

Plant Propagation Protocol for CACI2

ESRM 412 – Native Plant Production

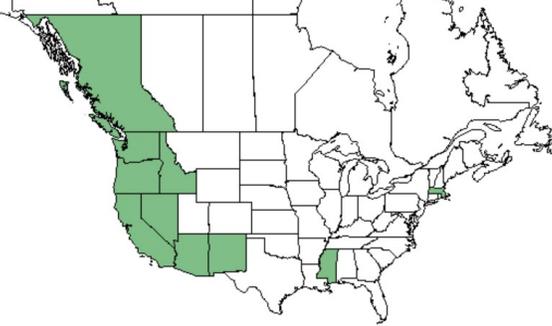
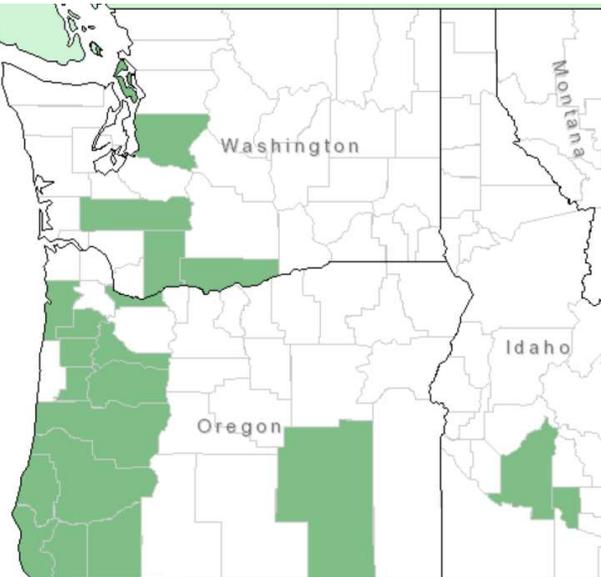
Protocol URL: <https://courses.washington.edu/esrm412/protocols/CACI2.pdf>



Source 5

TAXONOMY

Plant Family	
Scientific Name	Portulacaceae ¹
Common Name	Purslane ¹
Species Scientific Name	
Scientific Name	<i>Calandrinia ciliata</i> (Ruiz & Pav.) DC. ¹
Varieties	<i>Calandrinia ciliata</i> (Ruiz & Pav.) DC. var. <i>menziesii</i> (Hook.) J.F. Macbr. ¹
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	<i>Calandrinia arizonica</i> , <i>Calandrinia caulescens</i> , <i>Talinum ciliatum</i> ²
Common Name(s)	Desert Rock Purslane, Redmaids, Rock Purslane ²
Species Code (as per USDA Plants database)	CACI2 ¹
GENERAL INFORMATION	

<p>Geographical range</p>	 <p>Source 1</p>  <p>Source 1</p>
<p>Ecological distribution</p>	<p>Native to the Western and South Western United States.³ Ranges from South America to as far North as British Columbia.³ Introduced to the Eastern States, where it is considered both an ornamental and a weed.²</p>
<p>Climate and elevation range</p>	<p>Can be found <2200 m.⁵ Rainfall between 30-80cm per year.⁴ Sunshine</p>
<p>Local habitat and abundance</p>	<p>Can occur in human disturbed habitats, meadows and fields.⁴ Prefers dry, sandy loamy soil and grassy, open habitat.³ Soils should be medium to fast draining.³ Soil pH between 5-8.⁴</p>
<p>Plant strategy type / successional stage</p>	<p>Annual pioneering weedy/colonizer.⁶ Early successional.⁹</p>
<p>Plant characteristics</p>	<p>General: Wildflower, annual, low and spreading with several stems.⁷ Between 5-35 cm long.⁷ Leaves: Simple, alternate leaves.⁷ Linear to lance shapes, and somewhat fleshy in texture on narrow stalks.⁷ Between 1-7 cm in length.⁷ Flowers: Colored red to crimson-purple.⁷ Small in size, between 3-8mm long.⁷ 2 sepals and 5 petals.⁷ Withers quickly.⁷</p>

Fruit: Capsules are papery in texture, that open from the top into three segments.⁷ When fruits are ripe they turn brown and start to split open.⁸

