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Conservation
District



A Field Guide for Forest Indicator Plants, Sensitive Plants, and Noxious Weeds of the Shoshone National Forest, Wyoming

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Abstract

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This field guide was designed for people with minimal botanical training. It is an identification aid to plant species that have ecological indicator value, are on sensitive species lists, or are considered noxious weeds. It contains illustrations and simplified taxonomic descriptions.

Key words: indicator species, sensitive species, noxious weeds, plant guide, forest plants, Shoshone National Forest

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Kent E. Houston, Walter J. Hartung, and Carol J. Hartung

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Introduction

The early rangers in the Forest Service were required to collect plants as part of their regular work load. Many of the early plant collections are now important historical references in the Forest Service Herbarium. This collection is graciously housed at the University of Wyoming's Rocky Mountain Herbarium in Laramie. Today, much of the technical aspects of forest work emphasizes other priorities such as environmental reports, politics, and the electronic medium. However, plant identification skills still remain one of the essential components of "caring for the land." To correctly assess the environmental effects of a particular management activity or to simply understand the distribution of a particular plant species, one must still be able to correctly identify plants and the communities in which they occur.

This book is not intended to replace the use of existing plant keys, but rather as an aid to those individuals who are not as fluent in the language of botany. The plants in this guide are considered "indicator" plant species, sensitive or rare species, and potential noxious weed species of the Shoshone National Forest. Indicator plants give clues to the ecological or bio-physiological characteristics of a particular landscape. Sensitive or rare plant species are those plants which have been identified by plant taxonomists as being rare or endangered on a worldwide, national, or statewide basis. The USFS has established an official Sensitive species program to document plants of special management concern.

Noxious weeds (also known as exotic or alien species) represent plants that have been introduced into native plant communities and potentially threaten the natural composition of forests and rangeland. The plants in this field guide represent only a fraction of the 1000+ plant species documented by the Rocky Mountain Herbarium as occurring within the forest.

The purposes of this publication are to:

1. provide a plant field guide that will enhance and supplement the *Ecological Types of the Shoshone National Forest* publication;
2. promote an interest in the ecological relationships on the Forest;
3. create a lay-persons guide to plants in the Forest which have ecological significance;
4. stimulate interest in plant identification;
5. provide a "tool" for field personnel to utilize in Forest inventory studies;
6. enlighten Forest users of the threat of noxious weeds; and
7. help aid identification of sensitive or rare plant species within the Forest.

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Walt & Carol Hartung and Kent Houston

Acknowledgements

Illustrations in the *Field Guide to Forest Indicator Plants, Shoshone National Forest, Wyoming* were derived from several reference sources. Line art drawings were used with permission from:

University of Washington Press. C. L. Hitchcock et al. *Vascular Plants of the Pacific Northwest*. Seattle, WA: . 1969. Volumes 1-5.

Wyoming Rare Plant Technical Committee. *Wyoming—Rare Plant Field Guide*. 1994.

Walter Fertig. *Guide to the Willows of Shoshone National Forest*. Laramie, WY: Wyoming Natural Diversity Database. 1998.

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Aquatic and Wetland Vascular Plants of the Northern Great Plains. Fort Collins, CO: USDA—Forest Service, Rocky Mountain Forest and Range Experiment Station. General Technical Report RM-238. 1993.

Dr. Earl Jensen. *Flowers of Wyoming's Big Horn Mountains*. 1987.

Wyoming Natural Resource Foundation. *Wyoming Range and Land Management Handbook*. 1996.

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Dr. David Roberts, Dr. Steve Cooper, and Robert Steele's habitat type classification work was instrumental in defining Northwest Wyoming forest indicator plants. Susan Tweit's work in grassland and shrublands defined the non-forest indicators. Work by Jill Walford and Dr. George Jones provided the indicator plants for riparian environments. Alpine indicator plants were derived from the work of Dr. Philip Johnson and Dr. Dwight Billings in their Ecological Monograph, *Alpine Vegetation of the Beartooth Plateau in Relation to Cryopedogenic Processes and Patterns*. This work is currently being revisited and analyzed as part of the Shoshone National Forest Ecological Inventory.

Robert Dorn's *Vascular Plants of Wyoming* for its valuable key and descriptive properties resource.

The Wyoming Natural Resource Foundation's *Range and Land Management Handbook*, provided extremely useful descriptions (and terrific line art) for the guide.

Michele Girard, David L. Wheeler, and Stephanie B. Mills for their insightful 1997 publication, *Classification of Riparian Communities on the Bighorn National Forest*.

Use of the Natural Resources Conservation Service's National Plants Database for taxonomy and authorship standards for plant species.

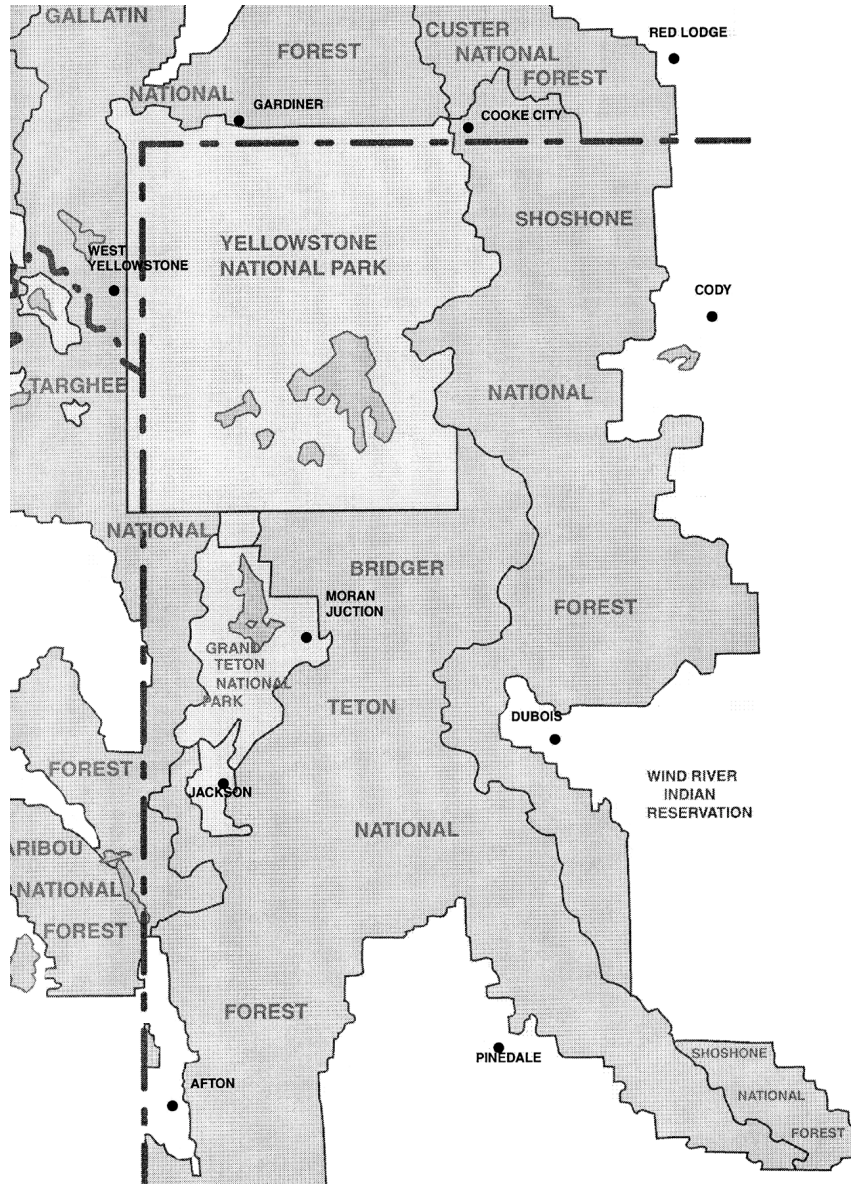
And finally, this field guide was fashioned after the work by Pat Patterson, Dr. Kenneth Neiman, and Jonalea Tonn's *Field Guide to Forest Plant of Northern Idaho*, General Technical Report INT-180. April, 1995. David C. Powell also produced a field guide, *Field Guide to Forest Plants of South-Central Colorado*, R2-ECOL-87-01. His work was also used as a model and reference for our field guide.

Photo Credits:

Cover — Walt Hartung
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Forbs — Don Finnie and Walt Hartung
Grasses — Roy Reichenbach
Thistles — Don Finnie



SHOSHONE NATIONAL FOREST



Trees

Key to conifer tree species on the Forest:

Leaves linear or scale-like; vegetation evergreen.....Coniferous trees
Leaves broad, thin, flat, vegetation deciduous.....Deciduous trees

Coniferous Trees

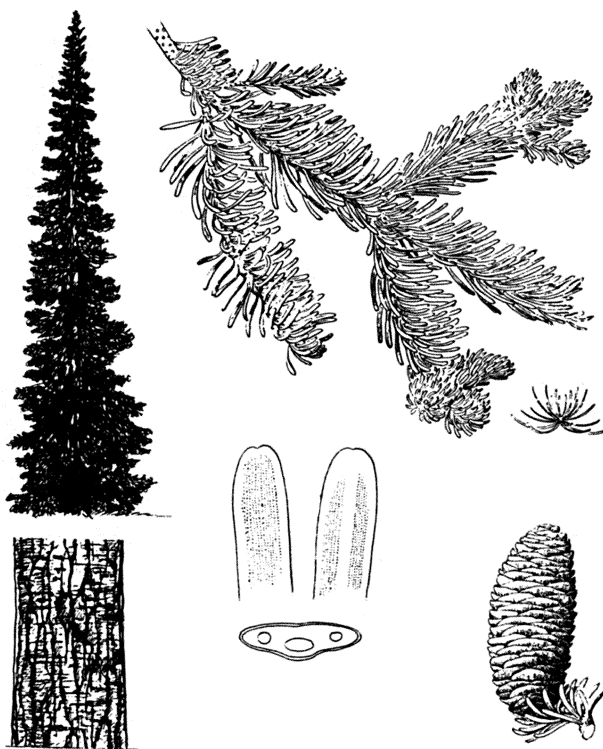
1. Leaves in bundles
 2. Leaves in bundles of 5
 3. Cones disintegrate, no evidence of intact previous year's cones. Usually at high elevations....*Pinus albicaulis* "Whitebark pine" p.8
 3. Cones persist for many years. Usually at low elevations.....*Pinus flexilis* "Limber pine" p.10
 2. leaves in bundles of 2.....*Pinus contorta* "Lodgepole pine" p.9
1. Leaves scattered singly on stems
 4. Leaves without a petiole
 5. Leaves 4-sided, with sharp tip, borne on short peg which remains on twig after needles fall.....*Picea engelmanni* "Engelmann spruce" p.7
 5. Leaves flat with rounded tip not borne on a peg.....*Abies lasiocarpa* "Subalpine fir" p.6
 4. Leaves with a petiole..*Pseudotsuga menziesii* "Douglas fir" p.15

Trees

Abies lasiocarpa

(Hook.) Nutt.

Subalpine fir/alpine fir ABLA



PINACEAE

Habitat: Subalpine zone.

Habit: Tree, up to 40m (137 ft.) tall; spirelike crown often extending to ground; bole extremely tapered; primary branches distinctly opposite.

Bark: Thin, grey, smooth with resin blisters; shallowly fissured.

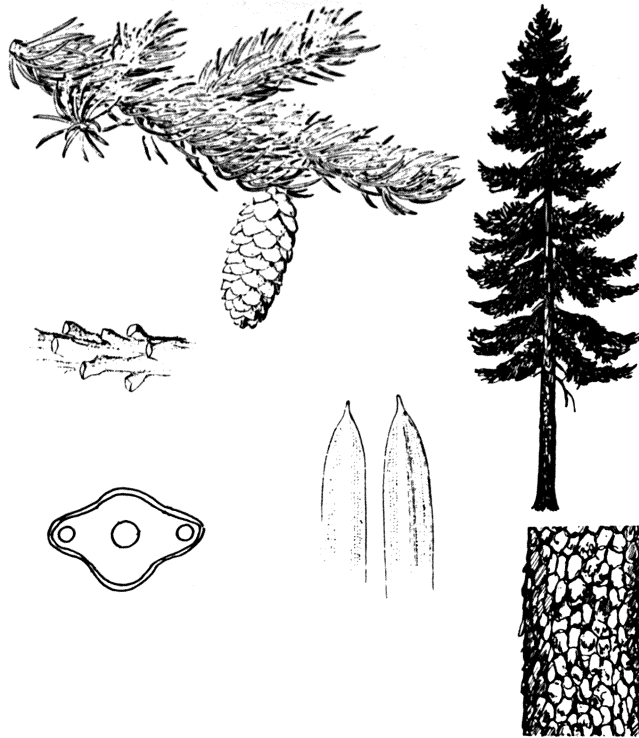
Buds: Rounded, light brown, 6mm long.

Leaves: Thick needles, 2-4cm (1-2 in.) long, apex rounded, blue-green with stomatal bands on both surfaces with large resin ducts located midway between leaf margins; leaves brushed to upperside.

Cones: Purplish-grey, cylindrical, 6-10cm (1-2 in.) long; borne upright, high in crown and disintegrating on tree; ripens mid-Aug; seed sheds mid-September.

Notes: Moose browsing can cause a layering effect on young saplings.

Picea engelmannii
 Parry ex. Engelm.
Engelmann spruce PIEN



PINACEAE

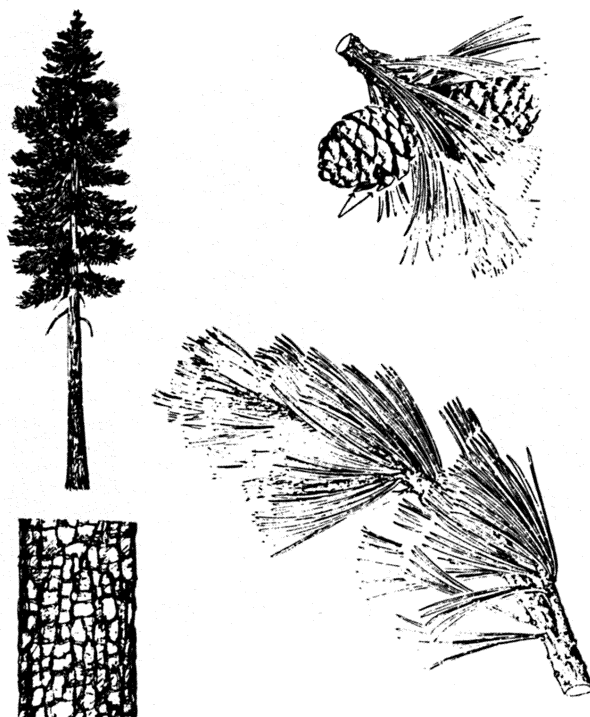
- Habitat:** Montane; favors cold humid sites, and wet frost pockets of all elevations.
- Habit:** Tree, up to 55m (180 ft.) tall; crown spirelike; branches extending to ground.
- Stems:** Young twigs finely pubescent.
- Bark:** Thin, brownish-red, scaly.
- Leaves:** Short, rigid needles, 2-4cm (1-2 in.) long, blue-green, pointed, 4-angled in cross-section; borne singly on a peg that remains on twig when needle is shed.
- Cones:** Oblong, 2-4cm (1-2 in.) long; light chestnut-brown, scales paper-thin; cones droop from branches, falling during autumn or winter; ripens Aug.-Sept., seed shed Sept.-Oct.
- Notes:** *Picea pungens* may be found along river courses within the forest and *Picea glauca* occasionally occur on limestone influenced soils around Crandall and Sunlight Basin.

Trees

Pinus albicaulis

Engelm.

Whitebark pine PIAL



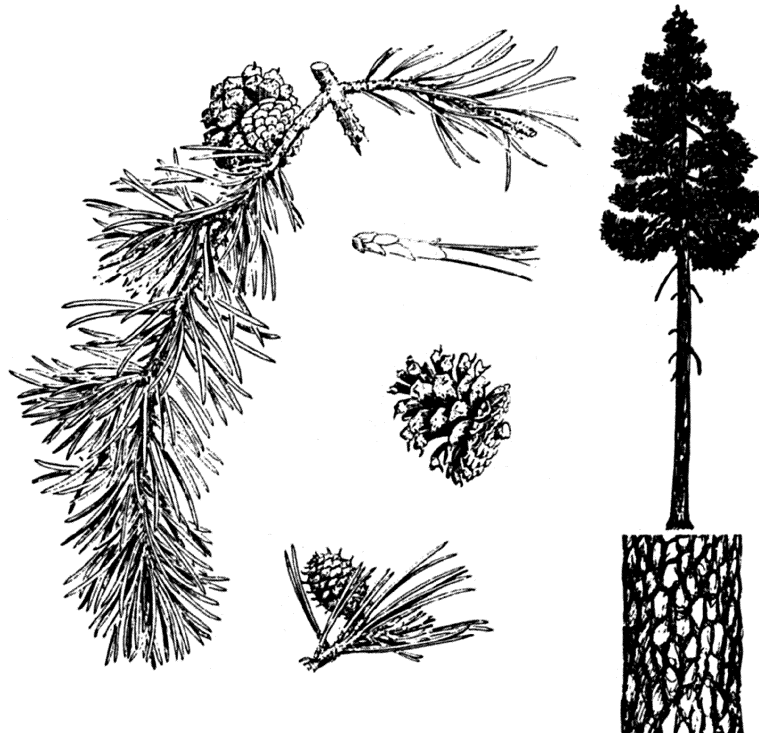
PINACEAE

- Habitat:** Subalpine slopes and ridges.
- Habit:** Tree, 5-15m (15-50 ft.) tall, with broadly branched crown; stunted or decumbent on exposed sites.
- Bark:** Thin, white-grey, scaly; inner bark red-brown.
- Leaves:** Needles in bundles of 5, dark yellow-green, 1 1/2 - 2 1/2 in. long; clustered at the tips of the branches.
- Cones:** Ovoid, deep red to purple-brown, 2-4 in. long, thick scales with stout, pointed protuberances; the scales do not separate, but after several years the whole cone disintegrates and releases the large seeds.
- Notes:** This species represents an important food source for grizzly, Clark's nutcracker, and pine squirrels. These trees are being threatened by white pine blister rust.

Pinus contorta

Dougl. ex Loud.

Lodgepole pine, jack pine PICO



PINACEAE

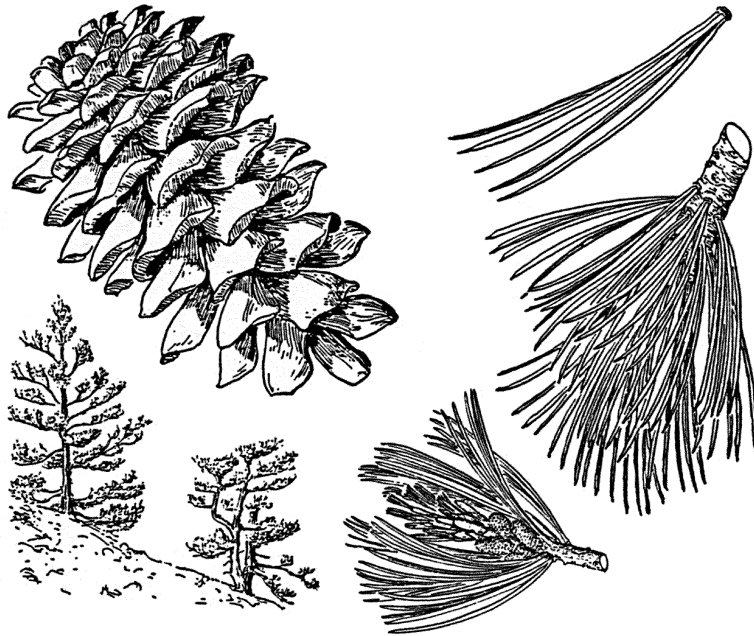
- Habitat:** Potential early seral occupant on all habitat types except *Pinus ponderosa* series.
- Habit:** Tree, up to 30m (100 ft.) tall with short crown.
- Bark:** Lowland form has thick, black, rectangular plated bark; subalpine form is thin reddish to grey with loose scales.
- Leaves:** Needles in bundles of 2, 3-8cm (1-3 in.) long; stiff, often twisted; yellowish-green.
- Cones:** Subsessile, 3-5cm (1-2 in.) long, sharp-spined tip on scale; persistence and cone serotiny is regionally variable; cones mature Aug.-Sept; seed shed Sept.-Oct.
- Notes:** Fire is an important factor in the regeneration of this species. This species is also commercially important and provides a wood product for local industry. This species is relatively short-lived when compared to other *Pinaceae*.

Trees

Pinus flexilis

James

Limber pine PIFL2



PINACEAE

- Habitat:** Foothills, lower treeline, windy ridges and rock outcrops.
- Habit:** Tree, some attaining 50 ft., open woodlands, flexible branches.
- Bark:** Light grey on young trunks and branches but, much darker on old trunks.
- Leaves:** Dark green in needle bunches of five.
- Cones:** Cylindrical, often very pitchy; rounded scales with pale border. Residual cones usually found under trees help distinguish this species from whitebark pine.
- Notes:** Like whitebark pine, this species is being threatened by the movement of whitepine blister rust into the Greater Yellowstone area. Important food source for pine squirrels and Clark's nutcrackers. In other areas of the northern Rocky Mountains it is an important food source for grizzly bears.

Populus angustifolia

James

Narrowleaf cottonwood POAN3



SALICACEAE

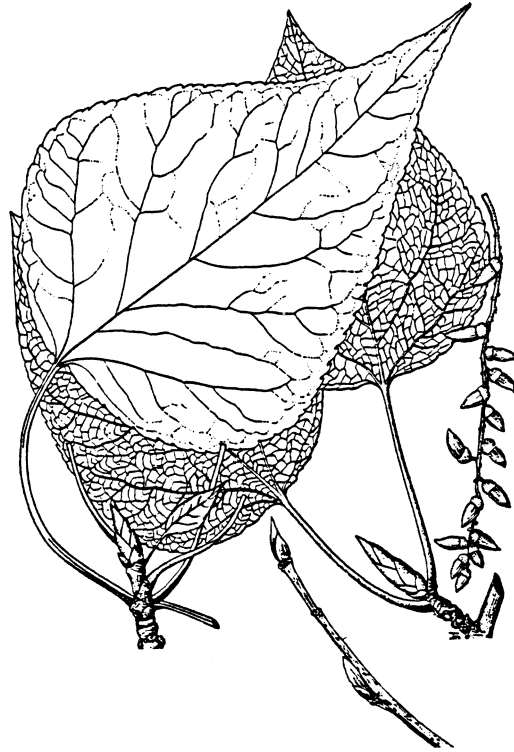
- Habitat:** Flood plains along the river/stream courses.
- Habit:** Tree.
- Bark:** Smooth and cream-colored except near base, where it becomes broken by dark furrows into broad ridges.
- Buds:** Terminal, brown, usually 5 scales; very resinous and somewhat fragrant.
- Leaves:** Lance-shaped, tapering to tips, 5-10cm long.
- Notes:** This species needs flooding to regenerate. It is an important browse species for deer, elk, and moose. May be found in dense stands on recently deposited river alluvium.

Trees

Populus balsamifera

L.

Balsam poplar POBA2



SALICACEAE

Habitat: Small groves on valley bottoms of montane zone.

Habit: Tree.

Bark: Ridged, grey or black.

Buds: Pointed, sticky, terminal bud, 2.5cm long; fragrant winter bud.

Leaves: Usually ovate with sharp-pointed tips, 7.5-15cm long, dark green above and lighter colored beneath.

Notes: Younger trees are an important browse species for elk, deer, and moose. This species also provides important habitat for birds.

Populus deltoides var. *occidentalis*

Rydb.

Plains cottonwood PODEO



SALICACEAE

Habitat: Moist soils of bottom lands, along streams.

Habit: Large trees, shade trees up to 30m tall.

Bark: Rough when mature.

Leaves: Broad, more or less deltoid; abruptly acuminate, margins crenate redundant.

Flowers: Male and female catkins on separate plants. Female catkins produce seeds with fine cottony hairs.

Notes: Younger trees are an important browse species for elk, deer, and moose. This species also provides important habitat for birds.

Trees

Populus tremula ssp. *tremuloides*

(Michx.) A. & D. Love

Quaking aspen POTRT



SALICACEAE

Habitat: Streams, moist benches and mountain slopes.

Habit: Small tree, up to 25m (82 ft.) tall, forming dense colonies of clones, rarely singular.

Bark: Smooth, greenish-white to cream colored becoming blackish and rough with injury and old age.

Buds: Resinous, sharp tipped, reddish-brown, 1cm long.

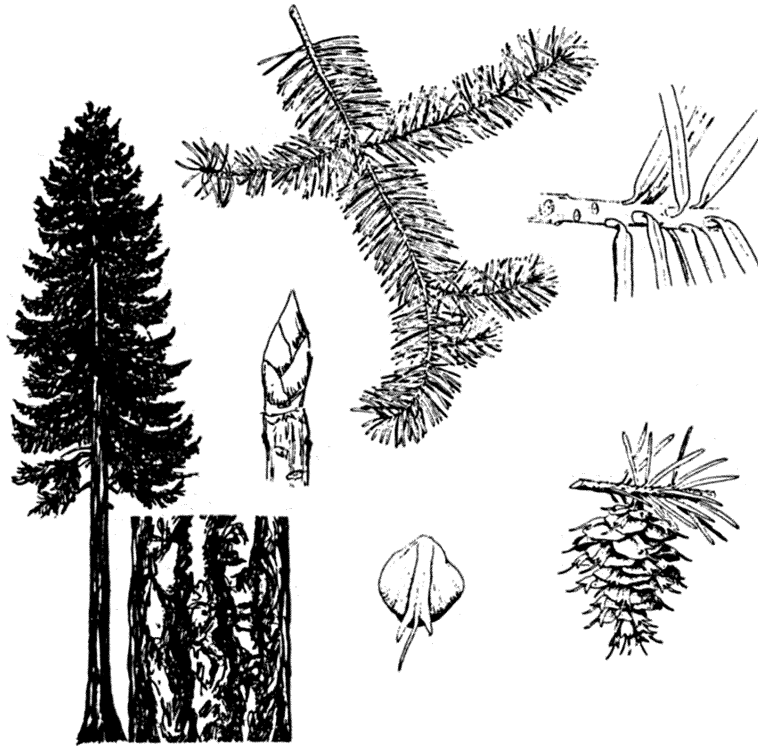
Leaves: Alternate, deciduous, broadly ovate almost round, 2-9cm (1-4 in.) long, finely toothed, apex acute, shiny yellow-green, pale below; becoming bright yellow in autumn; slender, laterally flattened petiole allows leaf to flutter in slightest breeze.

Flower: Catkins drooping; appearing before leaves; April-May.

Notes: Short-lived. Younger trees are an important browse species for elk, deer, and moose. This species also provides important habitat for birds. Very seldom reproduces by seed. Regenerates by suckering.

Pseudotsuga menziesii var. *glauca*

(Beissn.) Franco

Douglas fir PSMEG**PINACEAE**

- Habitat:** Variable slope aspects of the montane zone.
- Habit:** Tree, up to 45m (150 ft.) tall; compact, pyramidal crown with irregular branching habit; branches upward spreading to drooping, with stiffly erect leader.
- Bark:** Rough, very thick, reddish-brown, separated by irregular deep furrows, bark's internal layers consist of light colored corky material mixed within reddish-brown material.
- Buds:** Shiny, reddish-brown, sharp-pointed, 6mm long.
- Leaves:** Linear, flattened, blue-green petiolate needle, 2-3cm (1 in.) long, apex blunt, slightly grooved above with 2 white stomatal bands below, spirally-arranged on twig, petiole drops with needle, leaving small flat scar on twig.
- Cones:** Pendent, reddish-brown, oblong-cylindric, 4-10cm (2-4 in.) long, with three-lobed bracts, protruding from thin scale; ripens/sheds Aug.-Sept. of first year.



Shrubs



Shrubs

Shrubs are like bushes.....Woody perennial plants, which includes "half shrubs."

Shrubs

Acer glabrum

Torr.

Rocky Mountain maple AGCL

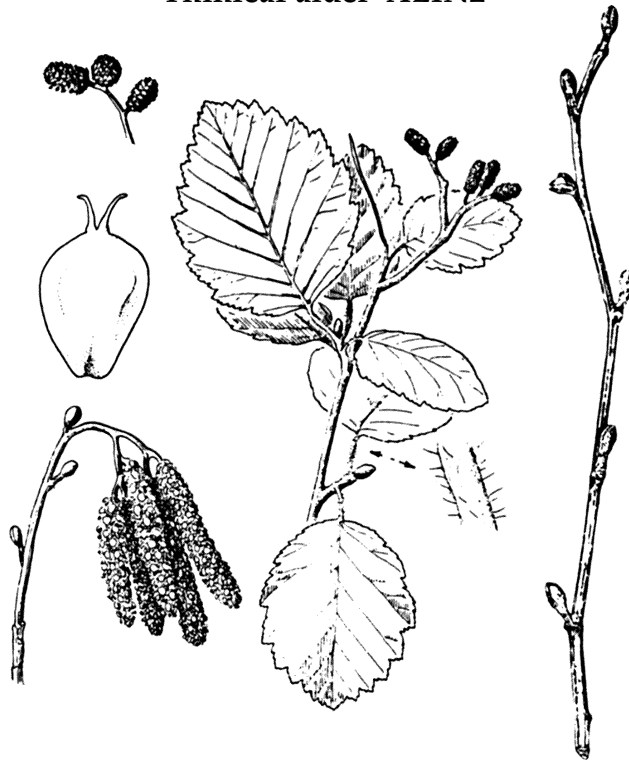


ACERACEAE

- Habitat:** Moist site conditions, woods and slopes.
- Habit:** Usually a small shrub up to 15 ft. tall in this area.
- Stems:** Smooth, reddish-purple; old bark grey.
- Leaves:** Opposite, deciduous, simple 3-5 toothed, palmately and deeply lobed, maplelike leaves, dark green often with reddish tints, 2-14cm (1-6 in.) long, trifoliolate leaves may frequently be found, <6cm wide. Buds are opposite, smooth, red, plump, ovate, 3mm long; bud scales paired.
- Flowers:** Small, greenish-yellow, borne in short terminal or axillary clusters; appearing with the leaves; April-June. Fruits are double samaras 2-3cm (1 in.) long.
- Notes:** Although this species has a sporadic distribution, it is an important browse for large ungulates.

