



STATE WILDLIFE GRANT PROJECT REPORT—INDIANA

Developing an Outreach Campaign to Protect Six Federally Listed Mussels in the Tippecanoe River



February 2015 public meeting with partners and stakeholders in Winamac. (photo by Dr. Sarah Church)

CURRENT STATUS

Second year of three-year project

FUNDING SOURCES AND PARTNERS

State Wildlife Grant Program (T7R16)
Purdue University

PROJECT PERSONNEL

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PROJECT ASSISTANTS

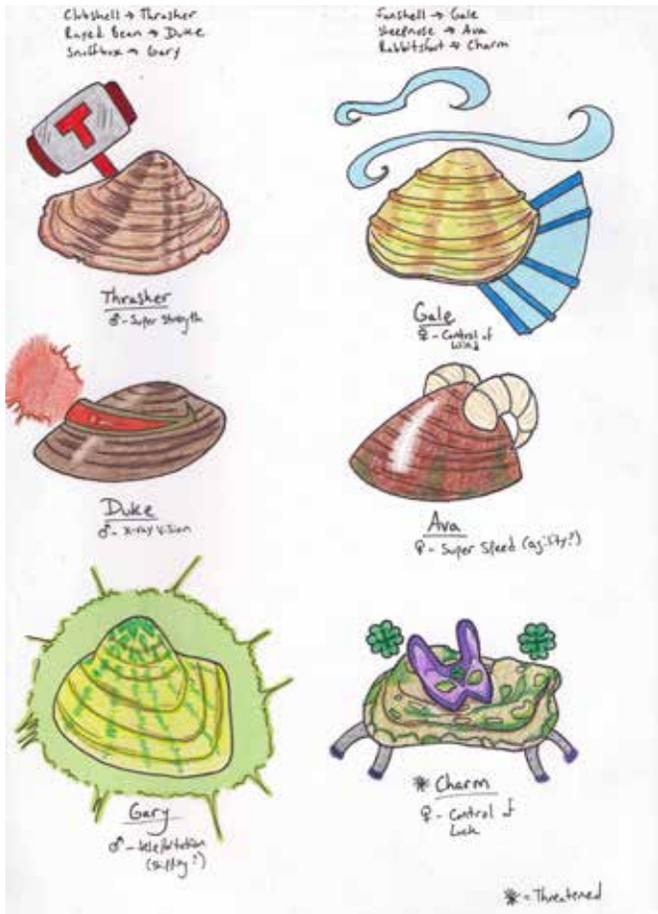
Purdue University undergraduate students including Becca Busse, Kalli Dunn, Erica Ernst, Jaclyn O'Connor, Dawn Braddock, Katelyn Fagan, Rebekah Lumkes, Kylie Schofield, Sophia Vela, and Renee Wickliffe.

BACKGROUND AND OBJECTIVES

Water quality in North America has been declining due to human activities for the past 200 years. As a result, the continent has lost nearly 70% of its freshwater mussels. A primary cause was that native North American mussels were harvested by the thousands for commercial button and jewelry making in the 19th and 20th centuries, especially from Midwestern rivers.

Today, freshwater mussels are the Midwest's most imperiled animals. More than half of such species are federally listed as endangered, threatened, or as state species of special concern. The eight states of the Midwest (Iowa, Michigan, Minnesota, Wisconsin, Illinois, Ohio, Indiana, and Missouri) range from having three to 11 federally listed species of freshwater mussels. Indiana is home to 10 federally listed freshwater mussels.

Six of Indiana's 10 species live in one river in north-central Indiana. Once found in virtually all rivers in



Original Mighty Mussel designs. (illustration by Jaclyn O'Connor)

Indiana, the clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), rayed bean (*Villosa fabalis*), rabbitsfoot (*Quadrula cylindrica cylindrica*), sheepnose (*Plethobasus cyphus*) and snuffbox (*Epioblasma triquetra*) mussels now mainly reside in the Tippecanoe River. Removing any native mussel from Indiana waters has been illegal since 1991. Despite federal listing and legal protection, native mussel populations continue to decline.

