Using Clean Water Act Section 319 to Promote Coordinated Nutrient Management

ACWA Clean Water Cross-Program Workshop
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Clean Water Act Funding for Watershed Protection and Restoration

303(c): Establish WQ Standards and Beneficial Uses

+

106: Monitor and Assess ($)

+

305(b): State Integrated Report

+

Establish Goals, ID Loads, Sources
319: WS & Alt. Plans
303(d): TMDLs

Planning & Actions to Restore & Protect

CWA Includes:

- **402: NPDES Permits**
- **404: Wetlands Regulatory Permits**
- **104(b)(3): Water Quality Cooperative Agreements ($)**
- **Title VI: Clean Water State Revolving Fund ($)**
- **604(b): Water Quality Management Planning Grants ($)**
- **319: Nonpoint Source Program ($)**
- **320: National Estuary Program ($)**
- **Geographic Programs (Ches. Bay, Gulf of Am., Great Lakes, etc.) ($)**

+

Technical Tools to Get It Done

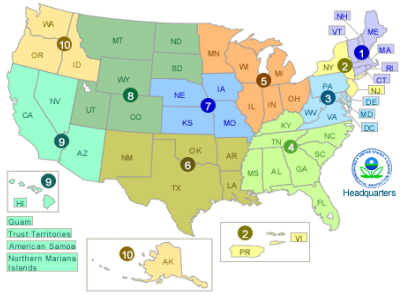
- How's my Waterway
- Water Quality Exchange
- Grants Reporting and Tracking Tool
- Load Calculators, e.g., PLET
- Restoration & Protection Screening Tool & Indicator Database
- National Nutrient Inventory

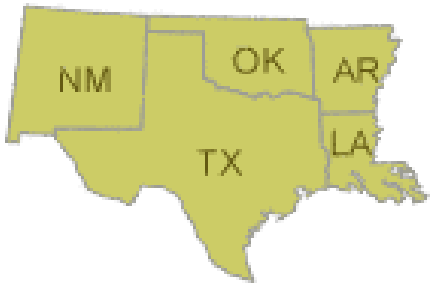
In Collaboration With:

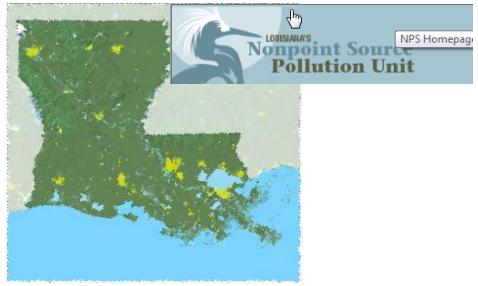
Farm Bill USDA Conservation Programs
FEMA Hazard Mitigation Planning Grants
State and Local Programs
Public Private Partnerships
Private Philanthropy

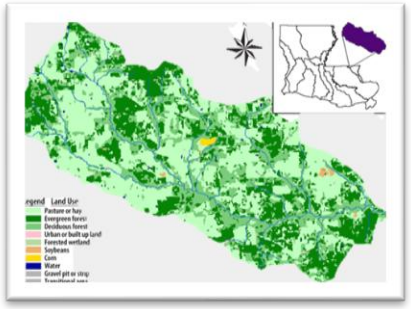
319: Flexible Partnership Program with 100s of Engaged Partners

EPA National 319 Program → coordinates w/ **EPA Regions** → supports **State, Tribe, Territories** → powers **Local** watershed projects









EPA provides states, territories and tribes with guidance/grants for their NPS programs

EPA promotes the watershed approach: target work and engage stakeholders and partners at the local scale

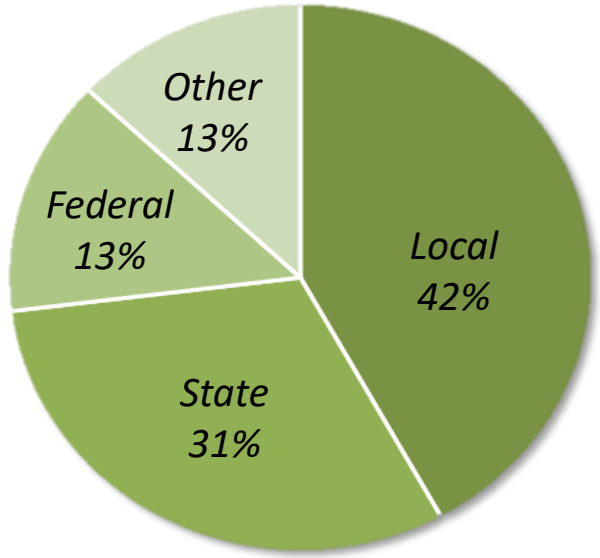
Shows results (lbs pollution reduced, mi/acres restored)

