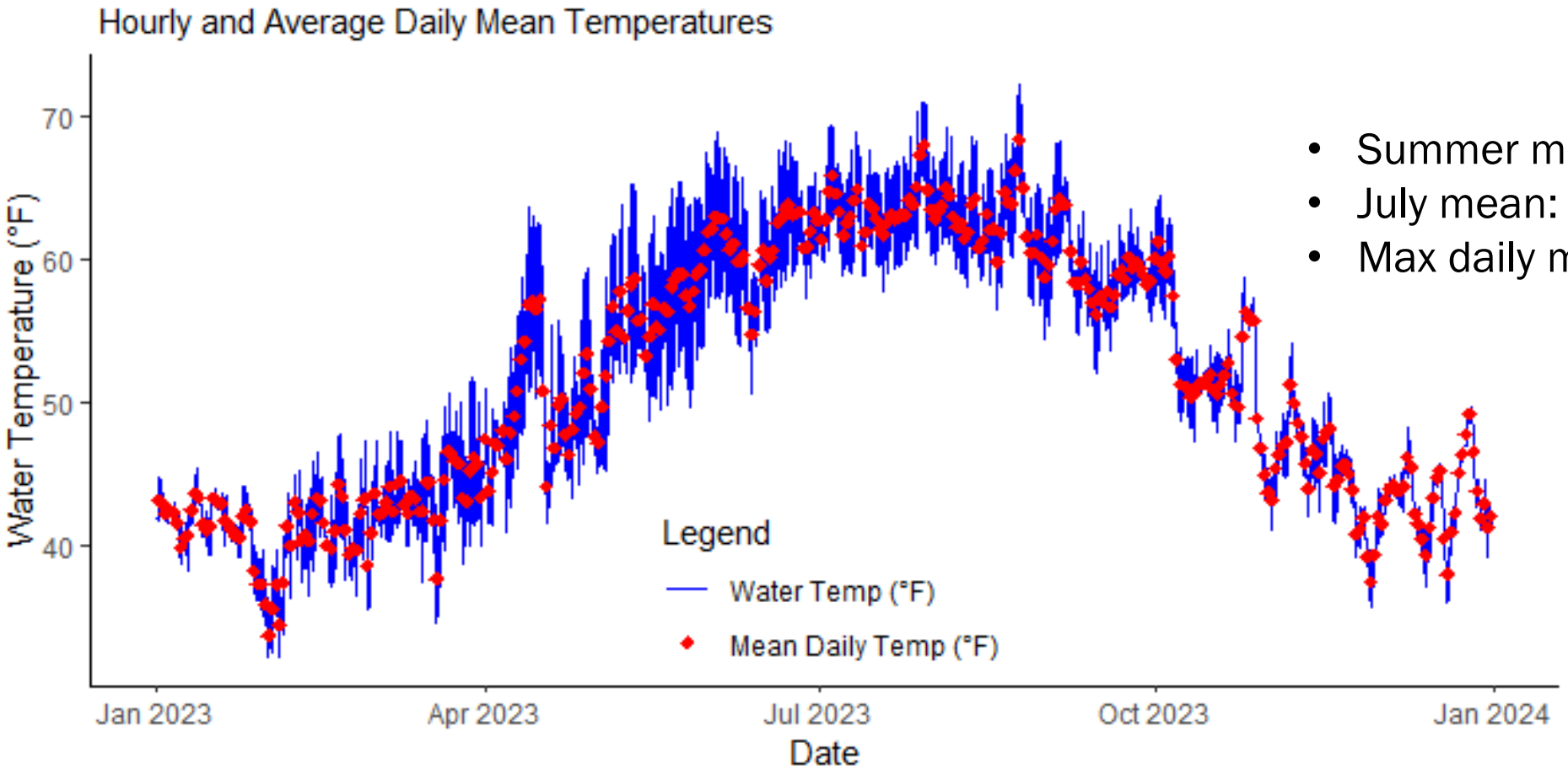
Black Earth Creek Watershed

Kimberly Kuber- WDNR Water Quality Biologist

4/22/2025


How do we assess stream health?

