

Clean Water or Bust!

Our Study of the Upper Little Miami Watershed



By: Tiantian Zhang, Sarah Mayo, and Haley Kauffman

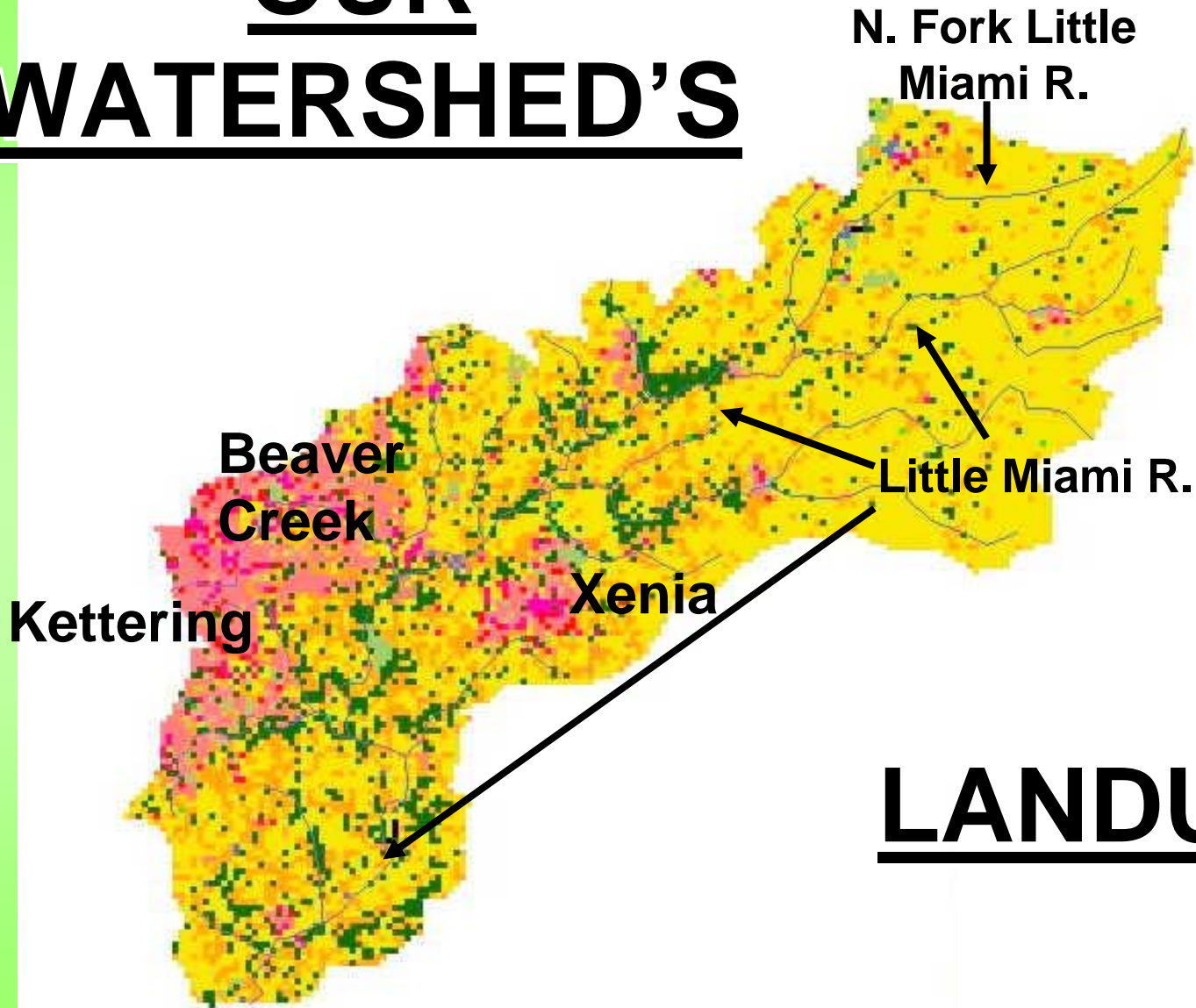
Background Info.



