

The biodiversity of invertebrates in our local wetlands

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Project Goals:

- Assess baseline biodiversity of wetland sites in the Slocan and Meadow Creek areas
- Prioritize wetlands for restoration and track results
- Engage the community in wetland science and enhancement and promote stewardship
- Encourage conservation of existing wetlands

What are macroinvertebrates?

- Organisms without a backbone
- Visible to the naked eye
- Variable tolerances to stressors



The suite of invertebrates indicates health

Methods:

Parameters monitored included:

- Invertebrates from emergent vegetation
- Water & sediment chemistry
- % Composition of emergent vegetation
- Habitat variables & stressors

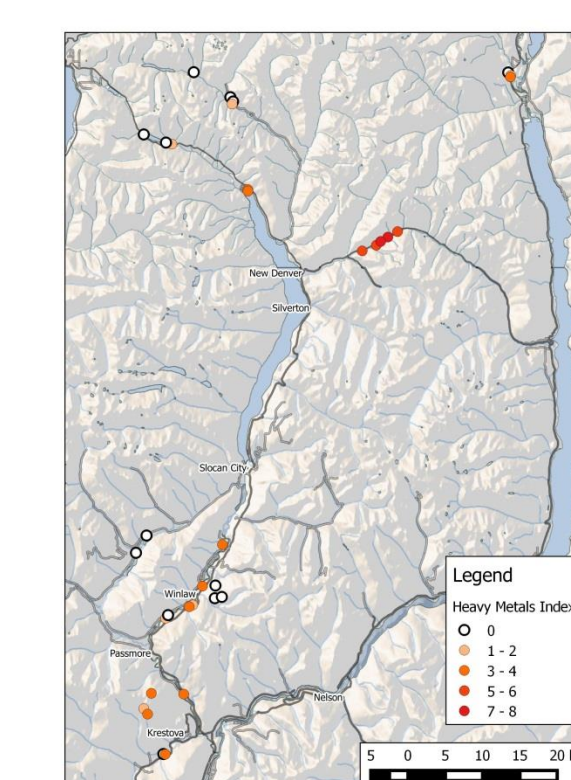


Conclusions:

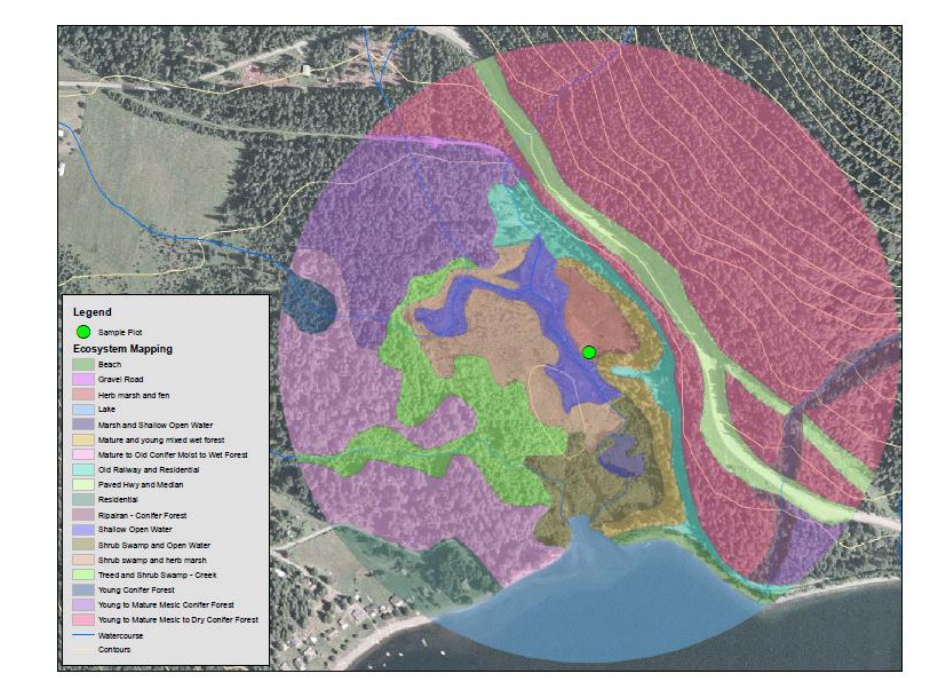
- The composition of invertebrates differed by wetland type
- Reference sites were identified.
- Disturbances to wetlands were quantified.
- Constructed sites showed increases in the biodiversity and abundance of macroinvertebrates over time.

