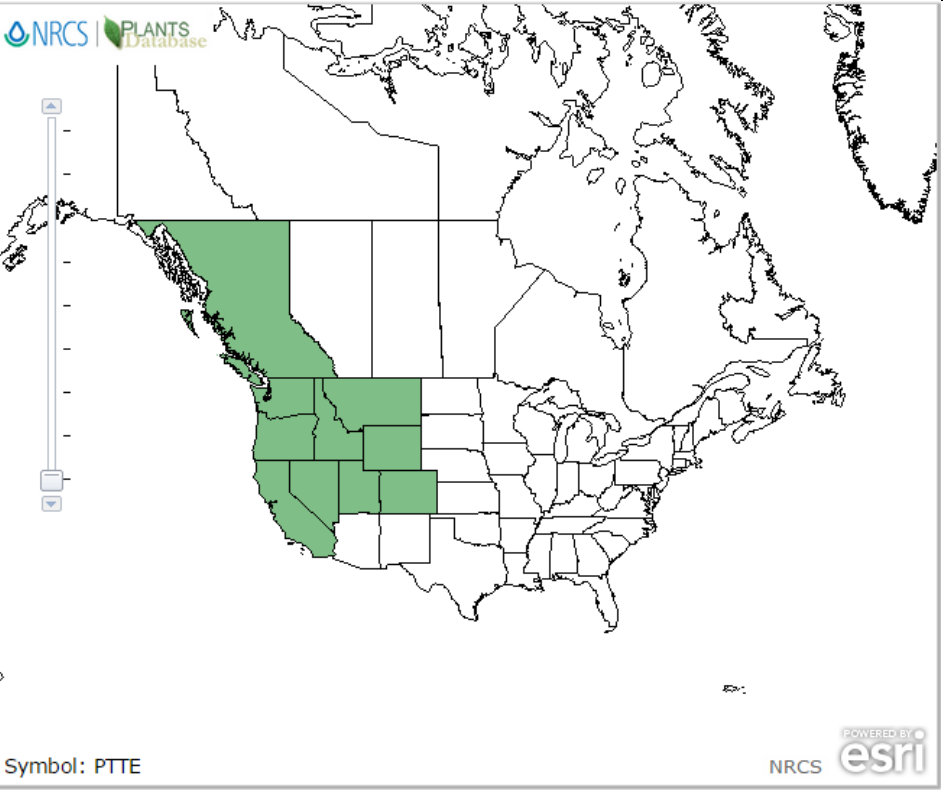


**Plant Propagation Protocol for *Pteryxia terebinthina***

ESRM 412 – Native Plant Production

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

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Apiaceae
Common Name	Carrot
<b>Species Scientific Name</b>	
Scientific Name	<i>Pteryxia terebinthina</i> (Hook.) J.M Coult. & Rose
Varieties	<i>Pteryxia terebinthina</i> (Hook.) J.M. Coult. & Rose var. <i>terebinthina</i> , <i>Pteryxia terebinthina</i> (Hook.) J.M. Coult. & Rose var. <i>albiflora</i> (Torr. & A. Gray) Mathias, <i>Pteryxia terebinthina</i> (Hook.) J.M. Coult. & Rose var. <i>californica</i> (J.M. Coult. & Rose) Mathias
Sub-species	None
Cultivar	None
Common Synonym(s)	<i>Cymopterus terebinthinus</i> (Hook.) Torr. & A. Gray
Common Name(s)	Turpentine wavewing, Rockloving wavewing
Species Code (as per USDA Plants database)	PTTE
<b>GENERAL INFORMATION</b>	

Geographical range	 <p>Symbol: PTTE</p> <p>Native, Introduced, Both, Absent/Unreported</p> <p>Native, No County Data, Introduced, No County Data, Both, No County Data</p> <p>Native Status: L48, AK, HI, PR, VI, NAV, CAN, GL, SPM, NA</p>
Ecological distribution	This species is found in drier areas in western North America. Within its natural range it can be found in dry desert climates and on the drier sides of the mountain ranges (Fertig).
Climate and elevation range	Turpentine waveweed can grow from the low elevation dunes in eastern Washington and Oregon to as high as 8,000 feet in some areas of Montana and Nevada. It prefers drier climates with well drained soils (L.F. James, 1980).
Local habitat and abundance	Locally this plant is not very abundant but can be found in montane areas on the east side of the Cascades and in the dry dune areas of southern and eastern Washington (Region 4 Habitat Type Indicator List).
Plant strategy type / successional stage	This plant is a stress tolerator that is capable of withstanding dry, well drained soils including sand. It survives these conditions by having a very long taproot (L.F. James, 1980).
Plant characteristics	This species is a perennial that has small white flowers that are in 1 inch clusters that are umbrella shaped. It has leaves that resemble parsley and it is known to be one of the earliest plants that begins to grow in the spring (L.F. James, 1980).
<b>PROPAGATION DETAILS</b>	
Ecotype	Not Found
Propagation Goal	Not Found

