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Colorado River Mussels Project 6 At Risk Mussel Species

Fresh Water Mussel Summit – Austin Texas
November 15th 2017
Russell Castro – NRCS, State Wildlife Biologist

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HELPING PEOPLE

FOR **80** YRS

HELP THE LAND

NRCS

Farm Bill Programs

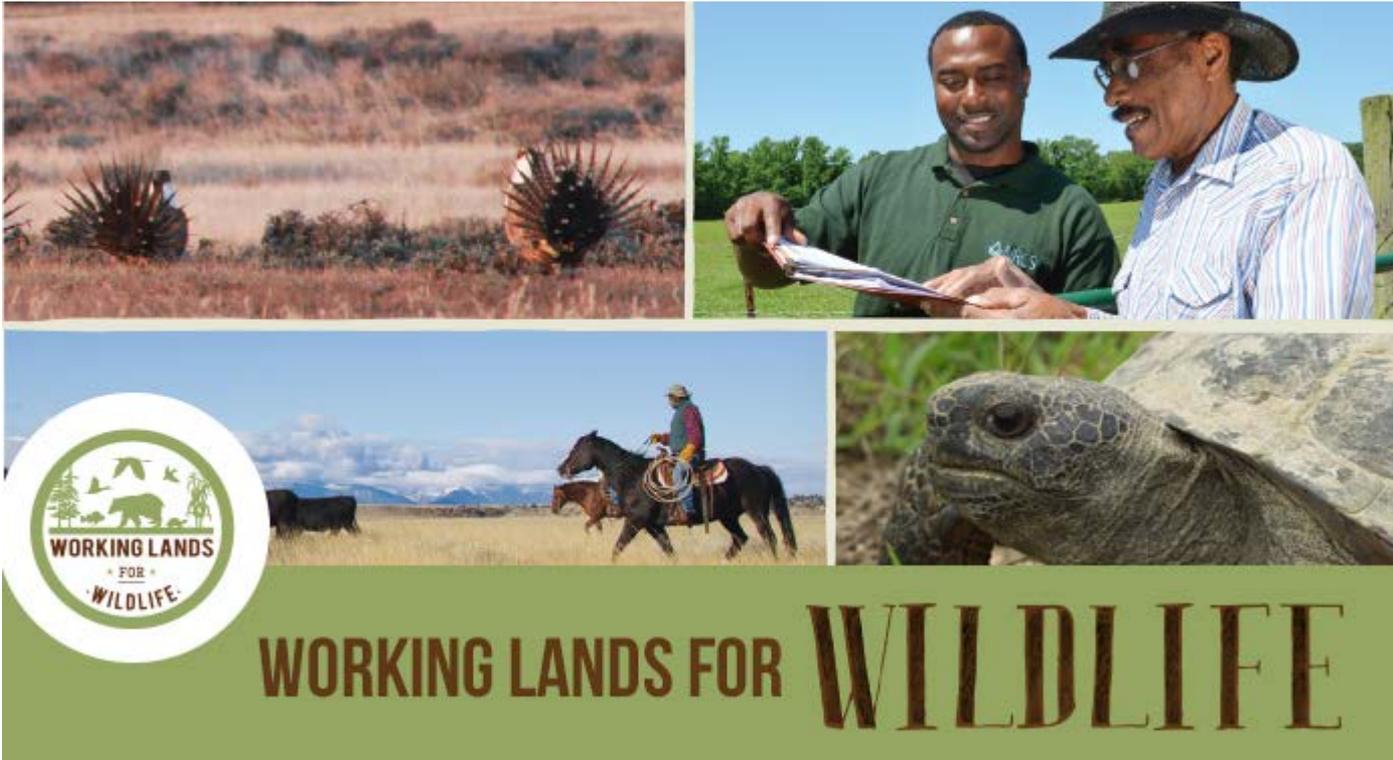
- **Agricultural Act of 2014**
- **Technical Assistance**
- **Financial Assistance Programs**
- **Easement Programs**



Conservation Programs



Working Lands for Wildlife



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Working Lands for Wildlife (WLFW)

- Working Lands for Wildlife (WLFW), NRCS works with partners and private landowners to focus voluntary conservation on working landscapes.
- NRCS provides technical and financial assistance to agricultural producers, helping them plan and implement conservation practices that benefit target species and priority landscapes.



Environmental Quality Incentives Program (EQIP)

EQIP offers financial and technical assistance to agricultural producers to promote agriculture production and environmental quality as compatible goals.



