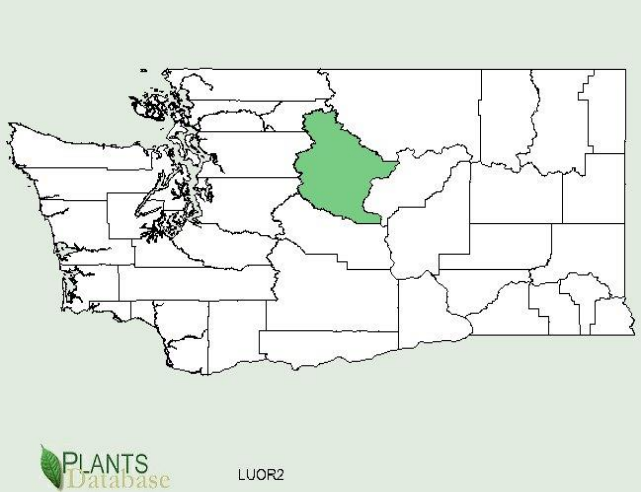
Plant Propagation Protocol for *Lupinus ornatus*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/LUOR2.*pdf*



Images from USDA Plants Database[8]

TAXONOMY	
Plant Family	Fabaceae [8] Peas/Legumes [7]
Scientific Name	*Lupinus ornatus* [8]
Common Name	Ornate Lupine [8]
Species Scientific Name	*ornatus*[8]
Scientific Name	*Lupinus ornatus* Douglas ex Lindl. [8]
Varieties	None
Sub-species	None
Cultivar	None, though Lupines are known to hybridize [1]
Common Synonym(s)	*Lupinus minimus* Douglas ex Hook. var. *hellerae* (A. Heller) C.P. Sm. [8] *Lupinus hellerae* A. Heller [8] *Lupinus sericeus* Pursh [2]
Common Name(s)	Ornate Lupine [8]
Species Code (as per USDA Plants database)	LUOR2 [8]
GENERAL INFORMATION	
Geographical range	USA (ID, OR, WA [Chelan County]) [8] *See Distribution Maps
Ecological distribution	Grassland, sagebrush, mountain brush, aspen and conifer forests[6]. Will only grow in light, dry soils[4].
Climate and elevation range	Grows up to 3000m in elevation, occurring on dry, rocky sites with gentle to steep slopes[6].
Local habitat and abundance	Grows best in dry, sandy-loam and clayey-loam soils[6].
Plant strategy type / successional	Nitrogen Fixer[6, 3]. Does well as early-seral and on

stage	disturbed sites [3]
Plant characteristics	Perennial forb/herb[8]. Irregular flowers in short, dense racemes, deep blue in color[4]. Palmately compound leaves, silky pubescence, height to 40 inches[9], 7-12 lanceolate leaflets[4]. Nitrogen Fixer[6], [3].
PROPAGATION DETAILS From Seed	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Propagules (seeds)
Stock Type	
Time to Grow	Germination within a few weeks if planted in Fall or Spring[5]. Matures from early to late August[6].
Target Specifications	Poor transplant, so move young stock when it is still very small[1].
Propagule Collection Instructions	Strip seed pods from the spike and handle carefully due to high moisture content[10]. Collect in late summer before the pods split open[5].
Propagule Processing/Propagule Characteristics	Fresh seeds do not require pre-treatment, but stored seeds may require hot water (16 hour soak treatments) [6], or acid-scarification[10]. May also treat with sandpaper[6]. Seeds may be stored for 5-10 years without loss of viability[6]. Seeds per kilogram: 43,430-92,595[6]
Pre-Planting Propagule Treatments	Clean with a hammermill and fanningmill, store in cold, dry environment[6]
Growing Area Preparation / Annual Practices for Perennial Crops	After seeds cool plant in flats of potting soil or plant directly into a garden[5].
Establishment Phase Details	Germination within a few weeks if planted in Fall or Spring[5].
Length of Establishment Phase	2-4 weeks[5].
Active Growth Phase	Keep moist to dry in full sun, in lime-free garden soil[1].
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	Collect in late summer before the pods split open[5]. Clean with a hammermill and fanningmill, store in cold, dry environment[6]
Length of Storage	Seeds may be stored for 5-10 years without loss of viability[6]. Nursery viability is limited due to poor transplanting. Plants should be transplanted shortly after germination[1].

Guidelines for Outplanting / Performance on Typical Sites	Fast-growing but short lived, they will often self-sow in gardens[5].
Other Comments	Lupines do not tolerate a great deal of handling[6], and are shade intolerant requiring 100% sun in dry soil[3]. Seed pods have a reputation of being poisonous to livestock[7].
PROPAGATION DETAILS From Cuttings	
Ecotype	
Propagation Goal	Plants
Propagation Method	Vegetative.
Product Type	Propagules (cuttings)
Stock Type	
Time to Grow	Poor transplant, so move young stock when it is still very small[1].
Target Specifications	Keep moist and humid until roots form[5].
Propagule Collection Instructions	Take cutting from side shoots of hardened stems/base of crown in early Spring[6]. Treat the cuttings with rooting hormone and set into pumice or another medium[5].
Propagule Processing/Propagule Characteristics	Treat with rooting hormone and set into pumice or another medium[5]. Do not over handle[6].
Pre-Planting Propagule Treatments	Keep moist and humid until roots form[5].
Growing Area Preparation / Annual Practices for Perennial Crops	Pumice or another medium[5]. Lime-free garden soil[1].
Establishment Phase Details	Keep moist and humid until roots form in a few weeks[5].
Length of Establishment Phase	2-4 weeks[5].
Active Growth Phase	Keep moist to dry in full sun, in lime-free garden soil[1].
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	Nursery viability is limited due to poor transplanting. Plants should be transplanted shortly after root formation[1].
Guidelines for Outplanting / Performance on Typical Sites	Fast-growing but short lived, they will often self-sow in gardens[5].
Other Comments	Lupines do not tolerate a great deal of handling[6], and are shade intolerant requiring 100% sun in dry soil[3]. Seed pods have a reputation of being poisonous to livestock[7].

INFORMATION SOURCES	
References	See Below
Other Sources Consulted	Pojar J, MacKinnon A. 1994. Plants of the Pacific Northwest Coast. Lone Pine Publishing. Vancouver BC, Canada.
Protocol Author	Andy Shuckhart
Date Protocol Created or Updated	04/23/14

References

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