- Located in SW Ohio
- Most land is used for agricultural purposes
- Counties in our watershed
 - Warren
 - Greene
 - Clark
 - Madison
 - Montgomery



OUR WATERSHED'S



LANDUSE



What are the Problems?

- The river is facing....
 - Nutrient enrichment
 - Pathogens
 - Turbidity
 - Ammonia
 - Other habitat alterations



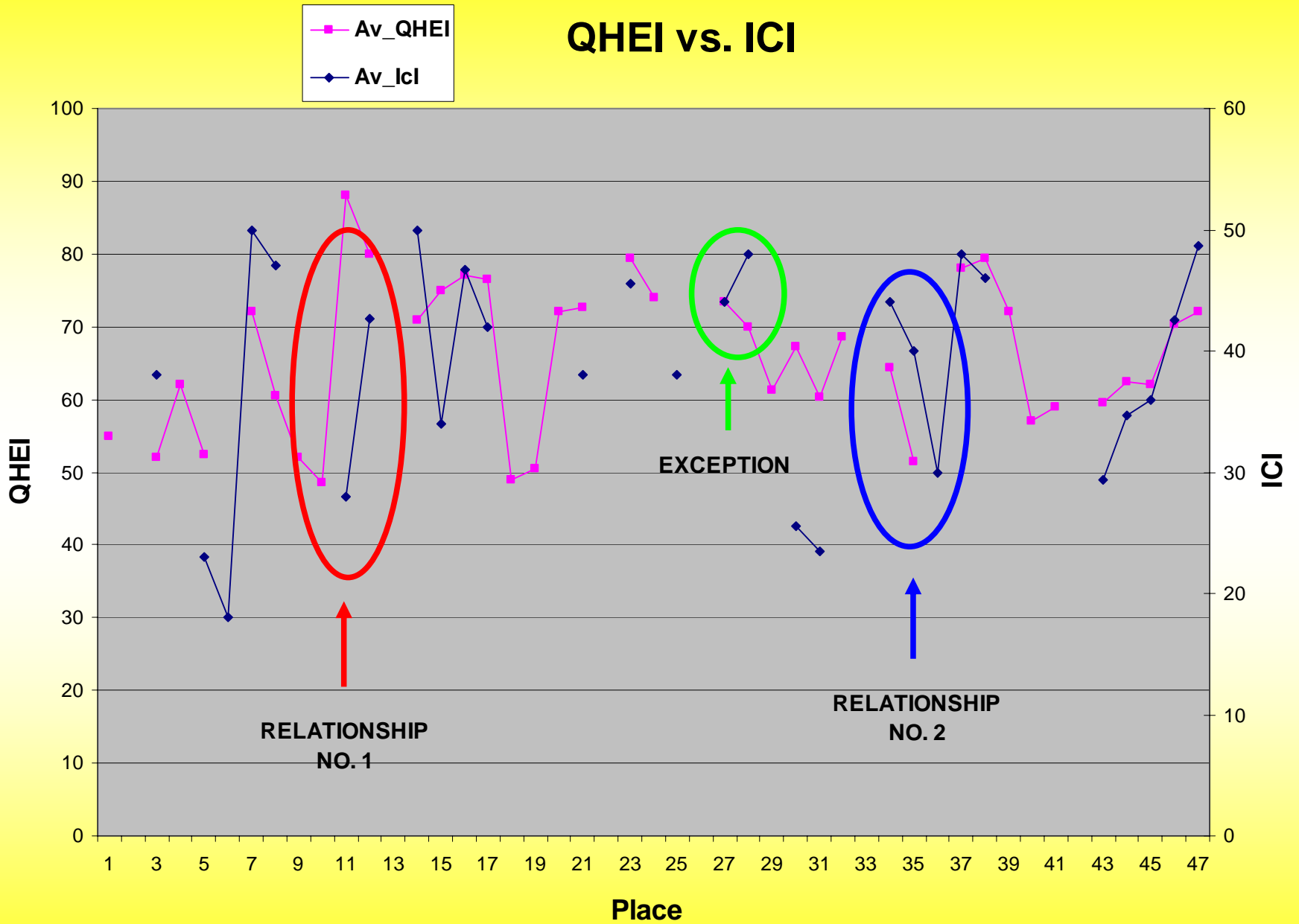
Haley's Hypotheses



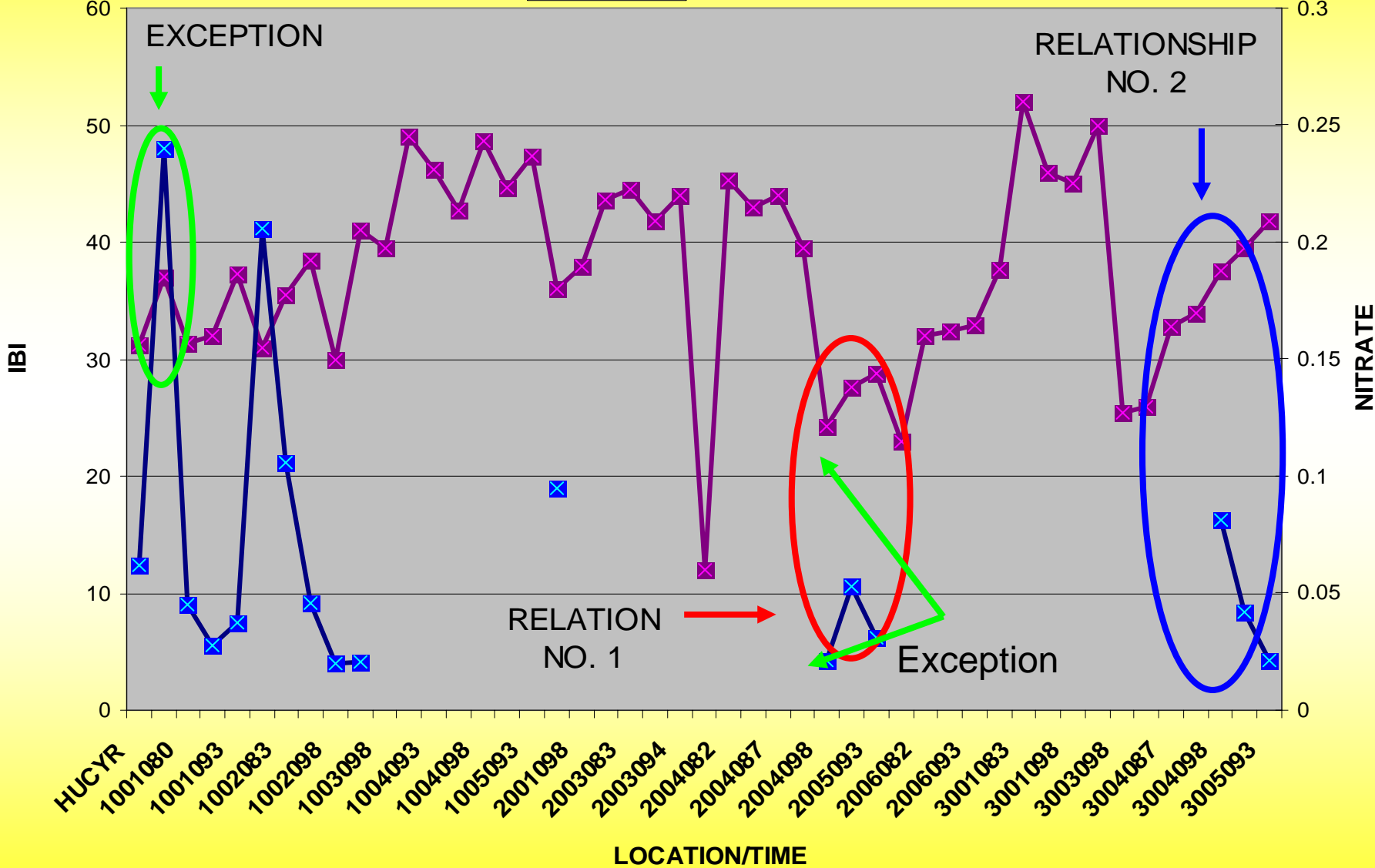
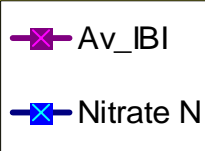
- As the nitrate level increases, the IBI (fish) will decrease.
- As the QHEI (habitat) decreases, the ICI (macroinvertebrates) will decrease. If the QHEI increases, the ICI increases.



