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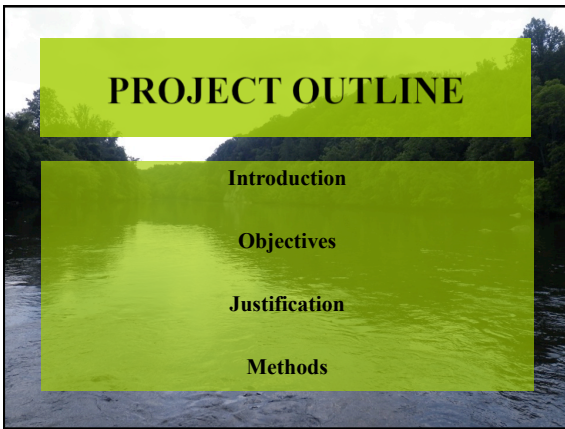
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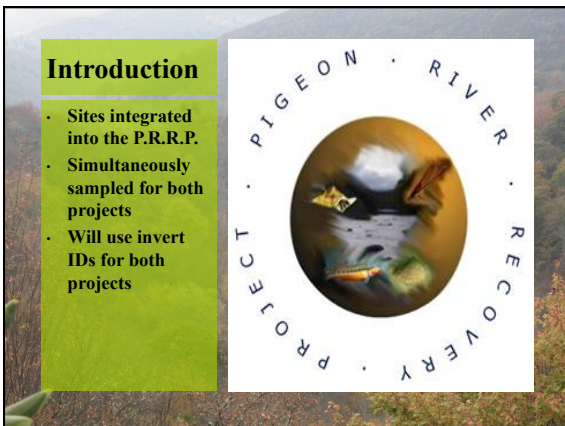
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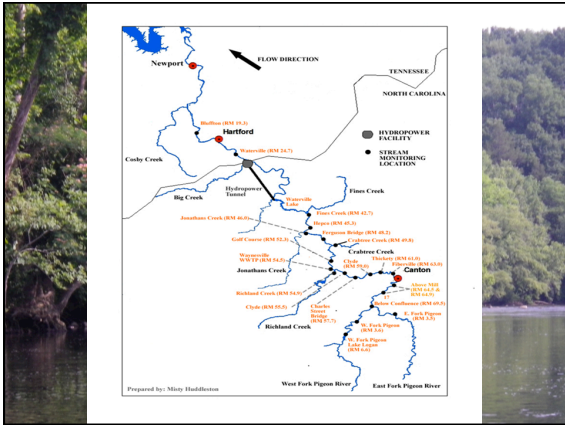
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### STUDY SITES

- 24 sites total
- 10 will be used for comparison
  - Most diverse sites
  - 7 tributary sites
  - 3 main channel sites
  - 8 of 10 in North Carolina.

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### What are aquatic benthic macro-invertebrates?

- Small animals
- Mostly insects
- Live on or in aquatic substrate

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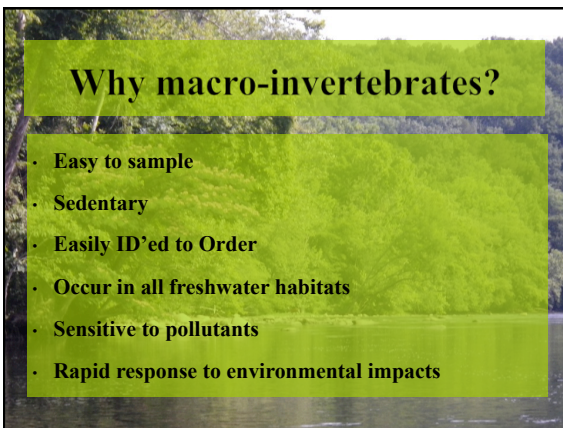
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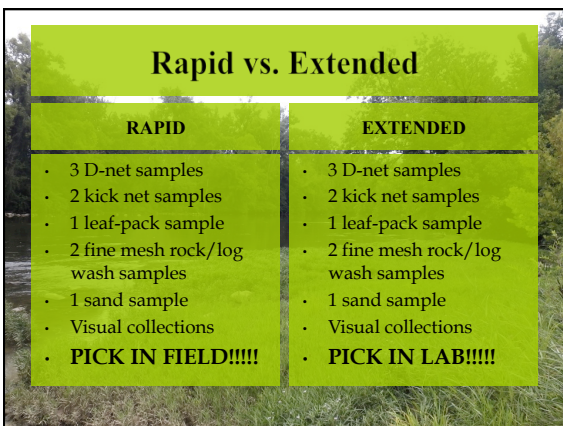
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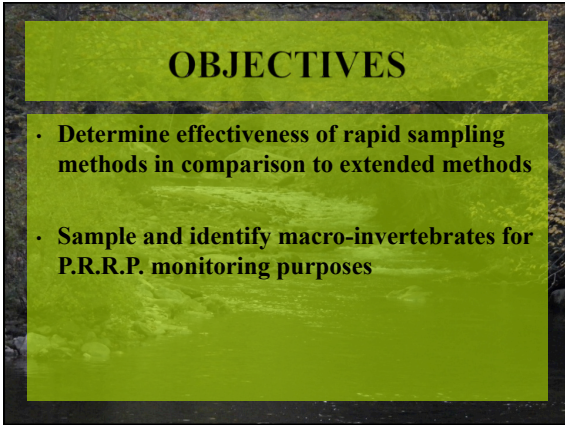
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## OBJECTIVES

