

Plant Propagation Protocol for *Carex proposita*

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2022/CAPR10.pdf>

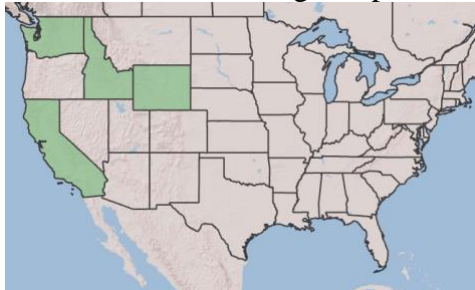
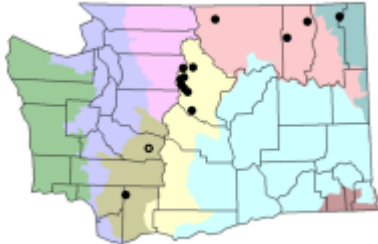


Bud Kovalchik

Photo: Bud Kocalchik [1]

TAXONOMY

Plant Family	
Scientific Name	Cyperaceae
Common Name	Sedge
Species Scientific Name	
Scientific Name	<i>Carex proposita</i> Mack.
Varieties	n/a
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	n/a

Common Name(s)	Great smoky mountain sedge[2], Propose sedge[2], Potato chip sedge [3]
Species Code (as per USDA Plants database)	CAPR10
GENERAL INFORMATION	
Geographical range	<p>Occurs as far north as B.C., as far east as wyoming and as far south as california. [5] Washington species occur in the alpine of the cascades [4]</p>  [5]  [4]
Ecological distribution	Open, Dry rocky slopes and ridges above the treeline and dry meadows near freshwater in the alpine.
Climate and elevation range	Elevation range in WA: 1370-2350 m [4] Typical alpine climate.
Local habitat and abundance	Associated species: <i>Abies lasiocarpa</i> , <i>Larix lyallii</i> , <i>Pinus albicaulis</i> , <i>Carex species nardina</i> , <i>breweri</i> and <i>phaeocephala</i> , <i>Antennaria alpina</i> , <i>Phlox diffusa</i> , <i>Empetrium nigrum</i> and <i>Festuca brachyphylla ssp. brachyphylla</i> . [4]
Plant strategy type / successional stage	Shade and drought tolerant [2]
Plant characteristics	Graminoid [5] Small perennial, 10-30 cm tall. Firm narrow leaves, folded margins [2,5,9] Dense, open inflorescences. 3 to 6 spikes per plant. Perigynia large and papery, conspicuously veined, ovate. Inflorescence spherical or ovoid. [5,9]
PROPAGATION DETAILS	
Ecotype	n/a
Propagation Goal	Plants* [6]
Propagation Method	Seeds* [6]
Product Type	Container/plug* [6]

Stock Type	490 ml containers* [6]
Time to Grow	9 months* [6]
Target Specifications	Container seedlings, 15cm tall, plugs with a well established root system. * [6]
Propagule Collection Instructions	Hand Collection by stripping seeds from head.** [7] Perigynium removed with air screen machine [8]
Propagule Processing/Propagule Characteristics	small brown seeds, 2,684,946 seeds per kg, 50% germination rate* [6]
Pre-Planting Propagule Treatments	5 month cold/moist stratification outdoors.* [5,10]
Growing Area Preparation / Annual Practices for Perennial Crops	Sown in cone-tainers with sunshine#1 media with micronutrient amendment (Micromax) and Osmocote 14-14-14 treatment. * [8]
Establishment Phase Details	Germination occurs in early spring.(10 days to 2 weeks [10] Media must be kept moist during germination. Rapid growth after germination.* [6]
Length of Establishment Phase	4 weeks* [6]
Active Growth Phase	Additional fertilizer not required to reach target specification* [6] Flowers can occurs 5 weeks after snowmelt in nursery environment* [6]
Length of Active Growth Phase	8 weeks* [8,10]
Hardening Phase	Fertilize with 10-20-20 NPK at concentration of 200 ppm during Summer months.* [6]
Length of Hardening Phase	4 weeks* [6]
Harvesting, Storage and Shipping	9 months to harvest, harvest in early summer, overwinter outdoors using coverings to insulate from the snow * [6]
Length of Storage	5 months * [6]
Guidelines for Outplanting / Performance on Typical Sites	n/a Flowers can occurs 5 weeks after snowmelt in nursery environment* [6]
Other Comments	Due to lack of studies for <i>Carex proposita</i> , much of the propagation protocol is based on protocols for the carex genus, or a similar congener: <i>Carex nigricians</i> .
INFORMATION SOURCES	
References	1. Giblin, D.E. & B.S. Legler (eds.). 2003+. <i>Carex proposita</i> . In: WTU Image Collection Web Site: Vascular Plants, MacroFungi, & Lichenized Fungi of Washington State. University of Washington Herbarium. Accessed 24 May 2022. http://biology.burke.washington.edu/herbarium/imagecollection.php .

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3. Peter F. Zika, Andrew L. Hipp & Joy Mastrogiuseppe 2015, *Carex proposita*, in Jepson Flora Project (eds.) *Jepson eFlora*, Revision 3, https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=17752, accessed on May 25, 2022.
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7. Butler, Jennifer; Frieswyk, Christin. 2001. Propagation protocol for production of Propagules (seeds, cuttings, poles, etc.) *Carex* seeds USDI NPS - Rocky Mountain National Park Estes Park, Colorado. In: Native Plant Network. URL: <https://NativePlantNetwork.org> (accessed 2022/05/25). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.
8. Bartow, Amy. 2008. Propagation protocol for production of Propagules (seeds, cuttings, poles, etc.) *Carex nigricans* C. Meyer seeds USDA NRCS - Corvallis Plant Materials Center Corvallis, Oregon. In: Native Plant Network. URL: <https://NativePlantNetwork.org> (accessed 2022/05/25). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.
9. Hitchcock, C.L. and A. Cronquist. 2018. *Flora of the Pacific Northwest: An Illustrated Manual, 2nd Edition*. Edited by D.E. Giblin, B.S. Legler, P.F. Zika, and R.G. Olmstead. University of Washington Press, Seattle, WA. 882 pp.
10. Houseal and Smith 2010 “Upland Sedge (*Carex* spp.) Propagation for Seed Increase” Landscape Ecology, Agriculture and Invasive Species 7. Schuetz 20

Other Sources Consulted	n/a
Protocol Author	Samuel Champlin
Date Protocol Created or Updated	05/25/22

*based on protocol for congener *Carex nigricans* [6,8], another alpine carex species from the PNW

** based on general carex propagation protocol [7]