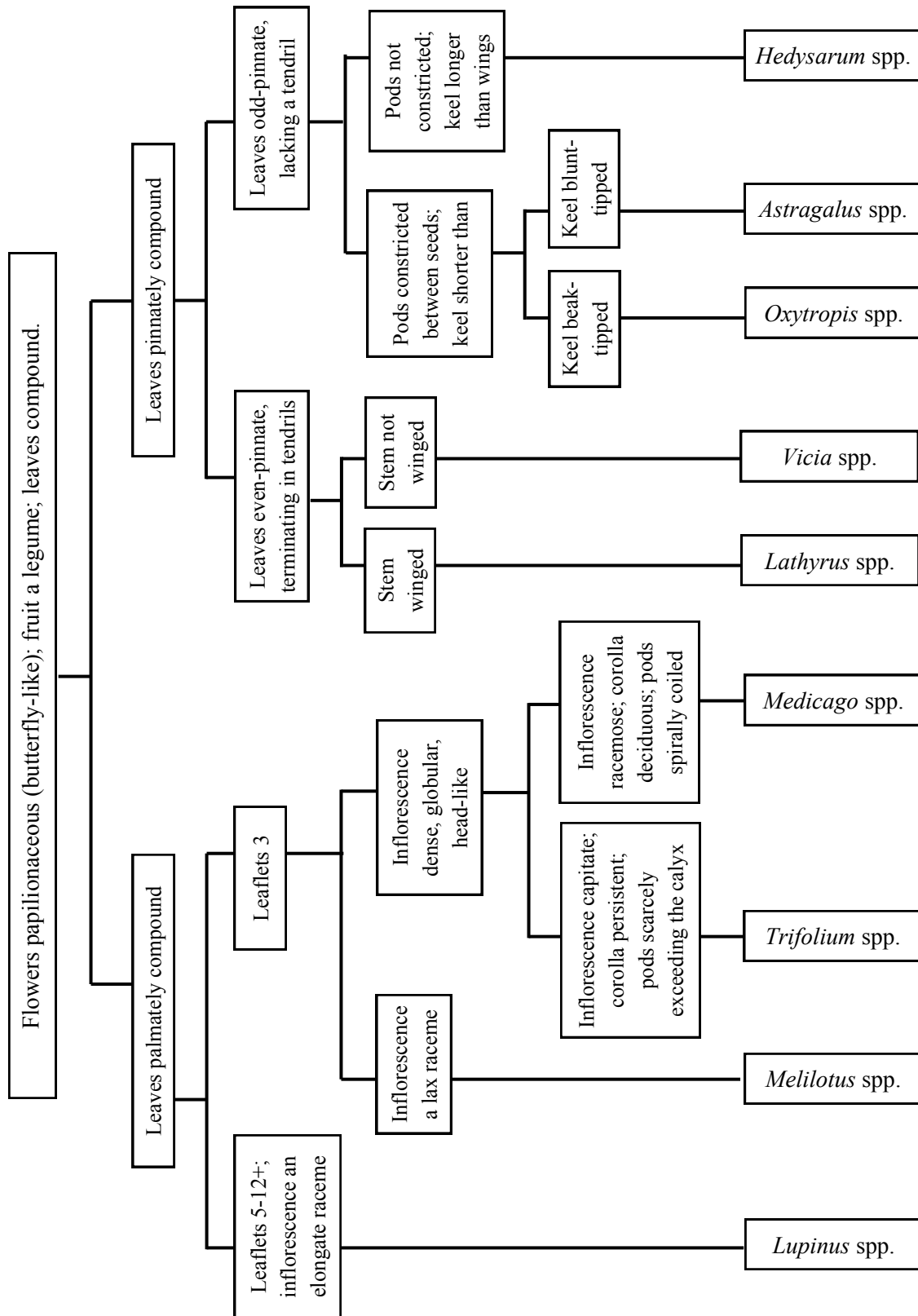
L. nootkatensis:

- 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



PALMATE LEAVES

LEGUME FAMILY (FABACEAE)



KEY TO THE FABACEAE GENERA OF ALASKA

Giant hogweed • *Heracleum mantegazzianum*

Invasiveness Rank: 81 points

Species Code: HEMA17

General Information:

Biennial or perennial
3-4.5 m tall
Typically die after flowering

Description:

Stems

- Hollow
- Reddish spots
- Bristles

Leaves

- Compound

Inflorescence

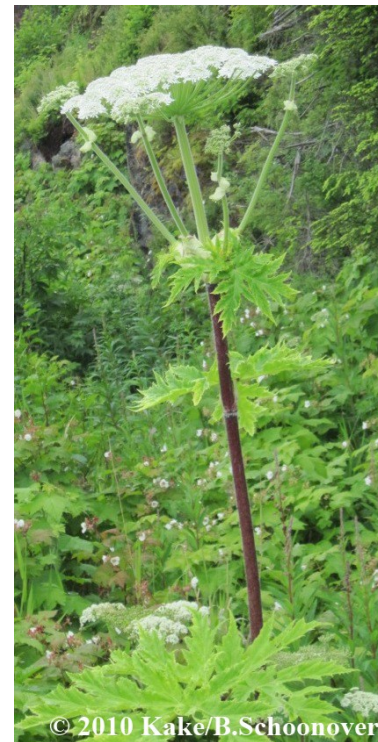
- Umbels up to 75 cm in diameter
- Flowers small and white

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.



Comparison to native *H. maximum*:

| | Height | Umbel Width | Leaves |
|--------------------------|---------|-------------|-----------------|
| <i>H. mantegazzianum</i> | < 4.5 m | < 75cm | Compound |
| <i>H. maximum</i> | < 1.8m | <30 cm | Palmately lobed |

TOUCH-ME-NOT FAMILY (BALSAMINACEAE)

Ornamental jewelweed • *Impatiens glandulifera*

Invasiveness Rank: 82 points

Species Code: IMGL

General Information:

0.9-1.8 m tall

Entire plant has purple or reddish tinge

Description:

Stems

- Hollow

Leaves

- Mostly opposite or whorled
- Serrated margins
- Petioles with large glands

Inflorescence

- White, pink, red or purple
- With a 4-5 mm long spur

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,



Touch-me-not • *Impatiens noli-tangere*

General Information:

0.2-0.8m tall

Smaller than *I. glandulifera*

Description:

Stems

- Watery to fleshy

Leaves

- Alternate
- Margins coarsely toothed

Inflorescence

- Yellow-orange with brown spots
- With a 6-10 mm long spur

Fruits

- Dehisce explosively

Habitat: moist forests and stream banks

Distribution: Pacific maritime and interior boreal regions



Key to select common, small, blue-flowered species:

- 1a. Alternate leaves and round stemsBoraginaceae
 - 2a. Annual or biennial, fruit with nutlets with hooked prickles*Lappula*
 - 3a. 2 rows of prickles on nutlet*L. squarrosa*
 - 3b. 1 row of prickles on nutlet*L. occidentalis*
 - 2b. Perennial
 - 4a. Up to 10 cm tall, nutlets with jagged prickles on the margins.....*Eritrichium*
 - 4b. Up to 40 cm tall, smooth nutlets*Myosotis*
 - * Calyx densely covered in hairs, which are all appressed in one direction.....*M. scorpioides*
 - * Calyx with spreading hairs*M. asiatica*
- 1b. Opposite leaves
 - 5a. 5 petals and sepals, 2 stamens, fruit is a capsule with seeds*Veronica*
(Plantaginaceae)

*Mertensia paniculata* (Boraginaceae)*Myosotis scorpioides* (Boraginaceae)*Veronica spicata* (Plantaginaceae)

European stickseed • *Lappula squarrosa*
syn. Lappula myosotis

Invasiveness Rank: 44 points

Species Code: LASQ

General Information:

Annual Perennial

Up to 60cm tall

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.

Remarks: 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.



European forget-me-not • *Myosotis scorpioides*
syn. Myosotis palustris, Myosotis scorpioides var. palustris

Invasiveness Rank: 54 points

Species Code: MYSC

General Information:

Perennial

15-60 cm tall

Entire plant has inconspicuous, scattered, short, stiff, appressed hairs

Description:

Roots

- Rhizomes and stolons

Stems

- Decumbent to ascending
- Mostly unbranched

Leaves

- Lower leaves with little to no stalk
- Upper leaves oblong, elliptical, or lance-shaped, with short appressed hairs or nearly smooth

Inflorescence

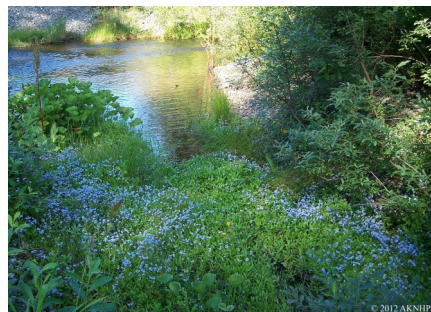
- Sky blue to white
- Pedicels 1-2 times as long as the calyx
- Floral tube of the corolla longer than calyxes (unlike native *M. laxa*, in which they are the same length)
- Flower 3-5 mm long, 4-10 mm wide (wider than native *M. laxa*)
- Calyx teeth equally broad and long
- Calyx has appressed hairs that are not hooked

Fruits

- Smooth, 4-parted nutlet, egg-shaped

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

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



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

General Information:

Short-lived perennial, sometimes annual
10-40 cm tall
Hairs inconspicuous, straight, appressed

Description:

Roots

- Lacking rhizomes and stolons

Stems

- Weak, slender, often decumbent

Leaves

- Oblong to lance-shaped
- 1.5-8 cm long, 3-15 mm wide

Inflorescence

- Pedicels usually longer than calyx
- Petals blue
- Corolla tube equal in length to calyxes (in *M. scorpioides* the corolla is longer)
- Flower is 3-7 mm long, 2-5 mm wide (narrower than *M. scorpioides*, or *M. sylvatica*)
- Calyx with appressed hairs lacking hooks



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

Spring forget-me-not • *Myosotis verna*

General Information:

Annual
5-40 cm tall
Hairs short, coarse, spreading to appressed, some hooked

Description:

Roots

- Lacking rhizomes and stolons

Stems

- Branched or unbranched

Leaves

- Lower leaves oblanceolate, somewhat stalked
- Upper leaves oblong to linear; 1-5 cm long, 2-10 mm wide

Inflorescence

- Pedicels often shorter than calyx
- Petals inconspicuous, white
- Flower 4-7 mm long, 1-2 mm wide
- Sepal tube covered with short, hooked hairs; lobes with stiff ascending hairs
- Flower asymmetric, with two longer lobes and three shorter lobes



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

Asian (alpine) forget-me-not • *Myosotis asiatica*

General Information:

Perennial

3-50 cm tall

Tufted, erect clumps

Hairs spreading or appressed hairs arising from base, some hooked

Description::

Roots

- Lacking rhizomes and stolons

Stems

- Branched several to many times, forming erect clumps

Leaves

- Lower leaves stalked, oblanceolate to elliptical; 5-13 cm long, 2-12 mm wide
- Stem leaves, without stalks, oblong to lance-shaped

Inflorescence

- Calyx teeth are longer than they are broad
- Pedicels are equal in length to the calyx
- Corollas blue, sometimes white; yellow bulges at the throat
- Calyx with ascending to spreading hairs, hooked or straight

Fruits

- Black, smooth, shiny, 1-2 mm long
- With narrow margin on upper half (unlike *M. arvensis* and *M. laxa*, which have a margin all around).



