

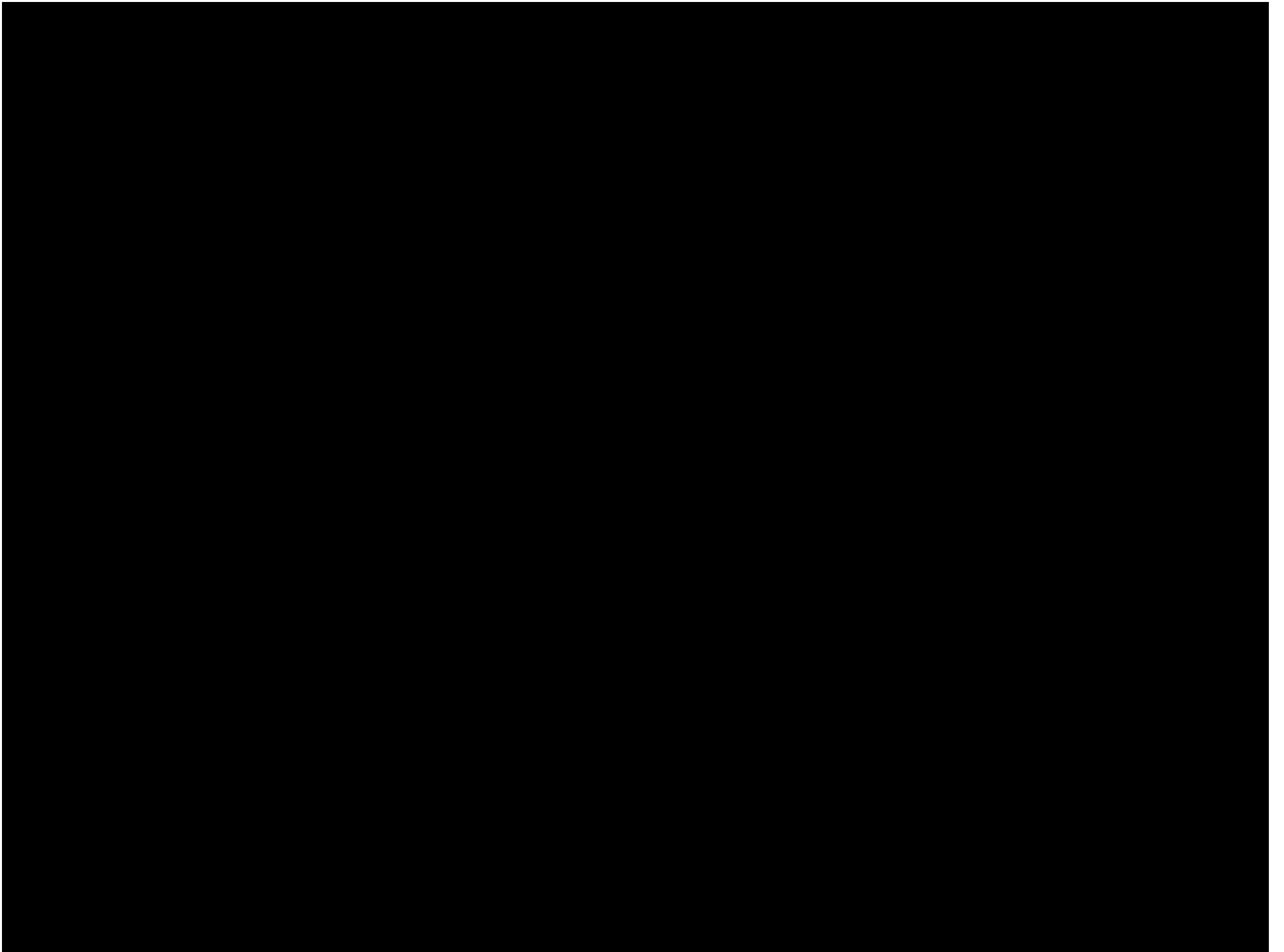
# Low Impact Development (LID) in Section 319 Urban Projects



Eve Brantley, PhD, Extension Specialist and Assoc. Professor  
Department of Crop, Soil and Environmental Sciences  
Auburn University

What are the consequences of poor stormwater management?





What are the solutions?



