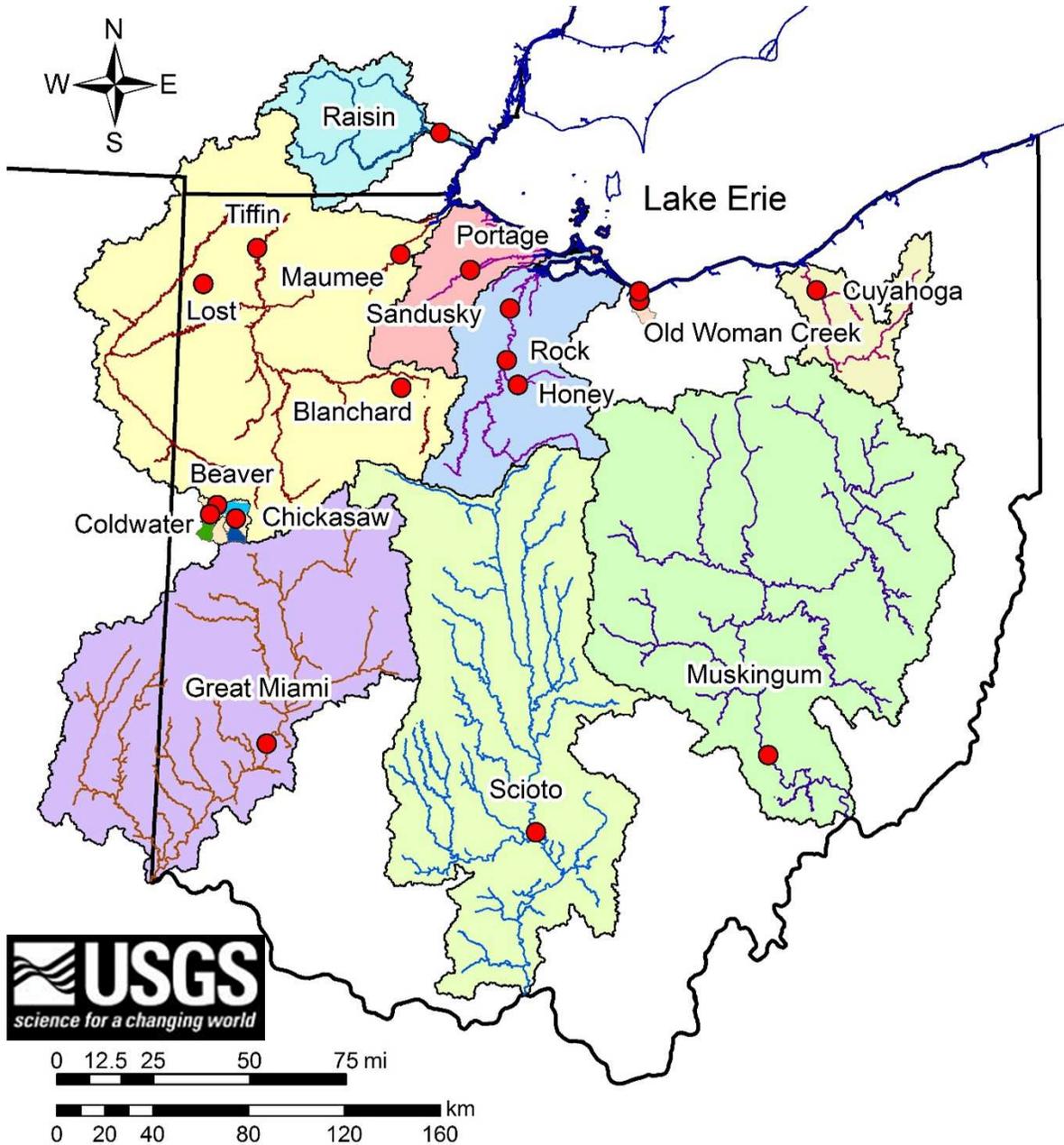


Updates from the National Center for Water Quality Research at Heidelberg University

