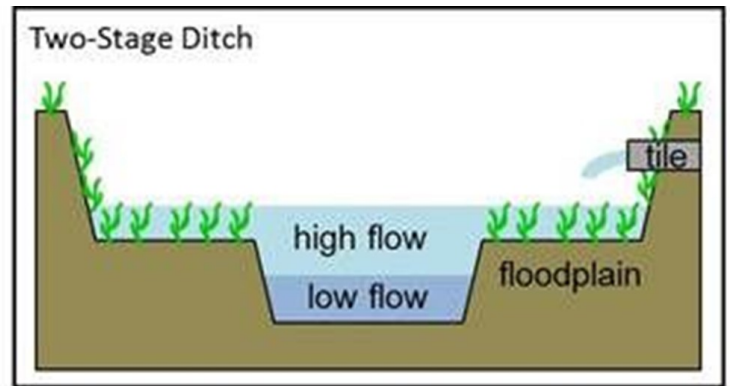
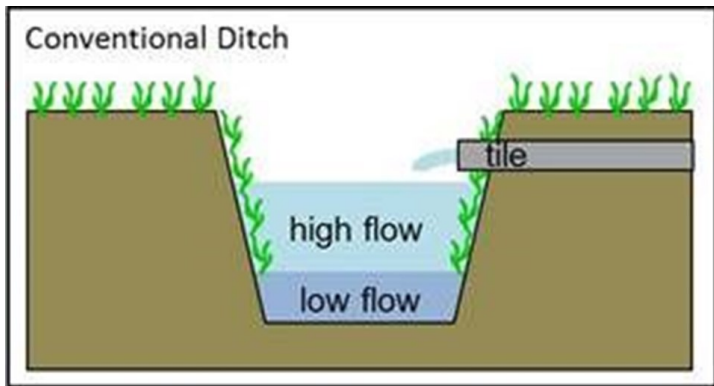


Two-Stage Ditch at Beargrass Creek

When water is confined to small ditch, it can cause destruction in the form of stream bank erosion. When there is a large volume of water in a small ditch, the water has nowhere to go but outside of the stream banks. A solution for erosion and flooding is installing a two-stage ditch. The design includes floodplain zone on each side of the stream, called benches, that will allow the water to go into a larger channel. This channel will displace the high velocity water and allow high volumes of water to pass through with minimal streambank erosion. The two stage ditch project on Beargrass Creek started construction on September 9, 2016 and was completed on September 23, 2016. Since completion of the ditch, there have already been some noteworthy changes to the stream: In fall of 2016, there were high levels of dissolved oxygen in the stream. In previous years, leaves falling into the stream and decomposing have led to low dissolved oxygen levels which caused fish kills in Beargrass Creek. Since the construction of the ditch, there has also been more development of riffle, pool, run sequences, which are important for stream health and the aquatic organisms that live in the creek. Water quality has been collected once a week through the year and everyday in May and June of 2017. Fish community data and habitat evaluations were collected in the summer of 2017 as well. This data will be compiled to see the impacts that the two-stage ditch has on Beargrass Creek.



Two-Stage Ditch at Beargrass Creek



Eel River Happenings

Environmental Studies Interns



Over the summer of 2017, there were 7 student interns hired. Through may and June, they focused on collecting water samples in the field and running chemistry on the samples back in the lab. Samples were collected everyday either every 4 hours or every 6 hours, depending on what grant they were working on. Once intensive water sampling was completed, their attention was moved onto biological sampling. The main focus was to find the fish community on several sites throughout the watershed. A total of 15 sites were sampled with a backpack electrofisher, one site with a tote barge, and 3 sites with the electrofishing boat. Students worked on their fish identification skills as well as habitat evaluation skills. Some students even gained the skill of filling their waders full of water too!

Some student took the initiative to take charge on some side projects throughout the summer. Some of these projects include smallmouth bass population estimate with a three pass method, Eel River reintroduction of bluebreast darters, and a population estimate of the mussels living the Eel River.

Soil and Water Conservation Districts of



Huntington
Kosciusko
Wabash
Whitley
Counties



WATERSHED INITIATIVE



A COALITION LED BY
Manchester University

9th Annual Canoe Float

Join us for an opportunity to canoe the Eel River while learning about its natural and historical beauty. This event is appropriate for all ages. There will be a brief safety and informational meeting before launching. Come out with us for a day of fun and relaxation and reconnect with our watershed!

Reservations are required to participate. **Space is limited**, sign up early. This event is **Free** and open to the public, so bring your family and friends!