Urban Streams = Difficult

# Immediate Solution?



1. Get the right team

2. Awareness

3. Education

4. Understanding

5. Involvement

6. Change



# Step 1: Get the right team

Identify the problem

Set goals



# What is the right team?





## 2. Awareness





# Who is interested?

Regulators

Regulated

Consultants

Practitioners

Schools

Businesses

Clubs

Non-profit organizations

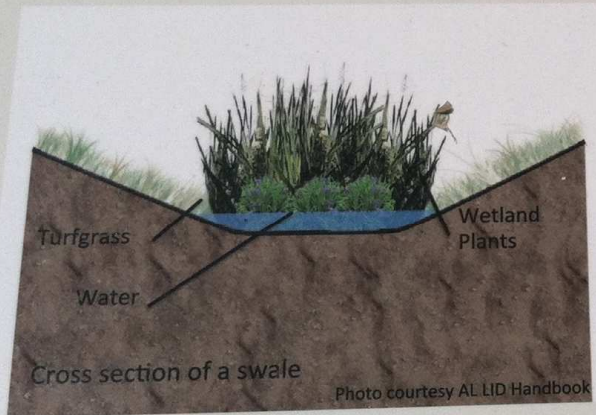
Citizens





# Highway 29 Water Quality Swale

Lee County, the Alabama Cooperative Extension System, Auburn University, and the Alabama Department of Environmental Management joined together to install a practice to capture and filter stormwater runoff exiting the trash compactor before it enters Parkerson Mill Creek.



A water quality swale is a shallow, open channel stabilized with grass or other herbaceous vegetation designed to filter pollutants and convey stormwater. Wet swales function as small wetlands to increase denitrification. Swales are applicable along roadsides, in parking lots, residential subdivisions, and commercial developments. Swales reduce erosion, peak flows and runoff velocity, and promote stormwater infiltration, while working to improve water quality by trapping sediment, trash, and other pollutants.

This project was funded in part by the Alabama Department of Environmental Management through a Clean Water Act Section 319(h) nonpoint source pollution grant provided by the U.S. Environmental Protection Agency – Region 4.



