Plant Propagation Protocol for *[Lomatium cuspidatum]*
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Apiaceae
Family Common Name:	Carrot Family
Scientific Names	
Genus:	*Lomatium*
Species:	*Cuspidatum*
Species Authority:	Mathias & Constance
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s) (include full scientific names (e.g., *Elymus glaucus* Buckley), including variety or subspecies information)	*Leptotaenia watsoni* Coulter & Rose (Knoke, 2012) (Agriculture, 2009)
Common Name(s):	Wenatchee Desert Parsley, fern-leaved desert parsley, fern-leaved lomatium or biscuitroot.(Skinner, 2005)
Species Code (as per USDA Plants database):	LOCU2, (USDA, 2012)
GENERAL INFORMATION	

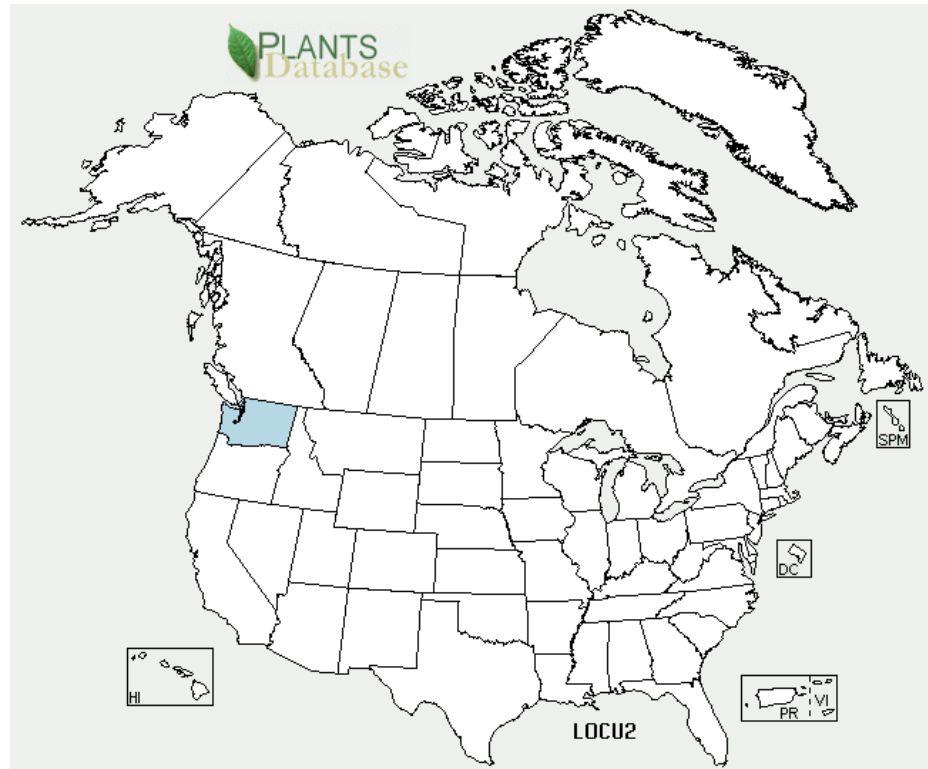| Geographical range (distribution maps for North America and Washington state)	United States and Canada Distribution: Image courtesy of USDA Plants Database Washington State distribution:

Image courtesy of USDA Plants Database

Ecological distribution (ecosystems it occurs in, etc):	Endemic to the Wenatchee Mountains of Chelan and Kittitas Counties, Washington. (Knoke, 2012)
Climate and elevation range	Habitat is in open, rocky slopes, often on serpentine, between 2500-6000 ft. (Knoke, 2012)
Local habitat and abundance; may include commonly associated species	This species locally abundant. (Knoke, 2012).
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	

Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Glabrous, somewhat-glaucous perennial from a woody taproot, the top covered with remnants of previous year's leaf bases, the stems are up to 5 dm. long. This herb blooms in May through July. The leaves mostly basal, ternate-pinnately dissected into numerous small, crowded, firm, sharp-pointed ultimate segments 1-5 mm. long; stems or scapes simple or few-branched, ascending. **Flowers:** Inflorescence a compound umbel, the rays 5-13, unequal, 3.5-10 cm. long; involucre none; involucel bractlets narrow and inconspicuous; calyx teeth obsolete; flowers brownish-red; fruiting pedicels 5-20 mm. long. **Fruits:** Fruit elliptic, 9-13 mm. long, the lateral wings very narrow, about 0.5 mm. wide. (Knoke, 2012) *Lomatium dissectum* is the most prominent of all the *Lomatiums*. Fine cut leaves and yellow flowers borne on plants 3 or more feet tall. Grows early and then goes dormant before hot weather arrives in summer. (Skinner, 2005)
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	Wild seeds are collected and are found in rocky terrain in open areas in the higher elevations. (Knoke, 2012) This species is found where no trees species occur. Steep talus or exposed ridge tops are places that this perennial herb will be found. It is a serpentine habitat field indicator species. (Franklin, 1984).
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Collection of wild seed is the preferred method. (Knoke, 2012)
Propagation Method (Options: Seed or Vegetative):	Grows readily from seed given extremely long stratification of up to two years, as some seeds won't germinate until after a second winter. (Skinner, 2005)
Product Type (options: Container (plug), Bareroot (field	Seed should be sown outdoors in pots or in the ground in late August or early September.(Skinner, 2005)

grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	Seedling growth is slow and it takes at least 2 years to grow to transplant size and another couple years to flower.(Skinner, 2005)
Target Specifications (size or characteristics of target plants to be produced):	
Propagule Collection (how, when, etc):	For the *Lomatum* species in general, seed should be collected in late spring to early summer and planted outside in the fall. (Robson, 2008)
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	
Growing Area Preparation / Annual	

Practices for Perennial Crops (growing media, type and size of containers, etc):	
Establishment Phase (from seeding to germination):	Leave planted seeds outside to cold stratify over the winter for germination in the spring. (Robson, 2008)
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active Growth Phase:	
Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	
Length of Hardening Phase:	
Harvesting, Storage and Shipping (of seedlings):	

Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Plants will take a few years to reach flowering size. (Robson, 2008)
Other Comments (including collection restrictions or guidelines, if available):	
INFORMATION SOURCES	
References (full citations):	Agriculture & Agri Food Canada, (2009), Catalog of Type Specimens in the Vascular Plant Herbarium, (http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1257345100081&lang=eng, accessed 16 May 2012) Franklin, F. and Dyrness C.T. (1984), Natural Vegetation of Oregon and Washington, Oregon State Publishing, pp.306-309 Images reference: *Lomatium. cuspidatum* USDA, NRCS. 2012. The PLANTS Database (http://plants.usda.gov, 8 May 2012). National Plant Data Team, Greensboro, NC 27401-4901 USA. Landscope Washington, (2012), (http://www.landscope.org/washington/plants-animals/Species%20Lists/species_101/, accessed 16 May 2012 Knoke, D and Giblin, D, (2012), Lomatium cuspidatum, Wenatchee Desert

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Skinner, D et al, (2005), Characteristics and Uses of Native Palouse in Landscaping, (http://public.wsu.edu/~pmc_nrcs/Docs/Forbs_for_Landscaping.pdf, accessed 16 May 2012

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| Other Sources Consulted (but that contained no pertinent information) (full citations): | Barbour, M. and Billings W. D. (2000), North American Terrestrial Vegetation, United Kingdom, Cambridge University Press.

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Date Protocol Created or Updated (MM/DD/YY):	06/07/12

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