

# Addressing Nonpoint Source Pollution through EPA's National Nonpoint Source Program



**Monday, July 17 2023, 2:30pm – 4:30pm Eastern**

**Speakers:**

- **Ellie Flaherty**, U.S. EPA
- **Adrienne Donaghue**, U.S. EPA
- **Don Waye**, U.S. EPA
- **Jake Greif**, U.S. EPA
- **Steve Epting**, U.S. EPA
- **Margot Buckelew**, U.S. EPA

## Watershed Academy Webcast

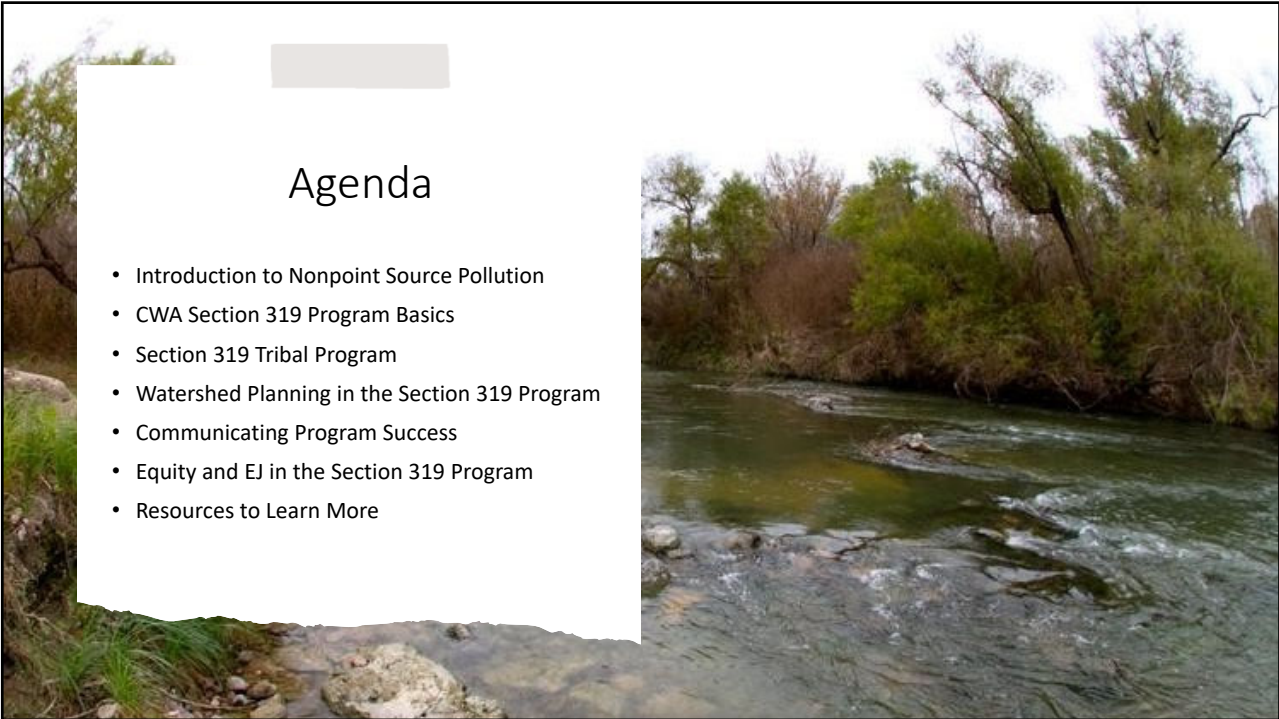
- The slides for today's presentations are posted on the Watershed Academy webpage.
- A recording of the webcast will be posted within the next month.

[www.epa.gov/watershedacademy](http://www.epa.gov/watershedacademy)

## Webcast Logistics

- **To Ask a Question** – Type your question into the “Questions” tool box on the right side of your screen and click “Send.”
- **To Report any Technical Issues** (such as audio problems) – Type your issue in the “Questions” tool box on the right side of your screen and click “Send” and we will respond by posting an answer in the “Questions” box.

## Audience Polling





# Sources of Pollution under Clean Water Act

## 'Point sources' regulated under CWA

- Any "discernable, confined and discrete conveyance including...any pipe, ditch, channel...[etc] from which pollutants are or may be discharged"
- Discharges must be regulated in a manner consistent with state/tribal WQS, e.g., NDPDES permits

## 'Nonpoint sources' not regulated or specifically defined

- Any source of water pollution that doesn't meet point source definition
- Polluted runoff from rain or snowmelt carrying natural and anthropogenic pollutants to waters
- Includes: agriculture stormwater discharge and irrigation return flows

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<https://www.deerfoot.com/blog/blog-entries/whats-the-point-of-non-point/>

## NPS Pollution Comes From Diverse Sources



- **Agriculture**
  - Nutrients, sediment, pathogens, pesticides, metals
  - Row crop runoff, irrigation water, animal facilities
- **Onsite septic systems**
  - Nutrients, pathogens
- **Acid mine drainage**
  - Abandoned mines, metals
- **Unregulated urban runoff**
  - Pathogens, fertilizer, pet waste, oil & grease, construction sediment
- **Forestry**
  - Sediment (slides, road construction, fire), temperature
- **Hydro-modification**
  - Dams, channel straightening – sediment, temperature, habitat destruction



# Nonpoint Source Pollution Dominates Impaired Waters

Of waters that have been assessed and a possible source identified:  
85% of rivers and streams and 80% of lakes are impaired by nonpoint sources

## Rivers and Streams

Probable Source Group	Miles Threatened or Impaired
Unknown	144,971
Agriculture	135,855
Hydromodification	88,634
Atmospheric Deposition	85,922
Habitat Alterations (Not Directly Related To Hydromodification)	65,633
Unspecified Nonpoint Source	60,807
Municipal Discharges/Sewage	57,237
Natural/Wildlife	50,702
Urban-Related Runoff/Stormwater	49,330
Silviculture (Forestry)	40,942

## Lakes, Reservoirs and Ponds

Probable Source Group	Acres Threatened or Impaired
Atmospheric Deposition	4,215,980
Unknown	3,849,855
Agriculture	1,112,048
Natural/Wildlife	1,083,193
Unspecified Nonpoint Source	1,070,339
Other	834,283
Urban-Related Runoff/Stormwater	759,483
Legacy/Historical Pollutants	749,611
Municipal Discharges/Sewage	686,322
Hydromodification	569,138

\*NPS shaded in blue

Source: Draft CWA 305(b) National Water Quality Inventory. Disclaimer: Impairment information as of October, 2017. Because data are being migrated to the new ATTAINS system, these numbers may not reflect most current information.

## §319 of the Clean Water Act

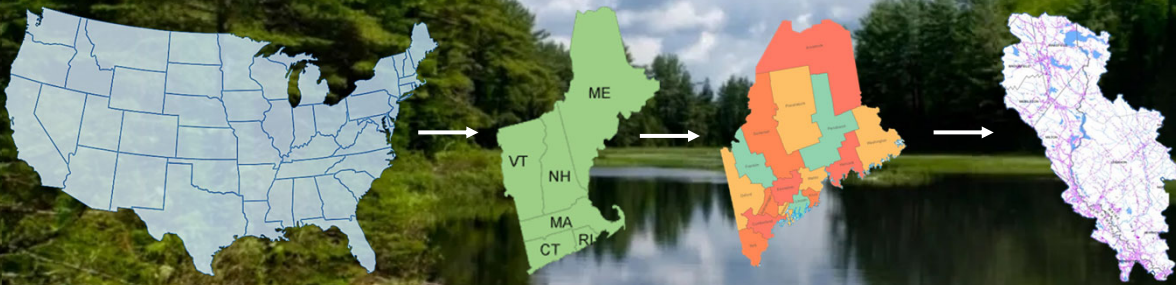
Established in 1987, provides a framework and federal funding for state and local NPS efforts

- 319(a) - Nonpoint Source Assessment Report
- 319(b) - State NPS Management Programs (or NPS Management Plans)
- 319(h) - Grant Program
- In addition to CWA, states follow grant guidelines in spending 319 funds.