Habitat and distribution: alpine and subalpine meadows across Alaska; streambanks, rocky

Key to *Myosotis* species:

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

Stems erect, from branching stem-base or short rhizome, forming tight, erect, clumps; leaves largest basally, gradually reduced upwards; common at high elevations*M. asiatica*
 - 3b. Corollas 1-3 mm wide

Calyces asymmetric, 2 lobes longer than other 3.....*M. verna*

Common comfrey • *Symphytum officinale*

Invasiveness Rank: 48 points

Species Code: SYOF

General Information:

Perennial

0.3-0.9m tall

Coarse, stiff-hairs

Description:

Roots

- Taproot

Stems

- Hairy
- Winged

Leaves

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

Inflorescence

- Leafless, branched cluster
- 5-parted
- Blue to cream colored
- Nodding
- Tubular bell-shaped
- Tube 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



BELLFLOWER FAMILY (CAMPANULACEAE)

Rampion bellflower • *Campanula rapunculoides*

Invasiveness Rank: 64 points

Species Code: CARA

General Information:

Perennial

0.4-1 m tall

Description:

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

Remarks: Native *Campanula* species can be distinguished by smaller flowers or flowers that are borne singly, and an inflorescence that is not one-sided.



Tatarian honeysuckle • *Lonicera tatarica*

Invasiveness Rank: 66 points

Species Code: LOTA

General Information:

Shrub

Up to 3m tall

Description:

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



Distribution: one documented location in

Ju-
in a



neau
botan-

Bearberry honeysuckle • *Lonicera involucrata*

General Information:

Shrub

Up to 4m tall

Description:

Stems

- Finely branched

Leaves

- Often hairy on the underside

Inflorescence

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

Fruits

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

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

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



PINK FAMILY (CARYOPHYLLACEAE)

Traits of *Cerastium* and *Stellaria* Species in Alaska:

| <i>Cerastium:</i> | <i>Stellaria:</i> |
|-----------------------------|--|
| Petals are lobed or notched | 5 petals are deeply bifid, often appearing as 10 |
| Flowers have 5 styles | Flowers have 3 styles |
| Stem nodes are not swollen | Stem nodes are swollen |



Big chickweed • *Cerastium fontanum* ssp. *vulgare*
syn. Cerastium fontanum ssp. *triviale*

Invasiveness Rank: 36 points

Species Code: CEFOV2

General Information:

Biennial or perennial
 Prostrate stems up to 38cm long
 Stems and leaves hairy

Description:

Inflorescence

- Petal tips two-lobed
- Petals equal to or slightly longer than sepals
- Sepals hairy (unlike *C. glomeratum*, hairs are not longer than the sepal tip)



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Habitat: roadsides, waste places, gardens, fields

Distribution: all three ecogeographic regions; western limit is around Bethel, and it

Sticky chickweed • *Cerastium glomeratum*

Invasiveness Rank: 36 points

Species Code: CEG2

General Information:

Biennial or perennial

Up to 45cm tall

Description:

Stems and leaves

- With 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

Remarks: There are many native *Cerastium* species in Alaska. They can be distinguished



Cerastium beeringianum

from non-native species because their petals are always longer than their

Common chickweed • *Stellaria media*

Invasiveness Rank: 42 points

Species Code: STME2

General Information:

Annual,
Stems up to 40cm long

Description:

Stems

- Vascular bundles inside the stem stay intact when the stem is damaged
- With a line of white hairs on the stem (unlike native *Stellaria* species)

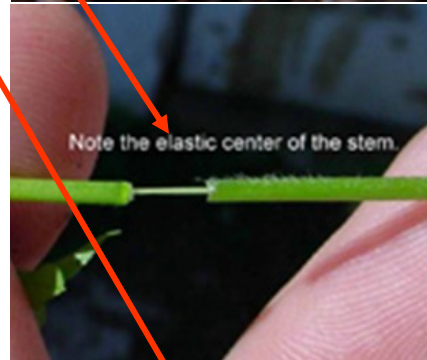
Leaves

- Opposite
- 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

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



White cockle • *Silene latifolia*

syn. *Lychnis alba* x *loveae*, *Melandrium album*

Invasiveness Rank: 42 points

Species Code: SILA21

General Information:

Annual to short-lived perennial
<100 cm tall

Description:

Roots

- Woody taproot

Stems

- Branched
- With fine hairs

Leaves

- Lanceolate to elliptic
- 3-12 cm long and 0.6-3 cm wide (narrower than *S. dioica*)
- Sparsely hairy on both sides
- Basal leaves wither by the time of flowering

Inflorescence

- Unisexual; plants with either all staminate flowers or all pistillate flowers
- Pedicels 1-5 cm long
- Several to many flowers

Fruits

- Capsules have 4-8 bifid teeth
- Slightly reflexed or spreading at maturity (*S. dioica* has teeth that roll backward)
-

Habitat: waste lands, roadsides

Distribution: Pacific maritime (only from Skagway in the southeast) and interior boreal regions (throughout Anchorage)

Remarks: *Silene latifolia* are and often



dioica and *Silene* closely related hybridize.

Red catchfly • *Silene dioica*

Invasiveness Rank: 42 points

Species Code: SIDI4

General Information:

Perennial
<80 cm tall



Description:

Roots

- Slender taproot

Stems

- Branched
- Softly pubescent and more or less glandular

Leaves

- Ovate to elliptic, 3-13 cm long, 1-5 cm wide (*S. latifolia* has narrower leaves)
- Stem leaves stalkless, lower leaves have petioles
- Softer and thinner than *S. latifolia*

Inflorescence

- Unisexual; plants have either all staminate flowers or all pistillate flowers
- Bracts have soft hair
- Several to many flowers
- **Bright pink**, 2-2.5 cm diameter
- Pedicels 0.2-3 cm, usually shorter than the calyx

Fruits

- Capsules with 5 bifid teeth that **curve backward at maturity**
- Capsule **broad, nearly spherical, thin, brittle**

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

Distribution: interior boreal, only reported from Anchorage and Palmer

Remarks: *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 (*S. latifolia*) is more sparsely pubescent
- 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

Species Code: SINO

General Information:

Annual

<75 cm tall

Entire plant densely hairy; outer portions may be sticky

Description:

Roots

- Slender taproot

Stems

- Erect
- Few basal braches

Leaves

- Elliptic, oblanceolate or lanceolate
- 6-14 cm long and 2-4.5 cm wide
- Hairy on both sides

Inflorescence

- Flowers bisexual
- 3 styles
- White, often tinged with pink
- Flowers 2-2.5 cm diameter
- Flowers opening at night

Fruits

- Capsules with 6 long, very narrow teeth (unlike *S. dioica* and *S. latifolia*) that are curved backward at maturity



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Habitat: arable and disturbed sites

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

Bladder campion • *Silene vulgaris*

Invasiveness Rank: 42 points

Species Code: SIVU

General Information:

Short-lived perennial

20-80 cm tall

Glabarous to glaucous, rarely pubescent

Description:

Roots

- Stout taproot

Stems

- Several to many
- Branched

Leaves

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

Inflorescence

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

Fruits

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

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

Distribution: Skagway; Dawson and the Yukon Territory



Corn spurry • *Spergula arvensis*

Invasiveness Rank: 32 points

Species Code: SPAR

General Information:

Annual

10-50cm tall

Description:

Stems

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

Leaves

- Leaves opposite but appear whorled
- 4 stipules per node (unlike *Spergularia* species, which 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



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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

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Lambsquarters • *Chenopodium album* ssp. *album*

Invasiveness Rank: 37 points

Species Code: CHALA

General Information:

Annual
0.1-1.0m tall

Description:

Stems

- Often turning 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 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*

General Information:

Annual
0.1-1.0m tall
Hairless
Succulent

Description:

Leaves

- Triangular

Inflorescence

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

Fruits

- Bright red
- Seeds black and lens-shaped

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



Common St. Johnswort • *Hypericum perforatum*

Invasiveness Rank: 52 points

Species Code: HYPE

General Information:

Perennial
30-90cmtall

Description:

Stems

- Two-sided
- Rust colored

Leaves

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

Inflorescence

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

Habitat: roadsides, gravel pits

Distribution: southeast Alaska; also reported from Anchorage



MORNING GLORY FAMILY (CONVOLVULACEAE)

Field bindweed • *Convolvulus arvensis*

Invasiveness Rank: 56 points

Species Code: COAR4

General Information:

Perennial

Up to 7m long

Stems trailing to twining

Description:

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

Remarks: There are no native *Convolvulus* species in Alaska. However, when not in



| | Roots | Leaves | Flowers | Sheaths |
|---|---------------------------------|--|---|---|
| <i>Fallopia convolvulus</i> (black bindweed) | Annual with thin but deep roots | arrow-shaped leaves; distinctly heart-shaped leaf base | small and reduced to white bracts, resembling other knotweeds | membrane-like sheaths where the leaf stalk joins the stem, resembling other knotweeds |
| <i>Convolvulus arvensis</i> (field bindweed) | perennial with rhizomes | arrow-shaped leaves; straight leaf bases | large and funnel-shaped | does not have membrane-like sheaths |

Redstem stork's bill • *Erodium cicutarium*

Invasiveness Rank: not yet ranked

Species Code: ERCI6

General Information:

Perennial

Flowering stems up to 30cm tall

Description:

Leaves and stems

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

Inflorescence

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

Fruits

- Resembling a bird's beak at maturity

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

Remarks: There are no native species of *Erodium* in Alaska. General traits of non-native *Erodium* species in Alaska include pinnate leaves and five sepals that twist spirally at maturity, while seeds remain attached.



Herb Robert • *Geranium robertianum*

Invasiveness Rank: 67 points

Species Code: GERO

General Information:

Annual
10 to 60 cm tall
Distinct unpleasant odor

Description:

Roots

- Taproot

Stems

- Hairy

Leaves

- Egg-to pentagon-shaped
- Light green to reddish
- Palmate
- Lowermost leaves 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 pink to purple
- Sepals 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

Remarks:

of *Geranium*
Alaska
palmate
five sepals
upwards at
release seeds.