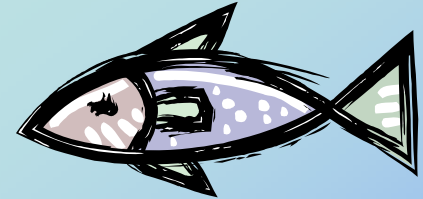
QHEI vs. ICI



IBI vs. NITRATE



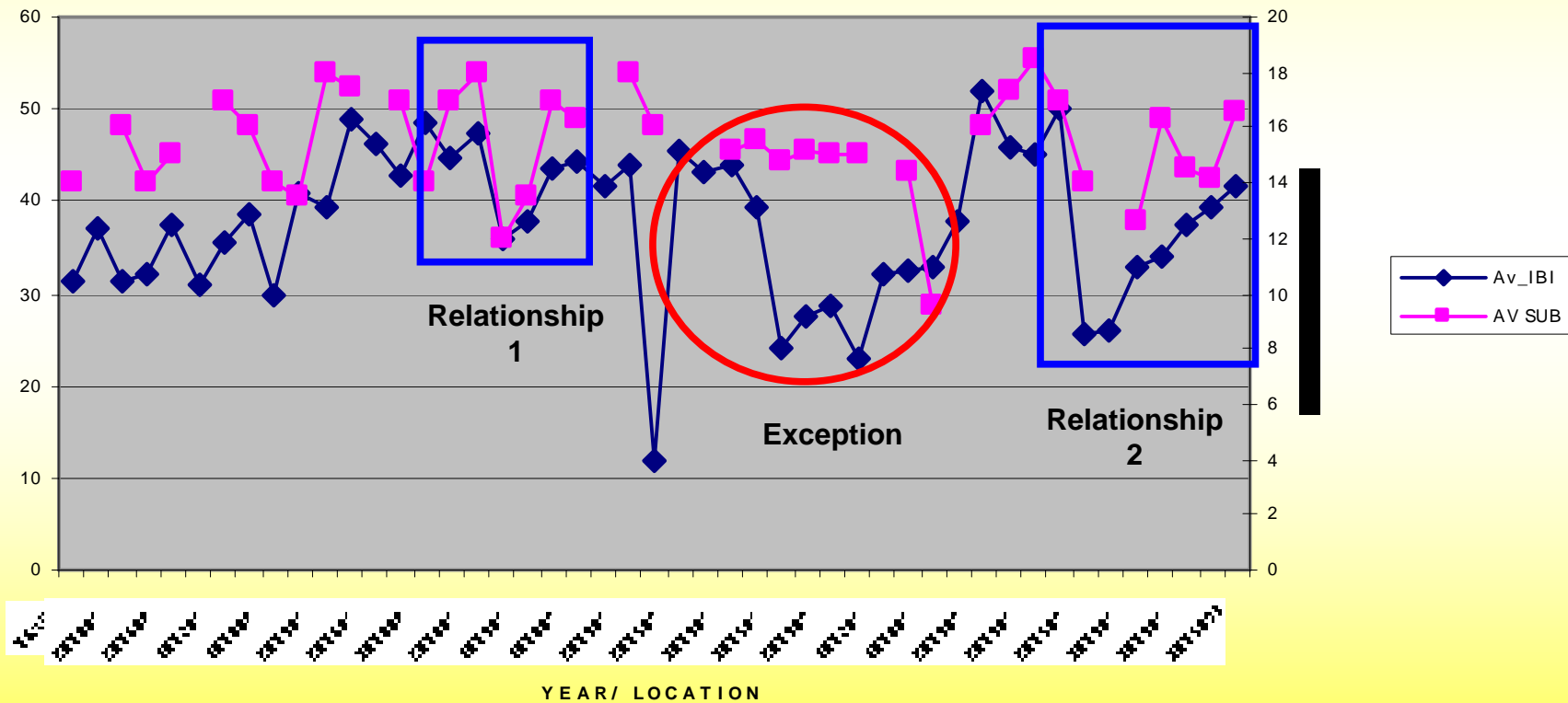
Sarah's Hypothesis



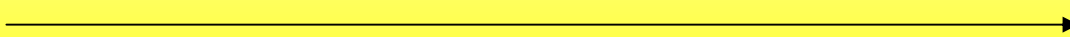
- As substrate quality decreases, the IBI decreases.