Supports innovative demonstrations & people coordinating & doing the work, at any time:

- ★ ~500 State and Tribal staff implementing NPS programs
- ★ ~1800 on-the-ground projects

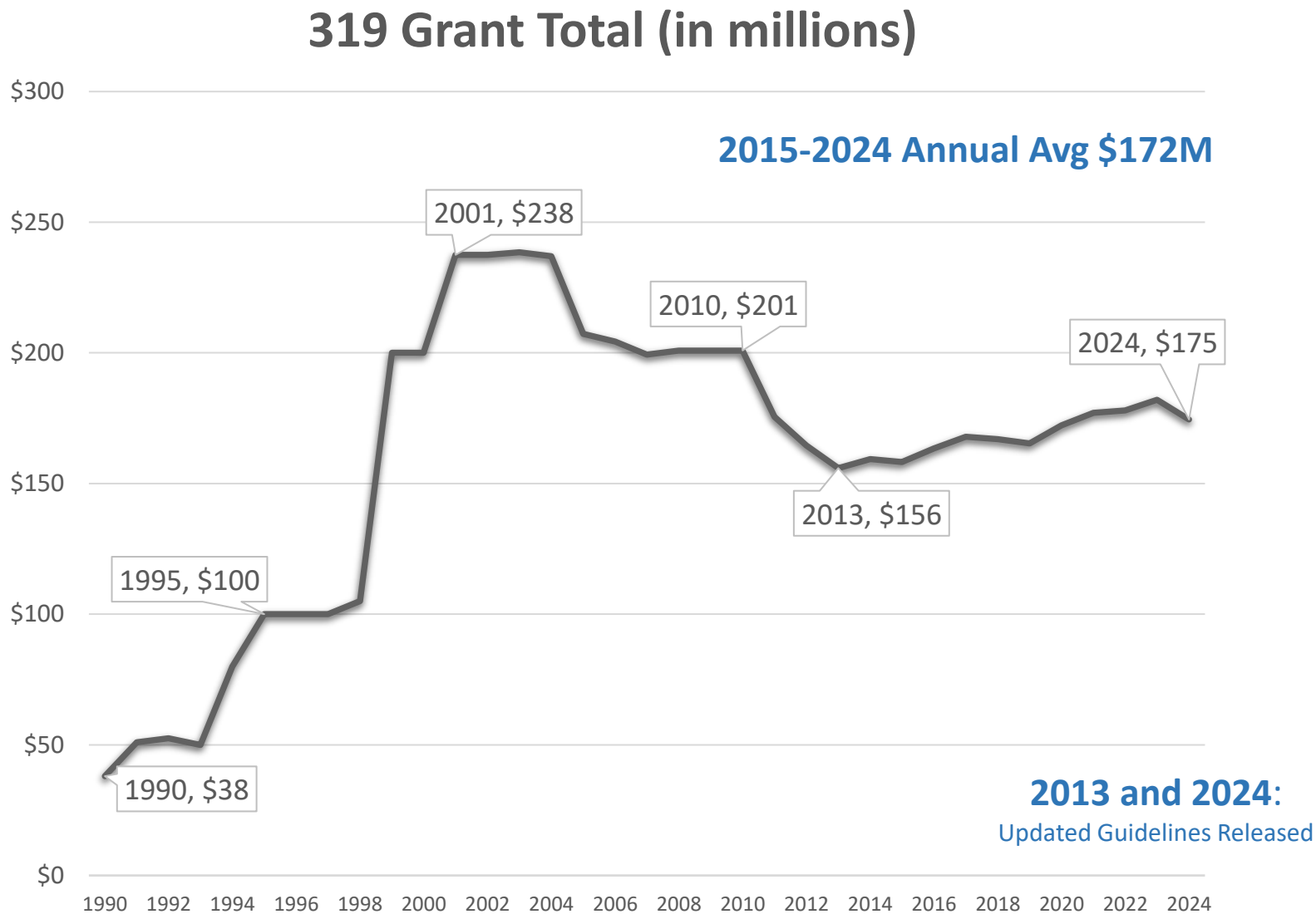
Success takes local action and people—communities, agencies, conservation districts, watershed groups, and landowners—willing to change behavior and/or adopt new practices

Currently, in the 6 R5 states, >225 partner organizations are involved in active projects



Nat'l Partner Distribution

Section 319 Program History



1987-2003:
Program Development

2011-2012:
EPA program review
+ GAO Audit

2013 and 2024:
Updated Guidelines Released

2021-2023:
Grantee Engagement
and Guideline Revision

CWA 319 Program Supports Nutrient Reduction

EPA guidelines prioritize reducing nutrient pollution, provide flexibility to support plan development, capacity building, data analysis & using existing plans (TMDLs, Hazard Mitigation, NRCS watershed assessment)

States set priorities and strategies for addressing nonpoint source concerns in 5-year Management Plans.

