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 & conservation
- Report findings to the local community

Methods:

Parameters monitored included:

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

Conclusions:

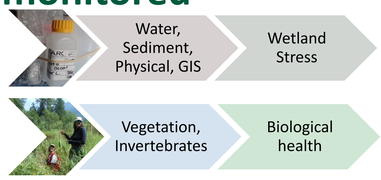
- Chemical stress varied from low to high at sites in the Slocan and Meadow Creek areas
- The composition of invertebrates differed by wetland type
- Reference sites were identified for comparison to impacted sites or restoration activities over time.

What are macroinvertebrates?

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

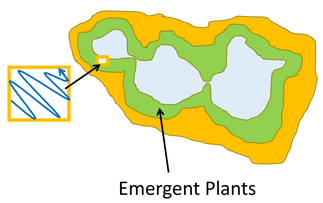
The suite of invertebrates indicates health

Indicators monitored

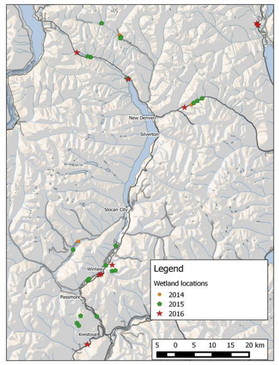


Invertebrate collection:

- 3 minute kick sample
- 5 x 5m quadrat



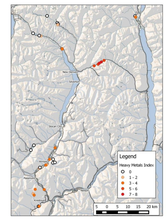
Site locations



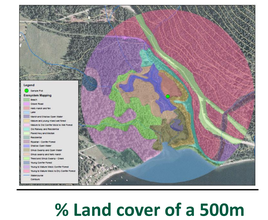
Results:

1. Chemical Stress:

based on sediment chemistry: an indicator of human activity



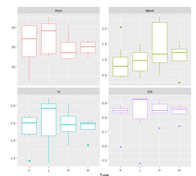
Map of chemical stress scores



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

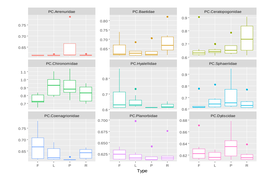
2. Biodiversity:

Invertebrates were identified to the genus level



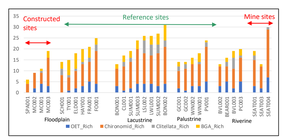
Relative biodiversity in Floodplain (FP), Lacustrine (L), Palustrine (P) & Riverine (R) wetlands

Measures of diversity in four types of wetlands



Dominant families in Floodplain (FP), Lacustrine (L), Palustrine (P) & Riverine (R) wetlands

Dominant families in four types of wetlands



Richness by major groups including: OET (dragonflies, mayflies, caddisflies), Chiron (midges), Clitella (Segmented worms), BGA (Snails, Shrimp)

Reference sites versus test sites

http://thenelsondaily.com

Methods can be used to identify impacts or track restoration goals

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 Rhia MacKenzie, Slocan Streamkeepers Society, zzoist@gmail.com , full report at slocanswamp.org

Integrated Ecological Research

SWAMP Slocan Wetland Assessment & Monitoring Project

National Conservation Plan / Plan de conservation national — Canada

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British Columbia

Columbia Basin trust

FWCP Fish & Wildlife Compensation Program

Royal BC Museum

BCWF B.C. Wildlife Federation