Laura Johnson

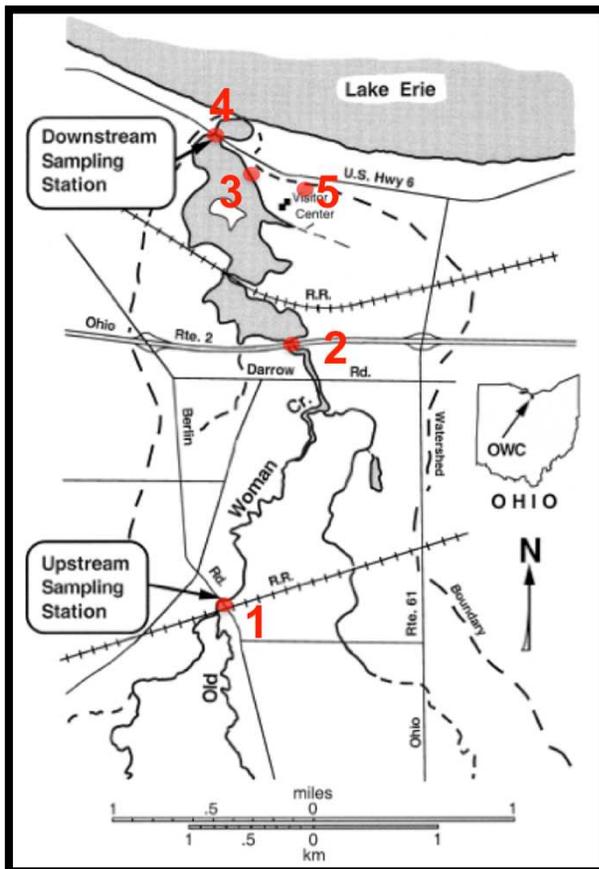


Heidelberg Tributary Loading Program



Opening the Black Box of Nutrient Processing in a Great Lakes Coastal Wetland

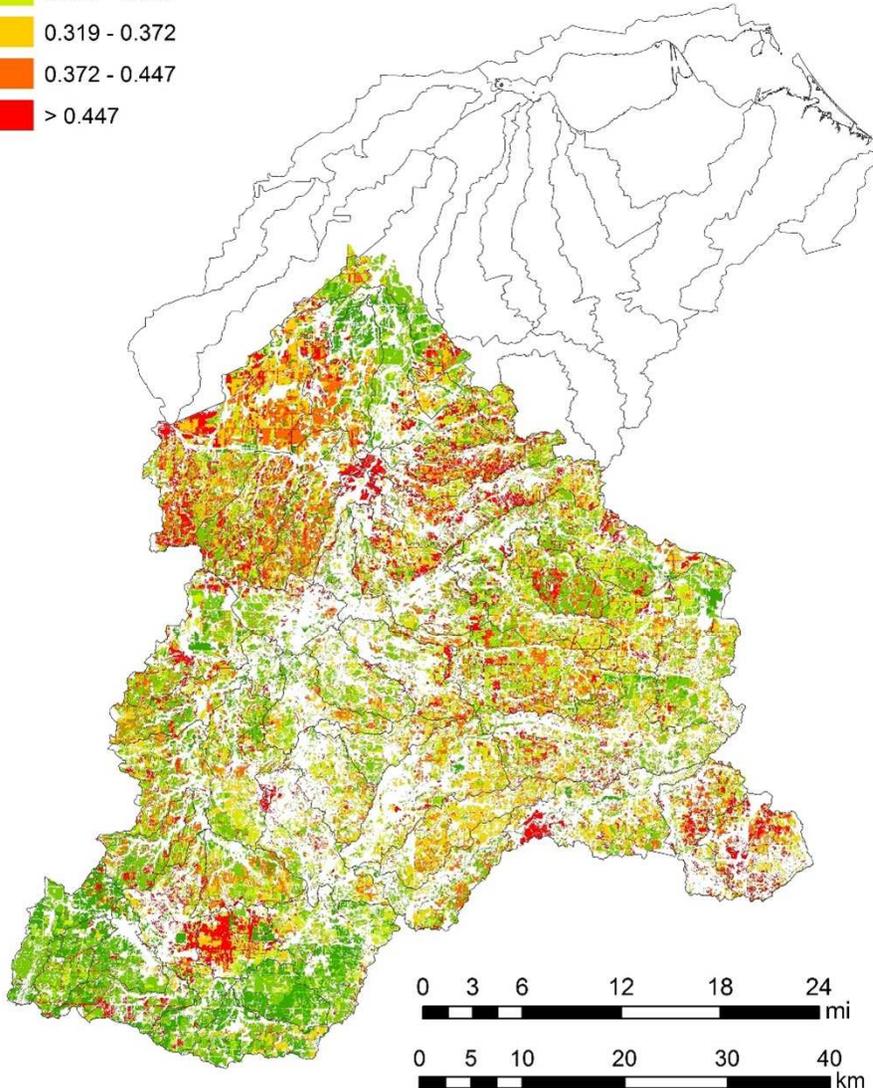
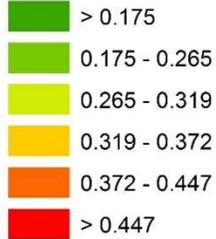
Lead PI: Lauren Kinsman-Costello at Kent State University
Funded by Ohio Sea Grant



