



Community Outreach in the Form of Education in the Upper Cumberland

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Introduction

Sparta, Tennessee was built on the banks of the winding Calfkiller River in 1806. This river has contributed to the success of local businesses, such as Calfkiller Brewing Company and Jackson Kayak, while offering a beautiful location for outdoor recreational activities to be enjoyed by residents and visitors alike. Along with the river itself, local flora and fauna have played a key role in the success of the city of Sparta by showcasing the river's true potential for fostering life and encouraging play in its clear waters.

In recent years, trouble has arisen for several species in the area—in particular, the Bluemask Darter (*Etheostoma akatulo*). Local impoundments, siltation, and poor agricultural practices have led to the extirpation of the Bluemask Darter from the Calfkiller River (Simmons & Layzer, 2004). This small fish needs a very specific habitat of rocky pools and riffles within clear creeks and small streams. They inhabit streams with slow to moderate currents over clean sand and fine gravel at depths of 4 to 20 inches.

The ESS Capstone Education Group has worked diligently to find different methods to inform residents, both children and adults, on ways they might voluntarily (and involuntarily) negatively impact the area. Our ultimate goal is to encourage environmental stewardship that will result in improving the health and sustainability of the Calfkiller River.



Figure 1 Bluemask Darter (*Etheostoma akatulo*)