Continuous stream temperature: Black Earth Creek at South Valley Rd



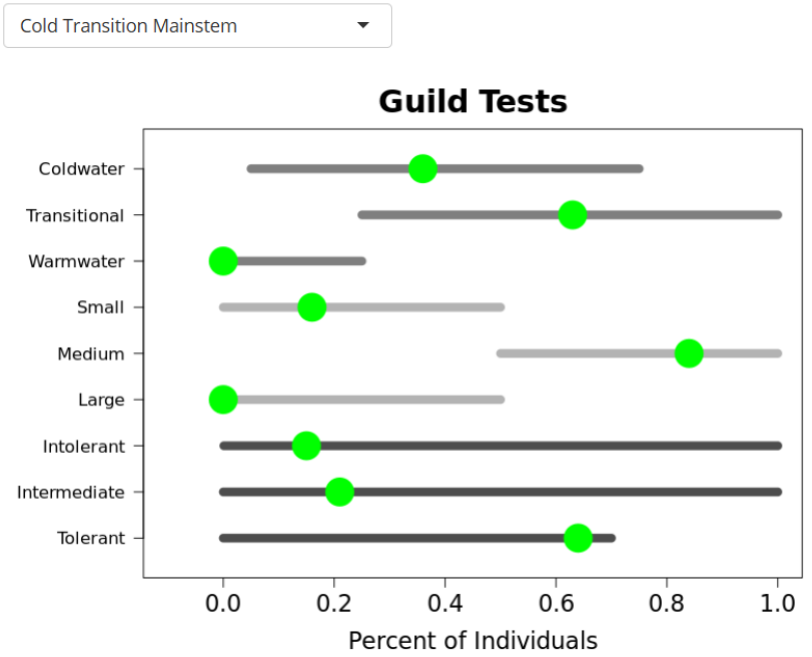
- Summer mean (June-August): 62.5 ^{0}F
- July mean: 63.6 ^{0}F
- Max daily mean: 68.3 ^{0}F

Credit: Marco Scarasso

Fish Index of Biotic Integrity:

BEC at South Valley Road

Species	Count	Thermal Guild	Stream Size Guild	Tolerance Guild
BLUNTNOSE MINNOW	2	Warmwater	Medium	Tolerant
BROWN TROUT	115	Coldwater	Medium	Intermediate
CREEK CHUB	5	Transitional	Small	Tolerant
MOTTLED SCULPIN	92	Coldwater	Small	Intolerant
RAINBOW TROUT	16	Coldwater	Medium	Intermediate
WHITE SUCKER	385	Transitional	Medium	Tolerant



	Metric Value	Metric Score
Number of intolerant fish species	1	10
Number of darter, madtom and sculpin species	1	20
Number of coolwater species	2	10
% tolerant species (% of individuals as tolerant species)	64	10
% as generalist feeding individuals	1	20
	Total Score	70
	Overall Rating	Excellent

Macroinvertebrate Sampling

What are we hoping to learn?

- How macroinvertebrate assemblages change over time
- mIBI and HBI scores

Where have we sampled?

- Samples have been collected throughout the watershed
- Recent samples collected at South Valley

Macroinvertebrate sample results: Black Earth Creek at South Valley Road

Wadeable Macroinvertebrate Index of Biological Integrity (IBI)		
Year	Result	Rating
2021	1.20868	Poor
2022	2.83615	Fair
2023	1.95932	Poor

New Zealand Mud Snails

Characteristics:

- Habitat generalists
- Parthenogenic
- Can survive out of water almost a month
- Anthropogenic methods of spread by river users including fishermen, paddling enthusiasts, etc.

When did they get here?

- First discovered in the US in the 1980's
- Detected in Black Earth Creek at S. Valley Road in 2011
- Currently documented in 16 Wisconsin streams

Potential impacts:

- Detrimental to macroinvertebrate communities in streams in the Western US
- Poor diet item for fish and other wildlife

How do we get rid of them?

- No treatment for NZMS that would be appropriate for natural settings
- Prevention is key! Disinfect gear to prevent the spread

