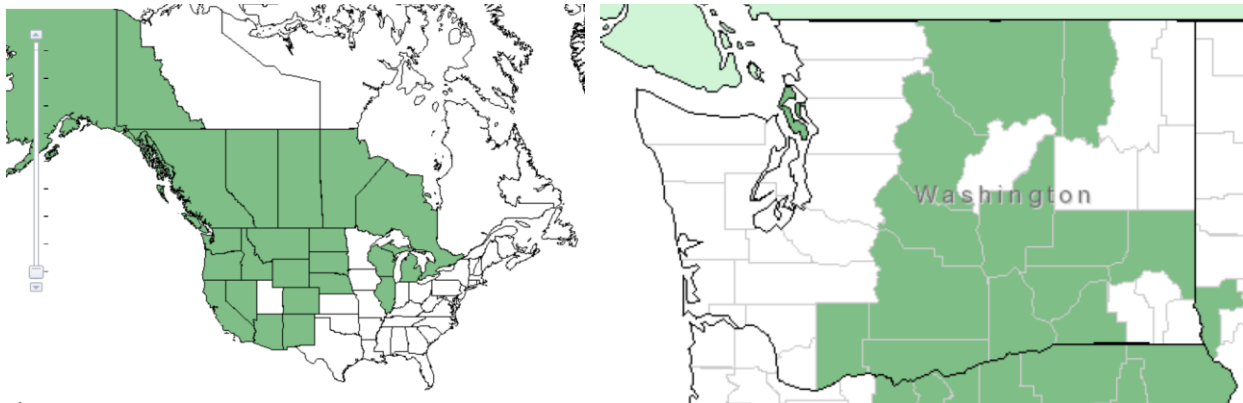


Plant Propagation Protocol for *Elymus lanceolatus*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/ELLA3.pdf>



TAXONOMY

Plant Family	
Scientific Name	Poaceae
Common Name	Grass
Species	
Scientific Name	
Scientific Name	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould
Varieties	
Sub-species	- <i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i> (Scribn. & Sm.) Gould - <i>Elymus lanceolatus</i> ssp. <i>psammophilus</i> (Gillett & Senn) A. Love
Cultivar	
Common Synonym(s)	<i>Agropyron dasystachyum</i> , <i>Agropyron dasystachyum</i> var. <i>riparium</i> , <i>Agropyron dasystachyum</i> var. <i>riparum</i> , <i>Agropyron elmeri</i> , <i>Agropyron lanceolatum</i> , <i>Agropyron riparium</i> , <i>Agropyron riparium</i> , <i>Elymus lanceolatus</i> var. <i>riparius</i> , <i>Elymus subvillosus</i> , <i>Elytrigia dasystachya</i> , <i>Elytrigia</i>

	<i>riparia, Elytrigia riparia</i>
Common Name(s)	thickspike wheatgrass, northern wheatgrass, streambank wheatgrass, wild rye
Species Code (as per USDA Plants database)	ELLA3
GENERAL INFORMATION	
Geographical range	Canada, Alaska, most of the western half of the United States as well as some of the northeastern states near the great lakes. (distribution maps above from USDA plant profile)
Ecological distribution	It is commonly found in arid to semi-arid ecosystems in western North America with mean annual precipitation averages of 8-36 inches. Common ecosystems are mountain grasslands, desert grasslands, and prairies. In eastern Washington it is commonly found on dry sandy soils by the Columbia basin. (US Forest Service)
Climate and elevation range	Typically found in arid to semi-arid climates with low precipitation and low elevation
Local habitat and abundance	Typically found in high abundance. Associated species and species groups it is commonly found with but not limited to are Ponderosa pine, Douglas-fir, White-red-jack pine, and Pinyon-juniper. (US Forest Service)
Plant strategy type / successional stage	It's known to be an early successional species. It's found in high abundance post fire and is also a stress tolerator that thrives in hot and dry climates.
Plant characteristics	It's a perennial grass with an extensive rhizome system. The roots are often so dense it inhibits growth of other species making it the dominant species in its ecosystem.
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	
Time to Grow	4 months
Target Specifications	Tight root plug in container
Propagule Collection Instructions	-Seeds ripen in Pullman area in mid to late July -Collect seeds when the inflorescence begins to dry, and the seed is in soft to hard dough stage, but before it shatters from the inflorescence -Strip seed from inflorescence

