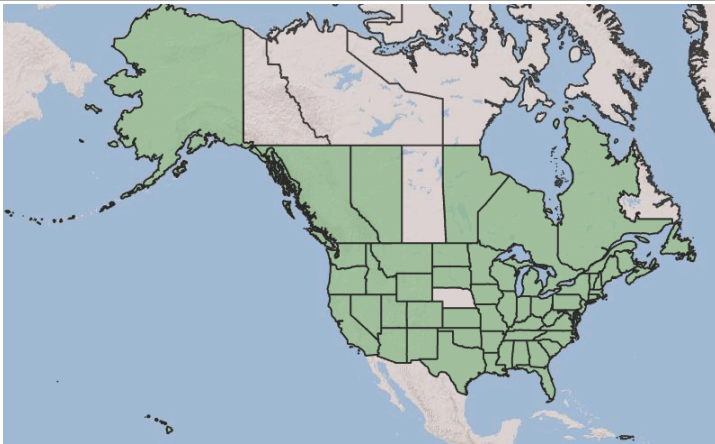


Plant Propagation Protocol for *Pteridium aquilinum* (western bracken fern)

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2025/PTAQ.pdf>

TAXONOMY	
Plant Family	
Scientific Name	Dennstaedtiaceae
Common Name	Bracken Fern family
Species Scientific Name	
Scientific Name	<i>Pteridium aquilinum</i> (L.) Kuhn
Varieties	
Sub-species	var. <i>decompositum</i> (Gaudich.) R. Tryon var. <i>latiusculum</i> (Desv.) Underw. ex A. Heller var. <i>pseudocaudatum</i> (Clute) A. Heller var. <i>pubescens</i> Underw.
Cultivar	none
Common Synonym(s)	none
Common Names	bracken, brake, pasture brake, common bracken, eagle fern
Species Code (as per USDA Plants database)	PTAQ
GENERAL INFORMATION	
Geographical range	 <p>This map (“USDA Plants Database”) represents North America, but this species is found around the world (MARRS and WATT).</p>
Ecological distribution	This species has a wide distribution and range of tolerance. It can be found on disturbed sites, open

	slopes, and in moist to dry forests. (“Pteridium Aquilinum”).
Climate and elevation range	It tolerates a climate ranging from dry to wet forests. It can be found at an elevation from sea level to 10,000 feet (“Pteridium Aquilinum”).
Local habitat and abundance	It likes areas recently disturbed by fire, logging, or grazing, where there are open clearings. (“Pteridium Aquilinum (Bracken Fern): Go Botany”) Common plants that associate with this species include plants living in Douglas-fir, pine, spruce, cedar, fir, and oak forests (“Pteridium Aquilinum”).
Plant strategy type / successional stage	It is a perennial (Burke). It starts as an early successional pioneer species but can also live among trees when there is more shade present (“Pteridium Aquilinum (L.) Kuhn Species”).
Plant characteristics	It can live for several decades, and it forms dense clusters growing from underground rhizomes and roots that can go up to 10 feet deep! (“Lady Bird Johnson Wildflower Center - the University of Texas at Austin”) It grows 1-4 feet tall and has 3 or 4 divisions of triangular, compound, opposite leaves (“Pteridium Aquilinum (L.) Kuhn Species”).
PROPAGATION DETAILS: VEGETATIVE	
Ecotype	n.a.
Propagation Goal	plants
Propagation Method	Root divisions from the parent plant
Product Type	Container
Stock Type	Container
Time to Grow	< 5 months
Target Specifications	5-7 mature fronds, about 6 inches tall, and fully developed roots filling the container (“Native Plant Network — Reforestation, Nurseries and Genetics Resources”).
Propagule Collection Instructions	Divide roots from the parent plant during the winter when the plant is dormant by digging up some of the rhizomes and cutting them (“Lady Bird Johnson Wildflower Center - the University of Texas at Austin”).
Propagule Processing/Propagule Characteristics	Early on, the divided plant needs lots of water but will also perish under “flooded” conditions (“Lady Bird Johnson Wildflower Center - the University of Texas at Austin”).
Pre-Planting Propagule Treatments	n.a.