Working Lands for Wildlife

Conservation Model

- **Trust and Credibility:** NRCS takes a community, grassroots approach to conservation that's based on the principles of neighborliness.
- **Shared Vision:** NRCS-recommended conservation practices benefit wildlife and agriculture
- **Strategic Approach:** NRCS directs resources where the biological returns are the highest.
- **Accountability:** NRCS and conservation partners use science to measure conservation effectiveness and quantify outcomes.
- **Leverage:** NRCS brings together partners to multiply investments to achieve more conservation.
- **Regulatory Predictability:** Through WLFW, NRCS partners with the U.S. Fish and Wildlife Service to provide predictability under the Endangered Species Act, providing peace of mind to participating landowners.



Working Lands for Wildlife Proposal Colorado River Mussels Project Overview

- **Targeting 6 At-Risk freshwater mussels**
- **Reduce threats to the species - Decline is attributed to cumulative impacts from several factors**
- **Improve Water Quality and Quantity by applied conservation practices and partnerships**



Shared Vision: Water Quality Initiative

- Build on success of Texas Water Quality Initiative
- Includes 43 conservation practices
- Improve habitat on upland to improve water quality and quantity
- Completion of Conference Report



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Partners involved/leveraging opportunities

- **USFWS - Partners for Fish and Wildlife**
- **Additional Partners and Programs**
 - Texas State Comptrollers office, TPWD, TSSWCB, Lower Colorado River Authority
- **NRCS - Water Quality Initiative**



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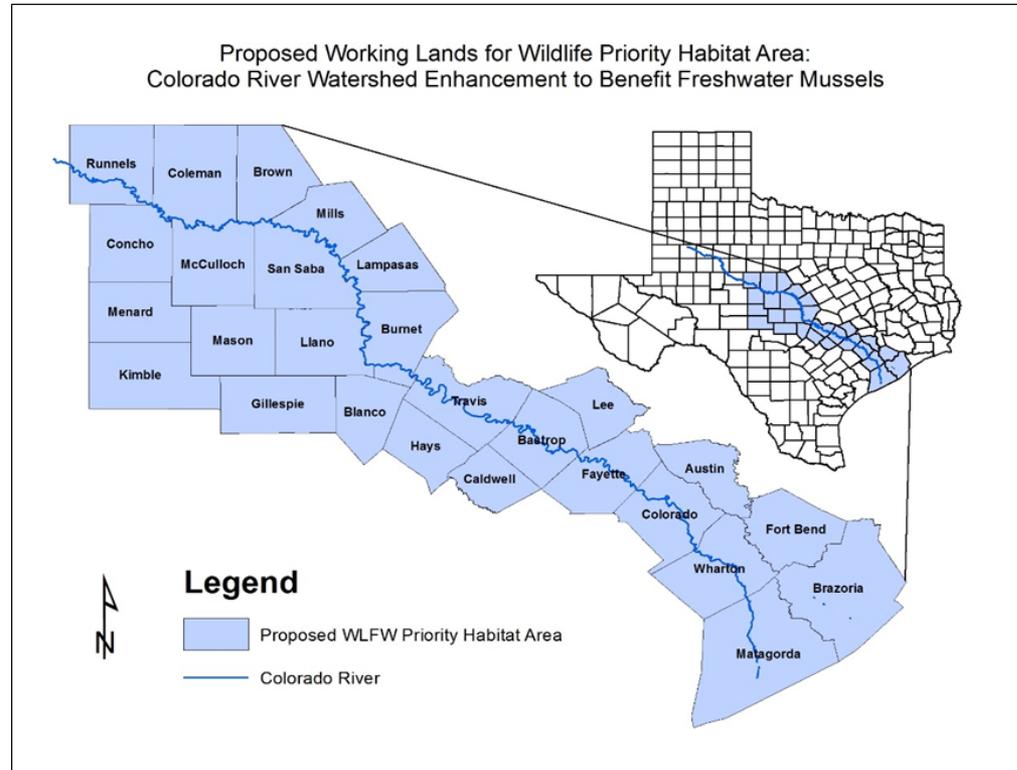
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Strategic targeting

