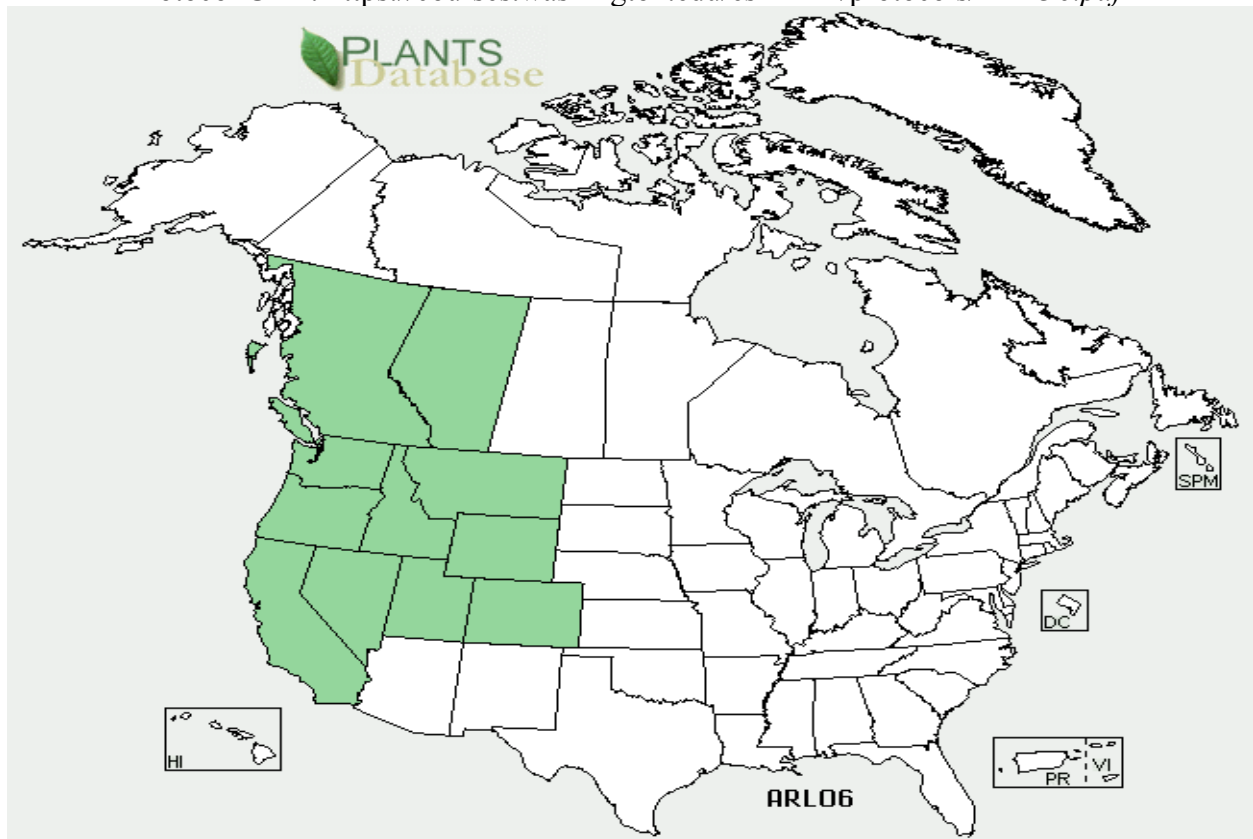


Plant Propagation Protocol for *Arnica longifolium*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/ARLO6.pdf>



Present Absent/Unreported

USA ([CA](#), [CO](#), [ID](#), [MT](#), [NV](#), [OR](#), [UT](#), [WA](#), [WY](#)), **CAN** (AB, BC) (1)



Bransford, W.D. and Dolia (5)

TAXONOMY

Plant Family	
Scientific Name	Asteraceae
Common Name	Aster family
Species Scientific Name	
Scientific	<i>Arnica longifolia</i> D.C. Eaton
Varieties	<i>Arnica longifolia</i> ssp. <i>Genuine</i> , <i>Arnica longifolia</i> ssp. <i>Myriadenia</i> (2)
Sub-species	
Cultivar	
Common Synonym(s)	<i>Arnica longifolia</i> D.C. Eaton ssp. <i>genuina</i> Maguire <i>Arnica longifolia</i> D.C. Eaton ssp. <i>myriadenia</i> (Piper) Maguire (2). <i>Arnica ciliaris</i> (8)
Common Name(s)	Spearleaf Arnica, longleaf arnica, seep spring arnica (2)
Species Code	ARLO6 (1)
GENERAL INFORMATION	
Geographical range	In California: Klamath Ranges, s High North Coast Ranges, High Cascade Range, High Sierra Nevada, Great Basin Floristic Province. East to Colorado, Montana, North through Canada (4).
Ecological distribution	Wetland-riparian plant occurring in Yellow pine forest, red fir forest, lodgepole forest, subalpine forest (2).
Climate and elevation range	Wet meadows, open coniferous forests in high mountain ranges; 1800–3500 m (4).
Local habitat and abundance	Usually occurs in subalpine wetlands. Associated species: <i>Mimulus guttatus</i> , <i>Equisetum arvense</i> , <i>Aquilegia formosa</i> , <i>Leymus triticoides</i> , <i>Deschampsia elongata</i> , <i>Populus balsamifera</i> ssp. <i>trichocarpa</i> , <i>Carex athrostachya</i> , <i>Carex hoodii</i> , <i>Geum macrophyllum</i> , <i>Carex simulata</i> , <i>Salix scouleriana</i> , <i>Trifolium wormskioldii</i> , <i>Populus tremuloides</i> , <i>Apocynum cannabinum</i> , <i>Nicotiana attenuata</i> , <i>Aconitum columbianum</i> , <i>Asclepias fascicularis</i> , <i>Salix lasiolepis</i> , <i>Juncus nevadensis</i> , <i>Rosa woodsii</i> var. <i>ultramontana</i> , <i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Clematis ligusticifolia</i> (8).

