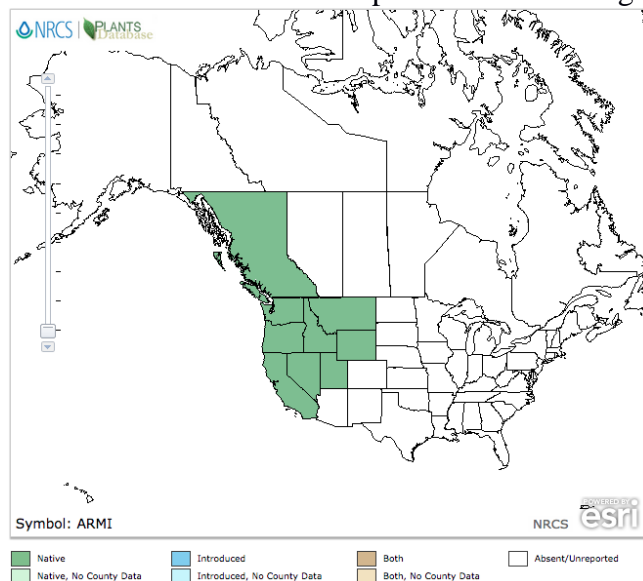


## Plant Propagation Protocol for *Arabis Microphylla*

ESRM 412 – Native Plant Production

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



Source: USDA Plants Database

### *Arabis microphylla* var. *microphylla*



Little-leaf rock cress from the lower Deschutes River, OR.....March 22, 1997.

Source: Science.HalleyHosting.com

## TAXONOMY

<b>TAXONOMY</b>	
Plant Family	
Scientific Name	Brassicaceae
Common Name	Mustard family
Species Scientific Name	
Scientific Name	<i>Arabis microphylla</i> Nutt.
Varieties	<i>Arabis microphylla</i> Nutt. var. <i>macounii</i> (S. Watson) Rollins <i>Arabis microphylla</i> Nutt. var. <i>microphylla</i> thompsonii <i>Arabis microphylla</i> Nutt. var. <i>thompsonii</i> Rollins
Sub-species	<i>Arabis microphylla macounii</i> (S. Watson) Rollins Nutt. <i>Arabis microphylla microphylla</i> Nutt. <i>Arabis microphylla thompsonii</i> Rollins Nutt.
Cultivar	None
Common Synonym(s)	<i>Arabis tenuicula</i> Greene <i>Boechera microphylla</i> (Nutt.) Dorn <i>Boechera microphylla</i> (Nutt.) Dorn var. <i>microphylla</i>
Common Name(s)	Littleleaf rockcress
Species Code (as per USDA Plants database)	ARMI

<b>GENERAL INFORMATION</b>	
Geographical range	<i>A. microphylla</i> can be found from British Columbia south to north central and northeastern Oregon, east to Montana and Wyoming <sup>9</sup> .
Ecological distribution	Rocky cliffs and outcrops <sup>9,7</sup> .
Climate and elevation range	Highland and semi-arid steppe <sup>4,6,7</sup> with elevations ranging from 1700m.-2700m. <sup>1,3</sup> .
Local habitat and abundance	rocky cliff bases <sup>2</sup> uncommon <sup>5</sup>
Plant strategy type / successional stage	Perennial <sup>2</sup> , stress-tolerator (i.e drought-resistant and grows in nutrient-poor soil) that inhabits rocky cliff bases and often grows on thin soil <sup>4</sup> . In stressful environments it creates rootstocks that keep it alive on otherwise uninhabitable sites <sup>8</sup> .  <i>A. Myrcophilla</i> also displays a weedy tendency by growing at the site of disturbed paths <sup>10</sup> .
Plant characteristics	Subshrub and forb/herb <sup>2</sup> presenting erect, ascending, or spreading stems, pink and purple four-petaled flowers (5-8mm in length) with trifurcate trichomes covering its leaves <sup>9</sup> . The basal leaves are arranged in a tight central clump <sup>9</sup> .  The seed pods of <i>A. microphylla</i> are long thin siliques <sup>9</sup> . In variety <i>microphylla</i> , the siliques often number fewer than six, and these are usually pendant-shaped <sup>9</sup> .  The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, Lepidoptera (Moths & Butterflies) and insects <sup>12</sup> .
<b>PROPAGATION DETAILS</b>	
Propagation Goal	Seeds, or cutting after flowering <sup>11</sup>
Propagation Method	Seed <sup>11</sup>
Product Type	Propagule <sup>13</sup>
Time to Grow	Seeds germinate in 2 - 3 weeks at 21 °C <sup>13</sup> . Growing conditions depend on the environment <sup>8</sup> .
Target Specifications	Stems that measure from 2.5-6 cm long, and 1.2-2 mm <sup>9</sup> .

