

# Mosquito monitoring at Crooked Horn Farm

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## Project Goals:

- Assess the ratio of mosquito to natural enemies within the aquatic invertebrate population in local wetlands using Canadian Aquatic Biomonitoring Methods (CABIN)
- Verify CABIN results and increase search effort by quick dip sampling

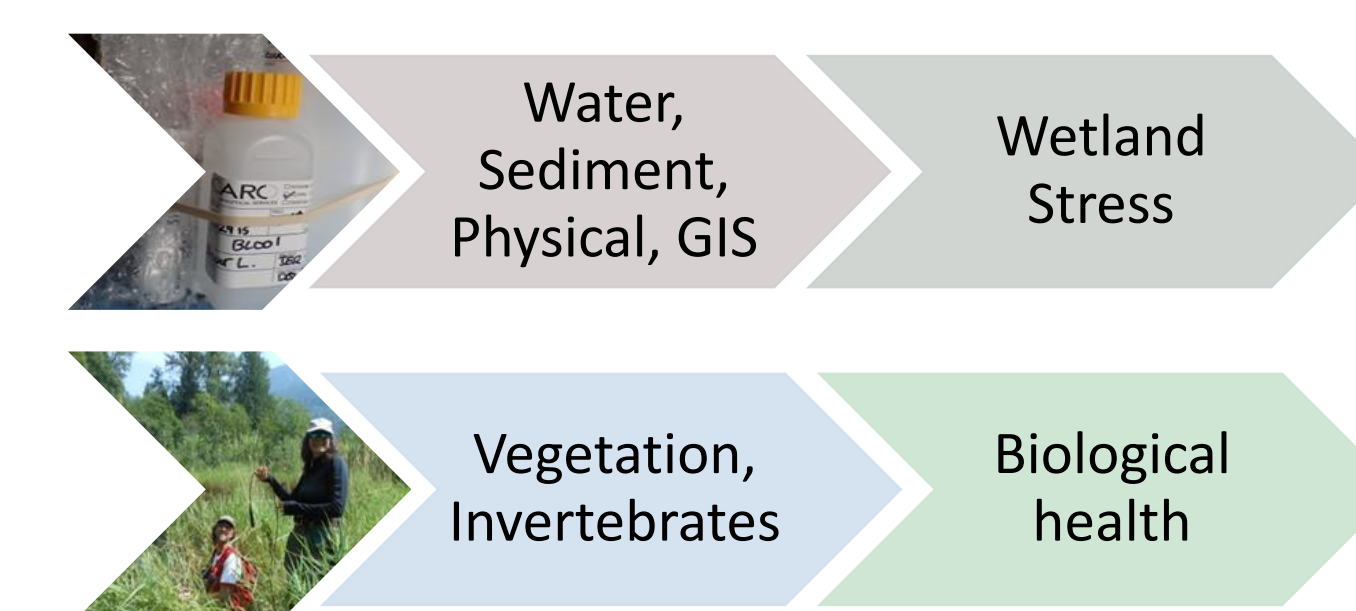
## Methods:

- Parameters monitored included:
- Mosquitoes from emergent vegetation
  - Water & sediment chemistry
  - % Composition of emergent vegetation
  - Habitat variables & stressors