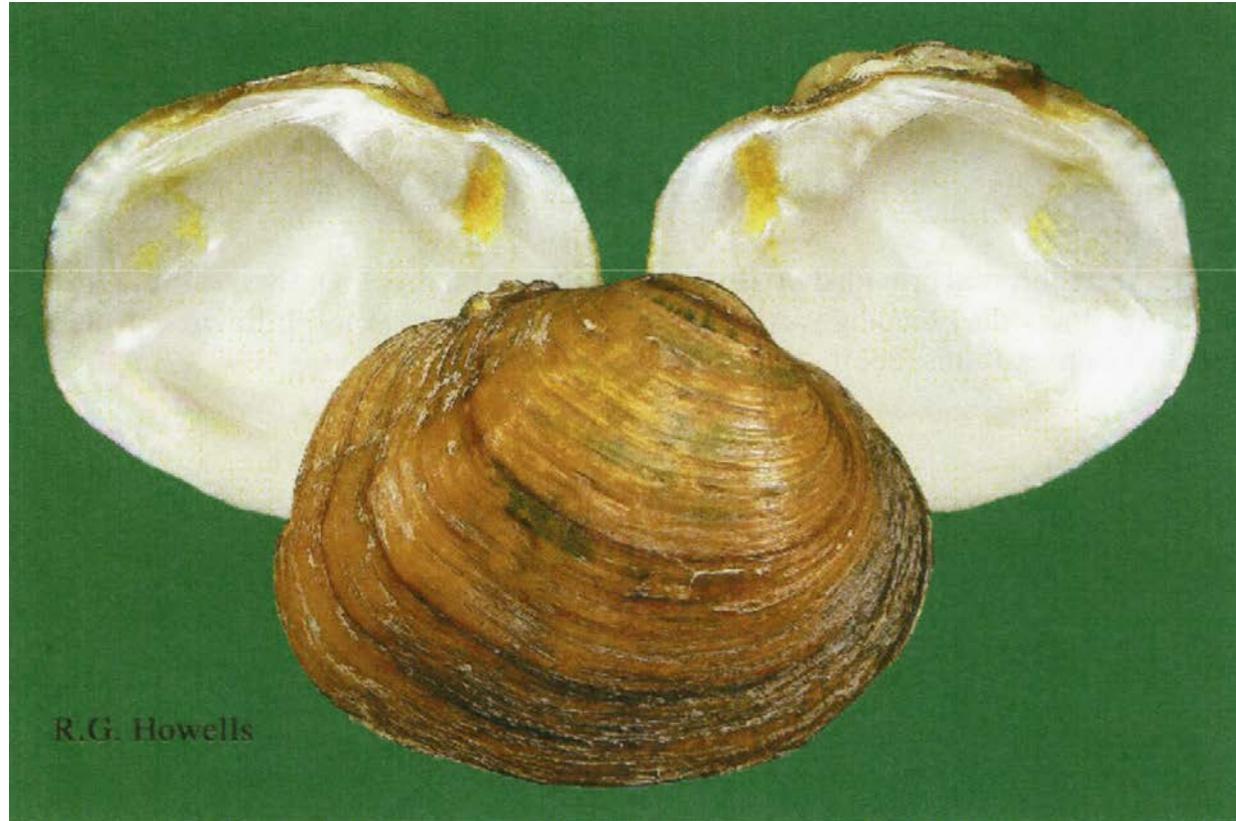


- **Focus on 27 counties in central Texas**
- **Target those elements that contribute to sediment loading of the stream system**
- **Conservation practices that will directly improve water quality and quantity**



Desired Project Outcomes

- Reduce/Remove the need for listing
- Improved water quality and quantity for at-risk species
- Landowner awareness
- Species survival



