BRYOPHYTES OF THE OKANOGAN: FINDING THE HIDDEN GEMS

Erica Heinlen

Seasonal Botanist - Tonasket Ranger District, Okanogan-Wenatchee National Forest

THE BRYOPHYTES

Mosses

Liverworts

Hornworts

THE BRYOPHYTES

Sporophyte – 2N generation that gives rise to spores for propagation.

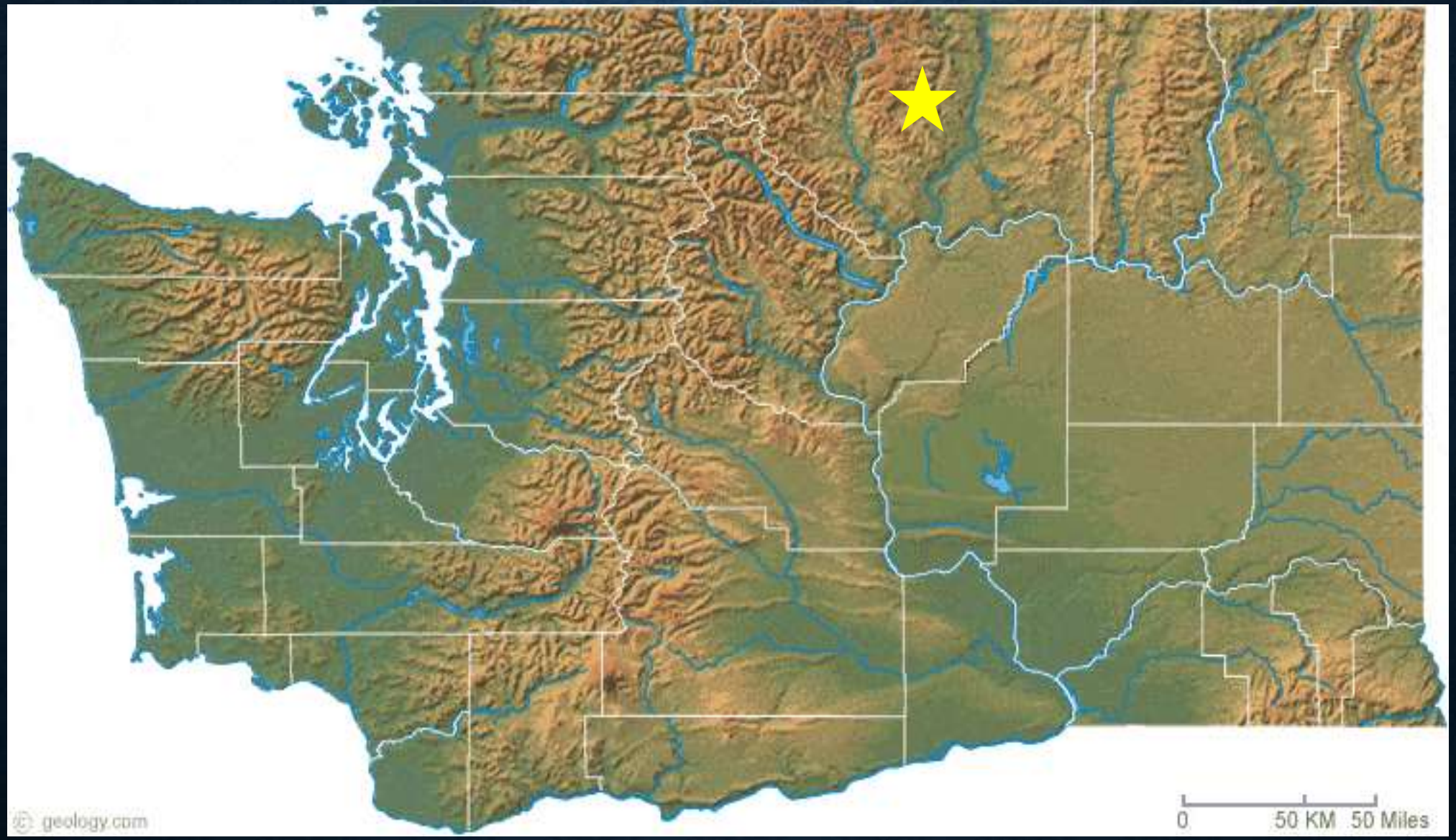
Gametophyte – leafy green growth. 1N generation produces sperm and eggs.

No roots – all water/nutrients absorbed directly into leaves from atmosphere/substrate.

THE BRYOPHYTES

Diversity

THE OKANOGAN



https://geology.com/state-map/maps/washington-physical-map.gif

THE OKANOGAN

FINDING THE HIDDEN

Moss species: ~ 750, Judy Harpel records

Checklist under development – Judy Harpel

Buxbaumia spp.

Liverwort species: ~ 230, CPNWH query

Working checklist under development

– Erica Heinlen

Hornwort species: 5,

CPNWH query

Working checklist - none

FINDING THE HIDDEN

Schistostega pennata

Washington Natural Heritage Program List of Mosses –

Judy Harpel, 1996, no major updates

Rare liverwort list for WA – none

Rare hornwort list for WA - none

FINDING THE HIDDEN

Patterns of rarity in mosses of the Okanogan Highlands of Washington State: an emerging coarse filter approach to moss conservation (Heinlen and Vitt 2002)

What correlates to rarity? Can we protect rare species without managing each species?