Shrubs

Alnus incana
(L.) Moench
Thinleaf alder ALIN2



BETULACEAE

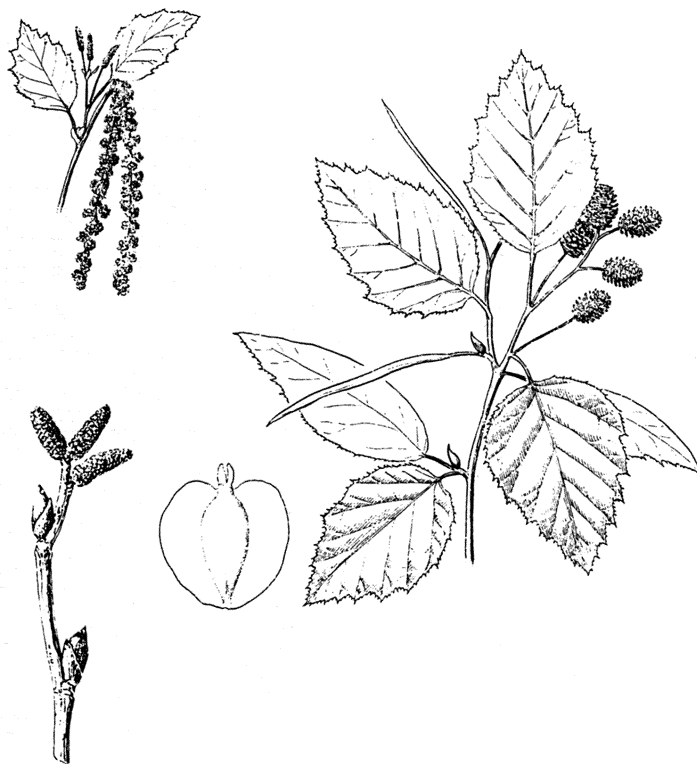
- Habitat:** Associated with riparian to subirrigated sites. Found along stream banks, shores, and moist woods.
- Habit:** A large shrub or small tree, up to 40 ft. tall with a tendency to form thickets.
- Stems:** Usually somewhat 3-sided, sometimes with short rusty hairs; cambium and pith turns a rusty color when freshly cut.
- Leaves:** Deciduous, alternate, broadly elliptic, apex acute, margins are double dentate 1-3 in. long; dull green on both sides with yellow-green on central vein; not sticky.
- Flowers:** Next seasons immature male and female catkins are exposed over winter; catkins developing before the leaves; male catkins clustered, pendulous; female catkins are small semi-woody, persistent, conelike clusters of 3-9 on short stout stalks approx. 1/2 in. long. Fruits lack a winged margin.
- Notes:** Roots have nitrogen fixing nodules.

Shrubs

Alnus sinuata

(Regel) Rydb.

Sitka alder ALSI3



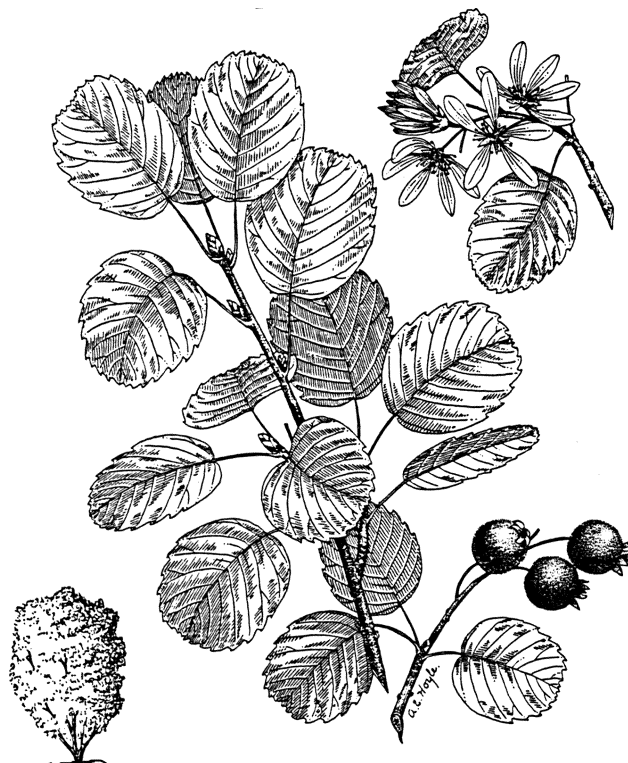
BETULACEAE

- Habitat:** Moist montane woods and streambanks.
- Habit:** Multiple-stemmed shrub, ascending and bushy, up to 3m (10 ft.) tall, often forming dense thickets.
- Stems:** Usually somewhat 3-sided; cambium and triangular pith remaining light not turning rusty colored when freshly cut. Bark is thin, smooth, reddish-brown aging to greyish-green with warty lenticles.
- Leaves:** Alternate, deciduous, ovate, 3-10cm (1-4 in.) long, shiny green, margins doubly serrate with fine sharp teeth, apex acute, sticky when young. Buds are sessile, alternate, dark purple, lanceolate with pointed apex, 3mm long.
- Flowers:** Male catkins up to 10cm (4 in.) long, only exposed over winter; cluster of 3-6 persistent, semi-woody, conelike female catkins on long thin stalks 15mm long, developing along with leaves; May-July. Fruits are a small winged nutlet.

Amelanchier alnifolia

(Nutt.) Nutt. ex M. Roemer

Serviceberry AMAL2



ROSACEAE

Habitat: Woods, slopes, and canyons. Found in the undergrowth of dense moist conifer forests. Lower montane to lower subalpine zones. Also found on open slopes dominated by shrubs usually where snow may accumulate.

Habit: A medium to tall shrub, 6-20 ft. tall, spreading to erect.

Stems: Bark is glabrous, reddish-brown aging to grey.

Leaves: Alternate, deciduous, thin, oblong to oval, 10-12 individual pinnate veins; generally coarsely toothed above the middle, no glands on leaf or petiole.

Flowers: White, 1/4-1/2 in. long; 3-20 in short racemes; April-July. The fruit is dark purple, apple-like, approximately 3/8-1/2 in. long.

Notes: One of the earliest blooming white-flowered shrubs; the fruit makes good jelly. Important browse species for elk, deer, and moose.

Shrubs

Artemisia arbuscula

Nutt.

Low sagebrush ARAR8



ASTERACEAE

- Habitat:** Found on the E. Fork—Button Draw area of the Wind River Ranger District on heavy clay soils.
- Habit:** A dwarf, irregular shrub to 16 inches tall.
- Stems:** Stems and short basal trunk dark brown to black.
- Leaves:** Light grey-green, mostly 3 toothed at tip, the basal part of at least some, usually, obviously broadened below the lobes.
- Flowers:** Small flowers, all alike, heads in elongated clusters, no colorful characteristics. Involucre bracts loosely woolly-hairy, flower heads large and widely spaced.
- Notes:** Can be confused with *A. nova* and *A. longiloba*. Flowers mid to late summer vs. early summer for *A. longiloba*. It may provide important winter browse for elk.

Artemisia cana var. *viscidula*
Osterhout
Mountain silver sagebrush ARCAV



ASTERACEAE

- Habitat:** Occurs along the continental divide at elevations of 6,000 to 10,000 feet. Often found in meadows, along streambanks in mountains and higher basins in areas with heavy snowpack on soils which are normally deep, rich loams.
- Habit:** Erect, not over 1 foot tall.
- Stems:** Freely branching; stems of the new growth white.
- Leaves:** Darker green, not grey-green as with *A. tridentata* var. *vaseyana*, with which it grows. Leaves mostly less than 2 in. long and 1/4 in. wide.
- Flowers:** Small flowers, all alike, heads in elongated clusters, no colorful characteristics.
- Notes:** In contrast to the plains subspecies, *A. cana* ssp. *cana*, Mountain silver sagebrush is hardly "silver" in appearance; in fact, the leaves are quite dark green at times, while also being more narrow and often with prominent unequal lobes.

Shrubs

Artemisia frigida

Willd.

Fringed sage ARFR4



ASTERACEAE

Habitat: Commonly seen on dry slopes of the foothill, montane, and subalpine zones. May also be found in bunchgrass meadows throughout the lower montane zone.

Habit: Erect, up to 16 inches tall.

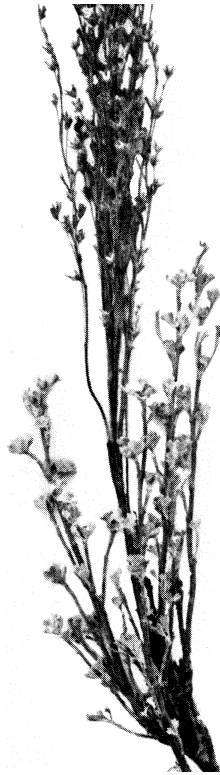
Stems: Woody stems at base.

Leaves: Finely divided, silvery leaves with basal tufts. Cauline leaf blades less than 1 3/8 in. long.

Flowers: Many small, yellowish flower heads less than 1/4 in. wide.

Notes: Aromatic. The early settlers used this plant to make a bitter tea, which was believed to be a tonic and a remedy for mountain (typhoid) fever. Occasionally considered to be a forb because it's woody only at the base. In the Cody area, this species is considered important deer browse.

Artemisia longiloba
(Osterhaut) Beetle
Longleaf or Alkali sagebrush ARLO9



ASTERACEAE

- Habitat:** This dwarf sage is found in the Horse Creek Basin and the lower Long Creek area of the Wind River Ranger District. Soils are fine textured with a clay layer in the 'B' horizon at depths averaging eight inches. This claypan interrupts drainage and root penetration, causing long periods of saturation, and consequent lowered productivity.
- Habit:** Erect, up to 2 ft. tall.
- Stems:** Little or no trunk formed, but old bark is brown to black.
- Leaves:** Three-lobed leaves are rather short and bell-shaped, up to 5/8 in. long.
- Flowers:** Flower heads few, usually single, forming a narrow, erect spicate or racemose panicle. Involucres woolly vs. glabrous in *A. nova*. Inflorescences extend above the rounded shrub tops.
- Notes:** Very early blooming when compared to other sages. May be confused with *A. arbuscula* and *nova*.

Shrubs

Artemisia nova

A. Nels.

Black sagebrush ARNO4



ASTERACEAE

Habitat: Very site specific distribution. It occupies only the very shallow, stony soils that are calcareous to the surface. Often associated with Wyoming big sagebrush.

Habit: Low shrub up to 16 in. tall; dwarf.

Leaves: 3-toothed truncate apex, the lobes even and rounded, but often with 3-5 deeply incised lobes especially in shade forms. Small glands on the leaves appear whitish early in the season and turn dark by mid-summer.

Flowers: Persistent red-brown flower stalks. A few small flowers in composite heads on spikelike panicle. Involucres glabrous, flower heads small, and densely clustered. Late summer.

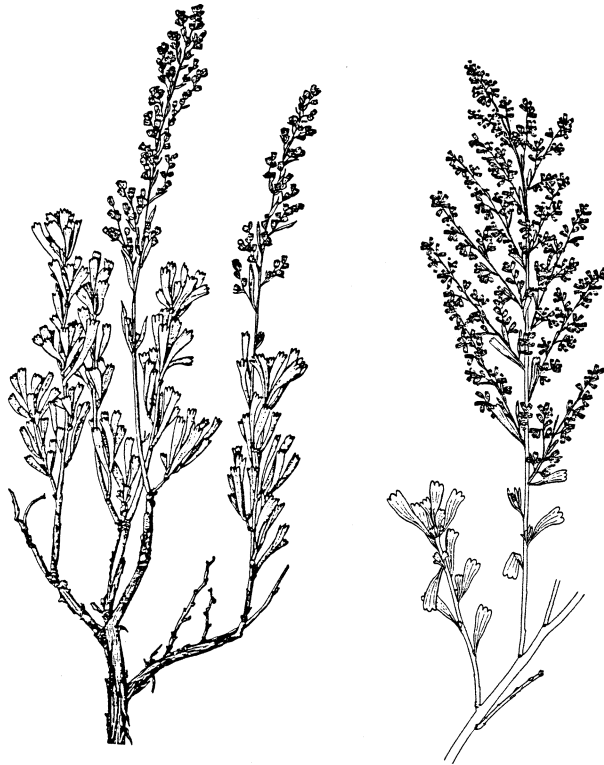
Notes: Provides fair to good browse for wildlife, especially in the winter. Palatability is usually fair for cattle and good for sheep. It looks like a small dark green version of big sagebrush. Similar to *A. longiloba* and *A. arbuscula*.

Artemisia tridentata ssp. *vaseyana*

Nutt.

(Rydb.) Beetle

Mountain big sagebrush ARTRV



ASTERACEAE

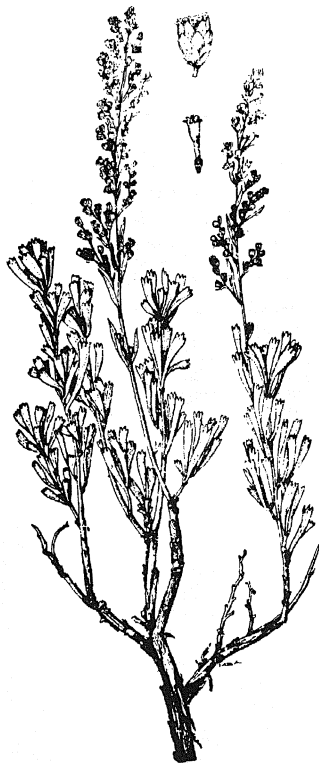
- Habitat:** Found throughout the upper foothills and mountain areas at elevations ranging from 5,500 to 9,500 feet. It occupies well-watered swales and pockets of deep soil at lower elevations.
- Habit:** A uniformly growing, flat-topped shrub up to 3 feet tall.
- Leaves:** Leaves are spatula-shaped and have three shallow lobes at their tips. The terminal leaves on each twig appear as though they arise from a common point (whorled). When crushed, they emit a pleasant, mintlike fragrance.
- Flowers:** Five to eight small, trumpet-shaped blossoms are produced in each flower cluster. Flowers have a green midrib. The flower stalks arise only at the upper crown portions of the plant and extend above the foliage. September.
- Notes:** Dense stands in some areas may be used as cover by wildlife during the animal's reproductive periods. This sage species has the most potential for increasing its canopy cover.

Shrubs

Artemisia tridentata ssp. *tridentata*

Nutt.

Basin big sagebrush ARTRT



ASTERACEAE

Habitat: Found in bottomlands, plains, and foothills to 8,000 ft., in a wide variety of soils. Grows in deep, well-drained soils. Valley bottoms and foothills of the Clarks Fork and Wapiti Ranger Districts.

Habit: A native, grey-green shrub, becoming tree-like in bottomlands, to heights of 12 feet.

Leaves: Long, narrowly triangular, with three terminal lobes. Leaf margins are straight, providing a narrow wedge-shaped leaf which is widest at the lobe tips.

Flowers: Small, in silver-green heads at different levels amid the foliage.

Notes: Big basin sagebrush is the least palatable form of big sagebrush and is normally only lightly browsed. However, observations on the South and North Fork winter ranges, Wapiti Ranger District, showed moderate winter browse use by mule deer. Brush reduction increases forage production of native grasses.

Shrubs

Artemisia tridentata var. *wyomingensis*

Nutt.

(Beetle & Young) Welsh

Wyoming big sagebrush ARTRW



ASTERACEAE

Habitat: Most adapted to xeric conditions of all the sub-species of big sage. It grows in relatively shallow soils in the warmer and drier portions of the sagebrush region, and is common on the lower elevations of the Wapiti and Clarks Fork Ranger Districts.

Habit: A native, relatively low-growing subspecies, 20-40 in. high.

Stems: The main stem is separated into 2-3 twisted portions at base.

Leaves: Relatively short and wide, more deeply lobed than those of other big sagebrush subspecies. The leaf margins curve outward from the base, forming bell-shaped leaves.

Flowers: Inflorescence openly spicate, many-flowered above foliage.

Notes: It tends to produce more lateral roots in the upper soil horizons than other big sagebrush taxa, and therefore, may compete more with associated herbaceous vegetation. Studies indicate that it may be the most palatable form of big sagebrush.

Shrubs

Artemisia tripartita var. *rupicola*

Rydb.

(Beetle) Dorn

Threetip sagebrush ARTR4



ASTERACEAE

Habitat: It is restricted to the Lander Ranger District where it is the only dwarf sage species. Sites with shallow or otherwise arid soils support this sage.

Habit: A native, dwarf shrub growing to 2 ft. tall.

Leaves: The linear leaves are deeply cleft into three lobes. Leaves are approximately 1 in. long, silvery-hairy.

Flowers: Many small composite heads on spikelike panicles.

Notes: The palatability of threetip sagebrush is rated as poor for cattle, to only fair for sheep and antelope. It increases under grazing pressure and, unlike big sagebrush, threetip sagebrush will sprout freely after a fire and may require special management to control its increase in burn areas.

Betula glandulosa

Michx.

Bog birch BEGL



BETULACEAE

Habitat: Wet mountain meadows, bogs, and around springs and seeps.

Habit: An erect, many branched shrub, 3-10 ft. tall.

Leaves: Alternate, deciduous, rounded ovate, less than 1 in. long, margins crenate, dark green above, lighter and glandular below.

Flowers: Cylindrical catkin breaking up at maturity, developing with or before leaves; April-June. An oval winged samara tipped with persistent styles.

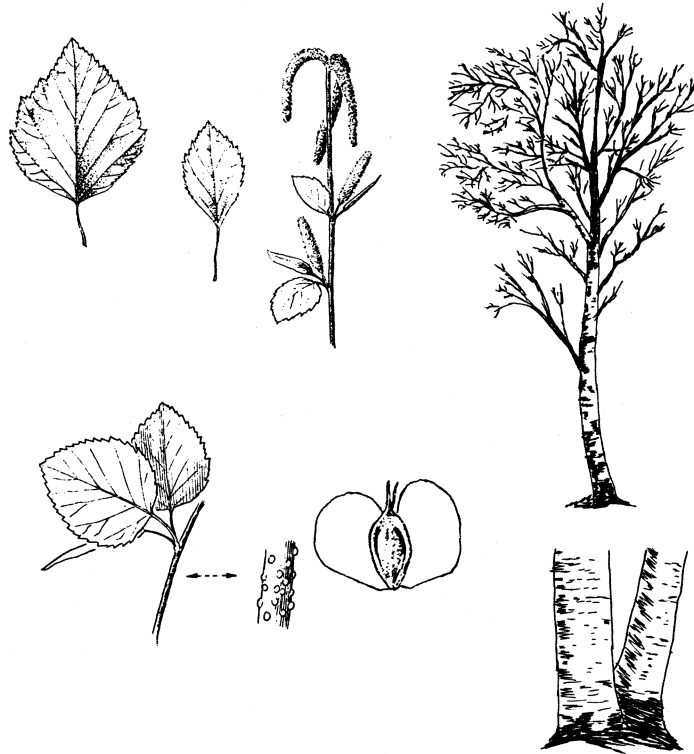
Notes: Important browse species.

Shrubs

Betula occidentalis

Hook.

Water birch BEOC2



BETULACEAE

Habitat: Along streams or on open hillsides.

Habit: Small tree or loosely branched shrub, 13-26 ft. tall.

Stems: Bark is smooth, shiny, reddish-brown, marked by pale horizontal lenticels; does not exfoliate.

Leaves: Alternate, deciduous, broadly ovate to diamond-shaped, 3-5cm (1-2 in.), serrate to dentate, green above, pale yellow-green and minutely glandular below, initially sticky; changes to dull yellow in autumn. Buds are brown, resinous, pointed about 6mm long.

Flowers: Cylindrical catkin 2cm long, flowering with or before leaves in spring; Feb-June; breaking up at maturity. Fruits are winged samaras tipped with persistent styles.

Notes: Important browse species.

Shrubs

Cornus sericea
L.
Dogwood COSE16

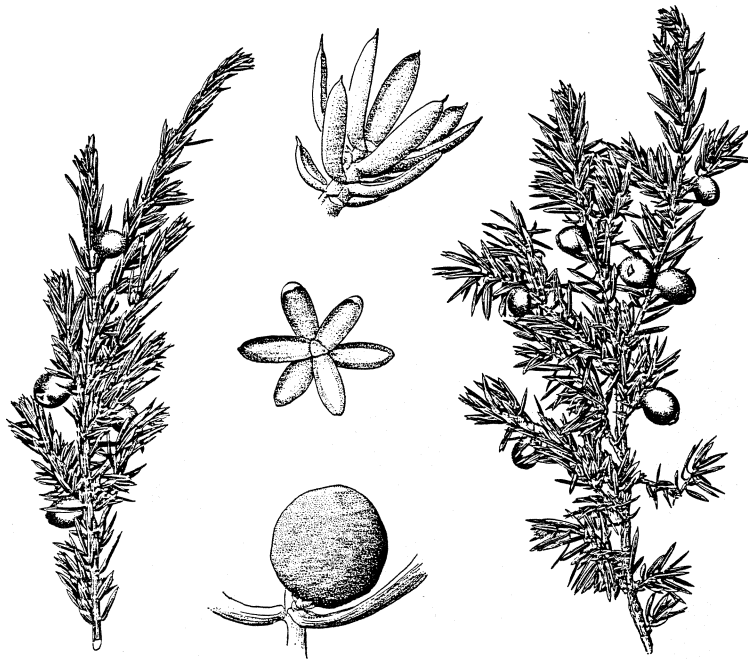


CORNACEAE

- Habitat:** Riparian, and other warm, moist sites in mountains.
- Habit:** Many-stemmed shrub, 7-12 ft. tall, usually spreading by layering stolons.
- Stems:** Slender, bark turns dark red to purplish-red when growing in the sun; pith round and white and stretches when twigs are broken.
- Leaves:** Opposite, deciduous, simple, entire, ovate 2-5 in. long, with unique 5-7 prominent upcurving and parallel veins that converge at the tip of the leaf.
- Flowers:** Small, 4-petaled, white 1/4 in. long, in flat-topped terminal cymes, not showy; May-July. Small, bitter fruits with berrylike drupe, about 3/8 in. long.
- Notes:** Preferred browse for elk, moose, and deer. May be the only 4-petaled shrub on the Shoshone National Forest.

Shrubs

Juniperus communis
L.
Common juniper JUCO6



PINACEAE

- Habitat:** Commonly grows from the foothills to lower subalpine zone, along forest edges and moist areas.
- Habit:** Low spreading shrub with the awl-shaped, prickly foliage characteristic of all junipers. May be up to 9 feet high.
- Leaves:** Some needle-like in rows of 3; whitish on the upper surface.
- Flowers:** Produces blue berries.
- Notes:** When located in swales or other depressions, common juniper is often an indicator of "frost pocket" conditions. May be confused with *J. horizontalis*.

Ledum glandulosum

Nutt.

Labrador tea LEGL



ERICACEAE

Habitat: Riparian, bogs, and moist coniferous woods; indicator of wet, usually very acidic and nutrient poor organic soils.

Habit: Erect shrub, 2-7 ft. tall.

Stems: Young branches finely hairy and dotted with glands, older branches smooth.

Leaves: Alternate, evergreen, entire, ovate to elliptic, 1-2 in. long, dark green above and light green and dotted with tiny yellow glands on lower surface, margins may be inrolled.

Flowers: Small, white or yellowish, in clusters at ends of branches; June-Aug. Fruits are globose capsule, 1-3mm long.

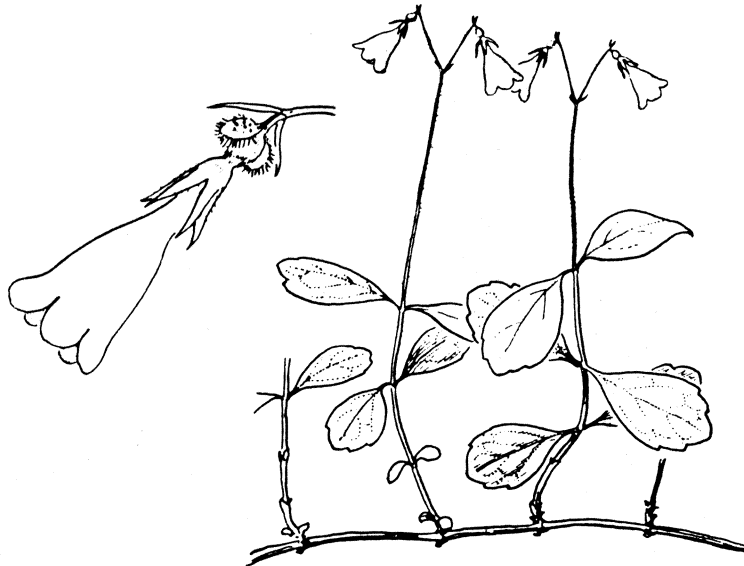
Notes: Occurs vary sporadically in the Wind River, Absaroka, and Beartooth ranges.

Shrubs

Linnaea borealis

L.

Twinflower LIBO3



CAPRIFOLIACEAE

Habitat: Occurs in the upper montane and subalpine mountain forests.

Habit: Low trailing plant, slightly woody, with paired evergreen leaves. Usually less than 4 in. tall.

Stems: Slender, but woody.

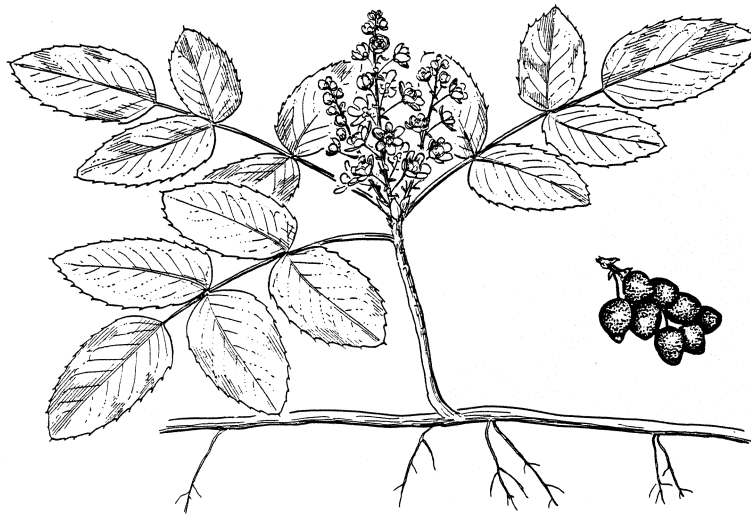
Leaves: Opposite, evergreen, firm, elliptic, up to 1 in. long, with shallow teeth near apex.

Flowers: A pair of tiny, pink, nodding, bell-shaped flowers, less than 1/4 in. long. Fruit is small one-seeded capsule.
June-September.

Notes: May form mats on forest floor.

Shrubs

Mahonia repens
(Lindl) G. Don
Oregon grape MARE11



BERBERIDACEAE

Habitat: Occurs in rocky areas in mountains near streams, woods, and slopes. Common in Douglas fir stands; also found among aspen and mixed spruce/fir stands.

Habit: Shrub near ground to 1 ft. high with compound, evergreen leaves.

Leaves: Compound, pinnate, leaflets leathery, spiny on margin.

Flowers: Sepals and petals bright yellow. Blue berries formed by late summer/early fall.

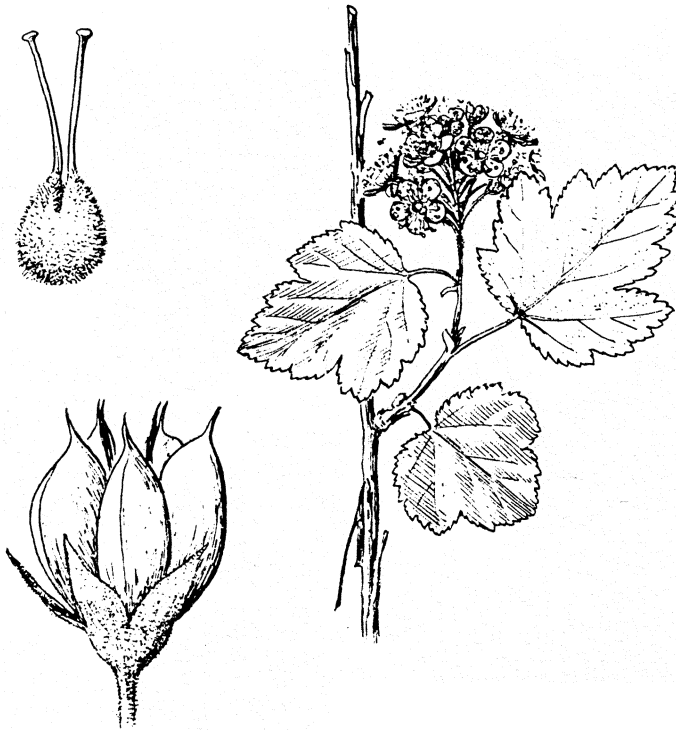
Notes: Blue grouse utilize these berries.

