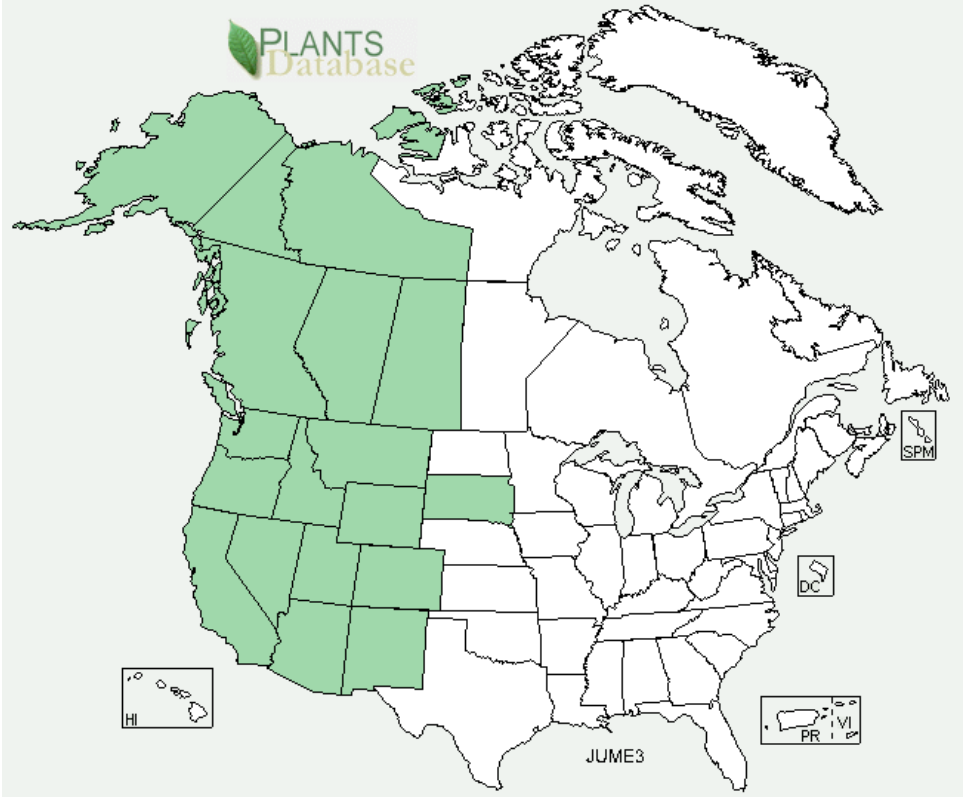
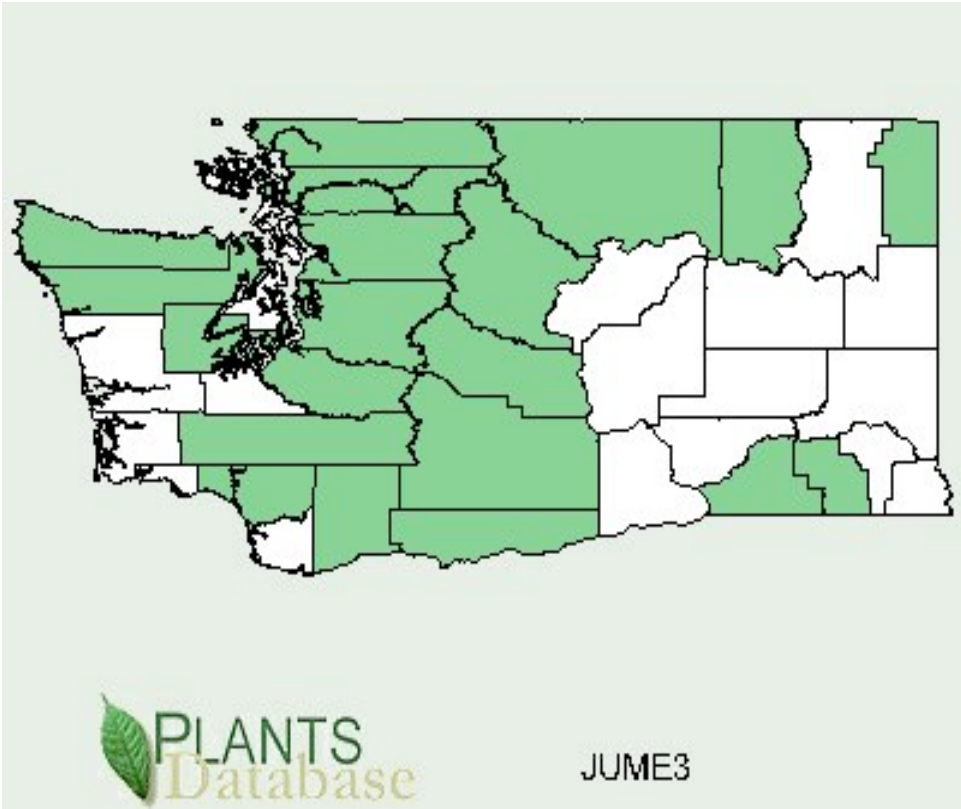


