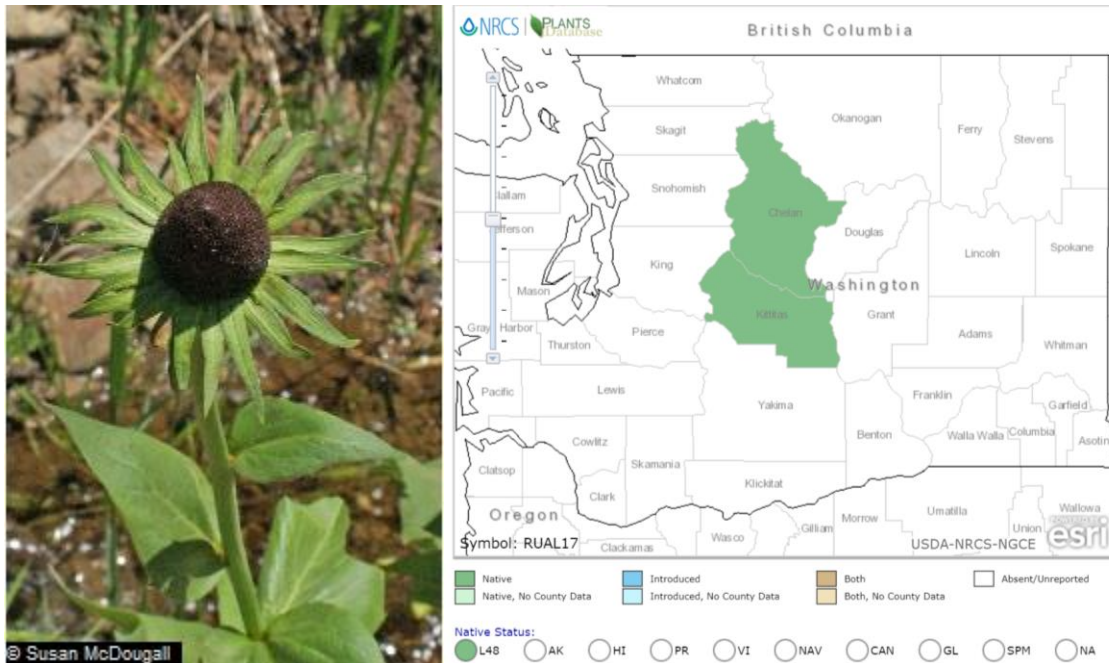


**Plant Propagation Protocol for *Rudbeckia alpicola* Piper showy coneflower**  
**ESRM 412 – Native Plant Production**  
 Protocol URL: <https://courses.washington.edu/esrm412/protocols/RUAL17.pdf>



TAXONOMY	
Plant Family	
Scientific Name	Asteraceae
Common Name	Sunflowers
Species Scientific Name	
Scientific Name	<i>Rudbeckia alpicola</i> Piper showy coneflower
Varieties	No varieties recognized
Sub-species	No sub-species recognized
Cultivar	Information not available
Common Synonym(s)	<i>Rudbeckia occidentalis</i> Nutt. <i>alpicola</i> (Piper) Cronquist
Common Name(s)	Showy Coneflower Wenatchee Mountain Coneflower
Species Code (as per USDA Plants database)	RUAL17
GENERAL INFORMATION	
Geographical range	Washington (Chelan and Kittitas county) <sup>1</sup>

Ecological distribution	Thickets, bogs, and slopes along streams <sup>3</sup>
Climate and elevation range	1,500 ft – 6,000 ft <sup>4</sup>
Local habitat and abundance	Mainly found in the Wenatchee National Forest at damp sites, such as wet meadows, or seeps <sup>3</sup>
Plant strategy type / successional stage	Late succesional <sup>2</sup>
Plant characteristics	Herb/Forb <sup>1</sup> Perennial flower <sup>2</sup> Flowers in June to August after the second year of growth <sup>2</sup> Lobed leaves <sup>2</sup>
<b>PROPAGATION DETAILS</b>	
Ecotype	Information not available
Propagation Goal	Seeds
Propagation Method	Seed
Product Type	Container (plugs) and seeds
Stock Type	Container
Time to Grow	Six to seven months
Target Specifications	Stem to be 12-24 inches tall
Propagule Collection Instructions	Hand collect seeds during late Summer and plant them in early Fall <sup>6</sup> Snip off flower heads and dry, remove seeds by pulling them out <sup>5</sup>
Propagule Processing/Propagule Characteristics	Information not available
Pre-Planting Propagule Treatments	No scarification needed, but seeds could be cleaned of any debris or pathogen before planting <sup>5</sup>
Growing Area Preparation / Annual Practices for Perennial Crops	Peat media with 6 inch deep plugs
Establishment Phase Details	Seedlings should be planted in the early Fall
Length of Establishment Phase	About 1 month <sup>6</sup>
Active Growth Phase	Seeds begin growth during the months of February to March <sup>6</sup>
Length of Active Growth Phase	Four to five months <sup>6</sup>
Hardening Phase	Information not available
Length of Hardening Phase	Information not available
Harvesting, Storage and Shipping	Harvest seeds in late Summer <sup>6</sup> Store seeds in dark and dry conditions <sup>5</sup>

