

Plant Propagation Protocol for *Mertensia paniculata*
ESRM 412 – Native Plant Production
URL: <https://courses.washington.edu/esrm412/protocols/2024/MEPA.pdf>



Photo by Craig Althen

TAXONOMY

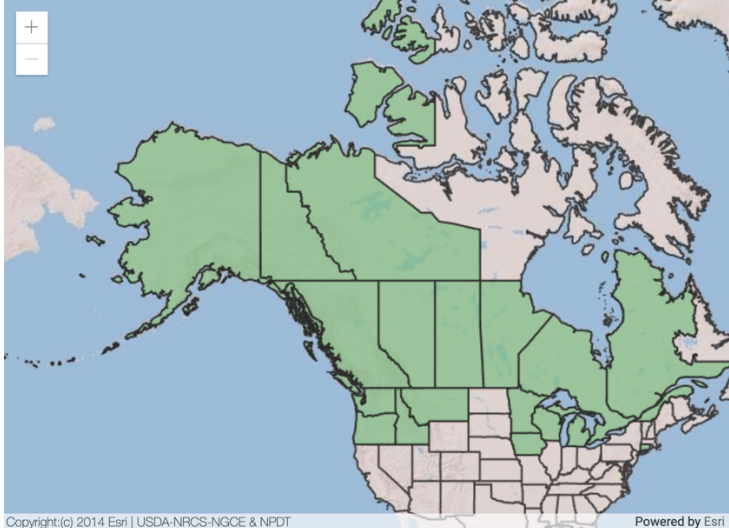
Plant Family	
Scientific Name	Boraginaceae
Common Name	Borage or Forget-me-not family
Species Scientific Name	
Scientific Name	<i>Mertensia paniculata</i> (Aiton) G. Don
Varieties	<i>Mertensia paniculata</i> (Aiton) G. Don var. <i>alaskana</i> (Britton) L.O. Williams <i>Mertensia paniculate</i> (Aiton) G. Don var. <i>borealis</i> (J.F. Macbr.) L.O. Williams <i>Mertensia paniculata</i> (Aiton) G. Don var. <i>eastwoodiae</i> (J.F. Macbr.) Hulten <i>Mertensia paniculate</i> (Aiton) G. Don var. <i>paniculata</i>
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Tall bluebells, tall lungwort, lungwort, tall mertensia, paniced bluebells
Species Code (as per USDA Plants database)	MEPA

GENERAL INFORMATION

Geographical range



Source: Burke Herbarium Image Collection

	 <p>Source: USDA Plant Database</p>
Ecological distribution	Found on both sides of the Cascade crest in Washington. Spans from Alaska to Oregon and east to Montana. Also found near the Great Lakes and most of Canada ⁵ .
Climate and elevation range	Mid-elevations in mountainous regions in cool, moist climates ⁵ .
Local habitat and abundance	Found in shady areas near streambanks, wet meadows, and moist woodlands in Washington ³ .
Plant strategy type / successional stage	Perennial and rhizomatous. All plant parts toxic when ingested ² . Occurs in early and late-seral conditions ⁵ .
Plant characteristics	The tall bluebell is an herbaceous shrub growing up to 5 feet tall. It is a perennial with flowers blooming from May through August. Blue funnel-shaped flowers hang from the leaf axels ³ . Leaves 2 to 5 inches long, 1 inch wide, dark green, and pubescent. They are prominently veined, thin, and lanceolate to broadly ovate. Fruits are made of 4 nutlets ⁶ .
PROPAGATION DETAILS	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	Container (4" pot or conetainer)
Time to Grow	N/A
Target Specifications	Small seedlings
Propagule Collection Instructions	Fruit is fully formed in early summer after flowers have been fertilized ⁶ . The fruits are in the form of a wrinkled nut, each containing 4 seeds. Nuts should be harvested in August through September ⁹ . Removal of nuts can be done using clippers to avoid shattering the nut and disturbing the plant ⁸ .

Propagule Processing/Propagule Characteristics	Each nut/fruit contains 4 seeds.
Pre-Planting Propagule Treatments	Cleaning of the seeds includes placing the nuts in a bag and crushing them using a tool like a soft mallet to avoid crushing the seeds. The seeds can then be screened to separate seeds from debris ⁸ .
Growing Area Preparation / Annual Practices for Perennial Crops	No literature on growing practices. From what the references have provided, <i>Mertensia</i> prefers moist soil and shady conditions ^{2,4,5} . I would suggest using a 4" plastic nursery pot or conetainers ⁷ , using a simple potting mix, making sure to water often (most likely using a misting bench) and keeping it in low light conditions.
Establishment Phase Details	Cold stratification used for germination ⁶ .
Length of Establishment Phase	Approximately 60 days ⁶ .
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Seeds are considered orthodox but there has been no success in germination after seed storage ⁶ .
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	Outplanting should occur before plants develop deep taproots. Small seedlings should be planted 10 to 18 inches apart in fall or after the last frost in spring ³ . If plants have a long tap root, wait until they reach dormancy to plant them in the ground. Plants will take approximately 2 years to produce flowers ² .
Other Comments	<i>Mertensia</i> requires 2 to 3 years to reach sexual maturity. Some sources cited were for propagation techniques of the Virginia bluebell ^{1,3} (<i>Mertensia virginica</i>), which is within the same genus and holds very similar physiology to the <i>Mertensia paniculata</i> .
INFORMATION SOURCES	
References	See below for full reference list.
Other Sources Consulted	Minnesota Environment and Natural Resources Trust Fund. (2011). <i>Mertensia paniculata</i> (northern bluebells). Minnesota Wildflowers. https://www.minnesotawildflowers.info/flower/northern-bluebells <i>Plant database</i> . Lady Bird Johnson Wildflower Center - The University of Texas at Austin. (2022). https://www.wildflower.org/plants/result.php?id_plant=MEPA
Protocol Author	Eva Rueter
Date Protocol Created or Updated	05/22/2024

References:

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<https://www.friendsofeloisebutler.org/pages/plants/virginiabluebells.html>
2. Knoke, D., & Giblin, D. (2012). *Mertensia paniculata*. Burke Herbarium Image Collection.
3. Mahr, S. (2024). *Virginia bluebells*. Wisconsin Horticulture.
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4. *Mertensia paniculata* (Aiton) G. Don. USDA plants database. (n.d.).
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5. Reeves, S. L. (2006). *Mertensia paniculata*. Fire Effects Information System (FEIS).
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6. Strachan, J. L. (1988). *A biosystematic study of the tall species of the genus Mertensia Roth nom. conserv. (Boraginaceae)* (Order No. 8906810). Available from ProQuest Dissertations & Theses Global. (303688465). <https://www.proquest.com/dissertations-theses/biosystematic-study-tall-species-genus-mertensia/docview/303688465/se-2>
7. Wilkinson, K. M., Landis, T. D., Haase, D. L., Daley, B. F., & Kasten Dumroese, R. (2014). Containers. In *Tropical Nursery Manual: A Guide to Starting and Operating a Nursery for Native and Traditional Plants* (pp. 123–139). essay, U.S. Department of Agriculture, Forest Service.
8. Wood, S., Gould, K., & Smreciu, A. (2013). *Mertensia paniculata*: bluebell, tall lungwort, tall bluebell.