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Session A, 2016 Cranberry Lake Director's Choice Award: Cryptic Shade and Hue Gradients of *Anaxyrus americanus* from Stream to Forest Habitats

Christopher Cruz

Robert Pedian

Connor Hassler

Matthew Wuertzer

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Cryptic Shade and Hue Gradients of
Anaxyrus americanus from Stream to
Forest Habitats

Christopher Cruz, Robert Pedian, Connor
Hassler, and Matthew Wuertzer



State University of New York
College of Environmental Science and Forestry

Introduction

- *Anaxyrus Americanus* (American Toad)
- Noticed a color gradient across the habitat types
- Toads actively move to respective substrate that match their coloration.
(Heinen, 1985)



Photo by Bob Pedian

Introduction

- *A. americanus* show a form of crypsis known as background pattern matching. (Cuthill et al., 2005)

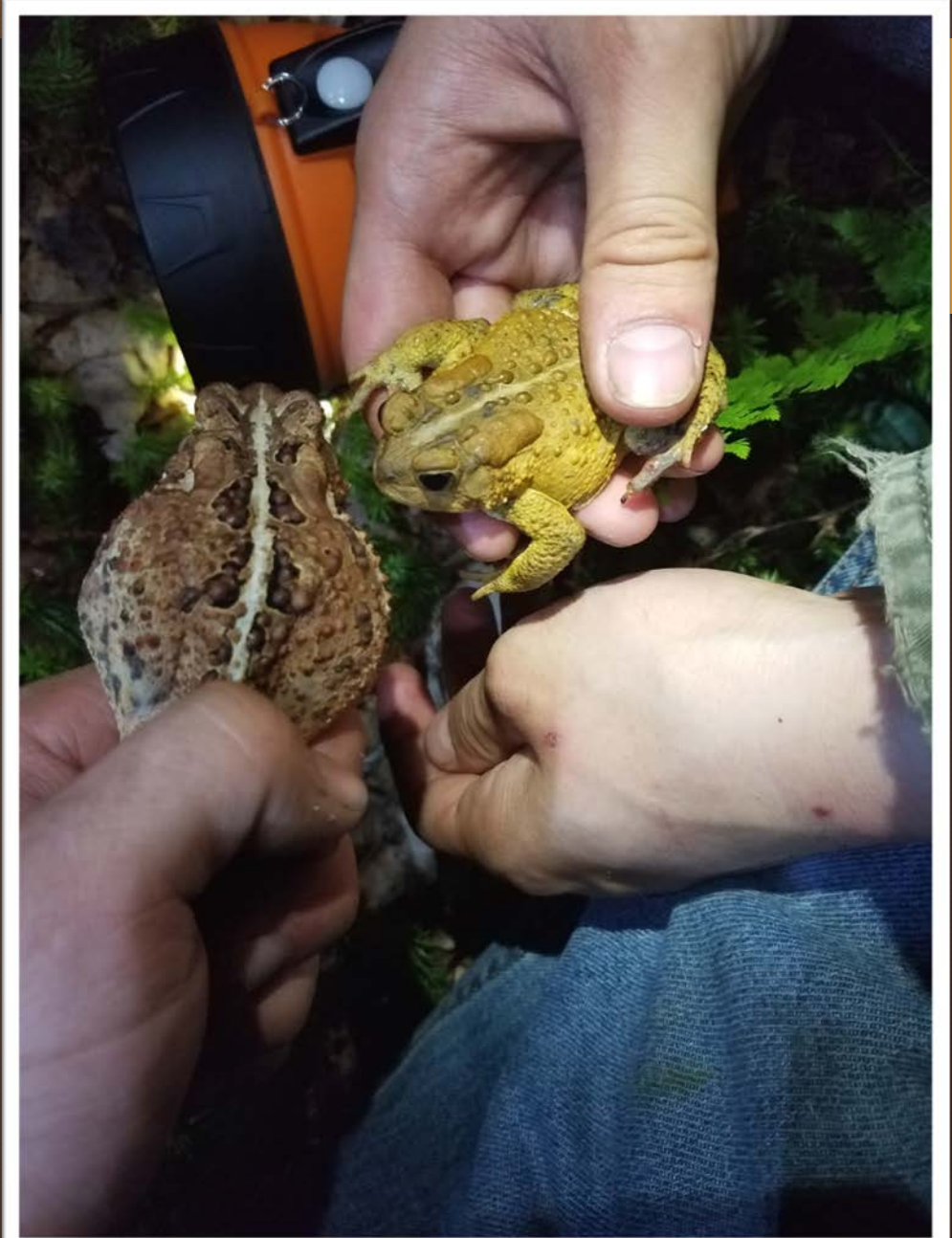


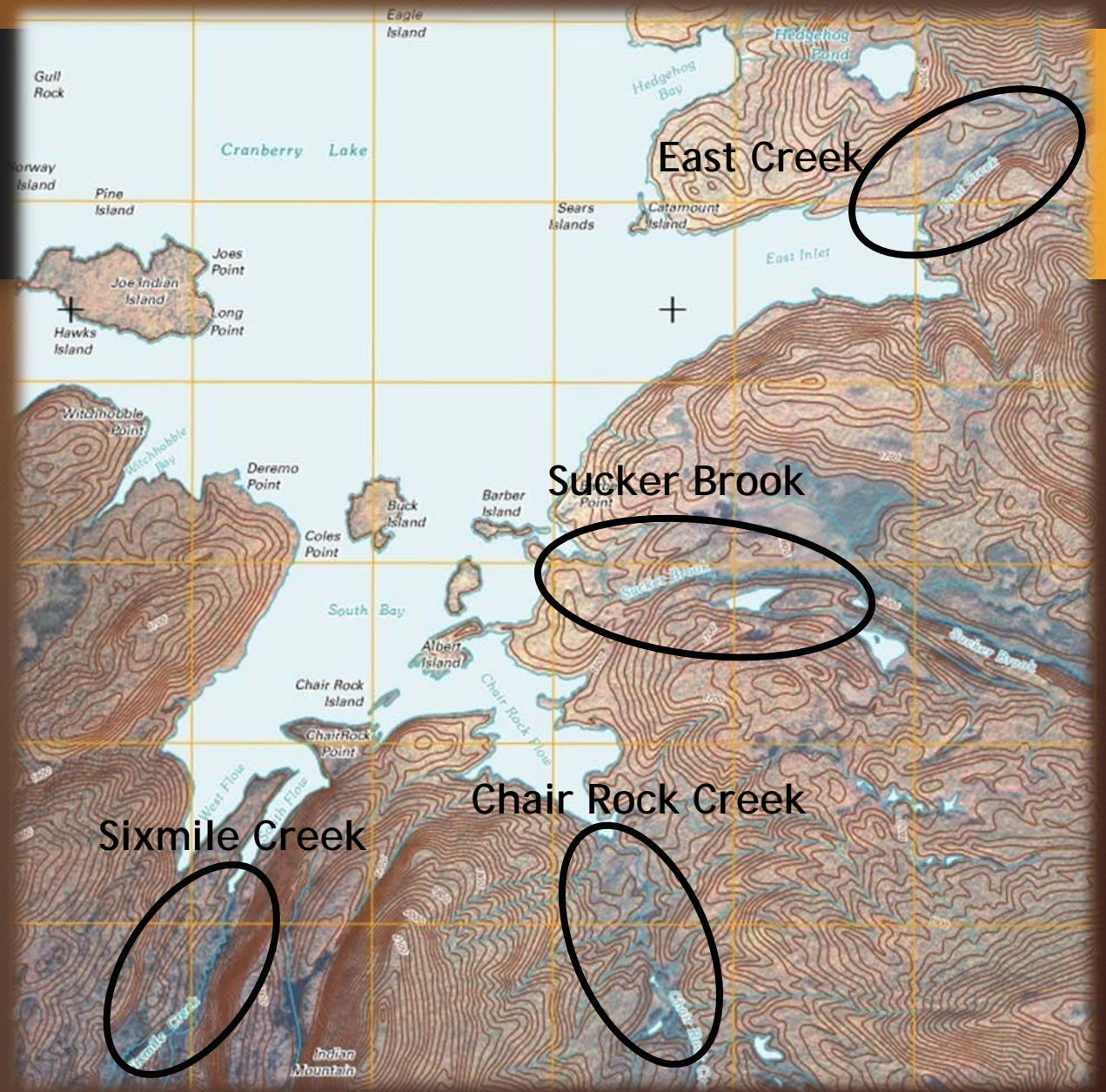
Photo by Matt Wuertzer

Hypothesis

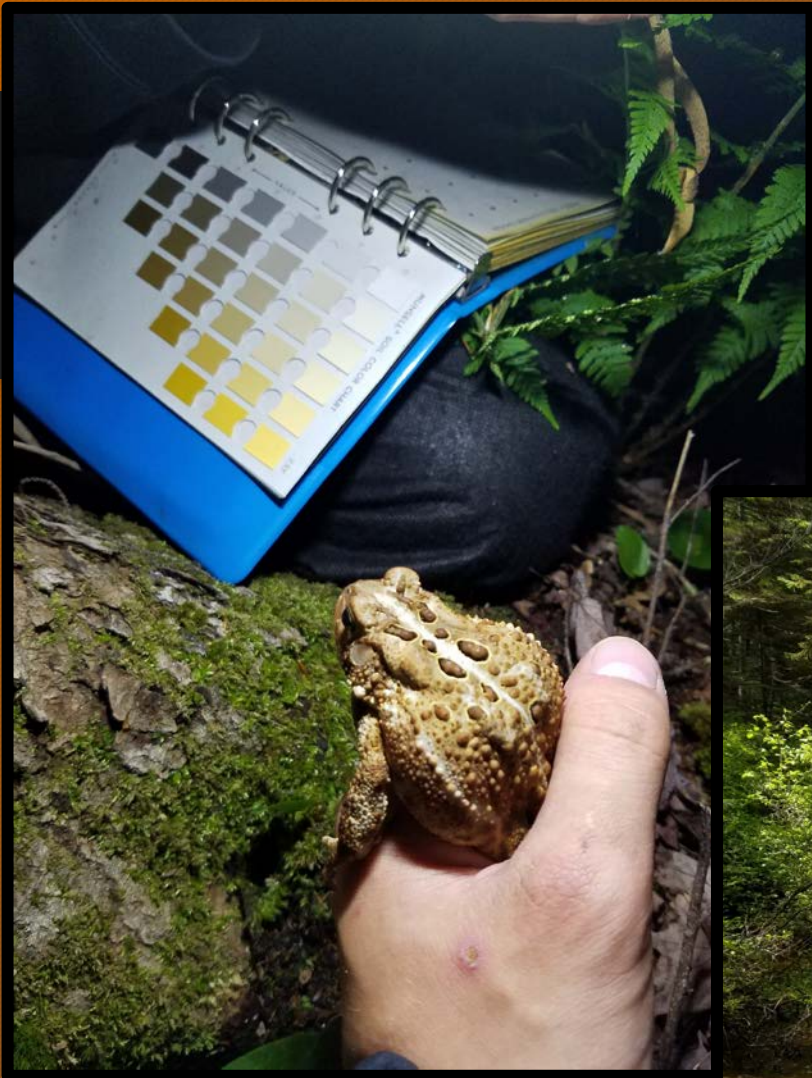
- H_a : American Toads (*Anaxyrus americanus*) are darker and redder in hue as distance from streams and into deciduous forest increases.
- H_0 : There is no significant difference in darkness or hue of *A. americanus* as distance away from streams and into deciduous forest increases.

