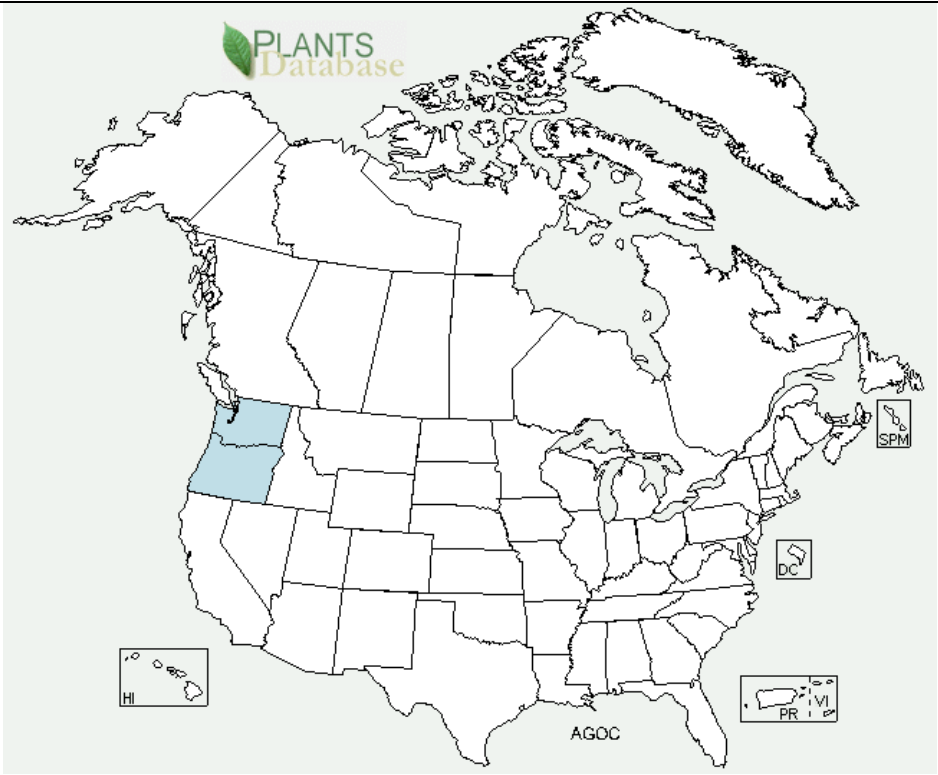
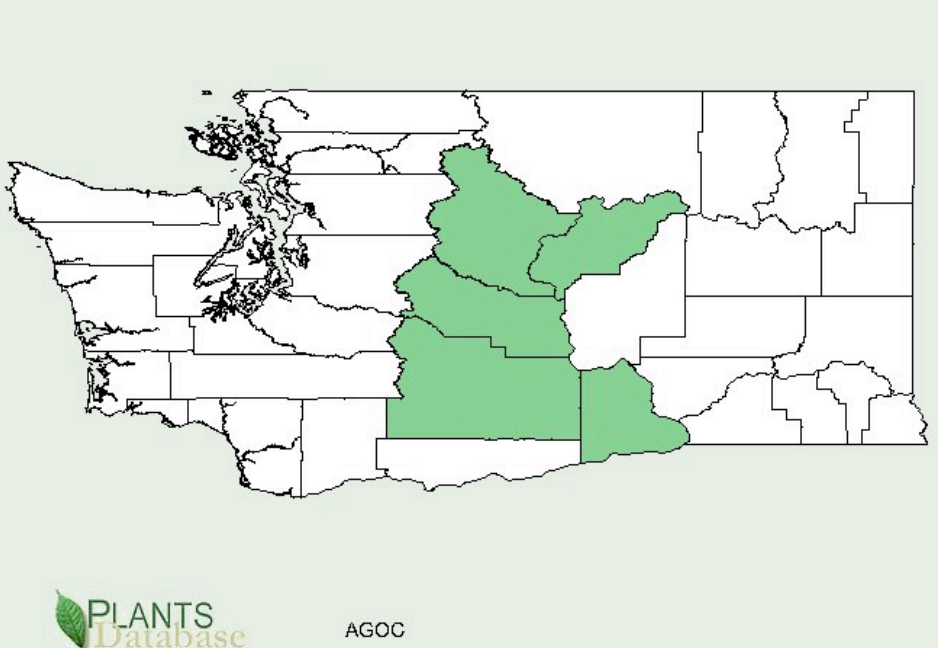


