

SWAMP: Wetland invertebrate project

Slocan Valley Wetland Assessment & Mapping Project (SWAMP)

Project Goals:

- Assess wetland health
- Prioritize wetlands for restoration & conservation
- Report findings to the larger Slocan Valley

What are macroinvertebrates?

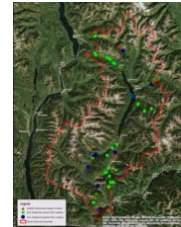
- Organisms without a backbone
- Visible to the naked eye
- Variable tolerances to stressors



The suite of invertebrates determines wetland health



Project Stages :



Site locations

Methods:

Parameters monitored included:

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

Invertebrate sampling:
3 minute travelling kick
5 x 5 m quadrat

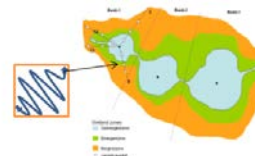


Figure modified from Bailey and Reynoldson (2009) & kick-net pattern from Emily McIvor (2014).

Conclusions:

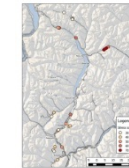
- Developed quantitative rating system that allows science-based decisions or prioritize wetlands for restoration or conservation
- Identified restoration targets with quantitative criterion

Results:

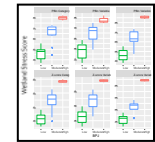
- Two independent quantitative scores were developed including:

1. Wetland Stress or "physiological stress"

based on water, sediment, physical, disturbance, contaminants & land cover



Map of wetland stress scores



Best Professional Judgement (BPJ)

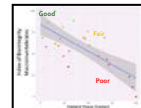
Good separation between Low, medium & high stress scores

2. Index of biotic Integrity:

biological rating score based on invertebrate metrics

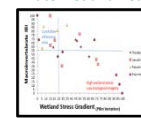
Site	Score	Color
Site 1	60.2	Yellow
Site 2	62.8	Green
Site 3	64.2	Red
Site 4	71.3	Yellow
Site 5	69.7	Green

2 Independent scores for each site



Scores were used to rate wetland health

Methods can be used to track both wetland health & restoration success



Established criterion and thresholds

Encouraging wetland stewardship and restoration, full report at slocanswamp.org

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