

**Plant Propagation Protocol for *Gentiana newberryi* A. Gray**  
 ESRM 412 – Native Plant Production

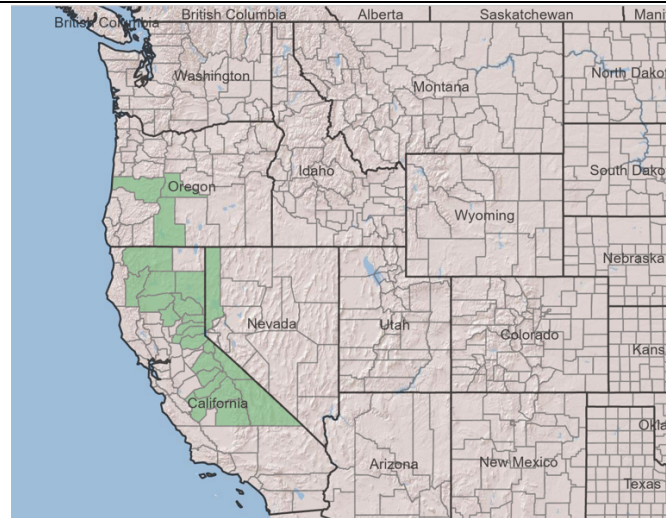


Photo courtesy of Yosemitehikes.com

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Gentianaceae
Common Name	Gentian
<b>Species Scientific Name</b>	
Scientific Name	<i>Gentiana newberryi</i> A. Gray
Varieties	<i>Gentiana newberryi</i> A. Gray var. <i>newberryi</i> <i>Gentiana newberryi</i> A. Gray var. <i>tiogana</i>
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	Alpine gentian Tioga gentian (var. <i>tiogana</i> )
Species Code (as per USDA Plants database)	GENE

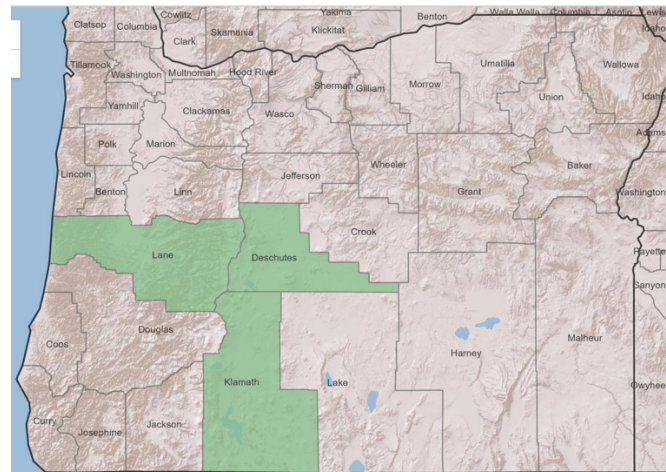
## GENERAL INFORMATION

Geographical range



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Native to California, Oregon, and spotted in Nevada.



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Ecological distribution	Wetlands; meadows and streambanks
Climate and elevation range	1,800 meters No information available on climate.
Local habitat and abundance	Meadows; wet regions Low abundance – considered imperiled.
Plant strategy type / successional stage	No information available.
Plant characteristics	Forb; perennial July-September bloom
<b>PROPAGATION DETAILS</b>	
Propagation Goal	Plant
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	Seed; Container
Time to Grow	9 months (Luna, 2008).

Target Specifications	2-3 cm; Firm root system (Luna, 2008).
Propagule Collection Instructions	Collect by hand during late summer. Perform a cutting test to determine seed maturity before collection (Luna, 2008).
Propagule Processing/Propagule Characteristics	Clean using screens; can be stored for 3 years in sealed containers and cold, low humidity temperatures (Luna, 2008). No information on seed density
Pre-Planting Propagule Treatments	Clean using screen; store in cold, low humidity temperatures for at least 3 years (Luna, 2008). Gibberellic acid stratification required for <i>Gentiana calycosa</i> a similar species with related growth requirements. 1000 ppm gibberellic acid should be mixed with distilled water; soak seeds for 15 minutes. Rinse seeds to remove any gibberellic acid residue for at least 10 minutes. (Luna, 2008). After acid stratification, place seeds on a moist towel in open bags; refrigerate for 100 days at 2 degrees Celsius (Luna, 2008).
Growing Area Preparation / Annual Practices for Perennial Crops	Sow seeds directly into containers with a well-draining media. Due to variable germination rates, sow throughout the year for greater germination success. Keep seeds cold until planted (Schultz, 2001).
Establishment Phase Details	Keep containers in a controlled greenhouse. 25 degrees Celsius during daytime; can handle cooler temperatures at night.
Length of Establishment Phase	4 weeks
Active Growth Phase	Avoid overwatering; growth is concentrated in the root system.
Length of Active Growth Phase	20 weeks (Luna, 2008).
Hardening Phase	Reduce watering frequency; move to avoid frost and other negative winter impacts.
Length of Hardening	8 weeks (Luna, 2008).
Harvesting, Storage and Shipping	Can be outplanted during late spring – early fall depending on time to grow in nursery. Can be stored in a greenhouse for another season if not planted before winter. No information available on shipping requirements.
Length of Storage	5 months – another season (based on similar species <i>Gentiana calycosa</i> and <i>Gentiana andrewsii</i> ) (Luna, 2008) (Schultz, 2001).
Guidelines for Outplanting / Performance on Typical Sites	No information available.
Other Comments	Reports of difficulty growing; difficulty breaking seed dormancy.

<b>INFORMATION SOURCES</b>	
References	See below
Other Sources Consulted	See below
Protocol Author	Abbey Lehn
Date Protocol Created or Updated	05/25/2022

## References

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