

Plant Propagation Protocol for *Petrophytum hendersonii*

ESRM 412 – Native Plant Production

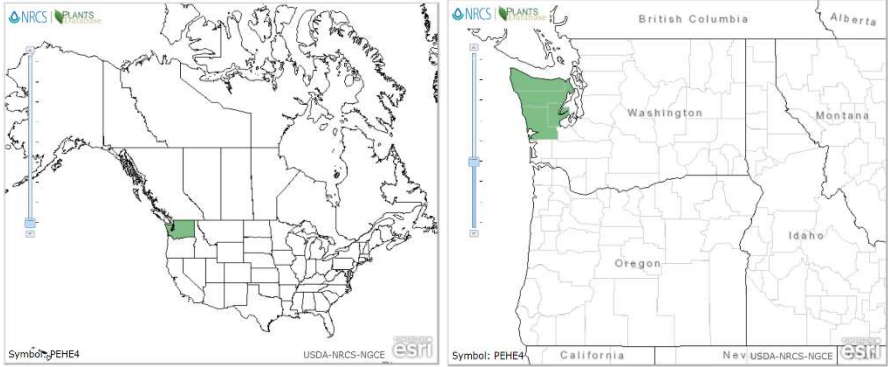
Protocol URL: <https://courses.washington.edu/esrm412/protocols/PEHE4.pdf>



Photo Courtesy of Turner Photography

TAXONOMY

Plant Family	
Scientific Name	Rosaceae
Common Name	Rose Family
Species Scientific Name	
Scientific Name	<i>Petrophytum hendersonii</i> (Canby) Rydb.
Varieties	None specified by the USDA plants database
Sub-species	None specified by the USDA plants database
Cultivar	
Common Synonym(s)	<i>Spiraea hendersonii</i> (Canby) Piper
Common Name(s)	Olympic Rockmat <i>Petrophytum</i> genus is commonly known as rock spiraeas or rockmats ²
Species Code (as per USDA Plants database)	PEHE4
GENERAL INFORMATION	

Geographical range	<p>Genus is native to western North America², while <i>Petrophytum hendersonii</i> resides solely⁴ on the Olympic peninsula of Washington State, see maps. <i>Maps courtesy of USDA plants database</i></p> 
Ecological distribution	Rocky cliffs, talus slopes ⁴
Climate and elevation range	Wide range of alpine elevations ⁶ – discovered around 7,500 feet of elevation ³
Local habitat and abundance	Dry sunny areas ⁷
Plant strategy type / successional stage	Tolerates poor soil and dry conditions ⁸
Plant characteristics	<p>A perennial⁵ shrub that forms low lying mats whose small white petalled flowers occur in spike inflorescences on erect stems², 1- 5 cm tall⁴ Seeds are linear³ from fruit that is barely 2 mm long⁴</p>
PROPAGATION DETAILS	
Ecotype	<p>Not specified, but all propagules will come from Olympics as it is endemic to the mountain range. Used for <i>Petrophytum cinerascens</i>¹¹: Cuttings came from rock outcrops along a section of the Columbia River North of Wenatchee, Washington</p>
Propagation Goal	Plants
Propagation Method	Seeds or small cuttings ^{9, 10}
Product Type	No information found
Stock Type	No information found
Time to Grow	No information found
Target Specifications	No information found
Propagule Collection Instructions	<p>Flowers from July through September⁴ Cuttings should be semihardwood - taken as flowers begin to fade to maximize root growth of cutting¹⁰</p>
Propagule Processing/Propagule Characteristics	No information found
Pre-Planting Propagule Treatments	No information found
Growing Area Preparation / Annual Practices for Perennial Crops	<p>Growing media: light, well-drained, lime-free mixture moderately enriched with humus¹⁰ Used for <i>Petrophytum cinerascens</i>: cuttings struck into peat moss¹¹</p>