<http://www.epa.gov/nps/319-grant-current-guidance>



## §319 is a National Program, Influences State Programs, and Powers Local Watershed Projects



### Funds distributed to states annually based on formula

- In FY22, \$178M was distributed to states (Tribes \$8M); ~ \$1M to ~ \$8.3M per state
- 40% non-federal match required

### Guidelines - Use of funds requires:

- **Watershed projects** – minimum 50% of funds allocated to support on-the-ground projects
- **NPS program work/staff**

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## State NPS Management Plans

- Updated every 5 years
- Lay out NPS priorities, focus areas, milestones
- Annual grant workplans derive from NPSMP
- May be opportunity for public comment
- Engagement with wide variety of partners

# Most states run RFP or other competitive processes and award subgrants for watershed projects

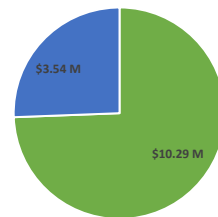


## Tribal §319 Grant Set-Aside



- Current Tribal set-aside is 7.6% of the total CWA §319 appropriation, or \$13.83M
  - Base grants range from \$45,000 to \$70,000 depending on land area
  - Competitive grants (up to \$125K/project)
- §319-funded work must be “activities that are related to waters within a reservation”
- Reduced match requirement, if tribe qualifies for “hardship waiver” (or if tribe adds §319 grant to PPG)

FY23 Funding Levels (\$13.83 M Total)

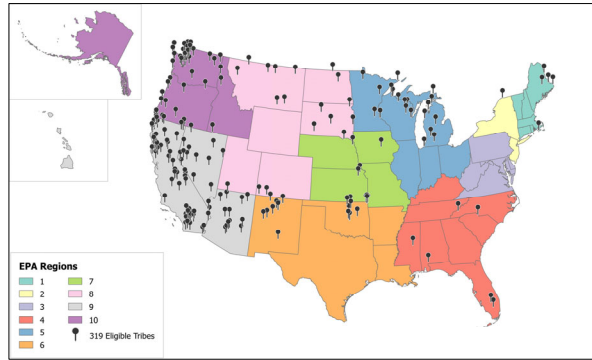


■ Base Grants ■ Competitive Grants  
**Base §319 Grants**  
 Primarily tribal staff-led activities to implement NPS program.  
**Competitive §319 Grants**  
 On-the-ground BMP implementation projects to protect/restore water quality.

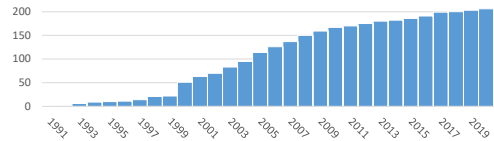


# Tribal NPS Program

- EPA is authorized to treat federally recognized Tribes in a manner similar as states (TAS) and award grants to eligible tribes. To gain TAS status, there is an application process through the EPA regional offices.
- Like states, §319 Tribal NPS efforts are guided by NPSMPs and assessment reports.
- Some important differences:
  - Partnerships & leveraged funding play a central role in Tribal NPS efforts
  - Integrated with CWA Section 106
  - Unique challenges (e.g., staff turnover, implementing watershed approach)



Tribal NPS programs are located in 9 of 10 EPA Regions. Current tribal land areas range from <1mi<sup>2</sup> to more than 24,000 mi<sup>2</sup>.

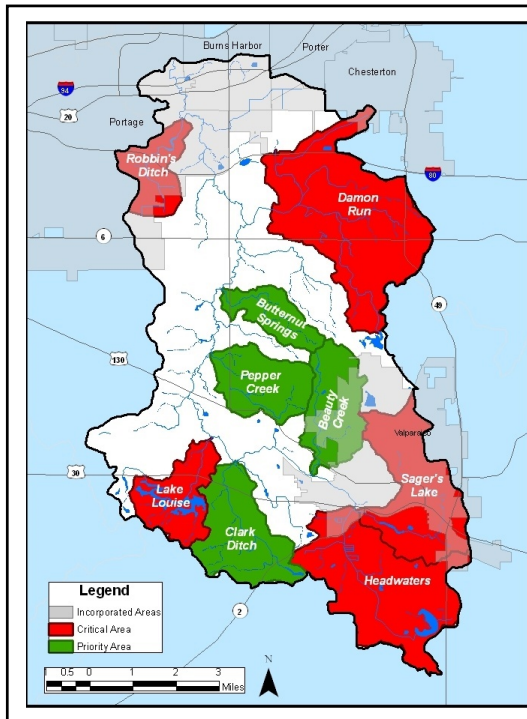


There are currently **213 tribes** eligible under §319. Since 2010, on average 5 new tribes have become eligible each year.

## Watershed Based Plans → *The Map for Water Quality Results*

- §319 projects must be guided by Watershed Plans
- Watershed plans provide **technical basis for project success** related to pollutant loads, critical source areas to be treated, BMPs with greatest impact
- Watershed plans are a **frame for engaging stakeholders** and landowners throughout the project.
  - Without local capacity and landowner engagement, projects don't get off the ground