Shrubs

Physocarpus malvaceus

(Greene) Kuntze

Mallow ninebark PHMA5



ROSACEAE

- Habitat:** Found in Douglas fir, limber pine, and dry spruce habitats with soils that have been derived from calcareous parent materials.
- Habit:** Shrub often over 3 ft. high. May be spreading and has angled branches.
- Leaves:** Alternate, deciduous with 3 palmate lobes, maplelike, doubly toothed, 1-2 in. wide and over 1 1/2 in. long, pubescent dark green above, paler with copious starlike hairs beneath.
- Flowers:** Numerous small, white flowers in terminal cluster. May-July. The fruit is generally a pair of brown, many seeded, hairy follicles.
- Notes:** Can be confused with Rocky Mountain ninebark. This species may be found in dense stands.

Shrubs

Physocarpus monogynus
(Torr.) Coult.
Rocky Mountain ninebark PHMO4



ROSACEAE

- Habitat:** Found on the slopes and in the valleys of the upper foothill and montane zone. Typically grows on moist, shaded sites.
- Habit:** Shrub to 10 ft. high, usually less than 4 ft.
- Stems:** The stems have a peeling or “exfoliating” bark.
- Leaves:** Alternate leaves have three to five doubly-toothed lobes, usually less than 1 1/2 in. long and resembles those of currants and, to a certain extent, Rocky Mountain maple.
- Flowers:** Showy clusters of attractive, white flowers are produced in late spring or early summer.
- Notes:** Can be easily confused with mallow ninebark. This species may be found in dense stands.

Shrubs

Potentilla fruticosa

auct. non L.

Shrubby potentilla POFR4



ROSACEAE

Habitat: Found on moist hillsides or meadows in the montane to subalpine zones.

Habit: Shrub to 3 ft. high

Stems: Appear dark brown or greyish in winter.

Leaves: Grey-green leaves pinnately divided into five crowded leaflets.

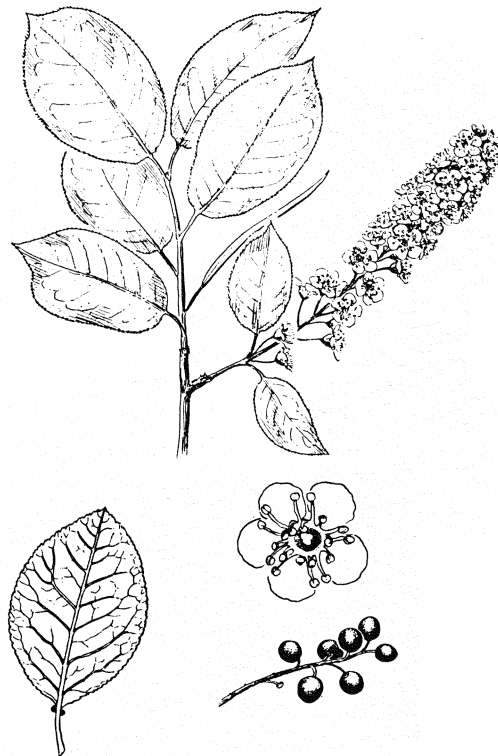
Flowers: Bright yellow, rose-like blossoms 1-1 1/2 in. wide.

Notes: This plant is also known as shrubby cinquefoil.

Prunus virginiana

L.

Chokecherry PRVI



ROSACEAE

- Habitat:** Grows in moist soils of valleys and slopes. These shrubs form thickets in valleys and on hillsides of the foothill and montane zones.
- Habit:** Native shrub to approximately 10 ft.
- Stems:** The bark is reddish-brown.
- Leaves:** Oval, with pointed tips, saw-toothed margins, dark green.
- Flowers:** Several small white flowers in long dense clusters. The fruits are approximately 1/3 to 1/2 in. in diameter; dark purple, and contain a large pit.
- Notes:** The green foliage is poisonous. Hydrocyanic (prussic) acid is released with chewing. The virulence of the poison diminishes in the winter. The fruit of the chokecherry was eaten fresh or dried for winter use by Native Americans. The fruit makes good jelly. Chokecherry furnishes excellent browse in the winter for wildlife.

Shrubs

Purshia tridentata

(Pursh) DC.

Bitterbrush PUTR2



ROSACEAE

Habitat: Found on well-drained sandy to gravelly soils of arid plains and foothill slopes. It is usually found on rocky south exposure slopes. Infrequently found in the Beartooth and Absaroka range, but is common along the limestone flanks of the Wind River range.

Habit: A native, semi-erect, greyish-green shrub, usually 3-6 ft. tall.

Leaves: Triangular, with three terminal lobes, bitter tasting.

Flowers: Yellow, solitary on short stems, fragrant.

Notes: Bitterbrush is an important browse species for livestock and wildlife. Although the palatability is quite variable, it is usually classed as good. Antelope bitterbrush is generally grazed from fall to spring. The plant forms roots where branches come in contact with the soil, as if stoloniferous.

Shrubs

Rhus aromatica var. *trilobata*

Nutt.

Skunkbush sumac RHTRT



ANACARDIACEAE

Habitat: Arid low elevation hills and slopes.

Habit: Much-branched, rounded shrub.

Stems: Bark is light brown.

Leaves: Bright green 3-foliolate, leaflets lobed or toothed.

Flowers: Appear before leaves, in crowded catkin-like clusters, and followed by flattened, velvety, red or orange berries. Petals are yellowish or greenish, 1-3mm long.

Shrubs

Ribes cereum

Dougl.

Wax currant RICE



GROSSULARIACEAE

Habitat: Woods, thickets and rocky areas.

Habit: Shrub.

Stems: Bark is smooth, greyish-brown or reddish-brown.

Leaves: Lobes rounded, 3-5, blades usually lacking sessile yellow glands. Waxy upper surface, both sides glandular.

Flowers: Hypanthium usually 2 or more times as long as calyx lobes; calyx lobes 1.5-3mm long; petals 1-2mm long. 2-8 tubular flowers, greenish to pinkish, singular in headlike clusters.

Notes: Birds and grouse like the berries.

Ribes montigenum

McClatchie

Gooseberry RIMO2



GROSSULARIACEAE

- Habitat:** Occurs from montane to subalpine zones growing along streams and on moist, upland sites.
- Habit:** A native shrub up to 3 ft. tall.
- Leaves:** Most are 3 to 5 lobed, with toothed margins.
- Flowers:** Somewhat bell-shaped with five petals, usually yellowish to pink or red.
- Notes:** The currants are important browse plants for both livestock and game animals. The palatability is usually rated as only fair; however, the plants are common and available for grazing. Gooseberries are separated in the *Ribes* genus from other currants by having prickly spines. Currants and gooseberries are alternate hosts for white pine blister rust, a disease infecting limber pine and certain other five-needled pines.

Shrubs

Rosa sayi
Schwein.
Prickly rose ROSA



ROSACEAE

Habitat: Woods, openings and moist areas.

Habit: Shrub to over 1m high.

Stems: Bristly with slender prickles, infrastipular prickles lacking or not strongly differentiated from others.

Leaves: Leaflets ovate, mostly 5-7.

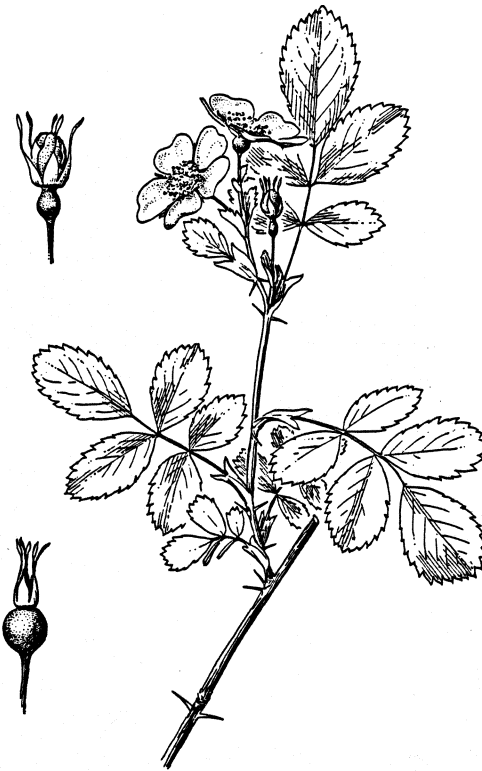
Flowers: Solitary or rarely 2 on lateral branches of year, sepals to 3cm long, petals equal to sepals.

Shrubs

Rosa woodsii

Lindl.

Woods rose ROWO



ROSACEAE

Habitat: Woods, hills and plains.

Habit: Shrub up to 1m tall.

Stems: Nearly without bristles, or with infrastipular bristles which are much larger than others.

Leaves: Leaflets 1-2cm long, teeth sometimes gland-tipped.

Flowers: Small and clustered, petals 1.2-2.5cm long; sepals 1-2cm long.

Shrubs

Salix arctica ssp. *petraea*
(Anderss.) A. & D. Love
Arctic or alpine willow SAAR4



SALICACEAE

- Habitat:** Rocky alpine tundra, dry meadows and fellfields on gentle slopes and flats.
- Habit:** Mat-forming shrub with creeping branches 1-5, 10 cm tall, often rooting at nodes.
- Stems:** Twigs yellowish and glabrous or glabrate when young, becoming brown with age.
- Leaves:** Blades elliptic to ovate, slightly pointed at tips, upper dull green, glabrous at maturity, lower glaucous or lighter and often silky-pubescent, margins entire, ciliate.
- Flowers:** Pistillate catkins on leafy flowering branchlets, flowering bracts dark brown or black, rounded at apex, long-hairy, persistent in fruit.
- Notes:** This species can be confused with *S. reticulata*, another alpine dwarf *Salix*.

Salix barclayi

Anderss.

Barclay's willow SABA3



SALICACEAE

Habitat: Montane to subalpine stream banks, wet meadows, seeps and lakesides.

Habit: Small to medium shrub, usually 2-3.5m tall.

Stems: First year twigs blackish, glabrous to slightly pubescent with loosely appressed hairs, older twigs dark reddish, glabrous and shiny.

Leaves: Blades ovate-elliptic, 3-6, 10 cm long, 1-3, 5 cm wide, dull green above and glaucous or lighter-colored below. Petioles typically 5-8mm long, yellowish, and often hairy, stipules often persistent, leafy, 4-6mm long, lance-shaped with glandular margins.

Flowers: Pistillate catkins 3.5-8cm long on long leafy branches appearing with leaves, staminate catkins 1-3cm long, 2 stamens per flower; bracts dark brown to black and persistent in fruit, long pubescent.

Shrubs

Salix boothii

Dorn

Booth's willow SABO2



SALICACEAE

- Habitat:** Common on stream terraces and floodplains along narrow to medium stream channels from foothills to lower subalpine zones.
- Habit:** Small to large multi-branched shrub 3-6m tall.
- Stems:** Twigs of current year with fine appressed hairs when young, becoming glabrous with age, year-old stems yellow, orange or brown.
- Leaves:** Elliptic or lanceolate leaves which are green on both surfaces, margins finely toothed.
- Flowers:** Pistillate catkins on leafy flowering branchlets with glabrous capsules and brown or black flower bracts, usually pubescent, persistent.

Salix candida

Fluegee ex Heller

Hoary willow SACA4



SALICACEAE

- Habitat:** Bogs, foothills to montane. Floating mats.
Habit: Low shrub 0.2-15dm high.
Stems: Twigs with dense, short, white-woolly pubescence, some tomentum persisting on older growth, lower branches becoming light brown, mottled, and glabrous.
Leaves: Leathery with blades narrowly elliptic, oblong or oblanceolate, upper surface dark green and lightly pubescent to glabrous, lower surface densely pubescent with white, felt-like hairs; margins entire, often inrolled.
Flowers: Short catkins with tomentose capsules; long-hairy flower bracts, brown or yellowish, wavy-pubescent, persistent.
Notes: Found infrequently in the Beartooth mountains. This plant is on the sensitive list in Montana.

Shrubs

Salix eastwoodiae
Cockerell ex Heller
Eastwood willow SAEA



SALICACEAE

Habitat: Hummocky open meadows or dense, low shrub thickets along small to medium stream channels or below small seeps.

Habit: Medium-sized shrub 1-2m (4m) high.

Stems: Twigs, first year dark brown to black and slightly to moderately pubescent with thin whitish hairs; older stems yellowish-brown to black.

Leaves: Silvery-hairy, lance-shaped to elliptic or oblanceolate blades, about equally green on both surfaces, margins entire or often prominently gland-toothed and arranged at right angles to leaf margin.

Flowers: Catkins on leafy branchlets with pubescent capsules; flowering bracts brown, or black, pubescent, persistent in fruit.

Notes: May be confused with *S. wolfii*.

Shrubs

Salix eriocephala var. *watsonii*

(Bebb) Dorn

Yellow willow SAERW



SALICACEAE

- Habitat:** Riverbanks and streamsides in foothills and lower montane areas.
- Habit:** Mid-sized shrub to 8m high.
- Stems:** Twigs yellowish, greenish or sometimes ashy white, older bark becoming silvery gray.
- Leaves:** Blades lance-shaped to ovate, slightly toothed, glaucous on undersurface, blades tend to contract abruptly to petiole.
- Flowers:** Catkins on leafy branchlets with long-stalked, glabrous capsules and brown or black, glabrate, sparsely-hairy flower bracts, persistent in fruit. Formerly called *S. lutea*.

Shrubs

Salix exigua ssp. *melanopsis*

(Nutt.) Cronq.

Dusky willow SAEXM



SALICACEAE

Habitat: Stream, ditch and reservoir banks, mostly in montane zone.

Habit: Medium to large-sized shrub (occasionally tree-like) 1.5-5, 8 meters tall forming extensive colonies from underground spreading roots.

Stems: Twigs, current year often thinly to densely pubescent with appressed hairs, two-year old glabrous, nonpruinose, light yellow to reddish brown, older with outer transparent surface flaking off.

Leaves: Blades linear to linear-elliptic, entire or few-toothed margins, pubescent at maturity. Straight, appressed hairs, grey-green to yellow-green on upper surface, slightly lighter and duller on underside.

Flowers: Glabrous capsules, flowering bracts yellow or light brown, narrow, acute, usually pubescent, deciduous when fruits are mature.

Shrubs

Salix farriae

Ball

Farr willow SAFA



SALICACEAE

- Habitat:** Often in willow thickets on volcanic silts along medium-sized streams and on hummocks. Elev. 6600-9000 ft.
- Habit:** Low shrub 1-1.5 m tall (rarely up to 2m tall).
- Stems:** Sparsely to moderately pubescent with loosely appressed hairs, becoming glabrous with age; young dull brown-green, red or black; older becoming dull brown or reddish.
- Leaves:** Elliptic to obovate blades 3-7cm long, glabrous at maturity. Upper dull yellow-green, lower glaucous and glabrous.
- Flowers:** Catkins on leafy branchlets with glabrous capsules, flowering bracts brown or black, occasionally yellowish at base, pubescent with long silky hairs or glabrous, persistent in fruit.

Shrubs

Salix geyeriana
Anderss.
Geyer's willow SAGE2



SALICACEAE

- Habitat:** Tall willow communities in mesic floodplains of wide valleys on volcanic or granitic alluvium. Elev. 6000-10,700ft.
- Habit:** Tall shrub averaging 3-4m tall (to 7m).
- Stems:** Clustered, erect. Young twigs moderately to densely pubescent, older glabrate, reddish-brown to blackish, branchlets bluish pruinose.
- Leaves:** Elliptic to lance-shaped, 2-8cm long, glaucous on underside, and silvery-pubescent on both surfaces.
- Flowers:** Catkins on leafy branchlets, with tawny, short-hairy flower bracts, 2 or more times as long as wide, persistent in fruit.
- Notes:** This is an important browse species for elk and moose. In many forests, this willow has been heavily browsed and has a "hedged" appearance.

Shrubs

Salix lasiandra

Benth.

Black or whiplash willow SALA5



SALICACEAE

Habitat: Streambanks, shores, wet meadows, swamps and seeps, usually in sandy or gravelly soil.

Habit: Tall shrub or tree with several main stems 3-6, 16m tall.

Stems: Stem diameter 10-30cm, bark smooth and grey when young, becoming dark and fissured with age. Twigs of current year moderately to densely pubescent with spreading hairs, yellow to reddish-brown.

Leaves: Blades lance-shaped to elliptic, long, pointed tips and fine, gland-toothed margins, equally green on both surfaces. Petioles with small glands.

Flowers: Catkins on leafy branchlets with glabrous capsules, flowering bracts yellow, pubescent at base, deciduous in fruit.

Shrubs

Salix planifolia

Brush

Planeleaf willow SAPL2



SALICACEAE

Habitat: Lower elevations to alpine and subalpine zones.

Habit: Low to medium-sized shrubs, 0.5-4m high, often forming dense thickets.

Stems: Twigs shiny reddish, glabrous, rarely slightly pruinose.

Leaves: Blades elliptic or lance-elliptic to ovate, 3-5, 8 cm long, 1-1.5 (2.2) cm wide, bright green above, glaucous and glabrate below. Margins slightly inrolled mostly entire, becoming toothed with age.

Flowers: Pistillate catkins 1.5-6cm long, sessile or nearly, appearing before leaves; capsules 4-6mm long, hairy, on 1mm stalks, styles 0.4-1.8mm; staminate catkins 1-3cm long, 2 stamens per flower; bracts dark brown to black, long-hairy, persistent in fruit.

Shrubs

Salix wolfii

Ball

Wolf willow SAWO



SALICACEAE

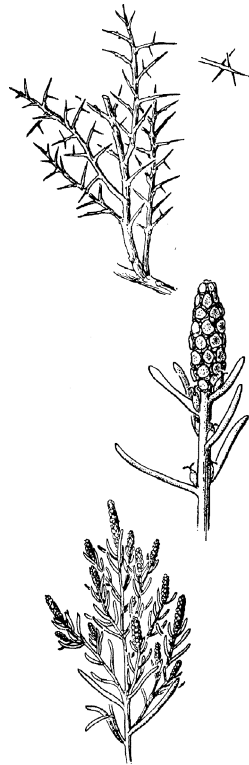
- Habitat:** Montane and subalpine wet meadows, streamsides, and fens.
Habit: Low shrub, averaging 1m tall (0.5-2m).
Stems: Twigs yellowish to reddish and thinly woolly-pubescent.
Leaves: Blades elliptic to lance-shaped, usually somewhat acute, pubescence mostly closely appressed and wavy, entire or with glandular margins, petioles pubescent, 1-4, 10mm; stipules leaf-like, 1-3, 7mm long, often glandular, deciduous.
Flowers: Pistillate catkins 0.8-2, 4cm long, densely congested on short, leafy flowering branchlets appearing with leaves. Staminate catkins 1-2cm long; stamens 2 per flower, flowering bracts dark brown or blackish, persistent, woolly-pubescent, with hairs exceeding length of bract. Fruit is glabrous.

Shrubs

Sarcobatus vermiculatus

(Hook.) Torr.

Greasewood SAVE4



CHENOPODIACEAE

Habitat: Saline soils at low elevations.

Habit: Native, spiny, free-branching shrub, up to 2m tall.

Stems: Whitish bark, poisonous.

Leaves: Linear, fleshy, yellowish-green.

Flowers: Imperfect, appearing as scales or burs.

Notes: Oxalates in sap can cause bloat or poisoning if eaten too freely.

Shepherdia canadensis

(L.) Nutt.

Buffaloberry SHCA



ELAEAGNACEAE

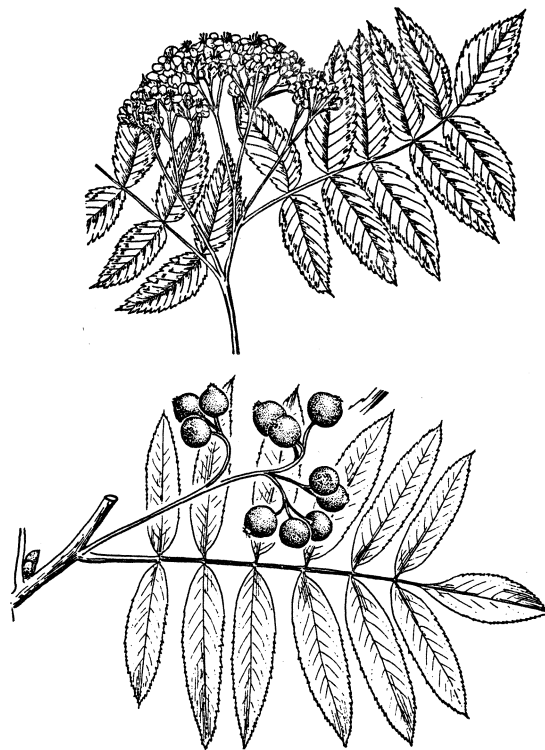
- Habitat:** Montane to subalpine forests.
- Habit:** Unarmed, spreading, medium shrub, 1-4m (3-13 ft.) tall.
- Stems:** Older stems brownish, young stems covered with reddish-brown scales; round, reddish-brown, continuous, pith.
- Leaves:** Opposite, deciduous, entire, ovate, 2-6cm (1-2 in.) long, dark greenish on upper surface with whitish silvery hair and rusty-brown scales on lower surface. Buds are opposite, naked, stalked, russet colored buds.
- Flowers:** 1-several, small yellowish, 1-2mm long, clustered in leaf axils, appearing with or before the leaves; male and female flowers are borne on separate bushes (dioecious); May-July. Fruits are orange to red, juicy, translucent berry.
- Notes:** Grizzly bear and birds eat the berries.

Shrubs

Sorbus scopulina

Greene

Mountain ash SOSC2



ROSACEAE

- Habitat:** Moist hillsides or along streams of montane and subalpine zones.
- Habit:** Erect, several-stemmed shrub, 1-4m (3-13 ft.) tall.
- Stems:** Main stems often decumbent where bent down by heavy snow. Bark is thin, light grey-red, smooth or slightly roughened by scales, inner bark fragrant.
- Leaves:** Alternate, deciduous, 9-13 odd-pinnate leaflets, yellowish-green, narrowly oblong, 3-7cm (1-3 in.) long, acuminate at tip, finely serrate. Buds also alternate, sticky, sparsely whitish-hairy.
- Flowers:** White, 70-200 flowers borne in large, dense flat-topped clusters, May-early July. Fruit, pome, 1cm, orange to scarlet, glossy globe-shaped.
- Notes:** Not common in the Absarokas, Beartooths, or Wind River ranges.

Shrubs

Spiraea betulifolia

Pallas

Spiraea SPBE12



ROSACEAE

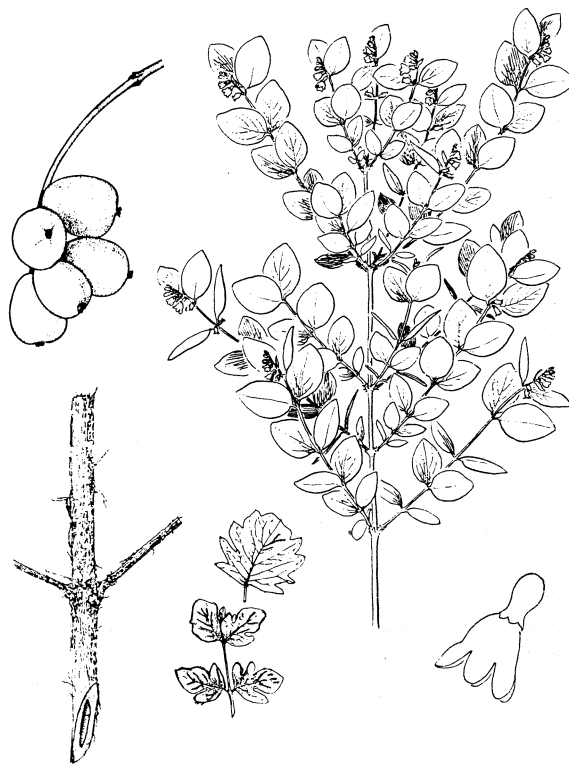
- Habitat:** Montane to subalpine forests.
- Habit:** Strongly rhizomatous, glabrous, medium shrub, 20-60cm (8-24 in.) tall.
- Stems:** Erect, slender, light yellow-brown and smooth, not hairy; aging to reddish-brown.
- Leaves:** Alternate, deciduous, ovate, 2-7cm (1-3 in.) long, generally coarsely toothed above middle, dark green on upper surface, slightly pale below, side veins of leaf bend toward apex.
- Flowers:** Dull white in flat-topped corymbs, 3-8cm (1-3 in.) broad; June-July. Fruits are glabrous follicles, 3mm long.

Shrubs

Symphoricarpus albus

(L.) Blake

Common snowberry SYAL



CAPRIFOLIACEAE

Habitat: Typically at medium elevations, in low depressions or draws, grows in full sunlight or shade under taller shrubs and trees.

Habit: Erect, rhizomatous shrub, 1-2m (3-7 ft.) tall.

Stems: Opposite, twigs very slender; older stems have shreddy, greyish bark with hollow, brownish pith.

Leaves: Opposite, deciduous, elliptic, 2-5cm (1-2 in.) long, entire or with a few teeth; leaves on new shoots may have variable shapes, some resemble small oak leaves.

Flowers: White to pinkish, bell-shaped, 5-7mm long, in few-flowered racemes; May-July. Fruits are white, spherical, berrylike, 6-15mm diameter; persistent into fall and winter; considered poisonous.

Notes: Blue and rough grouse like the berries produced by this plant. May easily be confused with *S. oreophilus*.

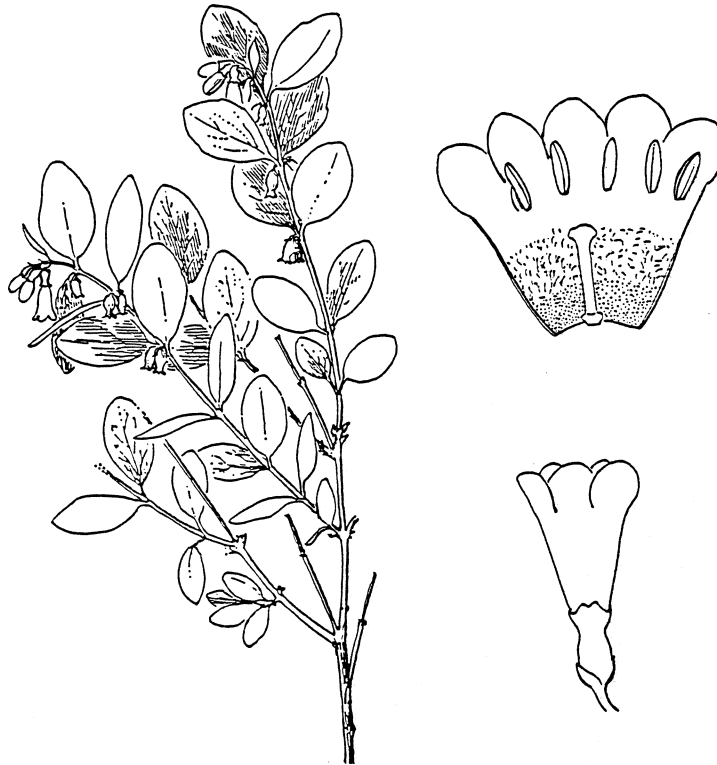
Shrubs

Symphoricarpus oreophilus var. *utahensis*

Gray

(Rydb.) A. Nels.

Mountain snowberry SYORU



CAPRIFOLIACEAE

Habitat: Montane and foothills. Tends to be associated with Mountain big sagebrush and forest ecotone habitat.

Habit: Much-branched shrub 3-9dm tall.

Stems: Shredding bark. Stems with solid pith.

Leaves: Glabrous or nearly so, roundish to ovate.

Flowers: Small, tubular or funnel-shaped, pink flowers, followed by white berries.

Notes: Frequently in mixed shrub communities along the flanks of the Wind River range. Grouse utilize the berries of this plant.

Shrubs

Vaccinium globulare
Rydb.
Blue huckleberry VAGL



ERICACEAE

- Habitat:** Toe slopes and moist areas in montane to subalpine forests.
Habit: Spreading shrub, 4-10dm (1-3 ft.) tall.
Stems: Older bark greyish and shreddy; young twigs somewhat angled, greenish-yellow.
Leaves: Alternate, deciduous, 2-4cm (1-2 in.) long, finely serrate, ovate with rounded tip.
Flowers: Single in axils, pale pinkish-yellow, globose, broader than long, 6-7mm long; May-June. Delicious, edible berry, 6-8mm broad, glaucous bluish-purple
Notes: Important grizzly bear food. Can be confused with *V. occidentale* in the Wind River range. Also similar to *V. membranaceum* which has a different flower and the fruits are reddish purple.

Shrubs

Vaccinium scoparium

Leib. ex Coville

Grouseberry or whortleberry VASC



ERICACEAE

- Habitat:** Subalpine forests.
- Habit:** Low, perennial shrub 10-25cm (4-10 in.) tall.
- Stems:** Numerous bright green slender, strongly angled, appearing broomlike.
- Leaves:** Alternate, deciduous, lanceolate, 8-15mm long, glabrous, shiny light green above, dull below, finely serrate.
- Flowers:** Pinkish, urn-shaped, 4mm long; May-Aug. Fruit a bright red, sweet berry, 3-5mm broad.
- Notes:** Bears like the berries.