Growing Area Preparation / Annual Practices for Perennial Crops	Use a sterile peat-moss media with fertilizer
Establishment Phase Details	Treat fungal infections if they occur, but otherwise, the plant is already established
Length of Establishment Phase	n.a.
Active Growth Phase	Grow in a greenhouse with fluctuating day and night temperatures to mimic the natural climate.
Length of Active Growth Phase	3 months (“Native Plant Network — Reforestation, Nurseries and Genetics Resources”)
Hardening Phase	Fertilize the plants going into the winter months. Slowly lean off of regular watering to the point of only watering them during a drought (“Lady Bird Johnson Wildflower Center - the University of Texas at Austin”).
Length of Hardening Phase	1 month (“Native Plant Network — Reforestation, Nurseries and Genetics Resources”)
Harvesting, Storage, and Shipping	Overwinter in a shaded, isolated space. Harvest in September (“Native Plant Network — Reforestation, Nurseries and Genetics Resources”)
Length of Storage	5 months (“Native Plant Network — Reforestation, Nurseries and Genetics Resources”)
Guidelines for Outplanting / Performance on Typical Sites	Plant in well-draining soil with nutrients/compost and rhizomes if feasible. Cut back in the winter to help new spring growth flourish. (“Lady Bird Johnson Wildflower Center - the University of Texas at Austin”)
Other Comments	Note: this method differs from the 2008 protocol, which relied on spores. Upon further research of current practices, it is clear that it is unlikely for propagation from spores to be as successful as root divisions (“ <i>Pteridium Aquilinum</i> (L.) Kuhn Species”).
INFORMATION SOURCES	
References	See below
Other Sources Consulted	Sowers, Patrick. “Plant Propagation Protocol for <i>Lathyrus Japonicus</i> .” <i>ESRM 412</i> , 2008, courses.washington.edu/esrm412/protocols/2008/LAJA.pdf .
Protocol Author	Gabriel Kennedy-Gibbens
Date Protocol Created or Updated	05/26/25

Works Cited

- Burke, Herbarium. "CPNWH Search Results." *Pnwherbaria.org*, 2025, www.pnwherbaria.org/data/results.php?DisplayAs=WebPage&ExcludeCultivated=Y&GroupBy=ungrouped&SortBy=Year&SortOrder=DESC&SearchAllHerbaria=Y&QueryCount=1&Species1=aquilinum&IncludeSynonyms1=Y&Zoom=4&Lat=55&Lng=-135&PolygonCount=0. Accessed 27 May 2025.
- . "Pteridium Aquilinum - Burke Herbarium Image Collection." *Burkeherbarium.org*, 2024, www.burkeherbarium.org/imagecollection/taxon.php?Taxon=Pteridium%20aquilinum. Accessed 27 May 2025.
- "Lady Bird Johnson Wildflower Center - the University of Texas at Austin." *Wildflower.org*, 2025, www.wildflower.org/plants/result.php?id_plant=ptaq. Accessed 27 May 2025.
- MARRS, R. H., and A. S. WATT. "Biological Flora of the British Isles: *Pteridium Aquilinum* (L.) Kuhn." *Journal of Ecology*, vol. 94, no. 6, Wiley, Sept. 2006, pp. 1272–321, <https://doi.org/10.1111/j.1365-2745.2006.01177.x>. Accessed 27 May 2025.
- "Native Plant Network — Reforestation, Nurseries and Genetics Resources." *Rngr.net*, 2025, nnp.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=dennstaedtiaceae-pteridium-3506. Accessed 27 May 2025.
- Pierszalowski, Sophie. "Plant Data Sheet Pteridium Aquilinum (Bracken Fern)." *ESRM 412*, 2008, courses.washington.edu/esrm412/protocols/2008/PTAQ.pdf.
- "Pteridium Aquilinum." *Usda.gov*, 2018, www.fs.usda.gov/database/feis/plants/fern/pteaqu/all.html#BOTANICAL%20AND%20ECOLOGICAL%20CHARACTERISTICS. Accessed 27 May 2025.

- “Pteridium Aquilinum (Bracken Fern): Go Botany.” *Nativeplanttrust.org*, 2025, gobotany.nativeplanttrust.org/species/pteridium/aquilinum/. Accessed 27 May 2025.
- “Pteridium Aquilinum (L.) Kuhn | Species.” *Wiktrop - Weed Identification and Knowledge in the Tropical and Mediterranean Areas*, 2019, portal.wiktrop.org/species/show/266. Accessed 27 May 2025.
- “USDA Plants Database.” *Usda.gov*, 2025, plants.usda.gov/plant-profile/PTAQ. Accessed 27 May 2025.