

SENSITIVE PLANT SPECIES

Barneby Woody Aster (*Aster kingii* var. *barnebyana*)

Barneby's woody aster is a member of the sunflower family (Asteraceae) and it grows from a well-developed taproot. There are persistent blackish or dark brown, old leaf bases at the base of the plant. The stems are short (3-12 cm long) and the herbage is covered with glandular hairs. The leaves are basal, 0.8-12 cm long, and oblanceolate to spatulate in shape with 1-10 pronounced teeth. Flowers occur in clusters of 1-5, standing 8-11 mm high. The inner bracts are often purplish and at least the outer tips are bent backward. The ray flowers are white, often fading to pale pink. This plant flowers between August and September.

This species is found in mountain mahogany and oak communities on rock outcrops composed of Precambian quartzite. This endemic species of the Canyon Mountains in Millard and Juab Counties, Utah has been reported in 15 element occurrence records as of 2002 (Madsen 2002). These scattered occurrences indicate a total population of 600+ plants. The range of elevation is between 7,500 and 9640. Major associated species are *Holodiscus dumosus* (Mountain spray), *Huechera rubescens* (Red alumroot), *Symphoricarpos oreophilus* (Mountain snowberry), *Quercus gambelii* (Gambel's oak), and *Eriogonum brevicaulis* (Shortstem buckwheat) (Franklin 1990).

To date there are 15 known occurrences of this species on the Fillmore Ranger District of the Fishlake National Forest (Franklin 1990). Plants are harbored from threats such as livestock grazing by their occurrence on steep rock outcrops.

Bicknell milkvetch (*Astragalus consobrinus*)

The Bicknell milkvetch is a member of the pea family (Fabaceae). *A. consobrinus* is very small forming tufts of silver gray foliage 3-20 cm in diameter and 1-5 cm tall, essentially lacking stems. The leaves with 3-11 leaflets are densely hairy on both sides. Flowers occur 2-7 per stem. The sepals are whitish, sometimes faintly pinkish tinged. Flowering occurs from mid May to mid-July with hairy pods produced later. The pods are 11-19 mm long, ovoid, and straight with a triangular beak. This species is found only on volcanic gravel, gravelly or sandy knolls, barren stony hillsides, cobblestone bluffs, and outwash fans on sandstone and volcanic debris. It appears in desert shrub, pinyon-juniper and sagebrush communities between 5200-9000 feet elevation. This plant flowers between May and July.

It is located on the upper forks of the Sevier River and the east slope of the Utah Plateaus from southeast Emery and Sevier to southwest Garfield Counties, Utah (Sphar et al. 1991). It occurs in Sevier, Wayne, Piute, Garfield, and Emery Counties.

To date there are 13 known occurrences of Bicknell Milkvetch located on the Fishlake National Forest. These all occur on the Loa Ranger District (Madsen 2002).

Tushar paintbrush (*Castilleja parvula* var. *parvula*)

Tushar paintbrush is a member of the figwort family (Scrophulariaceae). Its many stems reach between 5 and 15 cm in height and support lanceolate leaves, which are 1-2 cm long. The flowers are subtended by showy bracts that range from crimson to magenta in color. The flowers appear June to August with crimson-fringed, green petals. Capsules break open to allow dispersion of seeds by wind or gravity.

This subspecies is distributed almost exclusively through the alpine meadows and igneous rock beds of the Tushar Mountains between 10,000 and 12,100 feet. This location is under the jurisdiction of the Beaver Ranger District of the Fishlake National Forest (Spahr et al 1991). It occurs only in Beaver and Piute Counties. This species is one of several *Castilleja* species that occupy narrow ecological and edaphic sites. Mining claims and mineral exploration have impacted habitat of this plant. There is evidence of grazing on *Castilleja parvula* var. *parvula* but the impact of this activity is not known. It's high elevation; steep habitat makes it relatively free from disturbance.

