

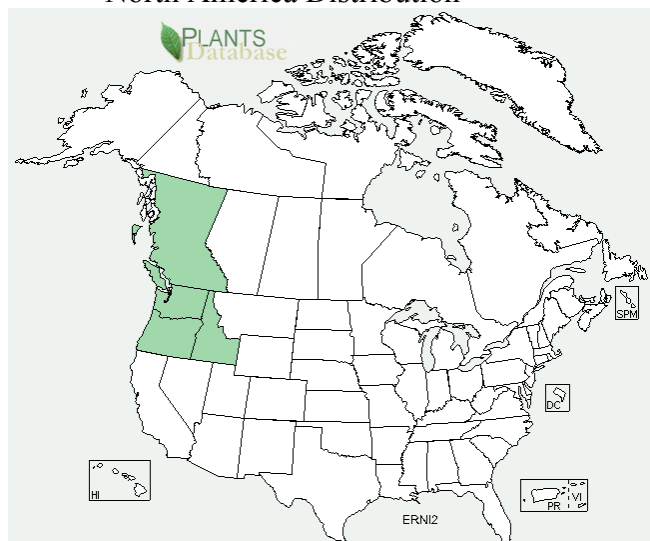
## Plant Propagation Protocol for *Eriogonum niveum*

ESRM 412 – Native Plant Production

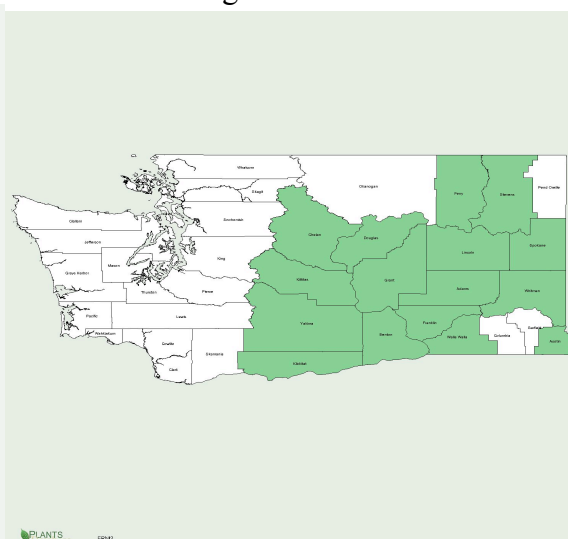
Protocol URL: <https://courses.washington.edu/esrm412/protocols/ERNI2.pdf>

Spring 2014

North America Distribution



Washington State Distribution



Source: USDA PLANTS Database

### TAXONOMY

Plant Family	
Scientific Name	Polygonaceae
Common Name	Buckwheat Family
Species Scientific Name	
Scientific Name	<i>Eriogonum niveum</i> Douglas ex Benth.
Varieties	<i>Eriogonum niveum</i> Douglas ex. Benth. var. <i>dichotomum</i> (Douglas ex Benth.) M.E. Jones <i>Eriogonum niveum</i> Douglas ex. Benth. var. <i>decumbens</i> (Benth.) Torr. & A. Gray
Sub-species	<i>Eriogonum niveum</i> Douglas ex. Benth. ssp. <i>decumbens</i> (Benth.) S. Stokes
Cultivar	
Common Synonym(s)	<i>Eriogonum strictum</i> Benth. var. <i>lachnostegium</i>
Common Name(s)	Snow buckwheat, canyon heather <sup>6</sup>
Species Code (as per USDA Plants database)	ERNI2

### GENERAL INFORMATION

Geographical range	Found mainly on the grassy plains east of the Cascade Range in southern British Columbia, west-central Idaho, northeastern Oregon, and eastern Washington. <sup>1</sup> See maps above for distribution in North America and Washington state.
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Ecological distribution	Found in sand to gravelly flats, slopes, bluffs, and rocky, often volcanic outcrops, mixed grassland and sagebrush communities and conifer woodlands. <sup>1</sup>
Climate and elevation range	<p>Elevation: 150-1500 m<sup>2</sup></p> <p>Cold Hardiness Zone: 5a-7a<sup>6</sup></p> <p>Mean Annual Precipitation: 150 – 460 mm<sup>2</sup></p> <p>Soil: Well-drained sands to clay<sup>2</sup></p>
Local habitat and abundance	<p>Common in big sage (<i>Artemisia tridentata</i>), antelope bitterbrush (<i>Purshia tridentata</i>), and open Ponderosa pine (<i>Pinus ponderosa</i>) areas. It also occurs in the canyon grasslands of the Snake and Columbia River systems.<sup>2</sup></p> <p>Found primarily in full sun but will grow in partial shade such as open Ponderosa pine hillsides.<sup>6</sup></p> <p>Tolerates extremely droughty soils and is a common occupant of dry, rocky southern exposures.<sup>6</sup></p>
Plant strategy type / successional stage	<p>Colonizer<sup>2</sup></p> <p>Very successful pioneer species<sup>6</sup></p>
Plant characteristics	<p>Rarity: Locally Common<sup>3</sup></p> <p>Dense perennial subshrub with erect leaves. Numerous stems with branches. Leaves oblong to egg-shaped, with petioles 2-3 times as long, very white with thick matted hairs on both sides. Flower stalks, freely branched with leafy bracts at each fork, are covered with white matted hairs, as are bases of flower heads. Flowers pinkish, white, or occasionally pale yellow, scattered along stalks.<sup>3</sup></p> <p>Grows to 0.5 m in height in most areas but may be as much as 1 m tall and 1 m wide in better sites.<sup>6</sup></p> <p>Flowering June to October.<sup>1</sup> The greatest bloom is usually observed in the late summer, with fruit and seed production starting in the summer and continuing until fall.<sup>2</sup></p> <p>Provides late-winter browse for mule deer and big horn sheep.<sup>7</sup></p> <p>Utilized by several species of bees and butterflies as a</p>