Propagation Method	Not Found
Product Type	Not Found
Stock Type	Not Found
Time to Grow	Not Found
Target Specifications	Not Found
Propagule Collection Instructions	Not Found
Propagule Processing/Propagule Characteristics	Not Found
Pre-Planting Propagule Treatments	Not Found
Growing Area Preparation / Annual Practices for Perennial Crops	Not Found
Establishment Phase Details	Not Found
Length of Establishment Phase	Not Found
Active Growth Phase	Not Found
Length of Active Growth Phase	Not Found
Hardening Phase	Not Found
Length of Hardening Phase	Not Found
Harvesting, Storage and Shipping	Not Found
Length of Storage	Not Found
Guidelines for Outplanting / Performance on Typical Sites	Not Found
Other Comments	No propagation guidelines or protocols were found for this species or this genus. Most of the scholarly articles about this genus have to do with chemicals found in their roots that are experimented with for pharmaceutical purposes. I do not know why no one is interested in growing this plant but all of the samples used in the pharmaceutical studies were collected around the Columbia river in both Oregon and Washington.
<b>INFORMATION SOURCES</b>	

References	<p>Fertig, Walter. "Plant of the Week." <i>Turpentine Spring-parsley</i>. U.S. Department of Agriculture Forest Service, n.d. Web. 18 May 2015. &lt;<a href="http://www.fs.fed.us/wildflowers/plant-of-the-week/cymopterus_terebinthinus.shtml">http://www.fs.fed.us/wildflowers/plant-of-the-week/cymopterus_terebinthinus.shtml</a>&gt;.</p> <p>Hallock, Lisa A. <i>Conservation Strategy for Washington State Inland Sand Dunes</i> (2007): n. pag. Washington State Department Of Natural Resources. Web.</p> <p>L.F. James, R.F. Keeler, A.E. Johnson, M.C. Williams, E.H. Cronin, and J.D. Olsen. <i>Plants Poisonous to Livestock in the Western States</i>. U.S. Department of Agriculture, Agriculture Information Bulletin 415, 90 pp. 1980.</p> <p>"Plants Profile for Pteryxia Terebinthina (turpentine Wavewing)." <i>Plants Profile for Pteryxia Terebinthina (turpentine Wavewing)</i>. U.S. Department of Agriculture Natural Resource Conservation Service, n.d. Web. 18 May 2015.</p> <p>"Region 4 Habitat Type Indicators List." <i>Region 4 Habitat Type Indicators List</i> (n.d.): n. pag. U.S. Department of Agriculture Forest Service. Web.  <a href="http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5423158.pdf">http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5423158.pdf</a></p>
Other Sources Consulted	<p>Beauchamp, Philip E., Vasu Dev, Elsa Munevar-Mendoza, and Peggy E. Moore. "Composition of Pteryxia Terebinthina Var. Californica (Coulter and Rose) Mathias Essential Oils." <i>Journal of Essential Oil Research</i> 12.3 (2000): 372-76. Web.</p> <p>Bryan, Gordon H. "Defibrillatory Substance From Pteryxia Terebinthina." <i>Journal of Pharmaceutical Sciences J. Pharm. Sci.</i> 51.9 (1962): 851-52. Web.</p> <p>George, Emma E., Donald H. Mansfield, James F. Smith, Ronald L. Hartman, Stephen R. Downie, and Cody E. Hinchliff. "Phylogenetic Analysis Reveals Multiple Cases of Morphological Parallelism and Taxonomic Polyphyly in <i>Lomatium</i> (Apiaceae)." <i>Systematic Botany</i> 39.2 (2014): 662-75. Web.</p> <p>Hitchcock, C.L. and A. Cronquist. 1973. <i>Flora of the Pacific Northwest</i>. University of Washington Press. Seattle, Wa. 730p.</p> <p>Sun, Feng-Jie, Stephen R. Downie, and Ronald L. Hartman. "An ITS-Based Phylogenetic Analysis of the Perennial, Endemic Apiaceae Subfamily Apioideae of Western North America." <i>Issn: 0363-6445</i></p>

	<p><i>Systematic Botany</i> 29.2 (2004): 419-31. Web.</p> <p>Sun, Feng-Jie, and Stephen R. Downie. "Phylogenetic Relationships among the Perennial, Endemic Apiaceae Subfamily Apioideae of Western North America: Additional Data from the CpDNA <i>trnF-trnL-trnT</i> Region Continue to Support a Highly Polyphyletic <i>Cymopterus</i>." <i>Plant Diversity and Evolution</i> 128.1 (2010): 151-72. Web.</p>
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