- 70% of 319 projects directly address nutrient reduction; an additional 10% address sediments or pathogens projects that often co-control nutrients
- Encourages cross-program coordination to expand innovation, funding sources & impact
- State-wide nutrient reduction strategies are a common priority

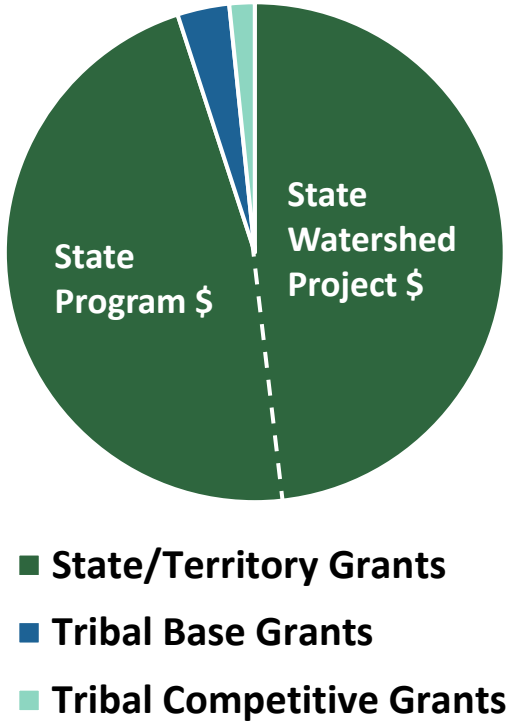
States can tailor work to their water quality concerns and program structure, include innovative financing and/or market approaches to achieve results.

Watershed coordinators and innovative finance aggregators increase connections between funding sources and stakeholders with aim to leverage funding

About 12 states have utilized 319 funds to evaluate or implement nutrient market activities. Examples include:

- Outcome based payments/pay for performance
- Evaluating trading as an option
- Supporting staff to develop state-wide trading strategy or policy
- Supporting staff to develop watershed trading/market plan, engage landowners
- Developing a catalog of acceptable BMPs for a trading market
- Providing monitoring to establish baseline for nutrient, temperature trading

CWA section 319 Funding
Annual Avg $172M, FY2015-2024



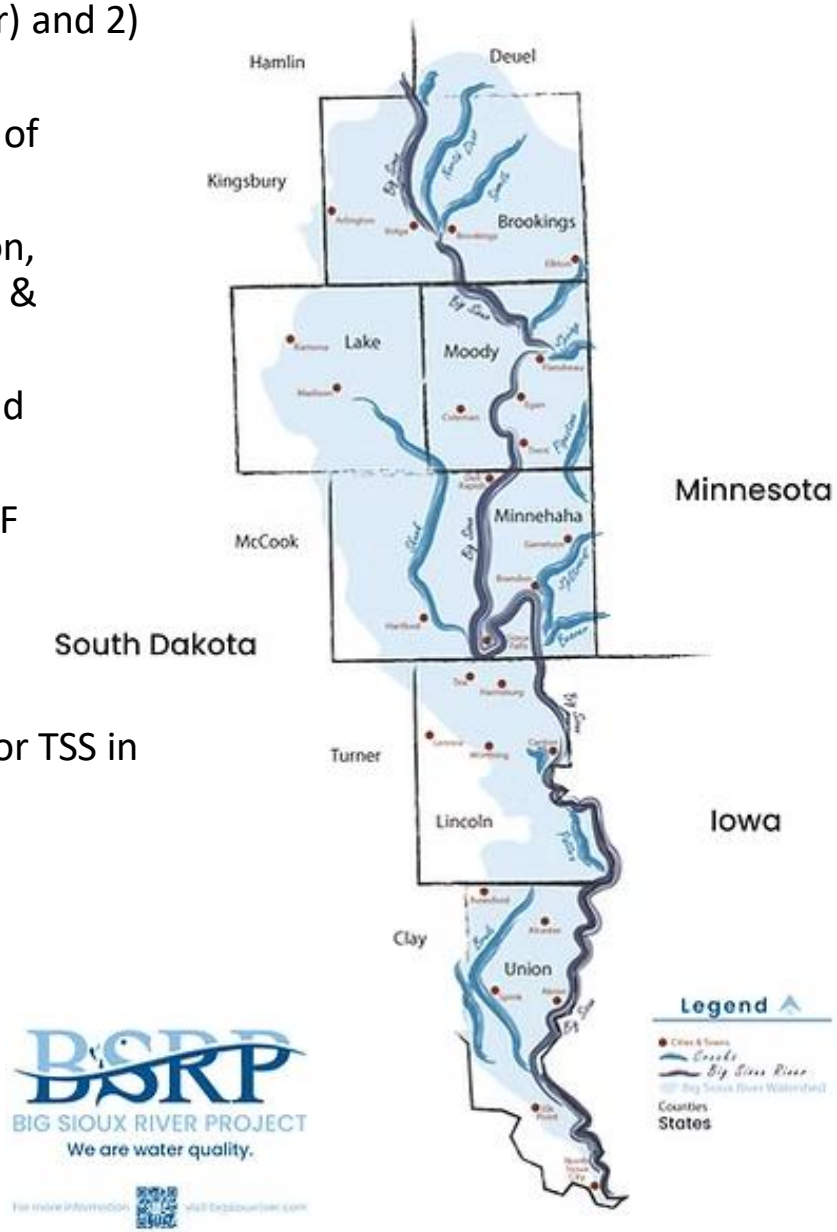
319 Program Role in Watershed Financing Partnerships

