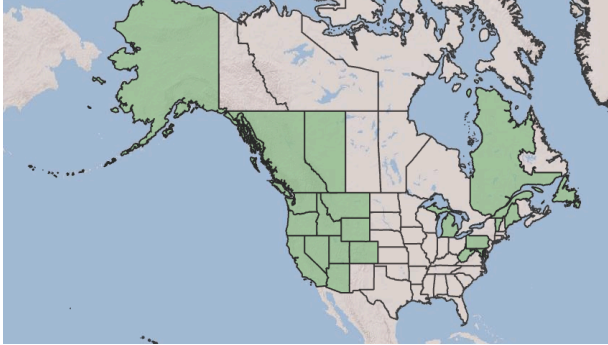


Plant Propagation Protocol for *Adiantum aleuticum*

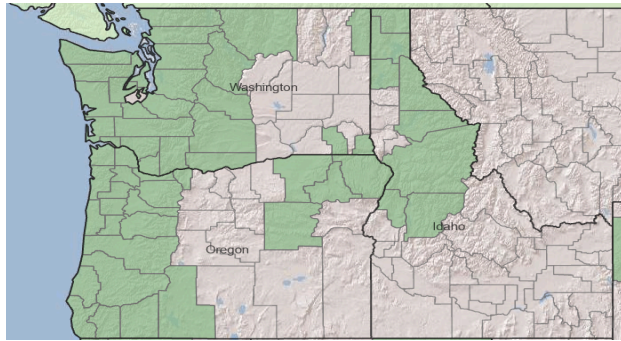
ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2026/ADAL.pdf>

North America distribution:



Pacific Northwest distribution:



(Ben Legler, 2004)



(Ed Alverson, 2014)



(Ben Legler, 2004)



(Al Dodson, 2008)

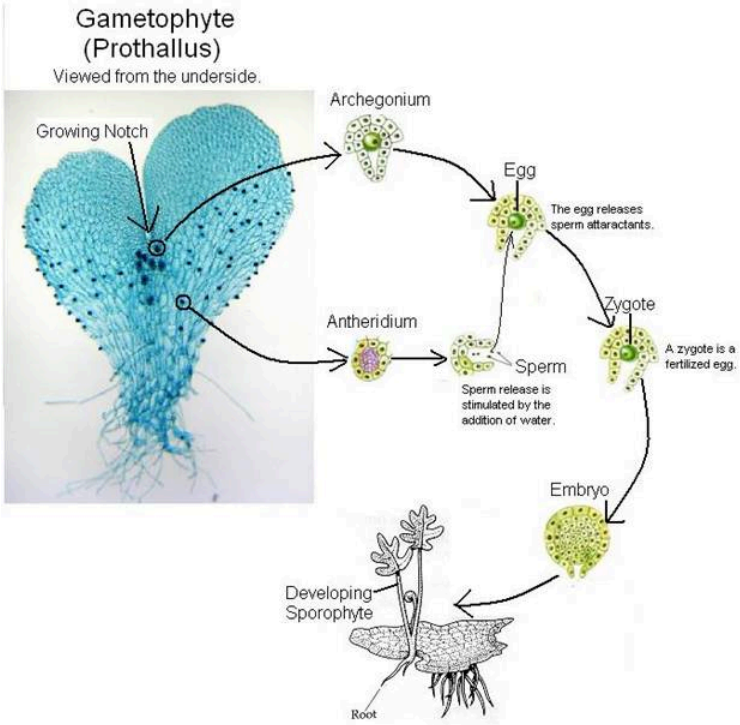
Photos courtesy of Burke Herbarium, Maps courtesy of USDA Plants Database.