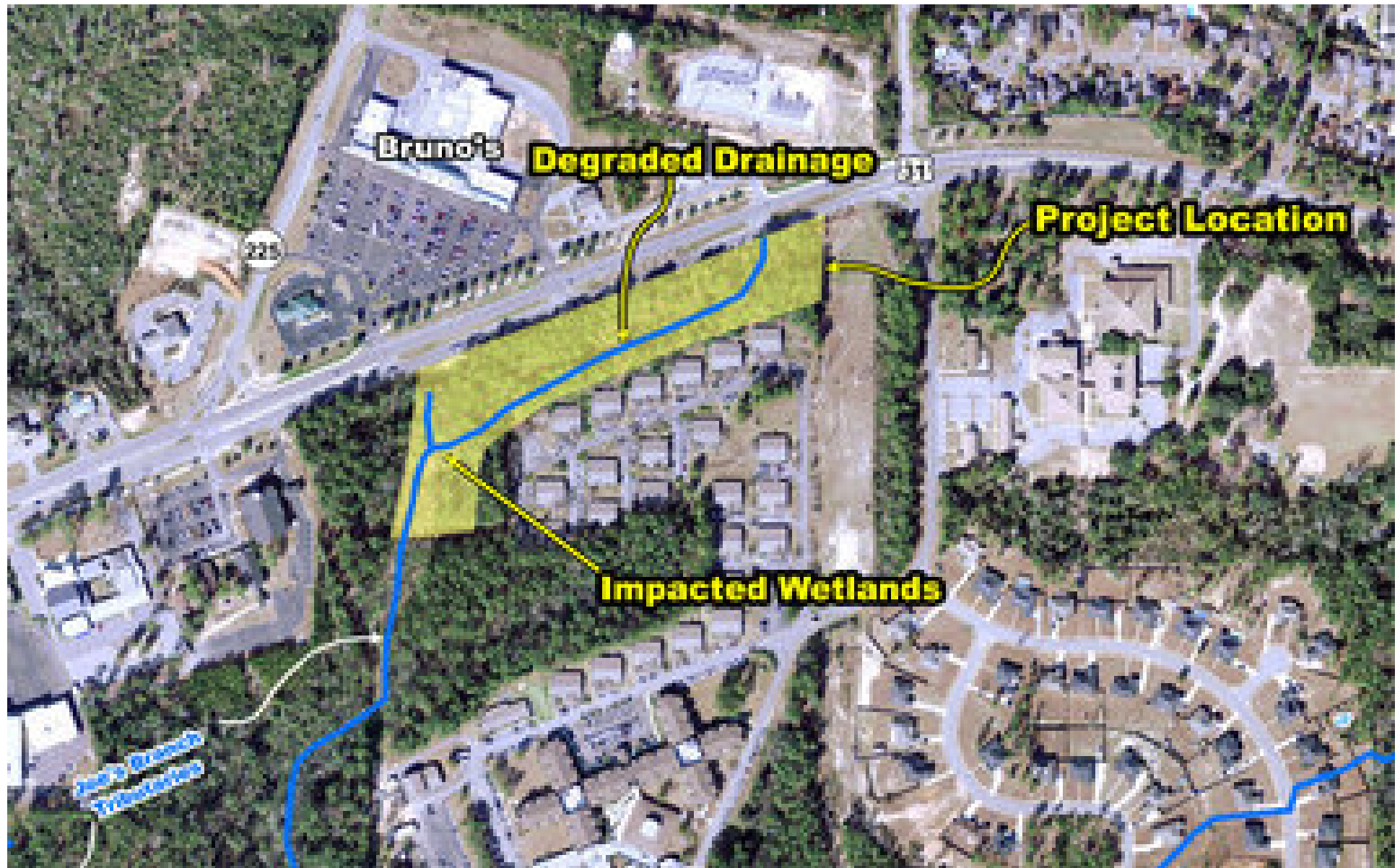






A

on  
SITIES





If you don't like talking to people – that's ok!





