

Plant Propagation Protocol for *Gentiana sceptrum* Griseb

ESRM 412 – Native Plant Production

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



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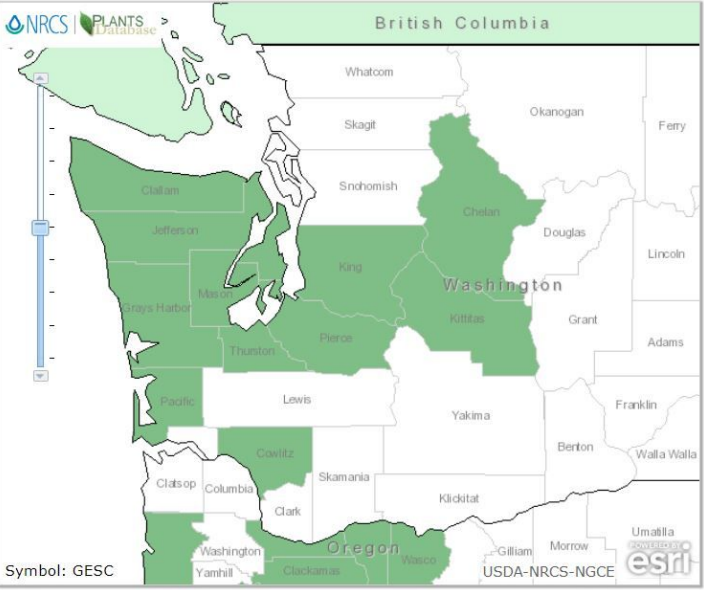
TAXONOMY

Plant Family	
Scientific Name	Gentianaceae
Common Name	Gentian
Species Scientific Name	
Scientific Name	<i>Gentiana</i> Griseb
Varieties	<i>sceptrum</i>
Sub-species	
Cultivar	
Common Synonym(s)	<p><i>Dasystephana menziesii</i> (Grisebach) Arthur</p> <p><i>Gentiana menziesii</i> Grisebach</p> <p><i>Gentiana sceptrum</i> Grisebach var. <i>sceptrum</i></p> <p><i>Gentiana sceptrum</i> var. <i>cascadensis</i> M. Peck</p> <p><i>Gentiana sceptrum</i> var. <i>humilis</i> Engelmann ex A. Gray</p>

	<i>Pneumonanthe menziesii</i> (Grisebach) <i>Pneumonanthe sceptrum</i> (Grisebach) Greene
Common Name(s)	King's scepter gentian, King gentian Pacific gentian Staff gentian
Species Code (as per USDA Plants database)	GESC

GENERAL INFORMATION

Geographical range	<p>Symbol: GESC</p> <p>USDA-NRCS-NGCE esri</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Native</td> <td><input type="checkbox"/> Introduced</td> <td><input type="checkbox"/> Both</td> <td><input type="checkbox"/> Absent/Unreported</td> </tr> <tr> <td><input type="checkbox"/> Native, No County Data</td> <td><input type="checkbox"/> Introduced, No County Data</td> <td><input type="checkbox"/> Both, No County Data</td> <td></td> </tr> </table> <p>Native Status:</p> <p> <input checked="" type="radio"/> L48 <input type="radio"/> AK <input type="radio"/> HI <input type="radio"/> PR <input type="radio"/> VI <input type="radio"/> NAV <input checked="" type="radio"/> CAN <input type="radio"/> GL <input type="radio"/> SPM <input type="radio"/> NA </p>	<input checked="" type="checkbox"/> Native	<input type="checkbox"/> Introduced	<input type="checkbox"/> Both	<input type="checkbox"/> Absent/Unreported	<input type="checkbox"/> Native, No County Data	<input type="checkbox"/> Introduced, No County Data	<input type="checkbox"/> Both, No County Data	
<input checked="" type="checkbox"/> Native	<input type="checkbox"/> Introduced	<input type="checkbox"/> Both	<input type="checkbox"/> Absent/Unreported						
<input type="checkbox"/> Native, No County Data	<input type="checkbox"/> Introduced, No County Data	<input type="checkbox"/> Both, No County Data							

	 <p>Symbol: GESC</p> <p> <input checked="" type="checkbox"/> Native <input type="checkbox"/> Native, No County Data <input type="checkbox"/> Introduced <input type="checkbox"/> Introduced, No County Data <input type="checkbox"/> Both <input type="checkbox"/> Both, No County Data <input type="checkbox"/> Absent/Unreported </p> <p>Native Status:</p> <p> <input checked="" type="radio"/> L48 <input type="radio"/> AK <input type="radio"/> HI <input type="radio"/> PR <input type="radio"/> VI <input type="radio"/> NAV <input checked="" type="radio"/> CAN <input type="radio"/> GL <input type="radio"/> SPM <input type="radio"/> NA </p> <p>North Coast, Outer North Coast Ranges from BC to California.₉</p>
<p>Ecological distribution</p> <p>Climate and elevation range₄</p>	<p>Wetlands, Bogs, wet meadows and along the coast.₁₁</p> <p>Sun: Prefers sun or partial shade.₁₁</p> <p>Elevation: More prominent in lower elevations, but can be found in elevations ranging from 45 to 330 ft₄</p> <p>Annual Precipitation: 36 - 55 inches₄</p> <p>Temperature: Coldest Season₄ Hottest Season₄ 17 - 44 ° F 60 - 80 ° F</p> <p>Zones: USDA zones: 6-9b.₄</p>
<p>Local habitat and abundance</p>	<p>Known as a wetland indicator species. Some associated species include: Sitka spruce, western hemlock, Pacific silver fir zones. Western red cedar, alder, willow, black cottonwood, and bog or moist meadow.₉</p>