Results:

- 1. Stress:** based on sediment chemistry: an indicator of human activity and mapping of disturbances



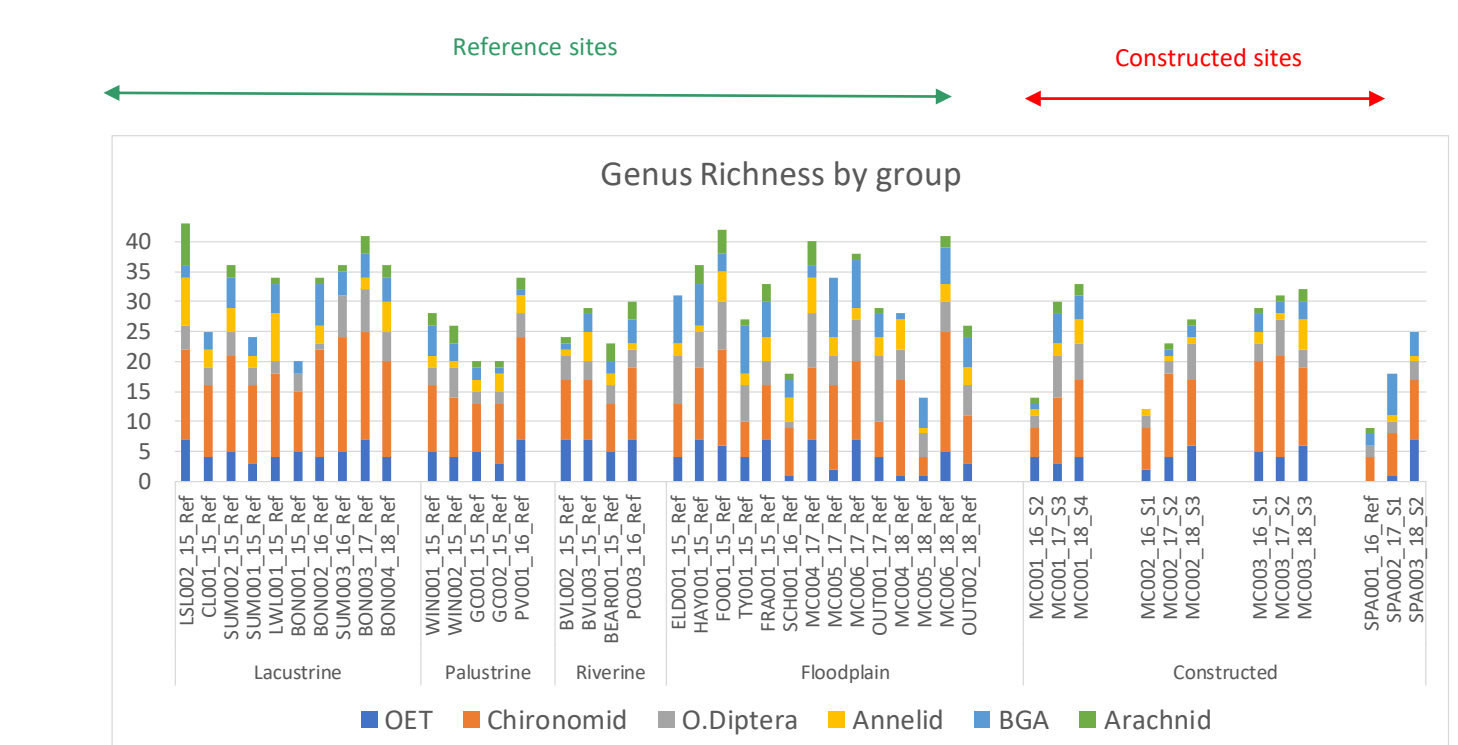
Map of chemical stress scores



% Land cover of a 500m buffer area for each site

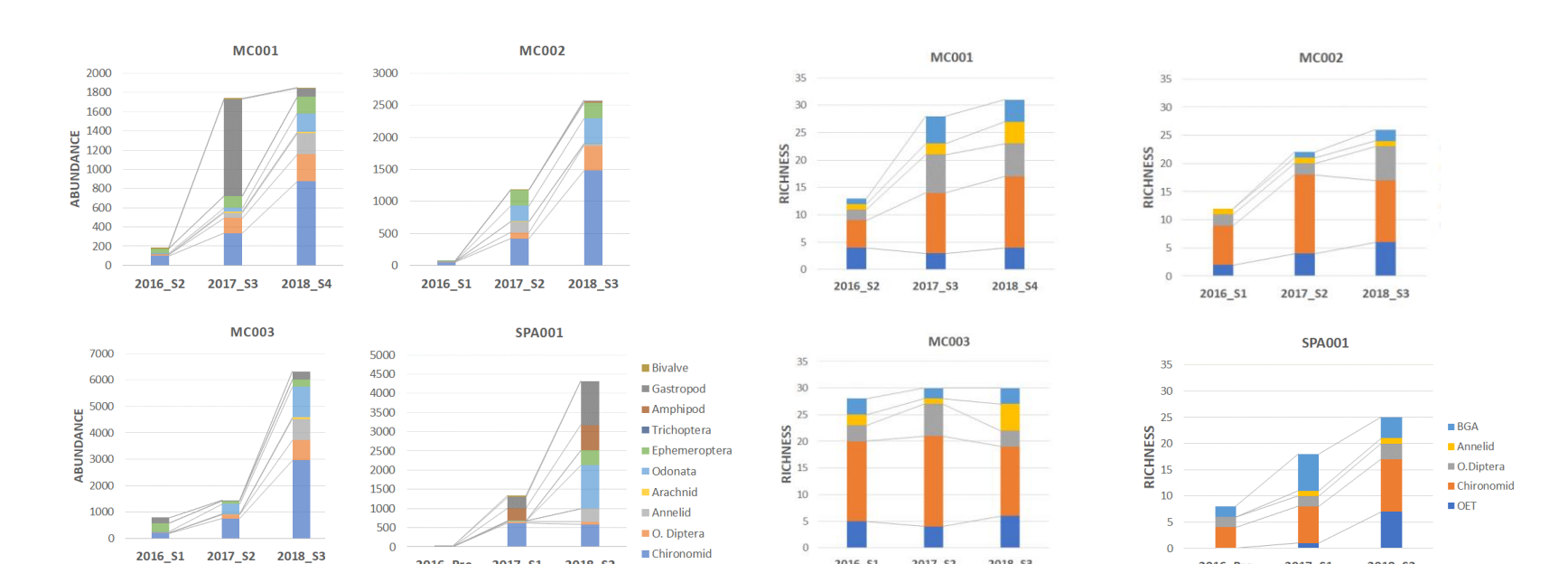
2. Biodiversity:

Invertebrates were identified to the genus level



Richness (total count of genus) at wetlands monitored from 2015-18 in Meadow Creek and Slocan areas. DET (dark blue) = Odonata, Ephemeroptera and Trichoptera (dragonflies, mayflies and caddisflies), Annelid (grey) = segmented worms and Annelid (yellow), BGA (light blue) = Bivalves, gastropods plus amphipods and Arachnid (green) = Aquatic mites. Site name is followed by year monitored. Ref = Reference sites.