Castilleja parvula var. *parvula* only occurs on the Beaver Ranger District of the Fishlake National Forest. There are currently 43 known occurrences on the Fishlake National Forest (Madsen 2002). The species has been found to be very locally common although it is very geographically restricted.

Pinnate spring-parsley (*Cymopterus beckii*)

Pinnate spring-parsley is a member of the carrot family (Apiaceae). It extends from a taproot with a simple or sparingly branched crown, which often has marcescent leaf bases. Plants in general are 0-4 dm tall, glabrous, weakly aromatic, and caulescent with leaves extending up the stem. Leaves are 1-2 pinnate, with 2-3 opposite pairs of lateral leaflets, or the upper ones ternate. Umbels 1-3 per stem, involucre lacking. Petals and stamens are bright yellow when fresh, fading to white as they dry (Welsh et al. 1993).

Pinnate spring-parsley can be distinguished from the closely related *C. lemmoni*. *Cymopterus beckii* has entire leaflets, glabrous peduncles and rays, and slightly longer fruit.

Pinnate spring-parsley is found in cliff crevices or sandy canyon bottoms of Navajo Sandstone and Cutler formations. Common associate plants species include *Cercocarpus intricatus* (Little-leaf mountain mahogany), *Pinus edulis* (Pinyon pine), *Juniperus osteosperma* (Utah Juniper), and *Clematis ligusticifolia* (Virgin-bower). *C. beckii* typically grows between 5,500 and 7,000 feet elevation. At the lower elevation, pinnate spring-parsley is restricted to north-facing, shady slot canyons in Navajo Sandstone. Pinnate spring-parsley is found in less protected areas such as cracks and crevices of sandstone domes at higher elevations (Clark 2002).

Pinnate spring-parsley is an endemic of San Juan and Wayne counties. Currently there are 7 known populations of *C. beckii* on the Loa Ranger District of the Fishlake National Forest containing approximately 2,800 – 217,000 individuals. (Clark 2002).

Creeping Draba (*Draba sobolifera*)

Creeping Draba is a member of the mustard family (Brassicaceae). It has a branched caudex with relatively tall, slender flower stalks with one or no leaves. The obovate leaves, primarily basal, are up to 2 cm long and covered with star-shaped hairs. Flowering July-August, this draba sports on each stalk 5-20 yellow flowers with petals measuring 4-5 mm long. The fruit is a silicle up to 8 mm long with 4-12 seeds. This species flowers between July and August.

The creeping draba grows mostly on igneous gravels and talus as a member of alpine tundra or spruce-fir communities between 10,000 and 12,000 feet on the Tushar Mountains southwest of Marysvale, Utah.

Activities associated with mineral exploration and extractions have impacted the species (Spahr et al. 1991). This species is not affected by grazing as it occurs in igneous soils and on talus slopes where livestock grazing does not occur (Atwood et al. 1991).

Creeping draba is known from 23 occurrences on the Beaver Ranger District of the Fishlake National Forest (Madsen 2002). It is also reported to be on the Markaguant Plateau, Dixie National Forest. Further efforts to pin point a known location for the Dixie National Forest are necessary.

Nevada willowherb (*Epilobium nevadense*)

Nevada willowherb is a member of the evening primrose family (Onagraceae). Nevada willowherb is shrubby with persistent, woody branches and a stout taproot. The stems are more or less upright, leafy, and 15-40 cm tall. The leaves are narrow mostly alternate, 4-30 mm long and folded. There are few to several flowers in a terminal cluster. The hypanthium is 2.0-4.5 mm long. The sepals are 2-4 mm long and purplish, with united 4 lobed 5.0-7.5 mm long pink and purple petals (Spahr et al. 1991). This species flowers from late June through September.

