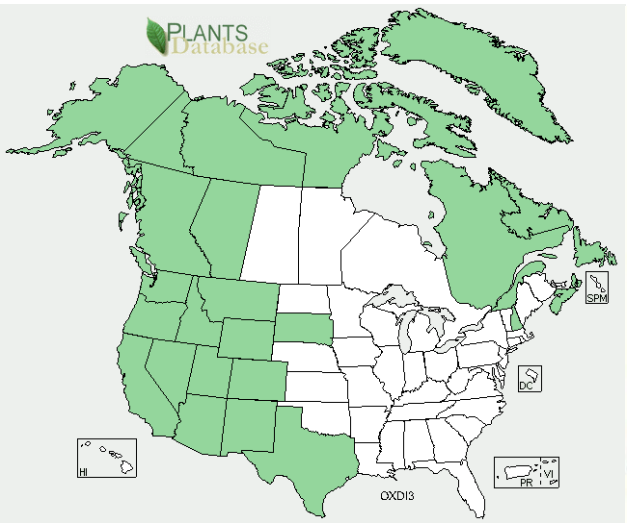
Plant Propagation Protocol for *Oxyria digyna*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/OXDI3.pdf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TAXONOMY	
Plant Family	
Scientific Name	*Polygonaceae*
Common Name	Buckwheat
Species Scientific Name	
Scientific Name	*Oxyria digyna*
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	*Rheum digynum*
Common Name(s)	Wood Sorrel, Alpine Sorrel, Alpine Mountainsorrel, Mountain-sorrel, Oxyrie de Montagne
Species Code (as per USDA Plants database)	OXDI3
GENERAL INFORMATION	
Geographical range	See above map[12]
Ecological distribution	Grows in a wide range of areas, particularly in rocky areas and scree slopes, in alpine and subalpine areas.[5,6,10] Does well in disturbed sites[11] with soils not too acidic, and moist but well drained. Can grow successfully in open areas with little to no shade, and often grows beneath bird nests due to the high nitrogen content of the soil.[4]

Climate and elevation range	
Local habitat and abundance	Subalpine forest or wetland riparian species[2]
Plant strategy type / successional stage	Produces small, wind dispersed seeds, making it a weed-like pioneer species, especially in disturbed sites.[3] Tolerant of sun stress, but not of interspecies competition, particularly that of Ranunculus glacialis. Is able to germinate after being buried beneath snow.[8] Has an intermediate tolerance for shade, a low tolerance for drought and anoxic conditions, and is adapted to coarse to medium soils. Seedlings spread slowly and are moderately vigorous, and the plant does not usually propagate vegetatively.[12]
Plant characteristics	*Oxyria digyna* is a perennial herb which grows to approx. 2ft tall and 1ft wide.[4] It is hairless, having a branching crown and several stems[11] with swollen nodes[8], and it is reddish tinged[11]. The leaves are kidney shaped and have a sour taste[6] *Oxyria digyna* produces a spike-like inflorescence that contains small greenish to reddish flowers, turning purple with age.[6] It flowers from June to September[10] with seed ripening from July to August. The flowers are short stalked[11] and are hermaphrodite. They are wind pollinated.[4]
PROPAGATION DETAILS	
Ecotype	Seeds taken from within or near disturbed areas[3]
Propagation Goal	Plants
Propagation Method	Seed[13]
Product Type	Plug[13]
Stock Type	160 ml container[13]
Time to Grow	6 months[13]
Target Specifications	Seedlings, 6-10 true leaves, 7 cm tall[13]
Propagule Collection Instructions	Collected in late August when seeds can be easily stripped from the inflorescence, which is a reddish-brown color at this time. Air dry seeds in paper bags[13]
Propagule Processing/Propagule Characteristics	Seeds are non-dormant[13] Seeds/Kg: 13,045,454/lb approx.[13]
Pre-Planting Propagule Treatments	Seeds should be hand cleaned[13], dried and stored at three different temperatures 4, -1, -20 degrees Celsius[3] When ready to sow, no stratification is required because seeds are non-

	dormant, though there may be a slight positive impact of cold-moist stratification[1,13]
Growing Area Preparation / Annual Practices for Perennial Crops	Sow in a cold-frame in spring.[4] Ideal temperature for germination is 21 degrees Celsius[13.] Seeds can be sown in peat soil covered with a thin layer of sand,[3] or placed on the surface, since germination rates are higher in light conditions. Keep soil moist during germination[13]
Establishment Phase Details	Uniform germination. After 3 weeks, seedlings had 4-6 leaves[13]
Length of Establishment Phase	4 weeks[13] sometimes as fast as 2[4]
Active Growth Phase	Development of roots and shoots occurs quickly once germinated. Seedlings can be treated with fertilizer[13]
Length of Active Growth Phase	16 weeks[13]
Hardening Phase	Irrigation gradually reduced in September and October. Leach with clear water[13]
Length of Hardening Phase	4 weeks[13]
Harvesting, Storage and Shipping	Harvest for 6 months, usually collection occurs in August. To store in winter conditions, keep beneath insulated foam if kept in outdoors to protect from snow and cold[13]
Length of Storage	5 months[13]
Guidelines for Outplanting / Performance on Typical Sites	Conetainers planted anywhere from late spring[4] to July[13]
Other Comments	Could use crown division to propagate in spring or once plants are established,[13] or place younger divisions in pots in a cold frame to ensure their establishment before outplanting.[4]
INFORMATION SOURCES	
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Other Sources Consulted	Interview attempt by A.N. Clay. The Shasta wildflowers project, Siskiou County. Retrieved from http://www.shastawildflowers.com/DatabaseSci.php

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