Measures of biodiversity in four types of wetlands

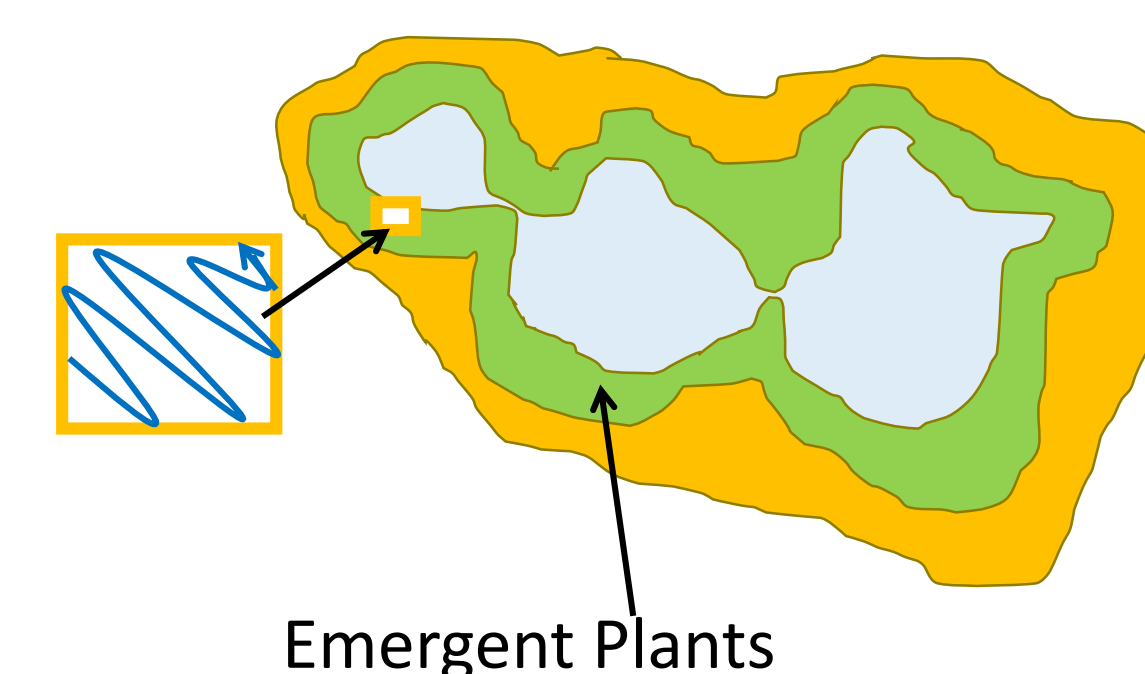


Tracking of restored sites over 3 years

Methods can be used to identify impacts or track restoration goals

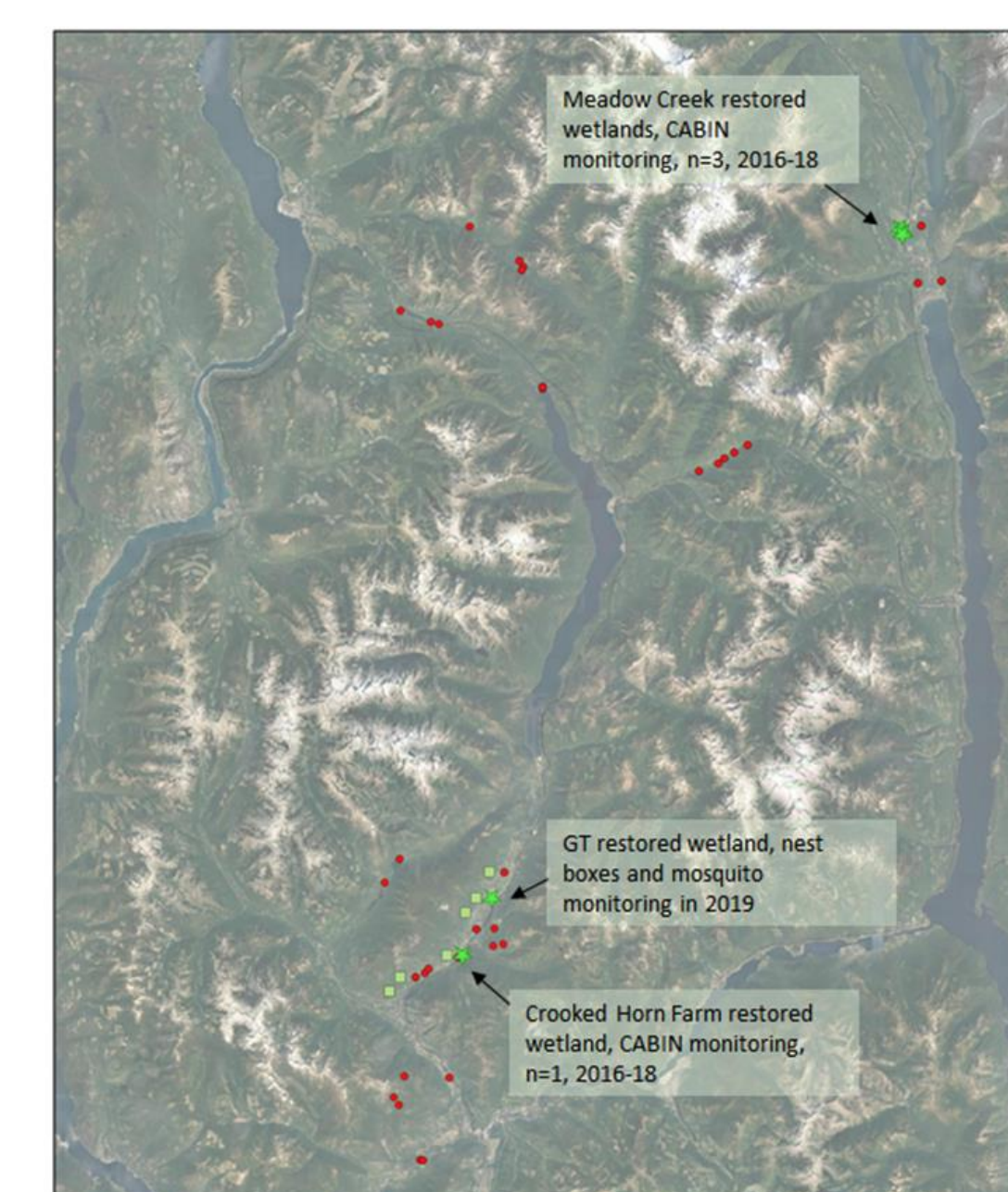
Invertebrate collection:

- 3 minute kick sample
- 5 x 5m quadrat



Emergent Plants

Site locations



Red dots indicate invertebrate monitoring, green stars are restored wetlands, squares indicate enhancement activities



Encouraging wetland stewardship and restoration

If you have a backyard wetland and want to be part of an innovative study please contact:
Darcie Quamme, Integrated Ecological Research, quamme@ecological.bc.ca, or full report at slocanswamp.org