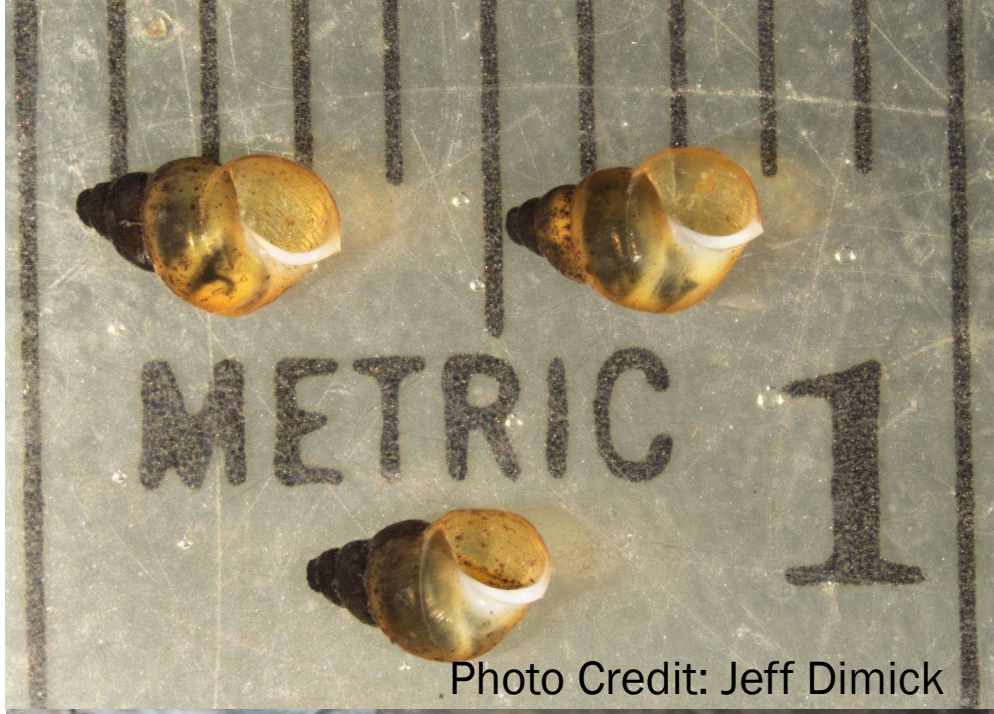
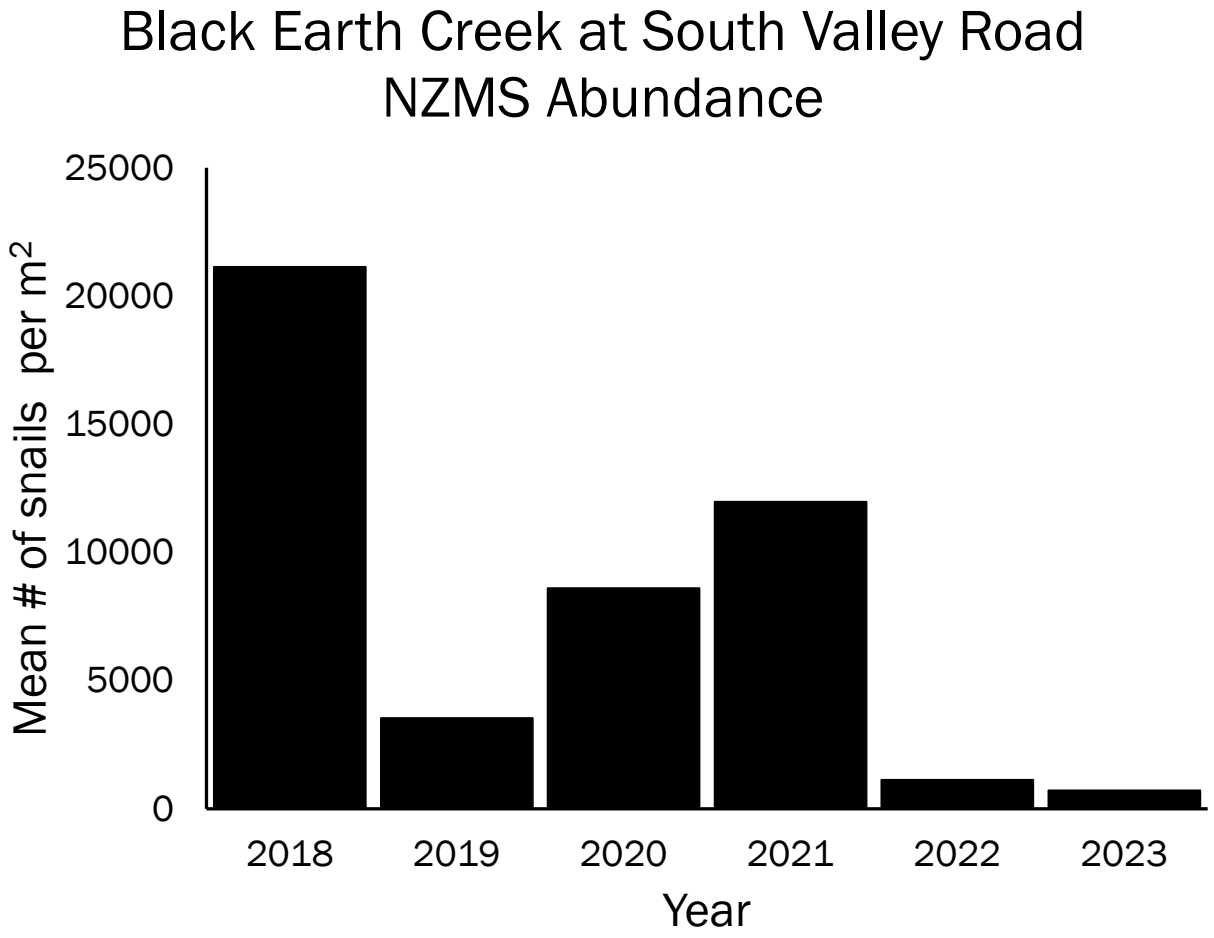
