

# Factors Impacting Amphibian Abundance in Anthropogenic Vernal Pools

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# Background

- Vernal pools = seasonal wetlands
- Breeding habitats for many amphibian species
- Rapidly disappearing
- Anthropogenic vernal pools
  - Useful in mitigating habitat loss
  - Potential ecological traps





# SUNY ONEONTA

- Two sets of anthropogenic vernal pools
  - SUNY Oneonta BFS Rum Hill property
- Distinct habitats
  - Upland meadow (lower site)
  - Northeastern hardwood forest (upper site)





# Lower Site





# Upper Site





# Methods

- Pitfall traps
- 15 pools
  - 8 Lower
  - 7 Upper
- Daily surveys during spring
  - March – April
- Count number of each species in traps





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# Methods

- Estimating abundance
- Wood frogs
- Bayesian binomial mixture models
- Allows us to take in to account imperfect detection





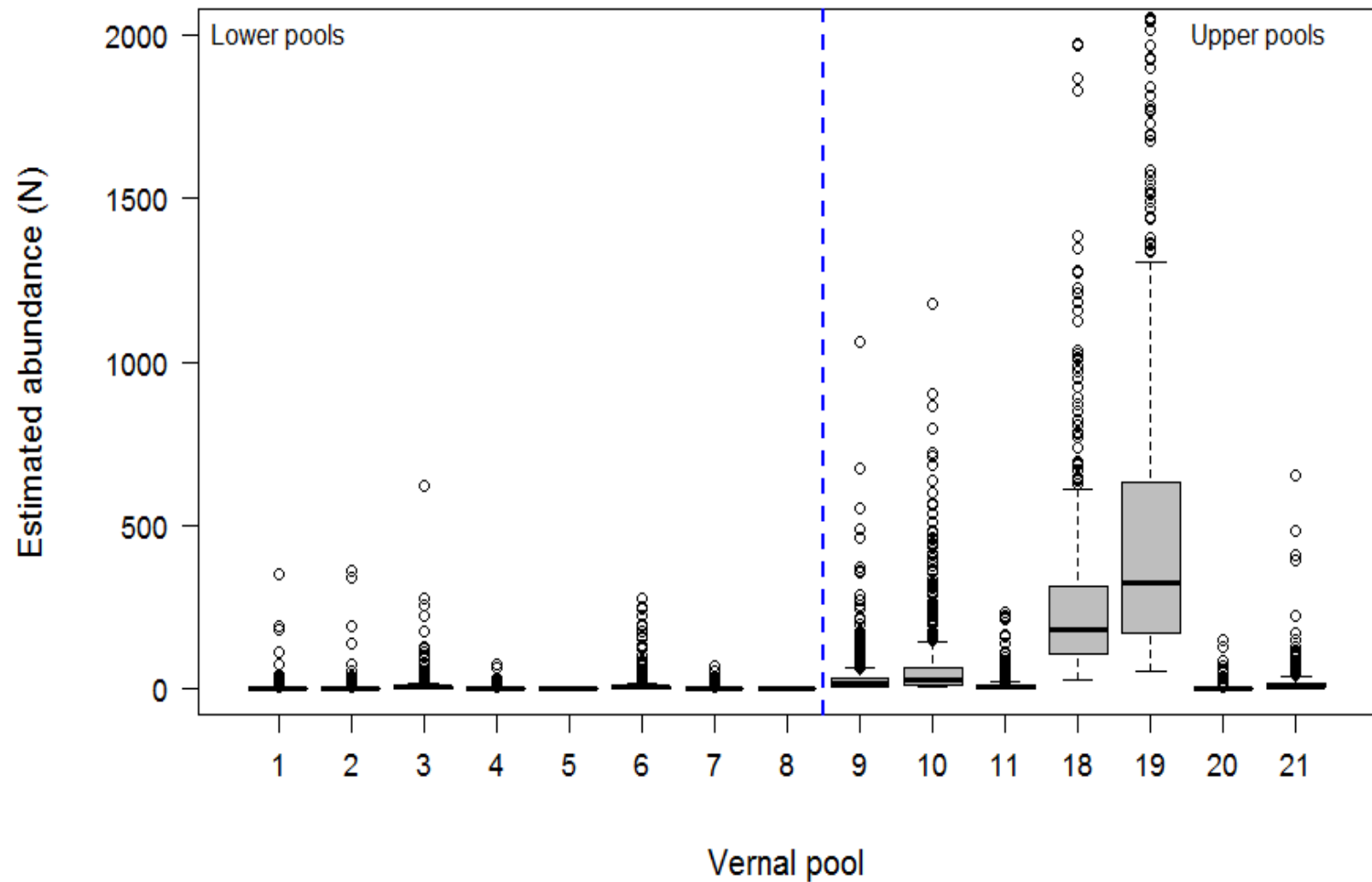
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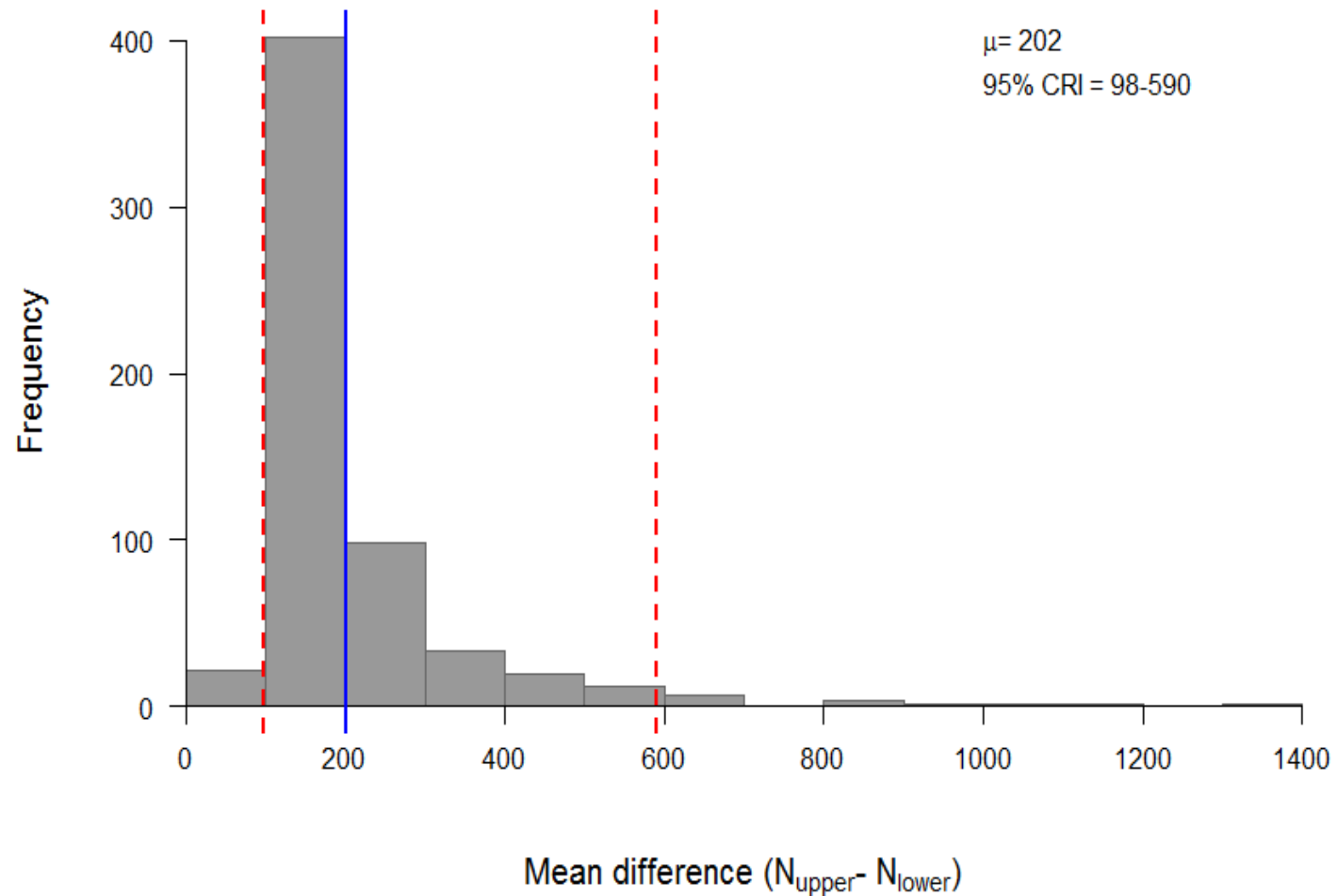