R.G. Howells

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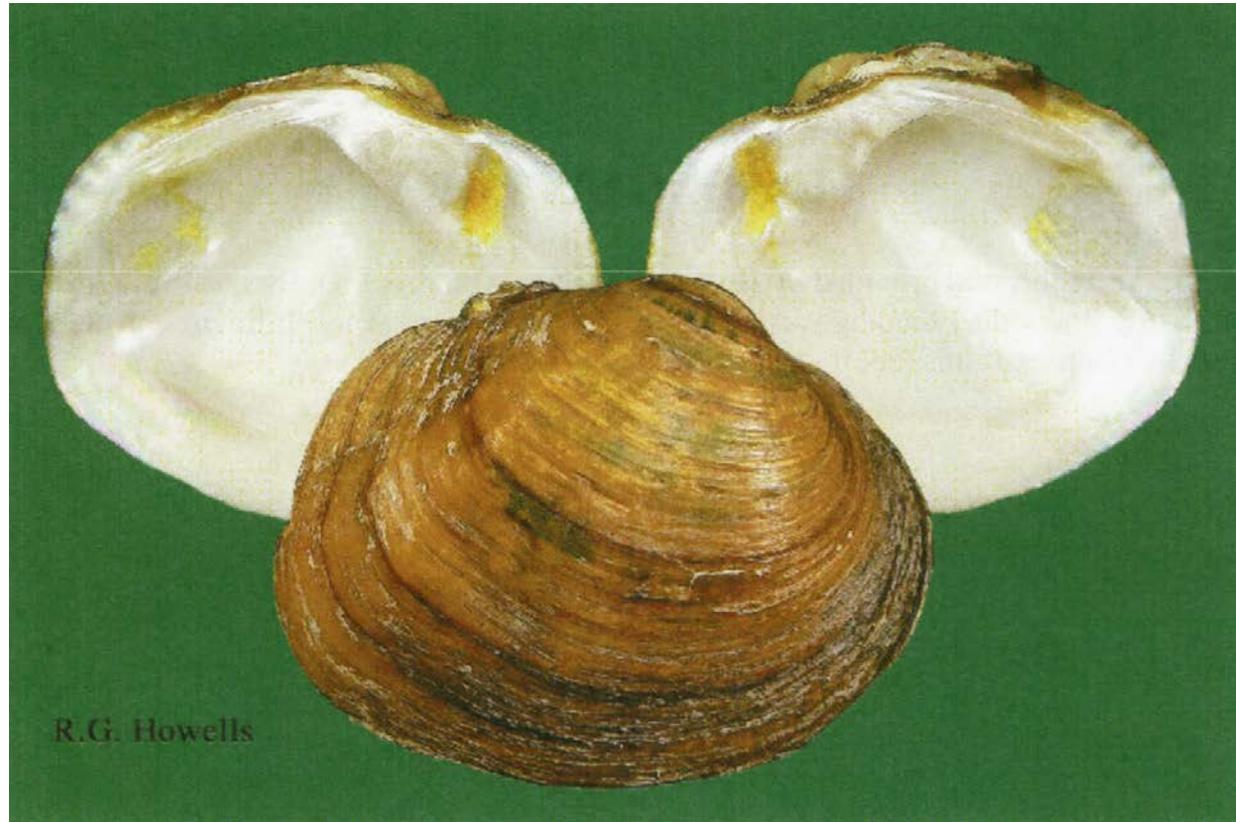
Strengths and Weaknesses of Project

- **Strengths:**
- **Partnership focus and collaboration**
- **Improved Water Quality and Quantity for species and shared uses by growing urban sector**
- **Improved habitat for other T&E species**
- **Weaknesses:**
- **Landowner and general public education and understanding of the species**
- **Need for new and improved science**



How Will NRCS Accomplish this Task?

- **Conservation Planning**
- **Develop conservation plans that build on a system approach.**
- **Implementation of those conservation practices which address the resource concerns**
- **Benefits to water quality, quantity and the targeted mussel species.**



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USDA NRCS Texas Working Lands for Wildlife Freshwater Mussels



**Texas Freshwater Mussel Summit
Austin Texas
November 2017**



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**Working Lands for Wildlife
Freshwater Mussels
is Built
on the Success
of the Texas
National Water Quality Initiative**



How Does NWQI Work?



- **NRCS works closely with conservation partners to select priority watersheds where on-farm conservation investments will deliver the greatest water quality improvements.**

- **NWQI is designed to help individual agricultural producers take actions to reduce the loss of sediment, nutrients and pathogens into waterways where water quality is a critical concern.**





Conservation Practices and “ACT” Avoid, Control and Trap

- Emphasizes a “systems approach” to address priority natural resource concerns.
- A cornerstone of this approach is to encourage producers to implement a system of practices that address the concept for **A**voiding, **C**ontrolling, or **T**rapping pollutants, or “ACT.”