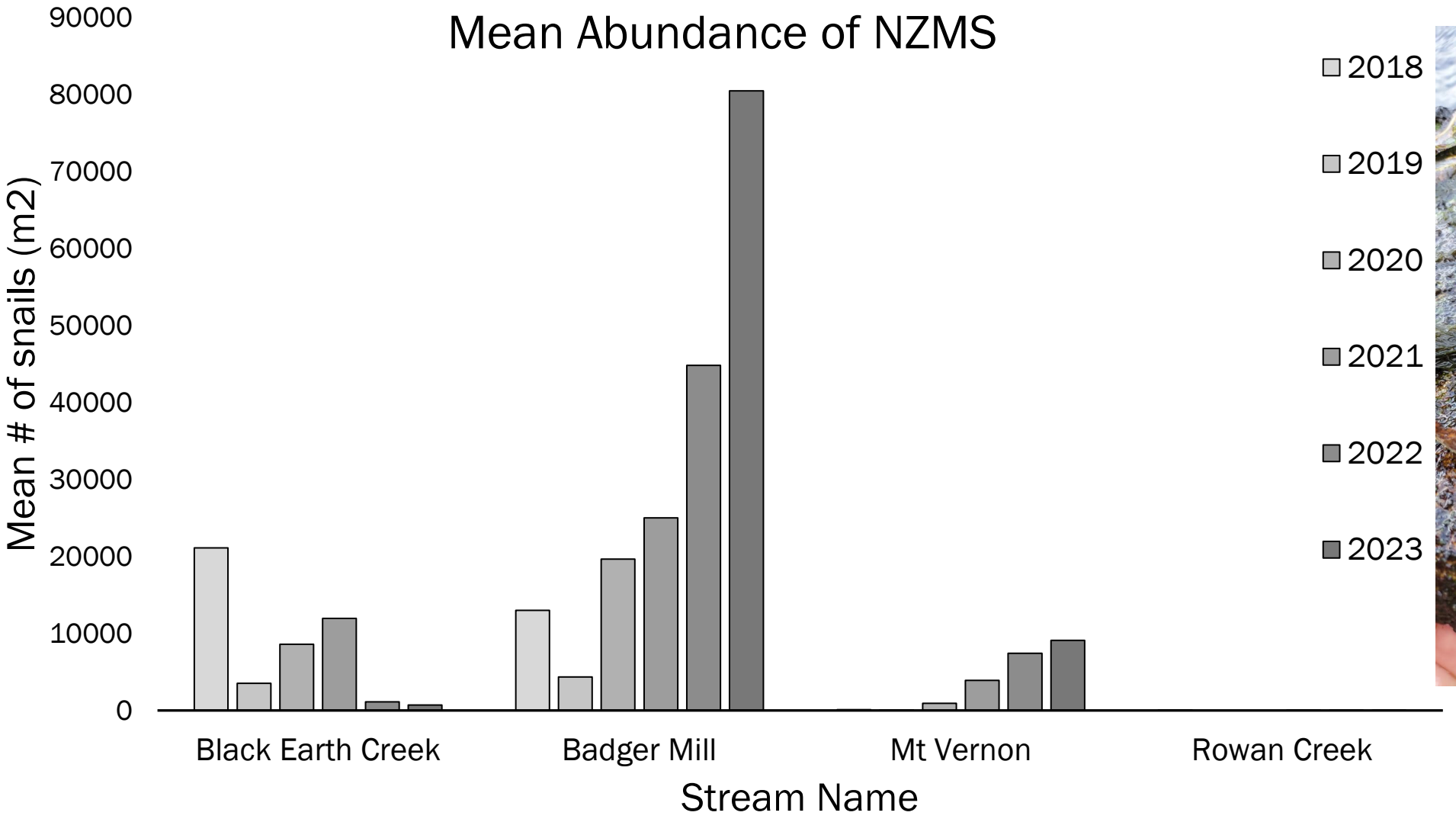