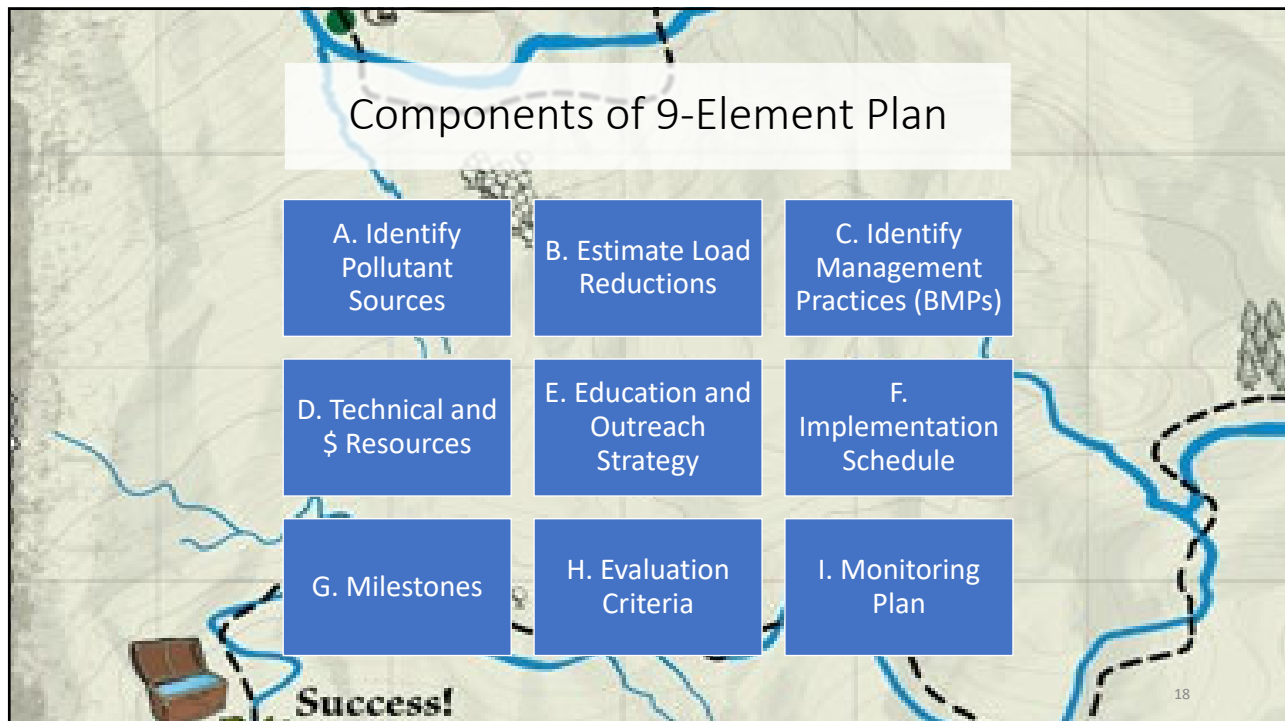
**Success!**



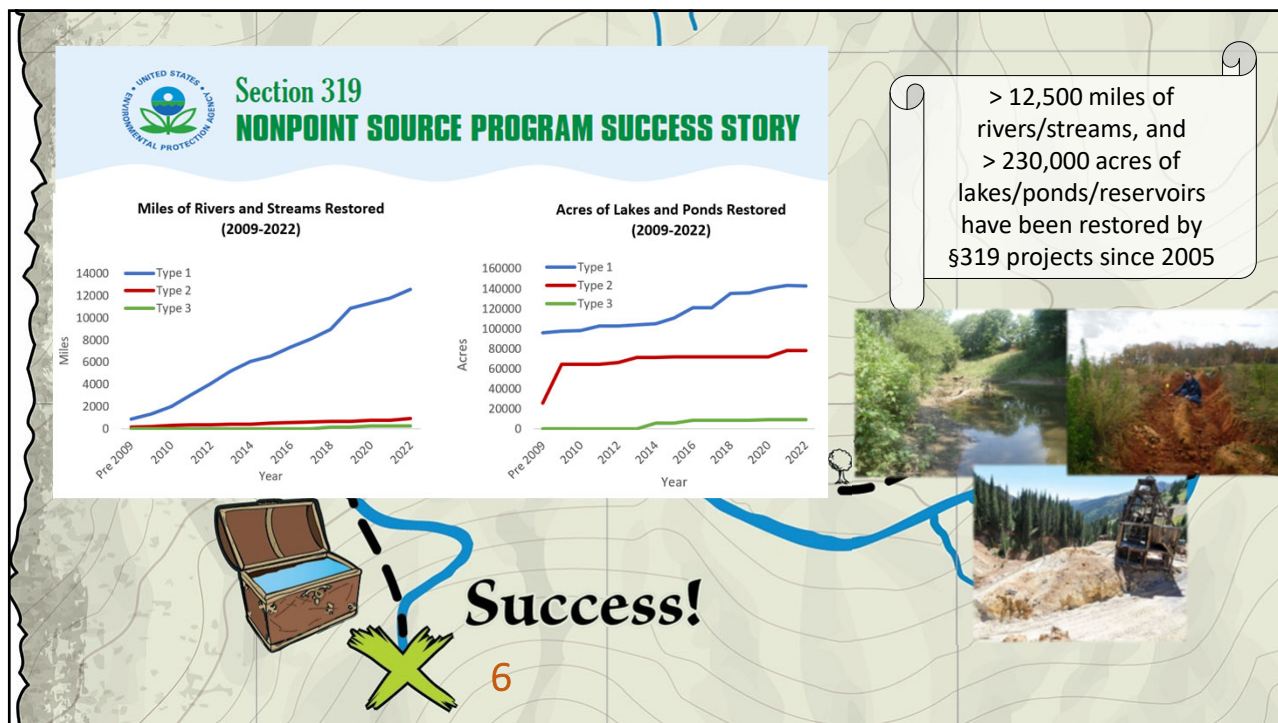
## NPS Loads in a Watershed Vary Widely and *Must be Targeted* to Achieve Water Quality results

- A watershed plan considers all sources and prioritizes the most important control actions
- **Critical source areas** (red) contribute the most pollution and must be treated to improve water quality
- Plans can also target priority areas for **protection** (green) to maintain relatively good water quality
- Any watershed plan or critical source area could require few to many individual projects or landowner actions to meet the pollution control need

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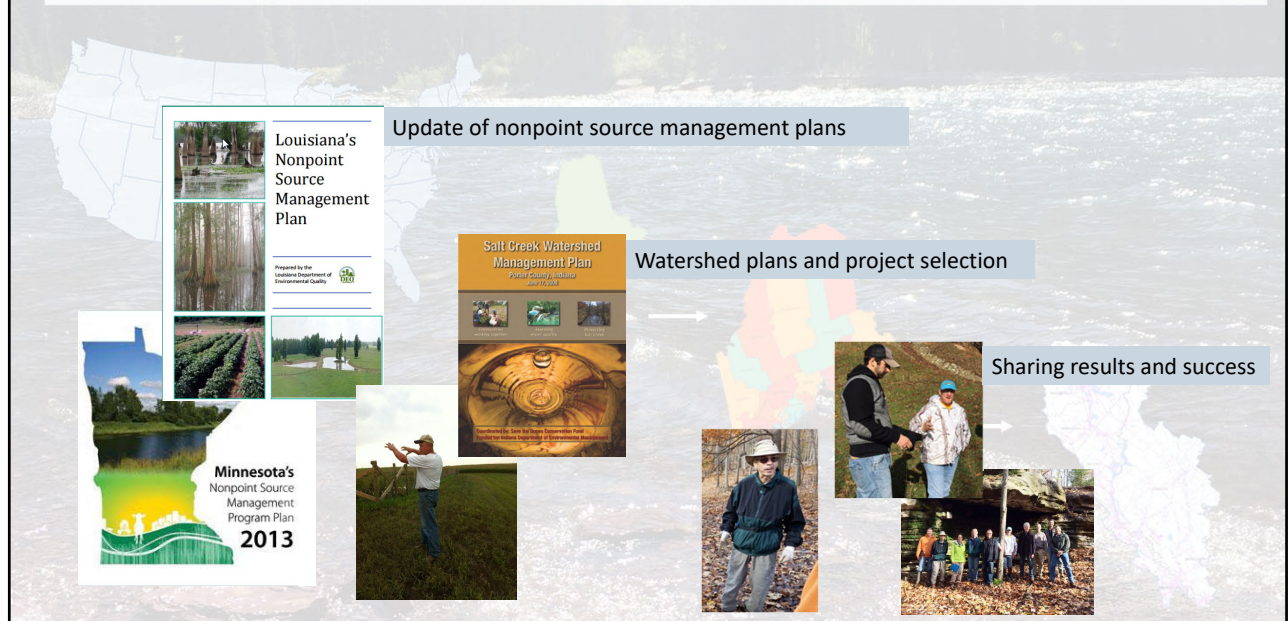



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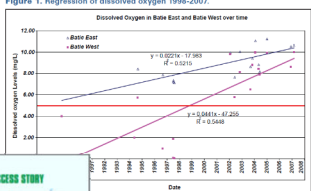
# Points of Engagement in the Nonpoint Source Process

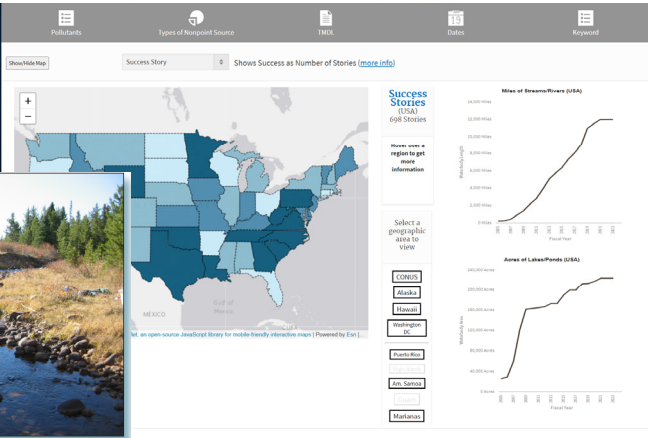


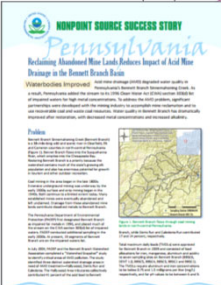



## Section 319 NONPOINT SOURCE PROGRAM SUCCESS STORY

**Figure 1. Regression of dissolved oxygen 1998-2007.**







## Section 319 NONPOINT SOURCE PROGRAM SUCCESS STORY

**Type 1.** Waters that are Partially or Fully Restored

**Type 2.** Waters that Show Progress toward Achieving Water Quality Goals

**Type 3.** Waters that Show Ecological Restoration

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### Success Stories Examples