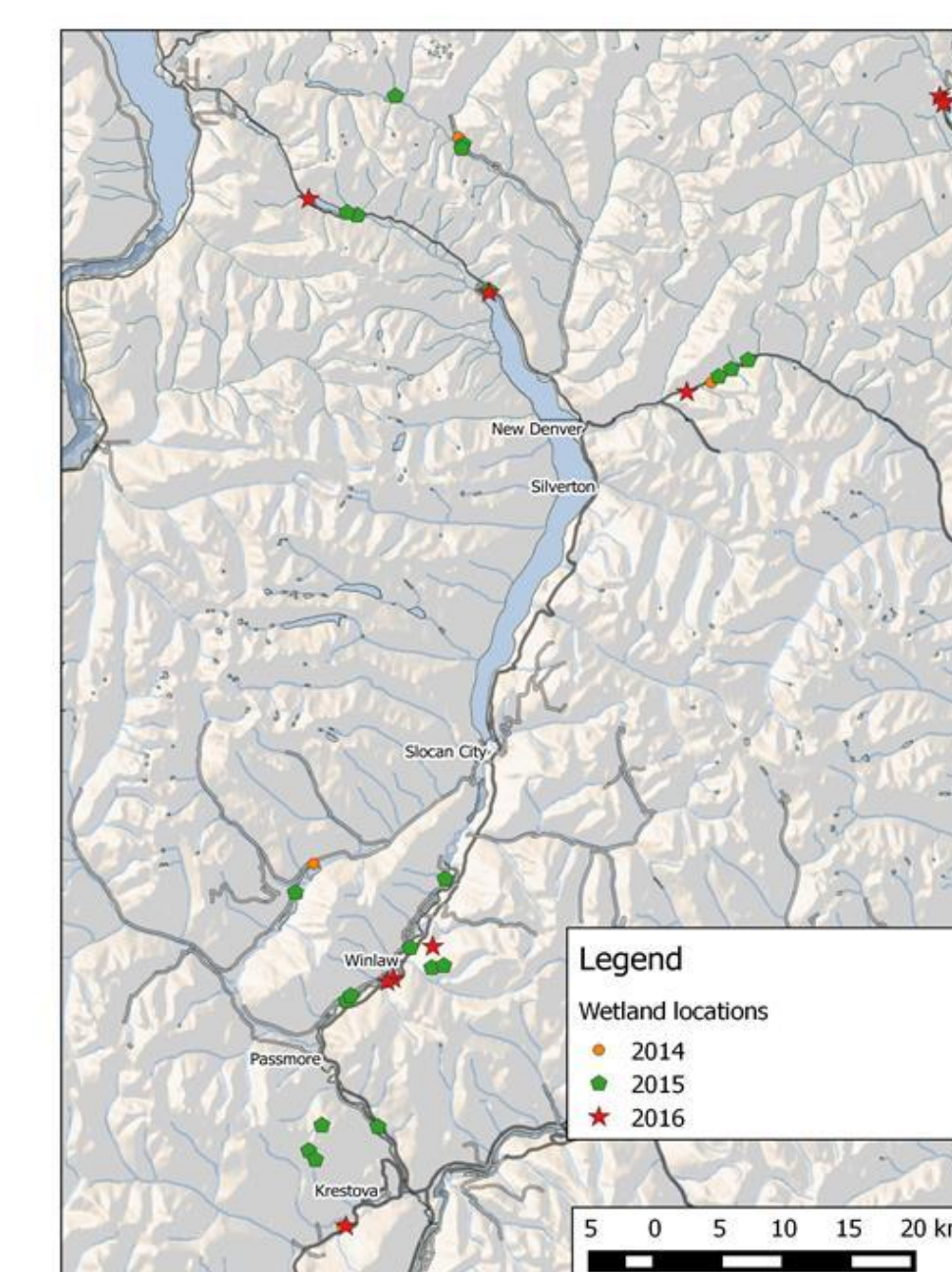
## Conclusions:

- Mosquitoes (n=51 kick net samples) comprised 0-6% of all invertebrates in emergent vegetation (2014-18) at all sites
- Mosquitoes comprised <2% of all invertebrates in 2016-18 at Crooked Horn Farm in pre and post-restoration monitoring (Kick-net, n=1 per year)
- Post-restoration monitoring in 2017 using 350mL dip sampler found zero larvae in 18 samples within the wetland & none in ditches (6 samples).
- Post-restoration monitoring in 2018 using 350mL dip sampler found two larvae in 24 samples within the wetland & none in ditches (6 samples).

