

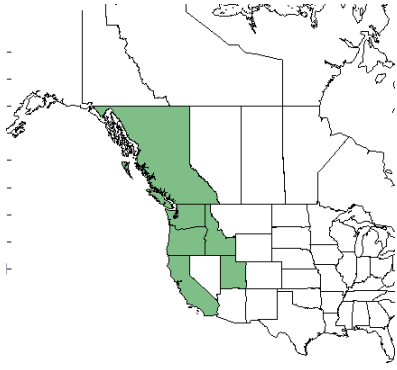
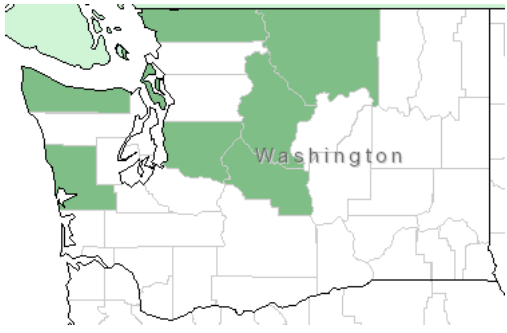
Plant Propagation Protocol for *Lotus denticulatus*

ESRM 412 – Native Plant Production

Spring 2016

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

TAXONOMY	
Plant Family	
Scientific Name	Fabaceae
Common Name	Pea family
Species Scientific Name	
Scientific Name	<i>Lotus denticulatus</i>
Varieties	<i>Lotus denticulatus</i> (E. Drew) Greene
Sub-species	
Cultivar	
Common Synonym	<i>Acmispon denticulatus</i> (Drew) D. D. Sokoloff <i>Lotus decumbens</i> Poir. <i>Lotus nummularius</i> Rchb. ex Steud., nom. nud. <i>Lotus corniculatus</i> L. subsp. <i>major</i> auct. <i>Lotus major</i> auct., non Scop. <i>Lotus pedunculatus</i> auct. mult. <i>Lotus pedunculatus</i> Cav. var. <i>villosus</i> (Lamotte) O. Boldòs & Vigo <i>Lotus uliginosus</i> Schkuhr var. <i>villosus</i> Lamotte
Common Name(s)	riverbar bird's-foot trefoil, toothed lotus, meadow trefoil
Species Code (as per USDA Plants database)	LODE
GENERAL INFORMATION	

North American Distribution	Washington Distribution
	
Source USDA Plants Database	

Ecological distribution	<i>Lotus denticulatus</i> likes moist soils and can thrive in a number of habitat types including in open meadows as well as on steep, sandy bluffs along salt water. ²
Climate and elevation range	Riverbar bird's-foot trefoil establishes successfully in moist climates between sea level and 1400 meters. ⁴
Local habitat and abundance (may include commonly associated species)	
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc.)	Its sub-pinnate or palate leaves have three to four leaflets 1-2cm in length and are usually asymmetrically distributed across the plant. ⁷

PROPAGATION DETAILS³

Ecotype	Seed
Propagation Goal	Forage production
Propagation Method	Seed
Product Type	Propagules
Stock Type	
Time to Grow	9-10 months
Target Specifications	18-24 in.
Propagule Collection Instructions	Collect in late summer when the flower petals have turned brown and fallen off the fruit.
Propagule Processing/Propagule	Plant fruits put into food processor with water to

Characteristics	chop off the fleshy bits before running the mix through a sieve to let the seeds through and filter out the flesh. There are an around 375,000 seeds per pound.
Pre-Planting Propagule Treatments	Seeds were scarred with acid to overcome any physical dormancy before they're sown 4 to 8 pounds per acre. ⁵
Growing Area Preparation / Annual Practices for Perennial Crops	Seeds are drilled ¼ in into the soil in late summer. To maintain a healthy crop 24 to 38 days should pass between grazing's/mowing, with a 60 rest required every three years. From there some can just be dug up and transplanted to pretty much anywhere.
Establishment Phase Details	Scarified seeds stratify in moist soils through winter until they mature from any physiological dormancy. ⁶
Length of Establishment Phase	This takes between 3-5 months
Active Growth Phase	From April to mid-October.
Length of Active Growth Phase	Between 6 and 7 months.
Hardening Phase	Plants lose their reproductive organs and enter a semi dormant period of slowed transpiration and growth through the winter.
Length of Hardening Phase	3-4 Weeks
Harvesting, Storage and Shipping	Shallow roots in a dense sod. Round plugs are dug and moved into 2 quart pots for transportation and selling.
Length of Storage	Up to 3 months at which time plants are either replanted in the field or thrown out.
Guidelines for Outplanting / Performance on Typical Sites	Lotus denticulotu is does better in areas that receive at least 20 inches of annual precipitation. It is suited to low and moderately fertile soils with relatively poor internal drainage.
Other Comments	Acid scarification is a way to relieve a large number of seeds (375,000 per pound) from their physical dormancy in an efficient manner. ¹
INFORMATION SOURCES	
References	See Below
Other Sources Consulted	See Below
Protocol Author	Thomas Radon
Date Protocol Created or Updated	06/09/16

References:

¹"Acmispon Denticulatus - Toothed Lotus." *California Native Plant Link Exchange*. Saint Mary's College of California, n.d. Web. Accessed 9, June 2016. Available at <http://www.cnplx.info/nplx/species?taxon=Acmispon+denticulatus>

²Atkinson, Scott, and Fr Sharpe. "Fabaceae." *Wild Plants of the San Juan Islands*. Second ed. Seattle, WA: Mountaineers, 1993. 154. Print.

³"Bird's Foot Trefoil" Garden Guides. Web. Accessed 9, June 2016. Available at <http://www.gardenguides.com/taxonomy/birds-foot-trefoil-lotus-corniculatus/>

⁴Goldman, Douglas H., and Bruce G. Baldwin. "Eudicots." *The Jepson Manual: Vascular Plants of California*. Illustrated ed. N.p.: U of California, 2012. 726. Print

⁵"*Lotus denticulatus* (E. Drew) Greene-riverbar bird's-foot trefoil" USDA Plants Database. Web. Accessed 9, June 2016. Available at <http://plants.usda.gov/core/profile?symbol=LODE>

⁶"Meadow Trefoil (*Lotus Denticulatus*)." *NatureWatch NZ*. Encyclopedia of Life, n.d. Web. Accessed 10, June 2016. Available at <http://naturewatch.org.nz/taxa/164819-Lotus-denticulatus>

⁷Pojar, Jim, A. MacKinnon, and Paul B. Alaback. "Lotus." *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska*. Revised ed. Redmond, WA: Lone Pine Pub., 2004. 328. Print.

Other Resources Looked at:

¹"Results Detailed Report." NatureServe, 2015. Web. Accessed 9 June, 2016. Available at <http://explorer.natureserve.org/servlet/NatureServe?searchName=Lotus%2Bdenticulatus>