TAXONOMY	
Plant Family	
Scientific Name	Pteridaceae E.D.M. Kirchn.
Common Name	Maidenhair Fern family
Species Scientific Name	
Scientific Name	<i>Adiantum aleuticum</i> (Rupr.) Paris
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	<i>Adiantum pedatum</i> L. var. <i>aleuticum</i> Rupr. <i>Adiantum pedatum</i> L. ssp. <i>aleuticum</i> (Rupr.) Calder & Roy L. Taylor <i>Adiantum pedatum</i> L. ssp. <i>calderi</i> Cody <i>Adiantum pedatum</i> L. ssp. <i>subpumilum</i> (W.H. Wagner) Lellingner <i>Adiantum pedatum</i> L. var. <i>subpumilum</i> W.H. Wagner (USDA, 2026)
Common Name(s)	Aleutian maidenhair fern, western maidenhair fern, and five-finger maidenhair fern. (OregonFlora, 2026; USDA, 2026)
Species Code	ADAL
GENERAL INFORMATION	
Geographical range	See figures above.
Ecological distribution	Shaded, often rocky, wet riparian sites, moist woods, and seeps. (OregonFlora, 2026)
Climate and elevation range	0-2300 m, USDA zones 3-8, cold hardy. (HardyFerns, 2018)
Local habitat and abundance	Western North America from the Aleutian Islands and SE Alaska down to Chihuahua, Mexico. Range also extends into ID, UT, NV, AZ, and WY. Another population is found in New England. Found in the Blue and Wallowa Mountains, the Cascades, Coast Range, Siskiyou Mountains, and the Willamette Valley. Found in BC, Alberta, Quebec, and Newfoundland. Abundant in and west of the Cascades, and sparser to the east. (OregonFlora, 2026; USDA, 2026)
Plant strategy type / successional stage	Late successional, as it requires an established overstory for tolerable shade conditions and moist soils.

Plant characteristics	<p>Herbaceous, long-lived perennial fern (in consistently wet sites). Has a shortly creeping growth form, with long, brittle, shiny, and purplish black petioles up to 60 cm. Rhizomes are brown, hairy, 1.5 cm in diameter, and underground. Branches dichotomously at the base of the blade into subequal sections. Rounded blade formation with paired pinnate sections, each with an arcing rachis, with the first pinna on each section pointed forwards and each subsequent pinna shorter and pointed backwards. Ultimate leaflets are wedge-shaped with fine lobes, tissue-paper-thin, and light green, including during new growth. Spores borne from sporangia under false indusia (rolled over leaf margins) pictured above. (OregonFlora, 2026; Huiet et al., 2016)</p>
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PROPAGATION DETAILS: FROM SPORE

Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (Plug)
Stock Type	Container sporophyte
Time to Grow	1 year
Target Specifications	<p>15 cm with 5-7 mature fronds, with a fully developed rhizomatous root mass. (Luna, 2008)</p>
Propagule Collection Instructions	<p>Collect mature fronds with unrolling indusium in late August. Collect when the spore color is tan to brown. (Luna, 2008)</p>
Propagule Processing/Propagule Characteristics	<p>Place fronds indusium side down on butcher paper in a dry room with no air movement. Spores will collect as a fine dust on the paper after multiple days of drying. Fern spores are not known to last long in storage. (Luna, 2008)</p>
Pre-Planting Propagule Treatments	<p>Use no longer than a few weeks after collection.</p>
Growing Area Preparation / Annual Practices for Perennial Crops	<p>Prepare flats with sterile, finely milled peat moss moistened with distilled water. Collect clear plastic wrap, loose spores, and grow lights. (Luna, 2008)</p>

<p>Establishment Phase Details</p>	<p>Sow spores on sterilized flats and water with distilled water. Seal flats with the plastic wraps, preventing moisture loss and fungal infection. Maintain a temperature of 20-23 degrees Celsius, using heat mats or climate control. Place flats under 60-watt soft incandescent lights set at 12 hours per day. Thread-like germ filaments will form on the surface of the media and will appear as fine green threads, typically 12-15 days after sowing. Heart-shaped prothalli form and will continue to grow for 6-8 weeks. Maintain a thin film of water over the prothalli for the entirety of 6-8 weeks to ensure conditions for germination are met. Continuously inspect media for fungal infection. Once sporophytes appear, remove plastic wrap and allow them to develop.</p>  <p>Gametophyte (Prothallus) Viewed from the underside.</p> <p>Archegonium</p> <p>Growing Notch</p> <p>Egg</p> <p>The egg releases sperm attractants.</p> <p>Zygote</p> <p>A zygote is a fertilized egg.</p> <p>Antheridium</p> <p>Sperm</p> <p>Sperm release is stimulated by the addition of water.</p> <p>Embryo</p> <p>Developing Sporophyte</p> <p>Root</p> <p>ClarendonCollege, 2025 (Luna, 2008)</p>
<p>Length of Establishment Phase</p>	<p>4 months (Luna, 2008)</p>
<p>Active Growth Phase</p>	<p>Transplant individual sporophytes to pots once 4 cm tall. Soil is to be rich in organic matter to avoid dry outs, which are quickly fatal. Allow to establish in greenhouse conditions, and then transplant to an outdoor shadehouse in the late spring. Fertilize with controlled-release Osmocote 13-13-13 and Micromax micronutrients mixed into medium.</p>