General traits
species in
include
leaves and
that roll
maturity and

Canadian waterweed • *Elodea canadensis*

Invasiveness Rank: 79 points

Species Code: ELCA7

General Information:

Perennial

Freshwater aquatic forb

Tolerates brackish conditions

Dies back in the winter and regenerates from belowground parts in the spring

Description:

Leaves and Stems

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

Inflorescence

- Flowering plants rare
- Solitary flowers arise from leaf axils on long, thread-like stalks
- Male and female flowers borne on different plants

Fruits

- Spindle-shaped, capsules 5-6 mm long, 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

con-
from
the
boreal
Elodea is
Fairbanks



firmed
Juneau; in
interior
ecoregion
present in

Western waterweed • *Elodea nuttallii*

Invasiveness Rank: not yet ranked

Species Code: ELNU2

General Information:

Perennial

Freshwater aquatic forb

Tolerates brackish conditions

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

Description:

Leaves and stems

- Pale green and flaccid
- Whorls of 3 (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 flower stalk separates from stem during the bud stage

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

Remarks: *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.

TAPE-GRASS FAMILY (HYDROCHARITACEAE)

A comparison of freshwater aquatic forbs:

| | Regrows from: | Leaves per node | Leaf shape | Leaf length (cm) | Leaf width (mm) | Leaf color/texture |
|---|-------------------------|----------------------------------|--|------------------|-----------------|---|
| <i>Elodea canadensis</i> Canadian waterweed (not reported from AK) | Belowground parts | Whorls of 3 | Linear; blunt/rounded tips | 0.5-1.7 | 1.75-5 | <ul style="list-style-type: none"> • Dark green • Crisp • Minutely toothed • Recurved |
| <i>Elodea nuttallii</i> Western waterweed | Sunken prostrate shoots | Whorls of 3, but may appear as 6 | Linear/lanceolate; pointed tips | 0.4-1.5 | Usually <1.75 | <ul style="list-style-type: none"> • Pale green • Flaccid • Undulate margins folded along midrib • Recurved |
| <i>Myriophyllum spicatum</i> Eurasian watermilfoil (not reported from AK) | Rhizome | Whorls of 3-5, nodes 1+ cm apart | Pinnate with >12 pairs of leaflet segments; flimsy | <2.5 | Usually <1.0 | <ul style="list-style-type: none"> • Reddish-brown |
| <i>Myriophyllum 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 watermilfoil | >3 | Usually <1.0 | <ul style="list-style-type: none"> • Purplish |
| <i>Egeria densa</i> (Brazilian waterweed) | Stem fragments | Whorls of 4-8, most often 4 | Linear with acute tip | 1-4 | 2-5 | <ul style="list-style-type: none"> • Bright green |
| <i>Hydrilla verticillata</i> (hydrilla) | Tubers | Whorls of 3-10, most often 5 | Linear with acute tip | 0.5-2 | 2-4 | <ul style="list-style-type: none"> • With large teeth along margin and midvein |



Linear
(*Elodea* spp.)



Pinnate
(*Myriophyllum* spp.)

Splitlip hempnettle • *Galeopsis bifida*

Bristlestem hempnettle • *Galeopsis tetrahit*

Invasiveness Rank: 50 points

Species Code: GABI3, GATE2

General Information:

Annual

20 to 80 cm tall

Description:

Stems

- Square
- Swollen below nodes
- Bristly

Leaves

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

Inflorescence

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



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Habitat: disturbed sites, roadsides, forests; moist soil

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

Remarks: Two traits are commonly used to distinguish between these species:

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

Some botanists have described additional differences between these species, but there is no consensus on their validity. In Alaska some specimens exhibit intermediate flower sizes or a moderate cleft in the lower lip, and differences in size and morphology have even been observed among flowers on a single plant.

White deadnettle • *Lamium album*

Invasiveness Rank: 40 points

Species Code: LAAL

General Information:

Perennial

0.2 - 0.8m tall

Description:

Leaves

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

Inflorescence

- White
- Consists of two lips with a wide-open “mouth” between them; the upper lip is hooded and hairy; 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



Stinging nettle • *Urtica dioica*

NETTLE FAMILY (URTICACEAE)

General Information:

Perennial

0.5-3.0m tall

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

LOOSESTRIFE FAMILY (LYTHRACEAE)

Purple loosestrife • *Lythrum salicaria*

Invasiveness Rank: 84 points

Species Code: LYSA2

General Information:

Perennial
1.8-4.2m tall

Description:

Leaves

- Opposite

Inflorescence

- Pink
- 5-7 petals
- Dense terminal spikes

Fruits

- Short capsules, 4 mm long









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Habitat: moist, wetland habitats; garden escapee

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

Remarks: *Lythrum salicaria* superficially resembles native *Chamerion angustifolium*

| | <i>Chamerion angustifolium</i> | <i>Lythrum salicaria</i> |
|----------------|---|--|
| Leaves | Alternate  | Opposite  |
| Flowers | With four petals  | With five petals  |
| Fruits | Long seed capsules, plumed seeds  | Short seed capsules  |
| Habitat | Grows in dry habitats | Grows in wet habitats |

Common eyebright • *Euphrasia nemorosa*

Invasiveness Rank: 42 points

Species Code: EUNE3

General Information:

Annual

10-40 cm tall

Hairy,

Partly parasitic on the roots of other plants

Description:

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



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, lacks a 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

Common plantain • *Plantago major*

Invasiveness Rank: 44 points

Species Code: PLMA2

General Information:

Annual, biennial or perennial
Flowering stalks 15-20cm tall

Description:

Leaves

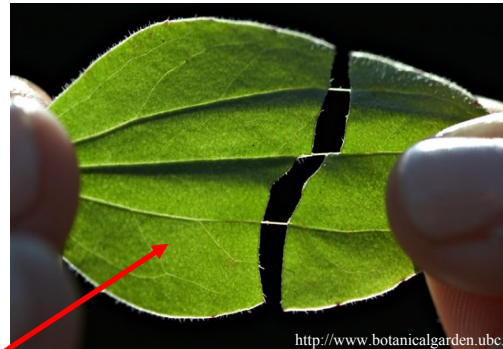
- Ovate
- Smooth margins
- Basal rosette only
- 3-5 prominent parallel ribs; the vascular bundles of these veins stay intact when leaves are damaged

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

Remarks: Most botanists specializing in northern floras think there were, or still are, native populations of *Plantago major*



Guide to *Plantago* species:

1. Leaves linear and somewhat fleshy*Plantago maritima* ssp. *juncooides* (goose tongue)

- Leaves are glabrous and almost linear
- Found along seashores and coastal marshes
- Mostly found in the Pacific maritime region

1. Leaves lance-shaped to oval

2. Base of leaves distinctly heart-shaped, 6+ seeds per capsule

.....*Plantago major* (common plantain)

2. Base of leaves are not heart-shaped.....Generally native*

*With the exception of non-native *P. lanceolata*, 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

Native *Plantago macrocarpa* (seashore plantain)

- Stout root
- Leaves glabrous or almost glabrous
- Found in wet areas, beaches
- South coastal Alaska

Native *Plantago canescens* (grey pubescent plantain)

- Leaves are erect and narrowly lance-shaped
- Leaves are hairy to ciliate on both sides
- 2-4 seeds per capsule
- Found on grassy slopes, rocky outcrops, and open soil
- Interior boreal and arctic-alpine regions

Yellow toadflax • *Linaria vulgaris*

Invasiveness Rank: 69 points

Species Code: LIVU2

General Information:

Perennial

Up to 60cm tall

Description:

Leaves

- Linear to narrowly lance-shaped
- Bluish-green

Inflorescence

- Many small, zygomorphic 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

Remarks: There are no native species in Alaska



Purple foxglove • *Digitalis purpurea*

Invasiveness Rank: 51 points

Species Code: DIPU

General Information:

Biennial or perennial

0.9-1.8m tall

Description:

Leaves

- Soft and hairy
- Lanceolate to egg-shaped
- Toothed
- Basal leaves can be up to 30 cm long

Inflorescence

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

Habitat: garden escapee

Dis-



Tiny trumpet • *Collomia linearis*

Invasiveness Rank: not yet ranked

Species Code: COLI2

General Information:

Annual,
Up to 40cm
Plant sticky due to secretions from the seeds

Description:

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:
the interior
graphic region



along roads in
boreal ecogeo-

BUTTERCUP FAMILY (RANUNCULACEAE)

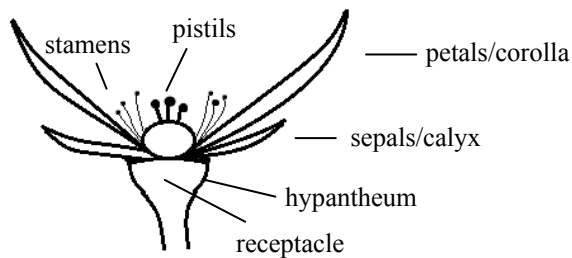
Distinguishing the *Ranunculus* genus (buttercups) from the *Geum* (avens) and *Potentilla* (cinquefoil) genera in Alaska:

Diagnostic traits for *Ranunculus* species in Alaska:

- Leaves form a sheath at the base
- Sepals look like petals; both are yellow
- Sepals are deciduous,
- No to many petals
- Stipules absent
- Stamens inserted in the receptacle, free from the calyx

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

- Yellow petals
- Leafy, green sepals often persisting at fruiting
- 5 petals
- Often with stipules
- Stamens borne on calyx or on rim of hypanthium



Potentilla diversifolia
Yellow petals and green sepals
(native)



Ranunculus acris
Yellow petals and sepals
(not native)

Creeping buttercup • *Ranunculus repens*

Invasiveness Rank: 54 points

Species Code: RARE3

General Information:

Perennial

Stems up to 0.9m long

Description:

Stems

- Leaves all along stem, not just at the base
- Horizontal growth habit due to trailing 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

General Information:

Biennial to short-lived perennial
40-100 cm tall

Description:

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 5 sepals

Fruits

- Fruit has a short, straight beak (~0.5 mm), compared many native *Ranunculus* species, which 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-



Lady's mantle • *Alchemilla mollis*

Invasiveness Rank: 56 points

Species Code: ALMO12

General Information:

Perennial

20-80 cm tall

Description:

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



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European bird cherry • *Prunus padus*

Invasiveness Rank: 74 points

Species Code: PRPA5

General Information:

Tree
Up 9m tall
Purple-grey bark

Description:**Leaves**

- Long stalks on leaves
- Obovate
- Sharply serrated
- Two greenish glands at the top of the petiole, not always easily visible

Inflorescence

- Whitish
- Clusters of long, showy, terminal spikes
- Inside of the hypanthium is hairy

Fruits

- Black, ovoid
- Fruits are 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

Remarks: The glands at the top of the petiole are diagnostic of the *Prunus* genus and serve as extrafloral nectaries, which attract ants toward the flowers.



