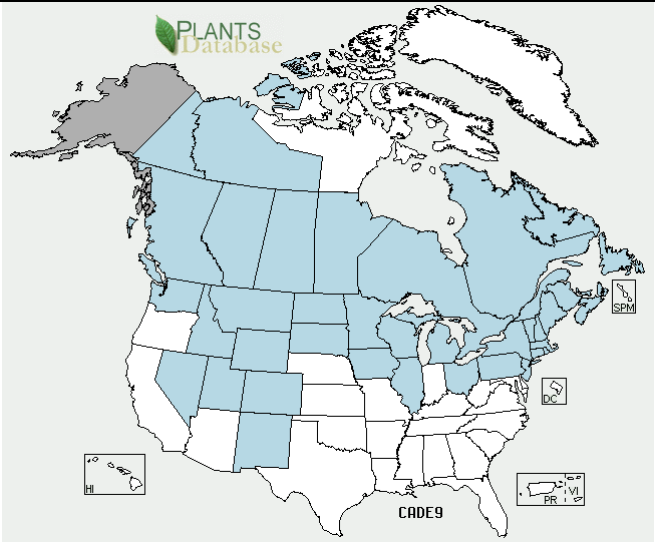


**Plant Propagation Protocol for *Carex deweyana* Schwein.**

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/CADE9.pdf>

<b>TAXONOMY</b>	
Plant Family	
Scientific Name	Cyperaceae (1)
Common Name	Sedge
Species Scientific Name	
Scientific Name	<i>Carex deweyana</i> Schwein
Varieties	<i>Carex deweyana</i> Schwein var. <i>deweyana</i> <i>Carex deweyana</i> Schwein var. <i>collectanea</i> Fernald
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	Dewey's sedge (1), Short-scale sedge (7)
Species Code	CADE9
<b>GENERAL INFORMATION</b>	
Geographical range	 <p>National distribution</p>

	<p>WA distribution</p> <p><b>Note:</b> See “Other Comments,” below.</p>
Ecological distribution	Open, alluvial forest, stream banks, and clearings (3), in at least partial shade (7). Widespread through North America and Eastern Asia (2)
Climate and elevation range	From near sea-level to the alpine ecosystem tree line (7).
Local habitat and abundance	Often found with <i>Fraxinus latifolia</i> , <i>Symphoricarpus albus</i> , <i>Carex obnupta</i> , <i>Alnus rubra</i> .
Plant strategy type / successional stage	n/a
Plant characteristics	Grass-like (7) perennial herb (8). Blooms May-July (8).
<p style="text-align: center;"><b>PROPAGATION DETAILS</b> All propagation details from (2)</p>	
Ecotype	n/a
Propagation Goal	Plants
Propagation Method	Seeds
Product Type	Container (plug)
Stock Type	160 ml conetainer seedling
Time to Grow	11 months
Target Specifications	6 to 10 true leaves with a height of 15 cm. Firm plug in conetainer.
Propagule Collection Instructions	Collect seeds in late August when perigynia are tan and easily stripped from inflorescence. Collect seeds in paper bags and store in drying shed before cleaning.
Propagule Processing/Propagule Characteristics	<p>Hand rub and screen the seeds. Seeds have non-deep physiological dormancy.</p> <p>Seeds/kg: 220,000</p> <p>% Purity: 100%</p> <p>% Germination: 40%</p>
Pre-Planting Propagule	The seeds should be stratified for 5 months in outdoor, cold, moist