## Indicators

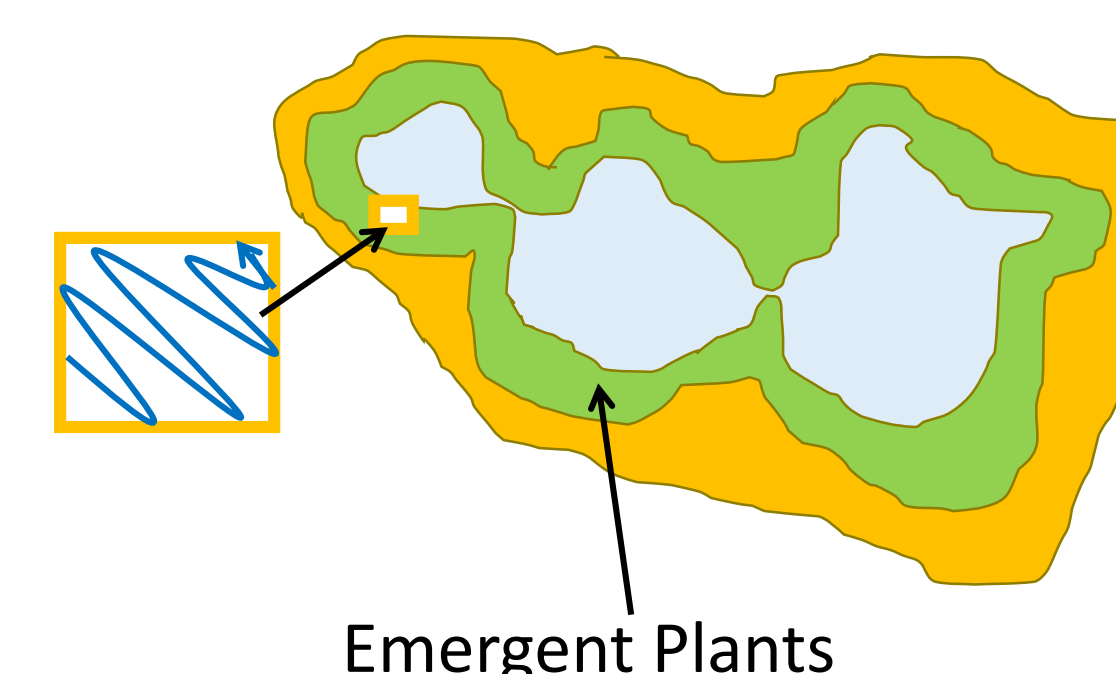


## Site locations



## Collection:

- Kick-net:** 3 minute kick sample
- Standard area (25m<sup>2</sup>)
- Larval dip sampler** (350 mL)



## What are macroinvertebrates?

- Organisms without a backbone
- Visible to the naked eye
- Variable tolerances to stressors
- The suite of invertebrates indicates health
- Mosquitoes are one type of macroinvertebrate



