

Rare and At Risk Bryophyte Research in Coastal British Columbia



Rigid Apple Moss

Acknowledgements

- various provincial and federal folks
- many other folks, Steve Joya in particular
- various landowners for permission to survey

Dedicated to the people of Ukraine



Some Bryophytes of Interest in Coastal BC

(many more in the interior drylands
where I do much of my research)

Ephemerum serratum

Photo by Wynne Miles

Entosthodon fascicularis

Photo by Hans Roemer



*Entosthodon
muhlenbergii*

Matt Fairbarns



Syntrichia laevipila



Sphaerocarpos texana



Riccia cf trichocarpa



Bartramia aprica



Bartramia aprica (*B. stricta*) (Rigid Apple Moss; aka RAM)

- the most researched moss in BC, maybe NA.
- found from BC south to Texas/New Mexico but only a few locations (including Washington; UBC Schofield).
- grows in crevices and on ground in Garry oak habitats (spring seepage) in dry coastal areas of Vancouver Island
- listed in the Canadian Species at Risk Act (SARA) as Endangered and is on the Red List of the BC CDC.
- by 2008, we had completed detailed studies of RAM populations at Mary Hill and Notch Hill and a federal Status Report was prepared (2009).
- by 2021, more populations had been discovered and more detailed surveys had been completed (e.g., Mary Hill, Notch Hill, Lasqueti Island, Observatory Hill).
- a new Status Report is in process.
- main threat is probably climate change (moisture changes)











2009 known RAM locations

Vancouver

Vancouver Island

Victoria

An aerial photograph of a coastal region, likely the Pacific Northwest, showing a large body of water (a bay or estuary) and surrounding green, hilly terrain. Several yellow pushpins are placed on the map to indicate specific locations. The text '2021 known RAM locations' is overlaid in yellow. The pushpins are located at various points along the coastline and within the bay area. One pushpin is on a small island in the upper left, another is on the northern shore, and a cluster of seven pushpins is located in the lower right, near a large urban area.