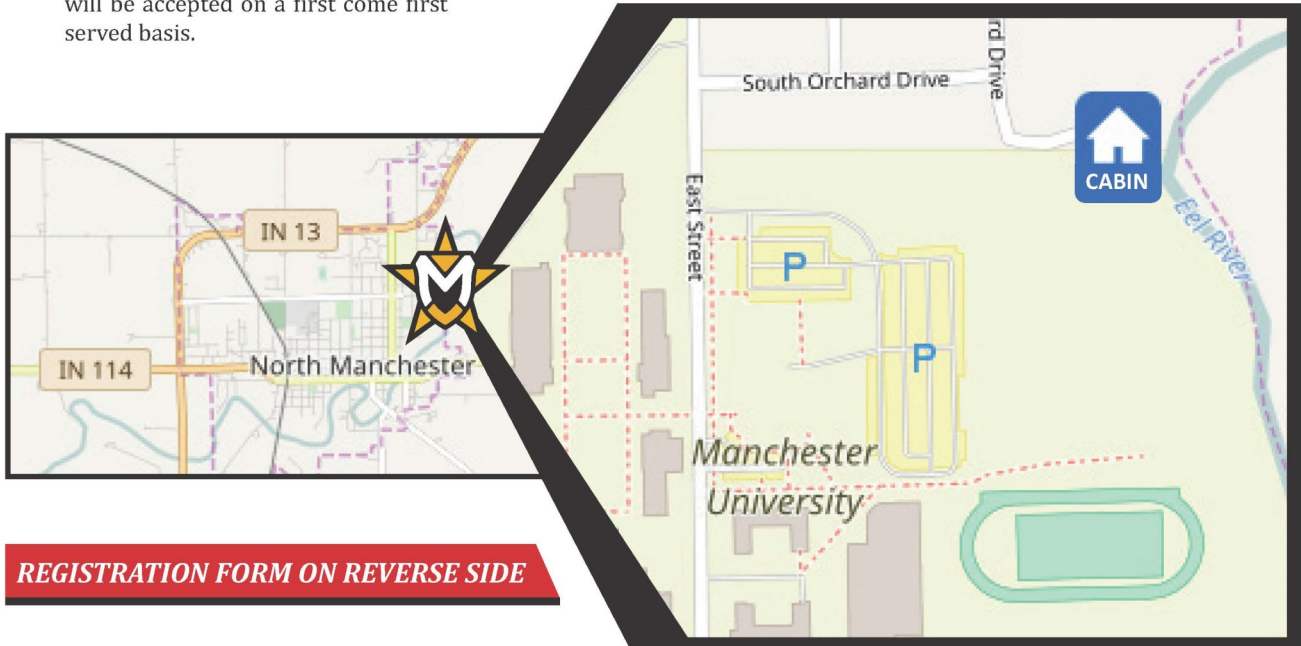
To participate in the Annual Eel River Watershed Initiative Canoe Float, please complete the form and return to the address below. Only 40 spaces are available this year, registrations will be accepted on a first come first served basis.

AUGUST
26

MEET AT THE
MANCHESTER
UNIVERSITY
ENVIRONMENTAL
STUDIES CABIN AT

9:00 AM

REGISTER BY AUGUST 11TH



Annual Eel River Canoe Float

To participate in our Annual Eel River Watershed Initiative Canoe Float, please complete the attached form and return to the address below. Only 40 spaces are available this year, registrations will be accepted on a first come first served basis.

Return this form by mail, e-mail (Herb's addresses are below) OR register online at:
<https://www.manchester.edu/middle-eel-river-watershed-initiative/middle-eel-river-initiative>

NAME

ADDRESS

CITY, STATE, ZIP

PHONE

E-MAIL

PLEASE PROVIDE THE NAMES AND AGES OF PEOPLE COMING WITH YOU BELOW

Some participants many wish to bring their own canoes or kayaks. That is fine, *however you will be responsible for transportation.*

Please check the appropriate line:

- I will need a canoe
- I will bring my own canoe or kayak

**REGISTRATIONS ARE
DUE AUGUST 11TH**

**RETURN
FORM
TO:**

Herb Manifold
Environmental Studies Grants Coordinator
604 E College Ave
North Manchester, IN 46962
hfmanifold@manchester.edu
(260) 982-5101



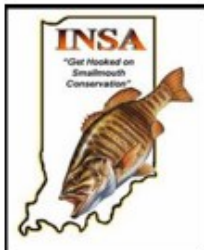
THANKS TO ALL OUR PARTNERS!!!



Local Farmers/Land Owners



Miller's Canoe Rentals



North Manchester Center for History

County Highway Departments



Contact Information

Herb Manifold
Environmental Studies Grants Coordinator
260-982-5101

hfmanifold@manchester.edu
604 East College Avenue
North Manchester, Indiana 46962