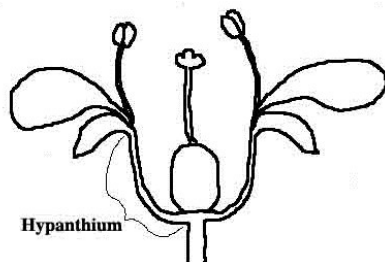
Chokecherry • *Prunus virginiana*

Invasiveness Rank: 74 points

Species Code: PRVI

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

- The hypanthium of *Prunus virginiana* is hairless
- In late 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*

Invasiveness Rank: not yet ranked

Species Code: PRAV

General Information:

Tree

Up to 15m tall

Peeling, red-brown bark

Description:

Leaves

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

Inflorescence

- Loose cluster of 2-6 flowers

Fruits

- Yellow, turning dark red

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



Key to *Sorbus* species in Alaska:

(excluding native *S. sambucifolia*, which is restricted to the outer Aleutian Islands)

- 1a. leaflets 9 or 11, elliptic, rounded or short-pointed at tip, margins smooth in lowest third *S. sitchensis*
- 1b. leaflets 11 to 15, oblong, short-pointed at tip, margins toothed nearly to base
 - 2a. leaflets becoming hairless *S. scopulina*
 - 2b. leaflets pale and hairy beneath *S. aucuparia*
- 1c. leaflets 11
 - 3a. plant a tree *S. aucuparia*
 - 3b. plant a shrub = *S. scopulina* or *S. sitchensis* (native; see couplets 1 and 4)
 - 3c. plant form indeterminate
 - 4a. flower stalks and winter buds with red hairs; paired, narrow, red-hairy deciduous stipules; winter buds red hairy.
..... *S. sitchensis*
 - 4b. flower stalks and winter buds with white hairs
 - 5a. leaflets pale and hairy beneath; paired, 3-angled, persistent stipules; winter buds with white hairs, not sticky
..... *S. aucuparia*
 - 5b. leaflets becoming hairless; paired, very narrow, hairless, persistent stipules; winter buds sticky and more or less white hairy *S. scopulina*

*Sorbus aucuparia**Sorbus scopulina*

European mountain ash • *Sorbus aucuparia*

Invasiveness Rank: 59 points

Species Code: SOAU

General Information:

Tree
7.5-12m tall

Description:

Leaves

- Pinnately compound, with 9-17 leaflets
- Leaflets short-pointed, unequal and rounded at base, toothed nearly to base, pale and hairy beneath
- Paired, 3-angled, persistent stipules

Inflorescence

- Clusters of many small, white flowers
- Flower stalks with white hairs
- Winter buds white hairy, not sticky

Fruits

- Bright, deep orange

Leo michels, <http://luirig.altervista.org><http://www.ces.ncsu.edu>

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

Remarks: Native *Sorbus* species are shrubs; non-native *Sorbus aucuparia* is a tree.

Greene's mountain ash • *Sorbus scopulina*

General Information:

Shrub

1.0-6.0m tall

Description:

Leaves

- Pinnately compound, with 11-13 leaflets
- Leaflets sharp-pointed, unequal and rounded at base, toothed nearly to base, becoming hairless
- Paired, very narrow, hairless, persistent stipules

Inflorescence

- Flower stalks with white hairs
- Winter buds sticky and more or less white hairy



Distribution: southern half of Alaska

Sitka mountain ash • *Sorbus sitchensis*

General Information:

Shrub

4.5-6.0m tall

Description:

Shrub

Leaves

- Pinnately compound, with 9-11 leaflets
- Leaflets rounded to short-pointed, margins smooth in lower third, pale beneath with red hairs but becoming hairless
- Paired, narrow, red-hairy deciduous stipules

Inflorescence

- Flower stalks with red hairs
- Winter buds red hairy



Distribution: southern Alaska coast

Himalayan blackberry • *Rubus armeniacus*
syn. Rubus discolor

Invasiveness Rank: 77 points

Species Code: RUDI2

General Information:

Shrub

Stems up to 9m long

Description:

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 native *R. idaeus*, which has smaller, prickly thorns)

Leaves

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

Fruits

- Fruit 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

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



Rugosa rose • *Rosa rugosa*

Invasiveness Rank: 72 points

Species Code: RORU

General Information:

Shrub

1.2-1.8 m tall

Forms dense thickets

Description:

Roots

- Spreads by extensive woody rhizomes

Stems

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

Leaves

- Alternate
- Pinnately compound with 5-9 ovate to elliptical leaflets
- Leaflets 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


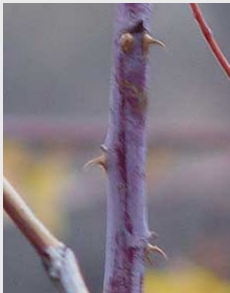

- Fruit a hip that is fleshy, shiny, deep red

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



Comparison of native *Rosa* species to non-native *Rosa rugosa*:

| | <i>Rosa acicularis</i> (prickly rose) | <i>Rosa nutkana</i> (Nootka rose) | <i>Rosa woodsii</i> (Wood's rose) |
|---------------------|---|--|---|
| Thorns | Thin, needle-like thorns  | Few short, straight flattened prickles. No thorns on upper parts  | Pairs of straight prickles mostly at the base of leaves and stems  |
| Leaves | Underside of leaflets sparsely hairy | Underside of leaflets have long hairs | Pedicles, both sides of leaflets are glabrous |
| Distribution | South central, interior, and part of arctic alpine regions | Southeast Alaska | Interior boreal region |

Johnny-jumpup • *Viola tricolor*

Invasiveness Rank: 34 points

Species Code: VITR

General Information:

Annual or biennial
10 to 30 cm tall

Description:

Stems

- Branched from the base

Leaves

- Elongate
- Round-toothed

Inflorescence

- Purple and yellow; 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



BUCKWHEAT FAMILY (POLYGONACEAE)

Buckwheat Family (Polygonaceae)

Common characteristics of Polygonaceae genera:

- Membranaceous sheaths where the leaf meets the stem
- Alternate, simple leaves
- Flowers 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
- Fruit is an achene

Additional characteristics shared by *Fallopia* and *Rumex* species:

- Leafy stems
- Leaves entire
- Flowers without involucral bracts



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Differences between *Fallopia* and *Rumex* species:

Fallopia species (knotweeds):

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



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-angled



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Japanese knotweed • *Fallopia japonica* syn. *Polygonum cuspidatum*

Invasiveness Rank: 87 points

Species Code: FAJA2

General Information:

Perennial

Up to 2.7 m tall

Description:

Roots

- Long, creeping rhizomes

Stems

- Bamboo-like stems
- Zig-zag pattern

Leaves

- 5-15 cm long
- Leaf base is flat or tapering (unlike *F. sachalinensis*, in which they are heart-shaped)
- Lower leaf with 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 winged (unlike *Persicaria wallichii*, in which the tepals are not winged)

Fruit

- 3-sided
- Black, shiny



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

Distribution: throughout southeast Alaska, Kodiak

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

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

Invasiveness Rank: 87 points

Species Code: FASA3

General Information:

Perennial
2-4 m tall

Description:

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

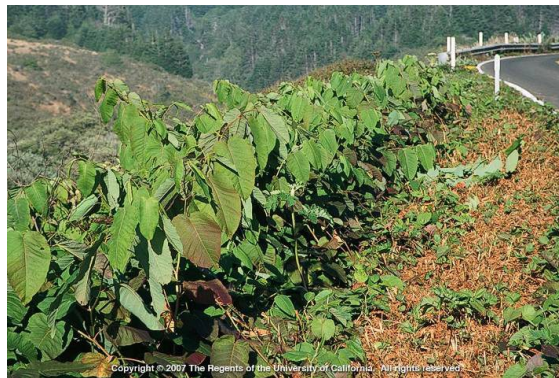
- In axils, panicle-like, 3-8 cm
- Greenish-white
- Outer 3 tepals winged (unlike *Persicaria wallichii*, which has no wings)

Fruit

- Brown, shiny, smooth

Habitat: disturbed sites

Distribution: only two known occurrences in Alaska; one near Ketchikan and a second in Kodiak



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Bohemian knotweed • *Fallopia xbohemica*

syn. *Polygonum xbohemicum*

Invasiveness Rank: 87 points

Species Code: POBO10

General Information:

Perennial

1.5-2.5 m

Hybrid of *F. japonica* and *F. sachalinensis*

Description:

Roots

- Rhizomes

Stems

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

Leaves

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

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Black bindweed • *Fallopia convolvulus* syn. *Polygonum convolvulus*

Invasiveness Rank: 50 points

Species Code: FACO

General Information:

Annual

0.5-1 m

Herbaceous and climbing

Description:

Roots

- Thin but deep

Stems

- Sometimes with 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

Remarks: When not in flower, *F. convolvulus* may be confused with *Convolvulus arvensis* (field bindweed); see description in Other Families section.



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

A comparison of *Fallopia* species:

| | Longevity | Height (m) | Roots | Stems | Leaves | Under leaf hairs | Inflorescence | Fruit |
|--|-----------|------------|-------------|--|--|---|--|--|
| <i>Fallopia japonica</i> (Japanese knotweed) | Perennial | 2-7 | Rhizomes | <ul style="list-style-type: none"> • Zig-zagged • Bamboo-like | <ul style="list-style-type: none"> • 5-15 cm long • Leaf base flat or tapered • Petiole 1-3 cm | <ul style="list-style-type: none"> • Minute hairs along veins • Blunt-tipped, scabrous, • Short (<0.1 mm) | <ul style="list-style-type: none"> • Greenish-white • At end of branches or in axils • Erect/spreading • 4-12 cm long • Outer 3 tepals winged | <ul style="list-style-type: none"> • Dark brown, shiny, smooth • 2-3.5 cm long |
| <i>Fallopia sachalinensis</i> (Giant knotweed) | Perennial | 2-4 | Rhizomes | <ul style="list-style-type: none"> • Somewhat mottled • Clustered, erect • Sparingly branched • Glabrous, glaucous | <ul style="list-style-type: none"> • 15-30+ cm long • Ovate/oblong • Leaf base heart-shaped • Petiole 1-4 cm long | <ul style="list-style-type: none"> • Wavy hairs along veins • Long (0.2-0.6 mm) | <ul style="list-style-type: none"> • Greenish-white • Panicle-like, in axils • 3-8 cm long • Outer 3 tepals winged | <ul style="list-style-type: none"> • Brown, shiny, smooth |
| <i>Fallopia xbohemica</i> (Bohemian knotweed) | Perennial | 1.5-2.5 | Rhizomes | <ul style="list-style-type: none"> • Clustered, erect • branched many times • Glabrous, glaucous | <ul style="list-style-type: none"> • 5-25 cm long • Ovate • Leaf base flat to heart-shaped • Petioles 1-3 cm long | <ul style="list-style-type: none"> • Fine, soft, hairs along veins • Short (<0.1 mm) • Hairs with triangular base and acute tip | <ul style="list-style-type: none"> • Greenish-white/pink • At ends of branches or in axils • Erect/spreading • 4-12 cm long • Outer 3 tepals winged | <ul style="list-style-type: none"> • Dark brown, shiny, smooth, • 3 mm long |
| <i>Fallopia convolvulus</i> (Black bindweed) | Annual | 0.5-1 | No rhizomes | <ul style="list-style-type: none"> • Climbing • Sometimes with reddish tinge | <ul style="list-style-type: none"> • 2-6 cm long • Ovate to arrow-shaped • Leaf base heart-shaped • Petioles 0.5-5 cm long | <ul style="list-style-type: none"> • Not hairy | <ul style="list-style-type: none"> • White to greenish-white • In racemes or clustered in axils | <ul style="list-style-type: none"> • Triangular |

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Prostrate knotweed • *Polygonum aviculare*

Invasiveness Rank: 45 points

Species Code: POAV

General Information:

Annual

Stems 6-200cm long

Mats up to 1.2m in diameter

Description:

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 1-4 times longer than branch leaves; largest leaves 2.5-6 cm long
- Sessile or with short petiole

Inflorescence

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

Fruits

- Achenes 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 (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Leathery knotweed • *Polygonum achoreum*

Invasiveness Rank: not yet ranked

Species Code: POAC3

General Information:

Annual

50-70 cm tall

General Information:

Description:

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 yellow-green with a margin that is occasionally pinkish
- Margins appear keeled (unlike *P. aviculare*)

Fruits

- Achenes dull,
- Triangular



<http://wisplants.uwsp.edu>, Emmet J. Iudziewicz

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

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Fowler's knotweed • *Polygonum fowleri*

General Information:

Perennial
5-50 cm tall

Description:

Stems

- Branched from 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

- Axillary
- Tepals green with white to pink margins
- Not keeled

Fruits

- Olive-brown to dark brown
- Ovate
- Shiny



Britton, N.L., and A. Brown. 1913.