Preferred habitat for this species includes pinyon-juniper and mountain brush communities on limestone cliffs and gravels at the base of cliffs in locations of 7000-9200-foot elevation in Millard and Washington counties, Utah. Common associates of the Fishlake National Forest populations include *Holodiscus dumosus* (Mountain spray), *Quercus gambelii* (Gambel's oak), *Heterotheca villosa* (Hairy goldenaster), *Elymus spicatus* (Bluebunch wheatgrass), *Haplopappus watsonii* (Watson's goldenbush), *Cercocarpus ledifolius* (Curl-leaf mountain mahogany), *C. montanus* (Alder-leaf mountain mahogany), *Artemisia tridentata* (Big or common sagebrush), *Pinus edulis* (Pinyon pine), *Juniperus osteosperma* (Utah Juniper), and *Eriogonum brevicaulis* (Shortstem buckwheat).

Little is known about this species. Livestock and wildlife grazing, and off-road vehicle use could threaten populations. Few roads exist in areas where this species is found. Populations often occur on Precambrian quartzite parent material.

Presently there are 9 occurrences of Nevada willowherb on the Fillmore Ranger District of the Fishlake National Forest (Madsen 2002). These records indicate a total population size of 450+ plants for the Fishlake National Forest. While concentrated in the Canyon Mountains on the Fishlake National Forest, this Utah/Nevada endemic has a fairly large overall distribution.

Elsinore buckwheat (*Eriogonum batemanii* var. *ostlundii*)

Elsinore buckwheat is a member of the buckwheat family (Polygonaceae) that grows 2-4 dm tall. The stems are glabrous, slender, and erect with 1-5 branched flowering stalks. The leaves are basal, elliptic to spatulate, 1-3 cm long, and white tomentose underneath. The flowers are 1.5-2.3 mm long and white in coloration (Spahr et al. 1991). This species flowers between July and September.

E. batemanii var. *ostlundii* is a long-lived perennial that flowers from July to September. Fruit consists of several achenes pale brown in color and 2.5-3.0 mm long (Spahr et al 1991). It prefers igneous outcrops and gravels in shadescale, sagebrush, ponderosa pine, mixed desert shrub, and pinyon-juniper communities between 5,495 and 6,512 feet in elevation (Atwood et al 1991).

This sensitive plant is endemic to Piute and Sevier Counties in central Utah (Madsen 2002). Presently, there are 4 known occurrences on the Richfield Ranger District, 7 known occurrences on the Fillmore Ranger District, and 3 known occurrences on the Beaver Ranger District of the Fishlake National Forest. Thirteen known occurrences exist on private, State, and BLM administered lands within one mile of the Fishlake National Forest boundary (Madsen 2002).

Rabbit Valley Gilia (*Gilia caespitosa*)

Rabbit Valley Gilia, a member of the phlox family (Polemoniaceae), grows in clumps from a taproot and branching caudex. It is clothed with persistent leaf bases and is terminated in rosettes of leaves (Spahr et al. 1991). Herbage is glandular, often with adherent sand grains (Atwood et al. 1991). The basal leaves are oblanceolate to linear and 3-20 mm long. Flowering stems (3-8 cm tall) are solitary or few to several per stalk. The petals are scarlet, fading maroon or blue-purple with a 9-17 mm long tube (Spahr et al. 1991). Flowering occurs from June through July with seed set in late July into the end of August.

Rabbit Valley Gilia is associated with cliffs, ledges and exposed outcrops, representing eroded or detrital Navajo and Wingate Sandstones. Plants occur in full sun or in shady canyons, on exposed sandstones, cliff walls, to less commonly sandy wash bottoms between 5,200-8,500 feet elevation. This Gilia occurs in association with open pinyon-juniper woodlands, which are often mixed with some elements of mountain brush, sagebrush steppe or ponderosa pine forests (USDA et al. 1996).

The Rabbit Valley Gilia is restricted to scattered occurrences from the northern Waterpocket Fold to Thousand Lakes Mountain and Rabbit Valley in Wayne County, Utah. This species is a narrow endemic, known only from unstable and faulting soils.