Establishment Phase Details	46% of seeds germinated at 70°F, 6% of seeds germinated at 40°F ² Used for <i>Petrophytum cinerascens</i> : allow cuttings to root ¹¹
Length of Establishment Phase	2 weeks to achieve germination rates above ²
Active Growth Phase	Used for <i>Petrophytum cinerascens</i> ¹¹ : <ul style="list-style-type: none"> • Media: 3:1 mixture of potting soil to coarse sand • Container: 2-liter pot • Treatment: Greenhouse conditions, well watered, fertilized once a week with 20:20:20 fertilizer, 3-5 pellets of Temik applied for aphid control
Length of Active Growth Phase	Used for <i>Petrophytum cinerascens</i> ¹¹ : 9 months
Hardening Phase	No information found
Length of Hardening Phase	No information found
Harvesting, Storage and Shipping	No information found
Length of Storage	No information found
Guidelines for Outplanting / Performance on Typical Sites	Several (most will take 3) years before flowering ¹⁰
Other Comments	Some propagation information for <i>Petrophytum cinerascens</i> is included to supplement to limited information available on its lesser known relative. Both live in rocky conditions in mountainous areas of Washington State (<i>cinerascens</i> occurs in the Cascade mountains in the region surrounding Chelan, WA).
INFORMATION SOURCES	
References	¹ USDA. "Petrophytum hendersonii." <i>USDA Plant Database</i> https://plants.usda.gov/core/profile?symbol=PEHE4 Accessed on May 26 2020 ² Love, Stephen L and Candace J Akins. "Fifth summary of the native seed germination studies of Norman C Deno: Species with names beginning with letters <i>P</i> and <i>Q</i> ." <i>Native Plants Journal</i> , vol. 21 no. 1, 2020, p. 83-111. <i>Project MUSE</i> muse.jhu.edu/article/754416. ³ Wm. M. Canby, "A New Eriogynia. Notes. Eriogynia (<i>Petrophytum</i> , Nuttall) <i>Hendersoni</i> N. Sp.," <i>Botanical Gazette</i> 16, no. 8 (Aug., 1891): 236-237. ⁴ Giblin, David. "Petrophytum hendersonii." <i>Burke Herbarium</i> , https://biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Petrophytum%20hendersonii . Accessed May 26, 2020. ⁵ Turner Mark. "Petrophytum hendersonii." <i>Turner Photographics</i> , https://www.pnwflowers.com/flower/petrophyton-hendersonii . Accessed on May 26, 2020. ⁶ Wershow, S. T. and DeChaine, E. G.. 2018. Retreat to refugia: Severe habitat contraction projected for endemic alpine plants of the Olympic Peninsula. <i>American Journal of Botany</i> 105(4): 760– 778. https://bsapubs.onlinelibrary.wiley.com/doi/epdf/10.1002/ajb2.1042

	<p>⁷ Hitchcock, Charles Leo. "Vascular Plants of the Pacific Northwest." Seattle: University of Washington Press, 1951-1969. https://babel.hathitrust.org/cgi/pt?id=uc1.31822009792227&view=1up&seq=138. Accessed on May 26, 2020.</p> <p>⁸ National Gardening Association. "Petrophytum hendersonii." <i>National Gardening Association Plant Database</i>. https://garden.org/plants/view/478286/Petrophytum-hendersonii/. Accessed on May 26, 2020.</p> <p>⁹ Kruckerberg, Arthur. "Gardening with Native Plants of the Pacific Northwest." Accessed via Google Books on May 26, 2020.</p> <p>¹⁰ Preece, W.H.A. "Petrophytum hendersoni (Rosaceae)." The American Rock Garden Society. https://nargs.org/sites/default/files/free-rgg-downloads/Saxiflora_13.pdf. Accessed on May 26, 2020</p> <p>¹¹ Moore, Darrin J., Robert S. Nowak, and Cheryl L. Nowak. "Photosynthetic Acclimation to Temperature and Drought in the Endemic Chelan Rockmat, <i>Petrophytum Cinerascens</i> (Rosaceae)." <i>The American Midland Naturalist</i>, vol. 139, no. 2, 1998, pp. 374-382. <i>ProQuest</i>, https://search.proquest.com/docview/234952176?accountid=14784.</p>
Other Sources Consulted	Lis, Richard. "Petrophytum hendersonii." <i>Flora of North America</i> . http://beta.floranorthamerica.org/Petrophytum_hendersonii . Accessed on May 26, 2020.
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