- Watershed Financing Partnerships are collaborations where partners stack funding opportunities to fund multiple projects to address watershed-scale priorities
- 319 funds used to support organizations that wish to serve as WFPs are counted as project work per EPA's Guidelines
- This approach supports greater use of CWSRF to implement high value NPS projects on a watershed-wide basis
- WFPs that receive 319 funds are expected to begin to implement within three years of the use of the 319 grant funds
- Other funding sources may also support these types of partnerships; focus is on scaling up successes on a basin-wide basis
- Watershed coordinators and innovative financing aggregators will increase connections between funding sources and stakeholders

The EPA encourages 319 grantees to invest in projects that build community capacity for NPS work, such as supporting local watershed coordinators and leveraging community resources.

WFP Example: South Dakota's Big Sioux River Project (BSRP)

- South Dakota 319 BSRP sub-grant enables them to 1) hire a staff person (watershed coordinator) and 2) to aggregate additional funding including from CWSRF and USDA-NRCS Farm Bill Programs.
- BSRP staff coordinates project financing, implementation, and monitoring with a large coalition of partners including conservation districts, land trusts and municipalities.
- BSRP works to restore WQ by coordinating the funding for conservation practice implementation, including riparian buffers, cover crops, conservation tillage, tree planting, shoreline stabilization & animal waste systems in SD and IA.
- Through 2024, BSRP received $10M+ in CWSRF financing from SD through sponsorship loans and partnerships with cities. CWSRF is >30% of BSRP's funding since 2004.
  - ✓ Sponsorship loan: muni POTW agrees to add NPS project to CWSRF loan. Thus, the CWSRF reduces the interest on the combined loan, effectively eliminating NPS project cost.
- Results: Through 2024, BSRP has protected 102 miles of rivers and streams by reducing ~477,000 lb N, ~126,000 lb P, & ~73,500 sediment tons.
- Skunk Creek, a major tributary of the Sioux River, was removed from the impaired streams list for TSS in 2016. Additional delistings are expected.



EPA past TA examples: working with CWSRFs interested in advancing how they finance priority NPS projects

- A Vermont CWSRF NPS sponsorship program finances NPS projects lacking repayment sources in supports of Lake Champlain TMDL implementation priorities, particularly for green stormwater infrastructure.
- Kansas helped kick-start adoption of no-till cover crop implementation by using the CWSRF to purchase specialized equipment necessary to scale up this practice through a pass-through lending model to support this market-driven public-private partnership .
- Arizona used the CWSRF for watershed protection/forest thinning projects to reduce wildfire risk in high priority drinking water supply watersheds, to reduce the potential for flash flood and mudslides that can pollute drinking water resources critically needed in drought-stricken areas.
- Maryland used the CWSRF to incentivize reforestation on private lands and developed a “road map” with a tool to calculate co-benefits of reforestation and restoration credits for stormwater permits to assist local governments and partners seeking loans to fund forestry efforts. The state CWSRF partnered with other programs and used the power of loan guarantees to expand the reach and effectiveness.
- Minnesota used the CWSRF to (1) establish a long-term easement program that provides funds to farmers who establish perennial crops that act as nitrogen sinks within sensitive wellhead protection areas to protect well water from nitrates and (2) establish a means use the CWSRF to purchase working lands in such areas as they come available. This work can be a roadmap for establishing a multi-agency funding council and a one-stop shop for financing such projects.
- Wisconsin’s CWSRF programmatic financing facilitated greater NPS investments with such as ag and urban green infrastructure practices as alternatives to point sources projects for reducing phosphorus in lakes and other water bodies. They developed a strategy to allow a wastewater utility to invest in a water quality trading approach for meeting a P reduction target by bundling disparate NPS projects throughout a watershed all in one loan agreement.
- Alaska, North Carolina, and Louisiana have used CWSRF to finance repairs or replacements of failing decentralized wastewater treatment systems. The assistance identified key community partners that could address needs. Such non-profit lender partners are typically community development financial institutions, or CDFIs. The assistance also considered ways to apply additional subsidization, such as 50% principal forgiveness, to address wastewater needs under a “loan loss allowance” approach that balances a community’s need for reducing financial risk.
- Hawaii used both the CWSRF and DWSRF to protect groundwater resources particularly from the impacts of abandoned wells in source water protection areas. Maine‘s CWSRF and DWSRF then developed a roadmap for the Saco Watershed Collaborative, a watershed group, for using SRFs to advance source water protection goals.