Plant strategy type / successional stage	Facultative wetland (6)
Plant characteristics	Herbaceous, perennial forb w/ basal, opposite, elliptical, lanceolate leaves with entire leaf margins (2) 30-100 cm high (8). Yellow-flowered, daisy-like heads, heads radiate, 3-20; involucre 7-10 mm, bell-shaped or widely obconic; phyllaries acute, glandular, ± long-hairy, (especially tip) (4) blooms in June-August (2). Fruit: brown achenes (7) 4-6 mm, subglabrous to glandular and hairy; pappus short-barbed or subplumose, red- to yellow-brown (4).
PROPAGATION DETAILS	
Ecotype	n/a
Propagation Goal	Plants (8)
Propagation Method	Seed (8)
Product Type	10" pots (8)
Stock Type	
Time to Grow	No info
Target Specifications	No info
Propagule Collection Instructions	Collect seed in late summer or fall (4).
Propagule Processing/ Propagule Characteristics	450,000 seeds per pound (6)
Pre-Planting Propagule Treatments	Optional (not necessary) to cold stratify over the winter for germination in the spring (3)
Growing Area Preparation / Annual Practices for Perennial Crops	sandy-loamy or gritty-loamy soil: pH 6-8. Soil depth of at least 25 centimeter (8).
Establishment Phase Details	No info
Length of Establishment Phase	No info
Active Growth Phase	Spring into summer (8)
Length of Active Growth Phase	Summer (6)
Hardening Phase	They tolerate temperatures down to -35°C (USDA zone 4) and need a frost-free period of at least 14 weeks. (7)
Length of Hardening Phase	No info
Harvesting, Storage and Shipping	No info
Length of Storage	No info
Guidelines for Outplanting /	No info

Guidelines for Outplanting / Performance on Typical Sites	No info
INFORMATION SOURCES	
References	<ol style="list-style-type: none"> <li data-bbox="565 289 1443 394">1. USDA, NRCS. 2014. The PLANTS Database (http://plants.usda.gov, 21 May 2014). National Plant Data Center, Baton Rouge, LA 70874-4490 USA. <li data-bbox="565 436 1443 695">2. Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of Calif. Herbaria. 2014. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: May 21, 2014). <li data-bbox="565 737 1443 842">3. Robson, K.A., Richter A., Filbert, M. 2008. Encyclopedia of Northwest Native Plants for Gardens and Landscapes. Timber Press, Inc. Portland, OR. <li data-bbox="565 884 1443 989">4. Jepson Flora Project: Jepson Interchange. 1993. (cited 20 May 2014) Available: http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?609,701,710 <li data-bbox="565 1031 1443 1178">5. Ladybird Johnson Wildflower Center. 2007. NPIN Native Plant Database: Arnica longifolia (cited 22 May 2014) Available: http://www.wildflower.org/plants/result.php?id_plant=ARLO6 <li data-bbox="565 1220 1443 1325">6. Sagebud: Grow your Garden. Spearleaf Arnica (Arnica longifolia) (cited 22 May 2014) Available: http://sagebud.com/spearleaf-arnica-arnica-longifolia <li data-bbox="565 1367 1443 1472">7. California Native Plant Link Exchange. (cited 22 May 2014) Available: http://www.cnplx.info/nplx/species?taxon=Arnica+longifolia <li data-bbox="565 1514 1443 1619">8. Gardenguides.com (cited 22 May 2014) Available: http://www.gardenguides.com/taxonomy/spearleaf-arnica-arnica-longifolia/

Other Sources Consulted	<p>9. Rose, R., Chachulski, C.E.C., Haase, D.L.1998. Propagation for Pacific Northwest Plants. Oregon State University Press, Corvallis, OR.</p> <p>10. Leigh, Michael. 1999. Grow Your Own Native Landscape. Native Plant Salvage Project, WSU Cooperative Extension-Thurston County.</p> <p>11. Dumroese, R.K., Luna, T, Landis, T.D. 2008. Nursery Manual for native Plants: A Guide for Tribal Nurseries, US Department of Agriculture.</p>
Protocol Author	Petra Mimosa Murdoch
Date Protocol Created or Updated	5/22/14