Methods

- Site locations at four local streams
- Three belt transects (10m x 100m) at each stream
- Dorsal color identified using Munsell soil color system
- Linear regression analysis

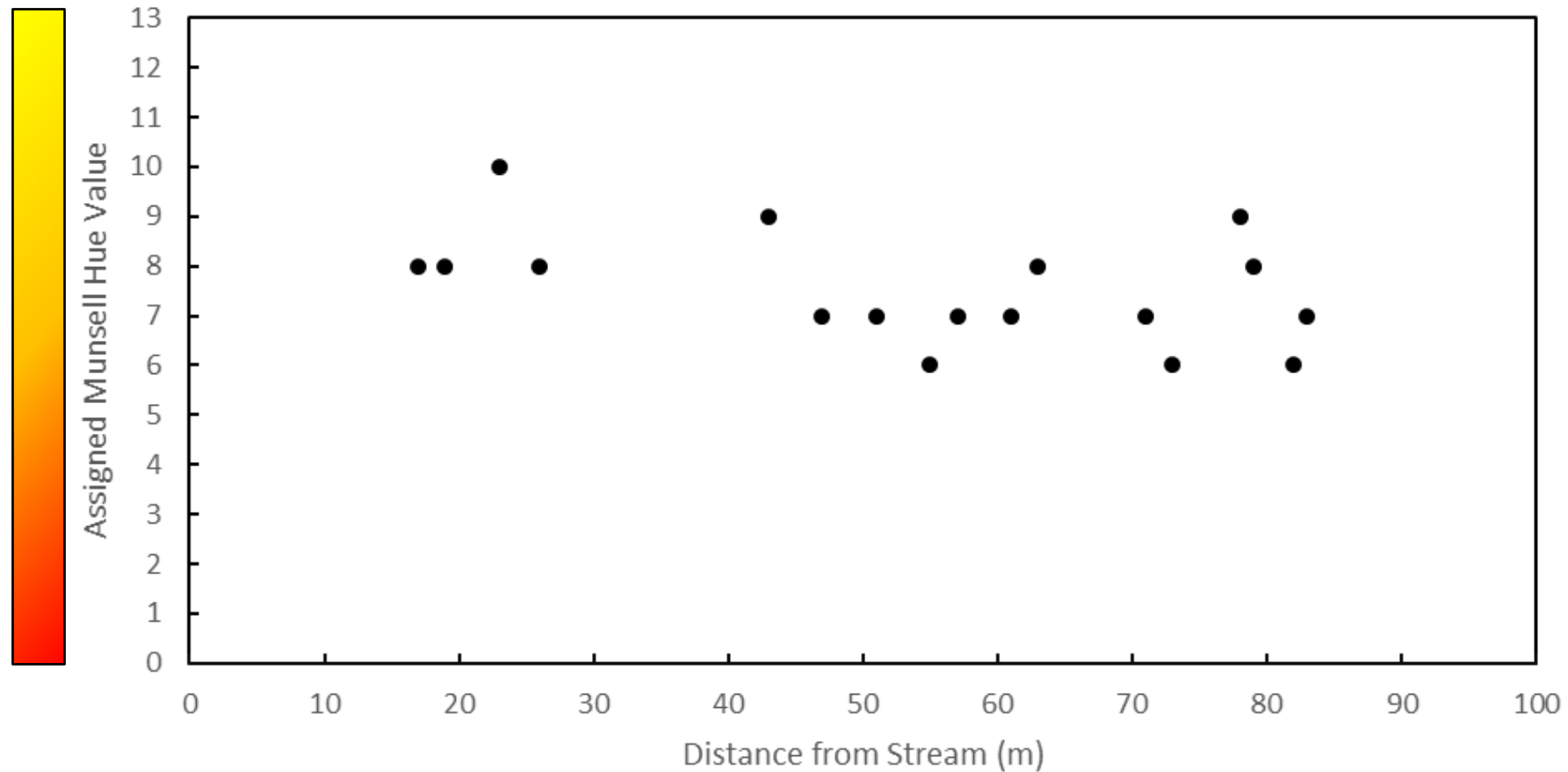


Methods



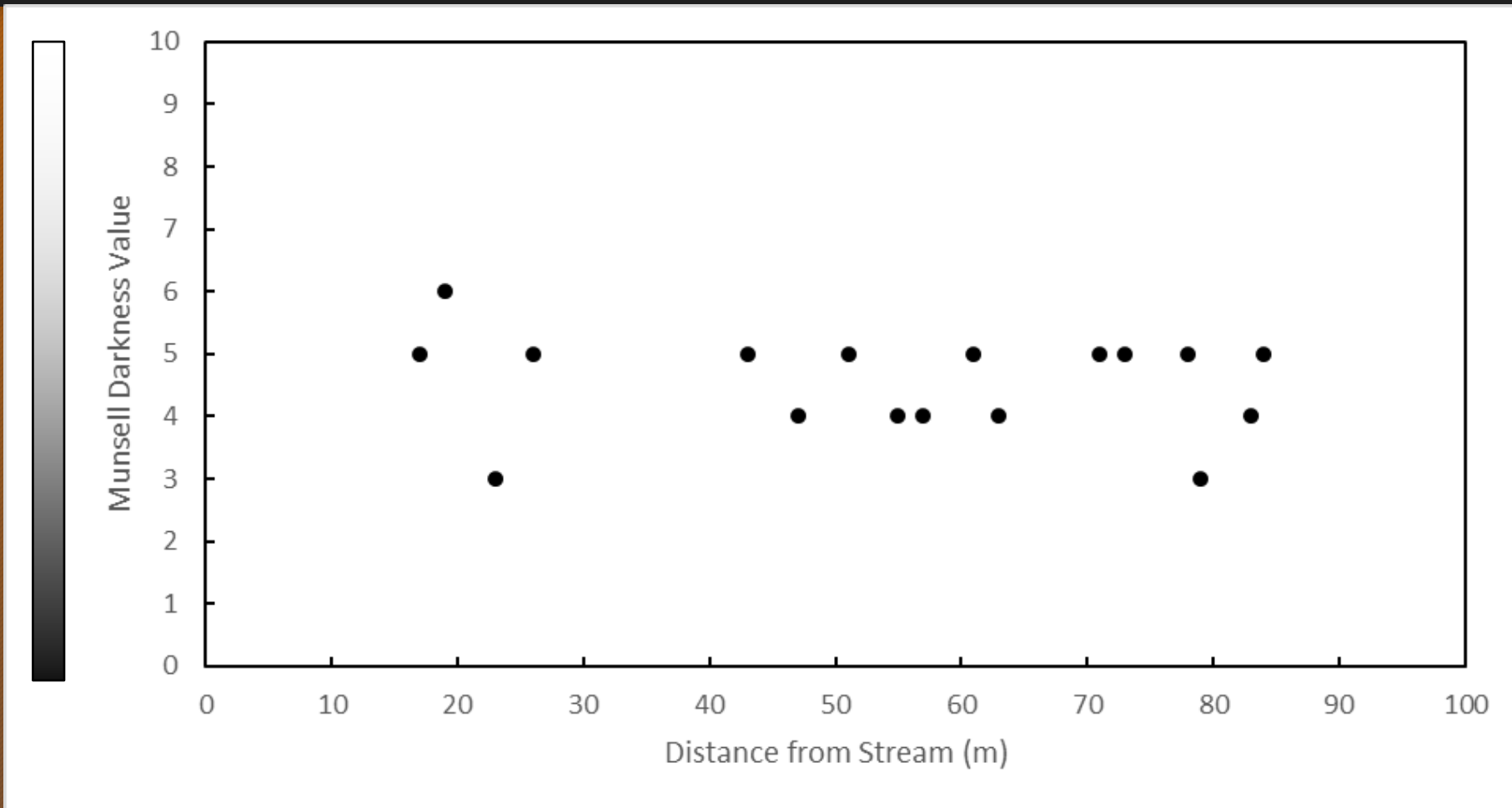
Results

American Toad Hue Over Distance from Stream



Results

American Toad Darkness Over Distance from Stream



Discussion

- We fail to reject the null hypothesis.
- Toads use cryptic coloration to prevent predation
(Heinen 1993)
- Numerous behavioral adaptations further assist in camouflage. (Kats & von Dragt, 1986)
- Toads can also undergo rapid color change to match new environments. (Heinen, 1993)

Discussion

- Results due to poor weather conditions, small sample size, time of year
- More transects, samples, habitats needed
- Analysis of different habitat types and seasons, genetics of toad color



Photo by Bob Pedian

Conclusion

- We fail to reject our null hypothesis based on the data collected.



Photo Credit Bob Pedian

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Questions?



Photos by Matt Wuertzer