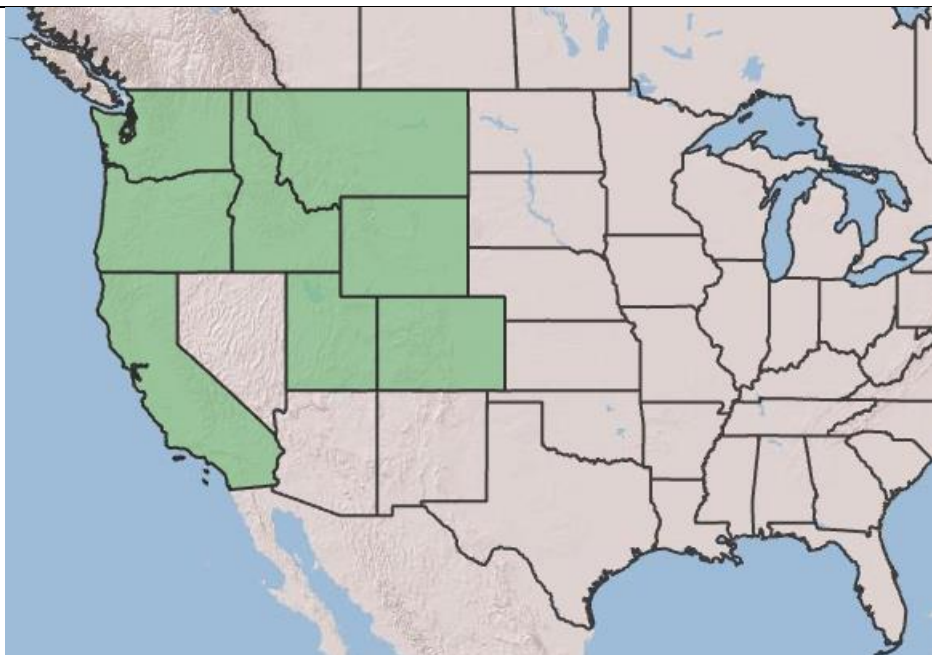
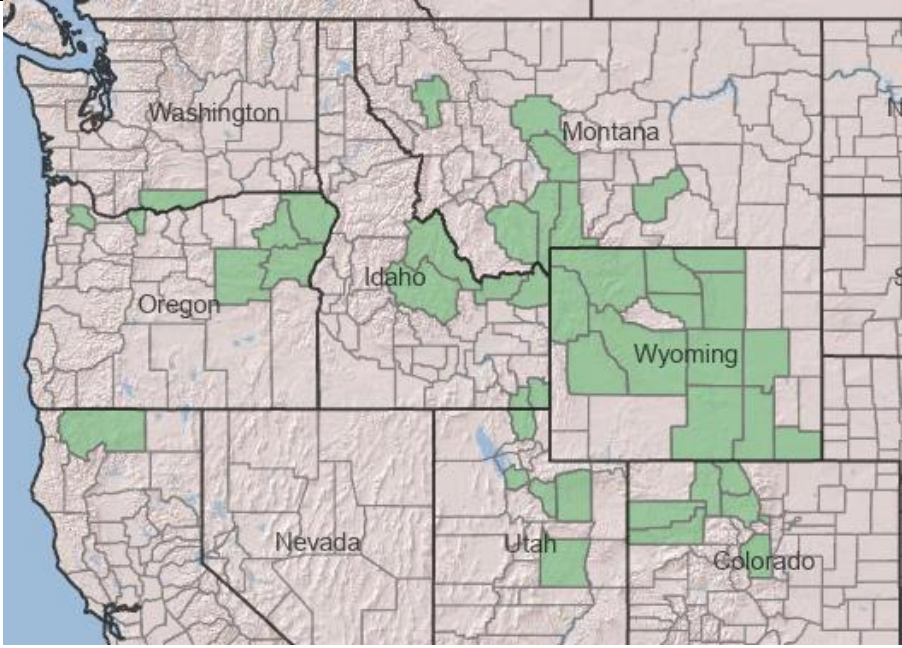


## Plant Propagation Protocol for *Filiform Rockjasmine*

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2024/ANFI.pdf>

TAXONOMY	
Plant Family	
Scientific Name	Primulaceae
Common Name	Primrose
Species Scientific Name	
Scientific	<i>Androsace filiformis</i> Retz.
Varieties	<i>Androsace filiformis</i> var. <i>elongata</i> L. Kress <i>Androsace filiformis</i> var. <i>glandulosa</i> L. Krylov <sup>2</sup>
Sub-species	None.
Cultivar	None.
Common Synonym(s)	<i>Primula filiformis</i> Retz. Kuntze <sup>1</sup>
Common Name(s)	Filiform rockjasmine, slender rockjasmine <sup>3</sup>
Species Code (as per USDA Plants database)	ANFI
GENERAL INFORMATION	
Geographical range	

