

PARSNIPFLOWER BUCKWHEAT

Eriogonum heracleoides Nutt.

Plant Symbol = ERHE2

Common Names: Whorled buckwheat, Wyeth buckwheat

Scientific Names: Insert text here

Description

General: Buckwheat family (Polygonaceae).

Parsnipflower buckwheat is a perennial forb to subshrub with a branching woody stem. Leaves can be

covered with dense white hairs making the herbage appear a light green to blue-grayish color. The flowers are a creamy-yellow color and have six petals which are borne in simple or compound umbels. Plants of parsnipflower buckwheat can be distinguished from other closely related members of the genus by having a whorl of 5 to 10 leaves at midpoint of flowering stem; however in some subspecies this is not apparent (Freeman and Reveal 2005). The seeds, or achenes, are light to dark brown from 3 to 5 mm long. There are approximately 374,000 seeds/kg (170,000 seeds/lb).



Distribution: The species range includes the Rocky Mountain and Intermountain western states from British Columbia and Alberta south to Utah and Nevada. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Plants of parsnipflower buckwheat can be found growing in rocky soils, often on slopes and dry canyons. This species is frequently found growing in association with mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and antelope bitterbrush (*Purshia tridentata*).

Adaptation

Plants are found growing naturally in areas receiving 12 inches to about 25 inches annual precipitation. Parsnipflower buckwheat grows in mountain foothills at the upper end of the Wyoming big sagebrush zone and into the mountainous coniferous and deciduous forest regions. Parsnipflower buckwheat typically occupies sites at lower elevation and precipitation than sulphurflower buckwheat (*E. umbellatum*), but the ranges of the two species do overlap. Plants grow in coarse, rocky, well-drained soils.

Uses

Restoration/low water use landscaping: Parsnip-flower buckwheat produces large splays of small, cream to yellow colored flowers and has tremendous potential for use in native landscaping and drought tolerant plantings in the semi-arid regions of western North America (Young 1989). Parsnipflower buckwheat can be used in seeding mixtures to increase the forb- subshrub component in native species diversification and site restoration planting projects in the sagebrush steppe and mountain foothills of the Intermountain West. Flowers of buckwheat species are known to attract insects which are an important part of the diets of insect loving species such as sage grouse (*Centrocercus urophasianus*). Parsnipflower buckwheat has little or no forage value for livestock (USDA, 1937).

Ethnobotany

A decoction of roots and stems are said to have been used to treat colds and tuberculosis and to treat cuts and sores (Turner and others 1980). Root decoctions have also been reported to have been used for diarrhea, stomachaches and other ailments (Steedman 1930).

Status

Threatened or Endangered: None.

Wetland Indicator: None.

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Planting Guidelines

In a field study conducted by the authors in conjunction with NRCS, ARS, BYU, Utah State University and USFS-RMRS at multiple sites in Utah and Idaho (results in preparation), germination rates of parsnipflower buckwheat ranged from 30 to 40%. At sites receiving 13 to 19 inches annual precipitation, 40 to 50% of the germinated seedlings survived through the first growing season. Germination and seedling emergence were increased by coating parsnipflower buckwheat seed with a broad-spectrum fungicide (Obvius®, BASF Corporation, North Carolina, USA).

A greenhouse study indicated that recently harvested seed is typically dormant and responds best to a 16 to 24 week chilling period at 2° C (36° F) (Meyer and Paulsen 2000).

Seed should be planted at or just below the soil surface, to no more than 3mm (0.25 in) depth. The full seeding rate is 3.4 kg/ha PLS (4.0 lb/ac PLS), but this species should not be seeded in a pure stand. This species would normally be included in native seed mixtures at a rate of 0.3 to 0.6 kg/ha PLS (1/4 to 1/2 lb/ac PLS).

Management

When planted in a native reclamation seed mix, parsnipflower buckwheat will be a minor component of the establishing plant community; therefore management should be based on other key species in the mixture. Any new planting should be deferred from livestock grazing until it is well established which may require 1 to 3 years.

Pests and Potential Problems

Seed collections often contain insect larvae in the seeds. Placing seeds in a freezer (0 to 10° F) for 7 to 10 days prior to long term storage effectively kills insect pathogens.

Environmental Concerns

Parsnipflower buckwheat is a species native to the Intermountain and Rocky Mountain West. The species is not considered weedy or invasive, but plants can spread to adjoining vegetative communities under ideal environmental conditions.

Seeds and Plant Production

Seed is typically planted in late fall as a dormant planting to allow proper stratification of the seed over winter; however parsnipflower buckwheat seed does not exhibit strong dormancy and can be planted at any time when moisture is available. For best results the seedbed should be weed free, moist and firmly packed. The use of weed barrier fabric is very effective at controlling weeds. Additionally, preliminary herbicide tolerance trials conducted at the University of Oregon, Malheur Experiment Station on sulphurflower buckwheat indicated Prowl® (pendimethalin) Treflan® (trifluralin) and Balan® (benefin) look promising for use in seed production fields (Shock and others 2006). J. Herbert Stone Nursery in Oregon recommends soil fumigation prior to planting forb seed production fields to eliminate soil borne pathogens and to reduce weed competition (Archibald 2006). Buckwheat seed should be planted to a depth of no more than 3 to 6 mm (0.125 to 0.25 in). When planting in weed barrier fabric, plant at 9 to 18 in spacing. When drill seeding, use a seeding rate of 20 to 30 pure live seeds (PLS) per linear foot (Ogle and others 2006).



Seed can be harvested by hand or direct combined in mid to late July. Due to the wide window of seed ripening it may be beneficial to harvest multiple times by hand to obtain the greatest amount of viable seed.

For seed cleaning, run harvested material through a hammermill followed by an air screen cleaner. Check cleaned seed for holes or other insect damage which may indicate the absence or damage of the seed within the achene. It may be necessary to reclean using the air screen cleaner with the blower on a higher setting to remove empty seed.

Cultivars, Improved, and Selected Materials (and area of origin)

Soda Springs Germplasm parsnipflower buckwheat (*E. heracleoides* var. *heracleoides*) was released in 2017 by the USDA NRCS Aberdeen Plant Materials Center. It is suited for conservation plantings in MLRA B11, Snake River Plains and B13 Eastern Idaho Plateaus. It is also likely adapted for use in ecologically similar locations throughout the Intermountain West, but has not been tested to that extent. G1 and G2 seed of Soda Springs Germplasm parsnipflower buckwheat will be maintained by the USDA Natural Resources Conservation Service, Aberdeen Plant Materials Center, Aberdeen, Idaho in cooperation with the Idaho Agricultural Experiment Station, University of Idaho. Seed through the G5 generation will be eligible for certification. G1 and G2 seed will be made available to commercial growers for distribution by the University of Idaho Foundation Seed Program and Utah Crop Improvement Association. Small quantities of seed will be provided to researchers by request to the corresponding author.

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

Literature Cited

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Citation

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