Forbs

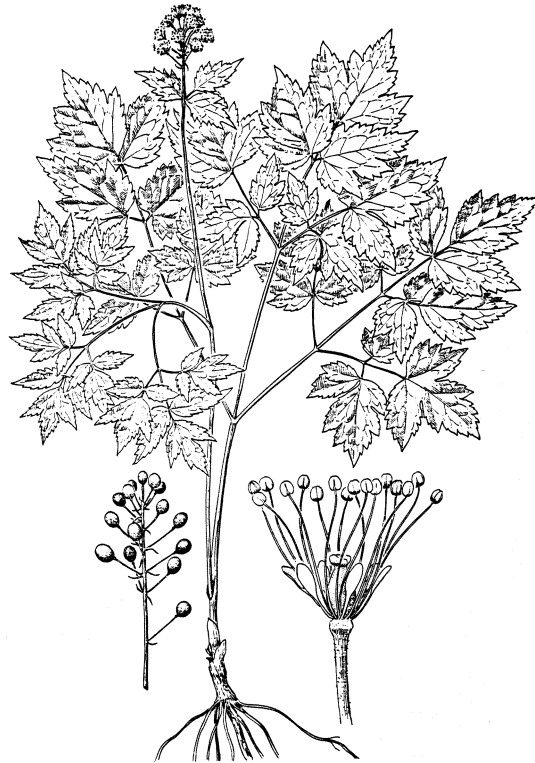


Forbs

Forbs are herbaceous perennial plants.

Forbs

Actaea rubra
(Ait.) Willd.
Baneberry ACRU2



RANUNCULACEAE

Habitat: Moist montane and subalpine forests.

Habit: Perennial, slender, erect, deciduous, up to 1m (3 ft.) tall.

Leaves: Alternate, mostly basal, thrice pinnately compound, fern-like leaf.

Flowers: Small, white flowers in small heads; June-Sept.

Petals: 5-10.

Fruits: Small, sticky achene, 5-8mm long, poisonous. Berries may be white or bright red.

Forbs

Antennaria corymbosa

E. Nels.

Flat-top pussytoes ANCO



ASTERACEAE

Habitat: Moist montane to subalpine meadows.

Habit: Dioecious, white-woolly perennials.

Leaves: Basal, mostly oblanceolate, grey-green, woolly.

Flowers: Involucral bracts with a conspicuous dark spot near base of scarious portion. Pappus of capillary bristles. Heads only with disk flowers — no rays.

Forbs

Antennaria lanata
(Hook.) Greene
Woolly pussytoes ANLA3



ASTERACEAE

Habitat: Alpine and subalpine.

Habit: Dioecious, white-woolly perennials, mostly less than 2dm high.

Leaves: Mostly entire, basal, and alternate.

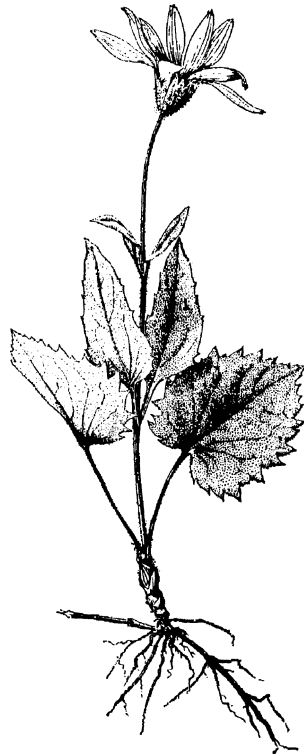
Flowers: Involucre hairy and not so scarious on lower portion even on inner bracts, blackish or dark brown or green except some times the inner bracts at tip. Pappus of capillary bristles.

Notes: Dense communities of Woolly pussytoes indicate sheep bedding sites.

Arnica cordifolia

Hook.

Heartleaf arnica ARCO9



ASTERACEAE

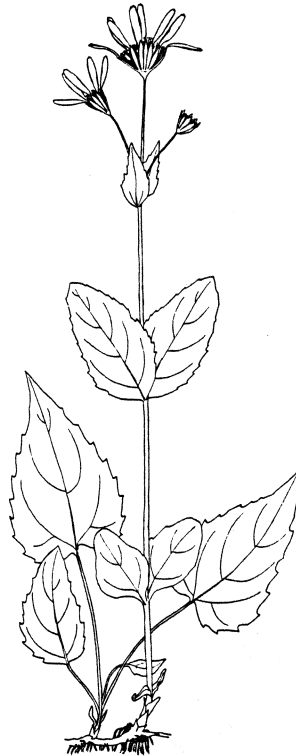
- Habitat:** Very common in montane and subalpine forests.
- Habit:** Perennial, hairy forb, 1-6dm (4-24 in.) tall, stems solitary to few, loosely clustered together, from a naked rhizome.
- Leaves:** Opposite, bluish-green, heart-shaped, entire to toothed, 4-12cm (2-5 in.) long, soft hairy upper surface veins appearing embedded; during flowering, lowest pair of leaves well-developed with largest blade and longest petioles; other leaves smaller, mostly 2-4, lance-shaped, petiolate, becoming sessile up the stem.
- Flowers:** Heads generally one per stem, rays yellow, involucre densely hairy; April-June.
- Fruits:** Achenes mostly uniformly short, hairy or glandular, dependable character for distinguishing *A. cordifolia* from *A. latifolia*.

Forbs

Arnica latifolia

Bong.

Broadleaf arnica ARLA8



ASTERACEAE

Habitat: This forb grows on fairly dry to moist sites in subalpine forests.

Habit: Perennial; blooms later than *A. cordifolia*.

Leaves: Its basal leaves are narrower than *A. cordifolia* and its middle leaves are attached directly to the stem (sessile). Mostly pinnate venation, the middle and upper leaves ovate to cordate.

Flowers: Narrower flower cluster with as many as five yellow blossoms.

Petals: Yellow, rays present.

Forbs

Artemisia ludoviciana
Nutt.
Prairie or Louisiana sage ARLU

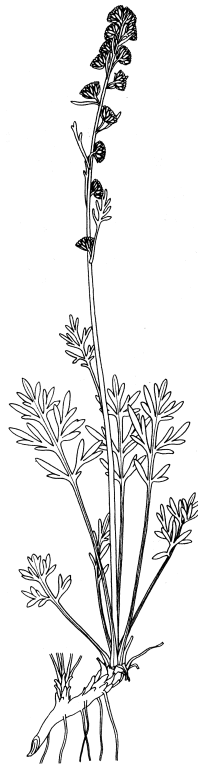


ASTERACEAE

- Habitat:** Montane sagelands.
Habit: Plants with deep creeping rhizomes, stems loosely clustered or solitary.
Leaves: Entire to subbipinnatifid, only occasionally narrow with a gradually tapering tip, hairs various, odor moderate.
Flowers: Involucres tomentose to glabrate, no rays.
Notes: Common forb of limber pine stands and Mountain big sage.

Forbs

Artemisia scopulorum
Gray
Rocky Mountain sage ARSC



ASTERACEAE

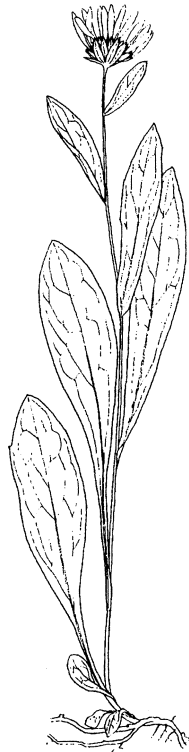
- Habitat:** Alpine to subalpine meadows.
Habit: Plants mostly 3-10dm high. Often fibrous rooted or with rhizomes.
Leaves: Pinnately divided, greyish, 4mm wide or less, 15mm or less long, branched caudex present.
Flowers: Pappus of an outer series of inconspicuous short bristles and an inner series of long bristles; heads solitary on each stem, only disk flowers present.
Notes: Similar to *A. norvegica* which has fewer, larger flower heads.

Forbs

Aster foliaceus

Lindl. ex DC.

Leafybract aster ASFO



ASTERACEAE

Habitat: Moderately-moist sites of montane and lower subalpine zones.

Habit: Mid-sized forb.

Leaves: Middle and lower often well over 15mm wide except when alpine, spatula-shaped that clasp the stems.

Flowers: Clusters of pink-rayed blossoms, involucre often with long foliaceous bracts at base. Late summer or early fall.

Notes: Foliage is wider and smoother, rather than hairy, than *Aster laevis*. Often grows with common juniper on densely-shaded Douglas-fir sites.

Forbs

Aster integrifolius

Nutt.

Showy aster ASIN3



ASTERACEAE

Habitat: Montane and subalpine mountain meadows.

Habit: Mostly less than 5dm high.

Leaves: Entire or merely ciliate, leaves reduced upward with some lower ones usually 8cm or more long.

Flowers: Bracts to 14mm long, often tipped purple; rays purple to 2cm long.

Notes: Preferred forage plant for sheep.

Astragalus miser
Dougl.
Weedy milkvetch ASMI9



FABACEAE

- Habitat:** Common in montane to subalpine forests.
Habit: Clumpy forb.
Leaves: Pinnately-compound with narrow, lance-shaped leaflets.
Flowers: Loose clusters of white flowers produced above foliage on slender, green stems. This is the only *Astragalus* with a pointy keel (but not beaked) like *Oxytropis*.
Notes: Presence of tendrils on leaf stems, occasionally a dominant undergrowth plant on spruce or aspen sites. Ecological equivalent to *Arnica cordifolia*.

Forbs

Balsamorhiza sagittata

(Pursh) Nutt.

Arrowleaf balsamroot BASA3



ASTERACEAE

Habitat: Montane hills, slopes and forest openings.

Habit: Deciduous, perennial forb, 20-80cm tall, from long woody taproot.

Leaves: Large, long petiolate, silvery-green, arrowhead-shaped leaves covered with whitish felt-like hair; all leaves basal, up to 30cm (12 in.) long; no aerial leaf-bearing stems.

Flowers: Showy, yellow, solitary sunflower head, 5-8cm (2-3 in.) in diameter; April-July.

Fruits: Glabrous achenes.

Notes: Fire resistant, regeneration from caudex to preburn levels within 2-5 years. Indians named it "pash," young stalks, roots and seeds used for food.

Forbs

Caltha leptosepala
DC.
Marsh marigold CALE4



RANUNCULACEAE

- Habitat:** Wet meadows, often above timberline.
Habit: Perennial. Succulent forb of moist, rich soil.
Leaves: Thick, shiny, oval with wavy margins.
Flowers: Showy, white, 1-3, always solitary and terminal on flowering stem.
Sepals: White or yellowish.
Petals: None.
Notes: Common plant of late snowmelt sites.

Forbs

Delphinium occidentale
(Wats.) Wats.
Tall mountain larkspur DEOC



RANUNCULACEAE

- Habitat:** Wet meadows, stream banks, and moist woods.
Habit: Perennials, tall, single stem.
Leaves: Usually palmately divided, alternate.
Flowers: In terminal, simple or compound racemes.
Sepals: Purple to white.
Petals: Purple to white.
Fruits: A follicle, ovary and fruit hairy (rarely glabrous); inflorescence often pyramidal with lowest peduncle or pedicel rarely over 2.5cm long.
Notes: Poisonous to livestock.

Epibolium angustifolium

L.

Fireweed EPAN2



ONAGRACEAE

Habitat: Widespread, successional species; common along roads and old burns.

Habit: Glabrous, deciduous, perennial forb from widespread rhizomelike roots, 1-3m (3-10 ft.) tall.

Leaves: Alternate, sessile, entire, willowlike, narrowly lanceolate, 10-15cm (4-6 in.) long, prominent white midvein, distinct venation pattern created by connection of lateral veins at margins.

Flowers: Pink to purple. June-Sept.

Petals: 4-merous, short-clawed, 8-20mm long, in many-flowered terminal racemes.

Fruits: Linear, green to red, dehiscent capsule, 5-8cm (2-3 in.) long, seeds long, soft hairy from tip.

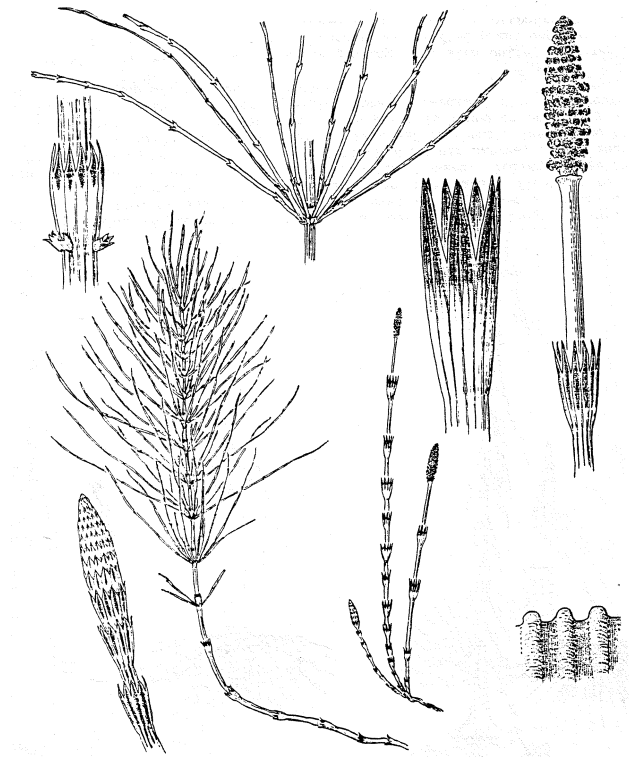
Notes: Fire resistant, regeneration from rhizomes and seed to preburn levels within 1-2 years. Edible, crisp, peeled stem, older leaves used for tea.

Forbs

Equisetum arvense

L.

Horsetail EQAR



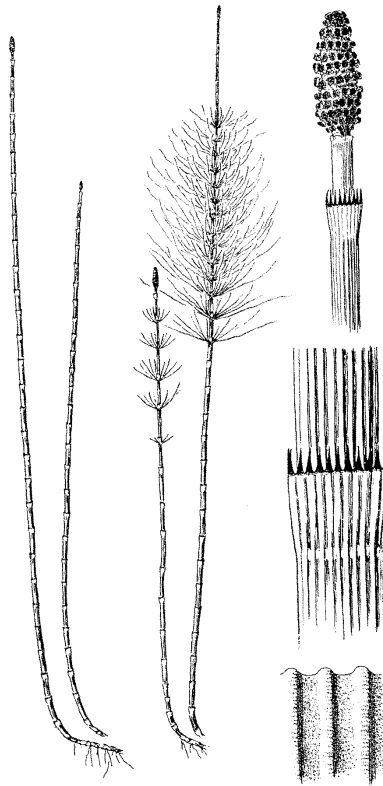
EQUISETACEAE

- Habitat:** Common in moist montane to subalpine spruce fir stands. Soils usually have a high water table.
- Habit:** Rhizomatous, colonial perennial with annual, aerial, jointed stems, producing terminal cones.
- Stems:** Dimorphic; sterile stems: greenish, 15-60cm (6-24 in.) tall, branches generally whorled, ascending or spreading; fertile stems: nonbranching, white to brownish, 30cm (12 in.) tall, soon withering.
- Cones:** Blunt, 5-40mm (<2 in.) long, generally produced on fertile stems, but EQAR is unusual in that the late-season green stems may produce some cones.
- Notes:** Also called "scouring rushes" because stems contain abrasive silica, unpalatable as livestock forage.

Equisetum fluviatile

L.

Horsetail EQFL



EQUISETACEAE

- Habitat:** Hydric soils from montane to subalpine.
Habit: Native, perennial, 12-24 inches tall.
Stem: Not evergreen, may or may not have regularly whorled branches, green. Stems jointed with longitudinal grooves and ridges.
Leaves: Teeth persistent, separate.
Notes: This plant is poisonous to livestock, particularly to horses and sheep.

Forbs

Eritrichium nanum

(Vill.) schrad. ex Gaudin

Alpine forget-me-not ERNA



BORAGINACEAE

Habitat: Ridges and slopes in high mountains (alpine). Mat forming cushion plant communities.

Habit: Perennials.

Leaves: Mature leaves loosely long hairy, leaf surface easily visible; hairs often more numerous toward leaf tip forming an apical tuft or fringe. Linear, overlapping.

Flowers: Blue; nutlets prickly on margin, smooth or hispidulous on back.

Fragaria virginiana

Duchesne

Wild strawberry FRVI



ROSACEAE

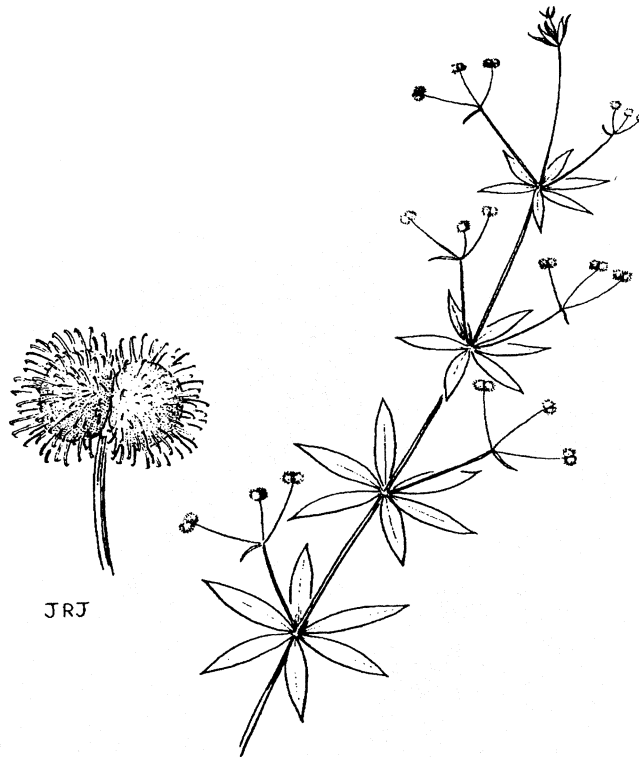
- Habitat:** Woods, banks, and meadows.
- Habit:** Strongly stoloniferous, deciduous, perennial forb.
- Leaves:** Basal, long petiolate, trifoliolate leaves; leaflets sessile, broadly ovate, 2-7cm (1-3 in.) long, crenate-serrate, glaucous bluish-green above, thick not prominently veined, upper surface not bulged, margins coarsely serrate, terminal tooth of leaflets generally shorter than adjacent lateral teeth, creating a gun sight. Unlike *F. vesca* that has a point at the central part of leaf.
- Flowers:** White or pinkish.
- Petals:** 5-merous, 2-15 in open cyme, inflorescence shorter than leaves; May-Aug.
- Fruits:** Succulent, edible red strawberry, about 1cm broad. Seeds embedded in deep pits.
- Notes:** Low to moderate fire resistance, regeneration within 3-7 years. Leaves used to make tea; high in vitamin C.

Forbs

Galium triflorum

Michx.

Fragrant bedstraw GATR3



RUBIACEAE

Habitat: Near streams, springs, seeps or in moist meadows and aspen groves and moist subalpine forests.

Habit: Square-stemmed, deciduous, perennial forb with numerous stems from creeping rhizomes. Usually lax, trails on ground, 2-8dm (8-32 in.) tall.

Leaves: Simple, entire sessile in whorls, 1-4cm (<2 in.) long. 6per whorl, 1-nerved, narrowly elliptic, vanilla scented.

Flowers: White, 4-merous, tubular. Usually borne in threes at ends of axillary peduncles; June-Aug.

Fruits: Dry capsule, 2mm long. Covered with hooked hairs, 1-2mm long.

Notes: Member of coffee family, seeds roasted and ground can be used for coffee; roots make yellow dye.

Geranium richardsonii

Fisch & Trautv.

Richardson geranium GERI



GERANIACEAE

Habitat: Usually in wet places in montane and subalpine forests.

Habit: Perennials, to 1m tall.

Leaves: Reniform or cordate-ovate, lobed or divided 3-17cm wide, 3-7 lobed.

Flowers: White with pink or purple veins.

Sepals: 3-12mm long.

Petals: Over 8mm long. White with pink or purple veins, 10-18mm long. Inflorescence pilose-glandular with usually purple-tipped hairs.

Notes: Not as common as *G. viscosissimum*.

Forbs

Geranium viscosissimum

Fisch & C. A. Mey. ex C. A. Mey

Sticky geranium GEVI2



GERANIACEAE

Habitat: Woods, sagebrush, meadows, and slopes.

Habit: Glandular-hairy, deciduous, perennial forb, 40-90cm (16-35 in.) tall, with several stems.

Leaves: Sharply toothed, densely glandular-hairy, 5 palmately-lobed blades, 5-12cm (2-5 in.) broad.

Flowers: Showy, sticky, opposite, 5-merous, pink to deep purplish-red. May-Aug.

Petals: Hairy at base, generally only two cymose inflorescences.

Fruits: Slender, glandular-hairy capsular fruit, containing 1-2 seeds, capsule tipped with slender persistent styles usually recurving after seeds are explosively shed.

Forbs

Geum macrophyllum

Willd.

Bur avens GEMA4



ROSACEAE

- Habitat:** Hydric soils of streambanks and meadows.
Habit: Perennial, lower stem usually moderately to densely hirsute.
Leaves: Terminal leaf division usually much larger than lateral ones.
Flowers: Persistent part of style glandular-puberulent.
Petals: Yellow, 5-petals.
Fruits: An achene—hairy, with persistent style vs. similar looking Potentillas that have glabrous fruits and the style is not usually persistent.

Forbs

Geum rossii

(R. Br.) Ser.

Alpine avens GERO2



ROSACEAE

Habitat: Alpine and subalpine meadows.

Habit: Perennial.

Leaves: Leaves of stem all greatly reduced, stems mostly subcapose; terminal division of lowest leaves usually not much larger than the lateral divisions, usually less than 3cm wide.

Flowers: Erect. Styles not conspicuously jointed, upper part persistent.

Petals: Yellow, 5-petals; spreading. The sepals usually reddish.

Fruits: An achene, hairy.

Heracleum lanatum

Michx.

Cow parsnip HELA4



APIACEAE

Habitat: Moist, shaded areas in montane to subalpine forests.

Habit: Perennial.

Leaves: Basal leaves compound. Most leaves with well-defined leaflets, not dissected into small, narrow segments, usually 3, mostly 1-4dm long and wide.

Flowers: White. Flowers at edge of umbels larger than the inner ones, umbels flat-topped.

Notes: Important grizzly bear food.

Forbs

Lupinus argenteus
Pursh
Lodgepole lupine LUAR3



FABACEAE

Habitat: Meadows or partially-shaded sites of montane and subalpine zones.

Habit: Perennial.

Leaves: Palmately compound, 5-9 long, narrow leaflets, usually hairy or silky.

Flowers: Blue or bi-colored, pea-like produced in spikes at end of leafy stems.

Notes: Poisonous to livestock and humans.

Forbs

Lupinus polyphyllus
Lindl
Washington lupine LUPO2



FABACEAE

- Habitat:** Mountain slopes and meadows.
Habit: Plants to 1m high.
Leaves: Few; slightly hairy, palmately compound.
Sepals: Not spurred.
Petals: Blue to violet to 14mm long. The banner is reflexed and forms a broad "V" between it and wings. *L. argenteus* has a narrow "V".
Notes: Syn. common name—Large-leaved lupine.

Forbs

Maianthemum stellatum

(L.) Link

False Solomon's seal MAST4



LILIACEAE

Habitat: Moist areas of montane and subalpine forests.

Habit: Rhizomatous.

Leaves: Alternate, clasping the stem, grasslike but very broad.

Flowers: Raceme, perianth white, filaments shorter than perianth.

Fruits: A berry.

Forbs

Mertensia ciliata

(James ex Torr.) G. Don

Mountain bluebells MECI3



BORAGINACEAE

Habitat: Subalpine springs and streams, from upper foothills to alpine zone.

Habit: Perennials.

Leaves: Smooth, entire, blue-green with strong lateral veins.

Flowers: Blue, hanging, calyx lobes 1-3mm long, often obtuse at tip.

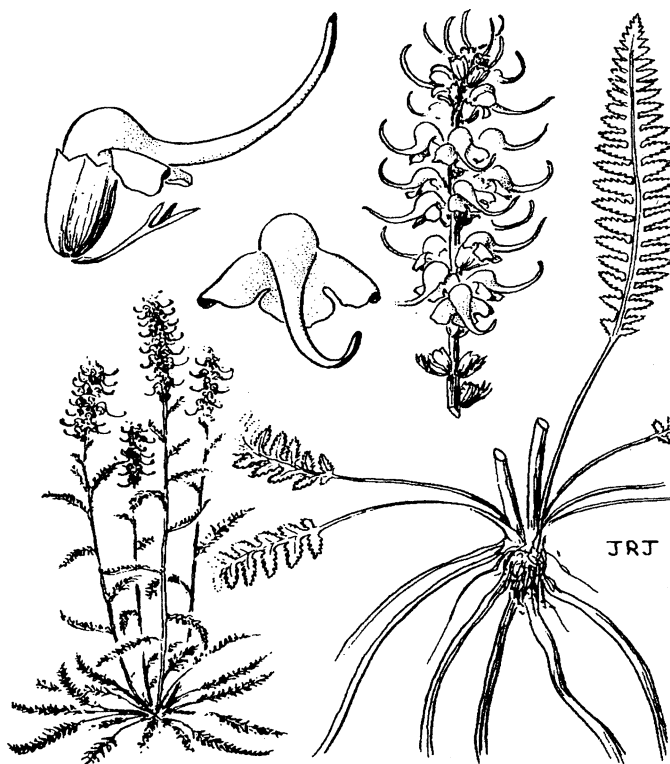
Fruits: Nutlets usually rugose or roughened, laterally attached.

Forbs

Pedicularis groenlandica

Retz.

Elephant's head PEGR2



SCROPHULARIACEAE

Habitat: Wet meadows, damp woods, along streams.

Habit: Perennial forb with thickened rootstock.

Stems: Upright, to 2 ft. tall, usually unbranched, often several together from base, smooth.

Leaves: Nearly all basal, few alternate, simple but deeply pinnately divided nearly to middle, up to 12 in. long, up to 3 in. wide, smooth, lobes toothed, lowest stalked, upper smaller and without stalks.

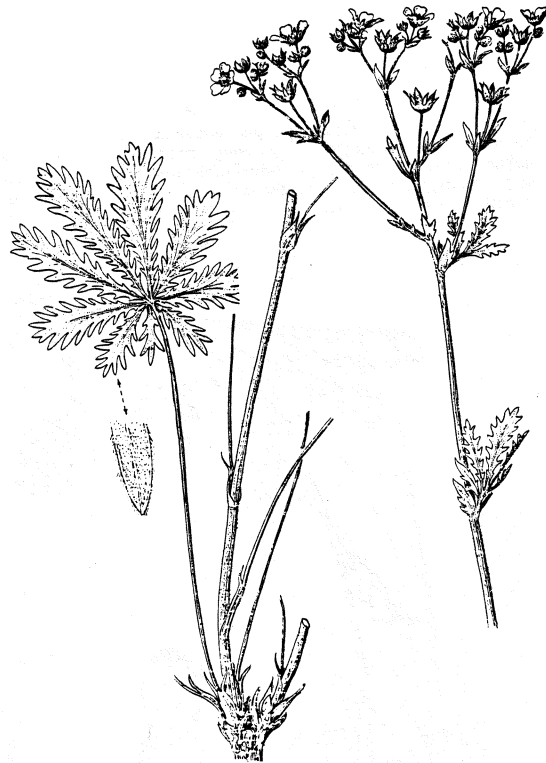
Flowers: Several crowded in spike, up to 8 in. long, each subtended by narrow, deeply lobed bracts.

Petals: 5, forming 2 lips, violet to purple, to 1/3 in. long, upper in a curved beak up to 3/4 in. long.

Fruits: Capsules 1/3-2/5 in. long, asymmetrical, smooth. Seeds, winged, smooth with prominent venation pattern.

Forbs

Potentilla gracilis
Dougl. ex Hook.
Goldcup potentilla POGR9



ROSACEAE

- Habitat:** Meadows and aspen groves, montane and subalpine zones.
Habit: Deciduous, generally hairy, perennial forb, with several stout stems, 40-80cm (16-32 in.) tall from a branched caudex.
Leaves: Numerous, alternate, mostly basal; blades palmate (handlike) with long petioles up to 30cm (12 in.), leaflets 7-9, cuneate or dissected, margins slightly revolute, lighter and slightly woolly on underside, 3-8cm (1-3 in.) long; 1-2 cauline leaves.
Flowers: Numerous, yellow, 5-merous; in large, open, flat-topped, terminal cymes; June-Aug.
Petals: 5, each has orange spot at base.
Fruits: Greenish achene.

Forbs

Senecio triangularis

Hook.

Arrowleaf senecio SETR



ASTERACEAE

- Habitat:** Moist sites from upper montane to upper subalpine.
- Habit:** Tall, perennial forb, 3-15dm (1-5 ft.) with several stems arising from fibrous roots.
- Leaves:** Numerous, alternate, simple, distinctly triangular, 4-20cm (2-8 in.); basal, strongly toothed, with long petioles; cauline leaves become reduced, sessile and less triangular upwards.
- Flowers:** Few to numerous yellow heads in flat-topped inflorescence; June-Sept.
- Fruits:** Achene.
- Notes:** Undergrowth indicator plant for subalpine fir/arrowleaf groundsel plant association, fairly common community along subalpine streams.

Forbs

Streptopus amplexifolius

(L.) DC.

