
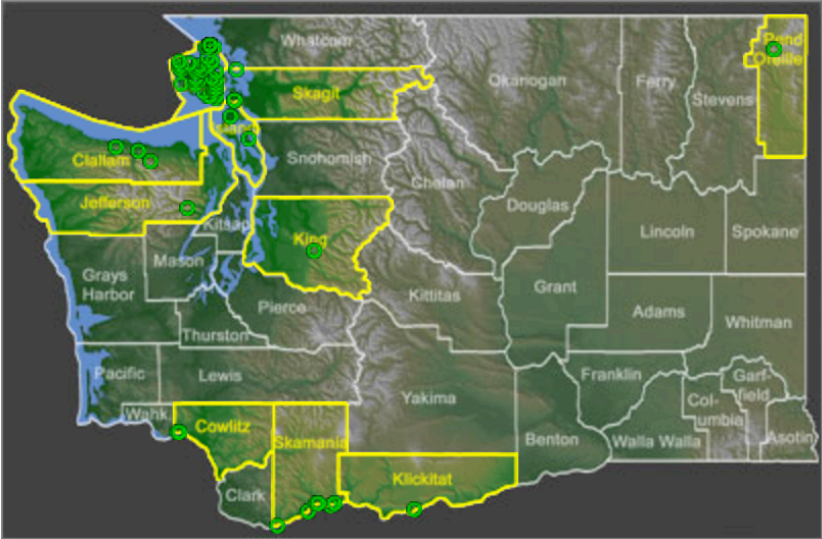


Plant Propagation Protocol for *Sedum spathulifolium*

ESRM 412 – Native Plant Production

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

TAXONOMY	
Plant Family	
Scientific Name	Crassulaceae
Common Name	Stonecrop Family
Species Scientific Name	
Scientific Name	<i>Sedum spathulifolium</i> Hook.
Varieties	<i>Sedum spathulifolium</i> Hook var. <i>spathulifolium</i>
Sub-species	<i>Sedum spathulifolium</i> ssp. <i>pruinatum</i> <i>Sedum spathulifolium</i> ssp. <i>purdyi</i> <i>Sedum spathulifolium</i> ssp. <i>spathulifolium</i> <i>Sedum spathulifolium</i> ssp. <i>yosemitense</i>
Cultivar	‘Cape Blanco’ ‘Rubra’
Common Synonym(s)	<i>Sedum spathulifolium</i> Hook ssp. <i>spathulifolium</i>
Common Name(s)	Broadleaf stonecrop, Pacific sedum
Species Code (as per USDA Plants database)	SESP
GENERAL INFORMATION	
Geographical range	 <p style="text-align: right;">USDA – NRCS – NGCE, 2017</p>

	 <p>WTU Herbarium, Burke Museum, 2017</p>
Ecological distribution	Southern half of coastal and interior British Columbia to California. Common on Vancouver Island, Gulf Islands, San Juan Islands, and west of the Cascades in Washington. Also, found east through the Coast Ranges in Oregon and California, and in the Columbia River Gorge. ⁶
Climate and elevation range	Low to middle elevations; abundance decreases with increasing precipitation; found in dry, sunny areas ⁵
Local habitat and abundance	Dry coarse, sandy to gravelly, nitrogen-poor soils; coastal cliffs, rock outcroppings, and ravines ^{2,5}
Plant strategy type / successional stage	Climax species on dry, non-forested sites ⁵
Plant characteristics	<p>Perennial, succulent herb grows from a stout rhizome and rootstock; stems ascending to erect, numerous, branched above, 5-20 cm tall; glabrous and glaucous.³</p> <p>Leaves sage green to reddish in full sun;⁴ spatulate to oblong, overlapping, flattened but very succulent; stem leaves alternate, basal leaves in rosette.²</p> <p>Inflorescence terminal, flat-topped, paniculate cymes; flower 5-parted, bright yellow; petals narrowly oblong-lanceolate 7-10 mm long, stamens 10, 5 attached to base of petals.^{2,3}</p> <p>Flowering time: June - July</p> <p>Fruit ripening time: July - August</p>
PROPAGATION DETAILS	
Ecotype	No information found.
Propagation Goal	Cuttings

Propagation Method	Vegetative
Product Type	Cuttings
Time to Grow	Roots develop in 1 month ⁶ and are ready for transplant at that time.
Target Specifications	No information found.
Propagule Collection Instructions	<p>Can propagate with leaves, stems, or full rosettes.</p> <p>Remove mature, healthy, leaves by pulling them gently sideways from the stem.⁷</p> <p>Collect cuttings spring, summer, or fall.</p>
Propagule Processing/Propagule Characteristics	No information found.
Pre-Planting Propagule Treatments	Set leaves in a warm, dry place for 2 – 3 days to let the cut end to callus over. ⁷
Growing Area Preparation / Annual Practices for Perennial Crops	<p>In a 2 – 3 inch pot with gritty, well-drained soil, such as a soil mix of half potting soil and half sand, insert cuttings, cut-side down, just beneath the soil surface. Top-dress with a layer of grit.⁹ Place in a partially shaded propagator at 64-70°F. Mist with water to keep cuttings just moist (too much water will cause cuttings to rot). Roots and plantlets should form in a month.⁸</p> <p>Another common method is placing cuttings on a seed tray lined with damp newspaper in bright shade at 61°F. When the cuttings form roots and plantlets (1 month), they are ready to be transplanted.⁵</p>
Establishment Phase Details	No information found.
Length of Establishment Phase	No information found.
Active Growth Phase	No information found.
Length of Active Growth Phase	No information found.
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	<p>Very high success rate.³</p> <p>Maximum height: 20 cm.</p> <p>Length to maturity: 1 year.</p> <p>Will flower in 1-2 years.</p>
Other Comments	While vegetative propagation is the easiest and most successful