Threats to this species include off-road use, recreational use, road and trail building/maintenance, mining, pesticide use, collection, disease and predation (USDA et al. 1996). Collection for commercial and personal use is thought to be the primary threat to this species. Rabbit Valley Gilia is not affected by grazing as it occurs on Carmel Limestone and Navajo sandstone on steep slopes, where cattle grazing does not occur (Atwood et al. 1991).

Rabbit Valley Gilia is only known to occur in 4 populations on the Loa Ranger District of the Fishlake National Forest. Recent changes in plant nomenclature have suggested that *Gilia caespitosa* be called *Aliciella cespitosa* (Wonderland alice-flower). The name *G. caespitosa* will be retained until a change in *A Utah Flora*.

Fishlake naiad (*Najas caespitosa*)

The Fishlake naiad is a member of the water nymph family (Najadaceae). This species is a submersed aquatic plant. Stems are stout and densely branching, 2-5 cm long. Leaves are narrow and linear, 0.3-1.0 cm long with scattered minute spines. Male florets are 2.0-2.5 mm long with a single, 1-celled anther, while female florets are 2.0-2.5 mm long with 3 unequal stigmas (Sphar et al. 1991). This species flowers and fruits in July-August, with narrow, elliptic, 2.0-2.5 mm long shiny, smooth seeds.

This naiad prefers habitats in shallow water of 12 inches or less with sand or gravel bottoms, 8800 feet elevation. In addition this species is endemic to Pelican Point, Fishlake, in Sevier County, Utah (Atwood et al. 1991, Welsh et al. 1993).

The only known population of this species is located on the Loa Ranger District of the Fishlake National Forest, however, presence of this species has not been verified since the type collection of 3 August 1940.

Little Penstemon (*Penstemon parvus*)

A member of the figwort family (Scrophulariaceae), little Penstemon, also called Aquarius Penstemon, has several stems, 5-10 cm tall, from a relatively long, slender root system. The leaves are green, obscurely veined, 2.0-2.5 cm long, and reduced in size upwards. The flowering stalk has 1-2 whorls consisting of 1-2 single flowered branches. The sepals are 4 mm long with fine glandular hairs. The petals are blue and 20 mm long, with soft, straight hairs. Little Penstemon flowers bloom from June through August. The fruit is a several-seeded capsule, and is set within 8-12 days of flowering.

Little Penstemon grows in sagebrush-grass, pinyon-juniper, and spruce communities on tertiary volcanic gravels in sandy, gravelly loam at elevations between 8200 and 11,500 feet. It is endemic to Utah in Piute, Garfield, and Wayne counties and apparently endemic to the Fishlake and Dixie National Forests (Atwood et al. 1991).

There are 10 known populations of this species on the Loa Ranger District of the Fishlake National Forest. Estimates for the populations put *P. parvus* numbers between 1,000+ individuals on the Loa District. The species was surveyed for on the Monroe Mountain Ranger District in 2001, but not found at that time.

Reclamation projects, roads, and excessive grazing in the past, currently threaten this species' survival (Spahr et al. 1991). This plant is affected by sheep grazing but not by other animals.

Ward's beardtounge (*Penstemon wardii*)

Ward's beardtounge is a member of the figwort family (Scrophulariaceae). *P. wardii* has stems that are 1-3 cm tall and covered with small rough hairs. The leaves are opposite, thick, and oblong to oblong-lanceolate. Basal leaves are 3.0-9.8 cm long. The flowers are large, blue purple, and 21-25 mm long (Sphar et al. 1991). Flowering for this species occurs from May-July. The 12-14 mm long capsule produces seeds 2.2-3.0 mm long, with plants long lived.

This species prefers habitats in the desert shrub, pinyon-juniper, sagebrush, shadscale, and greasewood communities on the Bald Knoll and Arapien Shale formations at the 5200-6810 feet elevations (Atwood et al. 1991).