	
Ecological distribution	Adapted to a range of habitats from wetlands and valleys to subalpine biomes, but prefers riparian wetlands. <sup>7,11</sup>
Climate and elevation range	Found between 4,000-12,000 ft, but prefers 8,000 ft. Can be found in temperate climates with cool summers, and other rocky mountainous regions. <sup>11</sup>
Local habitat and abundance	Found in wetter mountain meadows, and along lakes, marshes, and streams. <sup>7,11</sup>
Plant strategy type / successional stage	Hardy annual herb.
Plant characteristics	Annual herb with a slender stem and a fibrous root system. Forms hairy patches, growing 12cm in height. Leaves are basal, form petioles and are found in singular rosettes. Flowers are white and hemispheric in shape, with five petals on long pedicels. <sup>7,8</sup>
<b>PROPAGATION DETAILS: FROM SEED</b>	
Propagation Goal	Plants.
Propagation Method	Seed.
Product Type	Seeds should be sown into well-draining, shaded frames. <sup>10</sup> Scree beds and plug containers are also acceptable so long as they are still somewhat shaded. <sup>4</sup>
Time to Grow	Propagation from seed for this species is very flexible; ideal timeline spans from January to late April (~16wks), but no specific data was found.
Propagule Collection Instructions	Seeds should be collected in January or February, and sown immediately. <sup>5</sup>

Propagule Processing/Propagule Characteristics	Seeds may be stored in an orthodox fashion, and may be frozen. <sup>10</sup>
Pre-Planting Propagule Treatments	Sources differ in regard to pre-planting procedure. Some state that freezing seeds is not essential for germination <sup>10</sup> ; others state that freezing seeds produces the highest germination rates. <sup>5</sup> If freezing, place seeds on a pan with media in a freezer for at least ten days. After freezing, they may then be moved into a cool greenhouse system (~45 deg F). <sup>5</sup> Otherwise, seeds may be sown immediately.
Growing Area Preparation / Annual Practices for Perennial Crops	Media should contain lime, with the one part of 1/8 in gravel to two parts well-draining soil. Seeds may be spread liberally on top of media, with a sprinkle of grit or chippings on top to hold in place. <sup>10</sup>
Establishment Phase Details	It is recommended that seedlings stay in their sowing pan for one week before being transplanted into shaded frames. If germination is low, they may stay in the pan for longer, although the seedling's root systems are at risk of overcrowding. Regardless of container, seeds should be watered and kept in shady areas with access to indirect sunlight. Pans should be watered by soaking. <sup>10</sup>
Length of Establishment Phase	1-2 weeks. <sup>5</sup>
Active Growth Phase	Seedlings can be exposed to natural weather conditions, so long as their soil does not parch. They should still be exposed to indirect sunlight and remain in shaded areas. A mesh net over the seedling growing area may be useful. <sup>10</sup>
Length of Active Growth Phase	12 weeks. <sup>5</sup>
Hardening Phase	Seedlings should be kept relatively dry over the winter, watered only when soil is parched, from the base of the plant, making sure not to wet foliage. <sup>5</sup>
Guidelines for Outplanting / Performance on Typical Sites	Outplanting may be conducted in late spring, and placed into sites such as wetland marshes, mountain prairies, and sides of streams/marshes. Soil conditions should be relatively similar, and direct sunlight should be avoided. <sup>5</sup>
Other Comments	<ul style="list-style-type: none"> <li>- When researching, there were many differing opinions concerning propagation from seed, although it appears to be the most successful. Sources also differed when listing its climate and habitat.</li> <li>- No information about the length of hardening phase, target specifications, propagule characteristics, seedlings harvest, storage, or transport were found.</li> </ul>

