

Strategies to Involve County Surveyors in Watershed Enhancement

2013 Indiana Watershed Leadership Academy
Final Project

Gary Moody
Daragh Deegan
Sarah Todd

Problem

- Construction and maintenance of regulated drains by county officials under Indiana Drainage Code is often done in a manner that conflicts with watershed health.
- Regulated Drains represent a significant portion of streams in Indiana
 - 85% of all tributary waterways in the White River Basin are legal drains, according to a 2000 USGS study

Swamp Act of 1850



Problem

- Most regulated drain projects significantly degrade stream quality
- Many activities by county drainage boards may conflict with the Clean Water Act
- County Surveyors tend not to be involved in watershed efforts
- Efforts by watershed groups may lack efficiency and impact without County Surveyors' cooperation

Problem

- Common Stream Quality Issues in Regulated Drains
 - Streams are straightened
 - Banks are unstable and eroding, or armored
 - Instream substrate is homogenous
 - Little instream habitat
 - Poor water quality
 - Poor biological communities

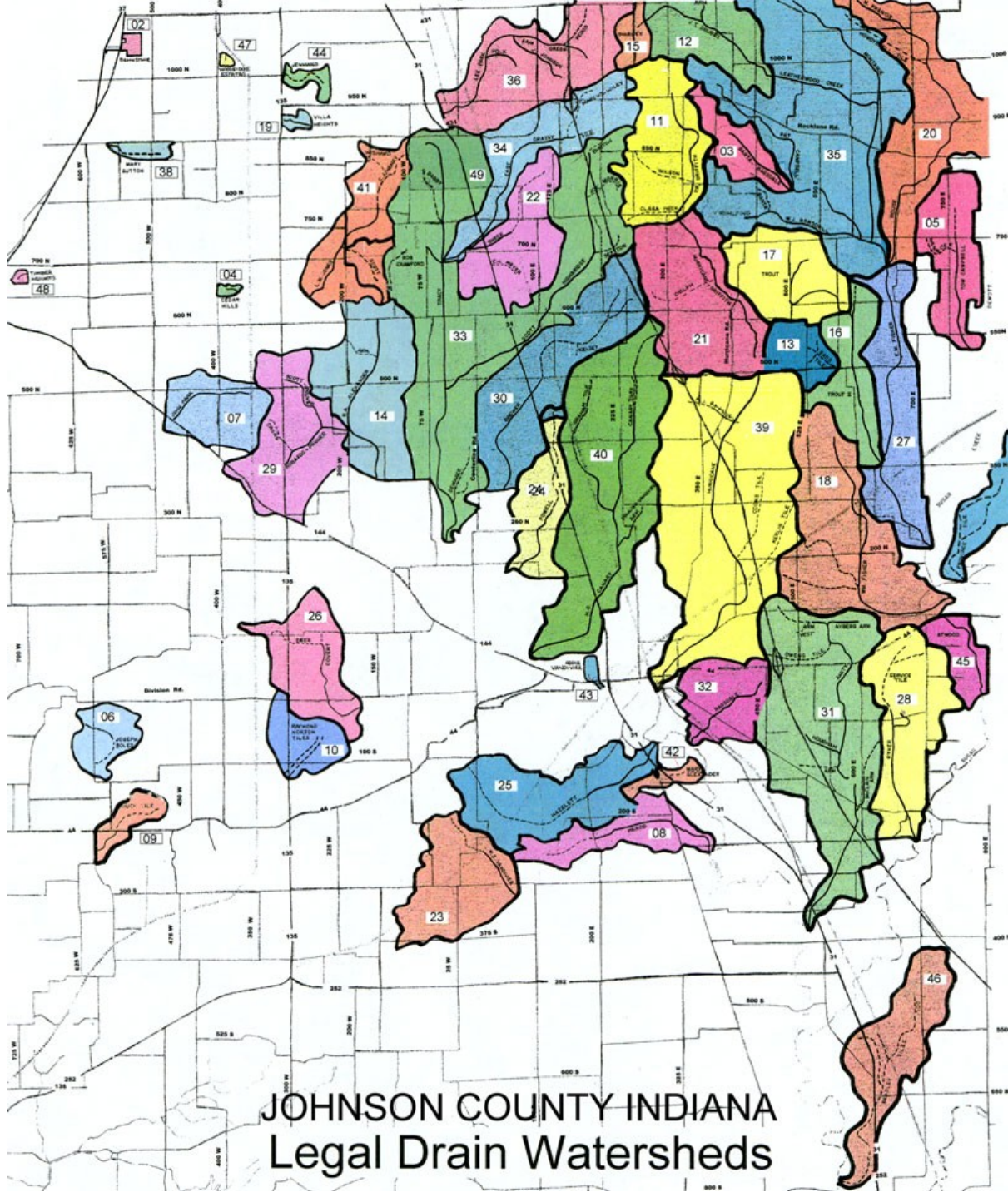




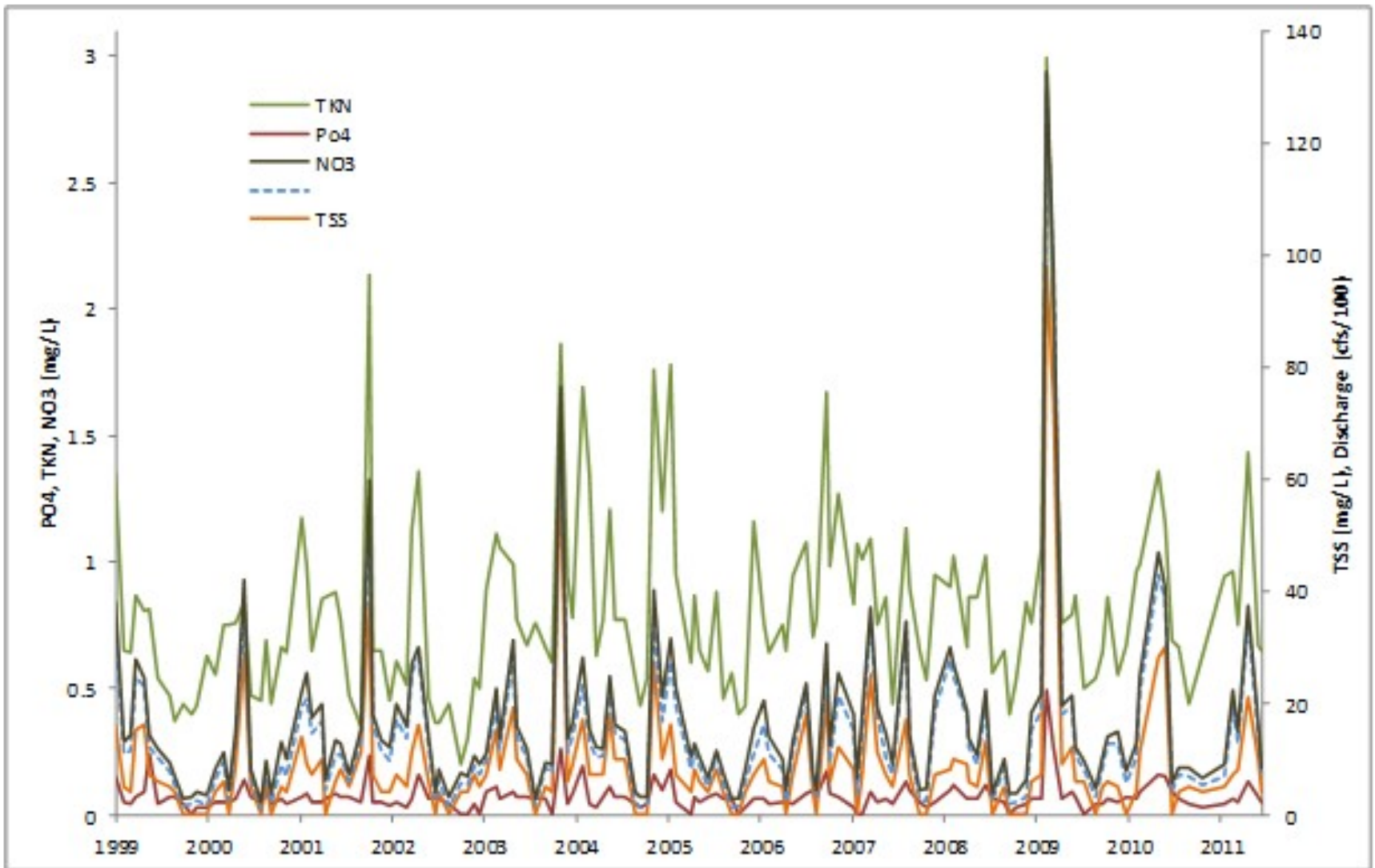
Indiana streams in their natural state tend to be sinuous, with adequate flood plains and riparian habitat.



- Local examples:
 - In a 2003 study of the Youngs Creek Watershed in Johnson County, most of the sites located within regulated drains were determined to have stream Qualitative Habitat Evaluation Index (QHEI) scores less than 51. A score of 51 or lower is considered to be too low to support healthy aquatic communities.



JOHNSON COUNTY INDIANA
Legal Drain Watersheds



IDEM Fixed Station Elkhart River, Elkhart. All of the river's tributaries are regulated drains resulting in a flashy flow regime significantly correlated with pollutant concentrations

Strategies for Change

- Use the Clean Water Act
 - 319 Grants: The state should require that County Surveyors, drainage boards, etc. fully participate in watershed studies & projects
 - NPDES/MS4 regs: Many MS4 utilities do not have legal agreements allowing county regulated drains in their jurisdiction
 - Indiana Drainage Code must comply with the CWA

Strategies for Change

- Use Indiana Law
 - Required training for County Surveyors, etc.
 - Watershed-based training
 - Hydrology, water quality, aquatic biology
 - Indiana Drainage Handbook
 - Update, complete, conform to Clean Water Act
 - Define & discourage “worst management practices”
 - Reform Drainage Code based upon revised Handbook
 - Require evaluation and use of BMPs

Strategies for Change

- Leverage Common Values
 - The cost of drainage projects
 - Tax Dollars used
 - Are all taxpayers, public “benefited”
 - “Double-dipping” in MS4 areas
 - Flooding
 - Connection between water quality and quantity

Hoosiers treasure our rivers and streams, and always will.