Local farmer and conservation leader observe cover crops

#### Iowa: Watershed Work Reduced Nutrients and Restored Native Freshwater Mussels in Lime Creek (2018)

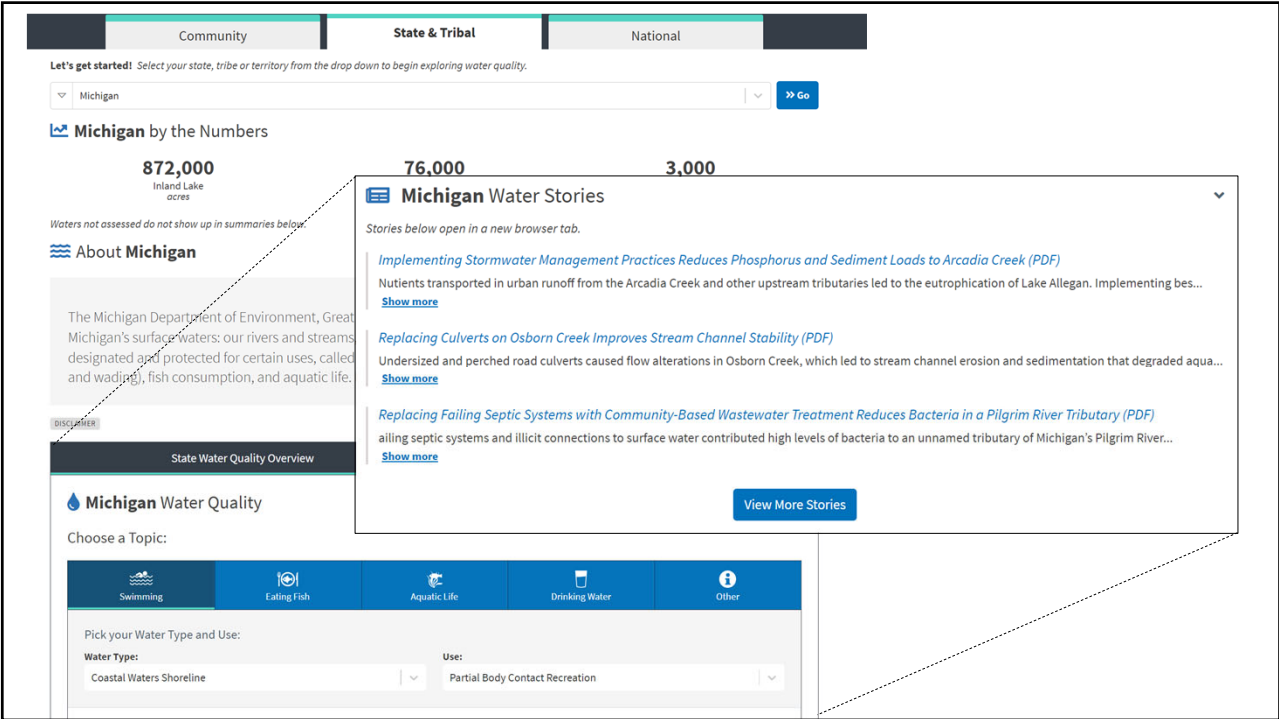
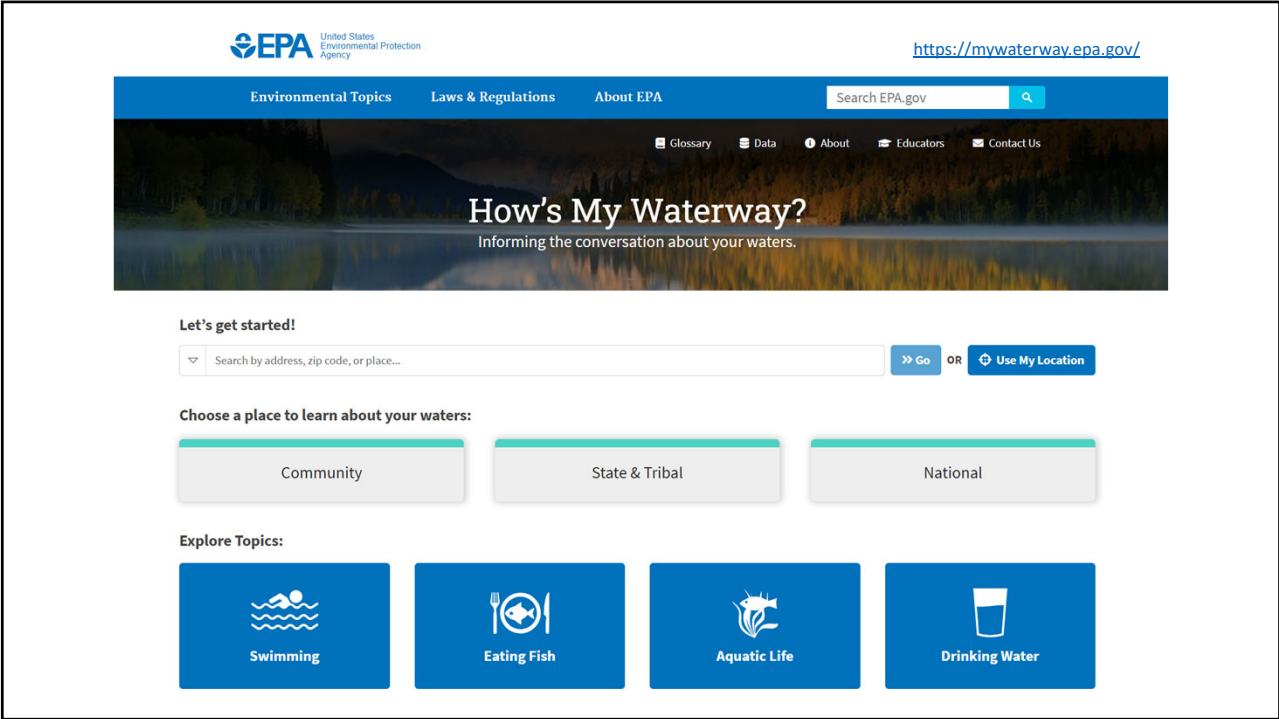
- Local farmers formed the Lime Creek Watershed Council to encourage practices that reduce erosion
- Reduction in Sediment and Phosphorus and Nitrate concentrations
- Mussel species found went from 0 in 1998 to 6 in a 2011 survey.



Restored floodplain in Baltimore County, MD

#### Maryland; Baltimore County Stream Restoration Project Helps Restore Scotts Level Branch to its Natural State (2022)

- Stream restoration, floodplain plantings, and wetland restoration in a degraded, urban stream reduced erosion and improved habitat.
- Nutrient and sediment cycling were beginning to re-establish to their natural state 2 years after construction.
- Increased native reptile, amphibian, and bird species have been observed in the project area.





**Nonpoint Source (NPS) Watershed Projects Data Explorer**

Map Viewer | Non-Point Source Protection Projects | Find Grants | Find Projects | Interactive Reports

**Nonpoint Source (NPS) Watershed Projects : Interactive Map and Reporting**

NPS pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. NPS pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

This map presents all U.S. States and Territories that contain nonpoint source (NPS) watershed restoration projects. The data being represented in this mapping application are being pulled directly from the Section 319 Grants Reporting and Tracking System (GRTS). The NPS projects are summarized by state as well as various levels of watersheds: subbasins (8-digit HUCs) and subwatersheds (12-digit HUCs) at the local level. You can click on any U.S. State or Territory to drill deeper into these watersheds to find NPS projects, or you may selectively search by HUC12 code, HUC8 code, or by subwatershed name as search filters to the right of the map (as well as incorporating other data filters). For more information on the interactive map and its reporting tools, please expand the [Instructions and Explanation of Features](#) section below.

Instructions and Explanation of Features

**NPS Projects Funded (2000-2023)**  
National  
21,466 Projects

Hover over a map feature to get more information

**Data Filters** Geographic Area of Interest  Show Reports Below

**Specify selections using one or more of the filters below.**

Date Range Type Selection: Project Appropriation Year: 2000 - 2023

Project Status: - ALL - Pollutant Load Reductions: - ALL -

Category of Pollution: - ALL -

Show Watershed Protection Projects (unimpaired waters) only [Apply Filters](#) [RESET ALL](#)

<https://ordspub.epa.gov/ords/grts/f?p=grts:940>

Contact Info

Please contact us to ask a question, provide feedback, or report a problem with the NPS Watershed Projects: Interactive Map and Reporting Tools.