Plant Propagation Protocol for *Juncus mertensianus* Bong.
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Juncaceae
Family Common Name:	Rush
Scientific Names	
Genus:	<i>Juncus</i>
Species:	<i>mertensianus</i>
Species Authority:	Bong.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym	<i>Juncus slwookoorum</i> S.B. Young
Common Name(s):	Mertens' Rush
Species Code	JUME3
GENERAL INFORMATION	
Geographical range	

	
Ecological distribution (ecosystems it occurs in, etc):	Meadows, stream-banks, snow beds, pond edges, heath, bogs and rocky runnels (Pojar). Lake margins and conifer woods (Flora of North America).
Climate and elevation range	400 – 3300 m (Flora of North America). Common at middle to high subalpine elevations (Pojar).
Local habitat and abundance	
Plant strategy type / successional stage	
Plant characteristics	Tufted perennial with rhizomes. Stems are leafy and rounded to somewhat flattened. 5-30 cm tall, with brown to purplish basal sheaths (Pojar).
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants (Luna)
Propagation Method	Seeds (Luna)
Product Type	Container (plug) (Luna)
Stock Type:	160 ml conetainers (Luna)
Time to Grow	9 months (Luna)
Target Specifications	Container seedling height: 8 cm with 6 to 8 true leaves (Luna)
Propagule Collection	Hand collect mature inflorescences when capsules are black-brown; just prior to splitting. Seeds are brown at maturity. Seeds are collected in late August using scissors and paper bags and are kept in a well-ventilated

	drying shed prior to cleaning. (Luna)
Propagule Processing/Propagule Characteristics	Hammer mill and fanning mill are used for cleaning. Seed longevity is unknown. Seed dormancy type is unknown. Seeds/Kg: unknown % Purity: 100% % Germination: 50 to 80% (Luna)
Pre-Planting Propagule Treatments	5-month outdoor cold, moist stratification. (Luna)
Growing Area Preparation / Annual Practices for Perennial Crops	Outdoor Nursery. Sowing Method: Direct Seeding. Seeds are surface sown for the light requirement. Conetainers are filled and sown in late fall and irrigated thoroughly prior to winter stratification. Seedlings germinate in spring under fluctuating outdoor temperatures and are grown under full sun exposure. Seedlings are irrigated by an automatic irrigation system in early morning until containers are thoroughly saturated. Average growing season of nursery is from late April after snowmelt until October 15th. (Luna)
Establishment Phase	Seeds are subjected to winter stratification and fluctuating temperatures during germination. Medium is kept moist during germination. Shoot and root development occur rapidly following germination. (Luna)
Length of Establishment Phase:	4 weeks (Luna)
Active Growth Phase	Seedlings are root tight 8 weeks after germination. (Luna)
Length of Active Growth Phase:	8 weeks (Luna)
Hardening Phase	Irrigation is gradually reduced in September and October. Plants are given a final irrigation prior to winterization. (Luna)
Length of Hardening Phase:	4 weeks (Luna)
Harvesting, Storage and Shipping	Total Time to Harvest: 9 months Harvest Date: August Storage Conditions: Overwinter in outdoor nursery under insulating foam cover. (Luna)
Length of Storage	5 months (Luna)
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	
INFORMATION SOURCES	
References	Luna, Tara; Evans, Jeff.; Wick, Dale.; Hosokawa, Joy. 2008. Propagation protocol for production of container <i>Juncus mertensianus</i> Bong. plants (160 ml conetainers); USDI NPS - Glacier National Park, West Glacier, Montana. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 18 May 2011). Moscow (ID):

	<p>University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>"Juncus mertensianus." <i>Flora of North America</i>. EFloras.org. Web. 18 May 2011. http://www.efloras.org</p> <p>Pojar, Jim, A. MacKinnon, and Paul B. Alaback. <i>Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska</i>. Redmond, WA: Lone Pine Pub., 1994. Print.</p>
Other Sources Consulted	<p>Guides, Step. "Juncus Mertensianus (Mertens' Rush) NPIN." <i>Lady Bird Johnson Wildflower Center - The University of Texas at Austin</i>. Web. 18 May 2011. http://www.wildflower.org/plants/result.php?id_plant=JUME3.</p> <p>"Juncus Mertensianus." <i>Wikipedia, the Free Encyclopedia</i>. Web. 18 May 2011. http://en.wikipedia.org/wiki/Juncus_mertensianus.</p> <p>Kozloff, Eugene N. <i>Plants of Western Oregon, Washington & British Columbia</i>. Portland, Or.: Timber, 2005. Print.</p> <p>Niehaus, Theodore F., and Charles L. Ripper. <i>A Field Guide to Pacific States Wildflowers: Field Marks of Species Found in Washington, Oregon, California, and Adjacent Areas : a Visual Approach Arranged by Color, Form, and Detail</i>. Boston: Houghton Mifflin, 1976. Print.</p> <p>Schofield, Janice J., and Richard W. Tyler. <i>Discovering Wild Plants: Alaska, Western Canada, the Northwest</i>. Anchorage: Alaska Northwest, 1989. Print.</p> <p>Turner, Mark, and Phyllis Gustafson. <i>Wildflowers of the Pacific Northwest</i>. Portland: Timber, 2006. Print.</p> <p>"Tropicos Name - Juncus Mertensianus Bong." <i>Tropicos - Home</i>. Web. 18 May 2011. http://www.tropicos.org/Name/16900159.</p>
Protocol Author	Austin Dickson
Date Protocol Created or Updated	05/18/11

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