Treatments	conditions. Recommendation for this species is a minimum of cold, moist stratification under fluctuating temperatures.
Growing Area Preparation / Annual Practices for Perennial Crops	<p>Grow in an outdoor facility.</p> <p>Seeds are sown directly to the surface.</p> <p>Use 6:1:1 milled sphagnum peat, perlite, and vermiculite with Osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21C) and Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) at the rate of 1 gram of Osmocote and 0.20 gram of Micromax per conetainer.</p> <p>Fill and sow conetainers in fall and irrigate thoroughly before winter stratification. Irrigate in early morning until conetainers are thoroughly leached.</p> <p>Growing season of nursery is late April until October 15<sup>th</sup>.</p>
Establishment Phase Details	Keep medium slightly moist during germination. Initial germination occurred 2 weeks of temperatures at or above 22C. 2 to 4 true leaves were evident 3 weeks after germination.
Length of Establishment Phase	4 weeks.
Active Growth Phase	Following germination, root and shoot developments is rapid. Plants were occasionally fertilized with 20-20-20 liquid NPK at 100 ppm during growing season. Plants were fully root tight 10 weeks after germination.
Length of Active Growth Phase	10 weeks.
Hardening Phase	Fertilize plants with 10-20-20 liquid NPK at 200 ppm in August and September. Gradually reduce irrigation in September and October. Plants were given one final irrigation prior to winterization.
Length of Hardening Phase	8 weeks.
Harvesting, Storage and Shipping	<p>Total time to harvest: 11 months.</p> <p>Harvest in September.</p> <p>Overwinter in outdoor nursery, under insulating foam cover and snow.</p>
Length of Storage	5 months.
Guidelines for Outplanting / Performance on Typical Sites	Outplant in the fall.
Other Comments	Wilson (5) says “Until recently, <i>C. deweyana</i> was considered very common in moist forest but now it has been split into four PNW species. <i>Carex deweyana</i> as now understood is a northern species occurring in the PNW only in mountains of N WA....” The other species are <i>C. bolanderi</i> , <i>C. infiminervia</i> , and <i>C. leptopoda</i> . Wilson says <i>C. leptopoda</i> is “the most common sedge of moist conifer forest

	<p>in WA...”</p> <p>Cooke (6) says <i>C. deweyana</i> occurs “in all counties in our region” and does not list any of the other species above.</p>
<b>INFORMATION SOURCES</b>	
References	<p>(1) <i>Carex deweyana</i> Schwein, retrieved 2014-05-12 from <a href="http://plants.usda.gov/core/profile?symbol=CADE9">http://plants.usda.gov/core/profile?symbol=CADE9</a></p> <p>(2) Luna, T.; Wick, D.; Evans, J. 2008. Propagation protocol for production of container <i>Carex deweyana</i> Schwein.; USDI NPS - Glacier National Park, West Glacier, Montana. In: Native Plant Network. URL: <a href="http://www.nativeplantnetwork.org">http://www.nativeplantnetwork.org</a> (accessed 20 May 2014). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>(3) Pojar, J. and A. MacKinnon, “Plants of the Pacific Northwest Coast,” 2004 (2<sup>nd</sup>. Ed). Lone Pine Publishers, Auburn, WA</p> <p>(4) Kunze, L.M., “Preliminary Classification of Native, Low Elevation, Freshwater, Wetland Vegetation in Western Washington,” 1994. WA Department of Natural Resources</p> <p>(5) Wilson, B.L.; R. Brainerd, D. Lytjen, B. Newhouse, and N. Otting, “Field Guide to the Sedges of the Pacific Northwest” 2008. Oregon State University Press, Corvallis, OR.</p> <p>(6) Cooke, S.S., “A Field Guide to the Common Wetland Plants of Western Washington &amp; Northwestern Oregon” 1997. Seattle Audubon Society.</p> <p>(7) Guard, B.J., “Wetland Plants of Oregon and Washington,” 1995. Lone Pine Publishing, Renton, WA.</p> <p>(8) <i>Carex deweyana</i> “Dewey Sedge.” Retrieved 2014-05-20 from <a href="http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Carex&amp;Species=deweyana">http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Carex&amp;Species=deweyana</a></p>
Other Sources Consulted	<p>Jacobson, A.L. “Wild Plants of Greater Seattle,” 2008. Self-published, Seattle, WA.</p> <p>Klinka, K.; V.J. Krajina, A. Ceska, and A.M. Scagel, “Indicator Plants of British Columbia” 1989. University of British Columbia Press, Vancouver, BC.</p> <p>Knobel, E.; “Field Guide to the Grasses, Sedges and Rushes of the United States” 1977. Dover Publications, Inc., New York.</p>
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Date Protocol Created or Updated	05/20/2014