Pollutant Load Estimation Tool (PLET)

Web-based tool that ***estimates*** annual, long-term ***nutrient and sediment loads*** from ***surface runoff*** over different land uses and load reductions resulting from BMP implementation

Section 319 subgrantees, watershed planners, academics, conservation districts and others

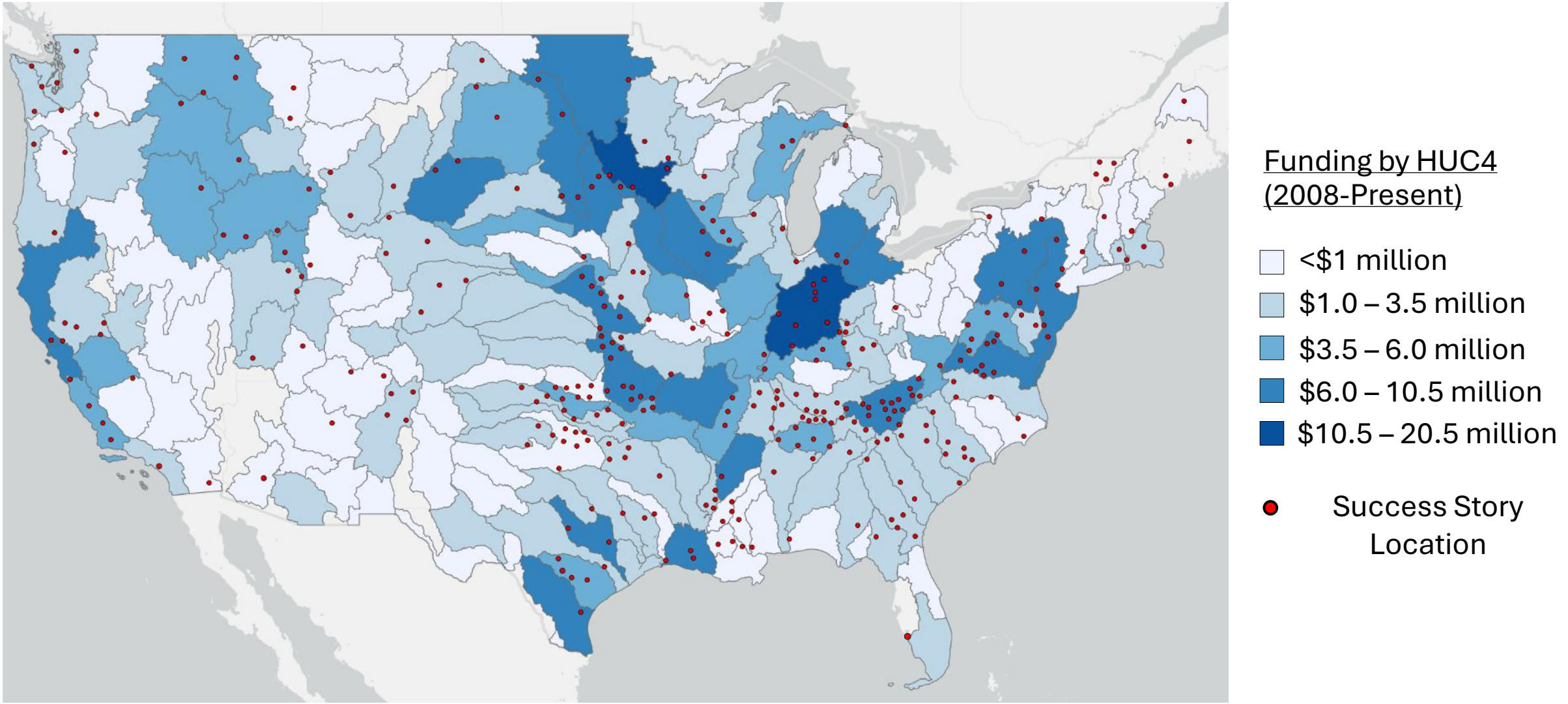
38% of Section 319 Grantees use PLET to ***report annual load reductions***. It's also used for planning purposes (i.e. watershed-based plans)

Updates coming soon include:

- A **protected Lands calculator** to estimate prevented loads and prevented runoff from protection efforts.
- Updated precipitation data using PRISM data processed from HAWQS model.