1. Get the right team

2. Awareness

3. Education















1. Get the right team
2. Awareness
3. Education
4. Understanding









# Lakewood Elementary, Phenix City, Alabama

















# Phenix City Intermediate School, Phenix City, Alabama

























1. Get the right team

2. Awareness

3. Education

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5. Involvement





































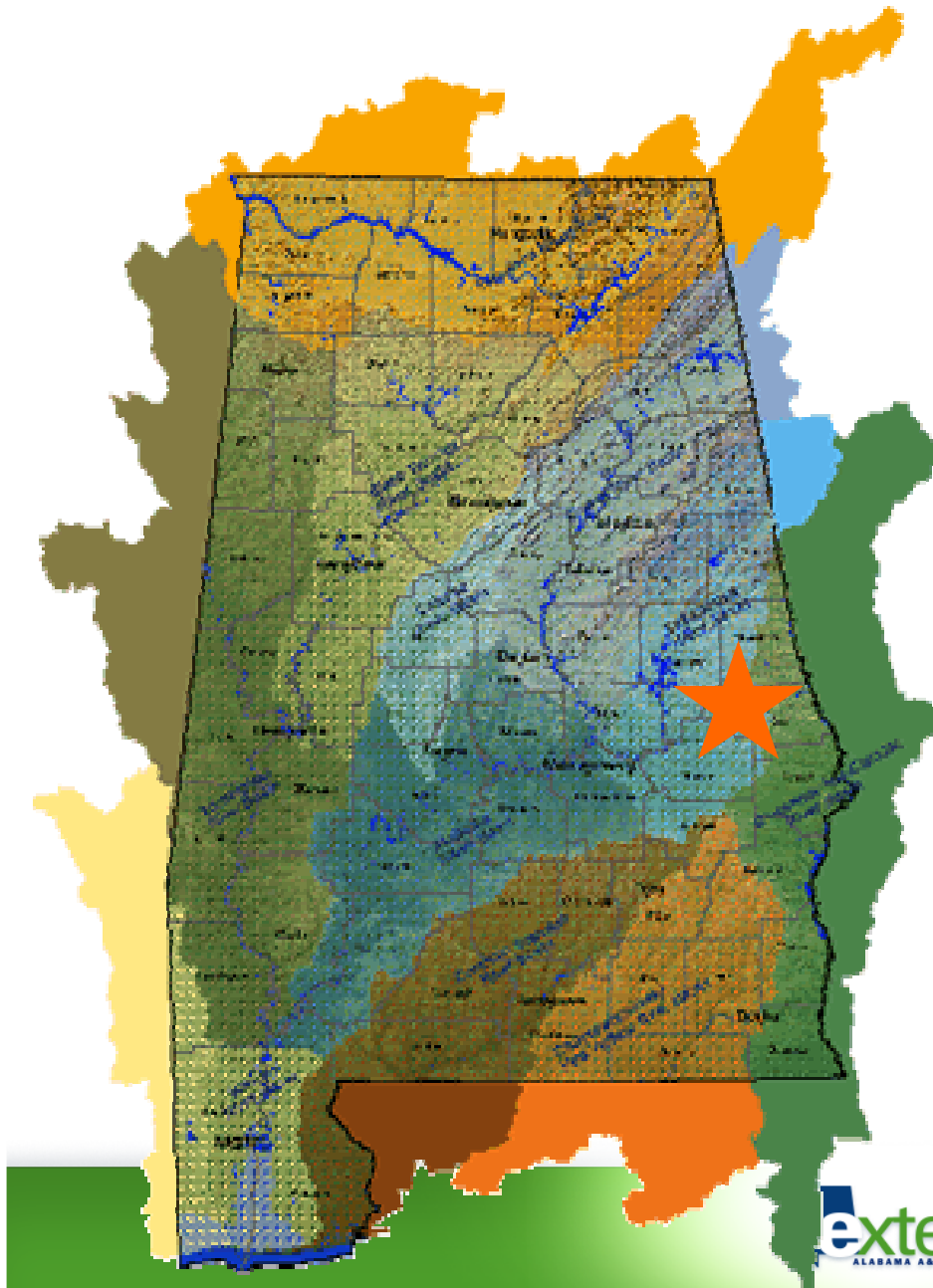








# Parkerson Mill Creek



Tallapoosa River Basin

Urban Stream - 303d list

9 mi<sup>2</sup> watershed

Jurisdictions include

City of Auburn

Auburn University

Lee County



Team: Local, State, & Federal Government, Utilities, Extension,  
Universities, Engineers, Ecologists, Educators





# Awareness: Urban Stream Issues

S. 319 Clean Water Act Funded Project, AL Dept of Environmental Management

Poor water / habitat quality

Threats to infrastructure





# Awareness



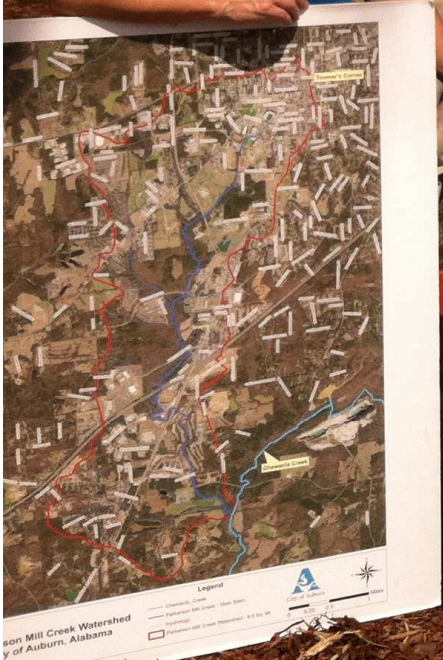












**Alabama Water Watch**

**How can I help Parkerson Mill Creek (PMC)?**

- Get Involved!**
  - Join Alabama Water Watch (AWWW)
  - At AWW events, there are many ways to help:
  - Plant native vegetation in riparian zones
  - Plant native vegetation at the source head
- Be smart at your activities**
  - Don't litter
  - Do not dump harmful chemicals or waste into streams
  - Pick up your pet's droppings (even manure is a pollutant - don't eat it!)
  - Do not over-use fertilizers (fertilizers can cause excessive algae growth, which leaves no oxygen for other water organisms)
  - Change a tire's tread with the treader
  - Adopt a portion of a creek
- Spread the word!**
  - Volunteer at local events like County Water Festival, Alabama County Water Festival
  - Send us your e-cards or our brochures!
  - Help us raise awareness!
  - Change a tire's tread with the treader
  - Adopt a portion of a creek
- For information on becoming a member, organizing a speaker, joining or supporting Alabama Water Watch:**
  - Phone: 334-844-5752
  - Email: [info@alabamawaterwatch.org](mailto:info@alabamawaterwatch.org)
  - Website: [alabamawaterwatch.org](http://alabamawaterwatch.org)

