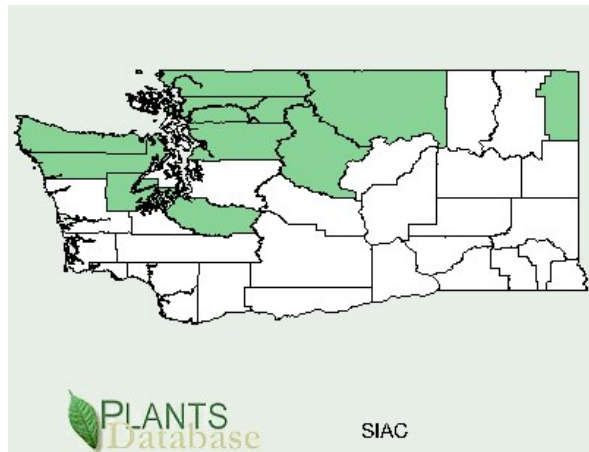
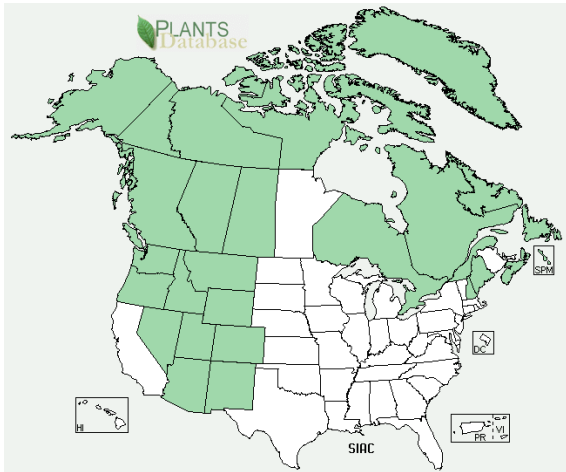


**Plant Propagation Protocol for *Silene acaulis* (L.) Jacq.**  
ESRM 412 – Native Plant Production



<b>TAXONOMY</b>	
<b>Family Names</b>	
Family Scientific Name:	Caryophyllaceae
Family Common Name:	Pink Family
<b>Scientific Names</b>	
Genus:	<i>Silene</i>
Species:	<i>acaulis</i>
Species Authority:	(L.) Jacq.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	<i>Cucubalus acaulis</i> , <sup>3,6,19</sup> <i>Silene acaulis</i> Linnaeus Jacquin ssp. <i>exscapa</i> (Allioni) de Candolle, <sup>3</sup> <i>Silene bryoides</i> , <sup>10</sup> <i>Silene exscapa</i> (Allioni), <sup>3,6,19</sup> <i>Xamilensis acaulis</i> (Linnaeus), <sup>3,19</sup>
Common Name(s):	Moss Champion, Cushion Pink, <sup>15</sup>
Species Code:	SIAC
<b>GENERAL INFORMATION</b>	
Geographical range	<b>USA</b> ( <a href="#">AK</a> , <a href="#">AZ</a> , <a href="#">CO</a> , <a href="#">ID</a> , <a href="#">ME</a> , <a href="#">MT</a> , <a href="#">NH</a> , <a href="#">NM</a> , <a href="#">NV</a> , <a href="#">OR</a> , <a href="#">UT</a> , <a href="#">WA</a> , <a href="#">WY</a> ) <b>CAN</b> (AB, BC, LB, NF, NS, NT, NU, ON, QC, SK, YT) <b>DEN</b> (GL), <b>FRA</b> (SPM) <sup>14</sup>

Ecological distribution	<i>S. acaulis</i> is a common alpine species in sites that are moist but well drained. <sup>3,9</sup>
Climate and elevation range	Luna, et al states that this species was found at 2200 meters, all other sources say within the alpine zone but do not give a range of elevation. <sup>7</sup>
Local habitat and abundance; may include commonly associated species	No Source with conforming information was attained.
Plant strategy type / successional stage	No Source with conforming information was attained.
Plant characteristics	<i>S. acaulis</i> has been generally described as a long lived tight cushion plant that displays “compass flowering”.
<b>PROPAGATION DETAILS</b>	
The primary propagation protocol information has been interpreted from Luna, et al. <sup>7</sup>	
Ecotype:	Alpine scree slope, Logan Pass, 2200m elev., Glacier National Park, Glacier Co., MT.
Propagation Goal:	Plants
Propagation Method:	Seed
Product Type:	Container (plug)
Stock Type:	160 ml conetainers
Time to Grow:	1 Years
Target Specifications:	Stock Type: Container seedling Height: Cushion plant with multiple leaves, 2 cm ht Caliper: n/a Root System: Firm plug in container.
Propagule Collection:	Seeds are hand collected in late August when capsules just begin to split and seeds are tan in color. Seeds are collected in paper bags and kept in a well ventilated drying shed prior to cleaning.
Propagule Processing/Propagule Characteristics:	Seeds are hand cleaned by rubbing the capsules through screens. Seed longevity is unknown. Seed dormancy is classified as physiological dormancy. Seeds/Kg: unknown % Purity: 100% % Germination: 90%
Pre-Planting Propagule Treatments:	5 month outdoor cold, moist stratification. Seeds were lightly covered with a thin layer of perlite to allow light transmission but hold seeds to the surface of the medium. Bliss, and Bianco/Bulard found no stratification was necessary for this species, and seeds that were exposed to light had greater germination percentages.

Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Outdoor nursery growing facility. Sowing Method: Direct Seeding. Seeds are lightly covered with medium. Growing medium used is 6:1:1 milled sphagnum peat, perlite, and vermiculite with Osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21C) and Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) at the rate of 1 gram of Osmocote and 0.20 gram of Micromax per container. Containers are filled and sown in late fall and irrigated thoroughly prior to winter stratification.
Establishment Phase:	Germination occurs in early spring under fluctuating temperatures. Seeds germinate very uniformly at temperatures above 21 C during the day. Seedlings produced true leaves within 3 weeks of germination. After seedlings are well established, they must dry down slightly between irrigations.
Length of Establishment Phase:	4 weeks
Active Growth Phase:	Once seedlings are established, plants develop rapid shoot and root growth 4 to 5 weeks following germination. Plants are fertilized with 20-20-20 liquid NPK at 100 ppm weekly during the growing season. Plants are root-tight in 20 weeks.
Length of Active Growth Phase:	20 weeks
Hardening Phase:	Plants are fertilized with 10-20-20 liquid NPK at 200 ppm in early fall; pots are leached with water, irrigation is gradually reduced through September and October.
Length of Hardening Phase:	4 weeks
Harvesting, Storage and Shipping (of seedlings):	Total Time to Harvest: 1 year Harvest Date: July or August Storage Conditions: Overwinter in outdoor nursery under insulating foam cover and snow.
Length of Storage:	5 months
Guidelines for Outplanting / Performance on Typical Sites):	Luna, et al did not specify survival or growth rates after harvesting.
Other Comments (including collection restrictions or guidelines, if available):	This species is a long-lived, alpine cushion perennial with a branched central taproot. Some individuals flowered one year after germination.
<b>INFORMATION SOURCES</b>	
References:	See Below
Other Sources Consulted:	See Below

Protocol Author:	Jason Ceralde
Date Protocol Updated:	May 17, 2011

Note: This template was modified by J.D. Bakker from that available at:  
<http://www.nativeplantnetwork.org/network/SampleBlankForm.asp>

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