What other improvements would users like to see?

319 Funding Levels for Agriculture and Silviculture



Data Source: EPA Grants Reporting and Tracking System (GRTS), includes projects that specifically identified row crop agriculture, animal agriculture and silviculture as an NPS source being addressed.

Snapshot of Frequently Funded Animal Ag Practices

Frequent Practices

- Waste Management
- Fencing
- Alternative Water Source
- Nutrient Management

Pollutants

- Nutrients
- Sediments
- Pathogens
- Biological Oxygen Demand

319 projects 2008–present

Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY

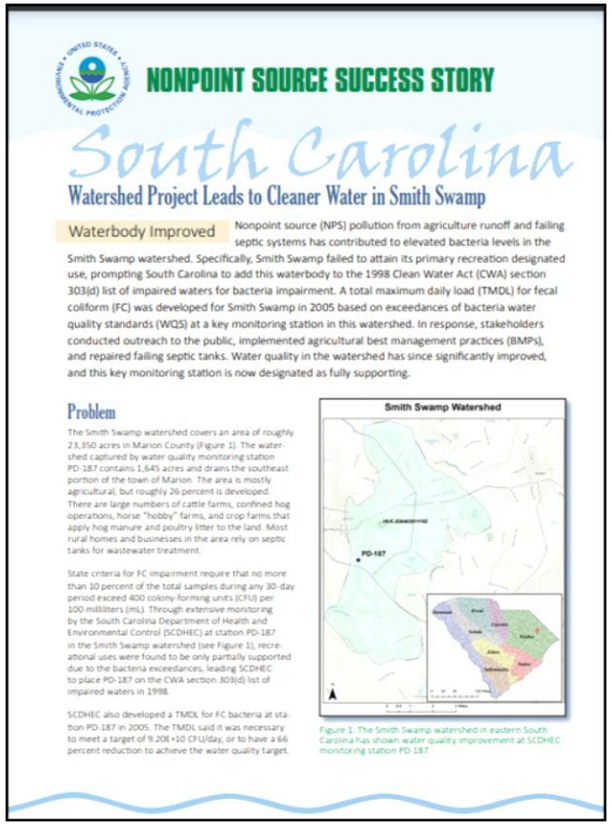
319 Success Stories

- Highlight water bodies states identified as primarily NPS-impaired and achieved documented water quality improvements
- Describe innovative strategies used to reduce NPS pollution, the growth of partnerships and a represent diverse funding sources.
- Written by local and state staff to showcase national, state and local success.
- Number of NPS-impaired water bodies that are partially or fully restored is a key EPA measure in effort to document how NPS restoration efforts are improving water quality across the nation.
- Collected and posted since 2005.

To Date

- 774 Stories
  - 56 different pollutants
  - Top 3: Sediment, Pathogens and Nutrients
  - More than 1300 impairments removed or improved
- 13,000 miles of rivers and streams
- 161,500 acres of lakes, ponds and reservoirs
- And counting!

Classic look


NONPOINT SOURCE SUCCESS STORY

South Carolina

Watershed Project Leads to Cleaner Water in Smith Swamp

Waterbody Improved

Nonpoint source (NPS) pollution from agriculture runoff and failing septic systems has contributed to elevated bacteria levels in the Smith Swamp watershed. Specifically, Smith Swamp failed to attain its primary recreation designated use, prompting South Carolina to add this waterbody to the 1998 Clean Water Act (CWA) section 303(d) list of impaired waters for bacteria impairment. A total maximum daily load (TMDL) for fecal coliform (FC) was developed for Smith Swamp in 2005 based on exceedances of bacteria water quality standards (WQS) at a key monitoring station in this watershed. In response, stakeholders conducted outreach to the public, implemented agricultural best management practices (BMPs), and repaired failing septic tanks. Water quality in the watershed has since significantly improved, and this key monitoring station is now designated as fully supporting.

Problem

The Smith Swamp watershed covers an area of roughly 23,350 acres in Marion County (Figure 1). The watershed captured by water quality monitoring station PD-187 contains 1,645 acres and drains the southeast portion of the town of Marion. The area is mostly agricultural, but roughly 26 percent is developed. There are large numbers of cattle farms, confined hog operations, horse "hobby" farms, and crop farms that apply hog manure and poultry litter to the land. Most rural homes and businesses in the area rely on septic tanks for wastewater treatment.

