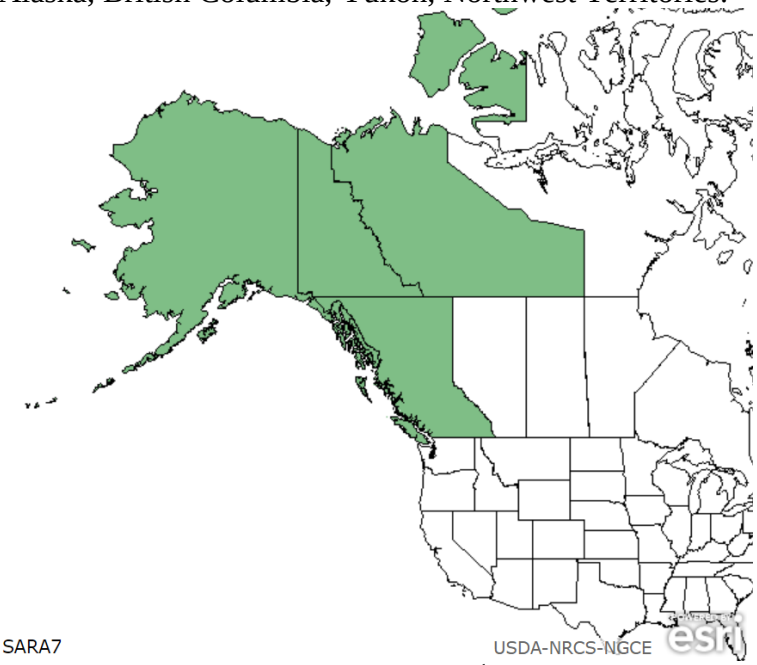
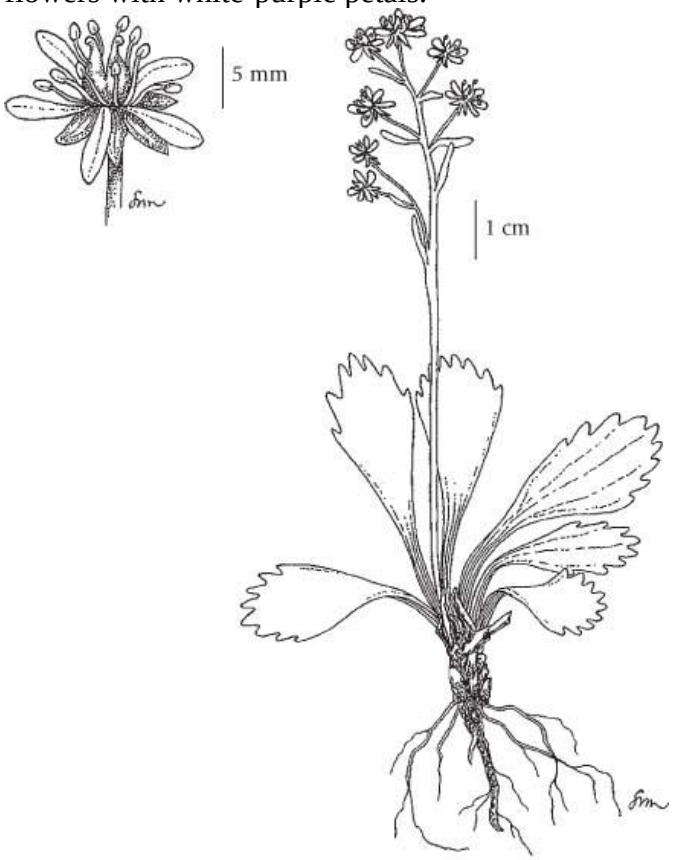
Plant Propagation Protocol for *Saxifraga razshivinii*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*SARA7.pdf*

TAXONOMY	
Plant Family	
Scientific Name	Saxifragaceae[1]
Common Name	Alaska Saxifrage
Species Scientific Name	
Scientific Name	*Saxifraga razshivinii* Zhmylev[1]
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	*Saxifraga davurica* Willd. ssp. *grandipetala* (Engl. & Irmsch.) Hultén[1] *Saxifraga davurica* Willd. var. *grandipetala* (Engl. & Irmsch.) B. Boivin[1]
Common Name(s)	Alaska saxifrage[1]
Species Code (as per USDA Plants database)	SARA7
GENERAL INFORMATION	
Geographical range	Alaska, British Columbia, Yukon, Northwest Territories.[1]  Image Source: USDA Plant Database[1]
Ecological distribution	Occurs on alpine slopes, in tundra meadows, and along alpine stream banks.[5]

