



# Baird Creek Water Quality Data (Fall 2003-Fall 2007)

Lucas Bartlett, Heather Duquaine, Courtney Kuehn, Kevin McDonald, Brian Neiheisel, Jennifer Short,



## Abstract

Phosphorus Levels in Baird Creek

School: Preble H.S.

Teachers: Chris Hansel, Kevin Hendricksen

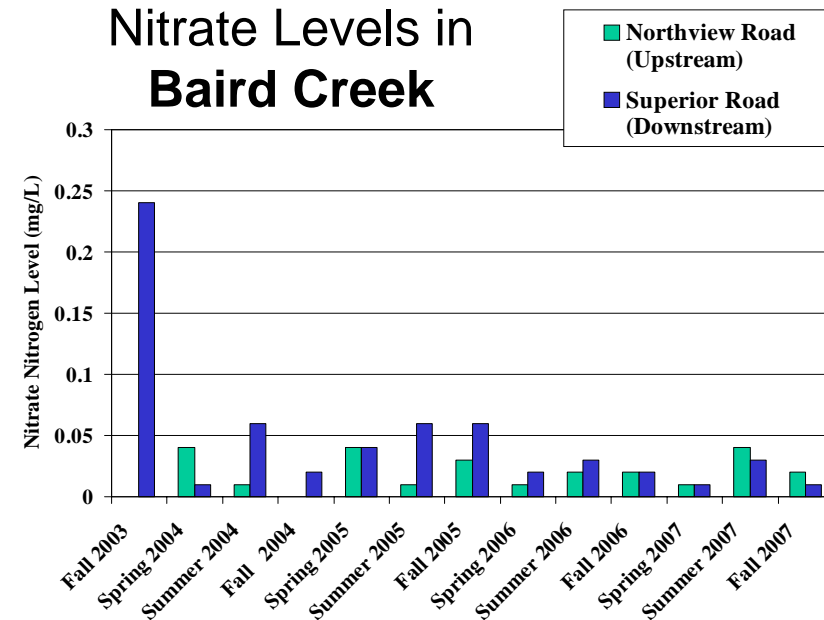
Stream Monitored: Baird Creek

Student Participants: Lucas Bartlett, Heather Duquaine, Courtney Kuehn, Kevin McDonald, Brian Neiheisel, Jennifer Short, Danielle Strebel

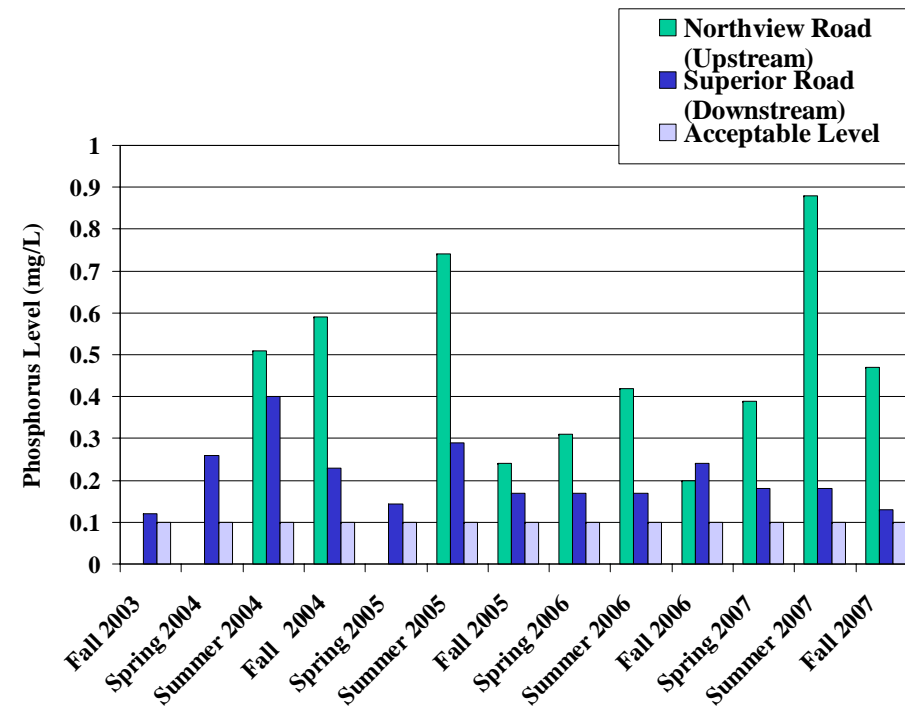
In an ongoing study beginning in October 2003, assessments of Baird Creek phosphorus, nitrate nitrogen, and ammonia nitrogen levels was begun by Preble High School students as part of the Fox River Watershed Monitoring Program. Testing indicated that the phosphorus levels were significantly higher in the upstream region of the creek than in the downstream area. Repeated analysis of the water over the course of two years yielded constant results. With the data being consistent and valid, possible questions are being raised as to why the upstream region of the creek is more phosphorous-rich than the downstream region. Further in-depth analysis of the creek will potentially give conclusive data as to the source of the phosphorus – an aberration compared to other area creeks. There is no significant data to report concerning nitrogen levels in Baird Creek.

