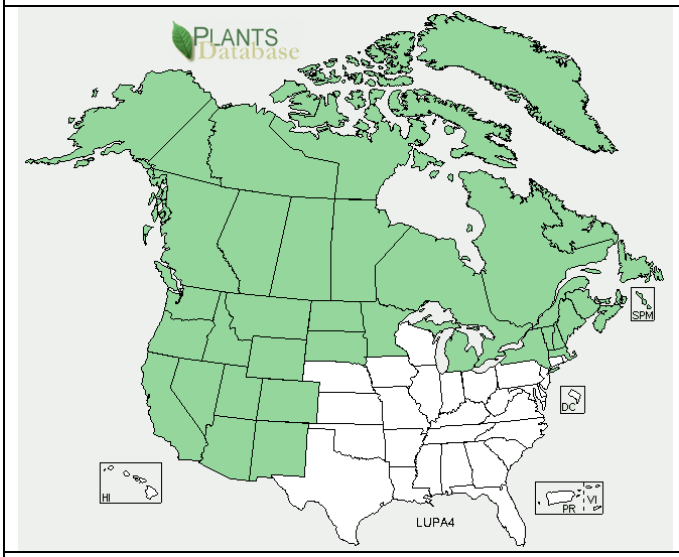
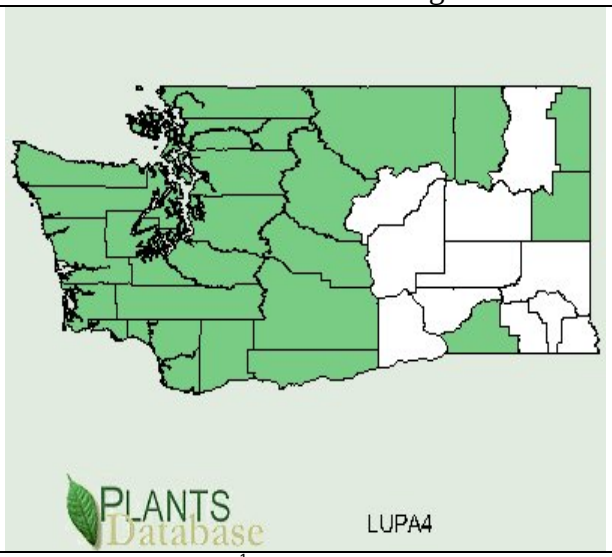
Plant Propagation Protocol for *Luzula parviflora*

ESRM 412 – Native Plant Production

North American Distribution	Distribution in Washington
	

Source of map images: USDA PLANTS Database[1]

TAXONOMY	
Family Names	
Family Scientific Name:	Juncaceae
Family Common Name:	Rush family
Scientific Names	
Genus:	*Luzula*
Species:	*parviflora*
Species Authority:	(Ehrh.) Desv.[1] or (Ehrhart) Desvaux[2]
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s):	*Juncoides parviflorum* (Ehrh.) Coville, *Juncus melanocarpus* Michx., *Juncus parviflorus* Ehrh., *Luzula melanocarpa* (Michx.) Desv., *Luzula parviflora* (Ehrh.) Desv. ssp. *melanocarpa* (Michx.) Tolm., *L. parviflora* (Ehrh.) Desv. var. *melanocarpa* (Michx.) Buchenau[1], *Luzula* sect. *Anthelaea* Grisebach[3]
Common Name(s):	Smallflowered woodrush[1]
Species Code:	LUPA4[1]
GENERAL INFORMATION	
Geographical range:	Range includes all of Canada, Greenland, Alaska and western and northern states of the contiguous U.S. (see distribution maps above).[1]
Ecological distribution:	Found in meadow and wet grassland ecosystems from