- As substrate quality increases, IBI increases.

What I See: The IBI vs. The Substrate

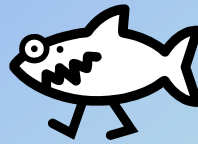
IBI VS. SUBSTRATE



1979

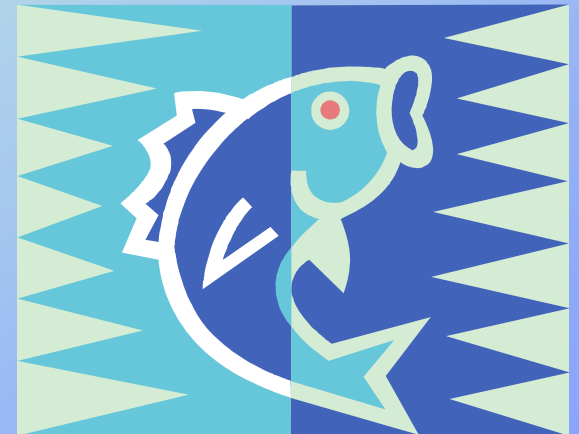
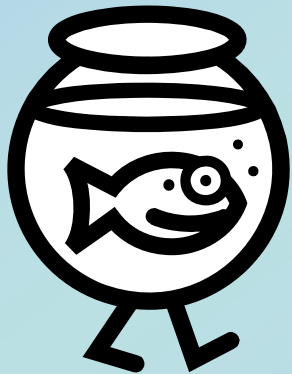


