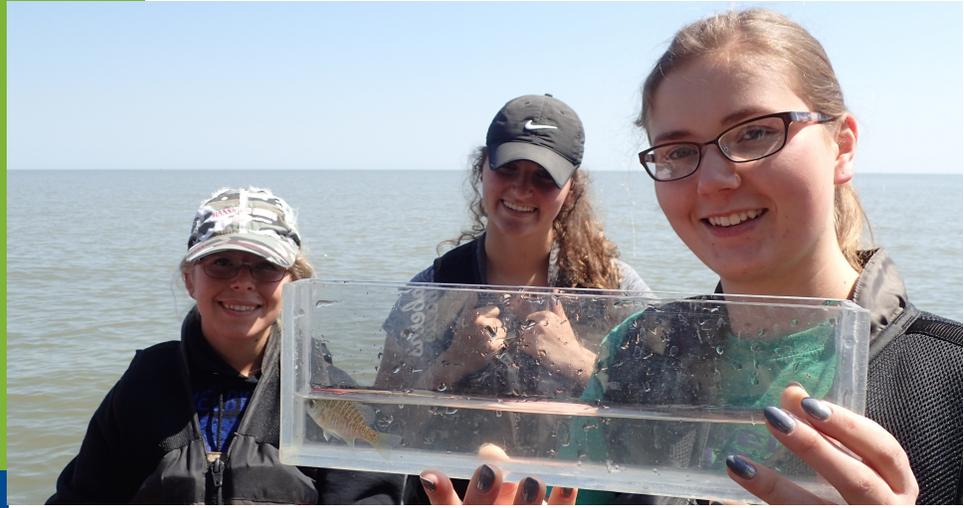


# Old Woman Creek Research Reserve Education is Change on the Ground



2017

## Connect



Mike Dewine Center for Coastal Wetland Studies

437 kayak & canoe trips

6,237 visitors



## Prepare

400 hours of teacher training

1,972 students engaged

8,559 student contact hours

## Improve

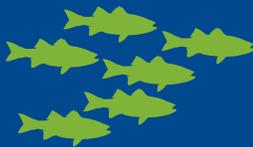


1,337 volunteer hours

910 hours of citizen science monitoring

*"Most people go to the beach to swim...biology kids go to the beach to search for otoliths."*

*Seth  
High School  
Senior*



*"As I learned (or re-learned) more about Lake Erie, I felt increased pride for the sense of stewardship toward the lake."*

*Teacher Cuyahoga County*

## Students Acquire New Skills

Students from two local high school biology programs participated in a new inquiry-based residential education program at Old Woman Creek National Estuarine Research Reserve (OWC NERR) in 2017. This in-depth, hands-on program allowed students to learn in the field alongside researchers who were collecting real-time data to be used in a biological assessment of fish health and diversity at the Reserve.

The students spent one to two nights in the on-site dormitory, providing the opportunity to put their newly acquired skills into action on the estuary. Over two weekends, the Reserve **hosted 20 high school students** for a total of **200 contact hours**. The students were able to develop their field research skills, and many expressed that the experience helped solidify their education choices and planned career paths. The Reserve used the data in spring fish population surveys, making this a mutually beneficial partnership.

## Citizen Scientists at Work

Old Woman Creek's Phenological Species Monitoring Program tracks keystone species that are indicators of the Reserve's unique estuarine environment. In order to successfully implement this program, the Reserve relies on the dedicated work of many citizen science volunteers. In 2017, **volunteers donated 910 hours of time** in monitoring the Reserve's designated species.

Each winter and spring, the volunteers observe Old Woman Creek's active Bald Eagle nest several days per week, record their observations, and send the data to the monitoring program coordinator. This information helps the reserve correlate Bald Eagle nesting activity with climate-related data. Each summer and fall, volunteers paddle out bi-weekly to the muskrat huts in the estuary to record the dimensions, vegetation composition, and status of each hut found. These data help the reserve understand the dynamic between a keystone aquatic fur-bearer and the dynamic water levels of the estuary, as well as the impact on wetland vegetation. In addition to these two species, citizen science volunteers also monitor secretive marsh birds, the Northern Ravine Salamander, seven species of frogs and toads, and Eastern Blue Birds and Tree Swallows.

Ohio's Old Woman Creek is one of 29 sites in the National Estuarine Research Reserve System. Each site is a state federal partnership that combines research, monitoring, and education to advance the understanding and management of estuarine environments.



Ohio Department of  
**NATURAL  
RESOURCES**

# National Estuarine Research Reserve Education Change on the Ground in 2017

## Connects

People to Estuaries

**1 million+  
ACRES**

of natural classrooms & living laboratories with



**28 INTERPRETIVE  
CENTERS**



**650,340  
VISITORS**

learn about estuaries through Research Reserve outreach & education



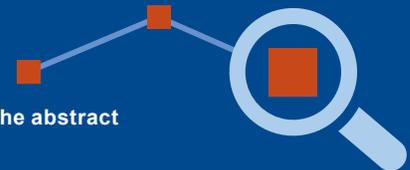
*Aloha to our Hawai'i Reserve, designated in 2017!*

## Prepares

the Next Generation

**87,899  
STUDENTS**

take learning out of the abstract & into the outdoors



**3,079  
TEACHERS**

are trained in the estuary & supported in the classroom



### SKILLS BUILT

- ✓ Observation
- ✓ Asking research questions
- ✓ Problem solving
- ✓ Data driven decision making

ESTUARY SCIENCE

LOCAL DATA

LAB WORK

FIELD INVESTIGATION

## Improves

the Environment

**12,849  
CITIZENS**

are trained & inspired to protect their coasts & estuaries



### VOLUNTEER ACTIONS

- ✓ Protect wildlife
- ✓ Monitor water quality
- ✓ Plant native species
- ✓ Clean up the coasts

**28 RESEARCH RESERVE  
EDUCATORS**

lead programs that foster coastal stewardship in communities in 23 states



Creating value through education  
39,035 volunteer hours = \$942,305\*