Mosquito larvae



Kick-net sampling



Larval dip sampler



Inspecting the site



Wetland restoration



Dip sampling



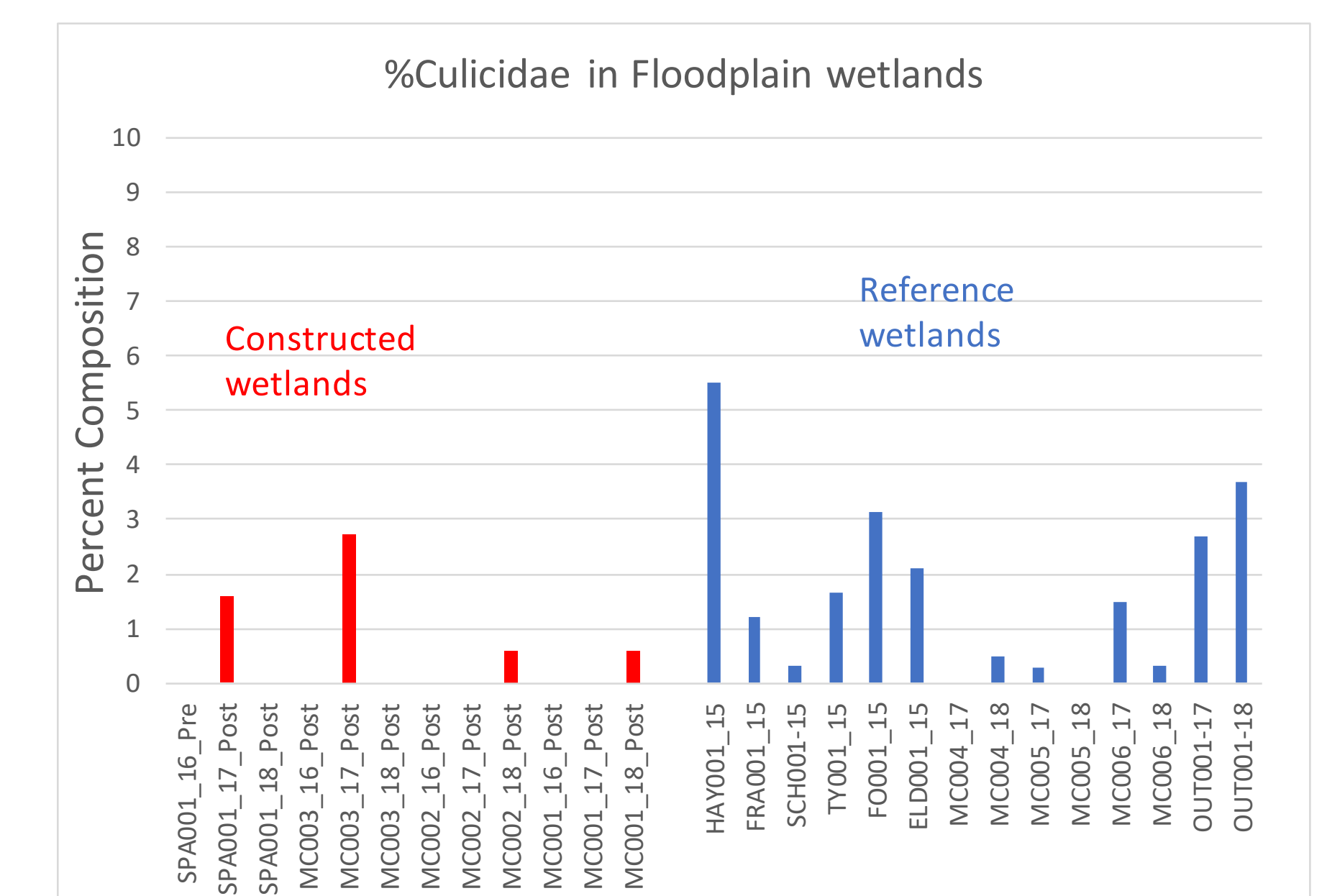
Meta-data



Examining Kick-net sample



Dragonflies, adult & larvae: natural enemies



% of invertebrates that were of the family Culicidae in lower Slocan Valley sedge/cattail wetland habitat for constructed versus reference site

% Mosquitoes in constructed vs reference sites at Floodplain sites (n=26)

## Results:

Mosquitoes at all sites were in the genus *Anopheles*

**Methods will be used to track restoration goals**

## Further analyses to be carried out:

- Calculation of predator : mosquito ratios
- Correlations with environmental variables such as degree days, and water level indices

## 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](mailto:quamme@ecological.bc.ca), or Rhia MacKenzie, Slocan River Streamkeepers, [zzoist@gmail.com](mailto:zzoist@gmail.com), full report at [slocanswamp.org](http://slocanswamp.org)