- Survey of sediment characterization
- In depth biogeochemistry (P fractionation, denitrification)
- Core incubation experiment

Shooting a moving target?

Mean DRP export WY 2008, kg/ha



Sandusky River Watershed

2008

2009

2010

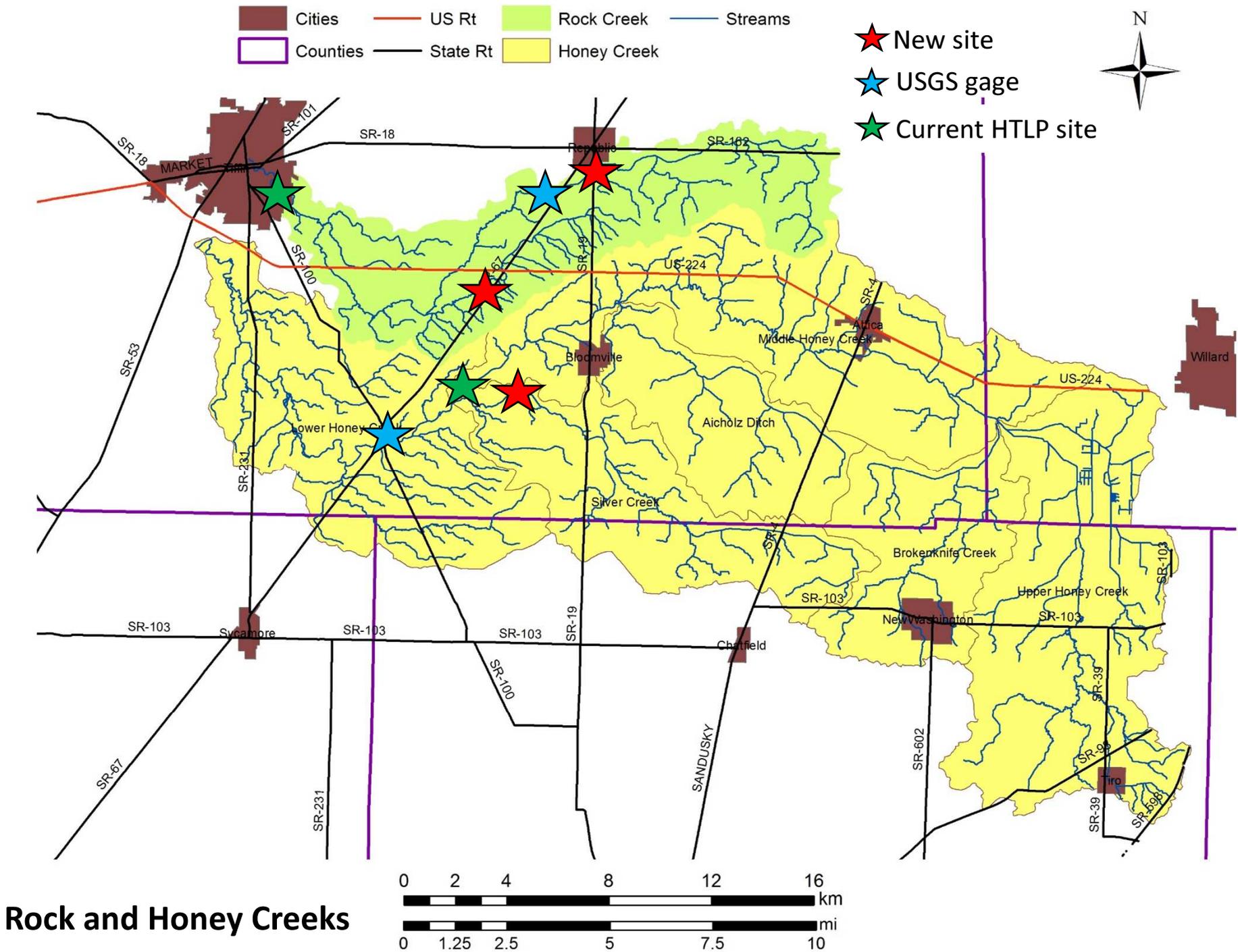
2011

Areas of high P export differ by year depending on:

- 1) Precipitation
- 2) Specific agricultural practices (crop rotation)



Identifying the best strategy to reduce phosphorus loads to Lake Erie from agricultural watersheds