Plant Propagation Protocol for *Agastache occidentalis* (Piper) A. Heller
 ESRM 412 – Native Plant Production
 Protocol URL: <https://courses.washington.edu/esrm412/protocols/AGOC.pdf>

TAXONOMY	
Plant Family	
Scientific Name	<i>Lamiaceae</i> , (USDA)
Common Name	Mint Family, (USDA)
Species Scientific Name	
Scientific Name	<i>Agastache occidentalis</i> (Piper) A. Heller, (1900) (Cronquist, Hitchcock and Ownbey), (USDA).
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	<i>Vleckia occidentalis</i> Piper, Erythea (1898) (Cronquist, Hitchcock and Ownbey).
Common Name(s)	Western giant hyssop, (USDA). Horse Mint (Hitchcock and Cronquist), (Robson, Richter and Filbert).
Species Code (as per USDA Plants database)	AGOC
GENERAL INFORMATION	
Geographical range	Current USDA Distribution Maps: <div style="display: flex; align-items: center; gap: 10px;"> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 15px; background-color: #add8e6; border: 1px solid black; margin-right: 5px;"></div> Native </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 15px; background-color: #a9a9a9; border: 1px solid black; margin-right: 5px;"></div> Introduced </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> Absent/Unreported </div> </div>

	<div></div> <p>Washington State Distribution:</p> <div></div>
Ecological distribution	Open, sunny slopes, and rocky ledges on eastern slopes of the Cascade Mountains (Robson, Richter and Filbert), (Hitchcock and Cronquist), (Rugged Country Plants).
Climate and elevation range	Hardy down to zone 4, -34.4° C to – 31.7° C (All Things Plants), (Rugged Country Plants).

	Elevation ranges from mountain bases to higher elevations close to the top of the Cascades. (Robson, Richter and Filbert), (Cronquist, Hitchcock and Ownbey).
Local habitat and abundance	Provides habitat for bees, butterflies, hummingbird (All Things Plants), (Robson, Richter and Filbert), (Rugged Country Plants).
Plant strategy type / successional stage	Drought tolerant perennial (Robson, Richter and Filbert).
Plant characteristics	<p>Forb/Herb, Subshrub, (USDA).</p> <p>This plant grows from a woody crown (Robson, Richter and Filbert) and may be possible to propagate by division (All Things Plants), though no other specific information could be found.</p> <p>Flowers are aromatic, early to late summer blooms (Robson, Richter and Filbert), small, tubular, arranged in spike-like, whorled inflorescence, 25 mm or more thick, up to 15 cm long, terminal, above the foliage on calyx with two slight lips and 5 teeth (Frye, PhD and Rigg, A.M.), (Hitchcock and Cronquist), (Robson, Richter and Filbert), (Rugged Country Plants). The upper lip of the corolla has 2 lobes and the lower has 3 lobes (Cronquist, Hitchcock and Ownbey), (Frye, PhD and Rigg, A.M.), (Robson, Richter and Filbert). Pink, white or lavender flowers (Rugged Country Plants) on pink to purple calyx (Robson, Richter and Filbert), four stamens with upper pair longer than lower, and 4 anthers (Hitchcock and Cronquist), (Frye, PhD and Rigg, A.M.).</p> <p>Four small nutlets form the fruit (Robson, Richter and Filbert).</p> <p>Leaves are green above and below (Frye, PhD and Rigg, A.M.), opposite, serrate, deltoid to ovate, 6cm long and 4 cm wide, 5 cm petiole (Robson, Richter and Filbert), (Rugged Country Plants), dense short hairs above and minute/fine pubescence below (Hitchcock and Cronquist), (Robson, Richter and Filbert), (Rugged Country Plants).</p>
Other Comments	<p>Deer and rabbit resistant, (All Things Plants).</p> <p>Cusick's Giant Hyssop (<i>A. cusickii</i>) has similar colorings and habitat but grows at mid elevations in central Idaho, southeast Oregon and northern Nevada (Robson, Richter and Filbert).</p>
PROPAGATION DETAILS	
Propagation by Seed	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	N/A
Stock Type	N/A
Time to Grow	N/A
Target Specifications	N/A