## Overview: Supporting and Improving Equity in the NPS Program

### Summary of Work and Engagement:

- Assessing and improving equity and inclusion is a national priority for the NPS program
- 2021 memo: [Near-term Actions to Support Environmental Justice in the NPS Program](#)
- 2022 memo: [Continued Actions in FY23 to Increase Equity and Environmental Justice in the Nonpoint Source Program](#)

### Current efforts:

- Revising grant guidelines to incorporate feedback
- Increasing technical assistance program-wide

## Learn More Nonpoint Source Resources ([www.epa.gov/nps](http://www.epa.gov/nps)):

- *NPS Program Contacts:*  
<https://www.epa.gov/nps/contacts-nonpoint-source-nps-pollution-programs>
- *NPS Success Stories:*  
[www.epa.gov/nps/success-stories-about-restoring-water-bodies-impaired-nonpoint-source-pollution](http://www.epa.gov/nps/success-stories-about-restoring-water-bodies-impaired-nonpoint-source-pollution)
- *Section 319 Training for States, Tribes and Territories:*  
[www.epa.gov/watershedacademy/national-nonpoint-source-pollution-control-program-basic-training](http://www.epa.gov/watershedacademy/national-nonpoint-source-pollution-control-program-basic-training)
- *NPS Technical Exchange Webcast Recordings:*  
[www.epa.gov/nps/nonpoint-source-pollution-technical-exchange-webinars](http://www.epa.gov/nps/nonpoint-source-pollution-technical-exchange-webinars)
- *Equity and EJ in the NPS program:*  
[www.epa.gov/nps/equity-resources](http://www.epa.gov/nps/equity-resources)
- *2023 Tribal Training Series:*  
[www.epa.gov/nps/tribal-nps-resources-and-training](http://www.epa.gov/nps/tribal-nps-resources-and-training)



Thank you!

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# Pollutant Load Estimation Tool (PLET)

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## d Estimati

.ET) is replacing the  
ant Loads (STEPL).  
as as STEPL, but in a  
tools employ


ifferent land uses,

ult from the


Pollutant Load Estimation Tool



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



Section 319 subgrantees, watershed planners, academics, and others

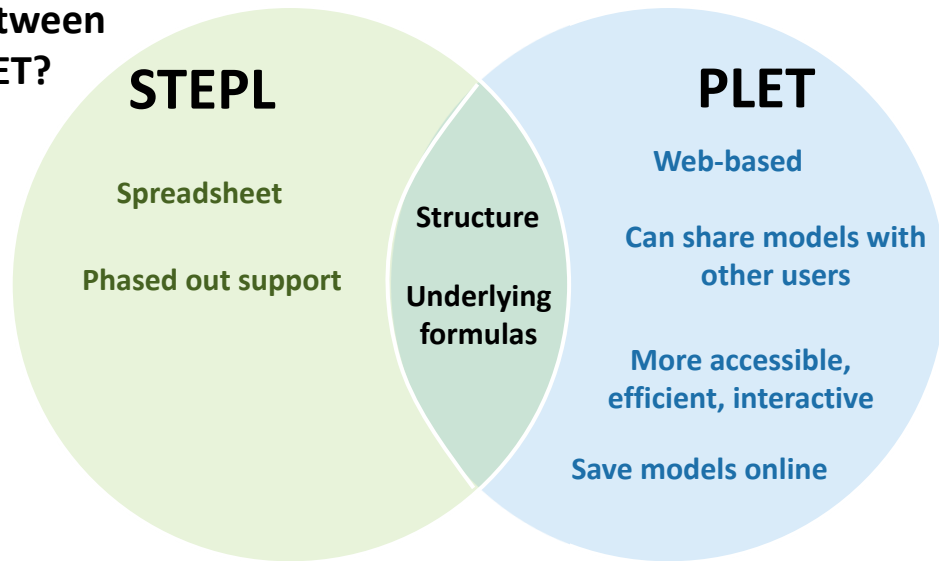


Report annual load reductions in GRTS and planning purposes (i.e. watershed-based plans)

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## What is the difference between STEPL and PLET?



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## Getting started is easy

Access through GRTS or

Visit the PLET Landing Page

Find the “Link to PLET” under “Model Documentation”

Enter your email

Create a new model



### Model Documentation

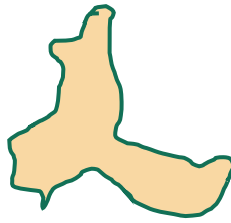
#### PLET Version 1.0

- [Link to PLET](#)
- [User's Guide: Pollutant Load Estimation Tool \(PLET\) version 1.0 \(pdf\)](#) (6.34 MB, April 2022)  
508 compliant user guide for the pollutant load estimation tool.
- [BMP Descriptions \(pdf\)](#) (3.48 MB, April 2023)  
This document provides definitions for best management practice (BMPs) used in the Pollutant Load Estimation Tool (PLET).

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Select Watershed\*  
and Weather Station

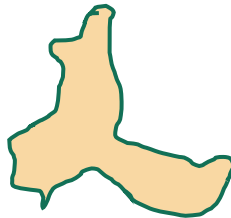


## PLET Structure

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Select Watershed\*  
and Weather Station



## PLET Structure

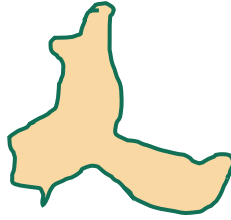


- Land Use
- Animal Counts
- Precip. and Irrigation
- Soil and USLE parameters
- Septic Systems and Direct Discharges

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Select Watershed\*  
and Weather Station



## PLET Structure

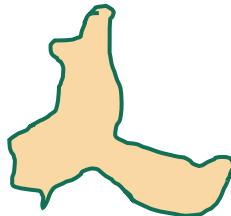


- |                                                                                                                                                                                                             |                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Land Use</li> <li>• Animal Counts</li> <li>• Precip. and Irrigation</li> <li>• Soil and USLE parameters</li> <li>• Septic Systems and Direct Discharges</li> </ul> | <ul style="list-style-type: none"> <li>• Runoff</li> <li>• Groundwater</li> <li>• Sheet/Rill Erosion</li> <li>• Gully and Streambank erosion</li> <li>• Pollutant Transport</li> </ul> |
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Select Watershed\*  
and Weather Station