Seeds: Numerous, lens-shaped, shiny, black seeds.⁷ Seeds have a bumpy texture.⁹



Source 9



Source 5



Source 3

PROPAGATION DETAILS

Ecotype	Marin County, California ⁸
Propagation Goal	Plants ⁸ and seeds ⁷
Propagation Method	Seed ⁸
Product Type	Container (plug) ⁸
Stock Type	Deepot 16 ⁸
Time to Grow	Dependent on temperature. In a greenhouse, only a few weeks. ⁹
Target Specifications	Some sprouts. Root plug firmly in container. ⁸
Propagule Collection Instructions	Seeds to be collected from late April-early June. ⁸ Collect by hand. As the plant matures the stem turns pink, the fruits mature from the base of the stalk out. ⁸ Collect the fruits when they are brown and have started to open. ⁸ Seeds will be light grey when they're mature. ⁸
Propagule Processing/Propagule Characteristics	10-20 seeds per capsule. ¹⁰ Unknown seed density and longevity.
Pre-Planting Propagule Treatments	Cleaning: Rub dry fruits on a #12 screen to separate the fruits from the chaff. ⁸ Check open fruits to see if seeds have fallen out. ⁸ Chaff weight is equal to that of the seeds. ⁸ Storage: Store in a dry paper bag in the refrigerator. ⁸
Growing Area Preparation / Annual Practices for Perennial Crops	Grow in a controlled greenhouse or sow directly in the ground. ^{8,9} Containers are 2"x7" tubes (Deepot 16). ⁸ One seed per container. ⁸

	If sowing in the ground, mix the seeds with 10 parts moist sand and then put on top of normal garden beds and rake through lightly. ⁹ If in a greenhouse, mix sand with a loamy media in the containers. ⁵
Establishment Phase Details	Keep warm (~20°C) ⁹
Length of Establishment Phase	Usually takes 1-3 weeks when temperature is 20°C ⁹
Active Growth Phase	Water sparsely, as they are drought tolerant, desert, weedy plants. ⁹
Length of Active Growth Phase	Grow from early spring to mid-June after the plant has gone to seed. Approximately 3-4 months depending on temperature. ⁸
Hardening Phase	N/a
Length of Hardening Phase	In cold climates, the species can become a self-sowing annual, waiting until temperatures warm up before germinating in the spring. ⁸ Because the plant is an annual, there is no cold-hardiness in the plant itself, and it does off after it's gone to seed.
Harvesting, Storage and Shipping	Sell seedlings in their containers to be planted within a short radius. ⁸ Need to be kept in a warm, dry, sunlight area. ³
Length of Storage	None. Fast life cycle so should be outplanted as soon as possible.
Guidelines for Outplanting / Performance on Typical Sites	Once outplanted, they can grow to a height of 40cm, and will flower after a few weeks of consistent warm weather. ³ Be careful not to overwater. ³ Percent survival is unknown.
Other Comments	Is used as a food source by first-nations peoples, especially for the oil contained in the seed. ¹⁰ The stems and leaves can also be eaten, though contain a large amount of oxalic acid, so should be eaten sparingly, though cooking the leaves and stems can reduce the amount of acid. ¹⁰ Cattle enjoy grazing on the plant and seem to ignore the oxalic acid. ¹⁰ The fire-following nature of this plant and its use as a food resource caused first-nations people to set fires to encourage the <i>Calandrinia ciliata</i> to grow and be harvested. ¹⁰

INFORMATION SOURCES

References	<ol style="list-style-type: none"> 1. <i>Calandrinia ciliata</i> (Ruiz & Pav.) DC: fringed redmaids. (2011). Retrieved from https://plants.usda.gov/core/profile?symbol=CACI2 2. Southwest Desert Flora. (2017). <i>Calandrinia ciliata</i>, Fringed Redmaids. Retrieved from http://southwestdesertflora.com/WebsiteFolders/All_Species/Portulacaceae/Calandrinia%20ciliata,%20Fringed%20Redmaids.html 3. Calscape. (2010). Red Maids. California Native Plant Society. Retrieved from https://calscape.org/Calandrinia-ciliata-()
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Other Sources Consulted	<ol style="list-style-type: none"> 1. Calflora. (2020). <i>Calandrinia menziesii</i> (Hook.) Torr. & A. Gray. The Calflora Database [a non-profit organization]. Berkeley, California. Retrieved from https://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Calandrinia+menziesii 2. Native Plant Trust. (2020). <i>Calandrinia ciliata</i> (Ruiz & Pavón) DC.: fringed redmaids. Native Plant Trust: Go Botany. Framingham, MA. Retrieved from https://gobotany.nativeplanttrust.org/species/calandrinia/ciliata/ 3. McGourty, G., et al. (2011). <i>Organic Winegrowing Manual</i>. Pg. 69-77. University of California. Richmond,

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