Propagule Collection Instructions	Seeds can be collected in Fall and stored dry to plant in Spring or plant immediately and will germinate in spring (Robson, Richter and Filbert).
Propagule Processing/Propagule Characteristics	N/A
Pre-Planting Propagule Treatments	N/A
Growing Area Preparation / Annual Practices for Perennial Crops	N/A
Establishment Phase Details	N/A
Length of Establishment Phase	N/A
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	<p>Excellent for “rock garden, dry slope, or parking area,” requires full sun to light shade and well drained soil (Robson, Richter and Filbert).</p> <p>Mature plants are 1 – 2 ft tall and 2 ft wide, recommended 1 – 2 foot spacing (Rugged Country Plants) or also suited to 3-gallon pots with re-pot every 2 – 3 years (All Things Plants).</p> <p>Requires good drainage (Robson, Richter and Filbert).</p>
Other Comments	Tolerates transplanting (All Things Plants).

INFORMATION SOURCES

References	<ul style="list-style-type: none"> • All Things Plants. Western Giant Hyssop (<i>Agastache occidentalis</i>). 2014. 18 May 2014 <http://allthingsplants.com/plants/view/152715/Western-Giant-Hyssop-Agastache-occidentalis/>. • Cronquist, Arthur, et al. Vascular Plants of the Pacific Northwest. Vol. IV. Seattle: University of Washington Press, 1959. V vols. • Frye, PhD, Theodore C. and George B. Rigg, A.M. Elementary Flora
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	<p>of the Northwest. New York: American Book Company, 1914.</p> <ul style="list-style-type: none"> • Hitchcock, C. Leo and Arthur Cronquist. <i>Flora of the Pacific Northwest, An Illustrated Manual</i>. Seattle: University of Washington Press, 1973. • Robson, Kathleen A., Alice Richter and Marianne Filbert. <i>Encyclopedia of Northwest Native Plants for Gardens and Landscapes</i>. Portland: Timber Press, Inc., 2008. • Rugged Country Plants. <i>Agastache occidentalis</i>, Western Giant-Hyssop. 2010. 201 <http://www.ruggedcountryplants.com/perennial/agastache-occidentalis.htm>. • USDA. Plant Profile - <i>Agastache occidentalis</i>, Western giant hyssop. Natural Resources Conservation Service. 16 May 2014 <http://plants.usda.gov/core/profile?symbol=AGOC>.
Other Sources Consulted	<ul style="list-style-type: none"> • Deur, Douglas and Nancy J. Turner. <u>Keeping it Living: Traditions of Plant Use and Cultivation on the Northwest Coast of North America</u>. Ed. Douglas Deur and Nancy J. Turner. Seattle: University of Washington Press, 2005. • Dirr, Dr. Michael A. and Dr. Charles W. Heuser, Jr. <u>A Reference Manual of Woody Plant Propagation: From Seed to Tissue Culture</u>. Portland: Timber Press, Inc., 2006. • Forest Service. <u>Seeds of Woody Plants in the United States</u>. Ed. C.S. Schopmeyer. Washington: Forest Service, US Department of Agriculture, 1974. • Franklin, Jerry F. and C.T. Dyrness. <u>Natural Vegetation of Oregon and Washington</u>. Corvallis?: Oregon State University Press, 1988? • Leigh, Michael. <u>Grow Your Own Native Landscape: A Guide to Identifying, Propagating, and Landscaping with Western Washington Native Plants</u>. Ed. Michael Leigh. Washington State University, Cooperative Extension/Thurston County, 1996. • Moerman, Daniel E. <u>Native American Ethnobotany</u>. Portland: Timber Press, 1998. • Rose, Robin, Caryn E.C. Chachulski and Diane L. Haase. <u>Propagation of Pacific Northwest Native Plants</u>. Corvallis: Oregon State University Press, 1998. • Young, James A. and Cheryl G. Young. <u>Collecting, Processing and Germinating Seeds of Wildland Plants</u>. Portland: Timber Press, 1988.
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