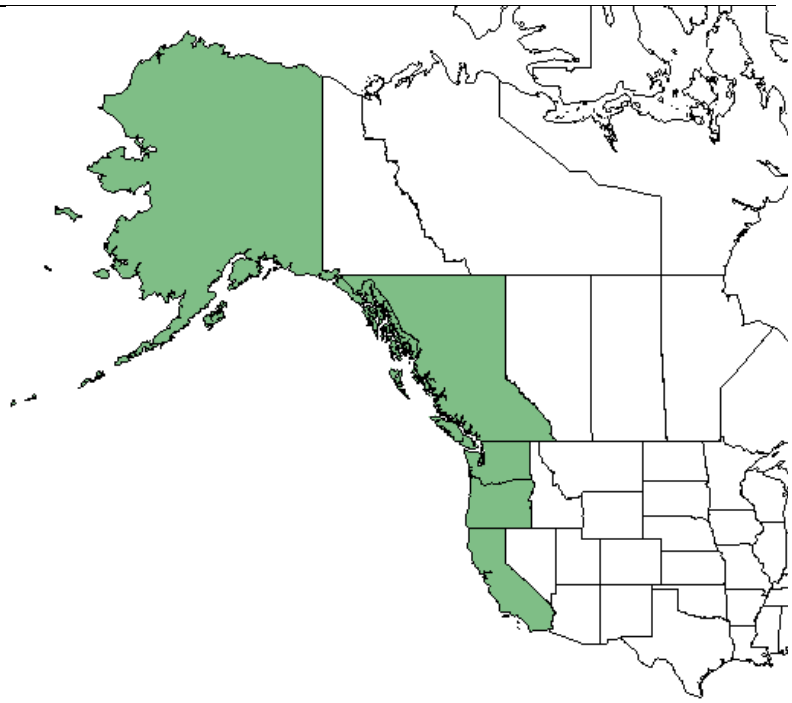
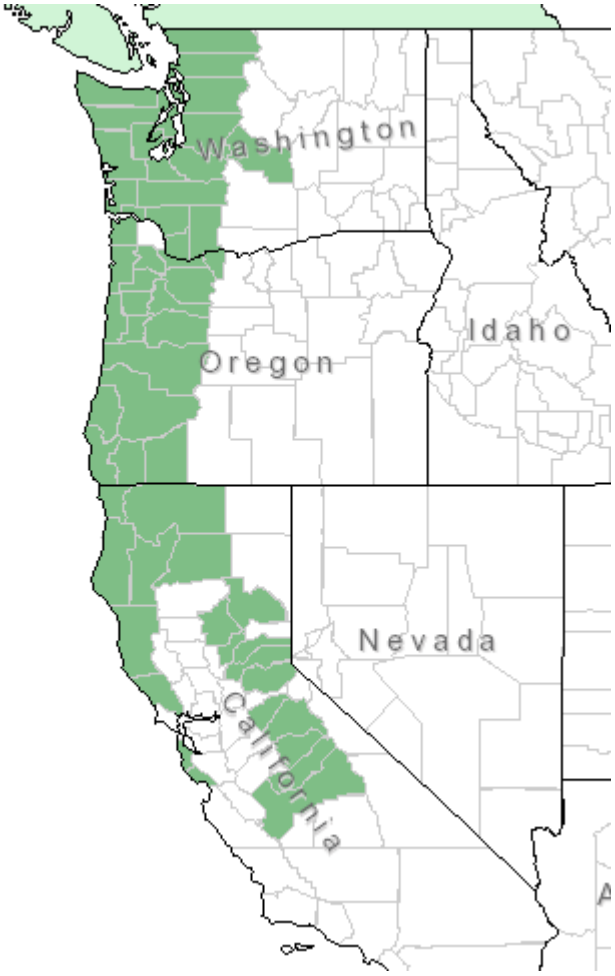
Plant Propagation Protocol for *Vaccinium Parvifolium*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*VAPA*

Image credit: Native Plants PNW

TAXONOMY	
Plant Family	
Scientific Name	Ericaceae
Common Name	Heath
Species Scientific Name	
Scientific Name	*Vaccinium parvifolium* Sm.
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	Red huckleberry, Red bilberry, Red whortleberry
Species Code	VAPA
GENERAL INFORMATION	