2021 known RAM locations

Brotherella roellii

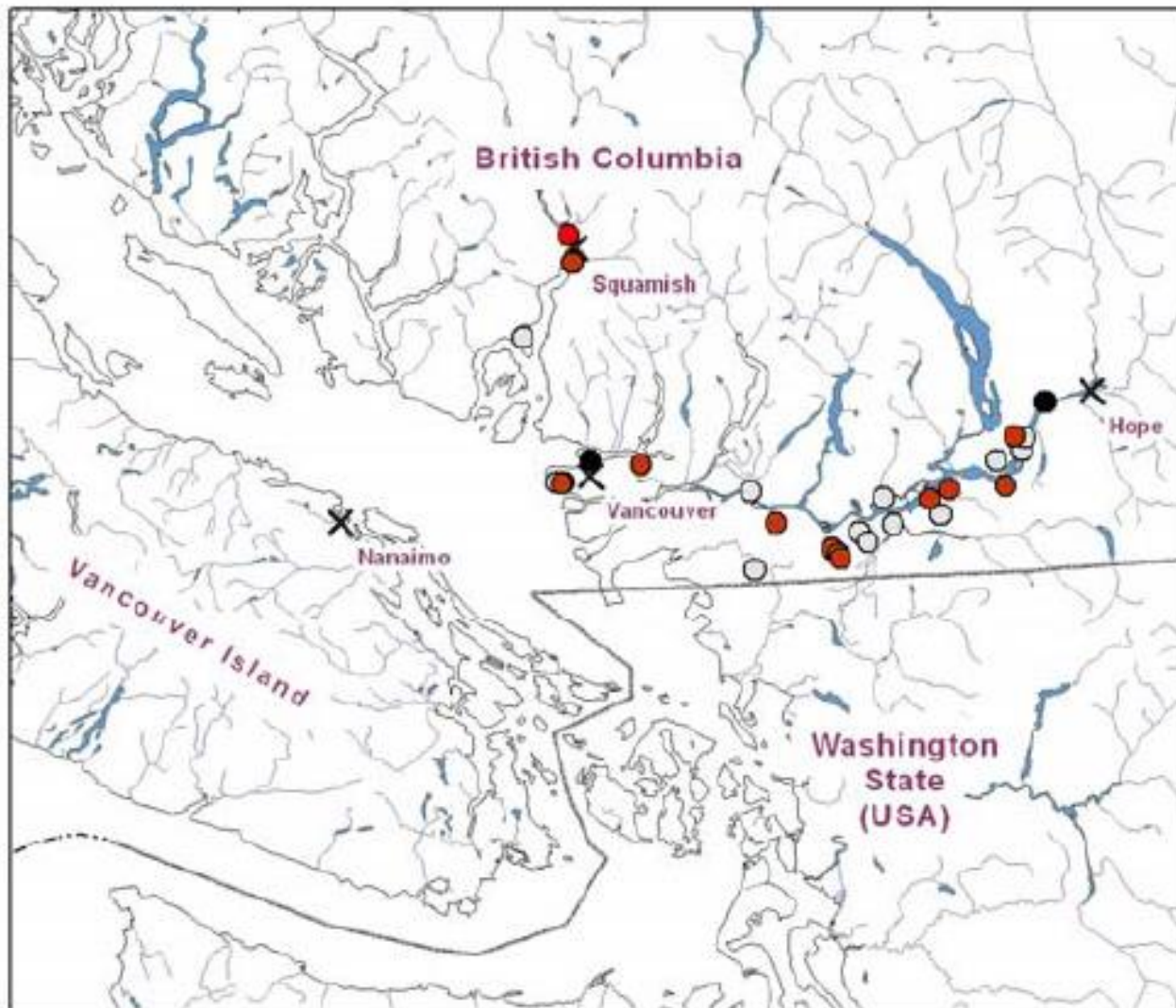


Brotherella roellii

(Roell's Brotherella)

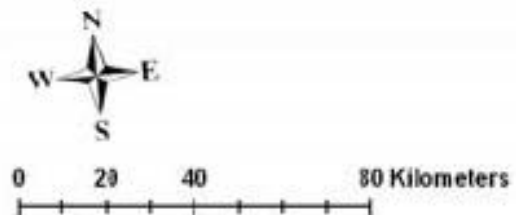
- endemic to BC and Washington State.
- also listed in the Canadian Species at Risk Act (SARA) as Endangered and is on the Red List of the BC CDC.
- species name under review (may be *B. fauriei*...).
- grows on trees (birch and alder mainly), stumps, and logs in low elevation (usually < 100 m) habitats usually along streams or shaded wet areas.
- many early collections were made but many of these sites appear to have been lost over time.
- by 2021, more populations have been discovered as inventory greatly increased often due to pre-development surveys.
- a new Status Report is in process.
- the main threat is probably development.





Legend

- *Brotherella roellii* collection sites (1980 to present)
- *Brotherella roellii* collection sites (before 1980)
- × Cities







Conclusions

- species-specific inventory is rewarding if funding available, but new potential sites need to be investigated
- we need to train more folks to look and process specimens properly (workshop?)
- send data to CDC (continuing)
- publish results

Addendum

- we (myself along with Steve Joya and Karen Golinski) are presently completing a moss list for BC, a long and picky, but highly rewarding task.
- so far we have over 850 taxa listed (so far), the great majority at the species level.
- that includes over 120 name changes (mainly species being realigned into different genera) following the intense genetic work, particularly in Europe, over the past 10 or so years.
- e.g., we only have one species of *Hypnum* in BC now (vs. >20 before): new genera include *Aquilonium*, *Buckia*, *Calliergonella*, *Calliergonellopsis*, *Campylium*, *Drepanium*, *Jochenia*, *Pseudostereodon*, *Roaldia*, *Stereodon*, and *Trochophyllohypnum*.