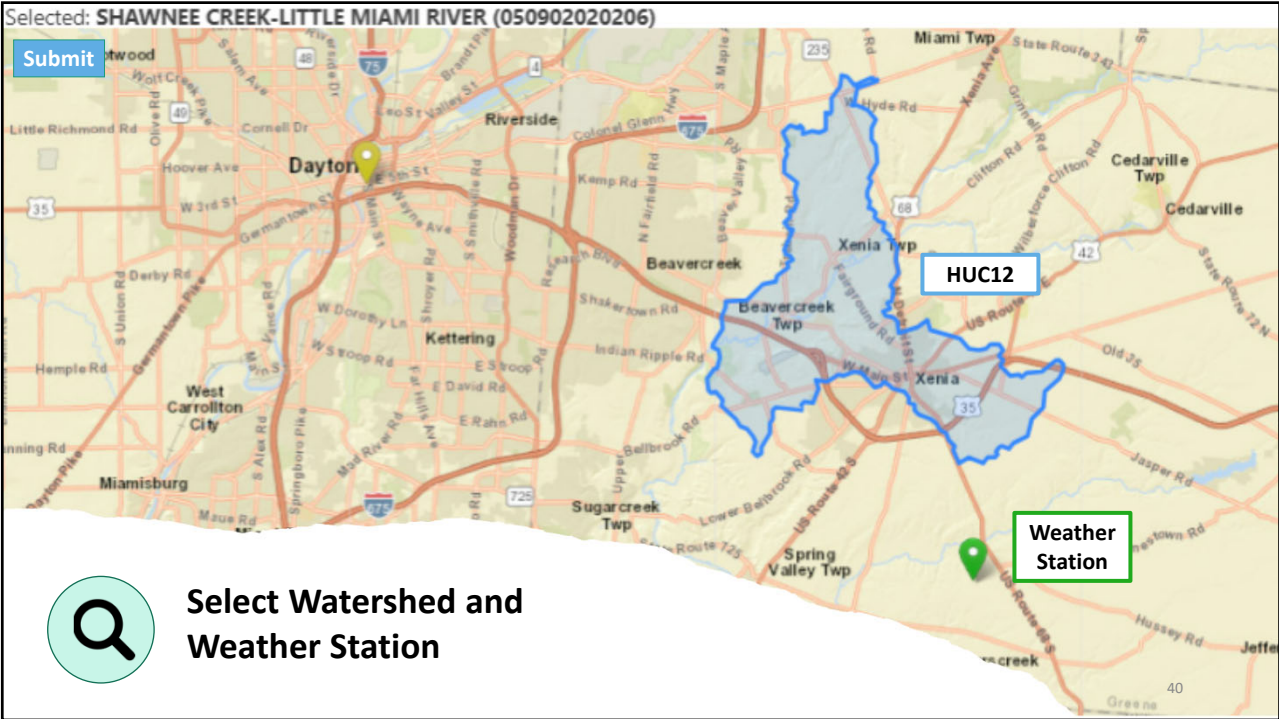
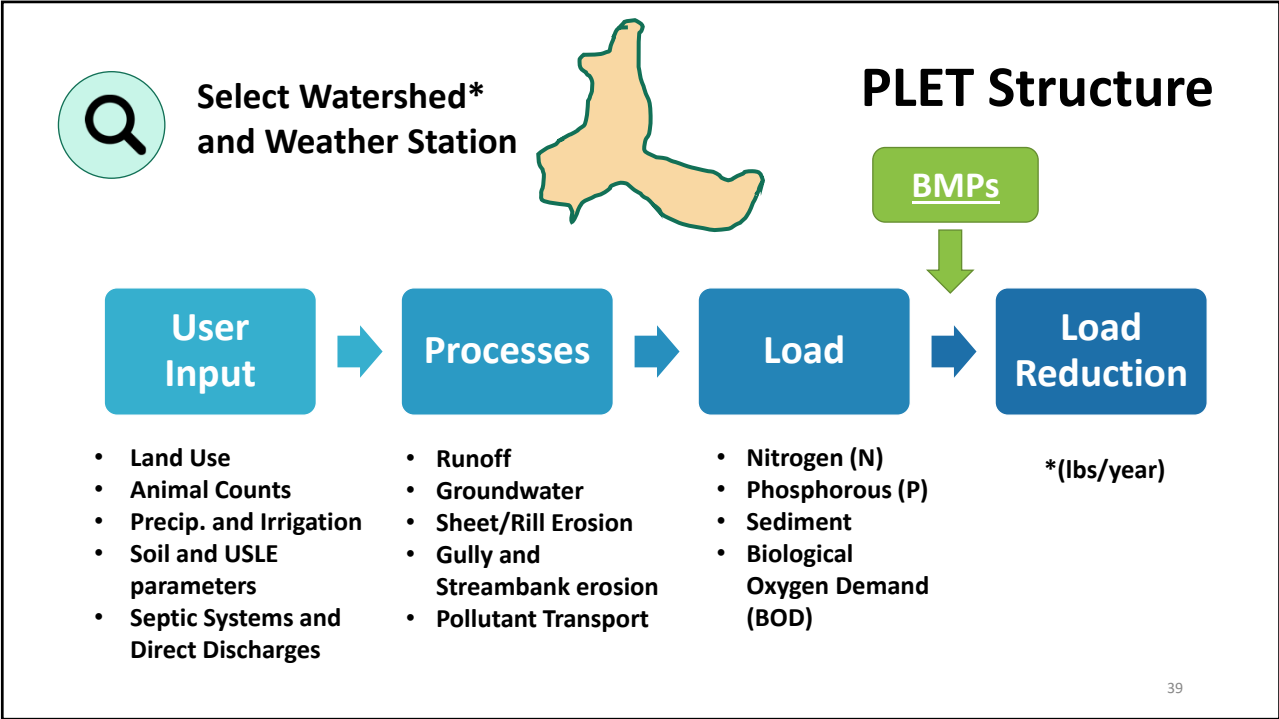
## PLET Structure



- |                                                                                                                                                                                                             |                                                                                                                                                                                        |                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Land Use</li> <li>• Animal Counts</li> <li>• Precip. and Irrigation</li> <li>• Soil and USLE parameters</li> <li>• Septic Systems and Direct Discharges</li> </ul> | <ul style="list-style-type: none"> <li>• Runoff</li> <li>• Groundwater</li> <li>• Sheet/Rill Erosion</li> <li>• Gully and Streambank erosion</li> <li>• Pollutant Transport</li> </ul> | <ul style="list-style-type: none"> <li>• Nitrogen (N)</li> <li>• Phosphorous (P)</li> <li>• Sediment</li> <li>• Biological Oxygen Demand (BOD)</li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

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# PLET – Input Data Server

Inputs    BMPs    **Total Loads**    Additional Reference Tables

Mandatory Inputs

NOTE: Required fields are highlighted in red

Download Inputs

## 1. Watershed Land Use Area (ac) and Precipitation (in)

Double-click on the "HSG" field to select a Hydrologic Soil Group category [NOTE: hover over the "HSG" column header for more information].

Watershed	HSG	Urban	Cropland	Pastureland	Forest	User Defined	Feedlots	Total	Feedlots Percent Paved	Annual Rainfall	Rain Days	Average Rain/Event
050902020206 - Shawnee...	C	50.00	8923.36	3946.84	2362.05	0.00	1.88	15284.13	0-24%	39.73	110.62	0.6071

Default values can be modified

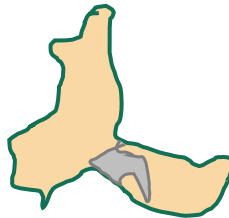
## 2. Agricultural Animals (Animal Count)

Watershed	Beef Cattle	Young Beef	Dairy Cattle	Young Dairy Stock	Swine (Hog)	Feeder Pig	Sheep	Horse	Chicken	Turkey	Duck	# Of Months Manure Applied to Cropland	# Of Months Manure Applied to Pastureland
050902020206 - Sha...	612.00	0.00	78.00	0.00	3458.00	0.00	178.00	212.00	541.00	6.00	29.00	0.00	0.00

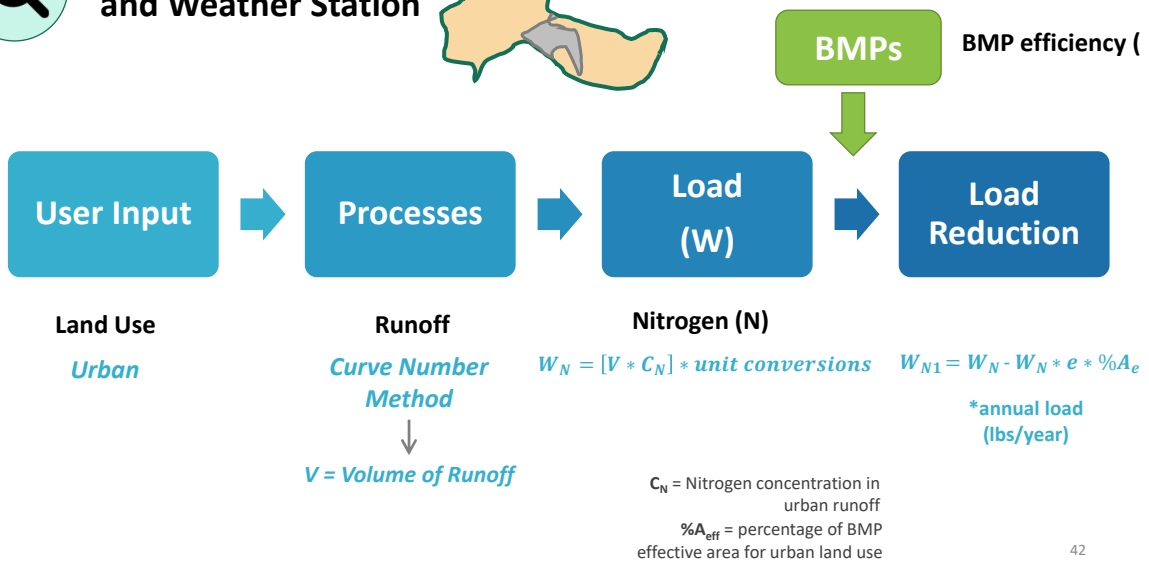
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Select Watershed\* and Weather Station