Mussels are filter feeders. They can reside for many years in a river's substrate. These features allow mussels to help indicate the health of the river in which they live. Because of the benefits mussels provide to rivers and because of these animals' endangered status, the Indiana Department of Natural Resources (DNR) and Purdue University are designing an outreach and education program to increase awareness of mussels and encourage positive public engagement with mussels.

Before designing and carrying out the program, we needed to measure public attitudes and levels of awareness of mussels. Two surveys were launched in summer 2014 to empirically measure public perceptions of the six endangered mussels in the Tippecanoe. The first was an in-person survey of recreational users and visitors of the river. The second survey was

mailed to riverside landowners. Both surveys asked if recipients had heard of the six endangered species of mussels before, whether it is legal to remove native mussels from Indiana waters, and what they would do with mussels they found. We used the survey results and tools from other endangered species programs to develop an informational campaign and enhance mussel conservation efforts along the Tippecanoe River.

METHODS

In-person survey responses of recreational users were collected from June to August 2014. The sites ranged from Rochester to Winamac to Monticello. Surveys took about five minutes. The surveys included questions about recreational activities, personal interactions with, and knowledge about the six endangered mussels. Riverside landowners received a mail survey that included questions used in the survey of recreational users, plus other questions about personal attitudes toward the mussels, local water quality, and wildlife in general.

Survey results were analyzed along with the framework for community-based social marketing to develop baseline outreach and education materials. Draft materials were presented in February 2015 at a public meeting of interested partners and stakeholders. These included representatives from the U.S. Fish & Wildlife Service, DNR, Natural Resources Conservation Service, county extension offices, soil & water conservation districts, Grace College Center for Lakes & Streams, local liveries, and landowners.

PROGRESS TO DATE

Results of the 2014 surveys indicated that outreach should focus on raising awareness about the existence of the mussels and about their federally endangered status. Overall, our surveys showed that visitors to the Tippecanoe and landowners along the river were largely unaware that the mussels lived in the river, nor were they aware that it is illegal to remove live mussels and mussel shells that are empty from the waters of Indiana. We coupled our survey findings with the principles of community-based social marketing to develop our outreach and education campaign. The tools we used from community-based social marketing included getting people to commit to enhancing water quality and protecting the mussels, prompting them about the appropriate behaviors, normalizing these behaviors, rewarding those who engaged in the specified behaviors, and removing barriers to information and action. Four undergraduate students, as part of a spring semester class, synthesized these tools with our survey information to draft outreach and education materials including:

- Campaign name—Heart of the Tippy
- Logo and slogan
- Website—heartofthetippy.org
- Mascot/mussel costume design



Original logo design. (illustration by Jaclyn O'Connor)



Original costume/mascot design. (illustration by Jaclyn O'Connor)

- Superhero mussel scavenger hunt
- Bumper stickers & fish measuring decals
- Campaign messages—forget the fertilizer, plant native plants, babies go back,
- Carry your canoe/kayak—signs, pledge, stickers for boats
- Informational posters for anglers
- Giveaway items; floating keychains, string bags, bobbers
- General information brochure
- Lesson plan
- Lake resident information specific to lowering the lake level

Draft designs and outreach materials were presented to partners at a public meeting in February 2015 to obtain feedback. Participants of this meeting divided into small groups focusing on different audiences, including anglers, youth, visitors/recreationists, and river residents. Feedback was collected on the presented designs and materials, plus any new ideas that were shared. Comments were used to further develop materials under the related project (Developing a Conservation Stewardship Campaign to Protect Mussel Habitat in the Tippecanoe River—E16R1).

A second wave of surveys will be conducted in

summer 2016 to evaluate effectiveness of the outreach and education campaign.

COST: \$264,611 FOR THE COMPLETE THREE-YEAR PROJECT