Climate and elevation range	Elevation 400-2000 m.
Local habitat and abundance	On alpine slopes they make up a small part of a diverse plant community of grasses and forbs.[2]
Plant strategy type / successional stage	
Plant characteristics	Perennial[1] rhizomatous forb with a basal rosette of ovoid leaves and flowers with white-purple petals. [5]  *Saxifraga razshivinii* Image Source: Illustrated Flora of BC[3]
PROPAGATION DETAILS	
Ecotype	Upper sub-alpine zone, Karkonosze Mountains,Poland.[4*]
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	n/a
Time to Grow	1-2 years[6**]
Target Specifications	
Propagule Collection Instructions	Collect seeds in fall when capsules turn brown and begin to split. [6**]

Propagule Processing/Propagule Characteristics	Hand clean seeds by rubbing capsules until seeds are extracted. [6**]
Pre-Planting Propagule Treatments	Five months of outdoor cold, moist stratification followed by 4 months of warm temperatures. [6**]
Growing Area Preparation / Annual Practices for Perennial Crops	Small containers filled with ½ MS medium. [4*]
Establishment Phase Details	Keep cultures at 25°C. [4*]
Length of Establishment Phase	It takes 3 months for seeds to germinate and reach 1.5cm in height. [4*]
Active Growth Phase	
Length of Active Growth Phase	
Hardening Phase	Gradually reduce irrigation in the fall, no irrigation during the winter. [6**]
Length of Hardening Phase	4 weeks. [6**]
Harvesting, Storage and Shipping	
Length of Storage	5 months. [6**]
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	*** Information is taken from a study of *Saxifraga nivalis*, a similar plant from Poland that also grows in alpine environments.** **** Protocols for *Saxifraga bronchialis* that seemed to be general for saxifrages**
INFORMATION SOURCES	
References	1. "*Saxifraga razshivinii*: Alaska saxifrage." *Natural Resources Conservation Service: Plants Database*, USDA, plants.usda.gov/core/profile?symbol=SARA7. Accessed 5/20/2020 2. Danby, R.K., Koh, S., Hik, D.S. et al. Four Decades of Plant Community Change in the Alpine Tundra of Southwest Yukon, Canada. AMBIO 40, 660 (2011). https://doi.org/10.1007/s13280-011-0172-2 3. Douglas, G.W., D.V. Meidinger, and J. Pojar (editors). 2000. Illustrated Flora of British Columbia. Volume 5: Dicotyledons (Salicaceae Through Zygophyllaceae) And Pteridophytes. B.C. Ministry of Environment, Lands & Parks and B.C. Ministry of Forests. Victoria. 389 p. 4. Kromer K, Raj A, Wojtun B, Poturala D. 2009. Use of biotechnology for conservation of a critically endangered population of alpine saxifrage (*Saxifraga nivalis L.).* Oral Presentation. Acta Biologica Cracoviensia series botanica. Poznan, Poland. 5. Flora of North America. FNA Vol. 8 Page 51, 52, 59, 60. Retrieved May 24, 2020, from

	http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250065886 6. Luna, Tara; Evans, Jeff; Wick, Dale. 2008. Propagation protocol for production of Container (plug) Saxifraga bronchialis L. plants 160 ml conetainers; USDI NPS - Glacier National Park West Glacier, Montana. In: Native Plant Network. URL: http://NativePlantNetwork.org (accessed 2020/05/24). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.
Other Sources Consulted	McGregor, M. (2008). Saxifrages : A definitive guide to the 2000 species, hybrids & cultivars. Portland, Or.: Timber Press. Hagen D. 2002. Propagation of native Arctic and alpine species with a restoration potential. Polar Research 21(1), 37-47. Brouillet, L., & Gornall, R. (2007). NEW COMBINATIONS IN MICRANTHES (A SEGREGATE OF SAXIFRAGA, SAXIFRAGACEAE) IN NORTH AMERICA. Journal of the Botanical Research Institute of Texas, 1(2), 1019-1022. Retrieved May 23, 2020, from www.jstor.org/stable/41971534 *Micranthes razshivinii* Zhmylev. In Klinkenberg, Brian. (Editor) 2020. E-Flora BC: Electronic Atlas of the Plants of British Columbia [eflora.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [Accessed: 2020-05-24] Adrian Young. 2015. Propagation of Porophyllum and Ligulate Saxifrages. North American Rock Garden Society. Forum Post by Lori S. Retrieved May 24, 2020. https://www.nargs.org/forum/propagation-porophyllum-and-ligulate-saxifrages
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