Geographical range	  Image source: USDA

Ecological distribution	*V. parviflorium* occurs in dry to moist coniferous forests in lowland and montane zones, as well as in wetlands west of the Cascade mountains.[2] It is often found at the edges of forests or where there is a break in the canopy.[1]
Climate and elevation range	*V. parvifolium* can be found from sea level up to 6,000 feet in elevation.[2]
Local habitat and abundance	*V. parvifolium* is shade tolerant, and generally grows on old decaying woody debris in moist coniferous wooded areas, wetlands, or in the transition zone of wetlands. It is commonly observed as a pioneering species on old stumps along with *Tsuga heterophylla*.[3] It can occur in nitrogen-poor soils, however its abundance decreases as elevation increases.[2] *V. Parvifolium* can become established in a range of soil conditions, however it requires acidic soils.[4]
Plant strategy type / successional stage	Depending on the specific composition of the coniferous forest it is found in, *V. parvifolium* may be either a climax species or an early successional species. In the majority of forest compositions *V. Parvifolium* occurs as a climax shrub, beginning its establishment three to five years after a disturbance and maintaining a dominant understory presence until the canopy closes. However in hemlock and hemlock-Douglas-fir stands *V. parvifolium* are considered early successional species.[4]
Plant characteristics	*V. parvifolium* is a deciduous shrub that can grow up to twelve feet tall. It has small, smooth, alternating leaves on bright green stems. The flowers of *V. parvifolium* are yellow-green to pink and urn shaped and emerge in late Spring through early Summer. The fruit are bright red when ripe, and can be up to one quarter of an inch in diameter.[4,5]
PROPAGATION DETAILS	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	Container seedling
Time to Grow	3-4 months [7]
Target Specifications	5-8cm plants
Propagule Collection Instructions	Harvest fruit in Summer.[6] Fruit may be picked by hand, collected by agitating the plant, or by combing branches.[1]
Propagule Processing/Propagule Characteristics	2,500,000 seeds per pound [8]
Pre-Planting Propagule Treatments	Seeds should be separated from fruit by blending the fresh fruit (or rehydrated fruit) with water. Seeds may be stored for up to three years in a dry frozen state.[6]
Growing Area Preparation / Annual	The final growing media may either be a pearlite mix, a

Practices for Perennial Crops	mix of perlite vermiculite and peat moss, or a mix of pearlite vermiculite and barkdust.[6] There should be no lime present in the media.[7] The container should be a 10-15cm pot.
Establishment Phase Details	Seeds should be stratified in stabilized medium plugs sealed inside plastic bags kept between 1ºC and 3ºC. The medium should be kept moist. Once germination has occurred, plugs should be moved into a greenhouse and fertilized.[9]
Length of Establishment Phase	60 days stratification 6 to 7 weeks establishment
Active Growth Phase	Fertilize as required during the first growing season with water-soluble fertilizers at a concentration of 100-150 ppm.[9]
Length of Active Growth Phase	18-20 weeks
Hardening Phase	Seedlings may be moved outdoors in mid-September.[9]
Length of Hardening Phase	2-3 weeks
Harvesting, Storage and Shipping	Plants should be harvested in mid-October to be outplanted in Fall. Plants should be stored outdoors, and well irrigated prior to shipping in pots.[9]
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	Seedlings are very slow to grow, and may take many years before they can bear fruit.[3]
INFORMATION SOURCES	
References	[1] Pojar, Jim and Andy MacKinnon, comp. and ed. Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska. British Columbia: Lone Pine, 1994. [2] In Klinkenberg, Brian. (Editor) 2020. *E-Flora BC: Electronic Atlas of the Plants of British Columbia*. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [Accessed: 2020-05-01] [3] Stevens & Darris. Red Huckleberry. *USDA NRCS* [4] Tirmenstein, Debra A. 1990. *Vaccinium parvifolium*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer).[Assessed 2020-05-01] [5] Gary D. Wallace 2017, *Vaccinium parvifolium*, in Jepson Flora Project (eds.) *Jepson eFlora*, Revision 5. [Accessed 2020-05-02] [6] Harrington, Constance, McGrath, James, Kraft, Joseph.

	1999. *Propagating Native Species: Experience at the Wind River Nursery*. WJAF, 14(2) [7] *The New RHS Dictionary of Gardening. 1992.* MacMillan Press 1992 [8] *Conservation Plant Characteristics Vaccinium Parvifolium.* USDA [9] Riley, Lee E.; Smith, Haley S.; Klocke, Allison. 2018. *Propagation protocol for production of Container (plug) Vaccinium parvifolium Plants 444 ml (27 in3) container;* USDA FS - Dorena Genetic Resource Center Cottage Grove, Oregon. In: Native Plant Network.
Other Sources Consulted	*WTU Herbarium Database*. Burke Museum. [Accessed 2020-05-01] *Red Huckleberry.* Encyclopedia of Life [Accessed 2020-05-01]
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