- Determine effectiveness of rapid sampling methods in comparison to extended methods
- Sample and identify macro-invertebrates for P.R.R.P. monitoring purposes

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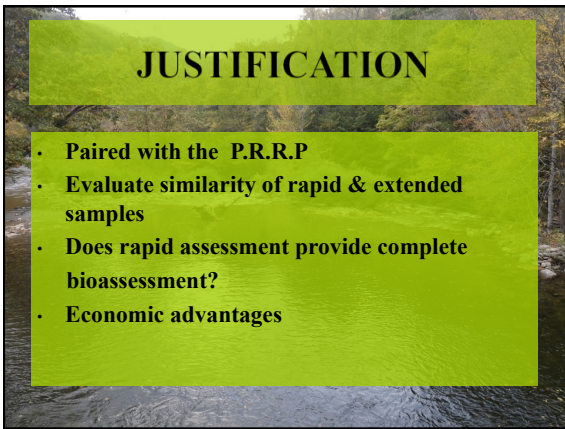
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## JUSTIFICATION

- Paired with the P.R.R.P
- Evaluate similarity of rapid & extended samples
- Does rapid assessment provide complete bioassessment?
- Economic advantages

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## METHODS

### Collection Techniques

- 3 D-nets or Sweep nets
- 2 kick net samples
- 1 leaf pack sample
- 2 fine mesh rock/log wash samples
- 1 sand sample
- Visual collection (Hand picking)

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### Field Picking

- 4-6 people
- 1.5 hours
- 10 specimens per species
- White lab trays



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### Field Picking

- Picked with forceps
- Floated in water
- Stored in labeled, white, plastic jars
- Residual debris stored in 70% isopropyl alcohol



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### Lab Picking

- Residual picked under lights
- Separated into Orders
- Timed picking for further evaluation



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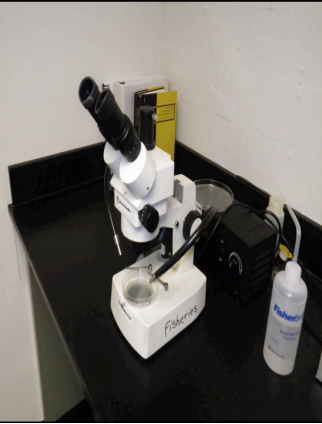
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### Lab Identification

- Use dissecting microscopes
- Identify to lowest level
- Keep residual and field collections separate.



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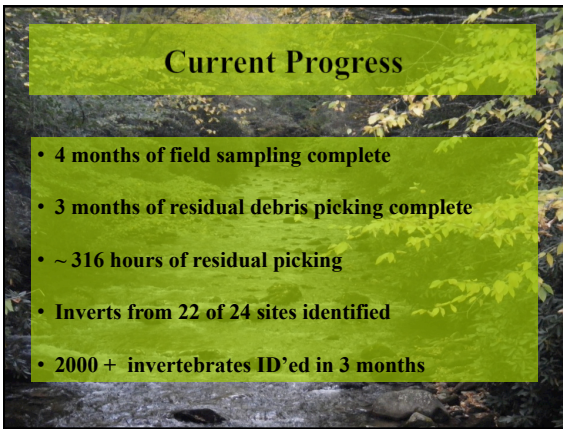
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### Current Progress

- 4 months of field sampling complete
- 3 months of residual debris picking complete
- ~ 316 hours of residual picking
- Inverts from 22 of 24 sites identified
- 2000 + invertebrates ID'ed in 3 months



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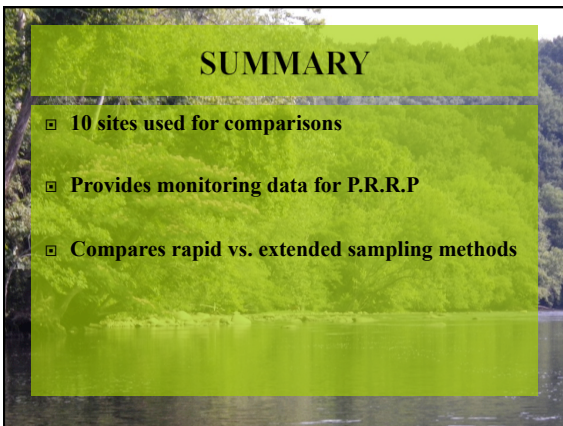
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### SUMMARY

- ▣ 10 sites used for comparisons
- ▣ Provides monitoring data for P.R.R.P
- ▣ Compares rapid vs. extended sampling methods



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## Picture References

- ☐ <http://bugguide.net>
- ☐ <http://www.troutnut.com>
- ☐ Joyce Coombs
- ☐ Keith Garner
- ☐ Dr. Misty Huddleston
- ☐ Justin Wolbert

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## Acknowledgements

Ethan Harnage  
 Jeremy Blaschke  
 Melinda Bousfield  
 Joyce Coombs  
 Jared Chrisp  
 Dr. Dave Etnier (Committee)  
 Keith Garner  
 Dr. Misty Huddleston (Committee)  
 Dan Walker  
 John Wojtowicz  
 Justin Wolbert

Committee  
 Dr. Larry Wilson (Major Advisor)  
 Dr. Dave Etnier (Bug Guru)  
 Dr. Misty Huddleston







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