Twisted stalk STAM2



LILIACEAE

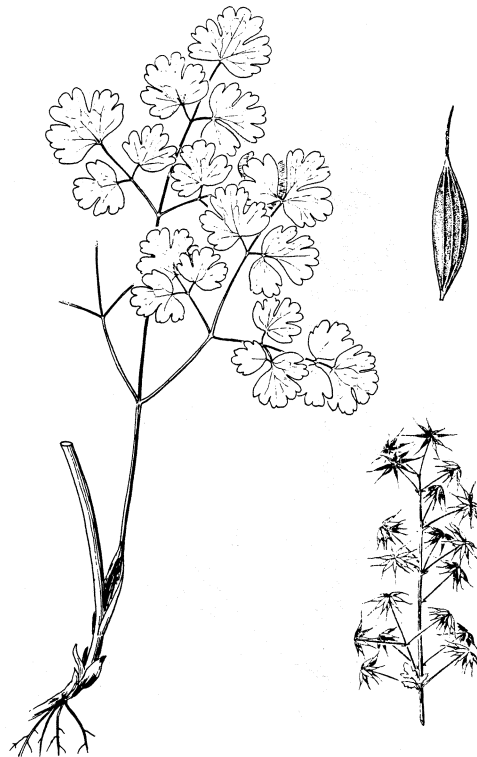
- Habitat:** Wet sites, near streams of montane and subalpine zones.
- Habit:** Slender, herbaceous, deciduous, rhizomatous perennial, mostly 6-12dm (2-4 ft.) tall.
- Stems:** Erect, green, usually branched below middle stem. Zig-zag pattern from one leaf to next.
- Leaves:** Alternate, parallel-veined, glabrous, ovate, acuminate, mostly 5-12cm (2-5 in.) long, sessile with cordate clasping bases.
- Flowers:** Greenish-white, 3-merous, bell-shaped 9-15mm long; solitary or in pairs on twisted stalks beneath each leaf along upper part of stem; May-July.
- Fruits:** Inedible, elongated, bright orange berry, slightly translucent, 10-12mm long.

Forbs

Thalictrum occidentale

Gray

Western meadow rue THOC



RANUNCULACEAE

Habitat: Moist montane to subalpine forests.

Habit: Rhizomatous, to 1m tall.

Leaves: Ternately compound; leaflets 1-4cm long, somewhat thin.

Flowers: Whitish, greenish, or purple inconspicuous, anthers linear, well over 1mm long, filaments usually over 5mm long. Could be one or two sexed. This species is dioecious.

Fruits: Achenes spreading to reflexed, usually over twice as long as wide; style 3-4.5mm long.

Notes: Very difficult to distinguish from *T. venulosum* and *T. fendleri* without seeds.

Forbs

Trifolium nanum

Torr.

Dwarf clover TRNA2



FABACEAE

Habitat: Rocky alpine or subalpine slopes and ridges.

Habit: Common in cushion plant communities.

Leaves: Mostly densely caespitose with leaves all basal or nearly so, with 3 leaflets, internodes usually obscure.

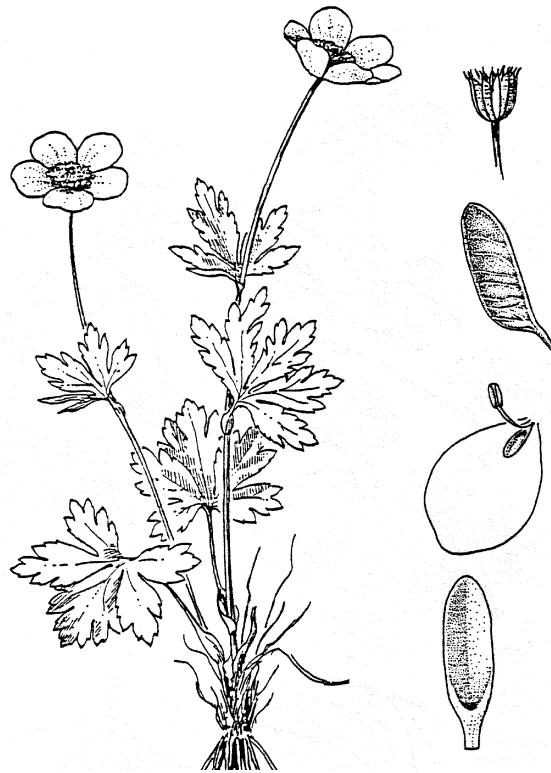
Flowers: Calyx glabrous; heads mostly 1-3 on short peduncles coming from the root. Flowers are whitish-purple.

Forbs

Trollius laxus

Salisb.

Globeflower TRLAL4



RANUNCULACEAE

Habitat: Moist sites saturated by snowmelt, subalpine zone.

Habit: Glabrous perennials.

Leaves: Palmately divided.

Flowers: Greenish-white to cream, solitary on each peduncle.

Sepals: 5-9, petal-like.

Petals: None.



Graminoids



Graminoids

Agropyron dasystachyum

(Hook.) Scribn. & J. G. Sm. Bowden

Thickspike wheatgrass AGDA



POACEAE (GRAMINEAE)

Habitat: Prefers medium textured soils.

Habit: Native, rhizomatous perennial.

Sheath: Smooth to slightly rough.

Auricle: Clawlike and clasping.

Inflorescence: A spike.

Blade: Flat, ridged, slightly rough, bluish-green, often long, hairy on inner surface.

Notes: Thickspike wheatgrass is a good forage species for all classes of livestock. The long creeping rhizomes of this plant enable it to withstand heavy grazing and considerable trampling. This plant is easily confused with western wheatgrass (*A. smithii*). The glumes of *A. dasystachyum* are widest in the middle, while those of *A. smithii* are widest at the base. Syn. = *Elymus lanceolatus*. (Scribn. & Smith) Gould

Agropyron smithii

Rydb.

Western wheatgrass AGSM

**POACEAE (GRAMINEAE)**

Habitat: Plains and foothills, widely distributed, medium textured soils.

Habit: Native, rhizomatous perennial.

Sheath: Round and rough.

Auricle: Clawlike and clasping.

Inflorescence: A spike.

Blade: Flat, prominently veined, very rough on the upper surface and margins, greenish-blue. Glabrous on inner surface.

Notes: Western wheatgrass is one of the more common and abundant wheatgrasses in the west, and is the Wyoming state grass. It has good palatability for all classes of livestock and wildlife, and makes very good winter forage. Syn. = *Pascopyrum smithii*. (Rydb) A. Love

Graminoids

Agropyron spicatum

Pursh

Bluebunch wheatgrass AGSP



POACEAE (GRAMINEAE)

Habitat: Common in montane, grass shrublands.

Habit: Native, perennial bunchgrass.

Sheath: Round, slender, and generally smooth.

Auricle: Small.

Inflorescence: A spike with awns.

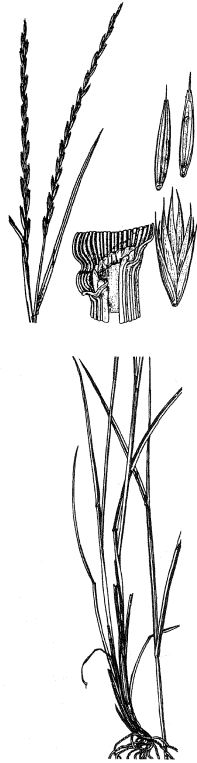
Blade: Flat to loosely rolled, slightly rough.

Notes: Bluebunch wheatgrass is one of the leading native western forage plants and is a key species on many ranges. It is highly palatable, remaining green throughout the growing season if moisture conditions are favorable. Reproduction is entirely from seed. The anthers are very large when compared to other *Agropyrons*. Syn. = *Pseudoroegneria spicata*

Agropyron trachycaulum

(Link) Malte ex H. F . Lewis

Slender wheatgrass AGTR



POACEAE (GRAMINEAE)

Habitat: Found on well drained, sandy to medium textured soils. It is especially common in drainage ways.

Habit: Native, perennial bunchgrass.

Sheath: Round, distinctly veined, and smooth.

Auricle: Clawlike and short.

Inflorescence: A spike.

Blade: Wide, flat, and slightly rough.

Notes: Slender wheatgrass is moderately tolerant to alkali. It starts growing early in the spring and remains green into the fall, making it one of the most palatable of the wheatgrasses. It will endure reasonable amounts of grazing and trampling. This a common montane to subalpine species. It was treated in the *A. canium* complex in Hitchcock. Syn. = *Elymus trachycaulus*.

Graminoids

Agrostis stolonifera

L.

Redtop bent AGST2



POACEAE (GRAMINEAE)

Habitat: Found in pastures and moist meadows, can withstand flooding for extended periods, widely naturalized, will grow on acidic soils, moderately salt tolerant, adapted to a wide range of soil and climatic conditions.

Habit: Cool season, rhizomatous perennial.

Sheath: Round, glabrous, frequently purplish to reddish.

Ligule: Ligules are membranous 1-7mm long, irregular on edges.

Inflorescence: Open, oblong, pyramid-shaped, reddish.

Blade: Wide, flat, and rough to the touch.

Notes: Redtop has been used in pasture and hay seeding mixtures throughout the west, from the moist bottomlands to the mountains of about 10,000 feet. It produces large amounts of forage of medium to good palatability for livestock and wildlife. Redtop is valuable as a soil binder on moist gullies and slopes. This species can be invasive.

Bromus inermis

Leyss.

Smooth brome BRIN2



POACEAE (GRAMINEAE)

- Habitat:** Found in pastures and hayland seedings and in highway revegetation.
- Habit:** The awnless variation, *inermis*, is an introduced, perennial sod-former. The variation *purpurascens* is considered native.
- Sheath:** Smooth, united to near the collar.
- Ligule:** 1 to 2mm long.
- Inflorescence:** Erect, dense panicle.
- Blade:** 5 to 10mm wide, flat, nearly smooth.
- Notes:** This plant is very palatable to all classes of livestock and wildlife, especially during spring and early summer. Smooth brome is strongly rhizomatous, responds well with application of nitrogen fertilizers. It is very competitive and may become dominant in seeded mixtures in just a few years.

Graminoides

Calamagrostis canadensis

(Michx.) Beauv

Bluejoint reedgrass CACA4



POACEAE (GRAMINEAE)

Habitat: Moist, poorly drained, cold sites; generally associated with high elevation wet sites.

Habit: Cool season rhizomatous perennial.

Sheath: Open sheath without hairy collar.

Ligule: Auricles lacking.

Inflorescence: Open diffuse panicle, drooping with age. 1 floret per spikelet.

Blade: Numerous, flat, dull bluish-green; rather lax and rough to the touch.

Notes: Bluejoint reedgrass is also known as bluejoint, meadow pinegrass, Canadian reedgrass, and marsh pinegrass in some localities. Under proper range management, bluejoint provides, on the average, medium or less palatability for all classes of livestock. This species is good elk feed and is grazed lightly by deer.

Calamagrostis rubescens

Buckl.

Pinegrass CARU**POACEAE (GRAMINEAE)**

- Habitat:** Open to dense lodgepole pine forests, prairies, meadows, and stream banks in dry to moderately moist soils; will not persist in open sunlight.
- Habit:** Cool season rhizomatous perennial.
- Sheath:** Smooth, distinctly veined, often purplish at base, generally glabrous, pubescent at the collar.
- Ligule:** Membranous, 1-4mm long, erose, truncate to acute.
- Inflorescence:** Panicle, spike-like, dense to occasionally loose. Pale green to reddish-purple. 1 floret per spikelet.
- Blade:** Leaf blades 8-12 in. or more long, inrolled above and long-tapering to tip.
- Notes:** Most palatable during the spring. Flowers only rarely—often after a fire. Pinegrass, however, will remain green late into the fall. Palatability improved by burning. A thick sod of this species may interfere with tree regeneration.

Graminoids

Carex atherodes

Spreng.

Slough sedge CAA T2



CYPERACEAE

- Habitat:** Marshes, wet meadows, ditches, stream and pond margins, usually in shallow water.
- Habit:** Loosely tufted from long, scaly rhizomes, perennial.
- Sheath:** Softly pubescent to puberulent dorsally, brown to purple-tinged at the mouth, the lower ones shredding into filaments.
- Inflorescence:** Spikes unisexual, sessile or short-peduncled, densely flowered; staminate spikes terminal, 2-6; pistillate spikes 2-4, remotely spaced, cylindric, 2-11cm long. Bracts leaflike, exceeding the culm. Perigynium with long fork beak. Styles 3.
- Blade:** Leaves 3-12mm wide.

Carex aquatilis

Wahlenb.

Water sedge CAAQ



CYPERACEAE

- Habitat:** Wet meadows, marshes, shores, stream banks, springs, bogs, and fens.
- Habit:** Tufted in large or small clumps, with long slender rhizomes.
- Sheath:** Separate-nodulose dorsally, thin and usually ruptured ventrally, whitish or purplish-dotted.
- Inflorescence:** Spikes 3-5, the upper staminate, peduncled, the middle and lower ones pistillate or often androgynous, 2-5cm long; pistillate scales acute to acuminate. Styles 2; perigynia green, without nerves (veins) on underside.
- Blade:** Glucous, 2-7mm wide, the lower ones with well developed blades.

Graminoids

Carex microptera

Mackenzie

Smallwing sedge CAMI7



CYPERACEAE

- Habitat:** Found at mid to high elevations in drier to moist riparian areas. It is found on both sedimentary and granitic soils.
- Habit:** Plants tufted, without creeping rhizomes, and perennial.
- Culms:** Numerous, 6-18 inches tall, and much exceeding the leaves. Sharply triangular above. Conspicuously marked with lines or streaks.
- Inflorescence:** A terminal, tight cluster of short and sessile spikes (5-10). Pistillate flowers above staminate in individual spikes. Heads typically 12-18mm long, 10-16mm wide. 1 1/2 -2mm long. Bracts small and inconspicuous, lowest short-awned. Styles 2.
- Leaves:** Found on lower third of stem, usually flat and firm. 2-5mm wide. 3-5 leaves to a culm.
- Notes:** It is commonly associated and often co-dominant with *Deschampsia cespitosa*, also Planeleaf willow and Booth's willow.

Carex praegracilis

W. Boott

Clustered field sedge CAPR5



CYPERACEAE

Habitat: Wet meadows, low prairie, shores, stream banks, ditches, and other wet or moist places; very common.

Habit: Colonial from long black rhizomes.

Culms: Arising singly or few together, trigonous, 1 1/2-7dm long, surpassing the leaves.

Inflorescence: Spikes bisexual and androgynous or nearly all staminate or pistillate, 4-8mm long, the upper ones crowded, the lower ones more separated, in narrowly ovoid to linear-oblong heads 1-4cm long. Bracts obsolete. Styles 2.

Leaves: 2-3mm wide, coming off the lower portion of the culm.

Graminoids

Carex rossii

Boott

Ross sedge CARO5



CYPERACEAE

Habitat: Common forest understory sedge.

Habit: Grasslike perennial; densely tuft-forming from short ascending rhizomes.

Culms: Same length or shorter than leaves, reddish at base.

Inflorescence: Terminal, solitary, staminate spike (1-4 short, few-flowered lateral pistillate spikes borne near staminate spike, pistillate flowers with 3 stigmas, the lowest subtended by a leafy bract which is longer than the staminate spike, one or more small pedunculate pistillate spikes often hidden near base of culms.

Leaves: Blades elongate and lax, 1-4mm wide, often longer than culm, basal sheaths reddish.

Notes: Fire resistant, regeneration from rhizomes to preburn levels within 1-2 years.

Carex rostrata

Stokes

Beaked sedge CAR06



CYPERACEAE

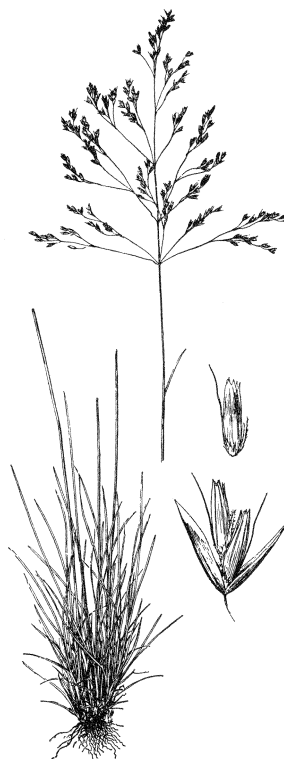
- Habitat:** One of the most common wetland sedges found at mid to high elevations (5,000 -11,000 ft.). It often grows on wet, fine textured soils.
- Habit:** Grasslike perennial, densely tuft forming short rootstocks, also with long rhizomes.
- Culms:** Arising singly or growing in tufts. 10-24 in. tall; bluntly triangular below the spikes.
- Inflorescence:** Spikes several (4-10), erect or nearly so, cylindric and elongate. Upper 2-4 spikes staminate, 1-6cm long and 3-4mm wide. Lower spikes pistillate (2-5) and densely flowered, 2-10cm long and about 1cm wide. Bracts—leaf like. Styles 3.
- Leaves:** Blades thick, stiff, and rough. Flat and slenderly tapering.
- Notes:** Found in valley bottoms near low gradient streams, which are nearly level and meandering. Syn. = *C. utriculata*.

Graminoids

Deschampsia cespitosa

(L.) Beauv

Tufted hairgrass DECE



POACEAE (GRAMINEAE)

Habitat: Wetland soils of the foothills, montane, and subalpine.

Habit: Native, perennial bunchgrass, 60-100cm tall.

Sheath: Smooth.

Spikelet: An individual spikelet resembles that of cultivated oats, although much smaller, 4-5mm long. Silvery colored, 2+ florets per spikelet, short-awned.

Inflorescence: Loose, open panicle, nodding, 10-25cm long.

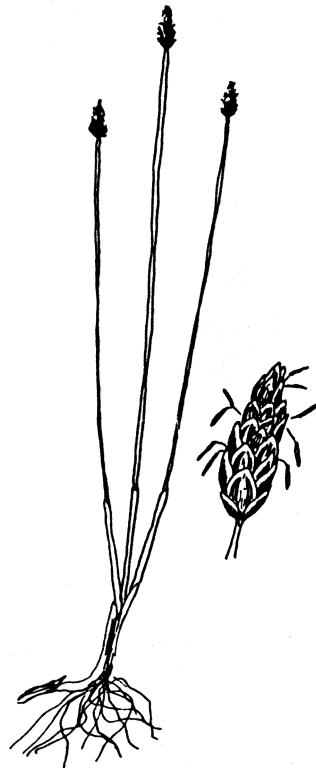
Blade: 1 1/2 to 4mm wide, flat or folded, rough on upper surface.

Notes: The leaves of tufted hairgrass grow mostly from the base and are usually relished by all classes of livestock. This species is circumpolar in its distribution. Tufted hairgrass is the potential dominant species on some of the drier riparian sites or as a seral species as *Salix* and *Carex* communities dry out.

Eleocharis palustris

(L.) Roemer & J. A. Schultes

Spike rush ELP A3



CYPERACEAE

Habitat: Often in shallow water, common in marshes, ditches, stream and lake margins. Mostly off mountain or in low mountain slopes.

Habit: Rhizomatous perennial 1-7dm tall.

Culms: Round in cross-section, like the leaves of an onion, 4-10dm tall, often soft and inflated, 1-5mm thick.

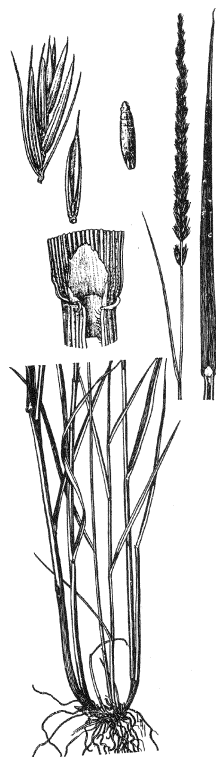
Inflorescence: Many flowered, spikelets lance-cylindric tapering to a slender point, 7-27mm long. Flower-bearing scales linear-lanceolate, 3-4 1/2mm long.

Graminoids

Elymus cinereus

Scribn. & Merr .

Basin wildrye ELCI2



POACEAE (GRAMINEAE)

Habitat: Typically found on moist to dry, light textured soils of slopes and ravines. Arid areas at low elevations.

Habit: Native, perennial bunchgrass, often with short rhizomes. Often over a meter tall.

Sheath: Smooth to slightly hairy.

Ligule: Very prominent, 3-7mm long.

Inflorescence: Compact spike with 2 to 4 spikelets per node.

Blade: Long, flat, strongly nerved, as much as 2cm wide.

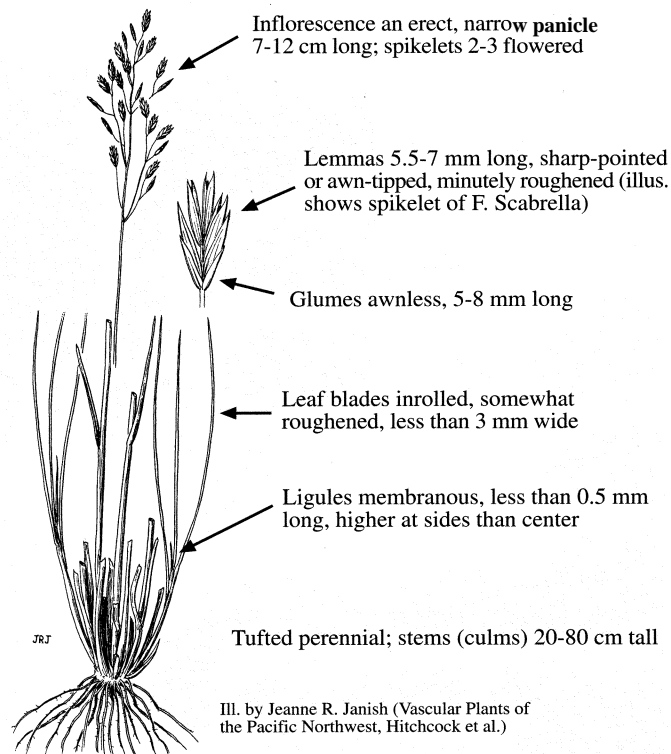
Notes: This plant is usually not readily grazed in the summer, but because it produces enormous amounts of foliage, it is an important winter forage. Syn. = *Leymus cinereus*. (Scribn. & Merr.) A. Love

Graminoids/Sensitive Plant

Festuca hallii

(Vasey) Piper

Hall's fescue FEHA3



POACEAE (GRAMINEAE)

Habitat: Meadows, slopes and open woods. Elevation 7400-10,500 ft. Calcareous soils.

Habit: Tufted perennial, 20-80cm tall.

Ligule: Membranous, less than 0.5mm long, higher at sides than center.

Inflorescence: An erect, narrow panicle 7-12cm long; spikelets 2-3 flowered.

Lemma: 5 1/2 to 7mm long, sharp-pointed or awn-tipped, minutely roughened.

Blade: Inrolled, somewhat roughened, less than 3mm wide.

Notes: This fescue is considered sensitive in the Clarks Fork and Wapiti Ranger District. Synonym: It has been included in *Festuca scabrella* by some authors. Flowering/ fruiting occurs May-July.

Graminoids

Festuca idahoensis

Elmer

Idaho fescue FEID



POACEAE (GRAMINEAE)

Habitat: It is the dominant plant in many foothill and open wooded areas, growing on all exposures and under a wide variety of soil and moisture conditions. It is most common in fairly dry, well-drained, moderately deep, sandy or gravelly loams.

Habit: Native, erect, densely tufted, perennial bunchgrass. Usually over 12 in. tall.

Roots: Usually black.

Inflorescence: A narrow dense panicle.

Awn: 2-5mm long.

Blade: The length of the blade is usually over half of the stem's length. The leaves are typically rolled up on sides.

Notes: Wildlife and all classes of livestock relish the early spring growth. Also known as Bluebunch fescue. May easily be confused with *F. rubra*, *F. ovina*.

Juncus balticus

Willd.

Baltic or Wire rush JUBA



JUNCACEAE

Habitat: Found from low to mid elevations, on soils that are relatively dry to moist. It may be found scattered or in small pockets throughout some of the *Carex* communities.

Habit: Rhizomatous perennial up to 30 in. tall.

Culms: Stems firm, round, and wiry. 8-12 inches tall, 1 1/2-3mm thick.

Inflorescence: Variable, appearing lateral, 10-50 flowered in compact to loose inflorescence. Perianth 3-6mm long. Anthers 1.2-2mm long, 3-5 times as long as the filaments. Stamens 6. Flowers each with a pair of bracteoles at base of perianth segments.

Leaves: Bladeless or reduced to bristles. Lowest bract in inflorescence cylindrical, 2-30cm long, appearing to be a continuation of the stem.

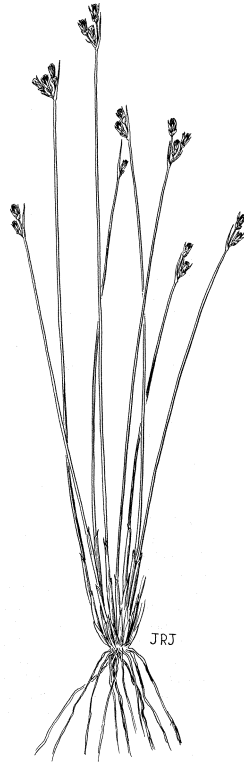
Notes: This species seems to be found in the transition between wetter *Carex* ecotypes and drier graminoid ecotypes.

Graminoids

Juncus drummondii

E. Mey.

Drummond's rush JUDR



JUNCACEAE

Habitat: Moist areas from subalpine to alpine.

Habit: Perennials up to 2dm high. Creeping rhizomes are lacking.

Culms: Stems densely clustered.

Inflorescence: Flowers each with a pair of small bracteoles at base of perianth segments in addition to the bract attached below and extending upward from the pedicel. The perianth is 5-7mm long.

Leaves: The uppermost leaf sheaths are bladeless or with a blade less than 1 1/2cm long.

Koeleria nitida

Nutt.

Prairie junegrass KONI



POACEAE (GRAMINEAE)

Habitat: Found on prairies, in open woods, and alpine areas in all soil textures; normally not found in wetlands.

Habit: Native, perennial bunchgrass. 1-1/2 feet tall.

Ligule: Less than 1mm long.

Inflorescence: Panicle, narrow, and spikelike.

Sheath: Rounded, retrorsely pubescent, distinctly veined. Upper sheaths may be glabrous.

Blade: Flat or inrolled, soft.

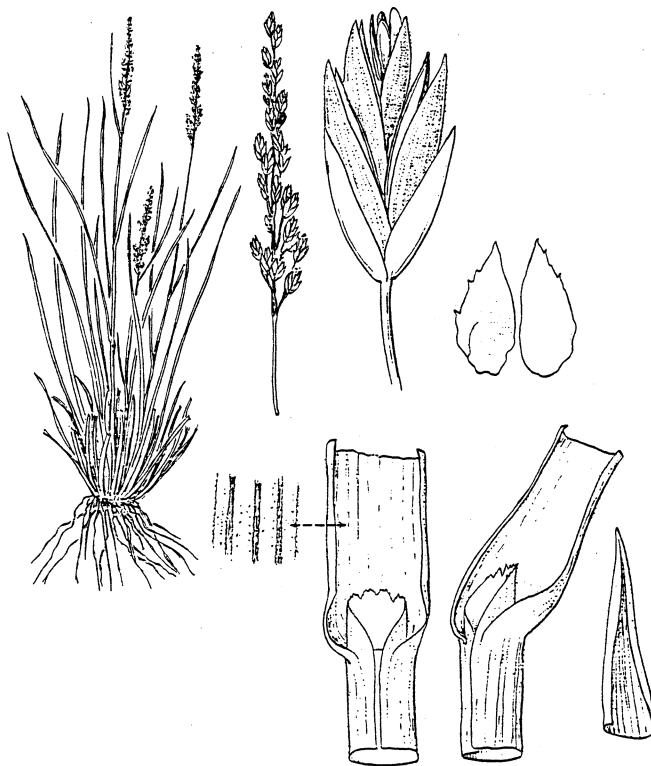
Notes: Prairie junegrass is considered good forage for all classes of livestock, but doesn't produce much forage. It is a low growing plant with mostly basal leaves. It is considered an increaser with overgrazing. Good forage for wildlife in the spring and in the fall after curing. Syn.: *Koeleria cristata* or *K. macrantha*. (Ledeb.) Schultes This grass looks a lot like a *Poa*, but can be distinguished by its finely hairy rachis.

Graminoids

Leucopoa kingii

(S. Wats.) W. A. Weber

King spikefescue LEKI2



POACEAE (GRAMINEAE)

Habitat: Found on dry mountain soils from 6,000 to 10,000 ft. elevations. Open woods, hills, and slopes. It prefers well drained, moderately deep soils of medium texture, but also occurs on rocky slopes.

Habit: Native, perennial bunchgrass. 1-2 feet tall.

Roots: Occasionally has short rhizomes.

Inflorescence: Panicle, somewhat narrow. Dioecious.

Sheath: Smooth.

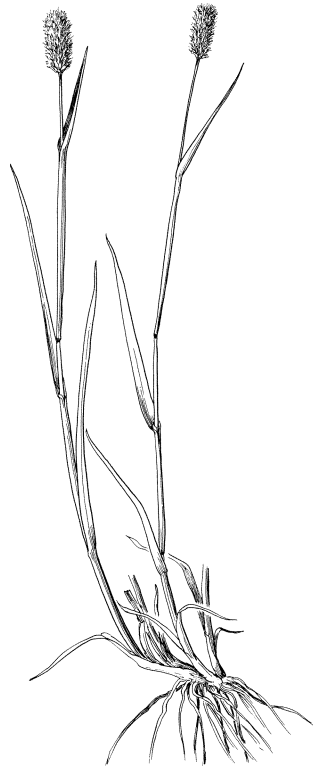
Blade: Firm, flat, sometimes rolling, rough on the margins, 3-6mm wide.

Notes: Spikefescue is a highly nutritious, productive and palatable grass and is considered a decreaser under grazing misuse. Spikefescue is brown at the base of the culm when compared to Rough fescue, which has a purple culm base. Syn. = *Festuca kingii*.