# Results - Abundance by pool





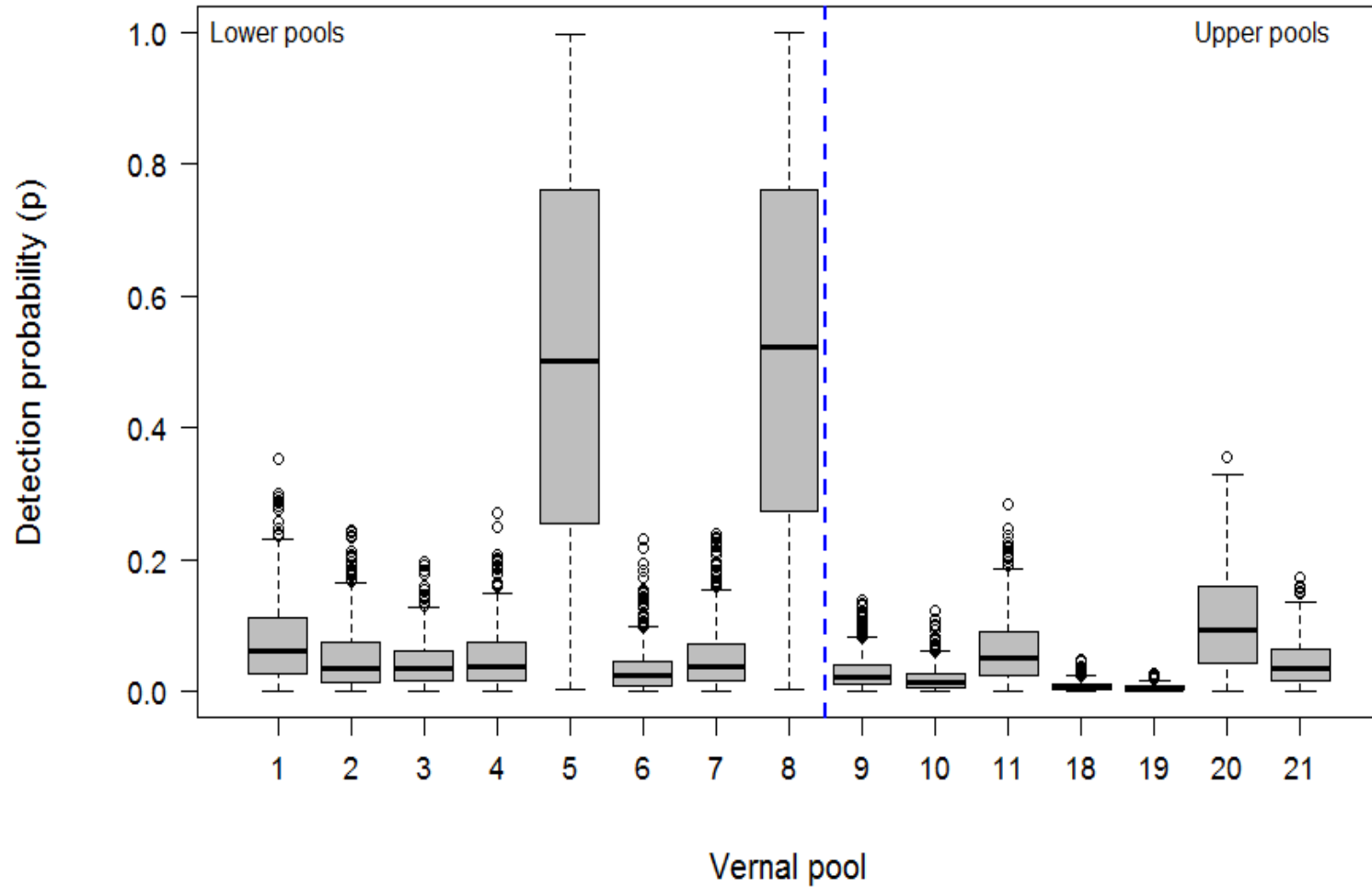
# Results - Abundance Differences





# Results – Detection by Pool

Probability of detection is low





# Discussion

- Detection low, but similar between pools & sites





# Discussion

- Major difference in Wood Frog abundance between sites



Representative catch at upper pools



Representative catch at lower pools



# Discussion

- Differences between sites likely related to habitat characteristics
  - Pool envelope
  - Connectivity
  - Water chemistry
  - Hydroperiod





# Future Work

- Statistical analysis for all amphibians using pools
- Seasonal patterns
  - Abundance & detection
- Another season of data collection





# Acknowledgments

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# Questions?