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

Remarks: More erect and shrubby than non-native *Polygonum* spp.

BUCKWHEAT FAMILY (POLYGONACEAE)

Alaska wild rhubarb • *Polygonum alaskanum*

General Information:

Perennial

<2 m tall

Glabrous

Description:

Roots

- Woody rhizome
- Crown many branched

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 roadsides, natural meadows, and other early successional sites



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

A comparison of *Polygonum* species:

| | Longevity | Height (cm) | Stems | Leaves | Inflorescence | Achene |
|---|-----------|-------------|---|---|--|---|
| <i>Polygonum aviculare</i> (prostrate knotweed) | Annual | prostrate | <ul style="list-style-type: none"> • Trailing • <1 m long | <ul style="list-style-type: none"> • Bluish to gray green • Linear/oblong • Stem leaves (2.5-6 cm) longer than branch leaves • Sessile or with short petioles | <ul style="list-style-type: none"> • Clustered in axils of reduced upper leaves • Tepals reddish brown with white/pink/red margins | <ul style="list-style-type: none"> • Dull, • Dark brown |
| <i>Polygonum achoreum</i> (leathery knotweed) | Annual | 50-70 | <ul style="list-style-type: none"> • Prostrate to ascending | <ul style="list-style-type: none"> • Light or yellowish-green • Ovate/obovate/elliptic • Rounded tip • 8-30 mm long • Stem leaves longer than branch leaves • Short petiole | <ul style="list-style-type: none"> • Flowers in axils • Tepals green with white/pink margins • Margins appear keeled | <ul style="list-style-type: none"> • Dull • Triangular |
| <i>Polygonum fowleri</i> (Fowler's knotweed) | Annual | 5-50 | <ul style="list-style-type: none"> • Erect and shrubby relative to non-natives • Sometimes zig-zagged | <ul style="list-style-type: none"> • Light green to purplish • Obovate/elliptic • 8-30 mm long • Middle stem leaves longer than branch leaves • Somewhat succulent • Petiole 2-7 mm | <ul style="list-style-type: none"> • Flowers in axils • Tepals green with white to pink margins • Not keeled | <ul style="list-style-type: none"> • Olive-brown/dark brown • Ovate |
| <i>Polygonum alaskanum</i> (Alaska wild rhubarb) | Perennial | <200 | <ul style="list-style-type: none"> • Hollow | <ul style="list-style-type: none"> • Dark green above, pale beneath • Lanceolate • 5-20 cm long • Wavy margins • Stipules 1.5-2 cm • More or less sessile | <ul style="list-style-type: none"> • Open panicle with many branches • White | <ul style="list-style-type: none"> • Light brown, • Triangular in cross section; • Ovate |

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Himalayan knotweed • *Persicaria wallichii* syn. *Polygonum polystachyum*

Invasiveness Rank: 80 points

Species Code: PEWA18

General Information:

Perennial

<1.8 m

Description:

Roots

- Creeping rhizomes

Stems

- Ribbed
- Red-brown
- Erect and branching

Leaves

- Alternate
- Lance-shaped
- 9-22 cm long
- Long-tipped (unlike the three non-native *Fallopia* spp., which are indistinctly-tipped)
- Leaf bases flat or heart-shaped
- Membranaceous sheaths are red-brown 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)



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<http://www.deeproot.co.uk>

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Curlytop knotweed • *Persicaria lapathifolia* syn. *Polygonum lapathifolium*

Invasiveness Rank: 47 points

Species Code: POLA4

General Information:

Annual

10-20+ cm tall

Description:

Roots

- Rhizomes and stolons absent

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 greenish to pale pink to whitish

Fruits

- Achenes lens-shaped, light brown, shiny

Habitat: wet lake edges

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



KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

BUCKWHEAT FAMILY (POLYGONACEAE)

Spotted ladysthumb • *Persicaria maculosa* syn. *Polygonum persicaria*

Invasiveness Rank: 47 points

Species Code: POPE3

General Information:

Annual

30-100 cm tall

Description:

Roots

- Rhizomes and stolons absent

Stems

- Erect to ascending
- Sheath margins with bristly hairs

Leaves

- Often with 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

KNOTWEEDS (MEMBRANOUS SHEATH AT LEAF BASE)

A comparison of *Persicaria* species:

| Longevity | Height (cm) | Roots | Stems | Leaves | Inflorescence | Achene |
|---|-------------|-------------------|--|---|--|---|
| <i>Persicaria wallichii</i> (Himalayan knotweed) | | | | | | |
| Perennial | 180 | Creeping rhizomes | <ul style="list-style-type: none"> Erect and branching Sheaths red-brown, 1-4 cm long Ribbed | <ul style="list-style-type: none"> Lanceolate Bases flat or heart-shaped With a distinctly long tip 9-22 cm long hairy underneath | <ul style="list-style-type: none"> Wide/spreading White-pink | <ul style="list-style-type: none"> 3-angled, Brown, dull 2-2.5 mm long |
| <i>Persicaria lapathifolia</i> (Curlytop knotweed) | | | | | | |
| Annual | 20 | Rhizomes absent | <ul style="list-style-type: none"> Ascending to decumbent Branching at base Sheaths are smooth and glabrous | <ul style="list-style-type: none"> Lanceolate/elliptic Bases wedge-shaped 2-6+ cm long Hairy underneath Scabrous margins | <ul style="list-style-type: none"> Arching/nodding at the ends of branches or in axils Greenish to pale pink/white | <ul style="list-style-type: none"> Lens-shaped Light brown Shiny |
| <i>Persicaria maculosa</i> (Spotted ladythumb) | | | | | | |
| Annual | 30-100 | Rhizomes absent | <ul style="list-style-type: none"> Erect/ascending Sheath margins with bristly hairs | <ul style="list-style-type: none"> Lanceolate/elliptic/oblong Bases tapered or wedge-shaped 3-15 cm long Often have dark spots on top Smooth or with short stiff hairs | <ul style="list-style-type: none"> Erect Spikes at the ends of branches or in axils Deep pink to purplish | <ul style="list-style-type: none"> 3-angled or lens-shaped 2.5-3 mm long |

BUCKWHEAT FAMILY (POLYGONACEAE)

Common sheep sorrel • *Rumex acetosella*

Invasiveness Rank: 51 points

Species Code: RUAC3

General Information:

Perennial

10-60 cm tall

Description:

Leaves

- Basal leaves 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 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 THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Garden sorrel • *Rumex acetosa* ssp. *alpestris*

General Information:

Perennial
0.1-1.0m tall

Description:

Roots

- Short rhizome

Leaves

- Basal leaves arrow shaped and broad with 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



Grassleaf sorrel • *Rumex graminifolius*

General Information:

Perennial
5-30+ cm tall

Description:

Leaves

- All leaves narrowly linear, although a few may be faintly arrow-shaped

Fruit

- Valves enclosing the fruit up to twice the length of the fruit

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



DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Curly dock • *Rumex crispus*

Invasiveness Rank: 48 points

Species Code: RUCR

General Information:

Perennial

0.4-1.5m tall

Description:

Leaves

- Lanceolate
- Tapered at the base
- Wavy margins

Inflorescence

- Large terminal clusters

Fruits

- Reddish with white tubercles
- Valves not toothed

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

Peninsula,
Anchor-



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Rumex crispus
Polygonaceae
© G. D. Carr



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DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Dooryard dock • *Rumex longifolius*

Invasiveness Rank: 48 points

Species Code: RULO2

General Information:

Perennial

0.5-1.5m tall

Description:

Leaves

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

Inflorescence

- Large terminal clusters

Fruits

- Tubercles absent
- Valves not toothed



Habitat and distribution: waste places; scattered locations in Pacific maritime and interior boreal regions



DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Bitter dock • *Rumex obtusifolius*

Invasiveness Rank: 48 points

Species Code: RUBO

General Information:

Perennial

0.6-1.5m tall

Description:

Leaves

- Heart-shaped base
- Wavy margins

Inflorescence

- Distinct small whorls

Fruits

- Some with tubercles
- Valves distinctly toothed

Habitat and distribution: agricultural areas,



www.discoverlife.org



E. P. 1999. *Rumex obtusifolius*. Broad-leaved Dock.



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DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Arctic dock • *Rumex arcticus*

General Information:

Perennial

<50-100 cm tall

(only 10 cm tall in the Arctic)

Description:

Roots

- Stout rhizome

Stem

- Unbranched or just a few upright branches

Leaves

- Dark green to reddish-purple
- Most leaves basal with 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
- Tubercles absent



Habitat: wet areas, snow beds

Distribution: common in western and northern Alaska

DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

Western dock • *Rumex occidentalis* syn. *Rumex fenestratus*

General Information:

Perennial
≥ 1m tall

Description:

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
- Pedicels 5-7 mm long

Fruits

- Reddish brown
- No tubercles



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

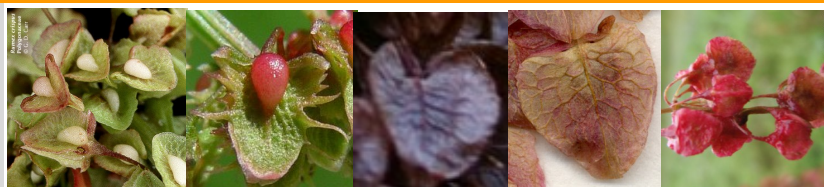


DOCKS (FRUITS ENCLOSED BY THREE VALVES)

BUCKWHEAT FAMILY (POLYGONACEAE)