## Nitrate Nitrogen Levels

### Nitrate Levels in Baird Creek



## Phosphorus Levels



## Conclusions

- Our original research hypothesis was that Phosphorous levels rose as we tested further downstream due to nutrient rich runoff coming in from the surrounding watershed.

- The original hypothesis was contradicted by higher phosphorus levels upstream in both 2004 and 2005.

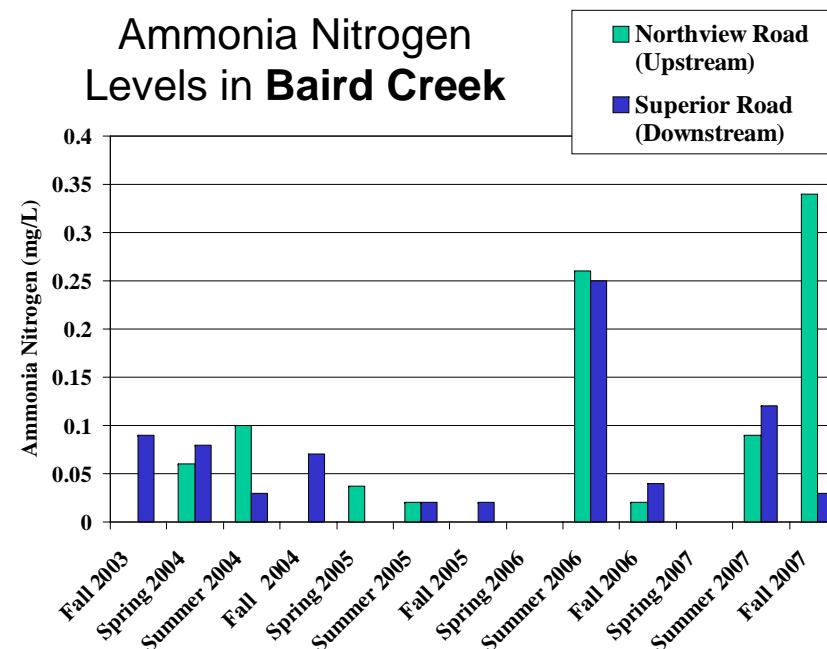
- Our results seemed counterintuitive so we compared our results to other local streams to see if our observations were atypical. The additional samples were taken from Apple Creek, Duck Creek and Spring Brook; some phosphorous levels were higher upstream than down; however, no apparent pattern was noticed.

- In 2005, we realized that we had only been collecting from the north branch of Baird's Creek, when two branches, one North and one South, merge and flow into our Superior Rd. location. We formed a new hypothesis that the South branch was diluting the phosphorous levels of the North branch.

- Our results have supported this new hypothesis five out of six test dates during 2005 and 2006. However, we realize that testing of streamflow in the South branch needs to be made in order for accurate analysis.

## Ammonia Nitrogen Levels

### Ammonia Nitrogen Levels in Baird Creek



- Future Questions

- Surveys to determine possible sources:

- Farmers
- Homeowners
- Golf Course Owners
- Landowners

- Soil Testing

- Sediment
- Surrounding Soil

- Testing more sites

- 2 or 3 points between Superior and Northview
- Test for other nutrients in the water or soil
- Test streamflow of South branch