

Cathance Vernal Pool Project

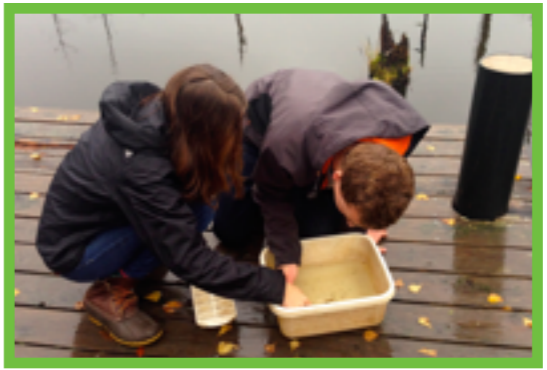
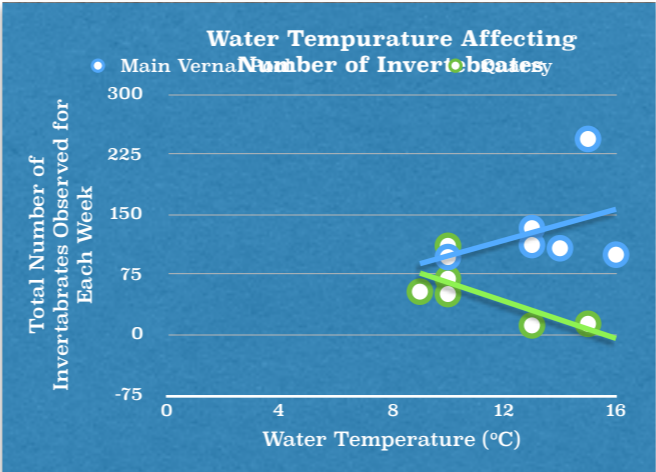
By Porter Galvin and Orion Sargent

Purpose
How do changing abiotic conditions impact vernal pool invertebrates?

Hypothesis
If the conditions in the vernal pools change then so will the number of invertebrates found.

Procedure

- Go to main vernal pool.
- Take pH, nitrate/nitrite, and dissolved oxygen levels.
- Measure water depth with meter stick at one consistent spot.
- Scoop three times just above the bottom of the water.
- Put scoops into the bucket.
- Sort and count each species in ice tray.
- Go to quarry vernal pool.
- Repeat steps above for the quarry vernal pool.



Sorting Invertebrates

Findings

Water Temperature [see graph above]:

- At the Main Vernal Pool warmer water temperatures led to more organisms observed.
- At the Quarry Vernal Pool there were less organisms observed at warmer water temperatures.

pH Level:

- At both the Main and Quarry Vernal Pools there were more organisms found at neutral pH levels.

Dissolved Oxygen:

- When the oxygen levels were lower at the Main Vernal Pool more invertebrates were found.
- At the Quarry Vernal Pool when higher oxygen levels were present more organisms were found.

Water Level:

- At both the Main and Quarry Vernal Pools there more invertebrates seen when the water level was lower.

Nitrate/Nitrite Levels:

- There was no change in nitrate/nitrite levels at the Main and Quarry Vernal Pools.

Thanks to our mentor Matt Dubel as well as Mr. G. Evans for the assistance as well as allowing all the students to return to CREA.

Main Vernal Pool

Quarry Vernal Pool

Abiotic Factors Studied

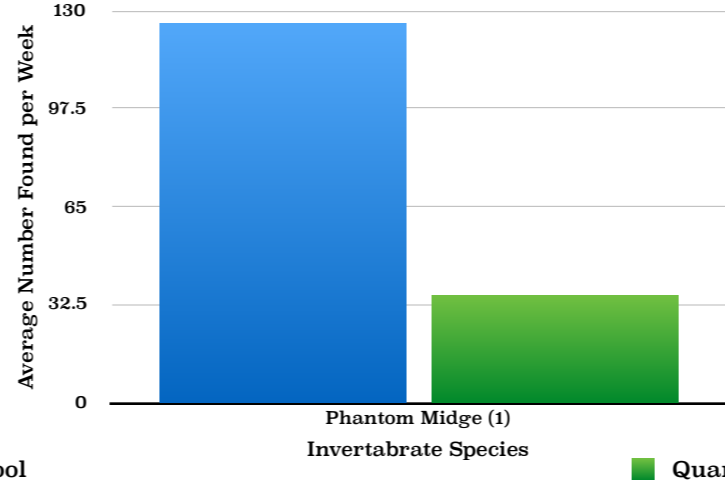
- Water Temperature
- pH Levels
- Oxygen Levels
- Water Levels
- Nitrite/Nitrate Levels

Invertebrates Studied

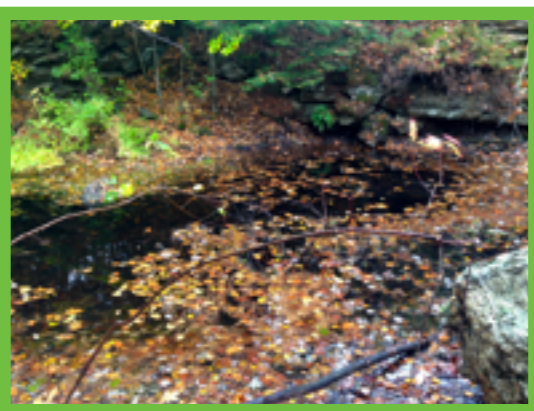
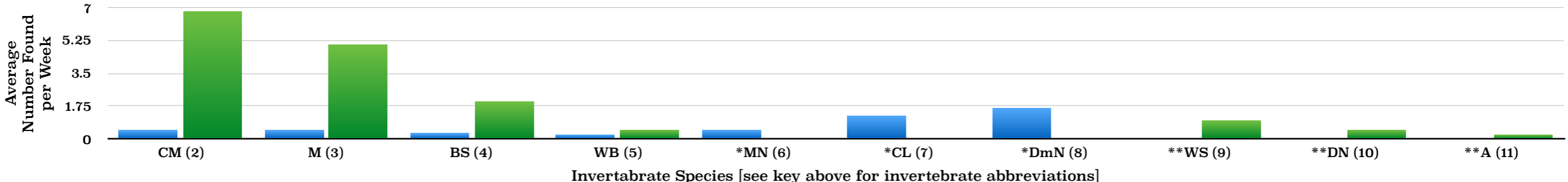
- Phantom Midge: (1)
- Chironomid Midge: CM (2)
- Mosquito Larva/Pupa: M (3)
- Back Swimmer: BS (4)
- Water Boatman: WB (5)
- Mayfly Nymph: *MN (6)
- Caddisfly Larvae: *CL (7)
- Damselfly Nymph: *DmN (8)
- Water Striders: **WS (9)
- Dragonfly Nymph: **DN (10)
- Amphipod: **A(11)

*Only found in Main Vernal Pool
**Only found in Quarry Vernal Pool

Average Phantom Midgess Found per Week



Average Invertebrates Found per Week



Water Boatmen

Damselfly

Phantom Midge