	temperate climate zones to subalpine boreal forests; also found on herb slopes and in willow thickets.[2]
Climate and elevation range:	Throughout much of its range, *L. parviflora* is considered to be a montane or subalpine species[4]; in the Puget Sound region it is found from low to relatively high elevations.[5]
Local habitat and abundance; may include commonly associated species	See ecological distribution section for information on habitat.
Plant strategy type / successional stage:	Colonizes disturbed sites such as borrow pits, substrates exposed by windthrow, road and trail edges and alluvial deposits.[3]
Plant characteristics:	Perennial graminoid with a tufted growth habit growing solitarily or from rhizomes or stolons; between 20 to 80 cm high; has both basal and stem leaves which are flat but with a pointed tip, 5-10 mm in width with white hairs along the margins; flowers are greenish to brown and are born on a nodding panicle; stems often reddish at the base; small, yellow-brown, smooth seeds are contained within ovular, brown capsules; seeds may be "frilly" at the tip.[2, 3, 5]
PROPAGATION DETAILS	
Ecotype:	Information on ecotypes where specific studies were conducted is provided below as applicable.
Propagation Goal:	Plants[6]
Propagation Method:	Seed[6]
Product Type:	Container (plug)[6]
Stock Type:	No information found.
Time to Grow:	No information found.
Target Specifications:	No information found.
Propagule Collection:	Seeds were collected from the Elwha watershed on the Olympic Peninsula of Washington in July and August.[7]
Propagule Processing/Propagule Characteristics:	Seeds are long-lived and may be viable for over 200 years in tundra environments of Alaska.[8]
Pre-Planting Propagule Treatments:	Dormancy is understood to be physiological[4, 6]; five weeks of cold-moist stratification was used to break dormancy of seeds collected from the Olympic Peninsula of Washington.[7] In a study of seed dormancy treatments for *L. parviflora* and *Luzula spicata*, it was concluded that the germination inhibitor in *L. parviflora* seeds is located at the micropylar end and that the inhibitor interacts with gibberellin hormones.[4] This study indicated that seed after-ripening was important in the germination of *L. parviflora*. One hundred percent germination of *L.*

	parviflora was achieved by storing seeds at room temperature for 8 months (the after-ripening treatment) and then scarifying the micropyle; 66% germination was achieved by storing seeds for one month at room temperature and then scarifying the micropyle; germination rates of 28-30% were achieved after storing seeds at room temperature for 8 months and then scarifying the hilar end of the seed; no germination occurred when seeds were stored for only one month at room temperature and then either unscarified or scarified at the hilar end.[4]
Growing Area Preparation / Annual Practices for Perennial Crops:	One study reviewed grew *L. parviflora* in four inch pots and used chipped montmorillonite clay as a growing medium.[8] A 50% Hoagland's fertilizer solution (50 mL) was applied daily and plants were irrigated daily.
Establishment Phase:	No information found.
Length of Establishment Phase:	No information found.
Active Growth:	No information found.
Length of Active Growth Phase:	No information found.
Hardening:	No information found.
Length of Hardening Phase:	No information found.
Harvesting, Storage and Shipping:	No information found.
Length of Storage:	No information found.
Guidelines for Outplanting / Performance on Typical Sites:	No information found.
Other Comments:	No other information was found.
INFORMATION SOURCES	
References (full citations):	See below
Other Sources Consulted (but that contained no pertinent information) (full citations):	See below
Protocol Author (First and last name):	Jenny Buening
Date Protocol Created or Updated (MM/DD/YY):	05/15/11

Note: This template was modified by J.D. Bakker from that available at: http://www.nativeplantnetwork.org/network/SampleBlankForm.asp

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7. Bartow, A. 2005. The 2005 Olympic National Park Annual Report: Elwha River Ecosystem and Fisheries Restoration. Corvallis Plant Materials Center Natural Resources Conservation Service, Corvallis, OR.
8. Bennington, C. C., McGraw, J. B., Vavrek, M. C. 1991. Ecological Genetic Variation in Seed Banks. II. Phenotypic and Genetic Differences Between Young and Old Subpopulations of *Luzula Parviflora.* Journal of Ecology. Vol. 79, No. 3: pp. 627-643.

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