Plant Propagation Protocol for *Viola selkirkii*

ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2025/VISE2.pdf*

TAXONOMY	
Plant Family	
Scientific Name	*Viola Selkirkii*
Common Name	Selkirk's violet
Species Scientific Name	
Scientific Name Genus Specific epithet Authority	 Viola selkirkii Pursh ex Goldie[1]
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	Selkirk's violet, Great-spurred violet, Viola borealis, Viola carnosula, Viola crassicornis, Viola funghuangensis, Viola imberbis, Viola kamtschatica, Viola salina, and Viola ulleungdoensis[2]
Common Name(s)	Selkirk's violet Great-spurred violet Long spurred violet[3]
Species Code (as per USDA Plants database)	VISE2
GENERAL INFORMATION	

Geographical range	 *Figure 1. Viola selkirkii distribution. From a map by Esri, USDA-NRCS-NGCE & NPDT, 2014. © Esri, 2014.* [1]
Ecological distribution	a circumboreal species found in the boreal regions of North America, extending from Alaska to Newfoundland and south to states like Washington, Pennsylvania, and Colorado. In North America, it is typically found east of the Cascades crest in Washington, Alaska to northeast Washington, and east across the northern U.S. and Canada. It prefers cool, moist environments like forests and thickets, often on rocky or limestone substrates[4]
Climate and elevation range	found in boreal and Rocky Mountain regions of North America, as well as cool temperate areas in Eurasia, eastern China, and Japan. In the Black Hills, it's restricted to spruce-dominated forests in cold, shady ravines

	from 5,400 to 7,000 feet (1,645 to 2,135 meters) elevation. In Colorado, it's observed at elevations between 6,950 and 8,320 feet[5]
Local habitat and abundance	Locally found in damp forests and thickets. While not rare overall, its abundance might be variable depending on specific locations and habitat conditions. It typically prefers cool, moist woods and ravines, often with rocky or rich soils[6]
Plant strategy type / successional stage	Shade-tolerant: Viola selkirkii is able to tolerate and even prefer shaded conditions. Weedy colonizer: can quickly colonize disturbed areas and open habitats, making it a "weedy" species. Can reproduce rapidly and spread, often taking advantage of nutrient-rich soils and disturbed environments. Not a late successional plant: With its weedy nature and preference for disturbed areas, Viola selkirkii is more characteristic of early to mid-successional stages, where it can thrive and compete with other plants in the early stages of ecosystem development.[6]
Plant characteristics	Life form: Herbaceous perennial: It is a non-woody plant that lives for more than two years. Clump-forming "stemless" violet: It grows in clumps, with leaves and flowers arising directly from the rhizome (underground stem), without any upright stems. Rhizomatous: It has a horizontal underground stem that helps it spread vegetatively. Longevity: Perennial: It lives for several years. Key Characteristics: Flowers: Distinctive long spur: A prominent, club-shaped spur, 4-7 mm long, located behind the flower. Pale blue to purple petals: Five petals, often with a white throat, lacking hairs (unlike some other violet species). Bilaterally symmetrical: The flowers can be divided into two mirrored halves. Two types of flowers: Insect-pollinated flowers in spring (chasmogamous) and self-pollinating, petal-less flowers in summer (cleistogamous). Leaves: Heart-shaped (cordate) with rounded teeth (crenate): Ovate leaves with deeply heart-shaped bases, often overlapping at the inner edges.

	Basal arrangement: All leaves arise from the base of the plant. Hairs: Scattered hairs on the upper surface, hairless underneath. Size: 1-5 cm long and wide. Fruit: Capsule: A dry fruit that splits open when ripe, 4-8 mm long. Seed dispersal: Seeds are forcefully ejected from the capsule and dispersed by ants, attracted to a nutrient-rich structure on the seeds (elaiosome).[6]
PROPAGATION DETAILS	
Ecotype	*Viola selkirkii* thrives in cool, moist, shaded forest habitats, often on calcareous substrates like limestone. It is typically found in rich, moist soils, frequently on rotting logs, moss-covered rocks, or near cool creeks[7]
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)[8]
Stock Type	
Time to Grow	Approximately 6–9 months from seeding to outplanting.
Target Specifications	Healthy seedlings with 2–4 true leaves, suitable for transplanting into shaded, moist forest environments.
Propagule Collection Instructions	Collect seeds in late summer when capsules turn brown and begin to dehisce. Due to explosive seed dispersal, monitor plants closely and collect capsules just before they open. Place mature capsules in paper bags to allow seeds to release naturally.
Propagule Processing/Propagule Characteristics	After collection, clean seeds by removing chaff and debris. Store seeds in a cool, dry place, such as a refrigerator, in airtight containers. Viola seeds can remain viable for up to three years under proper storage conditions.
Pre-Planting Propagule Treatments	To break physiological dormancy, stratify seeds by mixing them with moist vermiculite and placing them in a sealed plastic bag. Keep the bag at room temperature (approximately 20°C) for 3 weeks, then refrigerate at 4°C for 8 weeks. After stratification, sow seeds on the soil surface and lightly cover with a thin layer of compost or grit[9]
Growing Area Preparation / Annual Practices for Perennial Crops	Use well-draining, nutrient-rich seed-starting mix in trays or containers with adequate drainage. Maintain consistent moisture without waterlogging. Provide indirect light and maintain temperatures between 15–21°C (60–70°F).
Establishment Phase Details	Keep the soil consistently moist and maintain humidity by covering trays with plastic wrap or using a humidity dome. Provide indirect light and