	- Harvested seed is stored in paper bags at room temperature until cleaned. 150-160,700 seed/lb (Hassell, et al 1996)
Propagule Processing/Propagule Characteristics	-Small amounts are rubbed to free the seeds, and then they are cleaned with an air column separator -Larger amounts are threshed with a hammermill and then they are cleaned with air screen equipment after -Clean seed is stored in controlled conditions. They are kept at 40 degrees Fahrenheit and 40% relative humidity. (Skinner, NPN)
Pre-Planting Propagule Treatments	The seed has good germination without pretreatments but can be treated with Carboxin to prevent head smut in subsequent seed crops. (Skinner, NPN)
Growing Area Preparation / Annual Practices for Perennial Crops	-In January, sow seeds in 10 cu. Inch Ray Leach Super cell conetainers with sunshine #4 and cover lightly. -Apply thin layer of pea gravel to prevent seeds from floating -Water conetainers deeply (Skinner, NPN)
Establishment Phase Details	-Keep medium moist until germination occurs -Germination is expected in 6-10 days (Skinner, NPN)
Length of Establishment Phase	2 weeks
Active Growth Phase	-Water plants deeply every other day -Fertilize once a week with a complete, water soluble fertilizer containing micro-nutrients (Skinner, NPN)
Length of Active Growth Phase	2-4 weeks
Hardening Phase	-Move plants to cold frame in late March or early April -Water every other day if weather is cool, every day during hot dry spells
Length of Hardening Phase	2-4 weeks
Harvesting, Storage and Shipping	Information specific to harvesting, storage and shipping were not provided in the protocol information by David Skinner
Length of Storage	Information specific to the length of storage was not provided in the protocol information by David Skinner
Guidelines for Outplanting / Performance on Typical Sites	Information specific for outplanting guidelines was not provided in the protocol information by David Skinner

Other Comments	Plants can be propagated from pieces of rhizome as well. This method should only be used with plants already growing in cultivation. Plants should not be dug up from stands in the wild.
INFORMATION SOURCES	
References	<ul style="list-style-type: none"> • “Native Plant Network.” <i>Reforestation, Nurseries and Genetics Resources</i>, npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=poaceae-elymus-2831. • “Plants Profile for Elymus Lanceolatus (Thickspike Wheatgrass).” <i>Plants Profile for Taxodium Ascendens (Pond Cypress)</i>, plants.usda.gov/core/profile?symbol=ELLA3. • “Species: Elymus Lanceolatus.” <i>US Forest Service</i>, www.fs.fed.us/database/feis/plants/graminoid/elylan/all.html#LIFE%20FORM. • “Plant Database.” <i>Lady Bird Johnson Wildflower Center - The University of Texas at Austin</i>, www.wildflower.org/plants/result.php?id_plant=ELLAL. • “Elymus Lanceolatus.” <i>WTU Herbarium Image Collection - Burke Museum</i>, biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Elymus&Species=lanceolatus. • “Elymus Lanceolatus Ssp. Lanceolatus.” <i>Granite Seed and Erosion Control</i>, graniteseed.com/products/elymus-lanceolatus-ssp-lanceolatus/. • Hassell, et al. 1996. Seeding Rate Statistics for Native and Introduced Species. USDI National Park Service and USDA Natural Resources Conservation Service.
Other Sources Consulted	<ul style="list-style-type: none"> • “CalPhotos.” <i>Heterodon Kennerlyi; Mexican Hognose Snake</i>, calphotos.berkeley.edu/cgi/img_query?where-taxon=Elymus%2Blanceolatus • “ITIS Standard Report Page: Elymus Lanceolatus Ssp. Lanceolatus.” <i>ITIS Standard Report Page: Cichlidae</i>, www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=524037#null. • “Thickspike Wheatgrass: Elymus Lanceolatus (Cyperales: Poaceae): Invasive Plant Atlas of the United States.” <i>Scotch Broom: Cytisus Scoparius (Fabales: Fabaceae (Leguminosae)): Invasive Plant Atlas of the United States</i>, www.invasiveplantatlas.org/subject.html?sub=51836.
Protocol Author	Jake Henry
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