

## **Siltation Related to Beaver Dam Decomposition in the Little Kankakee River**

McKenzie Kelly, Chris Bitcheno, Alyssa Thacker, Jon Gardow, Arissa Wallis

*Departmental Affiliation:* Biology  
College of Arts and Sciences

The Little Kankakee River (LKR) in LaPorte County, Indiana is an uncommon example of a good, cold-water fishery in northwest Indiana. However, the river has variable sedimentation levels; deep silt often covers gravel and sand, smothering invertebrates, a key food source for higher trophic organisms. The LKR contains a naturally-decomposing, abandoned beaver dam. The purpose of this study is to monitor its impact upon upstream and downstream silt levels. This research intends to identify possible sources of variability in silt levels, benefiting restoration teams in determining effects of dam removals. Furthermore, understanding the impact and pattern of silt levels could aid the monitoring of river health. Water depth, silt depth, flow rate, and a description of the river bed are measured and recorded. Flow rate fluctuations will be charted against monthly precipitation, noting changes in flow. It is predicted that the beaver dam causes fluctuating siltation by collecting silt upstream and then releasing variable amounts during dam decomposition. Preliminary results indicate the narrow sections of the river have faster water flow and less silt. The beaver dam impedes flow, widens the river, and reduces velocity, allowing fine sediment to accumulate. It is predicted that if the beaver dam decomposes rapidly, then trapped silt above the dam will percolate rapidly through the system stopping at wide sections of the river. If the beaver dam deteriorates slowly, then silt accumulations may not be measureable and leave silt in the system much longer.

### *Information about the Authors:*

McKenzie Kelly is a senior biology and psychology major with minors in chemistry and Spanish. She is the president of the VU Biology Club and became interested in this project through volunteer work done with the club. Currently, she is planning to pursue a graduate degree in the area of neuroscience. Chris Bitcheno graduated from VU in 2010 with a degree in geoscience. He was one of the original students assigned to the project. Alyssa Thacker is a senior biology and humanities double major. She became involved in the LKR project by working as a student aid for Dr. Davis and participating in stream restorations through the Biology Club. In the future, she hopes to attend Iowa State University's School of Veterinary Medicine. Jonathan Gardow is a senior biology major. He became interested in ecosystem monitoring through Dr. Laurie Eberhardt's ecology class. After receiving his degree, he plans on going into medical and pharmaceutical sales. Arissa Wallis is a senior biology major with interests in water ecology.

*Faculty Sponsor:* Dr. Grayson David

*Student Contact:* [mckenzie.kelly@valpo.edu](mailto:mckenzie.kelly@valpo.edu)