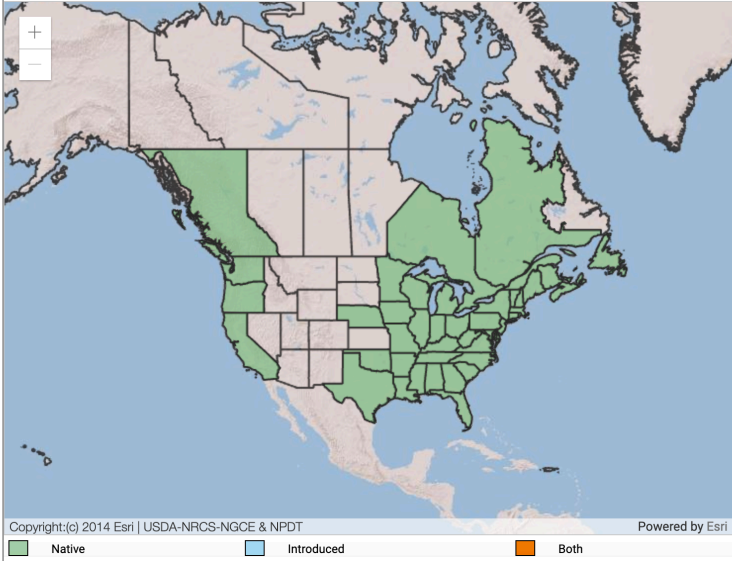



**Plant Propagation Protocol for [*Viola lanceolata*]**

ESRM 412 – Native Plant Production

URL: [https://courses.washington.edu/esrm412/protocols/\[year\]/\[USDA Species Code.pdf\]](https://courses.washington.edu/esrm412/protocols/[year]/[USDA Species Code.pdf])

<b>TAXONOMY</b>	
Plant Family	Violaceae Batsch - Violet family <sup>1</sup>
Scientific Name	<i>Viola lanceolata</i> <sup>1</sup>
Common Name	bog white violet <sup>1</sup>
Species Scientific Name	<i>Viola lanceolata</i> <sup>1</sup>
Scientific Name	<i>Viola lanceolata</i> <sup>1</sup>
Varieties	None <sup>1</sup>
Sub-species	None <sup>1</sup>
Cultivar	
Common Synonym(s)	<i>Viola lanceolata</i> , bog white violet, <sup>1</sup> lanceleaf violet <sup>3</sup>
Common Name(s)	<b>bog white violet, Lanceleaf violet <sup>3</sup></b>
Species Code (as per USDA Plants database)	VILA4 <sup>1</sup>
<b>GENERAL INFORMATION</b>	

Geographical range	<p>The geographic range of the bog white violet is the west coast of the United States as well as the eastern and most of the southern United States.<sup>1</sup></p> 
Ecological distribution	It likes Moist/wet and acidic soils. Occurs in bogs and along the edges of ponds, marshes and other wetlands. <sup>3</sup>
Climate and elevation range	Found in a wide range of climates. <sup>4</sup>
Local habitat and abundance	Bogs, the edges of ponds and wetlands. <sup>3</sup>
Plant strategy type / successional stage	Perennial wildflower <sup>3</sup>

Plant characteristics	<p>Wildflower that produces a white flower which can have purple veining on it. The flowers have five petals and the leaves can grow up to six inches long and tend to look like grass. <sup>3</sup></p> 
<b>PROPAGATION DETAILS: FROM SEED (based off of Viola abunca, Viola macloskeyi, and viola nephrophylla)</b>	
Propagation Goal	Plants <sup>2</sup>
Propagation Method	Seed <sup>2</sup>
Product Type	Container(plug) <sup>2</sup>
Stock Type	Container(plug) <sup>7</sup>
Time to Grow	Weeks <sup>2</sup>
Target Specifications	Crowns that are well developed. Roots and rhizomes oil the soil profile of the container. <sup>2</sup>
Propagule Collection Instructions	Full plants are harvested in late spring and transferred into a greenhouse. After about 3 to 4 months the plants produced flowers, which shortly after dropped seeds. <sup>5</sup>