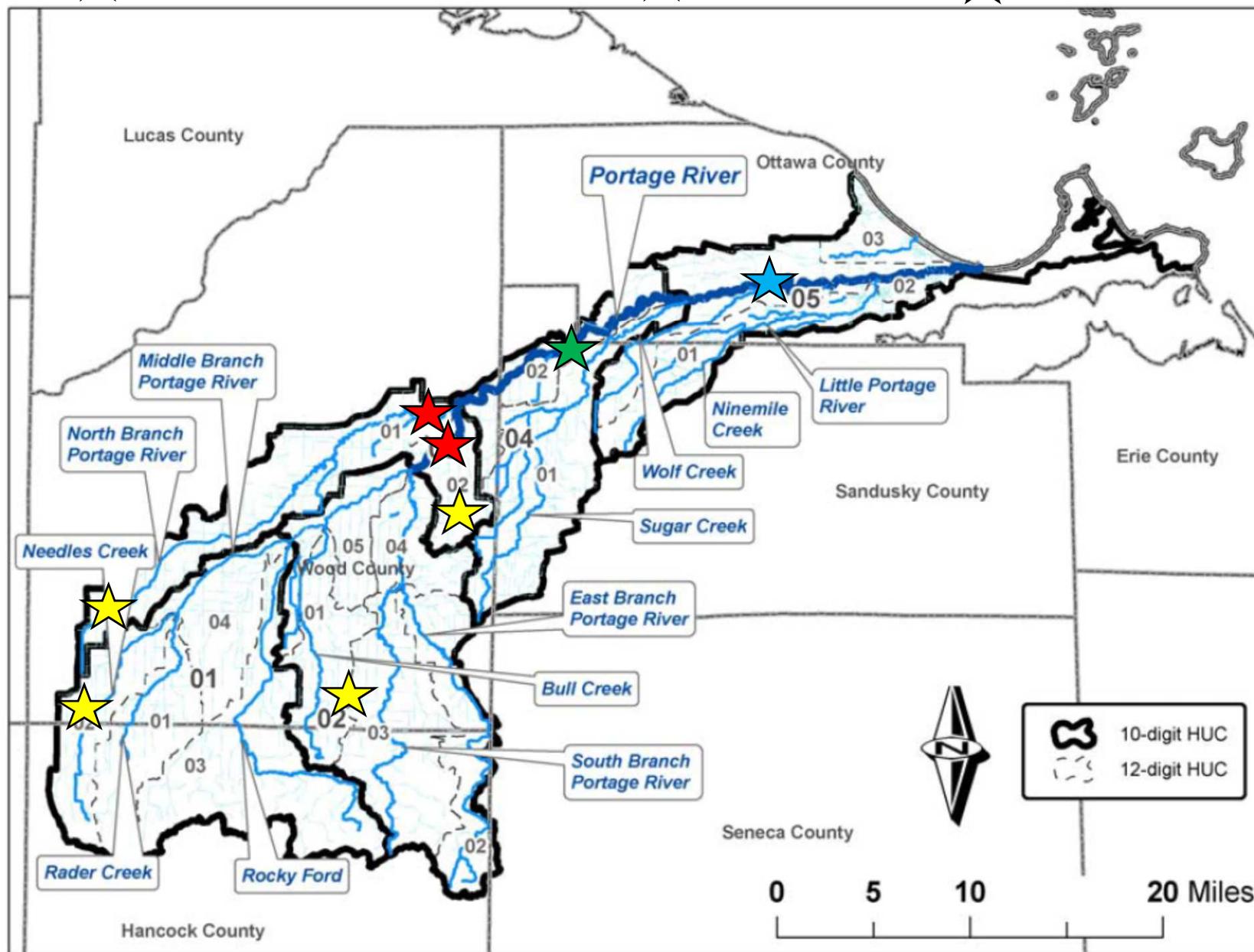
Rock and Honey Creeks

★ New site

★ USGS gage

★ Current HTLP site

★ USDA ARS EOF sites



Portage River

Determining sources of phosphorus to western Lake Erie from field to lake

- Phosphorus fingerprinting using stable isotopes of oxygen in phosphate and composition of organic P
 - Can we differentiate effluent, septic, manure, and commercial sources of P?
 - Can we quantify processing of these sources?
 - Can we age P leaving fields?
- First focus is Sandusky Watershed, but plan to expand to Blanchard as well

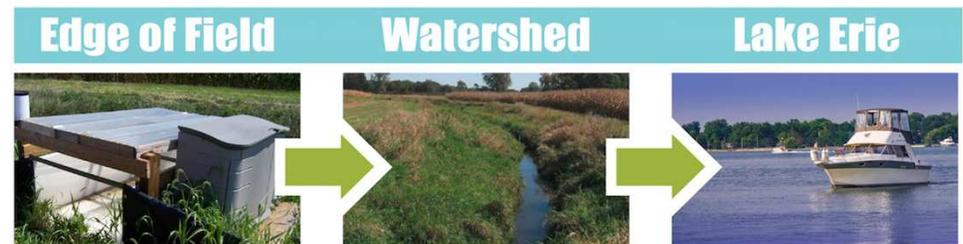
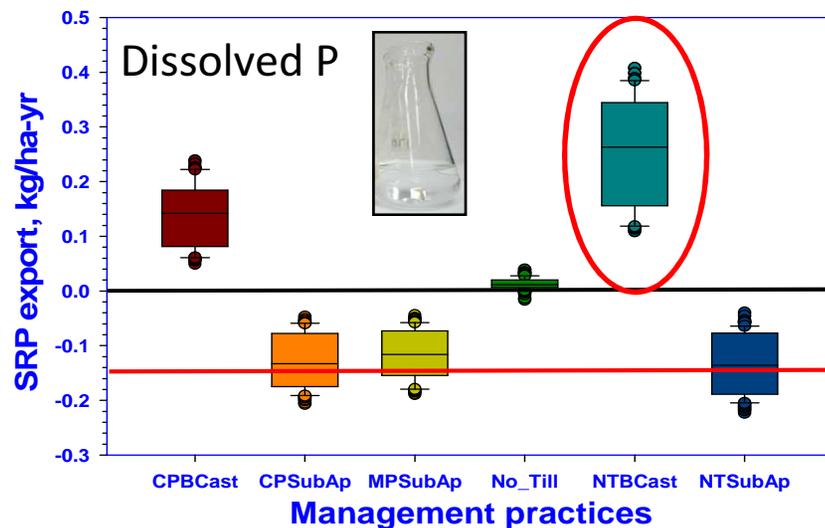
Evaluating the 4R Nutrient Stewardship Concept and Certification Program in the Western Lake Erie Basin

Lead PI: Kevin King, USDA-ARS

Funding: 4R Research Fund

SWAT model results

Dr. Rem Confesor, Heidelberg University



Monitoring
Modeling
Socioeconomics
Outreach

- Changing all watershed practices to surface fertilizer application increased dissolved P export relative to baseline conditions
- Changing to subsurface application led to decreases in dissolved P export

For more information visit:

<http://www.heidelberg.edu/NCWQR>

Or contact me at ljohnson@heidelberg.edu



<http://www.facebook.com/NCWQR>

Questions?

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