Propagule Collection Instructions	In a sun-drenched area, using a frigid frame, plant the ripened seed immediately; the seed can also be sown in the Spring. When the seedlings are sturdy enough and large enough to handle, sort the seedlings into individual pots and outplant them in the Summer. <sup>13</sup> Make divisions after the plants have flowered, which usually happens by Spring. Then, if you choose these divisions can be planted into plots. <sup>13</sup>
Propagule Processing/Propagule Characteristics	The recommended seed density for <i>A. microphylla</i> is 15-18 in (38-45 cm) <sup>11</sup> .
Pre-Planting Propagule Treatments	After cleaning the seeds store in a cool location with little moisture. Water the seeds once after installation into the frame. <sup>8</sup>
Growing Area Preparation / Annual Practices for Perennial Crops	<i>A. microphylla</i> can grow in sandy, clay, or loamy soils, and can grow in alkaline and neutral soils, but the soil must be semi-arid (i.e. well-drained) <sup>8</sup> . The seeds are placed in a cold frame for germination <sup>13</sup> .
Establishment Phase Details	The seeds can be stored <sup>11</sup> , but they are small, so desiccation can happen quickly, unless you surface-sow the seeds as soon as they are ripe <sup>13</sup> .
Length of Establishment Phase	It takes 2 - 3 weeks (at 21 °C) for seed germination to terminate <sup>13</sup> .
Active Growth Phase	The purplish stems of <i>A. microphylla</i> are usually present as a single growth, but two or three stems may arise from a tough base that usually grows to 0.6m. <sup>14</sup> .
Length of Active Growth Phase	If planted in the Spring, the seeds of <i>A. microphylla</i> finish growing, and flower from May to July <sup>12</sup> .
Hardening Phase	<i>A. microphylla</i> is a stress-tolerant (e.g. cold-tolerant) species, and is not frost-tender <sup>8</sup> .
Harvesting, Storage and Shipping	After cleaning the seeds store in a cool location with little moisture. Water the seeds once after installation into the frame. <sup>8</sup>
Length of Storage	The seeds can be stored <sup>11</sup> , but they are small, so desiccation can happen quickly, unless you surface-sow the seeds as soon as they are ripe <sup>13</sup> .
Guidelines for Outplanting / Performance on Typical Sites	In a sun-rich position, and using a cold frame, plant the seeds immediately after ripening; the

	<p>seed can also be sown by Spring. When large enough to handle, prick the seedlings out into individual pots and plant them out in the summer.<sup>13</sup></p> <p>Make divisions after the plants have flowered, which usually happens in the Spring. These divisions can then be planted into their final plots, if necessary.<sup>13</sup></p> <p>Stems, which often are purplish below, usually are single, but occasionally two or three arise from a tough, persistent base, growing to 0.6m.<sup>14</sup></p> <p><i>A. micriphylla</i> flowers between the months of May and July, and are hermaphroditic. <i>A. micriphylla</i> is pollinated by bees, moths and butterflies, and pollenating insects<sup>12</sup>.</p>
<p><b>INFORMATION SOURCES</b></p>	
<p>References</p>	<p><sup>1</sup> <a href="http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?2240,2250,0,2287">http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?2240,2250,0,2287</a></p> <p><sup>2</sup> <a href="http://plants.usda.gov/core/profile?symbol=ARM1">http://plants.usda.gov/core/profile?symbol=ARM1</a></p> <p><sup>3</sup> <a href="http://eol.org/pages/584107/hierarchy_entries/58902578/overview">http://eol.org/pages/584107/hierarchy_entries/58902578/overview</a></p> <p><sup>4</sup> Leshner, R. Botanical Reconnaissance of Silver Lake Research Natural Area, North Cascades National Park, Washington. Portland: U.S.D.A., 1984. p. 5 and p.15. Print.</p> <p><sup>5</sup> "Map 1.1." Human Activity and the Environment: Annual Statistics: Canadian Climate Regions. Web. 21 May 2015.</p> <p><sup>6</sup> <a href="http://commons.wikimedia.org/wiki/File:Climate_mapusa2.PNG">http://commons.wikimedia.org/wiki/File:Climate_mapusa2.PNG</a></p> <p><sup>7</sup> <a href="http://www.plantsofcanada.info.gc.ca/taxa.php?gid=1004654&amp;lang=e">http://www.plantsofcanada.info.gc.ca/taxa.php?gid=1004654&amp;lang=e</a></p>

	<p><sup>8</sup> Lambert, Amy. " ". " The Character Used to Best Describe North-American Arabisorth American Arabis Sp. 6 Apr. 3. Web. 21 May 2015.</p> <p><sup>9</sup> Slichter, Paul. "Little-leaf Rock Cress." Little-leaf Rock Cress. Web. 21 May 2015.</p> <p><sup>10</sup> Endangered and Threatened Species of the Southeastern United States FWS Region 4; <a href="http://endangered.fws.gov/i/q/saqdg.html">http://endangered.fws.gov/i/q/saqdg.html</a></p> <p><sup>11</sup> <a href="http://plantsdatabase.com/go/361/">http://plantsdatabase.com/go/361/</a></p> <p><sup>12</sup> Sanders. T.W.1926. Popular Hardy Perennials, Collingridge</p> <p><sup>13</sup> Rice, G 1988. A Wide Range of Perennial Plants that can be Grown in Britian and How to Grow Them. Volume 2. Thompson and Morgan.</p> <p><sup>14</sup> USGS Northern Prairie Wildlife Research Center, <a href="http://www.npwrc.usgs.gov/resource/literatr/wildflwr/species/arabhirs.htm">http://www.npwrc.usgs.gov/resource/literatr/wildflwr/species/arabhirs.htm</a></p>
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