

***Polystichum munitum* (Kaulf.) C. Presl**

Hənq̓əminəm' Name: sthxhelum

Island Hu'Iqumínu'm Name: sthxhelum

Upriver Halq'eméylem Name: sthxá:lem

English Name: sword fern (western swordfern)

Family: Dryopteridaceae (Wood Fern)

Identifying characteristics: *Polystichum munitum* is an evergreen perennial fern that produces lanceolate (sword-shaped) blade 20-150cm long, 5-25cm wide leaves growing from a short, stout rhizome. In addition to the shape, the base of each pinna (leaflet) has a protruding notch that looks like the hilt on a sword. The stalks (rachis) and stipes (stalk below the blade) are covered in cinnamon-coloured scales. Fronds (the whole blade, stalk, and stipe) typically grow 60-90cm in height; emerging fronds are called fiddleheads (efloraBC 2017).



emerging fronds

Distribution:

Sword fern can be commonly found throughout rain forests on the west coast of Turtle Island, from Alaska/ Yukon Territory to northern California (efloraBC 2017).

Natural and Cultural History

Habitat:

P. munitum prefers moist to mesic forest habitats, preferably with large old-growth trees. They can be found growing in the shady understory near *Thuja plicata* (Western redcedar) and *Pseudotsuga menziesii* (Douglas-fir) (Proudfoot et al 2016).

Reproduction:

Sword ferns do not flower, producing spores from specialized parts located on circular-shaped bumps (sori) located on the underside of the pinna (efloraBC 2017).



P. munitum sori

Interactions and Human Interest:

P. munitum is a favourite fern for native plant gardening in BC. Their deep green stiff fronds are attractive year-round. Sword ferns are very robust, reliable, and essentially maintenance-free. They tolerate difficult soil and manage to look good through the summer drought, recovering quickly in fall rains if not watered during the summer.

In the Lower Mainland of BC, clipping of the frond tips of *P. munitum* is an indicator of the presence of Columbian Black-tailed Deer (*Odocoileus hemionus columbianus*), the coastal mule deer. Preferred winter food plants though are *Thuja plicata* (Western redcedar), *Pseudotsuga menziesii* (Douglas-fir), *Vaccinium parvifolium* (red huckleberry) and *Gaultheria shallon* (salal), along with various species of arboreal lichens. Aerial parts of sword fern are used to stimulate digestion in ruminants such as Columbian Black-tailed Deer (Lans et al 2007).

Commercial harvesting of sword fern for floral greens is a long-established floriculture practice in the Pacific Northwest. It is considered an important non-timber sustainable forest product (Turner and Cocksedge 2001) but requires enormous quantities of harvested fronds to be commercially viable.

Ethnobotany:

First Nations used sword fern for a variety of purposes, including household tasks and technology applications, food, and medicine. On the northwest coast, sword fern fronds were harvested to line pits for cooking to layer between food in baskets, drying racks, and storage boxes, and to cover floors and beds (Pojar and MacKinnon 2016). The shape of sword fern fronds are an inspiration for traditional and contemporary art and design, for example Brynildson (2016).

Sword fern fronds were used in a traditional game known as pala-pala (Pojar and MacKinnon 2016). Pala-pala is a game that involved plucking as many pinna as you could while saying 'pala' with each pluck in one breath (Brynildson 2016). This led to sword fern being named the pala-pala plant in some Salish Sea-based dialects (Proudfoot et al 2016). The species has played a part in Kwakiut'l mythology and so was used in rituals (Turner and Bell 1973). The rhizomes

were roasted or steamed, peeled, and eaten as food by several First Nations tribes (Pojar and MacKinnon 2016).

Traditional medicinal uses of sword fern include consumption of rhizomes to cure diarrhea (Pojar and MacKinnon 2016), young fronds (fiddleheads) chewed and swallowed for sore throat or tonsillitis, an infusion of boiled rhizome used on sores and to ease pain, and a tea from boiled stems used in labor (Halversen 1986).

Cultivation: Sword ferns like many other ferns can be left to sow spores naturally, through vegetative rhizome division. Spore production is reliable from year to year. Cut old fronds off in winter for a fresh, bright green crown in spring.

On land development sites, *P. munitum* is often stripped and sent to green waste or landfill when the site is initially prepared. Instead, local governments should instill a conservation ethic and through policy, require live plant salvage as part of the development process.

Harvesting: Sword fern rhizomes are typically only harvested in the fall/winter when other food resources are scarce.

References

Brynildson J. (2016, October 3). Pala Pala pattern by Jami Brynildson. Retrieved from <https://www.ravelry.com/patterns/library/pala-pala>

efloraBC (2017) Klinkenberg B. (Editor) *Polystichum munitum* (Kaulf.) C. Presl. E-Flora BC: Electronic Atlas of the Plants of British Columbia [eflora.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [online] URL: <http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Polystichum%20munitum&redblue=Both&lifeform=5>

Halverson NM. (Comp.) (1986) *Major indicator shrubs and herbs on national forests of western Oregon and southwestern Washington*. R6-TM-229. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 180 p. [online] URL: <https://babel.hathitrust.org/cgi/pt?id=umn.31951002942495j>

Lans C, Turner N, Khan T, Brauer G. and Boepple W. (2007) Ethnoveterinary medicines used for ruminants in British Columbia, Canada. *Journal of Ethnobiology and Ethnomedicine* 3(11): 1-22 [online] URL: <https://doi.org/10.1186/1746-4269-3-11>

Pojar J and MacKinnon A. (2016) *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska*. Revised edition. Vancouver, Lone Pine International.

Proudfoot B, Brietzke C, and Starzomski B (2016) Sword fern, Western swordfern, *Polystichum munitum*. [online] URL: <https://www.centralcoastbiodiversity.org/sword-fern-bull-polystichum-munitum.html>

Turner NC, and Bell MAM (1973) The ethnobotany of the southern Kwakiutl Indians of British Columbia. *Economic Botany* 27(3): 257-310. [online] URL: www.jstor.org/stable/4253427

Turner NJ, and Cocksedge W. (2001) Aboriginal use of non-timber forest products in northwestern North America: applications and issues. *Journal of Sustainable Forestry*. 13(3-4): 31-58. [online] URL: https://doi.org/10.1300/J091v13n03_04

Zouhar K. (2015) *Polystichum munitum*, western swordfern. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). [online] URL: <https://www.fs.fed.us/database/feis/plants/fern/polmun/all.html#Introductory>

Images

Jami Dwyer. Western Sword Fern (*Polystichum munitum*) growing in the Columbia River gorge. Wikipedia CC BY-SA 2.0 [online] URL: <https://www.flickr.com/photos/jamidwyer/173970015/in/set-72157594359410541/>

Fancy Fronds Nursery. *Polystichum munitum* sporangia. [online] URL: <https://www.fancyfronds nursery.com/ferns/western-sword-fern-polystichum-munitum>