Increased utilization of gypsum will tend to reduce the habitat availability and population size of this species. Gypsum mining has and may continue to pose the major threat to endemic plants on the Arapien Shale Formation. (Sphar et al. 1991).

Ward's beardtounge can be found in Sanpete and Sevier counties, Utah and presently, is known to occur on all districts of the Fishlake National Forest in 29 known occurrences (Madsen 2002).

Arizona willow (*Salix arizonica*)

The Arizona willow (Salicaceae) is a small shrub up to 2 meters tall that can be scraggly, rounded, prostrate or thicket formed (Galeano-Popp 1988). Leaves, 1-5 cm long and 0.3-3 cm wide, are rounded or nearly heart-shaped at the base, with fine-toothed margins. The current year's stems are bright red but become lighter as the season progresses. Stems commonly have 2-6 leaves (USFWS 1992a). Male catkins are 1-3 cm long, with brown to black pubescent scales and female catkins are between 1-4 cm long. This species is related to and can be confused with *Salix boothii* in morphology (Kearney and Peebles 1960). Hybridization between *Salix arizonica* and *S. boothii* and *S. geyeriana* is thought to be very common, producing many plants of intermediate appearance.

According to Arizona documents, *Salix arizonica* occurs at elevations above 8500 feet in wet meadows, streamsides and cienegas on volcanic soils (Galeano-Popp 1988). In Utah, Arizona willow has also been found as low as 8300 feet on calcareous soils (Mead 1996). Most plants have been found adjacent to perennial water and less commonly in meadows adjacent to forest edges or meadows with sparse stands of spruce. Species associated with the Arizona willow include: *Salix geyeriana* (Geyer willow), *Symphoricarpos* spp. (serviceberry), *Salix bebbiana* (Bebb willow), *Picea pungens* (blue spruce), *Picea Engelmannii* (Engelmann's spruce), *Potentilla fruticosa* (shrubby cinquefoil), *Mimulus guttatus* (monkeyflower), *Deschampsia caespitosa* (tufted hairgrass), *Festuca ovina* (sheep fescue), and *Carex* spp. (sedge species) (USFWS 1992a).

Arizona willow was known only to exist in the White Mountains of Arizona on land managed by the Apache-Sitgreaves National Forest and the White Mountain Fort Apache Indian Reservation (USDA Forest Service 1995). In 1993, a specimen was discovered in the Forest Service National collection that had been collected in 1913 from the Sevier National Forest, now administered by the Powell Ranger District, Dixie National Forest. Since formal surveys began in July 1994, several verified populations of this species have been recorded in Utah. Confirmed sightings occur in Sidney Valley and Rainbow Meadows (Cedar City District), East Fork of the Sevier River (Powell Ranger District), Cedar Breaks National Monument. A recent survey (Clark 2002) revealed and revisited 55 separate sites of *S. arizonica*. These sites contain between 4400-14,300 individual plants of *S. arizonica* on the Loa and Richfield Ranger District of the Fishlake National Forest. Location and demographic data for hybrid remnants were thrown out. In addition, five new sites were located in 2001-2002 on Monroe Mountain, on the Richfield Ranger District. The overall range was recently extended into western Colorado.

Recent surveys have indicated that the species has a wider distribution and greater abundance than previously known. The main threats to this species include the degradation of its habitat by livestock/big game, off-road vehicle use, road and pond construction and timber harvest. Weakened plants become more prone to rust infection with increased risks of mortality from other environmental factors (USFWS 1992a).

Beaver Mountain groundsel (*Senecio castoreus*)

This member of the sunflower family (Asteraceae) is a perennial herb between 7-16 cm tall, erect or ascending. The leaf blades are 1-1.5 cm long and 5-10 mm wide. Herbage is woolly-tomentose; basal leaves are petiolate and are usually the largest in size. The upper leaves are smaller and clasping. The inflorescence is subumbelately corymbose with involucre and bracts. The outer bracts are short and rays are lacking. Fruit is a glabrous achene (Welsh et al. 1993). The Beaver Mountain groundsel is identified from more abundant *Senecio* species by having rayless (discoïd) inflorescences and purple involucre bracts. This species flowers between July and August.