1998



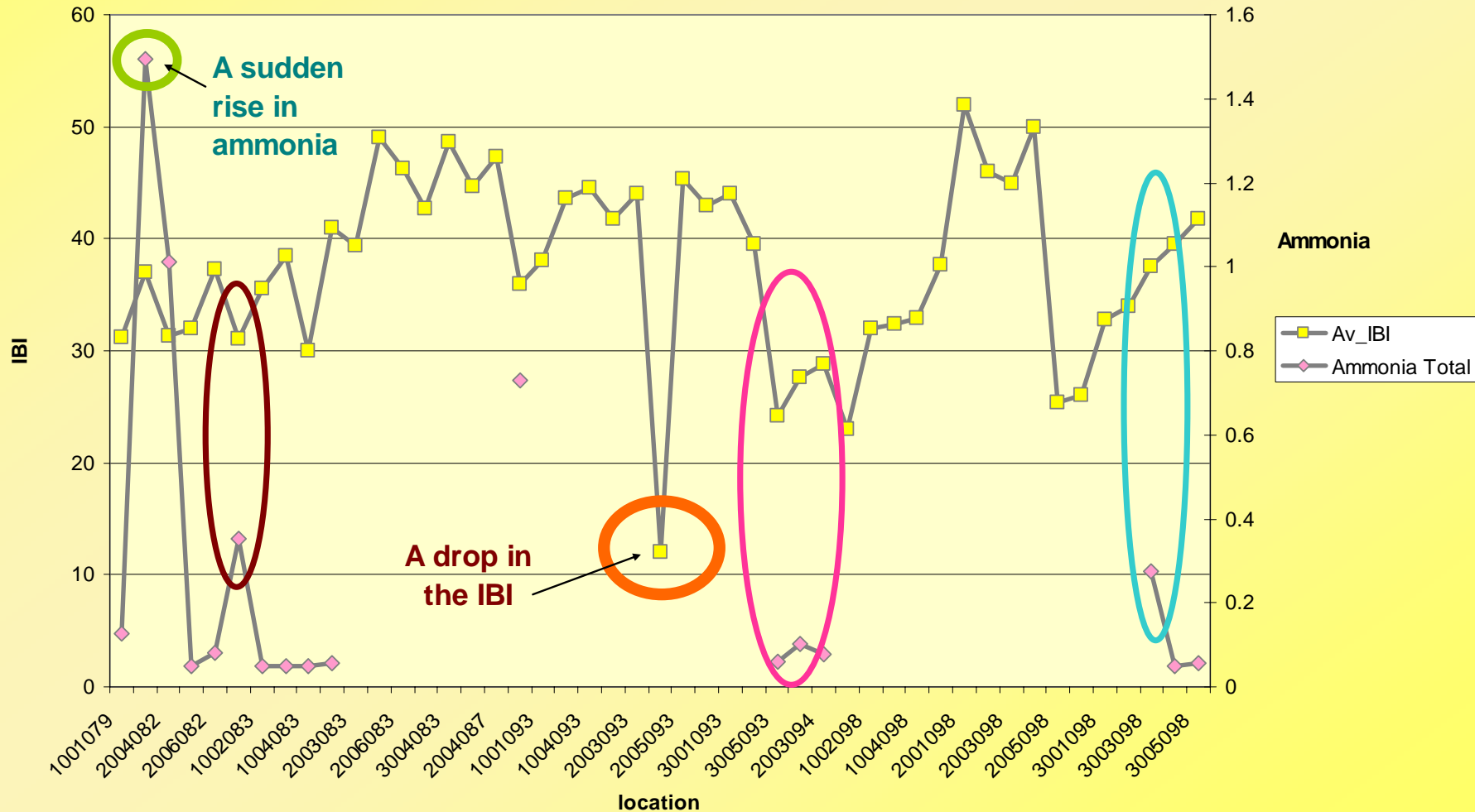
Tiantian's Hypothesis

As ammonia levels increase, IBI levels
decrease
(vice versa)



Analysis

Ammonia vs. Av. IBI



Conclusions

- From the data we studied, all of our problems are sources of non-point source pollution
- These are some of the causes that make the IBI or ICI decrease:
 - High nitrate levels
 - High ammonia levels
 - Siltation and sedimentation



Why You Should Care

- If a watershed upstream is impacted, it could impact downstream waterways.

What do you want to see every morning?



You Decide!

Conservation & Prevention

- *Everyone* needs to be aware of prevention methods like:
 - Maintaining the buffer zone
 - Wash cars at the car wash
 - Use environmentally friendly products
 - Practice no till farming
 - Join/Support watershed conservation groups

Acknowledgements

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- OSC for letting us take control of the building
- Chaperones – Ashley and Becky for transportation
- Directors – Leslie and Kathryn for organizing camp
- Teachers
- Science Advisors – Steve and Katie
- Food man Jared
- Mark Birkle – scenic photographer
- Camera Crew – Devon, Jameson, and Elliot
- Parents
- All presenters/speakers
- Shannon



P.S... Test Time!

1. What does IBI measure?
2. What does ICI measure?
3. What characteristics make a stream a healthy habitat? (Name three)
4. What is another word for QHEI?
5. Name at least one watershed discussed today.
6. Out of the 6 watersheds, do you know which one is closest to your home?
7. Name 1 way you can prevent polluted streams.