Unique habitat = Unique species

Campylium stellatum

UNIQUE HABITAT: UNDEVELOPED SAGEBRUSH

THE GEMS

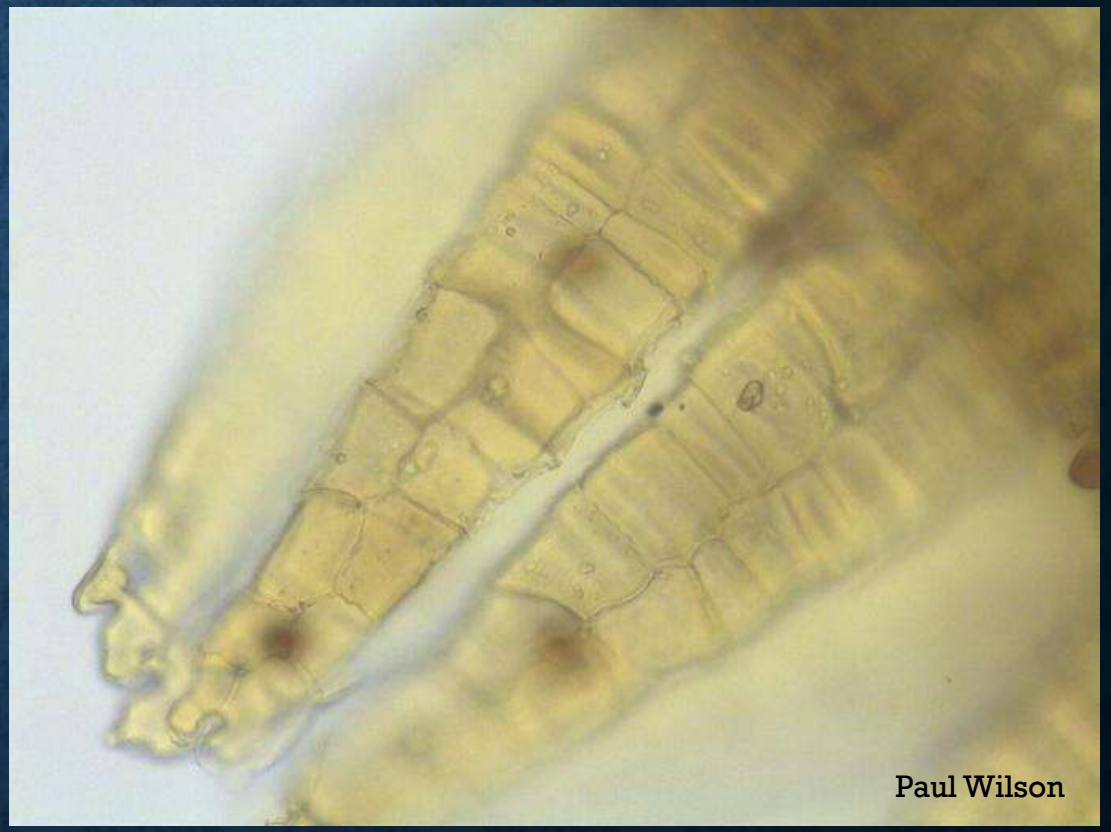
Undeveloped Sagebrush

Aloina bifrons

UNIQUE HABITAT: DRYLAND WATERFALLS

THE GEMS

Dryland Waterfalls



Orthotrichum holzingeri

UNIQUE HABITAT: BOREAL STREAMS

https://bengansblogg.files.wordpress.com/2011/09/bengansblogg-naturbilder-048.jpg

https://upload.wikimedia.org/wikipedia/commons/5/55/PleuroziumPiceaBorealForest.JPG

THE GEMS

Boreal Streams

Mnium blyttii

"Post mortum color blue"

UNIQUE HABITAT: FEN

THE GEMS

Fen

"*Drepanocladus*" spp.

Hamatocaulis vernicosus

Scorpidium cossinii

Scorpidium revolvens

THE GEMS

Fen

Elodium blandowii

Tomenthypnum nitens

THE GEMS

Fen

Paludella squarrosa

Pseudocalliergon trifarium

(Calliergon trifarium)

THE GEMS

Fen

Splachnum sphaericum

Tayloria lingulata

THE GEMS

Fen

Barbilophozia kunzeana

http://rbg-web2.rbge.org.uk/bbs/meetings/mtgs03.htm

Moerckia hibernica

THE GEMS

Fen

Meesia longiseta

Meesia triquetra

THE GEMS

Fen

Cinclidium stygium

BRYOPHYTES OF THE OKANOGAN: FINDING THE HIDDEN GEMS

- A diversity of habitats makes the Okanogan a great place to discover bryophytes.
- Bryophytes remain grossly understudied; without state lists or adequate conservation status.
- Unique habitats in Okanogan house some beautiful bryophyte species.
- Bryophytes are awesome!

QUESTIONS?

Thanks to Michael Lueth, Justin Haug, and Paul Wilson for use of their beautiful photos!