Beaver Mountain groundsel is endemic to Piute County, Utah. It is often found on windswept ridges or less commonly downward to the spruce-fir community ranging in elevation from 11,000-12,000 feet in elevation (Welsh et al. 1993).

This species is known from 6 occurrences on the Beaver Ranger District of the Fishlake National Forest (Madsen 2002).

Maguire campion (*Silene petersonii*)

The Maguire campion, a member of the pink family (Caryophyllaceae), grows from creeping; sub-rhizomatous root branches and tap roots. The stems are three to five cm tall, hairy and more or less glandular. The leaves are mainly along the stem in pairs of 2-6, 1-5 cm long and hairy like the stems. The upper petal is bent backwards and the flower is nodding both in bud and when open. Sepals are bell-shaped, 13-19 mm long, 10-veined, and green or purple. Petals are 15-33 mm long and pink to purplish. The Maguire campion is a perennial that begins flowering 5-10 days after the snow melts. Seeds are brown and 2-2.5 mm wide. Small birds, mammals, and winds will disperse the seed. The creeping rhizomes and perennial taproots persist for several seasons (Spahr et al. 1991). This species flowers in July and August.

Maguire campion occurs between 7,000 and 11,200 feet elevation on open calcareous limestone and igneous gravels. Preferred sites are near snowdrift areas in ponderosa pine, aspen, and spruce-fir communities (Spahr et al. 1991).

Potential threats to the Maguire campion include limestone and mineral exploitation, timber harvest and off-road vehicle use. Livestock do not use this plant as it occurs on open calcareous and igneous gravels where livestock grazing does not occur (Atwood et al. 1991, Spahr et al. 1991).

There are presently no known populations of Maguire campion on the Fishlake National Forest. However, the species does occur in Sevier County on the adjacent Manti-LaSal National Forest.

Bicknell Thelesperma (*Thelesperma subnudum* var. *alpinum*)

The Bicknell Thelesperma is a perennial herb and member of the sunflower family (Asteraceae). It grows from a taproot and less commonly with a caudex and creeping rootstock. Stems are between 3-7 cm tall (Atwood et al. 1991). The leaves occur mainly at the base and are between 1.5-9.0 cm long. Flowering disks are bright yellow and lack rays. Plants flower in late June and into July (Welsh et al. 1993).

The Bicknell thelesperma, a Wayne County endemic, is restricted to the Navajo Sandstone and Carmel limestone on peculiar vari-colored phase in pinyon-juniper, mountainbrush, and bristlecone pine communities between 7300-9000 feet elevation (Atwood et al. 1991).

This plant is not affected by grazing as it occurs on the Navajo sandstone and Carmel limestone formations, on barren slopes where livestock grazing does not occur (Atwood et al. 1991).

There are presently 11 known populations on the Loa Ranger District of the Fishlake National Forest constituting between 8300- 21200 individuals.

Sevier Townsendia (*Townsendia jonesii* var. *lutea*)

A member of the sunflower family (Asteraceae), this species has stems, which are subcaulescent, caespitose and perennial. Disk flowers are yellow with a ray pappus 2.0-4.5 mm long (Atwood et al. 1991).

This species prefers habitats in the salt desert shrub and juniper communities at 5500 to 6000 feet elevation. Occurs in the Arapien shale and Arapien clays in volcanic rubble and flowers from May-June (Atwood et al. 1991).

Sevier Townsendia occurs in Juab, Sevier, and Piute counties Utah and is endemic to the Great Basin. There are presently 2 known occurrences on the Fillmore Ranger District and 6 known occurrences on the Richfield Ranger District of the Fishlake National Forest (Madsen 2002).