	<ul style="list-style-type: none"> <li>- When collecting seed, it's important to note that seeds ripen quickly, and tend to spoil quickly as well. Seed pods are spoiled when they take on a brownish hue.<sup>9</sup></li> </ul>
<b>PROPAGATION DETAILS: VEGETATIVE</b>	
Propagation Goal	Plants derived from cuttings.
Propagation Method	Vegetative.
Product Type	Plugs.
Stock Type	
Time to Grow	Ideal timeline spans from June to early autumn (~12wks), but no specific data was found. <sup>5</sup>
Propagule Collection Instructions	Cuttings should be taken in June, in the form of harvesting single rosettes. Rosettes should be placed directly into media and kept in shade. <sup>10</sup> No dead leaves should be removed, so as not to damage the stem. <sup>5</sup>
Pre-Planting Propagule Treatments	None needed.
Growing Area Preparation / Annual Practices for Perennial Crops	Media should be limy and gritty, draining well and containing sand. <sup>10</sup> When preparing cuttings, there should be about $\frac{3}{4}$ in of space above media for a sprinkling of sharp sand. Cover seedlings with a pane of glass, flipping every 12 hours to remove built up condensation. <sup>5</sup>
Establishment Phase Details	Seedlings should be kept in shaded areas, and watered frequently from the bottom. It is not advisable to water from above as this species does not like wet foliage. Rooting compounds may be used if germination rates are low, but are not necessary. <sup>10</sup>
Length of Establishment Phase	4-8 weeks. <sup>10</sup>
Active Growth Phase	Seedlings should remain in shaded areas, receiving frequent watering from below. Additionally, when there is visible new growth either from the rosettes or the roots, the glass pane may be removed. <sup>5</sup>
Length of Active Growth Phase	2-4 weeks. <sup>10</sup>
Hardening Phase	Seedlings may be placed in a cold frame for up to 5 weeks over the winter. During this period, watering should be less frequent, but soil should not be parched. <sup>5</sup>
Guidelines for Outplanting / Performance on Typical Sites	Outplanting may be conducted in early Autumn, placed into sites such as wetlands, stream edges, marshes, and mountain prairies. Soil conditions should be relatively similar, and direct sunlight should be avoided. <sup>5</sup>
Other Comments	<ul style="list-style-type: none"> <li>- No information about propagule characteristics, target characteristics, length of hardening phase, and seedling transport, harvest, and storage was found.</li> <li>- Instructions regarding vegetative propagation was confusing, as it is unclear if simply transplanting single rosettes would suffice.</li> </ul>

	No other information regarding alternative propagation methods were found.
<b>INFORMATION SOURCES</b>	
References	<ol style="list-style-type: none"> <li>1. "Androsace Filiformis Retz.: Plants of the World Online: Kew Science." <i>Plants of the World Online</i>, powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30072292-2. Accessed 21 May 2024.</li> <li>2. "Androsace Filiformis Retz." <i>Tropicos</i>, legacy.tropicos.org/Name/26400308. Accessed 21 May 2024.</li> <li>3. "Androsace Filiformis." <i>USDA Plants Database</i>, plants.usda.gov/home/plantProfile?symbol=ANFI. Accessed 21 May 2024.</li> <li>4. Baskin, Jerry M.; Baskin, Carol C.. 2002. Propagation protocol for production of Container (plug) Androsace septentrionalis L. plants University of Kentucky Lexington, Kentucky. In: Native Plant Network. URL: <a href="https://NativePlantNetwork.org">https://NativePlantNetwork.org</a> (accessed 2024/05/21). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.</li> <li>5. Hills, Lawrence Donegan. <i>The Propagation of Alpines</i>. Theophrastus, 1976.</li> <li>6. Kelso, Sylvia. "Androsace Filiformis Retz." <i>Androsace Filiformis - FNA</i>, 5 Nov. 2020, beta.floranorthamerica.org/Androsace_filiformis.</li> <li>7. Program, Montana Natural Heritage. "Filiform Rockjasmine-Androsace Filiformis." <i>Montana Field Guide</i>, 21 May 2024, fieldguide.mt.gov/speciesDetail.aspx?elcode=PDPRI02040.</li> <li>8. "Slender-Stemmed Androsace (Androsace Filiformis)." <i>iNaturalist United Kingdom</i>, uk.inaturalist.org/taxa/75434-Androsace-filiformis. Accessed 21 May 2024.</li> <li>9. Smith, George, et al. <i>The Genus Androsace: A Monograph for Gardeners and Botanists</i>. AGS Publications, 1997.</li> <li>10. Smith, Gideon, and Duncan B. Lowe. <i>Androsaces</i>. Alpine Garden Soc., 1977.</li> <li>11. Sullivan, Steven. "Filiform Rockjasmine." <i>Wildflower Research</i>, wildflowersearch.org/search?name=Androsace%2Bfiliformis. Accessed 21 May 2024.</li> </ol>
Other Sources Consulted	"Androsace Occidentalis (Western Rock Jasmine)." Minnesota Wildflowers, <a href="http://www.minnesotawildflowers.info/flower/western-rock-jasmine">www.minnesotawildflowers.info/flower/western-rock-jasmine</a> . Accessed 21 May 2024.

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