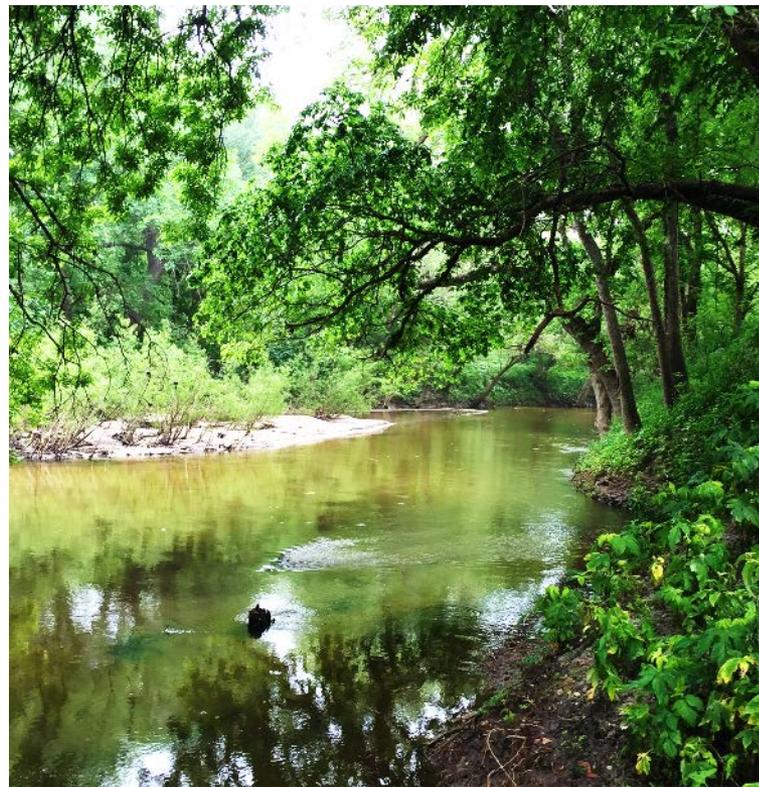
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Avoid

Avoidance helps manage nutrients and sediment source control from agricultural lands, including animal production facilities.

Practices such as **Nutrient Management**, **Cover Crop**, and **Conservation Crop Rotation** help producers avoid pollution by reducing the amount of nutrients available in runoff or leaching into water bodies and watersheds.

Practices such as cover crops and crop rotation help take up nutrients to avoid potential runoff and pollution. Crop rotations that include differing crops, such as legumes, can limit amounts of commercial nutrients applied.





Control



Choose practices that will help with controlling erosion and runoff.

Specific practices such as **No-till/Strip/Till/Direct Seed, Mulch Tillage, and Ridge Till** are foundation practices to recommend to producers.

Practices such as **Cover Crop** will also do double duty by helping with Avoidance as well as Controlling.

Other facilitating practices, such as **Terraces** or **Stripcropping**, help control erosion and may manage runoff to reduce nutrients loading.



Trap

The last line of defense against potential pollutants is to trap them.

Practices such as **Contour Buffers**, **Filter Strips**, **Riparian Buffers** and the suite of **wetland practices to create, enhance, and/or restore wetlands** all serve to trap and uptake nutrients before entering water bodies.





Working Lands for Wildlife

Core Practices

Rangeland

- Prescribed Grazing
- Upland Wildlife Habitat Management

Cropland

- Conservation Crop Rotation
- Residue & Tillage Management
(no Till or Reduced Till)
- Nutrient Management
- Upland Wildlife Habitat Management

Pastureland

- Forage Harvest Management
- Nutrient Management
- Upland Wildlife Habitat Management





Supporting Practices

- Waste Storage Facility (313)
- Brush management (314)
- Animal Mortality Facility (316)
- Composting Facility (317)
- Conservation Cover (327)
- Contour Farming (330)
- Contour Buffer Strips (332)
- Cover Crop (340)
- Critical Area Planting (342)
- Waste Treatment Lagoon (359)
- Waste Facility Cover (367)
- Anaerobic Digester (366)
- Fence (383)
- Field Border (386)
- Riparian Herbaceous Cover (390)
- Riparian Forest Buffer (391)
- Filter Strip (393)
- Stream Habitat Improvement and Management (395)
- Grade Stabilization Structure (410)
- Grassed Waterway (412)
- Irrigation Reservoir (436)
- Irrigation Water Management (449)
- Access Control (472)
- Range plantings (550)
- Drainage Water Management (554)
- Heavy Use Area Protection (561)
- Animal Trails and Walkways (575)
- Stream Crossing (578)
- Streambank and Shoreline Protection (580)
- Channel Stabilization (584)
- Terrace (600)
- Vegetative Barrier (601)
- Tree/Shrub Establishment (612)
- Waste Treatment (629)
- Vegetated Treatment Area (635)
- Water and Sediment Control Basin (638)
- Wetland Wildlife Habitat Management (644)
- Constructed Wetland (656)
- Wetland Restoration (657)
- Wetland Creation (658)
- Wetland Enhancement (659)





Benefits to the Landowner

Water quality-related conservation practices enhance agricultural profitability through reduced input and enhanced soil health, which results in

- **Higher soil organic matter**
- **Increased infiltration**
- **Increased water-holding capacity**
- **Improved nutrient cycling.**





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Public Benefits

Well-managed farms and ranches limit pollution from runoff, produce food and fiber, sustain rural economies and provide food security to the nation.