State criteria for FC impairment require that no more than 10 percent of the total samples during any 30-day period exceed 400 colony forming units (CFU) per 100 milliliters (mL). Through extensive monitoring by the South Carolina Department of Health and Environmental Control (SCDHEC) at station PD-187 in the Smith Swamp watershed (see Figure 1), recreational uses were found to be only partially supported due to the bacteria exceedances, leading SCDHEC to place PD-187 on the CWA section 303(d) list of impaired waters in 1998.

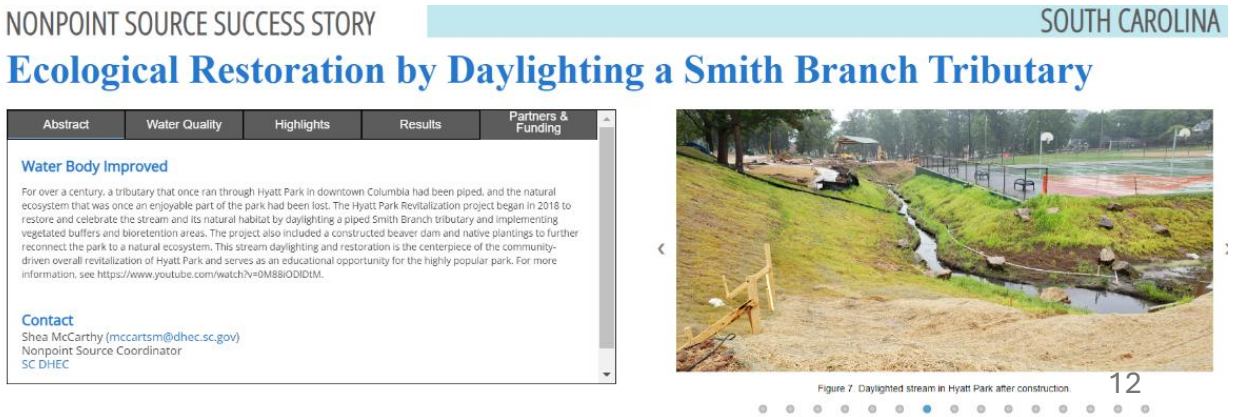
SCDHEC also developed a TMDL for FC bacteria at station PD-187 in 2005. The TMDL said it was necessary to meet a target of 9.20E+10 CFU/day, or to have a 66 percent reduction to achieve the water quality target.

Smith Swamp Watershed

PD-187

Figure 1. The Smith Swamp watershed in eastern South Carolina has shown water quality improvement at SCDHEC monitoring station PD-187.

Recent updated look


NONPOINT SOURCE SUCCESS STORY

SOUTH CAROLINA

Ecological Restoration by Daylighting a Smith Branch Tributary

Abstract | Water Quality | Highlights | Results | Partners & Funding

Water Body Improved

For over a century, a tributary that once ran through Hyatt Park in downtown Columbia had been piped, and the natural ecosystem that was once an enjoyable part of the park had been lost. The Hyatt Park Revitalization project began in 2018 to restore and celebrate the stream and its natural habitat by daylighting a piped Smith Branch tributary and implementing vegetated buffers and bioretention areas. The project also included a constructed beaver dam and native plantings to further reconnect the park to a natural ecosystem. This stream daylighting and restoration is the centerpiece of the community-driven overall revitalization of Hyatt Park and serves as an educational opportunity for the highly popular park. For more information, see https://www.youtube.com/watch?v=0M88IODIDtM.