## PLET Structure



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# Urban BMP Tool

- 9 different urban land use types with default event mean concentrations (EMCs)
- Load reductions are based on urban BMP efficiency values
- Select practices also estimate volume reduction ("LID" noted in BMP name)

## Urban BMP/LID

Watershed  
050902020206 - Shawnee Creek-Little Miami River

Landuse  Commercial  Industrial  Institutional  
 Multi-Family  Open-Space  Single-Family  
 Transportation  Urban-Cultivated  Vacant-Developed

Available LID/BMP: 0 No BMP    BMP Drainage Area (ac): .00    Total Available Area (ac): 732.1335

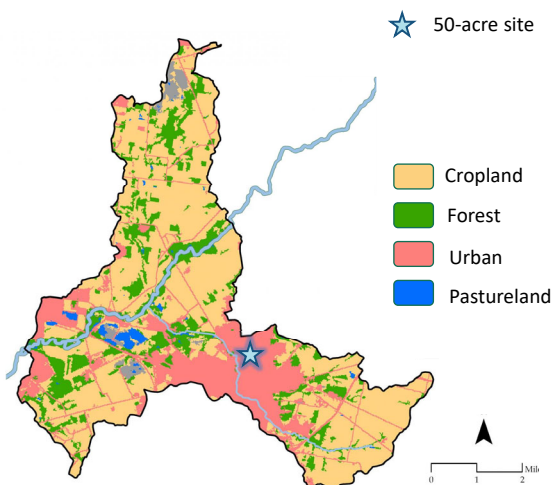
Apply LID/BMP    Exit    Reset All Urban BMPs

## Urban pollutant concentration in runoff (mg/L)

Pollutant	Commercial	Industrial	Institutional	Transport
TN	2	2.5	1.8	3
TP	.2	.4	.3	.5
BOD	9.3	9	7.8	9.3
TSS	75	120	67	150

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**Scenario:** We want to evaluate the annual load and volume reduction for several BMPs at an urban site



2 bioretention basins  
Treating 7.5 acres  
Commercial land use



2 vegetated swales  
Treating 5 acres  
Transportation land use



Porous pavement  
Treating 5 acres  
Institutional land use

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### Urban BMP/LID

Watershed  
050902020206 - Shawnee Creek-Little Miami River

Landuse:  **Commercial**     Industrial     Institutional  
 Multi-Family     Open-Space     Single-Family  
 Transportation     Urban-Cultivated     Vacant-Developed

Available LID/BMP: LID/Bioretenion    BMP Drainage Area (ac): 7.5    Total Available Area (ac): 7.5

Apply LID/BMP    Exit

Reset All Urban BMPs

### Runoff

Percent Impervious (%):

Runoff Capture Depth (in):

- Percent captured volum = 100%

- BMP Storage Capacity = 183290.95 gallons

- Required BMP Area = .187 acres

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## Scenario: We want to evaluate the annual load and volume reduction for several BMPs at an urban site

**LB** **Total Urban Loads**

	Units	N	P	Sediment
Pre-BMP Load	Lbs/yr	325	50	14,937
Load Reduction	Lbs/yr	55	10	3,051
Reduction Percent	%	<b>15</b>	<b>20</b>	<b>20</b>

**Volume Reductions**

Bioretention basins    **3.5 M gallons/yr**

Porous pavement    **1.8 M gallons/yr**

2 bioretention basins  
Treating 7.5 acres  
Commercial land use

2 vegetated swales  
Treating 5 acres  
Transportation land use

Porous pavement  
Treating 5 acres  
Institutional land use

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**Scenario:** We want to evaluate the annual load and volume reduction for several BMPs at an urban site (all **Institutional** land use)



**Total Urban Loads**

	Units	N	P	Sediment
Pre-BMP Load	Lbs/yr	325	50	14,937
Load Reduction	Lbs/yr	55	10	3,051
Reduction Percent	%	15	20	20



**Volume Reductions**

- Bioretention basins **3.5 M gallons/yr**
- Porous pavement **1.8 M gallons/yr**



2 bioretention basins  
Treating 7.5 acres  
**Commercial** land use



2 vegetated swales  
Treating 5 acres  
**Transportation** land use

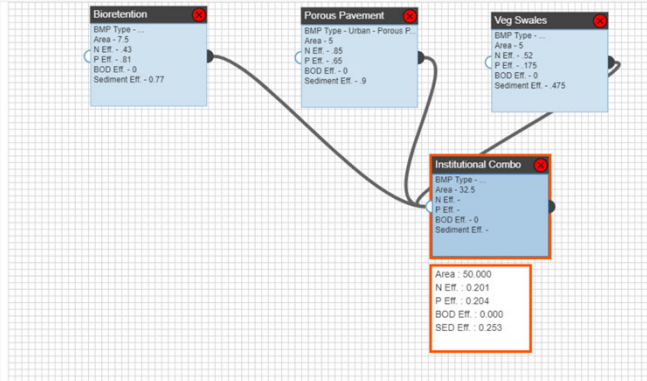


Porous pavement  
Treating 5 acres  
**Institutional** land use

# BMP Calculator

Calculates the combined efficiency value for BMPs applied in *series* or *parallel* orientation to one land use category.

BMP Calculator



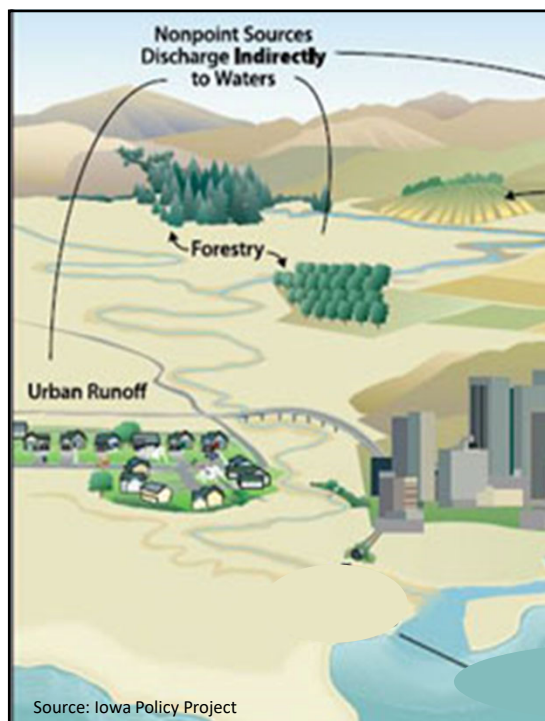
2 bioretention basins  
Treating 7.5 acres  
**Institutional** land use



2 vegetated swales  
Treating 5 acres  
**Institutional** land use



Porous pavement  
Treating 5 acres  
**Institutional** land use



Today we focused on the Urban BMP Tool but PLET can do more...

- Cropland, pastureland, forest, feedlots, and user-defined
- Gully and streambank erosion
- 60+ default BMPs with predefined efficiency values
- Users can tailor inputs to site-specific info
- Model a site/field to multiple HUC12 watersheds

## Improvements in the pipeline

- Protection BMPs and loads prevented
- Expand precipitation data range
- BMP efficiencies (refined literature values and incorporate a user database)
- Short how-to videos





Learn more!

Donaghue.Adrienne@epa.gov

## PLET Resources

PLET Website:

<https://www.epa.gov/nps/plet>

PLET User Guide:

[https://www.epa.gov/system/files/documents/2022-04/user-guide-final-04-18-22\\_508.pdf](https://www.epa.gov/system/files/documents/2022-04/user-guide-final-04-18-22_508.pdf)

PLET Training Video:

<https://www.youtube.com/watch?v=ODJl2KVlepQ&t=7s>

PLET Support Team

Email: [PLET@tetrattech.com](mailto:PLET@tetrattech.com)

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**Protecting Healthy  
Water(sheds)**  
through the National  
Nonpoint Source Program







**Steve Epting, US EPA**

# Healthy Water(sheds) Protection

**Clean Water Act (CWA) §101(a)**  
*"The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."*

[www.epa.gov/hwp](http://www.epa.gov/hwp)

Index of Watershed Health

- 
**Landscape Condition**  
 Patterns of natural land cover, natural disturbance regimes, lateral and longitudinal connectivity of the aquatic environment, and continuity of landscape processes.
- 
**Habitat**  
 Aquatic, wetland, riparian, floodplain, lake, and shoreline habitat. Hydrologic connectivity.
- 
**Hydrology**  
 Hydrologic regime: Quantity and timing of flow or water level fluctuation. Highly dependent on the natural flow (disturbance) regime and hydrologic connectivity, including surface-ground water interactions.
- 
**Geomorphology**  
 Stream channels with natural geomorphic dynamics.
- 
**Water Quality**  
 Chemical and physical characteristics of water.
- 
**Biological Condition**  
 Biological community diversity, composition, relative abundance, trophic structure, condition, and sensitive species.