	maintain temperatures around 15–21°C (60–70°F). Germination typically occurs within 10–21 days.[9]
Length of Establishment Phase	Approximately 2–3 weeks.
Active Growth Phase	After germination, remove humidity covers and provide ample indirect light. Maintain consistent moisture and begin light fertilization with a balanced, diluted fertilizer every 2–4 weeks. Monitor for pests and diseases and ensure adequate air circulation.[10]
Length of Active Growth Phase	Approximately 3–4 months, until seedlings develop 2–4 true leaves and are robust enough for transplanting.
Hardening Phase	Gradually acclimate seedlings to outdoor conditions over 1–2 weeks by exposing them to increasing amounts of sunlight and outdoor temperatures. Reduce watering frequency to encourage hardiness.
Length of Hardening Phase	1–2 weeks.
Harvesting, Storage and Shipping	Once hardened, seedlings can be transplanted into suitable field sites. If necessary, store seedlings in a cool, shaded area and maintain soil moisture until outplanting.
Length of Storage	Short-term storage (up to 2 weeks) is feasible under cool, moist conditions.
Guidelines for Outplanting / Performance on Typical Sites	Transplant seedlings into shaded, moist forest habitats with rich, well-draining soils. Ensure sites mimic natural conditions, such as presence of decaying wood or moss-covered substrates. Monitor for establishment success and protect from herbivory as needed. Plants tend to bloom in May[11]
Other Comments	Selkirk's violet may also be propagated via cuttings during spring and early summer. Select healthy, non-flowering stems, and root them in well-draining, moist soil under indirect light.
INFORMATION SOURCES	
References	See Below
Other Sources Consulted	See Below
Protocol Author	Karson Mertes
Date Protocol Created or Updated	05/25/2025

References

[1]U.S. Department of Agriculture, NRCS. (n.d.). *Plant profile for Viola selkirkii (great spurred violet)*. https://plants.usda.gov/plant-profile/VISE2

[2]Royal Botanic Gardens, Kew. (n.d.). *Viola selkirkii Pursh ex Goldie*. Plants of the World Online. https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:325433-2

[3]North Carolina Botanical Garden. (n.d.). *Viola selkirkii*. Flora of the Southeastern U.S. https://fsus.ncbg.unc.edu/main.php?pg=show-taxon-detail.php&taxonid=9615

[4]Pennsylvania Natural Heritage Program. (n.d.). *Great spurred violet (Viola selkirkii)* [PDF]. https://www.naturalheritage.state.pa.us/ccvi/great%20spurred%20violet.pdf

[5]Pennsylvania Natural Heritage Program. (n.d.). *Great spurred violet fact sheet*. https://www.naturalheritage.state.pa.us/factsheets/14891.pdf#:~:text=The%20species%20inhabits%20moist%20woods%20throughout%20its,northern%20and%20cooler%20parts%20of%20North%20America.

[6]Native Plant Trust. (n.d.). *Viola selkirkii*. Go Botany. https://gobotany.nativeplanttrust.org/species/viola/selkirkii/

[7]U.S. Department of Agriculture, Forest Service. (2004). *Viola selkirkii*. https://research.fs.usda.gov/treesearch/24017

[8]FloraVeg. (n.d.). *Viola selkirkii overview*. https://floraveg.eu/taxon/overview/Viola%20selkirkii

[9]Baskin, J. M., & Baskin, C. C. (2002). Effects of cold stratification on seed germination in *Viola* species. *Native Plants Journal, 23*(1), 40–44. https://npj.uwpress.org/content/23/1/40

[10]Chicago Botanic Garden. (n.d.). *Seed collection timing*. https://www.chicagobotanic.org/pr/release/seed_collection_timing

[11]Minnesota Wildflowers. (n.d.). *Great spurred violet (Viola selkirkii)*.

https://www.minnesotawildflowers.info/flower/great-spurred-violet