	foodstuff, including the endangered Mormon Metalmark butterfly ( <i>Apodemia mormo</i> ). <sup>6</sup>
<b>PROPAGATION DETAILS</b>	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Bareroot (field grown)
Stock Type	
Time to Grow	4 months
Target Specifications	
Propagule Collection Instructions	<p>Seed should be collected when the majority of petals have dried to a light brown color. This is usually the last week in October or first week in November in central and southern Washington.<sup>4</sup></p> <p>Hand harvesting is preferred because the seed shatters very easily upon the slightest plant movement.<sup>4</sup></p> <p>Mechanical harvest is possible providing that the cutting bar is set high enough to not damage the crown.<sup>2</sup> Threshing is the best option for commercial harvesting. Use a miniature hammermill operating at 600 to 900 rpm, keeping in mind that vigorous threshing may damage the seed coat and result in reduced seed longevity.<sup>4</sup></p>
Propagule Processing/Propagule Characteristics	<p>The seeds are small and shaped like urns. There are approximately 943,000 seeds/kg.<sup>2</sup></p> <p>Seed shelf life can be as short as 12 months if not properly stored. Seed is best stored in cool-dry conditions.<sup>2</sup></p>
Pre-Planting Propagule Treatments	<p>Short stratification period (15-20 days) may shorten the germination period and improve total germination.<sup>4</sup></p> <p>Cleaning of threshed seed can be performed with a small office clipper.<sup>4</sup></p>
Growing Area Preparation / Annual Practices for Perennial Crops	<p>Seed should be sown directly into ground in fall with a nitrogen starter fertilizer to provide 50lb/acre of elemental nitrogen.<sup>5</sup></p> <p>Should be planted in full sun, lean soil, and watered moderately until well established.<sup>8</sup></p> <p>Seed production for 24 inch row spacing produced 33 to 200% more seed on a per acre basis than 36 or 48 inch row spacing.<sup>4</sup></p>

	Standard reclamation drills and broadcast seeders are capable of handling the seed, however, ensure the seed is kept shallow (max. 6 mm deep). <sup>6</sup>
Establishment Phase Details	Germination is uniform and rapid <sup>5</sup>
Length of Establishment Phase	Time to germination: 5 days <sup>5</sup>
Active Growth Phase	Plants should be watered deeply every third day and fertilized once per week. <sup>2</sup>  Plants may require water every other day during the final part of the active growth period. <sup>2</sup>
Length of Active Growth Phase	10 weeks <sup>6</sup>
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	Rooted transplants are easily outplanted. The soil should be at least 75% of field capacity when planted. Once fully established, snow buckwheat is long-lived and very persistent. <sup>6</sup>
Other Comments	Low maintenance plant once established. <sup>6</sup>  Cheatgrass and other winter annuals should be controlled the first year to allow good establishment of snow buckwheat. <sup>6</sup>  Observations have shown that snow buckwheat withstands severe defoliation if the woody stems and crowns are not damaged. <sup>6</sup>
<b>INFORMATION SOURCES</b>	
References	See Below
Other Sources Consulted	See Below
Protocol Author	Kayla Finnegan
Date Protocol Created or Updated	5/19/14

### References:

<sup>1</sup> "Eriogonum Niveum in Flora of North America @ Efloras.org." *Eriogonum Niveum in Flora of North America @ Efloras.org*. Flora of North America. Web. 19 May 2014. <[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=250060411](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250060411)>.

<sup>2</sup> "Snow Buckwheat (Niveum)." *Snow Buckwheat Plant Guide*. Garden Guides. Web. 19 May 2014. <<http://www.gardenguides.com/taxonomy/snow-buckwheat-erogonum-niveum/>>.

<sup>3</sup> Turner, Matt. "Eriogonum Niveum." *Eriogonum Niveum | Snow Eriogonum | Wildflowers of the Pacific Northwest*. Wildflowers of the Pacific Northwest. Web. 19 May 2014. <<http://www.pnwflowers.com/flower/erogonum-niveum>>.

<sup>4</sup> Tiedemann, A. R., C, J. P., N, L. S., Lambert, S. M., Carlson, J. R., Welch, B. L., & Driver, C. H. (June 01, 1997). 'Umatilla' Snow Buckwheat for Rangeland Restoration in the Interior Pacific Northwest. *Rangelands*, 19, 3, 22-25.

<sup>5</sup> Butler, Jennifer; Frieswyk, Christin. 2001. Propagation protocol for production of *Eriogonum* seeds; USDI NPS - Rocky Mountain National Park, Estes Park, Colorado. In: Native Plant Network. URL: <http://www.nativeplantnetwork.org> (accessed 19 May 2014). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

<sup>6</sup> United States. Department of Agriculture. Natural Resources Conservation Service. *Snow Buckwheat: Eriogonum Niveum Dougl. Ex Benth.* By Mark Stannard and Wayne Crowder. USDA. Web. 19 May 2014.  
<[http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs144p2\\_042441.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_042441.pdf)>.

<sup>7</sup> "Snow Buckwheat." *Pictures and Information*. Bentler. Web. 19 May 2014.  
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<sup>8</sup> Schmidt, Marjorie G. *Growing California Native Plants*. Berkeley: U of California, 1980. Print.

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