Phleum alpinum

L.

Alpine timothy PHAL2



POACEAE (GRAMINEAE)

Habitat: Mountain meadows, bogs, and wet places in deep poorly drained soils to deep stony loam soils; generally above 4,000 ft. in elevation.

Habit: Native, cool season, perennial bunchgrass. 1-1/2 feet tall.

Ligule: Membranous, 1/2 to 4mm long, irregularly notched and blunt.

Inflorescence: Spikelike panicle, short, almost egg-shaped. The spike is short and stubby when compared to long and narrow in *P. pratense*.

Sheath: Usually shorter than the space between the nodes.

Blade: Flat, smooth on upper side, rough on lower side.

Notes: Alpine timothy is rated as good forage for all classes of livestock and wildlife. It is one of the grasses most eaten by deer. The plant tolerates trampling well and its growth habit is similar to a rhizomatous plant, with some of the basal stalks growing outward from the base.

Graminoids

Poa pratensis

L.

Kentucky bluegrass POPR



POACEAE (GRAMINEAE)

Habitat: Meadows, open woods, open ground, and disturbed sites; adapted to a broad range of soil textures; most common on sites with abundant soil moisture.

Habit: Introduced, cool season, perennial sod-former. 1-2 feet tall.

Ligule: About 2mm long and squared off at the end.

Inflorescence: Pyramid shaped panicle.

Sheath: Partially keeled and distinctly veined.

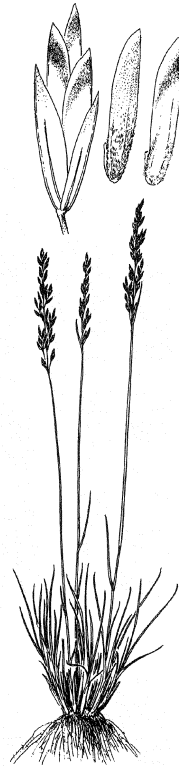
Blade: Flat or folded, keel-tipped, with two distinct parallel midveins ("railroad tracks").

Notes: Kentucky bluegrass will grow on a variety of sites, but prefers well drained loams or clay loams in valleys and moist bottomlands. It is not drought tolerant, but is able to withstand continued heavy grazing. It is good forage for all classes of grazing animals.

Poa secunda

J. Presl

Sandberg bluegrass POSE



POACEAE (GRAMINEAE)

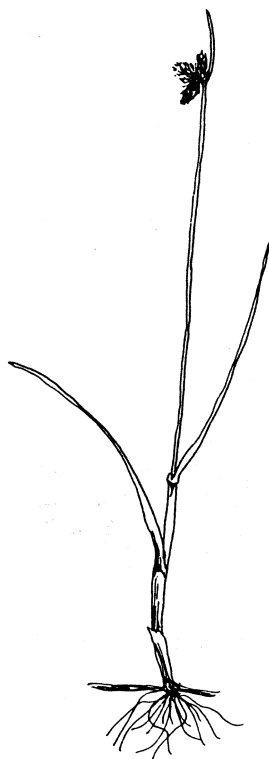
- Habitat:** Found on plains, dry woods, and rocky slopes; adapted to a wide variety of soils, most abundant on deep sandy to silt loam soils.
- Habit:** Native, cool season, perennial bunchgrass, short.
- Ligule:** Prominent, membranous (2-4mm long), and pointed.
- Inflorescence:** A narrow panicle.
- Sheath:** Rounded, glabrous, veins prominent and persistent.
- Blade:** Flat or folded, keel-tipped, with two distinct parallel mid-veins ("railroad tracks"). Margins slightly barbed.
- Notes:** Sandberg bluegrass is drought tolerant and withstands moderate to heavy grazing. It is most commonly found on shallow or poorly developed soils and is often abundant on abused ranges. Its roots are shallow when compared to many other species. Syn.: *Poa sandbergii*.

Graminoids

Scirpus pungens var. *polyphyllus*

Boeckl.

Bulrush SCPUP3



CYPERACEAE

Habitat: Shores, stream banks, wet meadows, ditches, seepage areas, and other wet areas.

Habit: A slender, rhizomatous perennial, 2-10dm tall.

Culm: Triangular, usually less than 1m high; spikelets sessile or nearly so. Scales with a short awn form a notched tip.

Inflorescence: Not branched.

Bracts: Solitary, mostly 1-3cm long; achenes 1.8-2.5mm long, 1.4-1.7mm wide.

Blade: Leaves few, mostly 1-3 per culm; the blades typically folded or channeled above, 1-2mm wide, usually diverging from the culm well within the lower 1/3 of its length and not overtopping it.

Stipa comata

Trin. & Rupr .

Needleandthread STCO4



POACEAE (GRAMINEAE)

Habitat: Found on sandy to medium fine textured soils. Prairies, plains, dry hills, foothills, alluvial fans, and sandy benches. Most abundant on excessively drained soils.

Habit: Native, cool season, perennial bunchgrass, up to 3 ft. tall.

Ligule: Prominent, two pointed, and membranous.

Inflorescence: Narrow panicle.

Sheath: Round, glabrous to scabrous, prominently veined.

Blade: Narrow, flat or inrolled, slightly rough, mostly basal.

Notes: The awns may be one of the most distinguishing features of this plant. They may be up to 18cm long, twisted and tapered. This plant is a decreaser on most range sites with less than 14 inches of precipitation.

Graminoids

Stipa nelsonii

Scribn.

Columbia needlegrass STNE3



POACEAE (GRAMINEAE)

- Habitat:** This grass grows on open sites from the lower montane through lower subalpine zones.
- Habit:** Native, cool season, perennial bunchgrass, up to 3 ft. tall.
- Ligule:** Mostly less than 1mm long.
- Inflorescence:** A loose spike of small, hairy flowers tipped with twisted awns up to 1 1/2 inches long.
- Blade:** Narrow and less than 1 foot long.
- Notes:** This species of *Stipa* has appressed hairs on lemma awns. A similar species also found in the forest is *S. viridula*. In older treatments, this grass was referred to as *S. columbiana*. *S. lettermanii* is also common on the forest in montane meadows. *S. lettermanii* has shorter awns and longer palea than *S. nelsonii*.

Trisetum spicatum

(L.) Richter

Spike trisetum TRSP2



POACEAE (GRAMINEAE)

Habitat: Found on moist bottomlands, alpine and subalpine meadows, and gentle slopes; most abundant on well-drained, medium-textured soils.

Habit: Native, cool season, perennial bunchgrass, up to 2 ft. tall.

Ligule: Membranous, 1/2-2 1/2mm long, irregularly notched.

Inflorescence: Spikelike panicle, becoming shiny purple at maturity.

Blade: Flat, inrolling with age, usually hairy.

Notes: Most palatable in the spring. Very slow to reach maturity. Spike trisetum is easily recognized by its spikelike head to which the fine, bent awns give a fuzzy appearance.

Rare and Sensitive Plants

Rare and Sensitive Plants

Source — *Wyoming Rare Plant Field Guide*. Fertis, Refsdal, & Whipple. 1994.
Field Guide to Rare & Sensitive Plants of the Shoshone National Forest. Stephane Mills & Walt Fertig. 1996.

Work on sensitive plant species on the Shoshone National Forest has an impressive history. Over the last twenty years, intensive floristic investigations have occurred quietly on the forest. It is from this work that “sensitive plant lists” have been developed. The Rocky Mountain Herbarium Curator, Dr. Ronald Hartman, and Assistant Curator, Ernie Nelson, have played an important role in the comprehensive field work and data compilation. Included in this work are three master’s theses by Neil Snow, Robert Kirkpatrick, and David Rosenthal.

Walt Fertig, Dr. George Jones, Jill Walford, Stephanie Mills, Mike Bynum, Sabine Mellmann-Brown, and Hollis Marriot of the Wyoming Natural Diversity Database have also provided key pieces of information on sensitive plants and their distribution. Their work has been completed through cooperative agreements with Dave Henry of the Shoshone National Forest.

Dr. Dick Scott and his students from Central Wyoming College have also contributed key information on sensitive species distribution. Dick’s recent *Alpine Flora of the Middle Rocky Mountains* is an important addition to the botanic literature of the Rocky Mountains.

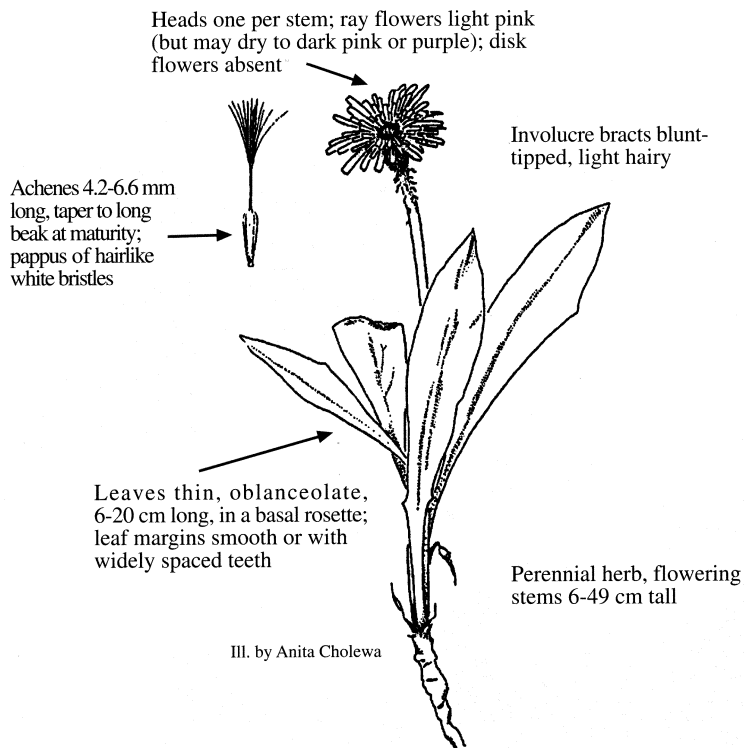
Private individuals have also had an important role. Dr. Erwin Evert has collected extensively in the Greater Yellowstone Area, in particular, the North Fork of the Shoshone River drainage. Dr. Robert Dorn, author of *The Vascular Plants of Wyoming* has “botanized” extensively over the years on this Forest.

The Shoshone National Forest has been fortunate to be the recipient of these exceptional efforts of botanical work. The information and drawings used in this section are taken from the *Wyoming Rare Plant Field Guide*.

Rare and Sensitive Plants

Agoseris lackschewitzii

Pink Agoseris



ASTERACEAE

Habitat: Wet montane and subalpine meadows. Elev. 9600-10,600 ft.

Habit: Perennial herb, flowering stems 6-49cm tall.

Leaves: Thin, oblanceolate, 6-20cm long, in a basal rosette; leaf margins smooth or with widely spaced teeth.

Flowers: One head per stem; ray flowers light pink (but may dry to dark pink or purple); disk flowers absent.

Bracts: Involucre, blunt-tipped, light hairy.

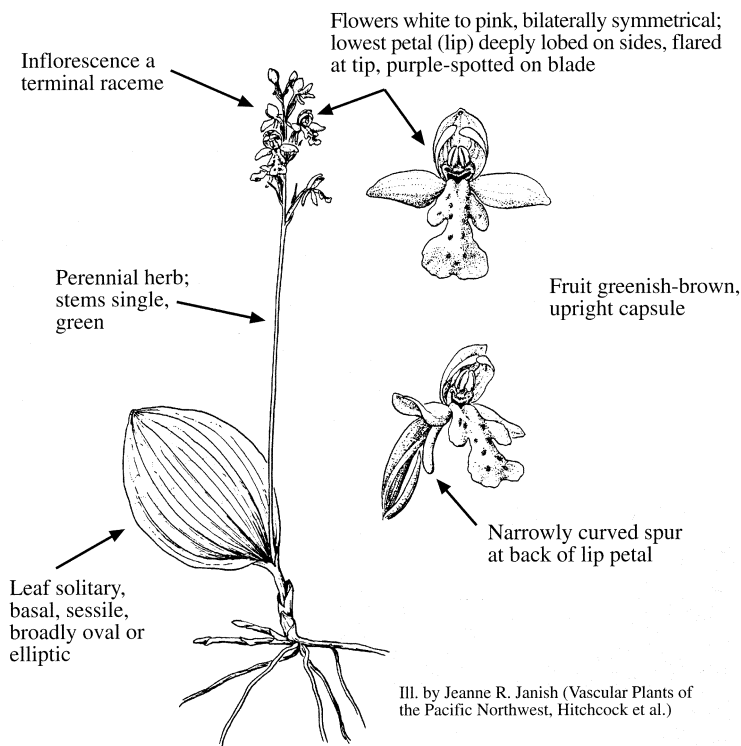
Fruits: Achenes 4.2-6.6mm long, taper to long beak at maturity; pappus of hairlike white bristles. Flower July-August. Mature fruit useful for identification.

Notes: Easily confused with *A. glauca*.

Amerorchis rotundifolia

(Banks ex Pursh) Hulten

Round-leaved orchid AMRO



ORCHIDACEAE

Habitat: Mossy, moist seepage areas in conifer forests, often associated with white spruce. Elev. 6600-6800 ft.

Habit: Perennial herb.

Stems: Single green.

Leaves: Solitary, basal, sessile, broadly oval or elliptic.

Flowers: White to pink, bilaterally symmetrical; lowest petal (lip) deeply lobed on sides, flared at tip, purple-spotted on blade.

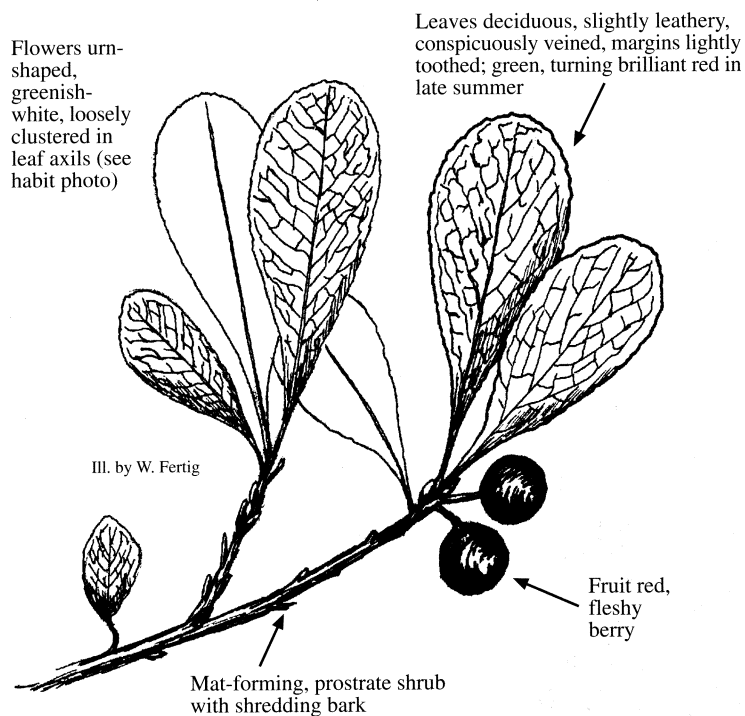
Narrowly curved spur at back of lip petal. Inflorescence a terminal raceme.

Fruits: Greenish-brown, upright capsule. June-July / July-August.

Notes: Synonym: *Orchis rotundifolia*. Found only in the Swamp Lake botanic area.

Rare and Sensitive Plants

Arctostaphylos rubra
(Rehd. & Wils.) Nakai
Red manzanita ARRU6



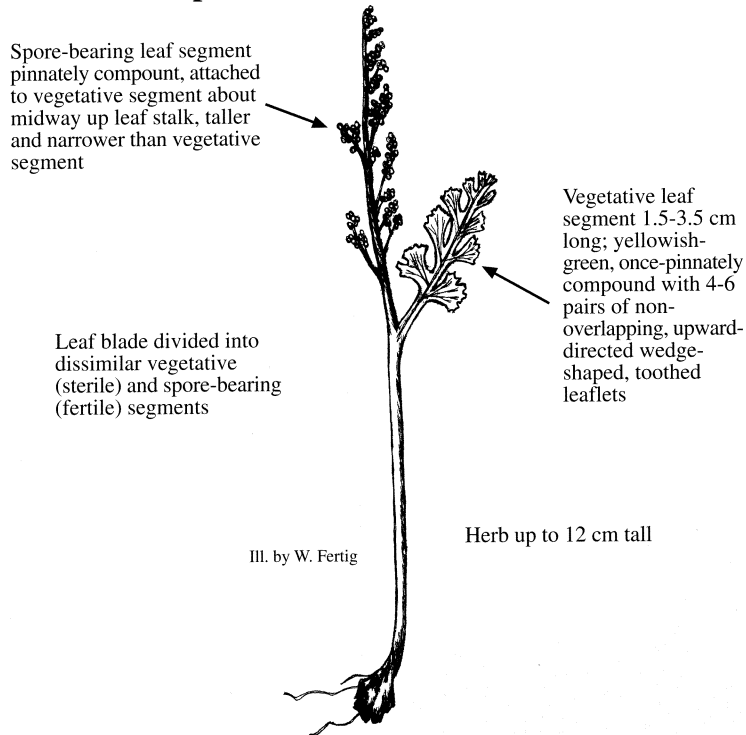
ERIACEAE

- Habitat:** Moist, but not flooded, calcareous sites dominated by low shrubs bordering white spruce swamp forests. Elev. 6600 ft.
- Habit:** Mat-forming, prostrate shrub with shredding bark.
- Leaves:** Deciduous, slightly leathery, conspicuously veined, margins lightly toothed; green turning brilliant red in late summer.
- Flowers:** Urn-shaped, greenish-white, loosely clustered in leaf axils.
- Fruits:** Red, fleshy berry. May-June/July-September.
- Notes:** Synonyms: *Arctostaphylos alpina* var. *rubra*; *Arctous rubra*. Found only in the Swamp Lake botanic area.

Botrychium ascendens

W. H. Wagner

Upward-lobe moonwort BOAS2



OPHIOGLOSSACEAE

Habitat: Moist meadows and thickets in mountains. Elev. 8000 ft.

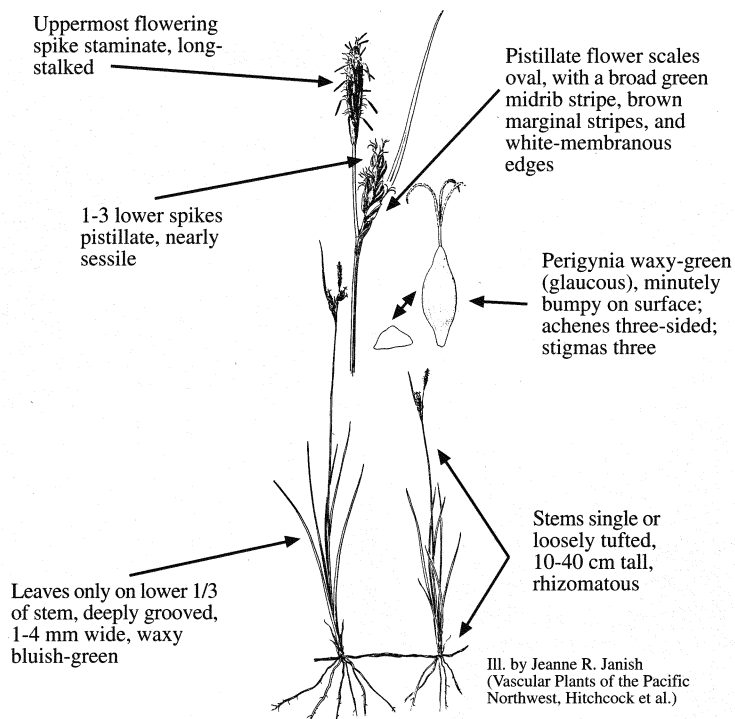
Stems: Herb up to 12cm tall.

Leaves: Leaf blade divided into dissimilar vegetative (sterile) and spore-bearing (fertile) segments. Vegetative leaf segment 1.5-3.5cm long; yellowish-green, once pinnately compound with 4-6 pairs of nonoverlapping, upward-directed wedge-shaped, toothed leaflets. Spore-bearing leaf segment pinnately compound, attached to vegetative segment about midway up leaf stalk, taller and narrower than vegetative segment.

Spore-Producing Period: July-August.

Rare and Sensitive Plants

Carex livida
(Wahlenb.) W illd.
Livid sedge CALI



CYPERACEAE

Habitat: Floating mats, bogs, and fens. Elev. 6400-6500 ft.

Stems: Single or loosely tufted, 10-40cm tall, rhizomatous.

Leaves: Only on lower 1/3 of stem, deeply grooved, 1-4mm wide, waxy bluish-green.

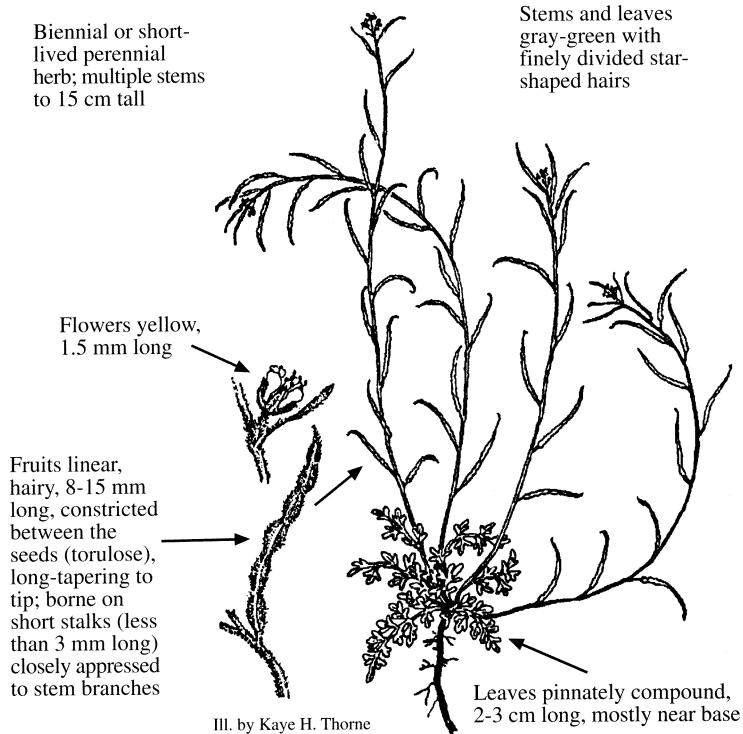
Flowers: Pistillate flower scales oval, with a broad green midrib stripe, brown marginal stripes, and white-membranous edges.

Spikes: Uppermost flowering spike staminate, longstalked. 1-3 lower spikes pistillate, nearly sessile.

Fruits: Perigynia waxy-green (glaucous), minutely bumpy on surface; achenes three-sided; stigmas three. June-August.

Notes: Found only in the Swamp Lake botanic area.

Descurainia torulosa
Rollins
Wyoming tansymustard DETO2



BRASSICACEAE

- Habitat:** Sparsely vegetated sandy slopes at base of cliffs of volcanic breccia or sandstone. Elev. 8300-10,000 ft.
- Habit:** Biennial or short-lived perennial herb; multiple stems to 15cm tall.
- Stems:** Stems and leaves grey-green with finely divided star-shaped hairs.
- Leaves:** Pinnately compound, 2-3cm long, mostly near base.
- Flowers:** Yellow, 1.5mm long.
- Fruits:** Linear, hairy, 8-15mm long, constricted between the seeds (torulose), long-tapering to tip; borne on short stalks (less than 3 mm long) closely appressed to stem branches. July-September.

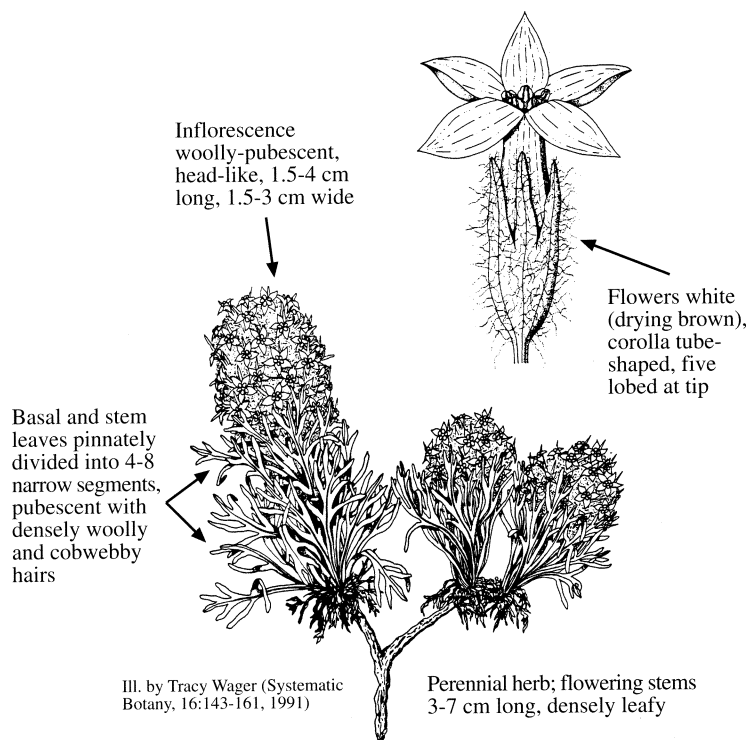
Rare and Sensitive Plants

Ipomopsis spicata ssp. *robruthii*

(Nutt.) V. Grant

Wilken and Hartman

Kirkpatrick's ipomopsis IPSPR



POLEMONIACEAE

Habitat: Sandy to rocky scree derived from andesite volcanic rock. Elev. 7,200-13,000 ft. Endemic to the Absaroka Range, Wyoming.

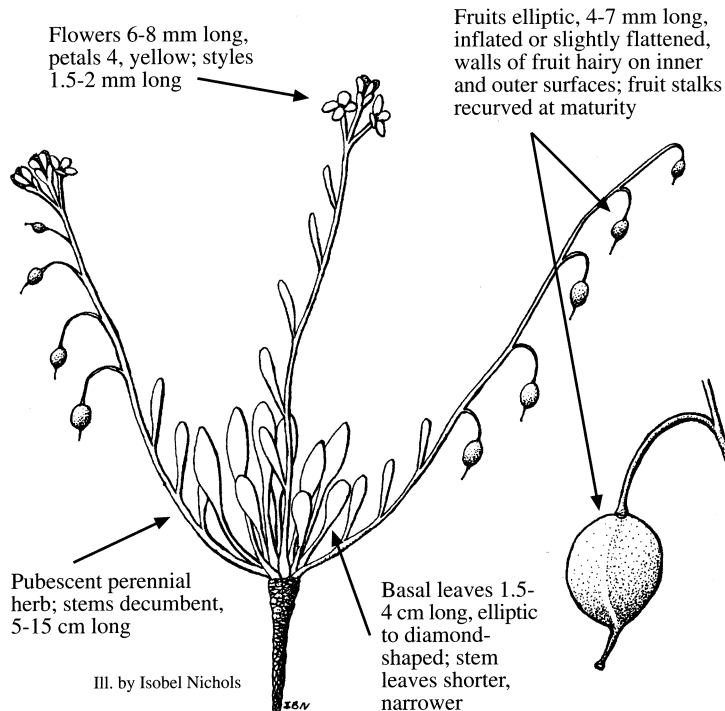
Habit: Perennial herb; flowering stems 3-7cm long, densely leafy.

Leaves: Leaves are pinnately divided into 4 to 8 narrow segments, pubescent with densely woolly and cobwebby hairs.

Flowers: Flowers white, filaments shorter than anthers; corolla lobes mostly 2-3mm and tubed shaped, five lobed at tip.

Notes: Synonym: *I. spicata* var. *robruthiorum*.

Lesquerella fremontii
Rollins & Shaw
Fremont bladderpod LEFR4



BRASSICACEAE

Habitat: Rocky limestone slopes and ridges. Elev. 7000-9000 ft.

Habit: Pubescent perennial herb.

Stems: Decumbent, 5-15cm long.

Leaves: Basal 1.5-4cm long, elliptic to diamond-shaped; stem leaves shorter, narrower.

Flowers: Yellow, 6-8mm long, petals 4; styles 1.5-2mm long.

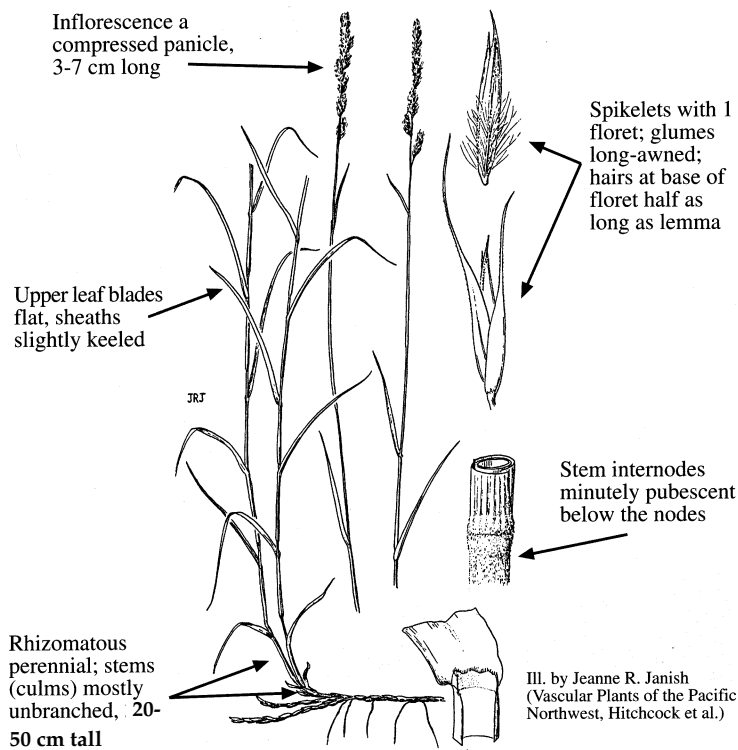
Fruits: Elliptic, 4-7mm long, inflated or slightly flattened, walls of fruit hairy on inner and outer surfaces; fruit stalks recurved at maturity.