	(Luna, 2008)
Length of Active Growth Phase	7 months (Luna, 2008)
Hardening Phase	Fertilize with 10-20-20 NPK liquid fertilizer in September and October. Water plants before winterization. Overwinter in an insulated outdoor shadehouse. (Luna, 2008)
Length of Hardening Phase	1 month
Harvesting, Storage, and Shipping	Harvest in September, keeping watered before and during shipping. Foliage is delicate. Plants can be kept in 3.5-inch pots up to 2 years after the active growth phase. (Luna, 2008)
Length of Storage	5 months
Guidelines for Outplanting / Performance on Typical Sites	Somewhat tolerant of partial sun exposure if the microsite has constant moisture and cooling humidity. Full shade is necessary for other sites. Nursery-grown plants produced spore-bearing fronds 2 years after germination. (Luna, 2008)
Other Comments	Can be propagated via rhizome by splitting rhizomes off with at least one leaf shoot and repotting. This plant is in a three-species complex, comprising <i>Adiantum aleuticum</i> , <i>viridimontanum</i> , and <i>pedatum</i> , all of which differ slightly in morphology but mostly in geography. This propagation protocol is based on one developed for <i>Adiantum aleuticum</i> by Tara Luna in 2008 for the USDI National Parks Service. (Maine.gov, 2021; WNPS, 2018; USDA, 2026; Luna, 2008)

INFORMATION SOURCES

References	<p>ClarendonCollege. (2025). <i>Introduction to Plant Lifecycles</i>. Clarendoncollege.edu. https://programs.clarendoncollege.edu/programs/NatSci/Biology/Botany/online%20lecture%20outlines/fern%20life%20cycle%2008.htm</p> <p>HardyFerns. (2018, April 30). <i>Adiantum aleuticum</i>. Hardy Fern Foundation. https://hardyferns.org/ferns/adiantum-aleuticum/</p> <p>Huiet, L., Kirkpatrick, R., Smith, A., & Lemieux, T. (2016). <i>Adiantum aleuticum</i>. Berkeley.edu. https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=11945</p>
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	<p>Luna, T. (2008). <i>RNGR- Adiantum (aleuticum) Propagation Protocol</i>. Rngr.net. https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=pteridaceae-adiantum-135</p> <p>Maine.gov. (2021). <i>Maine Natural Areas Program Rare Plant Fact Sheet for Adiantum viridimontanum</i>. Maine.gov. https://www.maine.gov/dacf/mnap/features/adivir.html</p> <p>OregonFlora. (2026). <i>OregonFlora</i>. Oregonflora.org. https://oregonflora.org/taxa/index.php?taxon=2458</p> <p>USDA. (2026). <i>USDA Plants Database</i>. Usda.gov. https://plants.sc.egov.usda.gov/plant-profile/ADAL</p> <p>WNPS. (2018). <i>Adiantum aleuticum var. aleuticum</i>. Wnps.org. https://www.wnps.org/native-plant-directory/17:adiantum-aleuticum-var-aleuticum</p>
Other Sources Consulted	<p>Calscape. (2026). <i>Five Finger Fern</i>. Calscape.org. https://calscape.org/Adiantum-aleuticum-(Five-Finger-Fern)</p> <p>NARGS. (2024). <i>Plant Of The Month For July 2024: Adiantum aleuticum North American Rock Garden Society</i>. Nargs.org. https://www.nargs.org/plant-of-the-month/adiantum-aleuticum</p>
Protocol Author	Kol Timura
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