	way to propagate <i>Sedum spathulifolium</i> , and other <i>Sedum</i> species, propagation by seed is also doable. See below.
PROPAGATION DETAILS	
Ecotype	Colorado, Sprague Lake (98-012s), Moraine Park (98-072s), Long's Peak Parking Lot (98-129s) ¹⁰
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Time to Grow	No information found.
Target Specifications	No information found.
Propagule Collection Instructions	Hand-clip ripe follicles into a collection bag. ⁴ Collect seed July – August ⁴
Propagule Processing/Propagule Characteristics	Allow follicles to dry in collection bag. Shake bag to release seed. ⁴ Alternatively, crush seed heads and let the tiny seeds fall out. Then, use fine screens to separate seeds from other plant material. ¹⁰ 15,000 seeds per gram. ¹¹
Pre-Planting Propagule Treatments	Stratification involves three months of cold, followed by warm temperatures to induce germination. ⁶ For even sowing, mix seeds with the finest sand or talcum powder, as the seeds are very fine. ¹¹
Growing Area Preparation / Annual Practices for Perennial Crops	Sow seeds in small pots, a few seeds per pot. ¹⁰ Preferred germination growing media is a mix of 2 parts compost and 1 part sand. ¹¹ Propagate in a greenhouse with day temperature between 65 – 70°F and night temperature of 55°F. Set tent misters for 8am – 8pm, with 10 second/ 15 minute watering intervals. One week after germination, move seedlings to mister area without tent. ¹⁰
Establishment Phase Details	No information found.
Length of Establishment Phase	7 days ¹⁰ Other sources say 4 – 180 days. ¹²
Active Growth Phase	No information found.
Length of Active Growth Phase	No information found.
Hardening Phase	No information found.
Length of Hardening Phase	No information found.
Harvesting, Storage and	Harvest seeds July – August. Store seeds in a cool, dry place. ¹⁰

Shipping	
Length of Storage	No information found.
Guidelines for Outplanting / Performance on Typical Sites	Maximum height: 20 cm; maximum spread: 60cm Length to maturity: 1 year Will flower in 1-2 years
Other Comments	The protocol above was adapted from the protocol on <i>Sedum</i> seeds from Colorado, Sprague Lake (98-012s), Moraine Park (98-072s), Long's Peak Parking Lot (98-129s). ¹⁰ Species-specific information was included when available.

INFORMATION SOURCES

References	<ol style="list-style-type: none"> 1. "Sedum spathulifolium Hook. broadleaf stonecrop." <i>Plants Profile for Sedum spathulifolium (broadleaf stonecrop)</i>. USDA Natural Resources Conservation Service, n.d. Web. 25 Apr. 2017. <https://plants.usda.gov/core/profile?symbol=SESP>. 2. "Sedum spathulifolium var. spathulifolium broadleaf stonecrop ." <i>Burke Museum</i>. Burke Museum of Natural History and Culture, 2017. Web. 25 Apr. 2017. <http://biology.burke.washington.edu/herbarium/imagecollection.php?SciName=Sedum spathulifolium var. spathulifolium>. 3."Sedum spathulifolium var. spathulifolium Hook. ." <i>E-Flora BC: Electronic Atlas of the Flora of British Columbia</i>. Ed. Brian Klinkenberg. E-Flora BC: An initiative of the Spatial Data Lab, Department of Geography UBC,, 2017. Web. 25 Apr. 2017. 4. "Native Plant Propagation Guidelines: forbs." <i>GOERT : for Gardeners & Restoration Practitioners : Propagation Guidelines</i>. Garry Oak Ecosystems Recovery Team Society., 2017. Web. 25 Apr. 2017. <http://www.goert.ca/propagation_guidelines/forbs/sedum_spathulifolium>. 5. Robson, Kathleen A., Alice Richter, and Marianne Filbert. <i>Encyclopedia of Northwest Native Plants for Gardens and Landscapes</i>. Portland, Or.: Timber Press, 2008. Print. 6. Pettinger, April, and Brenda Costanzo. <i>Native Plants in the Coastal Garden: A Guide for Gardeners in the Pacific Northwest</i>. Portland, Or.: Timber Press, 2003. Print.
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Other Sources Consulted	<p>1. Grantham, Keith, and Paul Klaassen. <i>The Plantfinder's Guide to Cacti & Other Succulents</i>. N.p.: Keith Grantham and Paul Klassen, 1999. Print.</p> <p>2. Kelaidis, Gwen Moore, and Saxon Holt. <i>Hardy Succulents: tough plants for every climate</i>. North Adams: Storey Publ., 2008. Print.</p> <p>3. Rose, Robin, Caryn E. C. Chachulski, and Diane L. Haase. <i>Propagation of Pacific Northwest Native Plants</i>. Corvallis: Oregon State U Press, 1998. Print.</p> <p>4. "Sedum." <i>Old Farmer's Almanac</i>. Yankee Publishing, Inc., n.d. Web. 26 Apr. 2017. <http://www.almanac.com/plant/sedum>.</p>
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