**What is wrong with Parkerson Mill Creek (PMC)?**  
By Beth Prior

- High Fecal Counts:**
  - The creek is on the list of Impaired Streams (303(d) List) for pathogens.
  - E. coli counts are too high for human contact
- Chemical Issues:**
  - Street and field run off bring unwanted fertilizers and other chemicals
  - This increases algae growth which decreases dissolved oxygen (fish cannot breathe)
- Erosion:**
  - Steep, eroding stream banks threaten nearby infrastructure
  - Erosion causes soil to wash into PMC, choking fish and blocking sunlight from plants
- Litter:**
  - The majority of AU's street litter is washed into PMC
  - Litter blocks the flow of water and kills organisms

**Alabama Water Watch**

**Why should I care about Parkerson Mill Creek (PMC)?**

- Low dissolved oxygen levels can kill fish and other aquatic life.
- High fecal counts can cause illness in humans and animals.
- High E. coli counts can cause illness in humans and animals.
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- High E. coli counts can cause illness in humans and animals.







# Education: Clever Technology, Hands-On Projects





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# Involvement: Building Local Capacity









# Change: Acceptance and Appreciation





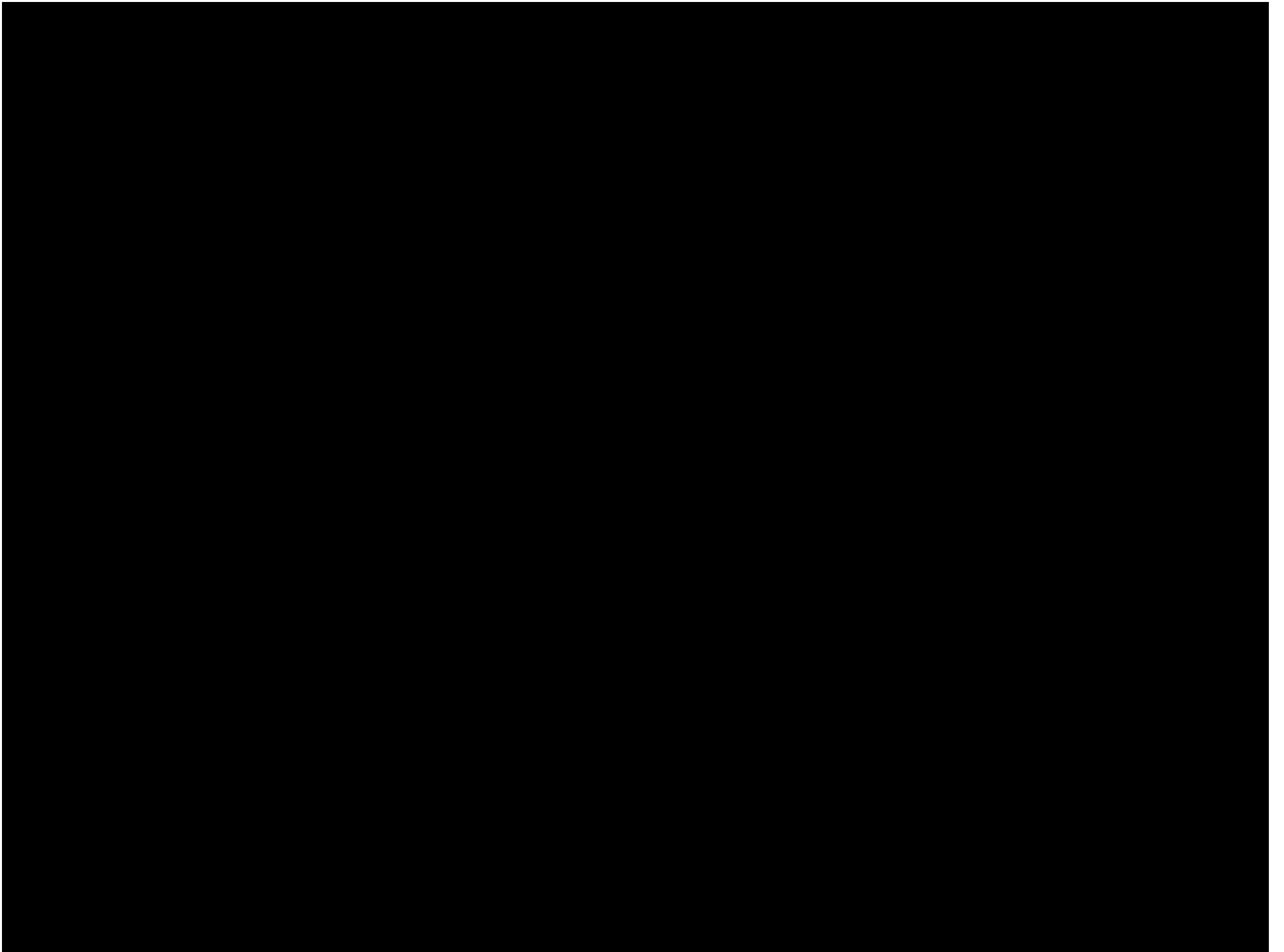




# Change: Acceptance and Appreciation













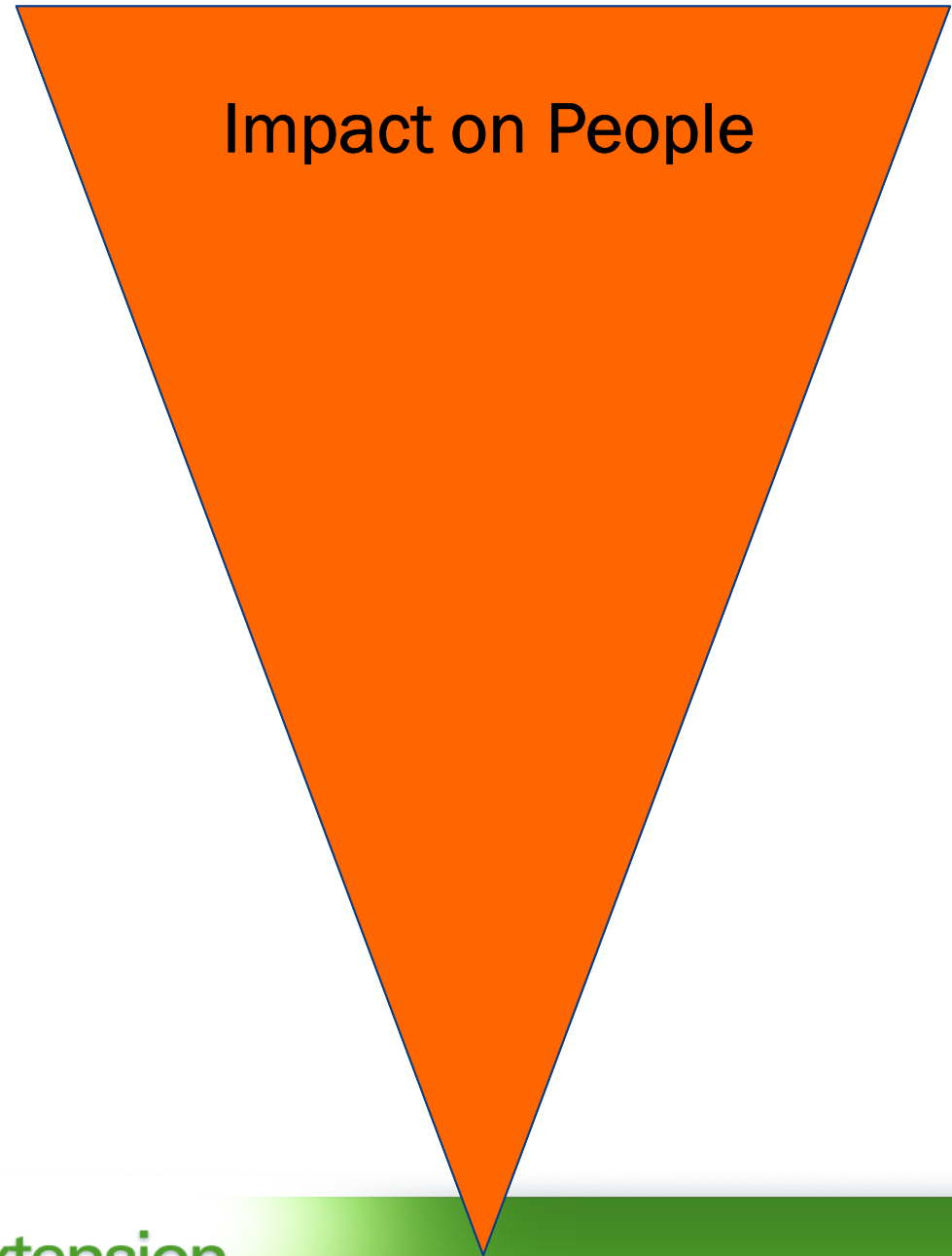
Awareness