Photo Credit: Jeff Dimick

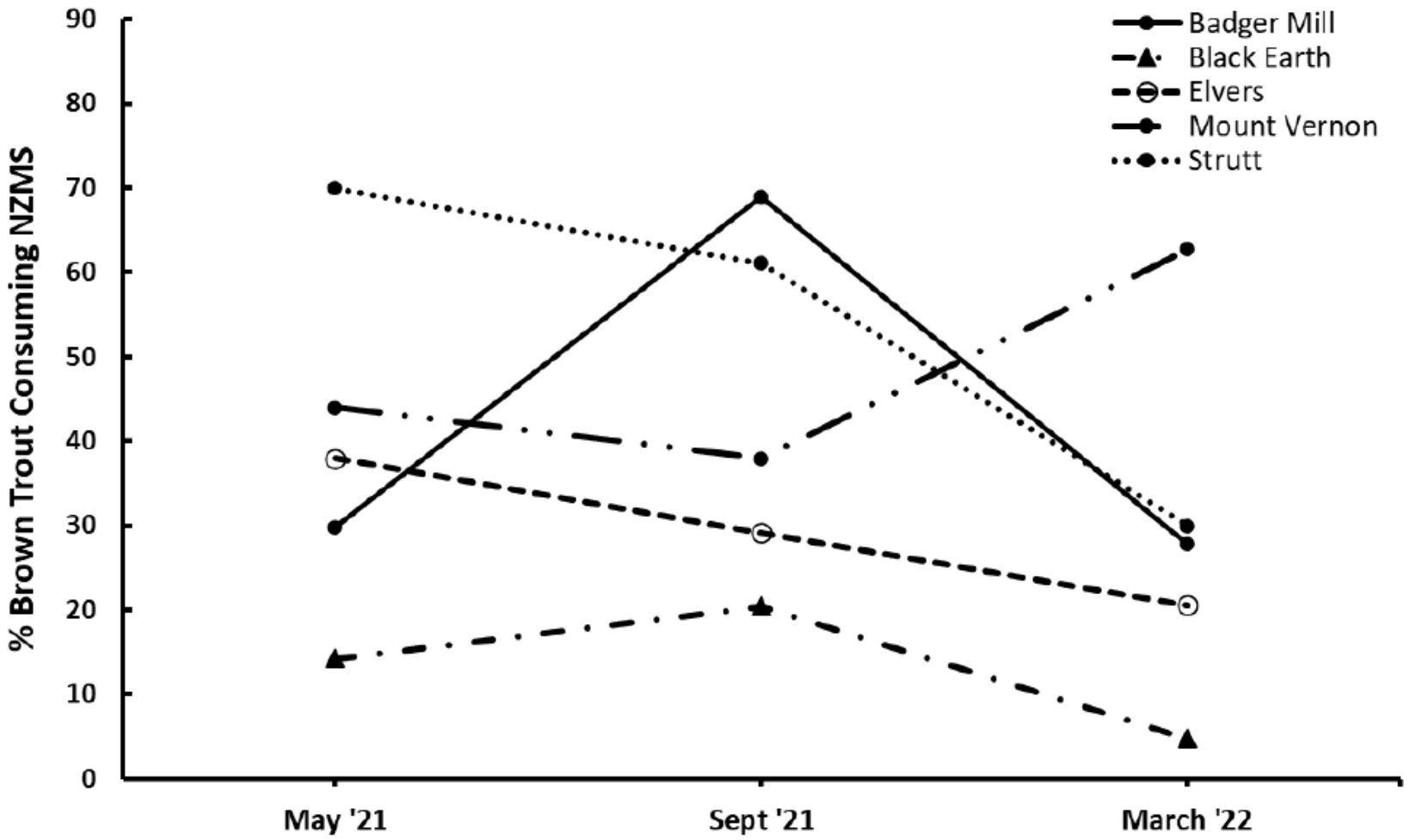
DNR New Zealand Mud Snail Monitoring



DNR New Zealand Mud Snail Monitoring



Additional NZMS Research



Summary

There are many ways to evaluate streams:

- Living organisms
  - Fish
  - Bugs
  - Plants
- Stream temperature
- Water samples

Additional monitoring is often necessary to learn more about invasive species and potential emerging contaminants

Monitoring can be used to identify challenges and opportunities for improvement in streams like BEC

CONNECT WITH US

Kimberly Kuber

Kimberly.Kuber@wisconsin.gov

608-669-6570

@WIDNR

@WI_DNR

/WIDNRTV

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OFF THE RECORD"