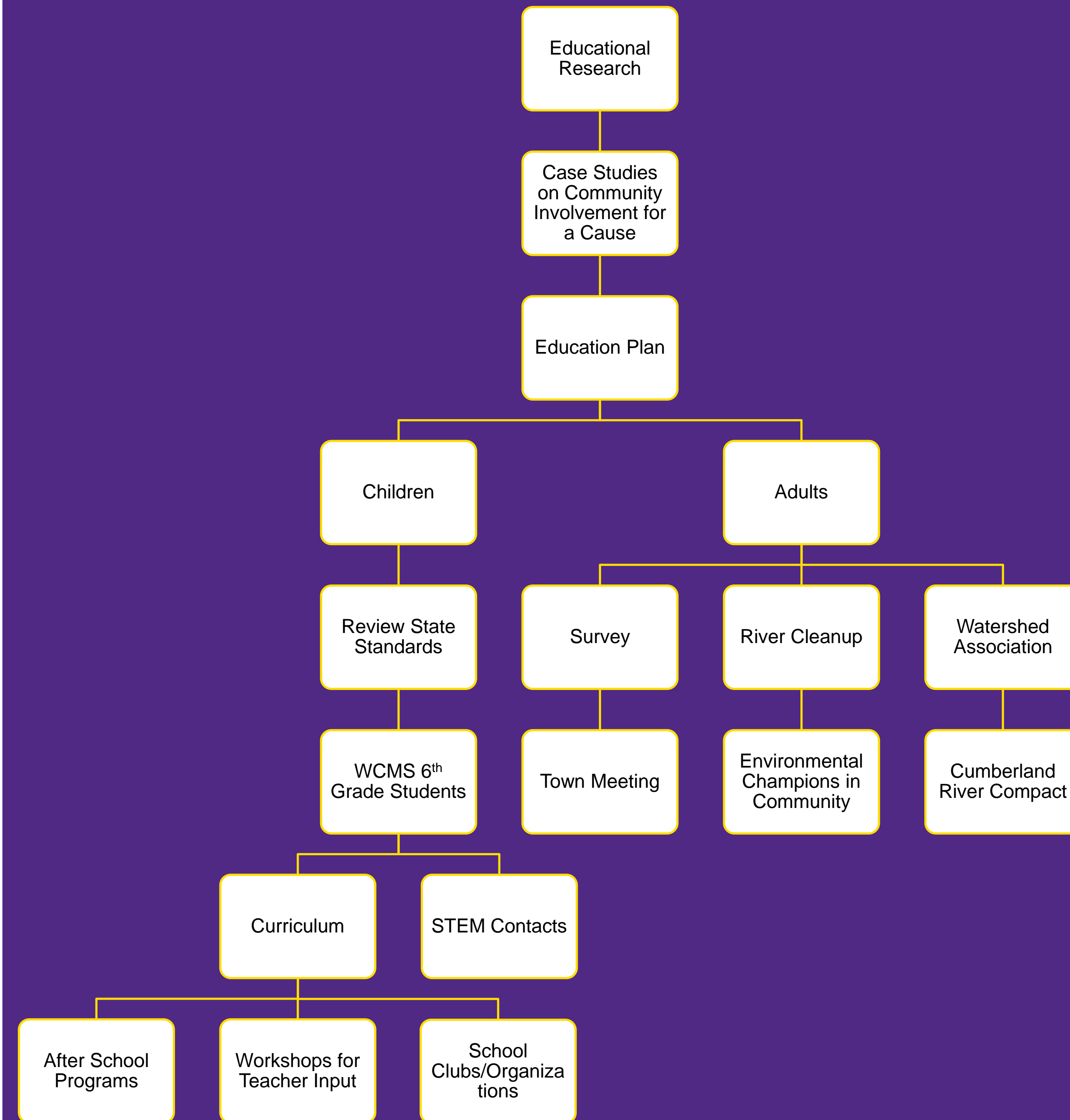


Figure 2 Research strategy diagram for community outreach through education

Methods

We reviewed a series of journal articles, primarily focusing on case studies that demonstrate improved environmental awareness as a result of community involvement. Successful strategies addressed adults and children differently.

Our team composed a survey to acquire information about how residents perceive and use the Calfkiller River. Survey results can be used to inform community interaction. Additionally, hosting town meetings is an effective way to obtain local support and to identify environmental leadership within the community.

Tennessee state standards for 6th grade environmental education more closely match the environmental issues associated with watershed protection, most notably those concerning biotic and abiotic elements of the environment. Because of Standard 2 Grade Level Expectation 0607.2.3*, we chose to create a curriculum for White County Middle School 6th graders.

*GLE 0607.2.3: "Draw conclusions from data about interactions between the biotic and abiotic elements of a particular environment."

Calfkiller River Survey

Please take a moment to fill out our short survey. Your input will help us obtain a better understanding of how people feel about the Calfkiller River.

1. What is your age?
 18-24 25-44 45-64 65 and up
2. What is your county of residence? _____
3. How long have you been a resident of your county?
 Less than one year 1- 3 years 4- 7 years 8 years or more
4. Rate of importance (1 being lowest importance and 4 being the highest importance)
 Environmental health 1 2 3 4
 Habitat quality 1 2 3 4
 Species preservation 1 2 3 4
 Environmental education 1 2 3 4
 Water quality 1 2 3 4
5. Which of these statements best describes your personal view of the natural environment and resources?
 The natural environment is primarily for human use, and the resources should be used for human benefit.
 The natural environment should be utilized at a sustainable rate.
 The natural environment should be protected, and the resources should not be interfered with at all.
 Other (please explain) _____
6. How often do you spend time in or around the Calfkiller River?
 Weekly Monthly Yearly Seasonally Never
7. I feel a sense of personal responsibility for protecting and preserving the Calfkiller River.
 Strongly agree Agree Disagree Strongly Disagree
8. How do you use the Calfkiller River? (check all that apply)
 Fishing Kayaking or Canoeing Hiking
 Swimming Observing nature Farming
 Other (Please list) _____

Figure 3 Proposed survey to distribute to local adults to gauge their value of the Calfkiller River

Results

When establishing a presence in the local community, the literature indicates the following strategies to be the most effective:

- working with existing groups, such as non-profit organizations, in the community;
- establishing relationships with local residents by hosting town meetings;
- gaining the public's trust by getting to know them early;
- appointing technical advisors to ensure informed comments and opinions;
- ensuring that information leads to human engagement and offline action;
- planning to reach audiences with limited-to-no internet access;
- centralizing information and making it easily accessible; and
- emphasizing sensitivity with respect to race (ethnicity), gender, language, and culture.

Results (cont.)

To ensure effective implementation of environmental education on a local level we suggest the following activities:

Adults:

- Work with the Cumberland River Compact to establish a local watershed association
- Host a river cleanup to promote water stewardship

Children:

- Use a variety of learning modes, including listening, reading, observing, and doing activities related to the theme of study.
- Create afterschool programs
- Establish school clubs/organizations
- Provide workshops for instructors

Conclusion

In order to preserve water quality and to successfully reintroduce the Bluemask Darter into the Calfkiller River, an education plan for both children and adults living in close proximity to the river is paramount.

References

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