A comparison of five large *Rumex* species:

| | Basal Leaves | Flower Cluster | Fruit Scale |
|---|---|--|--|
| <i>Rumex crispus</i> (curly dock) | Tapered bases Margins strongly wavy | Dense | Margins entire 3 tubercles |
| <i>Rumex obtusifolius</i> (bitter dock) | Broad, flat Heart-shaped bases Margins entire Flat | Usually loose and widely spaced in whorls | Distinctly toothed Usually 1 tubercle |
| <i>Rumex longifolius</i> (dooryard dock) | Rounded to truncate base Margins entire | Usually dense | Margins entire Tubercles usually absent |
| <i>Rumex arcticus</i> (arctic dock) | Often very purple Flat, obtuse tip Tapered base Margins entire | Interrupted | Margins entire Tubercles absent |
| <i>Rumex occidentalis</i> syn. <i>R. fenestratus</i> (western dock) | Acute tip Heart-shaped or rounded base Margins entire | Dense to interrupted | Margins entire Tubercles absent |



Photos credits

R. crispus: <http://www.botany.hawaii.edu>, G.D. Carr
R. obtusifolius: <http://www.discoverlife.org>
R. longifolius: <http://www.plant-identification.co.uk>, Carl Farmer
R. arcticus: <http://nature.ca>
R. occidentalis ©2011 AKNHP

DOCKS (FRUITS ENCLOSED BY THREE VALVES)

MUSTARD FAMILY (BRASSICACEAE)

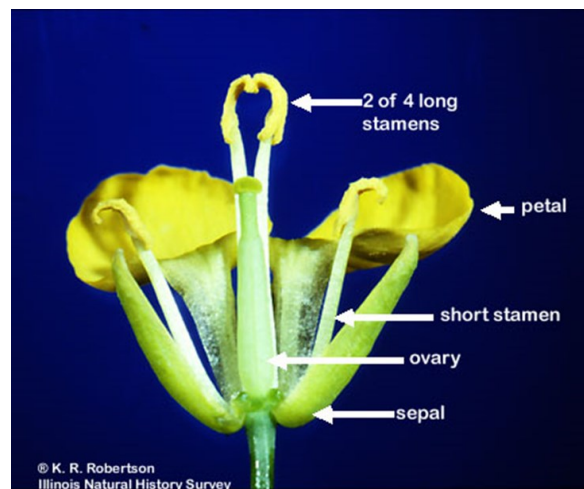
Mustard Family (Brassicaceae)

- Annual or perennial herbs
- Alternate leaves, simple, lobed or divided
- Often with a basal rosette
- Often with simple to complex hairs
- Inflorescence is a raceme
- Fruit pod-like and open from the base toward the apex
- Fruits are siliques (long and narrow) or silicles (length is less than 3 times the width).



Flowers

- 4 petals
- 4 sepals
- Arranged in a “cross” pattern, but can be variable
- **6 stamens**
 - 4 long stamens, visible
 - 2 short, hidden in the corolla



INTRODUCTION TO THE MUSTARD FAMILY

MUSTARD FAMILY (BRASSICACEAE)

Seed pods

Siliques - generally longer than broad, often with a “beak or “point” at the tip



Silicles - generally length is less than 3 times the width



INTRODUCTION TO THE MUSTARD FAMILY

MUSTARD FAMILY (BRASSICACEAE)

Types of hairs

Simple



Glandular



Stellate



Forked



INTRODUCTION TO THE MUSTARD FAMILY

MUSTARD FAMILY (BRASSICACEAE)

Shepherd's purse • *Capsella bursa-pastoris*

Invasiveness Rank: 40 points

Species Code: CABU2

General Information:

Annual or winter annual

10-50 cm tall

Mix of simple and other types of hairs

Description:

Leaves

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

Inflorescence

- White

Fruits

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

Habitat: roadsides, cultivated fields, waste areas

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



FLOWERS WHITE, FRUIT SHORT

Field pennycress • *Thlaspi arvense*

Invasiveness Rank: 42 points

Species Code: THAR5

General Information:

Annual

15-45cm tall

Strong odor

No hairs

Description:

Stem and Leaves

- Yellowish-green
- Basal leaves lanceolate, simple, entire to lobed
- Stem leaves 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 and interior boreal regions; northernmost records from Denali Park and Delta



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FLOWERS WHITE, FRUIT SHORT

MUSTARD FAMILY (BRASSICACEAE)

Common peppergrass • *Lepidium densiflorum*

Invasiveness Rank: 25 points

Species Code: LEDE

General Information:

Annual or winter annual
10-60 cm tall

Description:

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



© Photoflora - Jean-Luc TASSET

Habitat: roadsides, cultivated fields, waste areas

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

Remarks: The nativity of this species is disputed: Hultén 1968 lists it as introduced, while Flora of North America lists it as occurring in Alaska but introduced to Europe and Asia. Cody (Flora of the Yukon Territories) makes no mention of its nativity.

| Differences Between <i>L. densiflorum</i> and <i>L. latifolium</i> | | | |
|--|-----------|--|----------------|
| | Height | Inflorescence | No. of Stamens |
| Common peppergrass <i>Lepidium densiflorum</i> | 10-60 cm | single raceme or sparsely branched raceme | 2 |
| Broadleaved pepperweed <i>Lepidium latifolium</i> | 50-200 cm | dense pyramid-shaped cluster | 6 |

FLOWERS WHITE, FRUIT SHORT

MUSTARD FAMILY (BRASSICACEAE)

Broadleaved pepperweed • *Lepidium latifolium*

Invasiveness Rank: 71 points

Species Code: LELA2

General Information:

Perennial
0.5-2 m tall

Description:

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; stem leaves smaller and lacking 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 containing 2 seeds
- Not winged

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

Distribution: Only reported from Anchorage



FLOWERS WHITE, FRUIT SHORT

MUSTARD FAMILY (BRASSICACEAE)

Garlic mustard • *Alliaria petiolata*

Invasiveness Rank: 70 points

Species Code: ALPE4

General Information:

Biennial

< 1 m tall

Strong garlic odor when crushed

Description:

Stems

- Unbranched

Leaves

- Basal leaves are kidney-shaped
- Stem leaves are heart-shaped
- 5-10 cm wide

Inflorescence

- White

Fruits

- Siliques
- 20-45 mm long, 0.7-2 mm wide

Habitat: roadsides, abandoned fields, open forest, clearcuts

Distribution: Juneau

Remarks: There are other white flowered mustards in Alaska. Unlike *Alliaria petiolata*, however, none have large, well-developed and toothed stem leaves, or a garlic scent.



FLOWERS WHITE, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Lyrate rockcress • *Arabidopsis lyrata* syn. *Arabis lyrata*

General Information:

Biennial or perennial
5-50 cm tall

Description:

Leaves

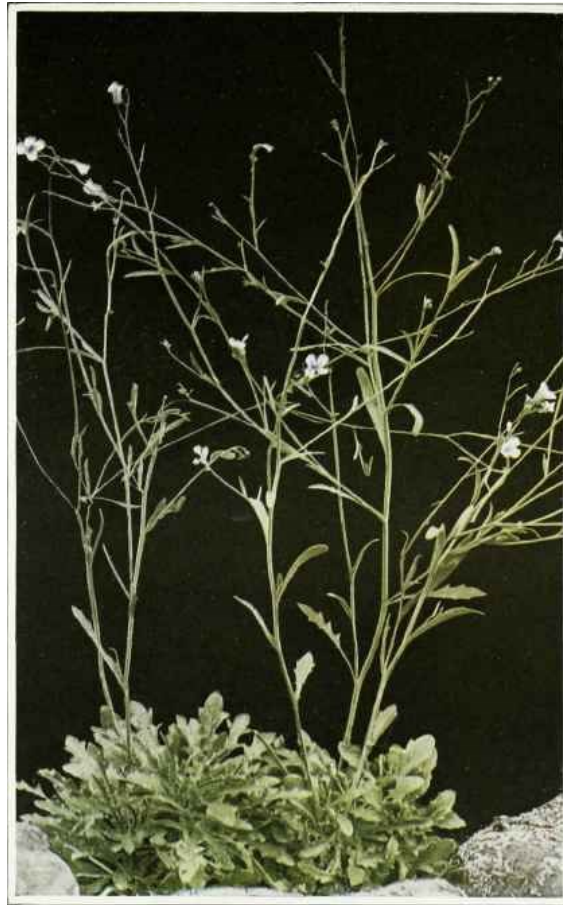
- Basal leaves lyre-shaped and oblong
- Stem leaves not stalked

Fruits

- Siliques slightly flattened
- 20-35 mm long, 1.25-1.5 mm wide

Habitat: sandy and rocky slopes, open areas

Distribution: interior boreal and Pacific maritime regions; common



FLOWERS WHITE, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Ball mustard • *Neslia paniculata*

Invasiveness Rank: not ranked

Species Code: NEPA3

General Information:

Annual

< 0.8 m tall

Description:

Stems

- Branched many times
- Star-shaped hairs

Leaves

- Arrow-shaped
- Clasping

Inflorescence

- Small, yellow

Fruits

- Silicles 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

FLOWERS YELLOW, FRUIT SHORT

MUSTARD FAMILY (BRASSICACEAE)

Flixweed • *Descurainia sophia*

Invasiveness Rank: 41 points

Species Code: DESO2

General Information:

Annual, winter annual, or biennial
< 1 m tall

Description:

Stems

- Numerous branches
- Star-shaped or tree-like hairs
- Hairs never glandular

Leaves

- Grayish-green
- Tripinnate, divided into narrow segments

Inflorescence

- Yellow

Fruits

- Siliques not overtopping developing flowers
- Inside of siliques, the septum with longitudinal bands



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

Distribution: arctic-alpine and interior boreal regions

Northern tansymustard • *Descurainia sophioides*

General Information:

Annual, or biennial
0.1-1.5m tall

Description:

Very similar to *D. sophia*, but:

- Hairs with or without glands and may or may not be tree-shaped
- Leaves are bipinnate
- Siliques overtop developing flowers
- Septum inside of siliques without longitudinal bands



Habitat: gravel bars, disturbed soil, roadsides

FLOWERS YELLOW, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Dog mustard • *Erucastrum gallicum* *syn. Brassica erucastrum*

Invasiveness Rank: not yet ranked

Species Code: ERGA

General Information:

Annual

0.3-1.2 m tall

Simple hairs

Description:

Leaves

- Deeply pinnately lobed

Inflorescence

- Yellow, sparse
- Lowermost flowers and seed pods in the of small leaves

Fruits

- 2.5-5 cm
- Approximately 4-sided

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

Distribution: Pacific maritime



FLOWERS YELLOW, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Field mustard • *Brassica rapa*

Invasiveness Rank: 50 points

Species Code: BRRA

General Information:

Winter annual or biennial

0.3-1.2 m tall

Description:

Stems and leaves

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

Inflorescence

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

Fruits

- Siliques 3.8-6.4 cm long
- Borne on long pedicles
- Pods without hairs
- Pods with a conspicuous beak 13-19 mm long and round in cross-section



FLOWERS YELLOW, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Rapeseed • *Brassica napus*

Invasiveness Rank: 47 points

Species Code: BRNA

General Information:

Annual or biennial

Up to 1.5m tall

Similar to *B. rapa*

Description:

Inflorescence

- Gold to cream-to pale yellow
- Petals 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 south-central Alaska

Remarks: *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.