Propagule Processing/Propagule Characteristics	Dry seeds can be stored for up to 6 months, and there are about 470,000 seeds per pound. <sup>7</sup>
Pre-Planting Propagule Treatments	120 days of moist cold stratification at 38 degrees F <sup>2</sup>
Establishment Phase Details	The plant needs to be well watered with plenty of shade. <sup>7</sup>
Length of Establishment Phase	1-2 weeks <sup>5</sup>
Active Growth Phase	Usually out planted after the establishment phase. <sup>7</sup>
Length of Active Growth Phase	21 days <sup>7</sup>
Hardening Phase	This plant will try to increase its size and hardiness as much as possible before winter and therefore increases surface area greatly in the winter. <sup>7</sup>
Length of Hardening Phase	6-7 months <sup>7</sup>
Harvesting, Storage and Shipping	Moist and semi-dark conditions at low temperatures. <sup>7</sup>
Length of Storage	In perfect conditions seeds can be stored for up to 6 months. <sup>7</sup>
<b>PROPAGATION DETAILS: VEGETATIVE (based off of Viola walteri)</b>	
Propagation Goal	Plants <sup>6</sup>
Propagation Method	Vegetative <sup>6</sup>
Product Type	Container (plug) <sup>6</sup>
Stock Type	1 gallon container, 1 year old plants
Time to Grow	4 months <sup>6</sup>
Target Specifications	The plug tray is well rooted. <sup>6</sup>
Propagule Collection Instructions	Collect cutting in December-May, use both flowering and nonflowering stems. Cut from greenhouse stock. <sup>6</sup>
Pre-Planting Propagule Treatments	In November they should be moved into the greenhouse with the heat set at 15-20 degrees Celsius with high pressure sodium lights that are on for 16 hours a day. <sup>6</sup>
Growing Area Preparation / Annual Practices for Perennial Crops	Misted about every 15 minutes for 8 seconds. As well as using tubes under the plants to run hotter through and keep warm. <sup>7</sup>

Establishment Phase Details	This occurs about 5 weeks after sticking and at this point plants are transported into a greenhouse that is cooler and has more shade cover. <sup>7</sup>
Length of Establishment Phase	6 to 7 weeks <sup>6</sup>
Active Growth Phase	The plants are translated after about 7 weeks to 1 quart pots. And put in well drained spaces in a shaded area of the greenhouse. <sup>7</sup>
Length of Active Growth Phase	8 to 10 weeks <sup>6</sup>
Length of Storage	Many are planted the spring after they are collected, others are kept in greenhouses for longer. <sup>6</sup>
Guidelines for Outplanting / Performance on Typical Sites	Out plant in the spring. <sup>6</sup>
<b>INFORMATION SOURCES</b>	

References	<p>USDA plants database. (n.d.). <a href="https://plants.usda.gov/home/plantProfile?symbol=VILA4">https://plants.usda.gov/home/plantProfile?symbol=VILA4</a></p> <p>Bartow, A. (2015). <i>Viola (adunca)</i>. Native Plant Network. <a href="https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=violaceae-viola-4084">https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=violaceae-viola-4084</a></p> <p>Flawildflowers. (2022, January 25). <i>Bog white violet</i>. Florida Wildflower Foundation. <a href="https://www.flawildflowers.org/flower-friday-viola-lanceolata/">https://www.flawildflowers.org/flower-friday-viola-lanceolata/</a></p> <p><i>Violets (viola): How to grow and care with success</i>. Gardenia. (n.d.). <a href="https://www.gardenia.net/guide/violets-viola-how-to-grow-and-care">https://www.gardenia.net/guide/violets-viola-how-to-grow-and-care</a></p> <p>Native Plant Network — reforestation, nurseries and genetics resources. (n.d.). <a href="https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=violaceae-viola">https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=violaceae-viola</a></p> <p><i>Violaceae (viola)</i>. RNGR. (n.d.). <a href="https://rngr.net/npn/propagation/protocols/violaceae-viola">https://rngr.net/npn/propagation/protocols/violaceae-viola</a></p> <p>Washington. (n.d.-b). <a href="https://courses.washington.edu/esrm412/protocols/2021/VIMA2.pdf">https://courses.washington.edu/esrm412/protocols/2021/VIMA2.pdf</a></p>
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Other Sources Consulted	<p>Seed production and propagation of Northern Bog Violet for ... (n.d.-b). <a href="https://www.nrcs.usda.gov/plantmaterials/idpmcsr13800.pdf">https://www.nrcs.usda.gov/plantmaterials/idpmcsr13800.pdf</a></p> <p><i>Viola lanceolata</i>. Viola lanceolata (Bog White Viola, Lance-leaved Violet, Strapleaf Violet, Violets)   North Carolina Extension Gardener Plant Toolbox. (n.d.). <a href="https://plants.ces.ncsu.edu/plants/viola-lanceolata/">https://plants.ces.ncsu.edu/plants/viola-lanceolata/</a></p> <p><i>Violets (viola): How to grow and care with success</i>. Gardenia. (n.d.). <a href="https://www.gardenia.net/guide/violets-viola-how-to-grow-and-care">https://www.gardenia.net/guide/violets-viola-how-to-grow-and-care</a></p>
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