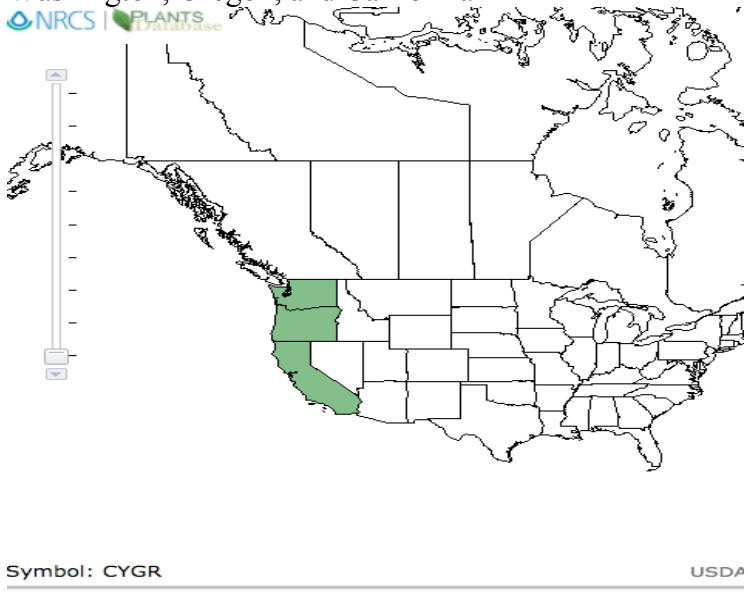


Plant Propagation Protocol for *Cynoglossum granda*

ESRM 412 – Native Plant Production

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

TAXONOMY	
Plant Family	
Scientific Name	Boraginaceae
Common Name	Borage family
Species Scientific Name	
Scientific Name	<i>Cynoglossum grande</i> Douglas ex Lehm.
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	<i>Adelinia grande</i> (Douglas ex Lehm.) J.I. Cohen
Common Name(s)	Pacific hound's tongue, Grand hound's tongue, Western houndstongue, Gypsyflower, blue buttons ³
Species Code (as per USDA Plants database)	CYGR
GENERAL INFORMATION	
Geographical range	<p>Washington, Oregon, and California¹</p>  <p>Symbol: CYGR</p> <p>USDA</p> <p>Native Introduced Both</p>
Ecological distribution	It grows in shady areas in woodland and chaparral. ⁵
Climate and elevation range	The plant grows in dry climates in semi shade or shade at elevations of 3 feet to 6,943 feet. ⁵
Local habitat and	The perennial prefers dry shaded places in woods. ²

abundance	It is found on slopes and has been seen in Northern Oak Woodland, Mixed Evergreen Forest, and Yellow Pine Forest. ³ Common associated species include <i>Calochortus luteus</i> , <i>Delphinium variegatum</i> , and <i>Calochortus amabilis</i> . ⁵
Plant strategy type / successional stage	The flowers are hermaphrodite and are pollinated by insects. The plant is suitable for light (sandy), medium (loamy), and heavy (clay) soils with a preference for well-drained moist soils. It can grow in semi-shade or no shade. This species is not hardy in the colder areas of the country, it tolerates temperatures down to between -5 and -10°C. ⁴ The plant is deer resistant. ⁵
Plant characteristics	<i>Cynoglossum grande</i> is a dicot that's a perennial herb native to California. ³ It has several smooth stems with large, ovate, long-stalked leaves that are near the base with loose clusters of purple or blue flowers on the branches at the top. The common name refers to the shape of the broad leaves. ² The stem can grow 30 to 90 centimeters tall and the flowers are 1 to 1.5 centimeters wide. The fruit is an array of four slightly bristly nutlets. ⁵
PROPAGATION DETAILS	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Plugs, propagules
Stock Type	N/A
Time to Grow	Planting hound's tongue seed into the site of a burn pile after burning debris from forest health thinning works. Once the small, circular burn pile has cooled or even if it was burned a year ago, you can seed hound's tongue into the ash in the winter. During spring, there will be a circle of hound's tongue sprouts. ⁷
Target Specifications	N/A
Propagule Collection Instructions	Seed is sown autumn, late winter or spring in a greenhouse. ⁴ The flower blooms from February to April. ⁸ The flowers stay from June to August and the seeds ripen from August to September so the seeds should be collected by then. ¹⁰
Propagule Processing/Propagule Characteristics	N/A
Pre-Planting Propagule Treatments	Fleshy coating on seed should be removed before storing. The unblemished fruit must be overripe before harvesting seed. Then clean and dry seeds. ⁶
Growing Area Preparation / Annual Practices for Perennial Crops	The plants do well in a dry, shady spot when there is little competition and wonderfully mineral-rich soil to help nourish the small seedlings. ⁷

Establishment Phase Details	Plant out in mid spring or in the autumn after germination that usually takes 1-3 weeks at 20° C. ⁴
Length of Establishment Phase	3 weeks
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	<i>C. grande</i> goes dormant each summer and emerges larger the following winter. ¹¹
Length of Hardening Phase	3 months
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	N/A
Other Comments	The root has been used in the treatment of stomachaches and venereal diseases. The grated root has been used as a dressing on inflamed burns and scalds. ⁹

INFORMATION SOURCES

References	<p>¹USDA Cynoglossum grande. (n.d.). Retrieved May 29, 2017, from https://plants.usda.gov/core/profile?symbol=CYGR</p> <p>²Plant Database. (n.d.). Retrieved May 29, 2017, from http://www.wildflower.org/plants/result.php?id_plant=CYGR</p> <p>³Calflora - <i>C. grande</i>. (n.d.). Retrieved May 29, 2017, from http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Cynoglossum%2Bgrande</p> <p>⁴Cynoglossum grande - Douglas. (n.d.). Retrieved May 29, 2017, from http://www.pfaf.org/User/Plant.aspx?LatinName=Cynoglossum%2Bgrande</p> <p>⁵C. (n.d.). Western Houndstongue, <i>Cynoglossum grande</i>. Retrieved May 29, 2017, from http://calscape.org/Cynoglossum-grande-()</p> <p>⁶PlantFiles: Pacific Hound's Tongue. (n.d.). Retrieved May 29, 2017, from http://davesgarden.com/guides/pf/go/74708/#b</p>
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Other Sources Consulted	Cynoglossum grande. (n.d.). Retrieved May 29, 2017, from https://www.aerulean.com/plants/1507
Protocol Author	Khang Nguyen
Date Protocol Created or Updated	05/29/17