Rare and Sensitive Plants

Muhlenbergia glomerata

(Willd.) Trin.

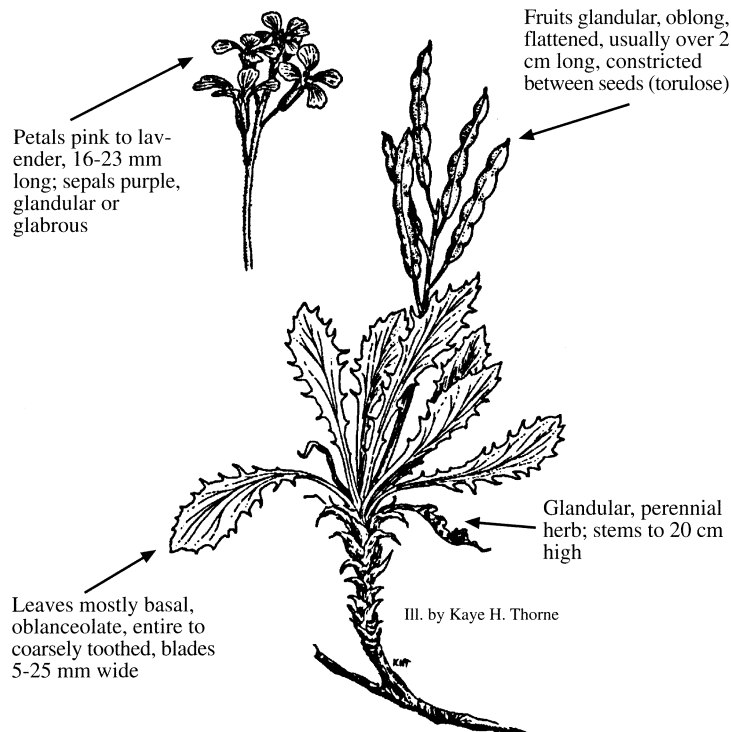
Marsh muhly MUGL3



POACEAE (GRAMINEAE)

- Habitat:** Bogs, springs, peaty or calcareous meadows, floating mats, stream edges and shores. Elev. 4700-6600 ft.
- Habit:** Rhizomatous perennial.
- Stems:** (Culms) mostly unbranched, 30-90cm tall. Stem internodes minutely pubescent below the nodes.
- Leaves:** Upper leaf blades flat, sheaths slightly keeled.
- Flowers:** Inflorescence is a compressed panicle, 3-7cm long. July-September.
- Spikelets:** 1 floret; glumes long-awned; hairs at base of floret half as long as lemma.
- Notes:** Synonym: *M. racemosa* Found only in the Swamp Lake botanic area.

Parrya nudicaulis
(L.) Boiss
Naked-stemmed parrya P ANU5



BRASSICACEAE

Habitat: Alpine talus, often on limestone substrates. Elev. 10,700-11,400 ft.

Habit: Glandular, perennial herb.

Stems: To 20cm high.

Leaves: Mostly basal, oblanceolate, entire to coarsely toothed, blades 5-25mm wide.

Sepals: Purple, glandular or glabrous.

Petals: Pink to lavender, 16-23mm long.

Fruits: Glandular, oblong, flattened, usually over 2cm long, constricted between seeds (torulose).

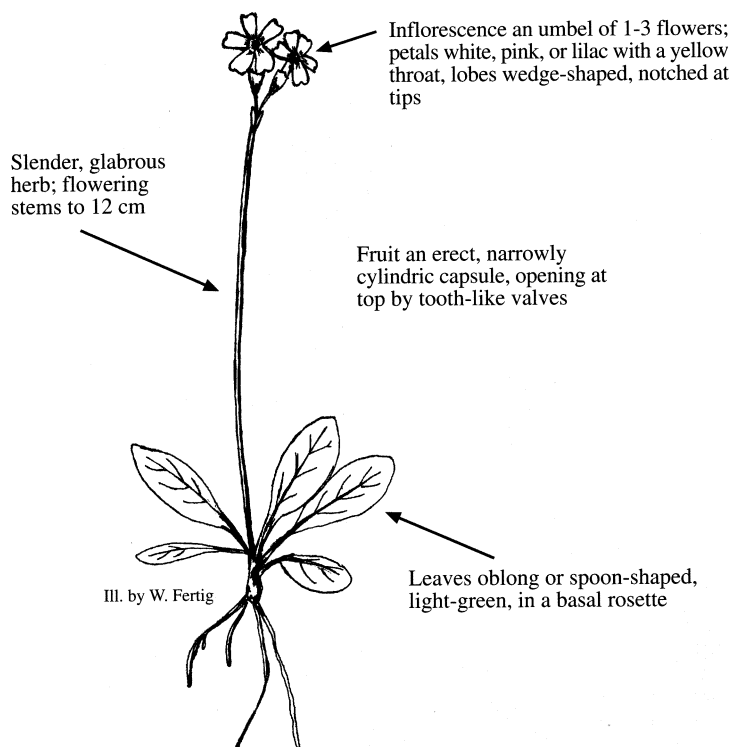
Notes: Synonym: *P. rydbergii*. Found in the Arrow Mountain region of the Wind River range and Beartooth Butte.

Rare and Sensitive Plants

Primula egaliksensis

Wormsk. ex Hornem.

Greenland primrose PREG



PRIMULACEAE

- Habitat:** Wet meadows along streams and calcareous montane bogs. Elev. 6600-8000 ft.
- Habit:** Slender, glabrous herb.
- Stems:** Flowering to 12cm.
- Leaves:** Leaves oblong or spoon-shaped, light-green, in a basal rosette.
- Flowers:** Inflorescence an umbel of 1-3 flowers. May-June/June-August.
- Petals:** White, pink, or lilac with a yellow throat, lobes wedge-shaped, notched at tips.
- Fruit:** Erect, narrowly cylindric capsule, opening at top by tooth-like valves.
- Notes:** Found only in the Swamp Lake botanic area.

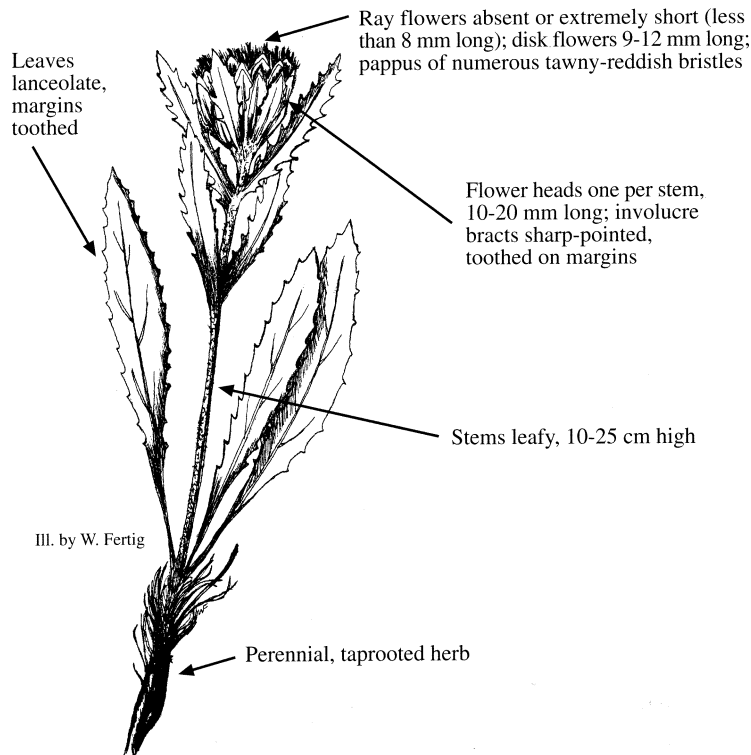
Rare and Sensitive Plants

Pyrrhoma carthamoides var. *subsquarrosa*

Hook.

(Greene) G. Brown & Keil

Absaroka goldenweed PYCAS



ASTERACEAE

Habitat: Open meadows, slopes, and ridges on sandstone or limestone substrates. Elev. 6400-10,300 ft. Calcareous soils.

Habit: Perennial, taprooted herb.

Stems: Leafy, 10-25cm high.

Leaves: Lanceolate, margins toothed.

Flowers: One head per stem, 10-20mm long; involucre bracts sharp-pointed, toothed on margins. Ray flowers absent or extremely short (less than 8mm long); disk flowers 9-12mm long; pappus of numerous tawny-reddish bristles. July-August.

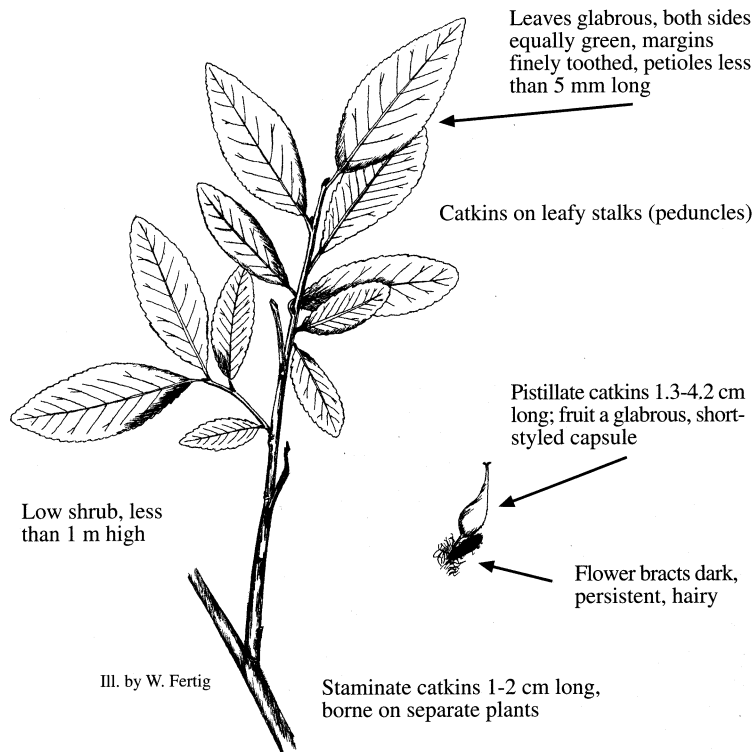
Notes: Synonym: *Haplopappus carthamoides* var. *subsquarrosa*

Rare and Sensitive Plants

Salix myrtillifolia var. *myrtillifolia*

Anderss.

Myrtleleaf willow SAMYM2



SALICACEAE

Habitat: Lake and stream banks, floodplain thickets, bogs, and moist white spruce forests. Elev. 6600 ft.

Habit: Low shrub, less than 1m high.

Leaves: Glabrous, both sides equally green, margins finely toothed, petioles less than 5mm long.

Flowers: Catkins on leafy stalks. Pistillate catkins 1.3-4.2cm long. Staminate catkins 1-2cm long, borne on separate plants. June-July.

Bracts: Dark, persistent, hairy.

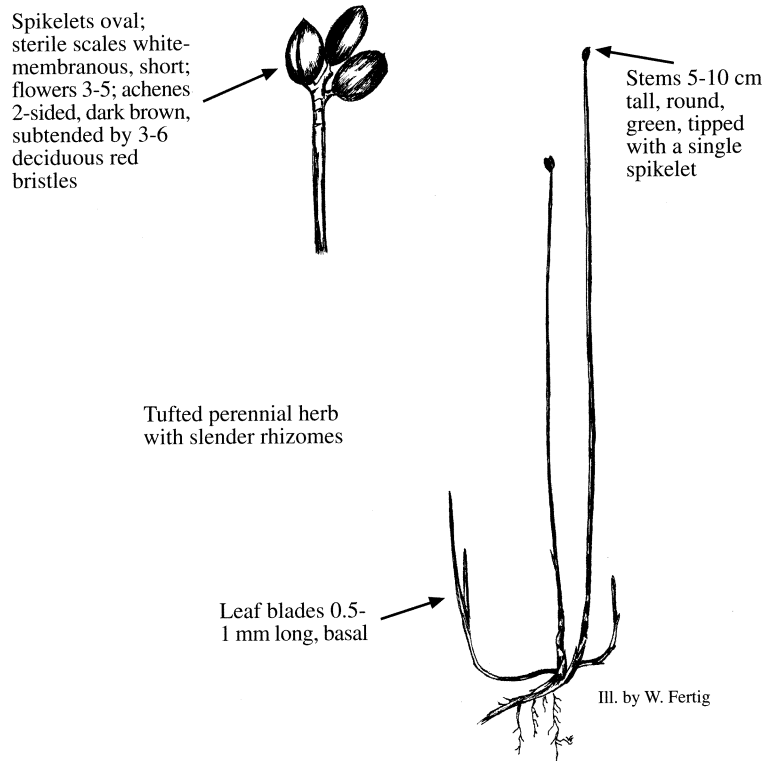
Fruit: Glabrous, short-styled capsule.

Notes: Found only at Swamp Lake botanic area.

Scirpus rollandii

Fem.

Rolland's bulrush SCRO3



CYPERACEAE

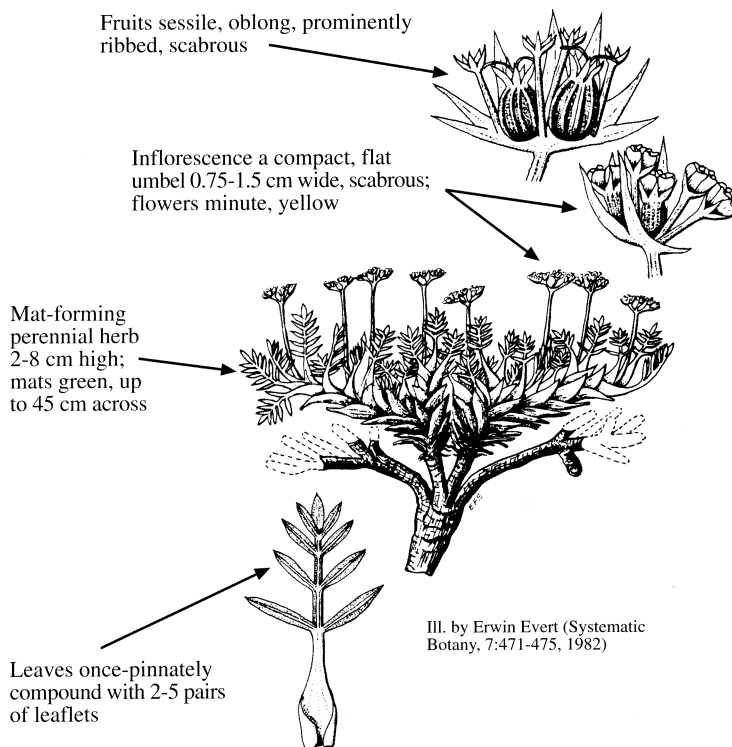
- Habitat:** Calcareous montane bogs. Elev. 6600 ft.
Habit: Tufted perennial herb with slender rhizomes.
Stems: 5-10cm tall, round, green, tipped with a single spikelet.
Leaves: Leaf blades 0.5-1mm long, basal.
Flowers: 3-5; achenes 2-sided, dark brown, subtended by 3-6 deciduous red bristles. June-July/July-August.
Spikelets: Oval; sterile scales white-membranous, short.
Notes: Synonym: *S. pumilus*. Found only at Swamp Lake botanic area.

Rare and Sensitive Plants

Shoshonea pulvinata

Evert & Constance

Shoshonea SHPU



APIACEAE

Habitat: Shallow, stony calcareous soils of exposed limestone outcrops, ridgetops, and talus slopes. Elev. 5900-9200 ft.

Habit: Mat-forming perennial herb 2-8cm high; mats green, up to 45cm across.

Leaves: Once-pinnately compound with 2-5 pairs of leaflets.

Flowers: Inflorescence a compact, flat umbel 0.75-1.5cm wide, scabrous; minute, yellow. May-July.

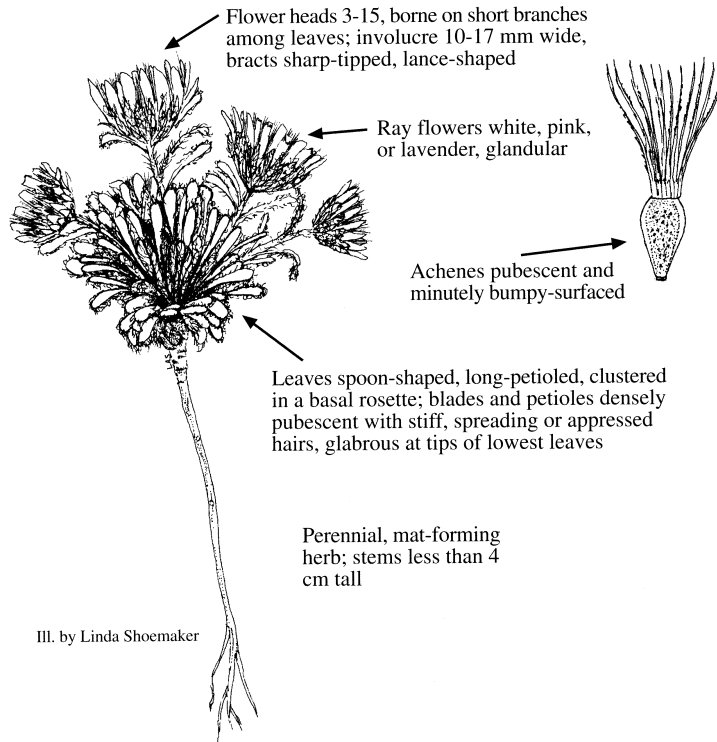
Fruit: Sessile, oblong, prominently ribbed, scabrous.

Townsendia condensata var. *anomala*

Parry ex Gray

(Heiser) Dorn

North Fork Easter daisy TOCOA



ASTERACEAE

Habitat: Sparsely vegetated rocky slopes and ridges. Elev. 6500-12,000 ft.

Habit: Perennial, mat-forming herb.

Stems: Less than 4cm tall.

Leaves: Spoon-shaped, long-petioled, clustered in a basal rosette; blades and petioles densely pubescent with stiff, spreading or appressed hairs, glabrous at tips of lowest leaves.

Flowers: Flower heads 3-15, borne on short branches among leaves; involucre 10, 1mm wide, bracts sharp-tipped, lance-shaped. Ray flowers white, pink, or lavender, glandular. June-August.

Fruits: Achenes pubescent and minutely bumpy-surfaced.

Notes: Synonym: *T. anomala*



Noxious Weeds



Noxious Weeds

Noxious Weed: a plant that is especially undesirable, troublesome, and/or difficult to control. All of the noxious weeds listed below are non-native species that have been introduced into North America from other continents, primarily Asia and Europe. The treatment and control of these noxious weeds is a Forest priority.

Convolvulus arvensis — Field bindweed
Cirsium arvense — Canada thistle
Euphorbia esula — Leafy spurge
Cardaria draba — Whitetop
Centaurea repens — Russian knapweed
Linaria vulgaris — Yellow toadflax
Linaria dalmatica — Dalmatian toadflax
Onopordum acanthium — Scotch thistle
Cardus nutans — Musk thistle
Arctium minus — Common burdock
Centaurea maculosa — Spotted knapweed

A key Forest objective is to maintain native plant communities and their diversity through reduction of noxious weeds, and to increase desired plant species to meet objectives of Forest Land and Resource Management Plans (LRMP).

Noxious weeds are a major concern over vast areas of the western United States, and they are spreading. Noxious weeds exist throughout the Shoshone National Forest and the trend of infestation continues to be upward, especially for infestations of Canada thistle, Musk thistle, Leafy spurge, Yellow toadflax, and Spotted knapweed. Therefore, it is important that Forest Service personnel and forest-users be able to identify these plants so that appropriate actions may be taken.

There is a need to control or eradicate undesirable plant species, designated noxious weeds and those that are declared noxious weeds on National Forest System (NFS) lands. Wyoming Weed and Pest Control Act of 1973 (W.S. 11-5-101 — 11-5-119) requires that all counties and municipal authorities develop and follow a weed management plan. Through this act, the State designates a priority list of noxious weeds requiring treatment for control.

Noxious weeds can lead to the establishment of an undesirable vegetation monotype in which plant species present can cause significant decline in watershed conditions, replace valuable forage species needed for wildlife habitat and livestock grazing. Infestations will also replace native vegetation which reduces species composition and population density, thereby reducing natural diversity. Weed infestations may also reduce recreation opportunities. Failure to control noxious weeds can significantly reduce the production of crops and desirable vegetation on adjacent private lands as well.

Noxious Weeds

Actium minus

Bernh.

Common burdock ARMI2



ASTERACEAE

Habitat: On fertile soils, but not common in cultivated areas because seed are produced the second year. It thrives in shade.

Habit: Introduced biennial.

Stems: None the first year, to 1 1/2 meters tall the second year, somewhat grooved or angular.

Leaves: A basal rosette the first year, the second year alternately up the stem, very large, dull green above, greyish underneath.

Flowers: A composite, many red-violet disc flowers, surrounded by a cup of many hooked bracts.

Fruits: The flowers dry to form a bur about 1.5cm in diameter.

Notes: Burdock burs attach themselves to livestock and wildlife and are distributed to other localities. This plant is on the noxious weed list for Wyoming.

Cardaria draba

(L.) Desv.

Whitetop, Hoary cress CADR



BRASSICACEAE

- Habitat:** Prefers alkaline or disturbed soils.
- Habit:** A perennial, reproducing from rootstock and seed.
- Stems:** Stoutish and branched toward top.
- Leaves:** Alternate, lance-shaped and slightly irregular, greyish-green, base of upper leaves clasping stem.
- Flowers:** Small, white, 4 petals; numerous flower branches and dense flowers give plant a dense, white, flat-topped appearance.
- Fruits:** Reddish-brown, granular, egg-shaped seeds contained in heart-shaped pods.
- Notes:** This plant emerges very early in the spring, making the plant very competitive with other plants. Hoary cress has bloomed and set seed by mid-summer. It reproduces by seeds, root stocks, and creeping roots.

Noxious Weeds

Carduus acanthoides

L.

Plumeless thistle CAAC



ASTERACEAE

- Habitat:** It may become abundant in pastures, meadows, and along roadsides and waste areas.
- Habit:** A winter annual or biennial, reproducing only by seed. A rosette forms the first year, flowering stem elongates the second year.
- Stems:** May be to 4 ft. tall, winged to flowering heads.
- Leaves:** Dark green with a light midrib, hair only found on the underside, leaf margin with sharp spines.
- Flowers:** Reddish-purple blooms 1/2 to 1 in. diameter, solitary, terminal or in clusters of 2 to 5. Narrow seedhead bracts spine tipped.
- Fruits:** Striped lengthwise, slightly curved, with a protrusion at one end. Pappus of smooth, unbranched white bristles.
- Notes:** Plumeless thistle form a rosette of 4 to 8 inch wavy leaves the first year, with yellow spines along the leaf margins. The plant has a stout, fleshy taproot. It may grow to 8 feet tall.

Carduus nutans

L.

Musk thistle CANU4



ASTERACEAE

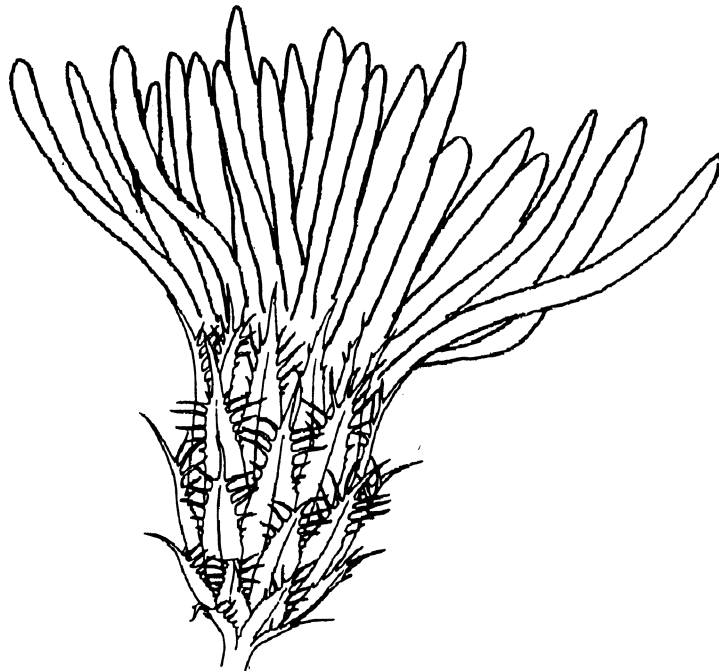
- Habitat:** An aggressive plant in pasture, range, and forest lands forming a dense monoculture.
- Habit:** A winter annual or biennial, reproducing only by seed. A rosette forms the first year, flowering stem elongates the second year.
- Stems:** Hairless, many branched, winged by leaf extensions. Stems arise from fleshy taproot, hollow near the ground surface.
- Leaves:** Dark green with a light midrib, hairless on both sides, long sharp spines.
- Flowers:** Rose to violet to purple, nodding, to 3 inches in diameter.
- Fruits:** The plant may produce in excess of 20,000 seeds.
- Notes:** Ninety percent of seeds produced may be viable and 90% of those seeds may germinate in the first two years. Seeds may germinate after 10 years in the soil. Biological agents can limit its spread, since it reproduces only by seed.

Noxious Weeds

Centaurea diffusa

Lam.

Diffuse knapweed CEDI3



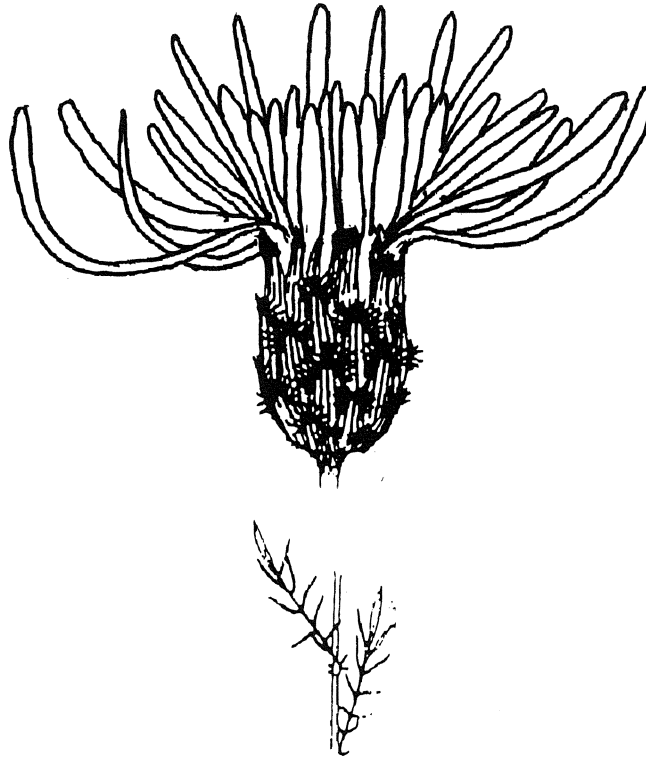
ASTERACEAE

- Habitat:** An aggressive plant in pasture, range, and forest lands forming a dense monoculture.
- Habit:** Annual or biennial, bushy. A rosette forms the first year, flowering stem elongates the second year.
- Stems:** Hairy, erect, single main stem from a rootstock, branched near or above the base.
- Leaves:** Greyish-green, alternate, basal leaves whorled, upper leaves much reduced. Covered with fine hair.
- Flowers:** Solitary, usually white, sometimes pink, rose or lavender; seedhead bracts end as sharp, rigid spines.
- Fruits:** Oblong, dark brown or grey with longitudinal lines.
- Notes:** This aggressive plant may seriously reduce productive potential of infested rangelands. There is evidence that knapweeds release a chemical substance which inhibits the growth of competing vegetation.

Centaurea maculosa

auct. no Lam.

Spotted knapweed CEMA4



ASTERACEAE

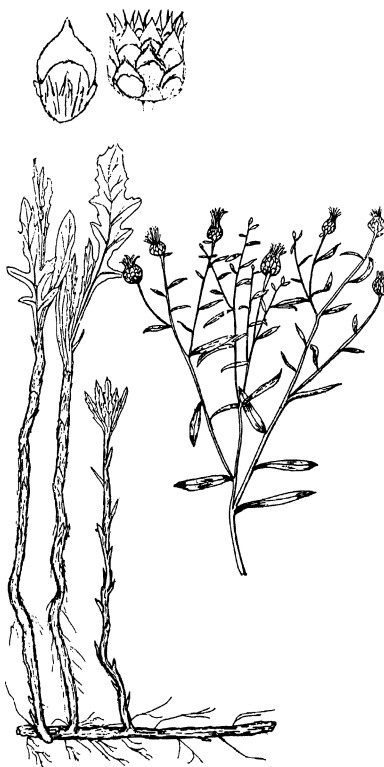
- Habitat:** A very aggressive plant on rangeland, forming dense monocultures. Readily establishes itself on disturbed soil.
- Habit:** Biennial or short-lived perennial. A rosette forms the first year, flowering stem elongates the second year.
- Stems:** Erect with slender wiry branches. Covered with fine hair.
- Leaves:** Long and divided below, short and narrow above. Covered with knap-like fine hair.
- Flowers:** Pink to purple, rarely white. Seed head bracts are black tipped, with 5 to 7 pairs of short feathery appendages.
- Fruits:** Brownish, 1/8 in. long, notched on one side of base, short tuft of bristles at tip end.
- Notes:** This aggressive plant may seriously reduce productive potential of infested rangeland for wildlife and livestock. Poisonous to horses.

