TEAM PO1: NIMBIS

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How might we help pollution monitoring efforts in the Chattahoochee by noninvasively **tracking bioindicator insect populations**?

70%

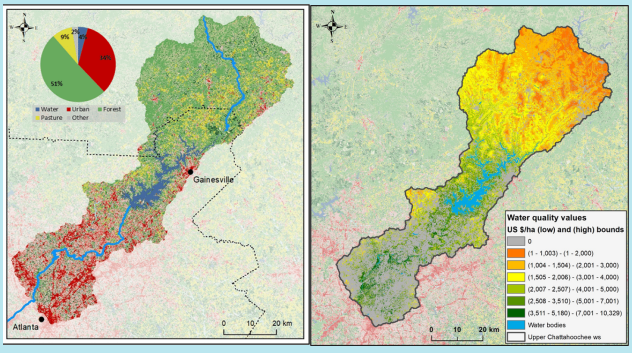
Of the metro Atlanta population receives their drinking water from the Chattahoochee River

Why it Matters

Over 1000 miles

miles of waterways within the Chattahoochee watershed still **do not meet water quality standards**.

The Chattahoochee river provides huge economic and social benefits to the state of Georgia. It is used for drinking water, fishing, and recreation, yet pollution from farms and urban areas (shown in yellow and red) threatens the health of the river.



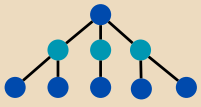
Current Monitoring

- E. Coli testing
- Hand sampling **requires volunteers** (and kills bugs!)
- **Expensive** turbidity sensors for constant monitoring

Our team participated in a volunteer event organized by the Neighborhood Water Watch (NWW) where we saw first hand how labor intensive this sample collection can be. With hundreds of volunteers sent to sites miles away this was certainly no easy task to pull off.

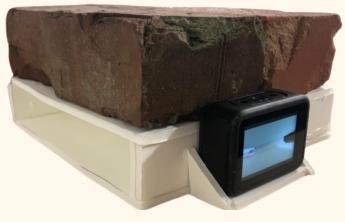
Key Insights

- Continuous monitoring is very **expensive** (and potentially damaging)**.**
- Large portions of river can be tested using **minimal testing** locations **at key nodes**.
- The population of **native insects correlate with water pollution** levels; their larvae hide under rocks in the river (EPT Index).



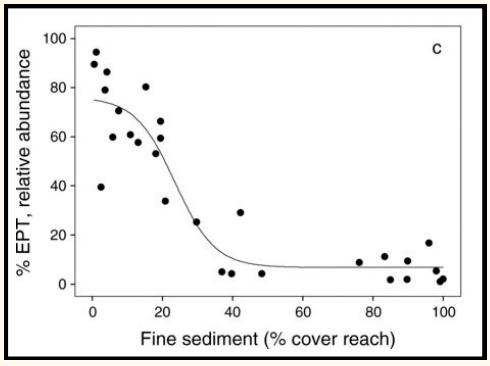
Our Solution!

Non-
Invasive
Monitoring of
Bio
Indicator
Species



What it is:
An artificial hiding place for larvae that monitors them, not disturb them.

Why it's valuable:
Provides cheap and continuous sampling with little manpower and no environmental damage.



Example of Using the EPT index to correlate bug populations to pollutant levels