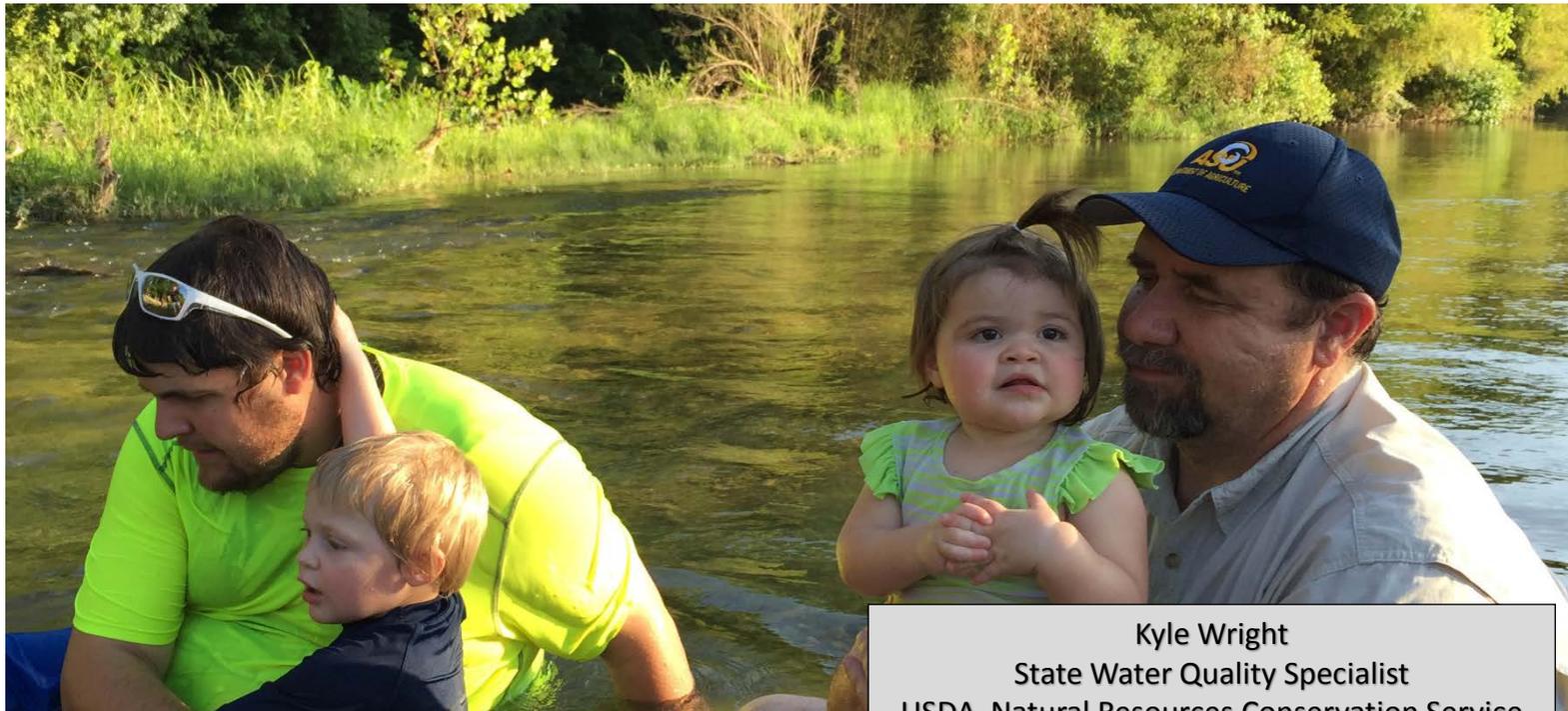
Communities benefit by having clean waterways, safer drinking water and healthy habitat for fish and wildlife.





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Questions?



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