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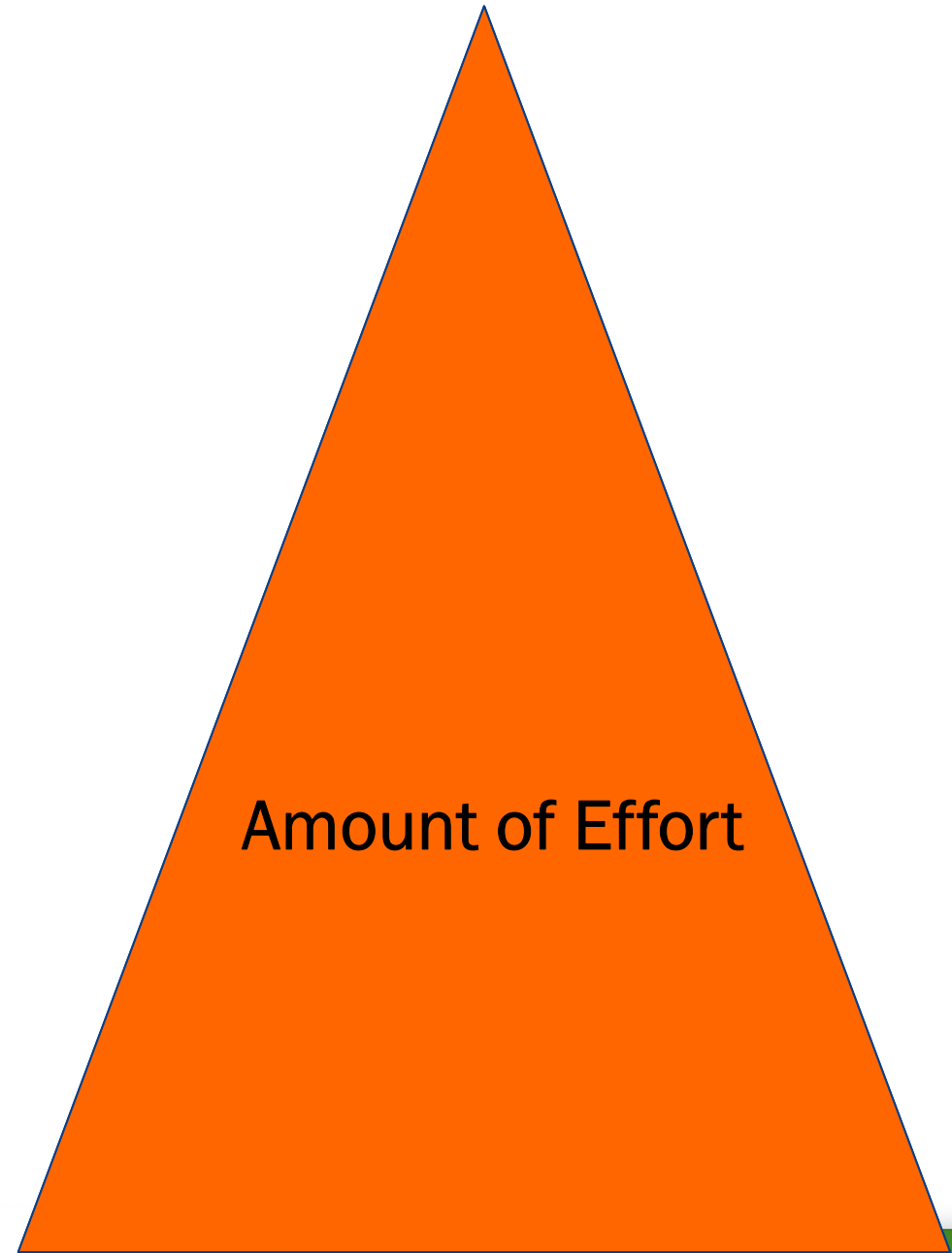
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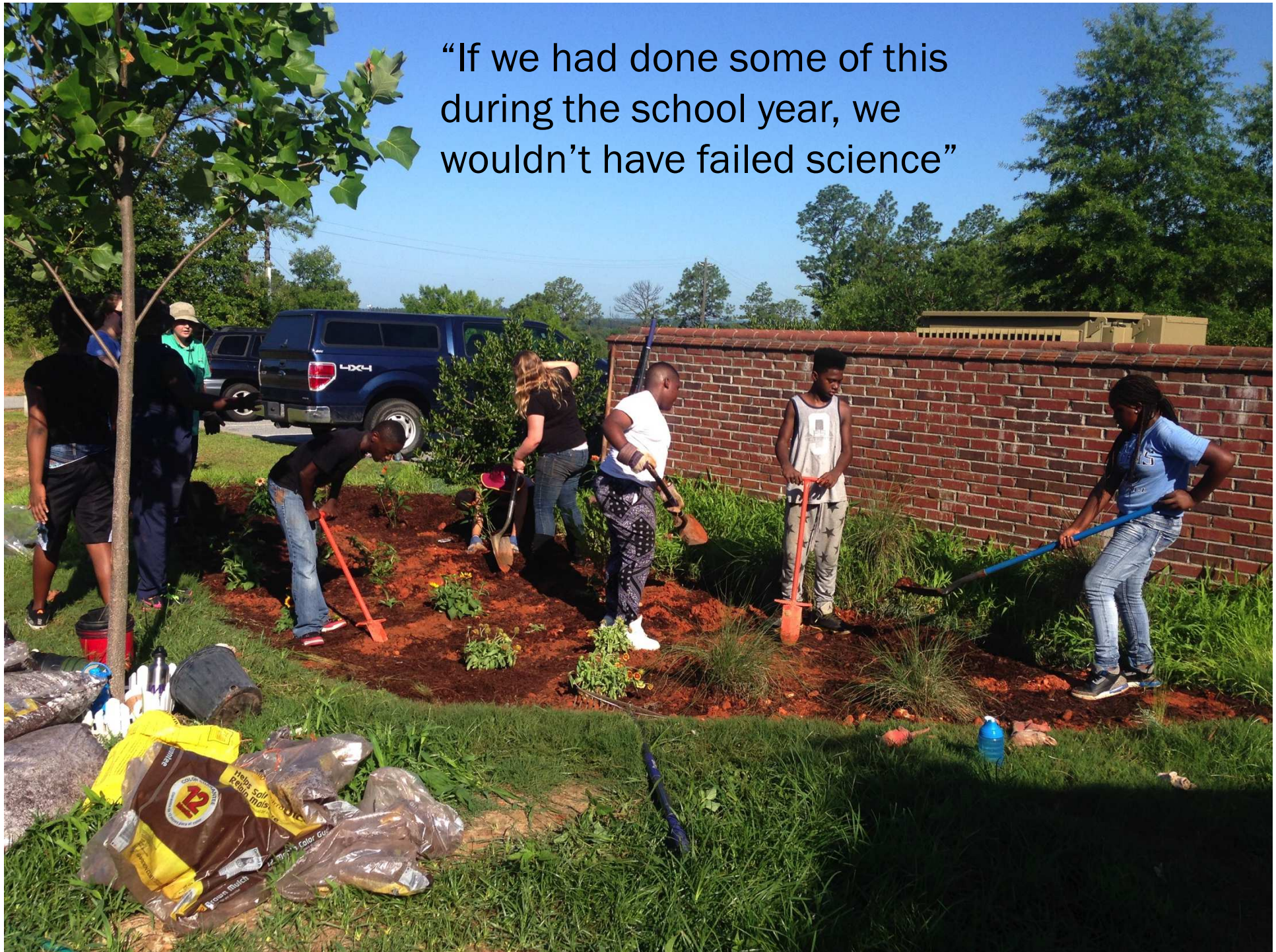


# What does success look like?





“If we had done some of this during the school year, we wouldn't have failed science”





Eve Brantley

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May 10-12, 2016

Auburn University



[agriculture.auburn.edu/stormwater](http://agriculture.auburn.edu/stormwater)