

**Plant Propagation Protocol for [Insert Species]**  
 ESRM 412 – Native Plant Production



USDA Data Base

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Poaceae
Common Name	Pinewoods Needlegrass
<b>Species Scientific Name</b>	
Scientific Name	Achnatherum pinetorum
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	Stipa pinetorum M.E. Jones
Common Name(s)	Pinewood Needlegrass
Species Code (as per USDA Plants database)	STPI2
<b>GENERAL INFORMATION</b>	
Geographical range	California Oregon Montana Colorado Desert Mountains Sierra Nevada
Ecological distribution	Rocky soil, woodland, conifer forest
Climate and elevation range	1900-3810m

Local habitat and abundance	Normally found in rocky soils and subalpine locations
Plant strategy type / successional stage	Plants are tightly cespitose and not rhizomatous
Plant characteristics	Pine needles that form tight bunches. Inflorescence can reach up to about 20 centimeters long Stem: 1-5 dm Leaf: 0.5-1 mm wide blade
<b>PROPAGATION DETAILS</b>	
Ecotype	Zion National Park, Utah
Propagation Goal	Plants
Propagation Method	Seeds
Product Type	Container
Stock Type	D 40 Containers
Time to Grow	1 year
Target Specifications	Height: N/A Caliper: N/A Firm root plug in container. (Decker)
Propagule Collection Instructions	The seeds were hand collected from sites within the Park, only when fruits have fully matured. (Decker)
Propagule Processing/Propagule Characteristics	Seeds are stored in sealed containers in a refrigeration that is between 40 and 60 F (Decker)
Pre-Planting Propagule Treatments	The seeds are naturally stratified in the outdoors during fall season. Seeds are directly sown (3-5 per cell) into D40 cells containing a medium of 1.5 parts vermiculite, 1 part sterile sand, 1 part coarse surface, and 2 parts peat moss. They are each watered thoroughly after sowing and are not allowed to dry out completely during stratification and germination. (Decker)
Growing Area Preparation / Annual Practices for Perennial Crops	Seedlings are grown in a shadehouse during the months of March through October(Decker)
Establishment Phase Details	13:13:13 NPK Osmocote time release fertilizer (Decker)
Length of Establishment Phase	N/A
Active Growth Phase	Seedlings are hand watered. Throughout the active growth phase, we irrigate when containers are nearly dry as a method of hardening the plants while they are being grown. (Decker)
Length of Active Growth Phase	N/A

Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	N/A
Other Comments	N/A

### INFORMATION SOURCES

References	<ol style="list-style-type: none"> <li>1. Decker, Cheryl. 2003. Propagation protocol for production of Container (plug) <i>Achnatherum speciosum</i> (Trin. &amp; Rupr.) Barkworth plants D 40 containers; USDI NPS - Zion National Park Springdale, Utah. In: Native Plant Network. URL: <a href="http://NativePlantNetwork.org">http://NativePlantNetwork.org</a> (accessed 2020/05/27). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.</li> <li>2. "Achnatherum pinetorum". Grass Manual Treatment. Archived from the original on June 11, 2011. Retrieved July 28, 2008.</li> <li>3. <i>Achnatherum pinetorum</i> syn. <i>Stipa pinetorum</i> from Manual of the grasses of the United States. USDA Miscellaneous Publication No. 200. Washington, DC. 1950.</li> </ol>
Other Sources Consulted	<ol style="list-style-type: none"> <li>1. <a href="https://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?8738,8739,8755">https://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?8738,8739,8755</a></li> <li>2. <a href="http://beta.floranorthamerica.org/Achnatherum_pinetorum">http://beta.floranorthamerica.org/Achnatherum_pinetorum</a></li> <li>3. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Sierra Nevada Bighorn Sheep (<i>Ovis canadensis californiana</i>) and Proposed Taxonomic Revision. (2007). <i>The Federal Register / FIND</i>, 72(142), 40956.</li> <li>4. Mansfield, Donald H. (2010). Vascular flora of the Owyhee River watershed in Oregon. <i>Journal of the Idaho Academy of Science</i>, 46(2), 1.</li> <li>5. Native Plant Propagation. (2012). <i>Premium Official News</i>, p. Premium Official News, April 25, 2012.</li> <li>6. Link, E., Rose Lake Plant Materials Center, &amp; United States. Soil Conservation Service. (1993). <i>Native plant</i></li> </ol>

	<p><i>propagation techniques for national parks : A cooperative program between the U.S. Department of Agriculture, Soil Conservation Service and U.S. Department of Interior, National Park Service.</i> East Lansing, Mich.: Rose Lake Plant Materials Center.</p> <p>7. Dumroese, R., &amp; Landis, T. (2016). The Native Plant Propagation Protocol Database: 16 years of sharing information. <i>Native Plants Journal</i>, 17(3), 267-272.</p> <p>8. Rose, R., Chachulski, Caryn E. C., &amp; Haase, Diane L. (1998). <i>Propagation of Pacific Northwest native plants.</i> Corvallis: Oregon State University Press</p>
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