Contact

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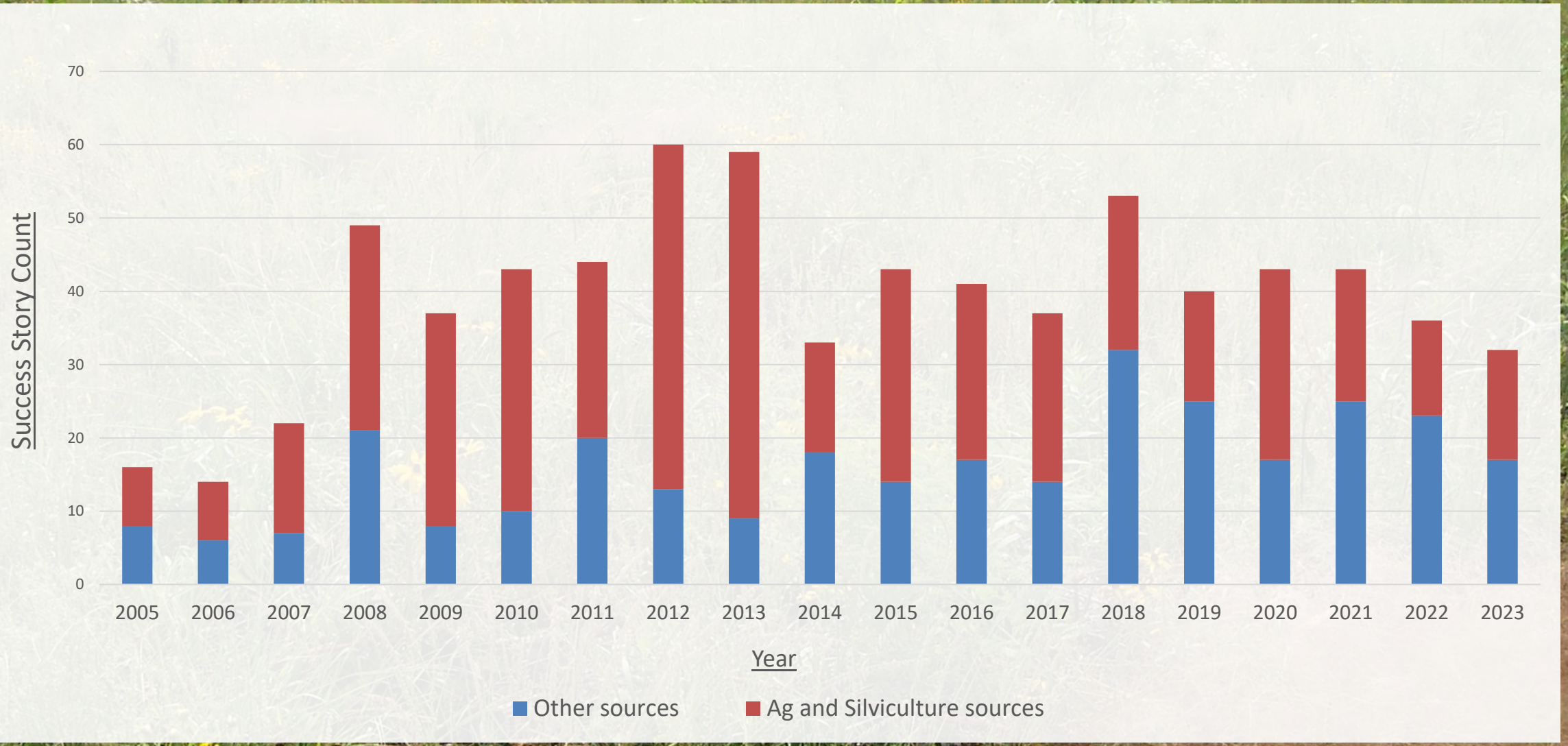
SC DHEC

Figure 7. Daylighted stream in Hyatt Park after construction.

Ag Success Stories Published, 2005-Present



445 Ag (Row Crop + Animal Ag +Silviculture Stories)

Gulf Hypoxia Program: an incubator for ideas

- In 2019, OW for the first time provided $2.4M ($200k per state) as direct grants to the Hypoxia Task Force states – states started thinking about opportunities to advance programs under their nutrient reduction strategies.
- Established in 2022 by IIJA, the Gulf Hypoxia Program is a first time Congressional investment in the HTF with $60M for 5 years to support the *Gulf Hypoxia Action Plan* goals.
- Locally, states and Tribes use GHP to engage farmers, rural communities, water utilities, and the public:
  - $50.7M to 12 states ($4.2 million each): Nutrient management planning, conversation practice implementation, stakeholder engagement and education, wastewater treatment plant optimization and water quality monitoring.
  - $5.4M to 15 Tribes (varies by Tribe): Demonstration project implementation, staff training and support, nonpoint source program development and implementation, and building capacity for Treatment as State for Clean Water Act programs.
  - $1.2M to 3 Sub-Basin Committees ($400k each): Interstate collaboration and coordination, and water quality monitoring on the Mississippi River, Ohio River and large tributaries.
  - $600,000 for a Land Grant University Consortium: Communication strategy and research needs assessment to support states and Tribes.
- The HTF is committed to demonstrating to the public the importance, success and impact of the GHP to advance the *Gulf Hypoxia Action Plan* goals and improve water quality.

319 Resources

- Resources for Watershed Planning
- Section 319 Project Mapper
- Section 319 NPS State Contacts
- NPS Success Stories
- Leveraging 319 funds and State Revolving Funds
- Local Source Water Collaborative Map
- Compendium of Tools and Methods to Estimate Environmental Benefits for Nature-Based Solutions