FLOWERS YELLOW, FRUIT LONG

MUSTARD FAMILY (BRASSICACEAE)

Rorippa species and *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 with siliques shorter than 6 cm

Habitat: roadsides, moist areas; very common

Distribution: arctic-alpine and interior boreal regions



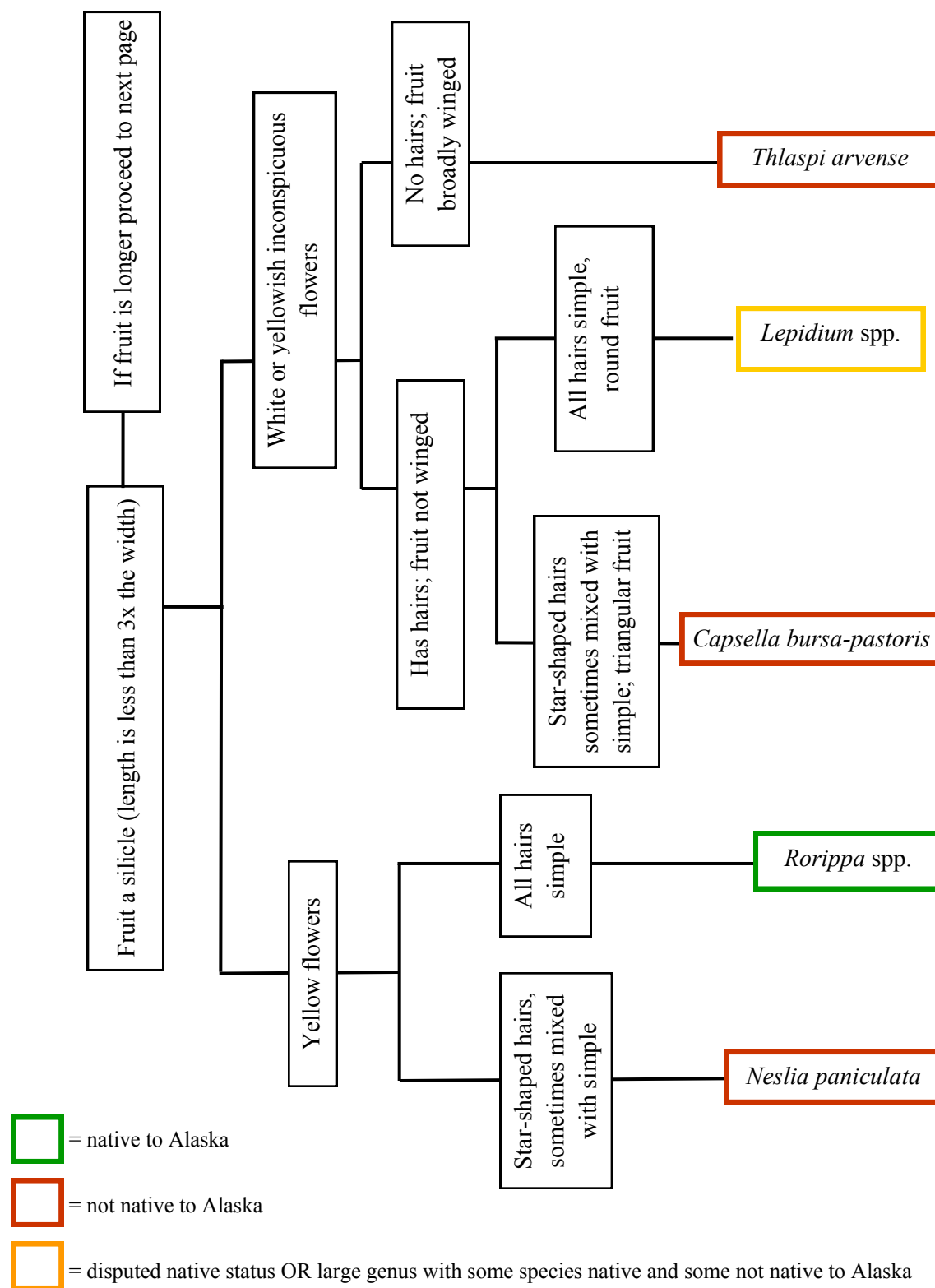
Rorippa islandica



Barbarea orthoceras

WEEDY BUT NATIVE YELLOW-FLOWERED MUSTARDS

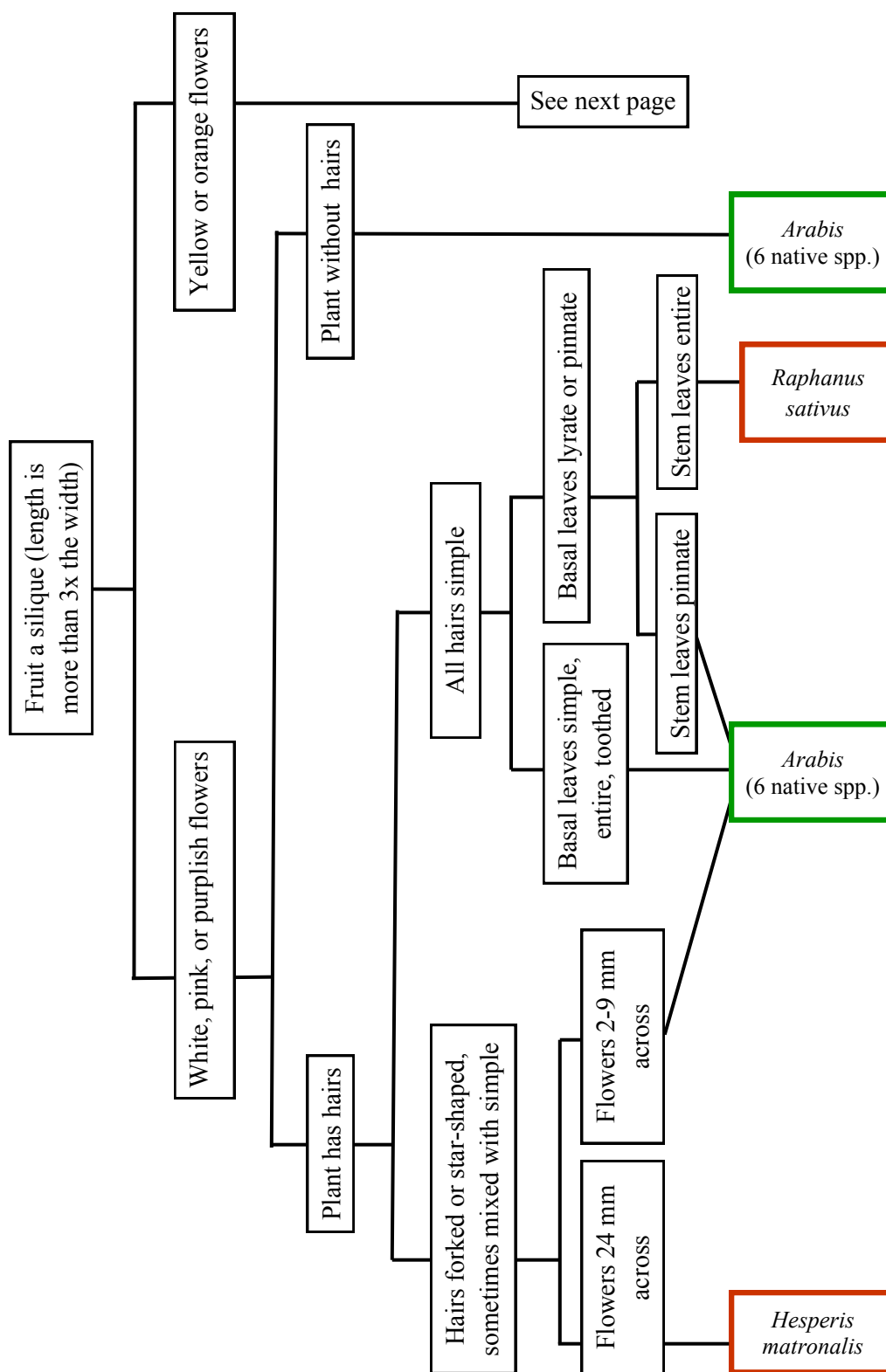
MUSTARD FAMILY (BRASSICACEAE)



KEY TO MUSTARDS OF DISTURBED HABITATS IN ALASKA

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

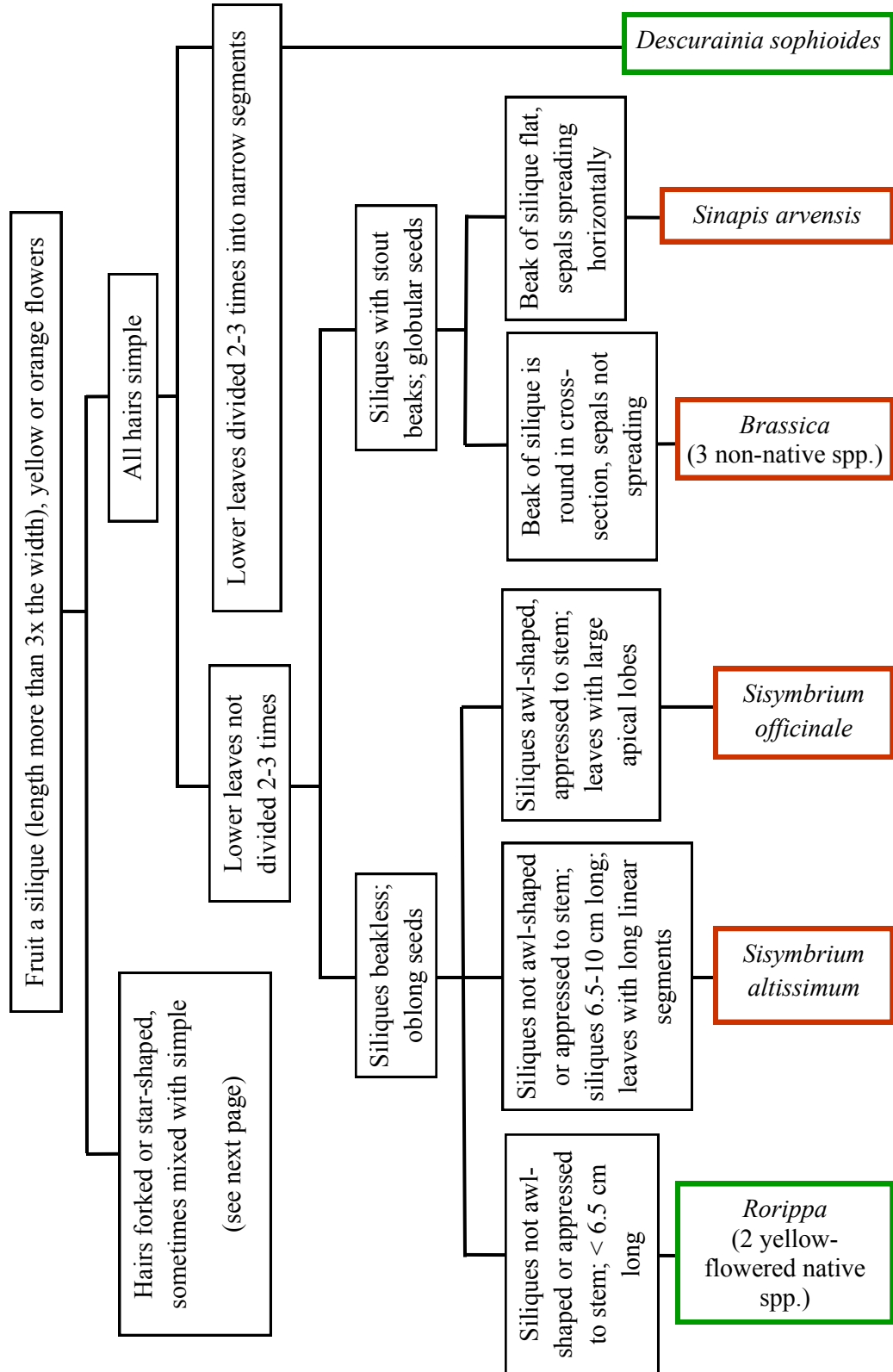
MUSTARD FAMILY (BRASSICACEAE)