Length of Storage	Seeds may remain viable for years if stored in proper dark and dry conditions <sup>5</sup>
Guidelines for Outplanting / Performance on Typical Sites	Information not available
Other Comments	None
<b>INFORMATION SOURCES</b>	
References	<p>(1) "Alpicola Piper Showy Coneflower." <i>Plants Profile for Rudbeckia Alpicola (Showy Coneflower)</i>, 2019, <a href="https://plants.sc.egov.usda.gov/core/profile?symbol=RUAL17">plants.sc.egov.usda.gov/core/profile?symbol=RUAL17</a>.</p> <p>(2) "Rudbeckia Alpicola." <i>Burke Herbarium Image Collection</i>, 2019, <a href="http://biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Rudbeckia%20alpicola">biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Rudbeckia%20alpicola</a>.</p> <p>(3) WTU Herbarium, et al. "Consortium of Pacific Northwest Herbaria." <i>CPNWH Database Search</i>, 1990, <a href="http://www.pnwherbaria.org/data/results.php">www.pnwherbaria.org/data/results.php</a>?</p> <p>(4) Urbatsch, Lowell E, et al. "Phylogeny of the Coneflowers and Relatives (Heliantheae: Asteraceae) Based on Nuclear RDNA Internal Transcribed Spacer (ITS) Sequences and Chloroplast DNA Restriction Site Data." <i>Systematic Botany</i>, vol. 25, no. 3, 2000, pp. 539–565.</p> <p>(5) Cox, Patricia B., and Lowell E. Urbatsch. "A Taxonomic Revision of Rudbeckia Subg. Macrocline (Asteraceae: Heliantheae: Rudbeckiinae)." <i>Castanea</i>, vol. 59, no. 4, 1994, pp. 300–318. <i>JSTOR</i>, <a href="http://www.jstor.org/stable/4033783">www.jstor.org/stable/4033783</a>.</p> <p>(6) Cox, Patricia, and Urbatsch, Lowell E. <i>Systematics of Rudbeckia Subgenera Macrocline and Laciniata (Asteraceae: Heliantheae: Rudbeckiinae)</i> (1991): ProQuest Dissertations and Theses. "Rudbeckia</p>
Other Sources Consulted	<p>(7) "Rudbeckia Alpicola." <i>Rudbeckia Alpicola / Showy Coneflower</i>, 2010, <a href="http://wildflowersearch.org/search?&amp;tsn=508138">wildflowersearch.org/search?&amp;tsn=508138</a>.</p> <p>(8) "Rudbeckia Alpicola Piper." <i>ITIS Standard Report Page: Rudbeckia Alpicola</i>, 2019, <a href="http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&amp;search_value=508138#null">www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&amp;search_value=508138#null</a></p> <p>(9) Griswold, Sylvia M. "Effect of Alternate Moistening and Drying on Germination of Seeds of Western Range Plants." <i>Botanical Gazette</i></p>

	<p>98.2 (1936): 243-69.</p> <p>(10) Morgan, Penelope. “The Journal of the Association for Fire Ecology.” <i>Vegetation Response after Post-Fire Mulching and Native Grass Seeding</i>, vol. 10, no. 3, 2014, pp. 49–62.</p> <p>(11) Morgan, Penelope. “The Journal of the Association for Fire Ecology.” <i>Vegetation Response to Burn Severity, Native Grass Seeding, and Salvage Logging</i>, vol. 11, no. 2, 2015, pp. 31–58.</p>
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Date Protocol Created or Updated	05/29/2019