Plant strategy type / successional stage	Intolerant to shade. Grows with stable plant communities. ₉
Plant characteristics	Gentiana sceptrum is a forb. It growth height ranges from 18-36 inches (45-90 cm with a width of 8 inches (20 cm). The leaves are opposite, oblong-lanceolate in shape and are green. The flowers grow in inflorescences. The corollas are blue with streaks of green. The flowers are tubular with 5 lobes. The fruits are elliptic-oblong capsules. The seeds are spindle-shaped and are about 1.5-2mm long. ₁
PROPAGATION DETAILS	
Ecotype	NA
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container Plug
Stock Type	NA
Time to Grow	Seeds can be sowed directly into soil in the fall, or outplanted after germination in the spring. Germination can be sporadic. ₂
Target Specifications	18-36"
Propagule Collection Instructions	Harvest seed directly from ripe pods. Pods are ripe when they began to break open. Seeds should be shown in fall or in early spring after stratification with the highest germinations rates with in the first season. _{5,9} Seeds should be kept dry and sent to supplier as quickly as possible. ₅
Propagule Processing/Propagule Characteristics	Produces an abundance of small seed that disperse well in autumn. ₁₀
Pre-Planting Propagule Treatments	Remove from ripe capsule, store in a dry place and planted immediately in autumn or following early spring. Stratification is required and is most successful with outdoor stratification. Seeds should be sown into moist soil and refrigerated for 8 weeks if sown in the spring. ₉
Growing Area Preparation / Annual Practices for Perennial Crops	Seed normally germinate in the dark. Plant in moist, humus rich soil that is lime free. ₁₁ Normally germinates in the dark.
Establishment Phase Details	Germination requires a stratification, but germination times can range greatly. ₈
Length of Establishment Phase	It can take 14-180 days for seeds to germinate and produce seedlings. ₈
Active Growth Phase	Seedlings grow slowly in the spring and will grown through the summer. They flower between July and

	September and go dormant in the winter. A small basal rosette grows within the first summer. ₃
Length of Active Growth Phase	6-8 months ₄
Hardening Phase	Plants go dormant in fall, the basal leaves turning purple. In late fall, new shoots emerged and basal leaves withered. ₃
Length of Hardening Phase	NA
Harvesting, Storage and Shipping	NA
Length of Storage	Plants grown in containers or flats should be outplanted during the spring of their second growing season. ₈
Guidelines for Outplanting / Performance on Typical Sites	Can require 2-7 years before flowering. ₅
Other Comments	This plant may require light during germinations and fluctuating temperatures during stratification. ₂
INFORMATION SOURCES	
References	<p>1. In Klinkenberg, Brian. (Editor) 2017. <i>E-Flora BC: Electronic Atlas of the Plants of British Columbia</i>[eflora.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [Accessed: 24/04/2018]</p> <p>2. Bartlett, Mary. <i>Gentians</i>. Alphabooks, 1981.</p> <p>3. Bartow, Amy L. 2004. Propagation protocol for production of container <i>Gentiana sceptrum</i> Griseb. plants; Corvallis Plant Materials Center, Corvallis, Oregon. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 19 October 2006). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>4. <i>Gentiana sceptrum</i>. Plant Characteristics and Associations. Calflora. http://www.calflora.org/entry/plantchar.html?crn=37865.</p> <p>5. Kohlein, Fritz, and Jim Jermyn. <i>Gentians</i>. Christopher Helm, 1991.</p> <p>6. James S. Pringle 2012, <i>Gentiana affinis</i> var. <i>ovata</i>, in Jepson Flora Project (eds.) <i>Jepson eFlora</i>, http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=59422. Accessed on April 24, 2018.</p>

	<p>7. King's Scepter Gentian. California Native Plant Society (CNPS). Calscape. <u>http://calscape.org/Gentiana-sceptrum-()</u>. Accessed on April 24, 2018</p> <p>8. Powell, Eileen. <i>The Gardener's A-Z Guide to Growing Flowers from Seed to Bloom</i>. Storey Pub., 2004.</p> <p>9. USDA. <i>Gentiana sceptrum</i> Grisb. Natural Resources Conservation Service. <u>https://plants.usda.gov/core/profile?symbol=GESC</u></p> <p>10. Vance, Nan C.; Borsting, Melissa; Pilz, David; Freed, Jim. Special forests products: species information guide for the Pacific Northwest. Gen. Tech. Rep. PNW-GTR-513. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.</p> <p>11. Wilkie, David. <i>Gentians</i>. Theophrastus, 1977.</p>
Other Sources Consulted	<p>Dave's Garden. "Gentiana Species, King's Scepter Gentian." Davesgarden.com. <u>https://davesgarden.com/guides/pf/go/83783#b</u>. Accessed on April 24, 2018</p> <p>Information and prices for <i>Gentiana sceptrum</i>. B & T World Seeds <u>http://b-and-t-world-seeds.com/cartall.asp?species=Gentiana%20sceptrum&sref=85760</u>. Accessed on April 24, 2018</p> <p><i>Gentiana sceptrum</i> Grisebach. Canadensys. <u>http://data.canadensys.net/vascan/taxon/6006</u></p> <p>McVicar, Jekka, and Marianne Majerus. <i>Seeds: the Ultimate Guide to Growing Successfully from Seed</i>. Kyle Cathie Limited, 2008.</p> <p>Teashon, Debbie. <i>Gentiana sceptrum</i>. Rainy Side Gardeners. <u>http://www.rainyside.com/plant_gallery/natives/Gentiana_sceptrum.html</u>. Accessed on April 24, 2018</p>

Protocol Author	Julia Bakke
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