KEY TO MUSTARDS OF DISTURBED HABITATS IN ALASKA

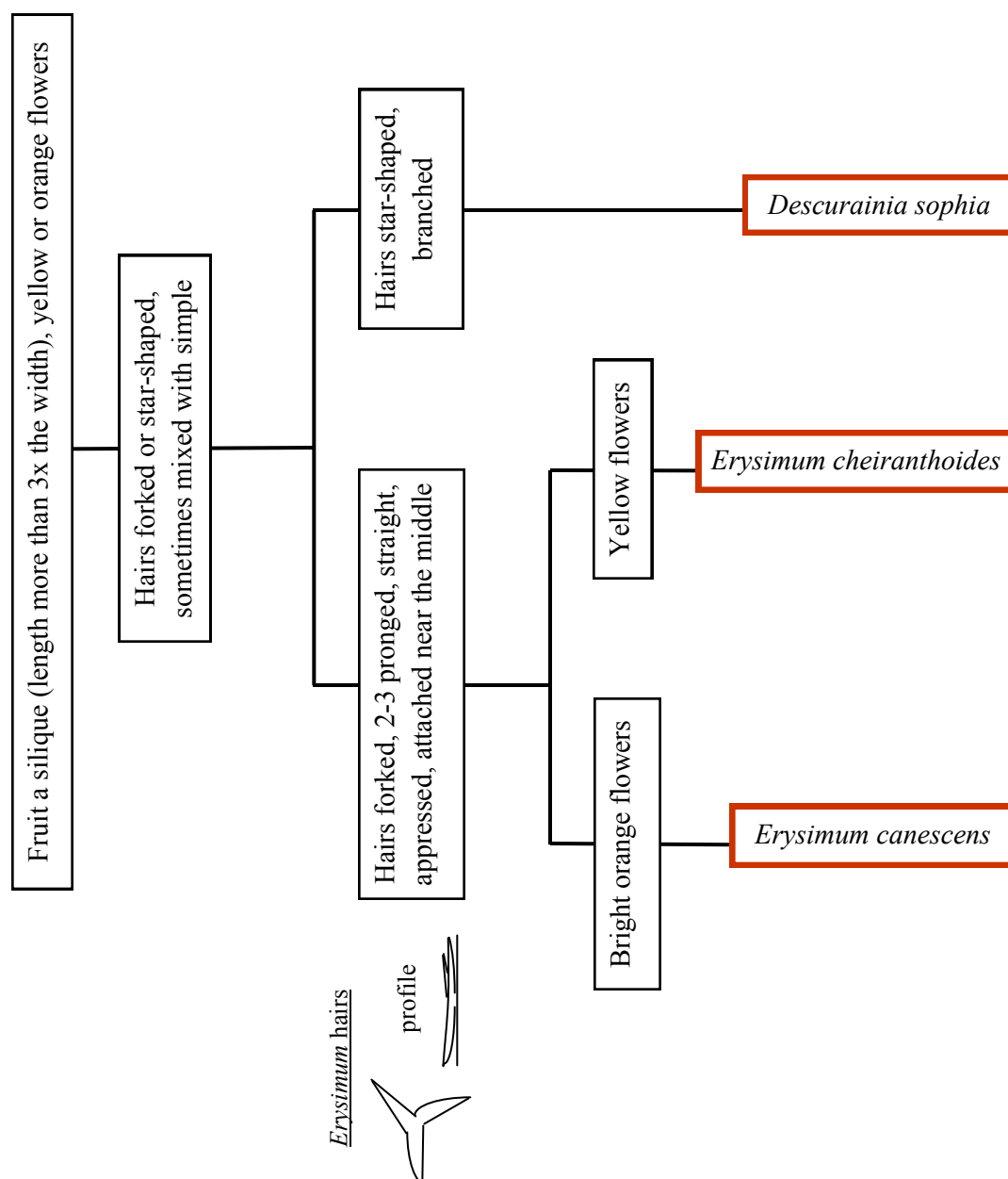
Partial key to mustards of disturbed habitats; consult Hultén (1968) or Welsh (1974) for more info

MUSTARD FAMILY (BRASSICACEAE)



KEY TO MUSTARDS OF DISTURBED HABITATS IN ALASKA

MUSTARD FAMILY (BRASSICACEAE)



KEY TO MUSTARDS OF DISTURBED HABITATS IN ALASKA

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

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.

Welsh, S.L. 1974. Anderson's Flora of Alaska and adjacent parts of Canada. Brigham Young University Press, Provo, Utah.

A second Alaska-specific flora. Good for comparison of or keying out on the basis of quantitative traits and measurements.

Cody, W. 1974. 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.

Skinner, Q., S. Wright, R. Henszey, J. Henszey, and S. Wyman. 2012. A Field Guide to Alaska Grasses. Education Resources Publishing, Cumming, Georgia.

The most comprehensive guide to all grasses occurring in Alaska.

Regional field guides

Pojar, J., and A. MacKinnon. 2013. Alpine plants of the Northwest, Wyoming to Alaska. Lone Pine Publishing, Edmonton, Alberta.

Most up-to-date regional flora but concentrates on native plants. Includes high quality photos.

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 to help you decipher the floras.

FIELD GUIDES

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.

Michael Shephard, M., T. Huette, J.M. Nielsen, C. Lindemuth. 2007. Selected Invasive Plants of Alaska. USDA Forest Service.

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.

Online 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/>

Consortium of Pacific Northwest Herbaria

Over 3.6 million specimen records and numerous online electronic resources are managed by the region's 60 herbaria. Includes the herbaria at both the museum of the North (ALA) and Alaska Natural Heritage Program (AKNHP-UAAH).

<http://www.pnwherbaria.org/>

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.

Online 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>

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

EDDMapS (Early Detection and Distribution Mapping System)

Displays the distribution of invasive species in the U.S., including Alaska.

<http://www.eddmaps.org/alaska/>

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/>

Online 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— Anchorage, Southeast, Fairbanks, Homer, Kenai, Kenny Lake, Kodiak, Mid-Yukon Kuskokwim, Palmer, Salcha-Delta, Upper Susitna, and Wasilla. The Invasive Plant Program coordinates the districts efforts to combat invasive weeds.

<http://www.alaskaconservationdistricts.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>

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/>

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Glossary

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| 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 germinating from seed. |
| 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. |
| 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. |
| Cauline | Of or pertaining to the stem. |
| 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. |

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| Dentate | Coarsely toothed. |
| Disarticulate | Separating at maturity at a joint. |
| Disc florets | The regular tubular flowers on the heads of the Asteraceae family. |
| Entire | Not toothed, notched or divided; refers to the continuous, smooth margins of some leaves. |
| Exotic | See Non-native. |
| Falcate | Scythe-shaped, curved sideways and flat, tapering upwards, asymmetrical. |
| Fibrous roots | A root system with all branches of approximately equal thickness, as in the grasses and other monocots. |
| Filament | The stalk of a stamen that bears the anther. |
| Floret | A single flower in a head of many flowers. |
| Geniculate | Bent abruptly at an angle, like a knee. |
| Glume | A chaffy or membranous bract at the base of a grass inflorescence or spikelet; the first glume refers to the lower bract, the second glume to the upper bract. |
| Glabrous | Having a smooth, even surface; without hairs. |
| Glaucous | Having a whitish or blueish waxy coating. |
| Glandular | Having secreting organs or glands. |
| Hastate | Arrowhead-shaped. |
| Hyaline | Thin, dry and transparent or translucent. |
| Hypanthium | A cup-shaped extension of the floral axis usually formed from the union of the basal parts of the calyx, corolla and the stamens, commonly surrounding or enclosing the pistils. |
| Internode | The part of the stem that lies between two nodes or joints on a plant. |
| Invasive | Exotic plants that produce viable offspring in large numbers and have the potential to establish and spread in natural areas. |
| Involucre | A whorl of leaves or bracts that enclose a flower or inflorescence. |
| Irregular | Describes a flower in which sets of organs differ in size, shape or structure. |
| Keel | A central ridge along the back of any organ of a plant; the lowest, fused petals of a pea-like flower. |
| Lemma | The lower, and larger, of two membranous bracts enclosing the flower in grasses. |
| Ligule | A strap-shaped plant part. The flattened part of the ray floret in 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, wavy, entire, etc. |
| Native | Refers to plants that live or grow naturally in a particular region. |
| Naturalized | Exotic plants that reproduce consistently in their new environment and sustain populations over many life cycles without direct intervention by humans. |

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| 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 weed | 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 |
| Ovule | The structure in the ovary 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; situated immediately within the petals and composed of the ovary, style, and stigma |
| 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. |
| Reflexed | Bent or turned abruptly backward or down |
| 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. |

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| Scarious | Thin, dry, membranous and more or less translucent; not green. |
| 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 twice as long as wide. |
| Silique | A long, narrow fruit of the mustard family that is more than twice as 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 pea-like flower. |
| Stellate | Star-shaped. |
| Stigma | The part of the pistil that receives pollen. |
| Stipules | Appendages at the base of a petiole or leaf. |
| Stolon | A stem which grows horizontally along the surface of 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 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 indistinguishable calyx 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. |
| Whorled | When three or more leaves are arranged at the same level on a stem. |
| Winter annual | A plant that germinates in the fall, overwinters as a seedling, and in the spring and summer flowers, produces seed and dies. |
| Wing | Any membranous or thin expansion bordering or surrounding an organ. |

Glossary adapted from: Harris, J.G. and M.W. Harris, 2001

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