Noxious Weeds

Centaurea repens

L.

Russian knapweed CERE6



ASTERACEAE

Habitat: Russian knapweed establishes colonies in cultivated fields, orchards, pastures, and roadsides. Aggressive.

Habit: Perennial, clumps up to 3 feet tall.

Stems: Numerous branched, each ending with a single flower.

Leaves: Lower leaves deeply divided, reduced in size toward the top, with upper leaf margins entire or serrated. Covered with knap-like fine hair.

Flowers: Pinkish-purple ray flowers with bracts that are rounded with papery tips, solitary at tips of leafy branches.

Fruits: Flattened, ivory colored, retained in cup-shaped seed heads.

Notes: Russian knapweed is usually avoided by animals because of a bitter quinine-like taste. Avoid picking without gloves. It may be carcinogenic. Poisonous. Reproduces by seeds and adventitious shoots from spreading black roots.

Cirsium arvense

(L.) Scop.

Canada thistle CIAR4



ASTERACEAE

- Habitat:** Prefers moist, rich soils and is a problem on cropland, meadows, and rangeland.
- Habit:** Perennial, erect, up to 4 feet tall.
- Stems:** Smooth to slightly hairy, branched at top.
- Leaves:** Varies from light to dark green, oblong or lance shaped, deeply cut, spiny toothed margins (some may be smooth), slightly hairy below. Tremendous leaf variability.
- Flowers:** Small bristly cluster, 3/8 to 5/8 inch in diameter, light lavender to deep rose purple. Plants are male or female.
- Fruits:** Smooth, light to dark brown, tipped by a cupped conical point, approximately 1/8 in. long.
- Notes:** The underground rootstalks are deep and spread in every direction, allowing one plant to be able to cover an area 6 meters across in just two years. Not usually grazed by livestock.

Noxious Weeds

Euphorbia esula

L.

Leafy spurge EUES



EUPHORBIACEAE

- Habitat:** Grows in nearly all soil types and habitats.
- Habit:** Perennial, erect, up to 3 feet tall.
- Stems:** Branched near top, hairless, entire plant contains milky sap.
- Leaves:** Alternate, long, narrow, 1/4 in. wide and 2 in. long, usually drooping.
- Flowers:** Inconspicuous, surrounded by large heart-shaped floral leaves which turn yellow-green near maturity.
- Fruits:** Oblong, greyish to purple, contained in a 3-celled capsule, each cell containing a single seed.
- Notes:** It has been reported to cause severe irritation of the mouth and digestive tract in cattle which may result in death. Capsules explode when dry, often projecting seeds as far as 15 feet. Roots may reach depths of 14 feet and pink buds form new shoots on roots and root crowns.

Hyocyamus niger

L.

Black henbane HYNI



SOLANACEAE

- Habitat:** Common to pastures, fencerows, roadsides, and waste areas.
- Habit:** Annual or biennial, 1-3 feet tall.
- Stems:** Erect and branched.
- Leaves:** Alternate, coarsely toothed, shallowly lobed, very hairy. Foliage has a foul odor.
- Flowers:** Long racemes of large, 1 to 2 inch brownish-yellow flowers with purple centers and purple veins.
- Fruits:** Seeds are tiny, black; hundreds in 1 inch long pineapple-shaped or vase-shaped seed capsules.
- Notes:** All parts of this plant are toxic. Alkaloids contained with the plant are poisonous to livestock. The plant is usually not grazed because of its unpleasant taste and smell. It is considered poisonous to humans as well.

Noxious Weeds

Hypericum perforatum

L.

Common St. Johnswort HYPE



HYPERICACEAE

- Habitat:** Sandy or gravelly soils, disturbed areas.
- Habit:** Perennial, erect.
- Stems:** Woody at base, 1 to 3 feet tall, rust colored, with 2 ridges.
- Leaves:** Opposite, attached directly to stem, 1 inch long, oblong, covered with transparent dots.
- Flowers:** Yellow, 3/4 in. diameter, numerous in flat-topped clusters, five petals with numerous stamens.
- Fruits:** Seeds are small, shiny black, with rough texture in a round, pointed, three-part seed pod.
- Notes:** Although St. Johnswort is fairly palatable, it is considered a poisonous plant. The plant contains a toxic substance which causes white-haired animals to become allergic to strong sunlight. Irritations and sores may develop which may be fatal for the animal.

Linaria dalmatica

(L.) P. Mill.

Dalmatian toadflax LIDA



SCROPHULARIACEAE

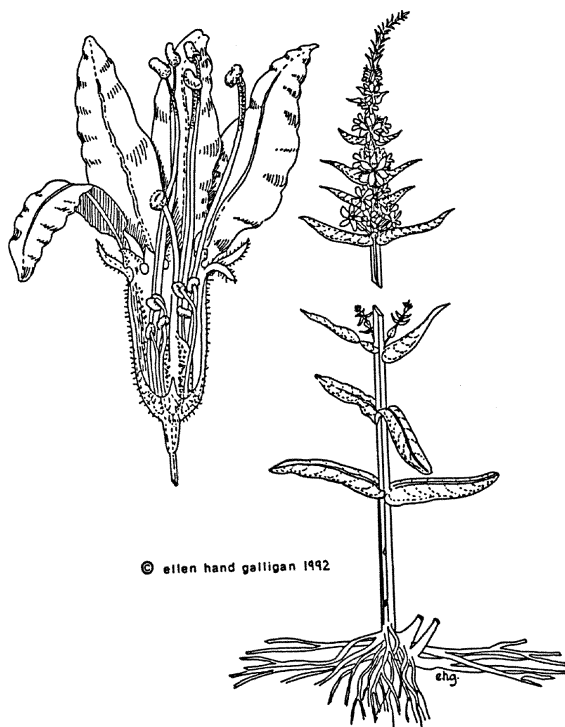
- Habitat:** May be found in almost all soil types, especially where rocky or gravelly.
- Habit:** Perennial, often over 3 feet tall.
- Stems:** Branching, light green, smooth and leafy.
- Leaves:** Light green, alternate, broad, heart-shaped, clasping the stem. Leaves are waxy.
- Flowers:** Snapdragon type, bright yellow, tinged with orange, to 1 1/2 in. long spur, born in upper leaf axils.
- Fruits:** Seeds are tiny, black; hundreds in 1 inch long pineapple-shaped or vase-shaped seed capsules.
- Notes:** This plant spreads by seeds or extensive creeping roots. Mature plants may produce over 200,000 seeds. Seeds may be spread by livestock or wildlife.

Noxious Weeds

Lythrum salicaria

L.

Purple loosestrife L YSA2



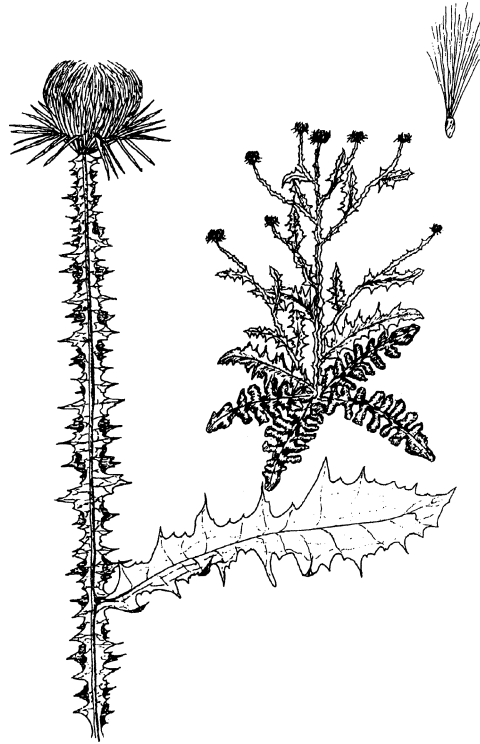
LYTHRACEAE

- Habitat:** Aquatic sites: streambanks or shorelines of shallow ponds moist, marshy areas.
- Habit:** Perennial, often up to 8 feet tall.
- Stems:** Branched terminating in flowering stalks.
- Leaves:** Simple, lance-shaped, smooth margins, opposite or whorled.
- Flowers:** Rose-purple flowers having 5 to 7 petals and numerous stamens, in long, vertical racemes.
- Notes:** Infestations can become dense and impede water flow in canals and ditches. Syn. Purple lythrum.

Onopordum acanthium

L.

Scotch thistle ONAC



ASTERACEAE

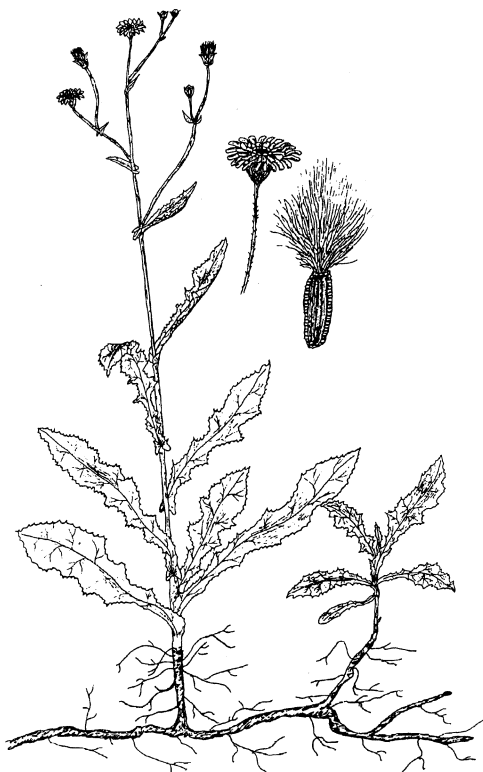
- Habitat:** Along waste areas and roadsides.
- Habit:** Biennial, up to 12 feet tall.
- Stems:** Erect, branching, spiny leaf wings extend down onto stem, covered with dense fine hairs.
- Leaves:** Large, coarsely lobed, hairy on both sides, velvety grey appearance. Margins lined with sharp conspicuous spines. Basal leaves up to 2 ft. long and 1 ft. wide.
- Flowers:** Solitary, terminal, 1 to 2 inches in diameter, violet to reddish colored. Bracts spine tipped.
- Notes:** Scotch thistle is an aggressive plant and may form a stand so dense that they are impenetrable to livestock. Scotch thistle is best controlled in the rosette stage. Syn. Cotton thistle.

Noxious Weeds

Sonchus arvensis

L.

Perennial sowthistle SOAR2



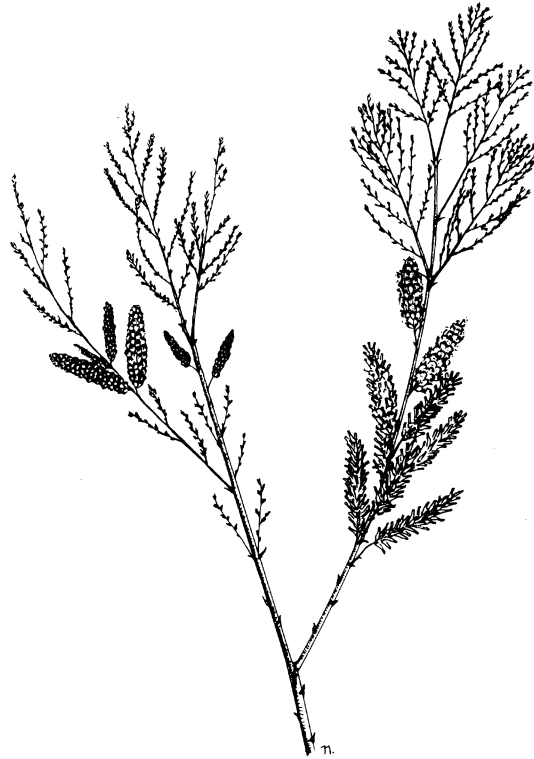
ASTERACEAE

- Habitat:** Found along ditchbanks, and fertile waste areas where adequate water is available.
- Habit:** Perennial, up to 4 feet tall.
- Stems:** Erect, finely grooved, hollow between joints, milky juice.
- Leaves:** Prickly serrations on margins, may be deep lobed, narrow at base. Upper leaves clasp stem. Alternate, usually crowded on lower 1/2 of stem.
- Flowers:** Brightly yellow, flat topped, clustered, 1-2 inches in diameter.
- Fruits:** Reddish brown, 1/8 in. long, 5 to 7 lengthwise ribs.
- Notes:** Reproduces by seed and creeping roots. Perennial sowthistle may be distinguished from marsh sowthistle (*S. arvensis uliginosus*) by the gland-tipping hairs on the flowering stalks and bract of perennial sowthistle. The sowthistles invade irrigated meadows and bottomlands, and do well on nitrogen rich soil.

Tamarix chinensis

Lour.

Saltcedar, Tamarisk TACH2

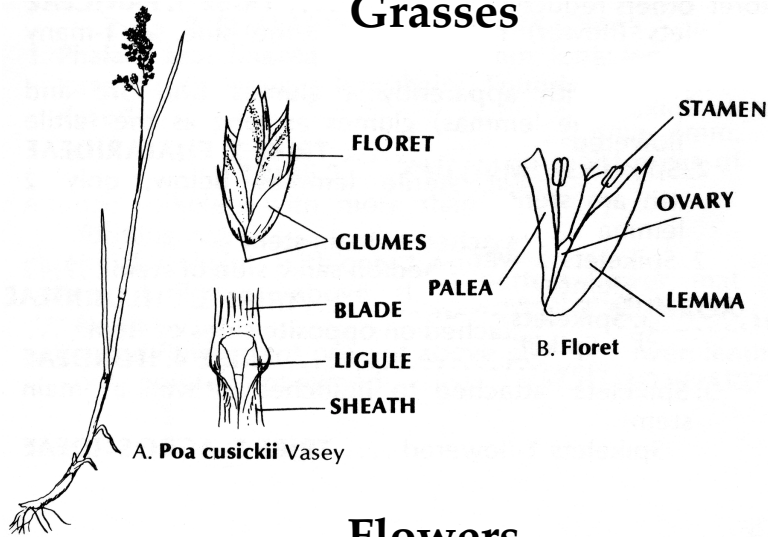


TAMARICACEAE

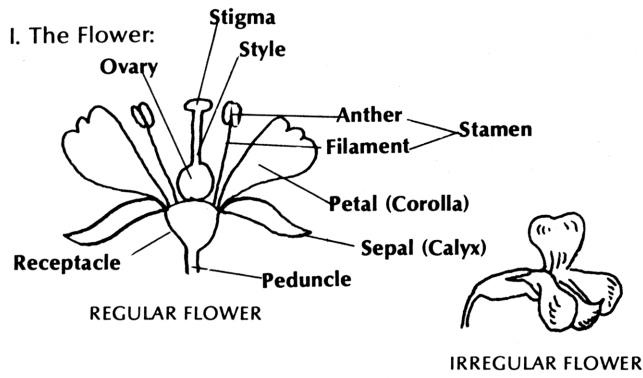
- Habitat:** Escaped ornamental that has become naturalized along streams, canals, and reservoirs.
- Habit:** Perennial deciduous or evergreen shrub or small tree, up to 20 ft. tall.
- Stems:** Bark on saplings and stems is reddish-brown.
- Leaves:** Small and scale-like, alternate, resembling a juniper, on highly branched slender stems.
- Flowers:** Bisexual, regular, in spike-like racemes; sepals 5, separate; petals 5, pinkish or rarely whitish, separate; stamens 5; pistil 1; ovary superior; style 1; Pink to white, 5-petalled.
- Fruits:** A capsule.
- Notes:** Listed as a noxious weed in 1998 by the State of Wyoming.

Plant Parts

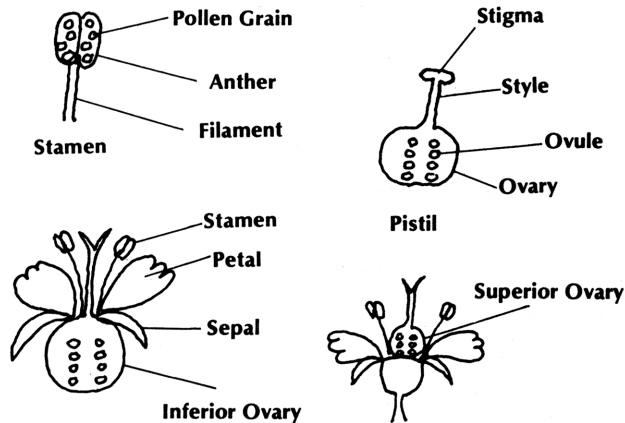
Grasses



Flowers

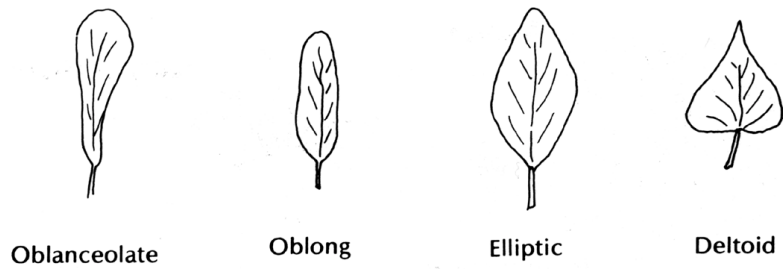
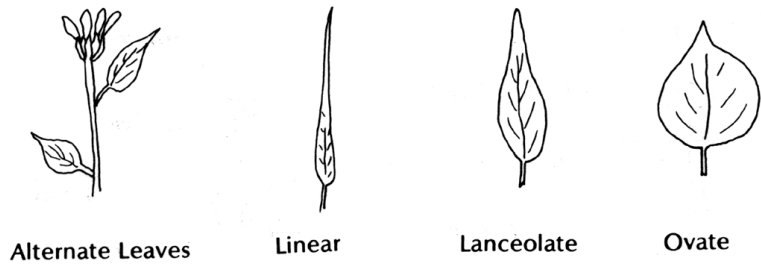
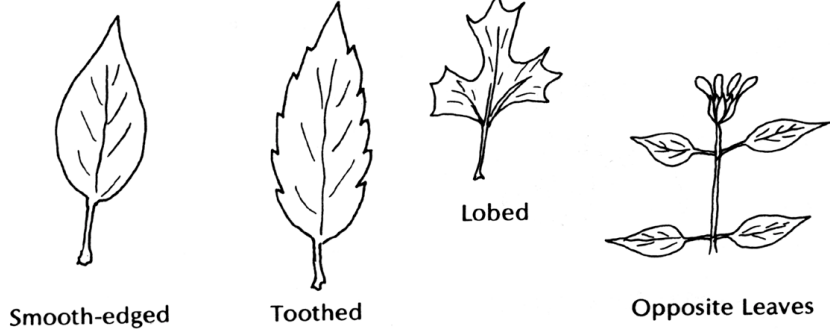
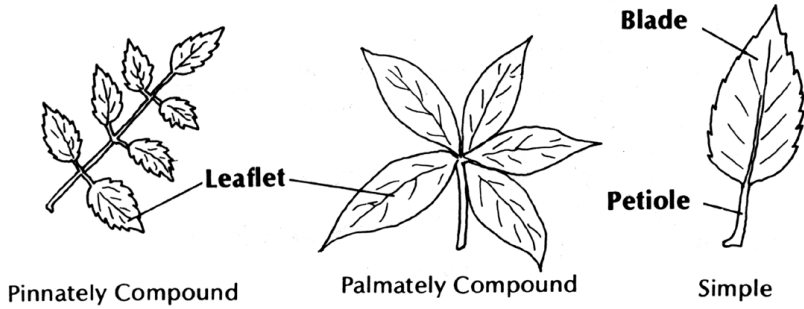


II. The Stamen and Pistil:



Leaves

III. The Leaf:



Drawings by Dr. Earl Jensen

Glossary

- achene:** A small, hard, one-seeded, dry fruit.
- acuminate:** Gradually tapering to a narrow tip or sharp point.
- acute:** Sharp pointed.
- alternate:** Borne singly along a stem, not opposite.
- androgynous:** Having the staminate flowers above the carpellate ones, and in the same spike.
- annual:** A plant that germinates, flowers, and seeds in a single growing season or less than one year.
- apical:** At the tip or top.
- appressed:** Lying close and flattened to surface.
- auricle:** An appendage on the top margin of grass leaf sheaths.
- awn:** Generally, a slender terminal bristle.
- axil:** The point of the angle formed by the leaf or petiole with the stem.
- axillary:** Occuring on the axils.
- basal:** At or near the base.
- biennial:** A plant that completes its life cycle and dies in 2 years.
- bract:** A very small or modified leaf, usually growing at the base of a flower or flower cluster.
- bracteole:** A secondary bract or small bract.
- caespitose:** Growing in dense, low tufts.
- calyx:** The outer circle of flower parts made up of sepals.
- capillary:** Slender and thread-like.
- catkins:** A scaly, bracted spike of usually unisexual flowers.
- caudex:** A short vertical, often woody, persistent stem at or just beneath the ground surface.
- cauline:** Of or pertaining to the stem.
- ciliate:** Fringed with hairs on the margin.
- clasp:** To surround the stem.
- cordate:** Shaped like a stylized heart, notched at the base.
- crenate:** Provided with rounded teeth; scalloped.
- culm:** The aerial stem of a grass, sedge, or other grass-like plants.
- cyme:** A flat-topped flower cluster; the flowers opening from the center outward.
- deciduous:** Falling after completion of the normal function; not persistent.
- decumbent:** With a prostrate or curved base and an erect or ascending tip.
- dehiscent:** Splitting open along regular lines.
- dentate:** With spreading pointed teeth.
- digitate:** With similar structures radiating from the same point.
- dimorphic:** With two forms.
- dioecious:** Producing male and female flowers on separate plants.
- dorsal:** The back or outer surface; side away from the axis.
- entire:** Not toothed or otherwise cut.
- erose:** Irregularly fringed or cut; ragged.
- exfoliate:** Peel off in thin layers or strips.

filament: The stalk of a stamen which supports the anther.

follicle: Dry fruit of one carpel, which opens along seed-bearing suture at maturity.

glabrate: Nearly glabrous, becoming glabrous.

glabrous: Smooth, without hairs or glands.

glandular: With secreting organs which produce small droplets of secretion, often at tips of hairs.

glaucous: Covered with a powdery or waxy substance, a whitish bloom easily rubbed off.

herbaceous: Adjectival form of herb; also, leaflike in color or texture, or not woody.

hispid: With stiff, bristly hairs.

hispidulous: Minutely hispid.

hypanthium: Tube or cup from base or tip of ovary to point of apparent attachment of sepals, petals, and stamens, found only in epigynous and perigynous flowers.

inflorescence: A flower cluster.

infrastipular: Prickle is just beneath stipule or closest to stipule.

internode: The part of a stem or branch between adjacent joints or points of attachment for leaves or branches.

involucral bracts: A set of bracts surrounding a flower cluster.

lanceolate: Lance-shaped.

lemma: One of two bracts (lemma & palea) subtending the individual flowers in grass spikelets; may be awned.

lenticel: A slightly raised area in the bark of a stem or root.

ligule: The termed applied to the flattened part of the ray corolla in the Asteraceae and to the appendage on the inner (upper) side of the leaf at the junction of the blade and sheath in many Poaceae and some Cyperaceae.

linear: Long and narrow, with parallel edges.

membranous: Thin and flexible, like a membrane.

nodulose: With small swellings.

nutlets: Hard, small, non-split, one-sided fruit.

oblanceolate: Widest well above midlength, inversely lanceolate.

obtuse: Blunt or with the sides forming an angle greater than 90 degrees.

orbicular: Essentially circular in outline.

palmete: With three or more lobes, nerves, leaflets, or branches arising from a common point.

panicle: A branched, indeterminate inflorescence resembling a raceme whose rachis is branched to varying degrees.

pappus: Modified calyx in flowers or Asteraceae, consisting of bristles, scales, awns, or a short crown at tip of achene.

pedicel: The stalk of an individual flower.

peduncle: Stalk of strobilus or inflorescence (cluster of flowers); stalk of a flower when only 1 per plant.

pendent: Hanging downward.

perennial: A plant capable of living through more than two growing

seasons and producing seeds for more than one year.

perianth: Petals and sepals of a flower together.

persistent: Remaining attached.

petiole: A leaf stalk.

pubescent: With long, soft hairs.

pinnate: Leaflets arranged along each side of the common petiole of a compound leaf.

pistillate: A flower with one or more pistils, but no stamens.

pith: The softer, central part of a twig or stem.

prostrate: Lying flat on the ground; may root at the nodes.

pruinose: With a bluish-white bloom on the surface that can be easily rubbed off.

puberulent: Minutely pubescent, usually fine, short, loose hairs.

pubescent: Covered with short, soft hairs.

raceme: An elongate inflorescence with stalked flowers arranged along a central stem.

rays: A branch or stalk; flower of Asteraceae with a strap-shaped corolla, usually on margins of head when disk flowers also are present.

recurving: Curving downward or backward.

reflex: Bent backward or downward.

reniform: Kidney-shaped.

retorse: Directed downward or backward.

revolute: Margin rolled toward underside.

rhizome: A creeping, underground stem.

rosette: A circular cluster of leaves, usually at the ground level.

rugose: Wrinkled.

samara: Dry, non-split, winged fruit as in maple, elm, and ash.

scabrous: Rough to the touch like sandpaper, usually from very short, stiff hairs.

scarious: Dry, thin, membranous, and translucent, not green.

sepal: One of the segments of the calyx, typically green or greenish and leafy in texture.

serotinous: Late in bearing or opening.

serrate: Toothed along the margin with sharp, forward-pointing teeth.

sessile: Attached directly by the base, without a stalk.

sheath: An organ that partly or wholly surrounds another organ, such as a sheath of grass leaf surrounding the stem.

spicate: Arranged in a spike.

spike: An elongate flower cluster with sessile flowers arranged along a central stem.

spikelet: The small spike of a grass consisting of glumes and enclosed florets; bracteate inflorescence or portion of inflorescence in the Cyperaceae.

stamen: The male organ of a flower, consisting of a slender stalk (filament) and a knoblike, pollen-bearing tip (anther).

staminate: A flower with one or more stamens, but no pistil.

stipule: A small leaflike growth at the base of a leaf stalk.

stoloniferous: Bearing stolons (an elongate creeping stem on or above the surface of the ground).
stomata: Specialized openings in leaf surfaces that allow movement of gases.
style: Stalk-like part of pistil between ovary and stigma.
subtended: To occur below.
succulent: Thick and fleshy.
taproot: The primary descending, usually fleshy root.
tendrils: A slender, coiling organ used for climbing or support.
terminal: The end or tip.
tomentose: Covered with tangled or matted, woolly hairs.
trifoliolate: With three leaves; with three leaflets.
trigonous: Three angled.
truncate: Horizontal as if cut off.
umbel: A flat-topped flower cluster in that all the flower stalks radiate from the same point, like the ribs of an umbrella.
vegetative: A non-reproductive part of a plant.
venation: System or pattern of veining.
whorl: Arranged in a circle around a central point.
xeric: Characterized or pertaining to conditions of scanty moisture supply.

Definitions for this glossary were derived from C. L. Hitchcock and Cronquist 1973; Johnson, F. D. 1983; Lee and Pfister 1978; and Newcomb 1977. Robert D. Dorn 1992, and R. A. Nelson 1992. Earl Jensen 1987.

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Douglas fir	15	Perennial sowthistle	170
Drummond's rush	126	Pinegrass	113
Dusky willow	54	Pink agoseris	138
Dwarf clover	103	Plains cottonwood	13
Eastwood willow	52	Planeleaf willow	58
Elephanthead	98	Plumeless thistle	158
Engelmann spruce	7	Prairie junegrass	127
False Solomon's seal	96	Prairie or Louisiana sage	75
Farr willow	55	Prickly rose	46
Fireweed	83	Purple loosestrife	168
Flattop pussytoes	71	Quaking aspen	14
Fragrant bedstraw	88	Red manzanita	140
Fremont bladderpod	145	Redtop bent	110

Redtop bent	110
Richardson's geranium	89
Rocky Mountain maple	18
Rocky Mountain ninebark	39
Rocky Mountain sage	76
Rolland's bulrush	151
Ross sedge	118
Round-leaved orchid	139
Russian knapweed	162
Saltcedar, Tamarisk	171
Sandberg bluegrass	131
Scotch thistle	169
Serviceberry	21
Shoshonea	152
Showy aster	78
Shrubby potentilla, Shrubby cinquefoil	40
Silver sagebrush	23
Sitka alder	20
Skunkbush sumac	43
Slender wheatgrass	109
Slough sedge	114
Smallwing sedge	116
Smooth brome	111
Spike trisetum	135
Spikerush	121
Spiraea	63
Spotted knapweed	161
Sticky geranium	90
Subalpine fir, alpine fir	6
Tall mountain larkspur	82
Thickspike wheatgrass	106
Thinleaf alder	19
Three-tip sagebrush	30
Tufted hairgrass	120
Twinflower	36
Twisted stalk	100
Upward-lobe moonwort	141
Washington lupine	95
Water birch	32
Water sedge	115
Wax currant	44
Weedy milkvetch	79
Western meadow rue	101
Western wheatgrass	107
Whitebark pine	8
Whitetop, Hoary cress	157
Wild Strawberry	87
Wire rush, Baltic rush	125
Wolf willow	59
Wood's rose	47
Woolly pussytoes	72
Wyoming big sagebrush	29
Wyoming tansymustard	143
Yellow willow	53

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