

Plant Propagation Protocol for *Calochortus apiculatus*

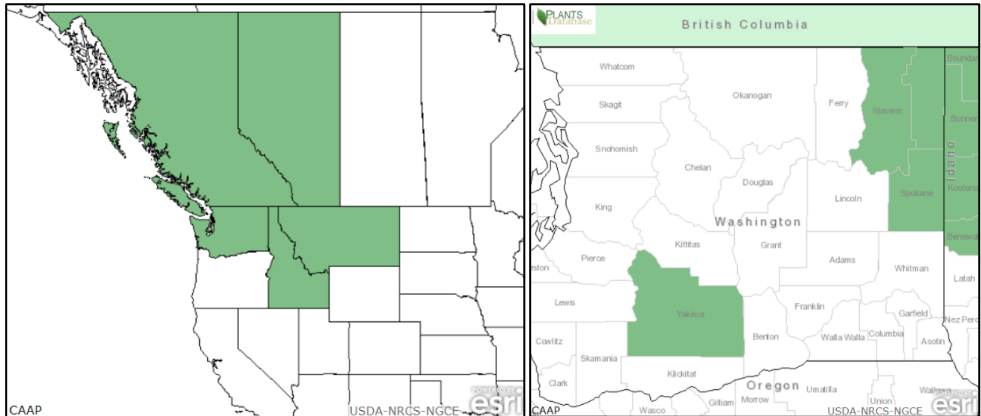
<http://courses.washington.edu/esrm412/protocols/CAAP.pdf>



Up close photograph of *C. apiculatus*. 2005, Robert L. Carr. ²



Photograph of *C. apiculatus* growth form. 2005, Robert L. Carr. ²

TAXONOMY	
Family Names	
Family Scientific Name:	Liliaceae ¹
Family Common Name:	Lily
Scientific Names	
Genus:	<i>Calochortus</i> ¹
Species/Epithet:	<i>Apiculatus</i> ¹
Species Authority:	Baker ¹
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Pointedtip Mariposa Lily ¹ Baker's Mariposa ² Three-Spot Mariposa Lily ²
Species Code:	CAAP ¹
GENERAL INFORMATION	
Geographical range	<p>Found in the United States of America in north eastern Washington as well as an isolated population in Yakima Co., northern Idaho, and in Montana. In Canada, this species is found in British Columbia and Alberta.</p> 
Ecological distribution	Typically found in meadows and grassy slopes, as well as open coniferous forests and valleys. ^{5,8,11}
Climate and elevation range	Found in dry to moist soils between 440-2500 meters. ^{4,8,10}
Local habitat and abundance	Doesn't commonly associate with specific species of plants.
Plant strategy type / successional stage	Seral, occurring in areas without a lot of disturbance, but also no late successional growth.

Plant characteristics	Perennial forb, leaves grow basally, flower is white with yellowish, hairy throat. ^{5,8}
PROPAGATION DETAILS	
Ecotype	N/A
Propagation Goal	Plants (Bulbs) ³
Propagation Method	Seed ³
Product Type	Container (plug) ⁶
Stock Type	4" pots, D-Pots seeding flats ^{3,6}
Time to Grow	1 year ⁶
Target Specifications	First year bulb, 3-8mm diameter ⁶
Propagule Collection Instructions	Collect whole fruits (capsules) right before or after ripening (for most <i>Calochortus</i> species, this is May through August). ⁶
Propagule Processing/Propagule Characteristics	Seeds last 5-6 years in the environment but may last longer if stored in a fridge. Seeds per pound vary in the <i>Calochortus spp.</i> ranging from 170,000-200,000 seeds. ^{7,9}
Pre-Planting Propagule Treatments	<p>Shake seeds from capsules that have split or break open capsules to retrieve seeds. Using a blender (dry) followed by sifting or an air column can be effective for large quantities of seeds.⁶</p> <p>Seeds require cold stratification: both a temperature of about 32°F and a high moisture is required. Putting the pot with ice or snow on the top in the fridge or keeping in a Ziploc bag with vermiculite is effective.³</p> <p>Store seeds in dry, cold storage after collection and before sowing.⁶</p>
Growing Area Preparation / Annual Practices for Perennial Crops	A few different mixes have been shown to be effective. In pots, the best seems to be ½ sand, ½ milled sphagnum peat moss. The next best was 1/3 perlite, 1/3 vermiculite, and 1/3 sphagnum peat moss. If planting in the ground, clay soil with some organic matter mixed in worked best. Incorporate slow release fertilizer from start. ³
Establishment Phase Details	Water pots about 1 time a week, about 1 inch of water. Watering from the bottom is recommended. Keep potting media moist, and don't allow to get hot. Plant seeds about ¼-½" deep, and ½-1" apart, knowing the seedlings will need spacing later. Plant the seeds in late winter or early spring, noting that depending on location of seed collection, the seeds will germinate differently (tend to germinate at peak rainfall times). ³
Length of Establishment Phase	Less than 6 weeks to one year, usually transplantable seedlings are produced after 3-4 weeks. ^{6,9}
Active Growth Phase	Fertilize with low nitrogen, high phosphorus fertilizer. Keep well-watered, but not overly saturated. Make sure containers stay weed free, as this can significantly hinder or kill the seedlings. ^{6,9}
Length of Active Growth Phase	6-8 months. ⁶
Hardening Phase	N/A
Length of Hardening Phase	N/A

Harvesting, Storage and Shipping (of seedlings)	Seedlings may be shipped out as bulbs after they have grown for about a year. ⁶
Length of Storage	Usually 3-5 months after dying back. ⁶
Guidelines for Outplanting / Performance on Typical Sites	Typically avoid transplanting seedlings before the first year, as transplanted seedlings don't do as well. After the first year, transplanting bulbs is fairly successful. ⁶
Other Comments	Bulb propagation is possible, but is highly discouraged, as it destroys the whole plant, and it has a very high failure/mortality rate. ⁷
INFORMATION SOURCES	
References	<ol style="list-style-type: none"> 1. <i>Plants Profile for Calochortus Apiculatus (Pointedtip Mariposa Lily)</i>, plants.usda.gov/core/profile?symbol=caap. 2. "Calochortus Apiculatus." <i>Flora of Eastern Washington and Adjacent Idaho</i>, web.ewu.edu/ewflora/Liliaceae/Calochortus apiculatus.html. 3. "How To Grow Calochortus." <i>Pacific Bulb Society</i>, www.pacificbulbsociety.org/pbswiki/index.php/HowToGrowCalochortus. 4. "Calochortus Apiculatus Pointedtip Mariposa Lily." <i>Wildflower Identification</i>, wildflowersearch.org/search/?&tsn=42835. 5. Giblin, David, et al. <i>Burke Herbarium Image Collection</i>, biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Calochortus apiculatus. 6. Leigh, Mark, et al. "Liliaceae (Calochortus) Calochortus (Luteus)." <i>Reforestation, Nurseries and Genetics Resources</i>, 2006, US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources. npn.rngr.net/npn/propagation/protocols/liliaceae-calochortus-3098/?searchterm=calochortus.

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Other Sources Consulted	N/A
Protocol Author	Caitlin Savo
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