**EPA** United States Environmental Protection Agency

Environmental Topics | Laws & Regulations | About EPA | Search EPA.gov

Glossary | Data | About | Educators | Contact Us

## How's My Waterway?

Informing the conversation about your waters.

Let's get started!

Cacapon Mountain, WV, USA [Go] OR [Use My Location]

**Dillons Run**

**State Watershed Health Index**

Watershed Name:	Dillons Run
Watershed:	020700030704
State:	WV
Watershed Health Score:	0.88

1 of 6

**Protect** Show Text

You can help keep your water clean. Together we can protect water for future generations.

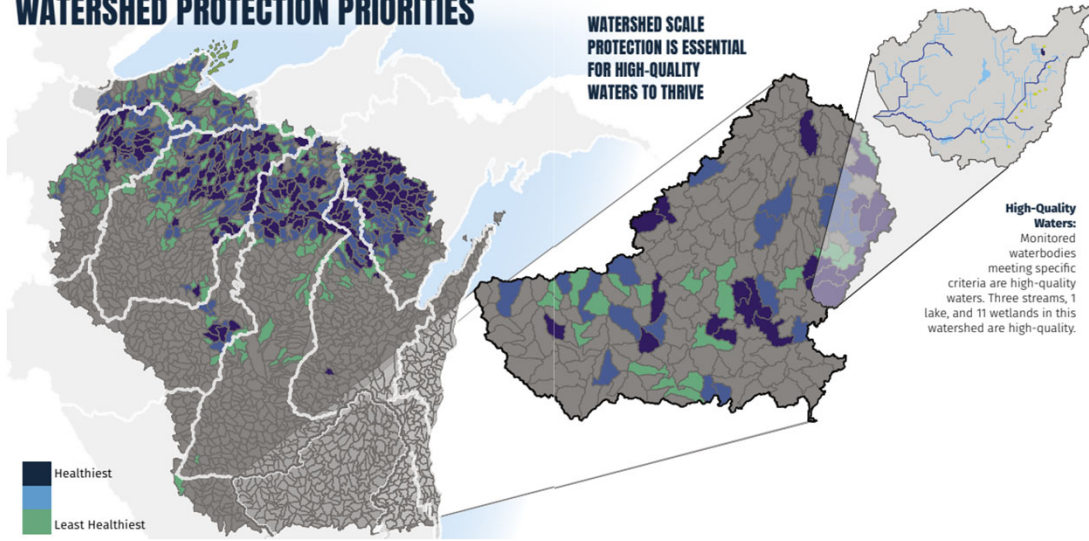
Watershed Health and Protection | Tips for Protecting Your Watershed

Learn about watershed health scores in relation to your state, the location of designated Wild and Scenic Rivers and if there are any protection projects or protected areas in your watershed.

Expand All

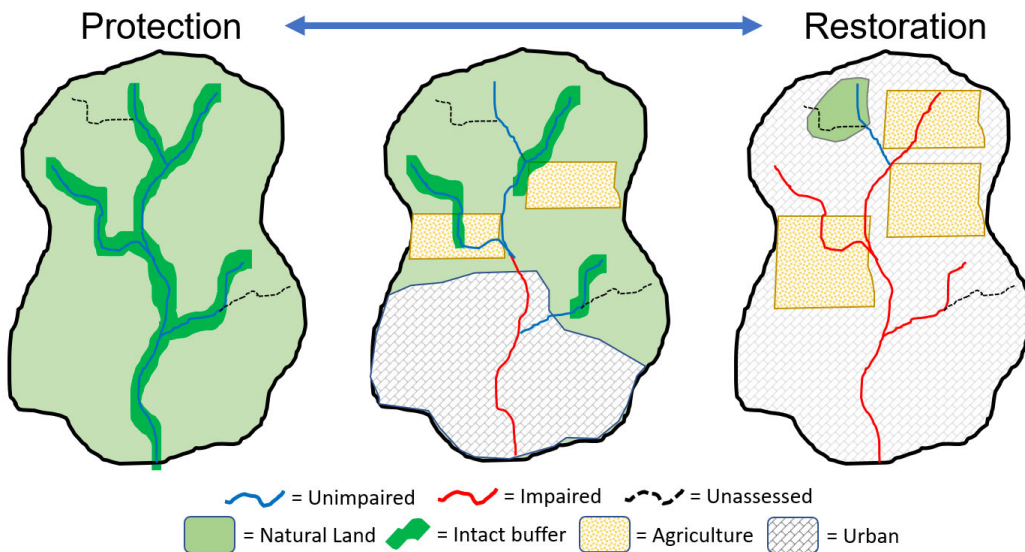
- Watershed Health Scores
- Wild and Scenic Rivers
- Protected Areas
- Protection Projects

# WATERSHED PROTECTION PRIORITIES



Wisconsin Department of Natural Resources Healthy Watersheds High Quality Waters Initiative Action Plan (March 2022)

## Protection can play a critical role in achieving watershed goals across a range of settings.





# Drivers of NPS Protection Work

i.e., what we've heard from states investing 319 \$ in protection work:

- Protecting healthy waters and watersheds can prevent the need for water quality restoration, as well as help ensure restoration success.
- Protection efforts help maintain healthy watersheds that are resilient to the effects of changes in land use, climate, and other water quality threats.
- Proactive watershed planning and management can help organize partners and gather support in protecting water resources highly valued by communities.

## Targeting 319 \$ for Protection

- State prioritization approaches often aim to identify healthier waters and watersheds most vulnerable to degradation.
- E.g., using EPA Recovery Potential Screening Tool
- Priority waters/watersheds can be focus of state RFAs.
- Example factors included in prioritization frameworks →

Category	Subcategory	Example Indicators
Water Quality	Water Quality Assessment Status	<ul style="list-style-type: none"> <li>• Presence/absence of impaired waters</li> <li>• Percent stream length supporting aquatic life use</li> <li>• Presence of waters supporting aquatic life and primary contact recreation uses</li> </ul>
	Water Quality Trend	<ul style="list-style-type: none"> <li>• Negative water clarity trend</li> <li>• Proximity to numeric water quality criteria</li> </ul>
	Biological Condition	<ul style="list-style-type: none"> <li>• Stream miles with healthy benthic community rating</li> <li>• Mean aquatic habitat condition rating in watershed</li> <li>• Count of monitoring stations in watershed with sensitive organisms</li> </ul>
Watershed Condition	Natural Land Cover Extent	<ul style="list-style-type: none"> <li>• Percent natural land cover in watershed</li> <li>• Percent natural cover in riparian zone</li> <li>• Percent of wetlands remaining in watershed</li> </ul>
	Existing Development	<ul style="list-style-type: none"> <li>• Percent impervious cover in watershed</li> <li>• Percent agricultural cover in watershed</li> <li>• Number road-stream crossings in watershed</li> <li>• Number of combined sewer overflow outfalls</li> </ul>
	Hydrology	<ul style="list-style-type: none"> <li>• Miles of free-flowing streams</li> <li>• Number of dams with fishways</li> </ul>
	Development Trend	<ul style="list-style-type: none"> <li>• Change in the number of housing units over the last X years</li> <li>• High risk for development due to proximity to highway access</li> <li>• Projected increases in wastewater discharges</li> </ul>
Social and Programmatic Factors	High Quality Water Designations	<ul style="list-style-type: none"> <li>• Presence of high quality-designated waters (i.e., Tier 2, 2.5 or 3)</li> <li>• Percent of stream miles within Natural or Scenic Rivers Programs</li> </ul>
	Drinking Water Supply	<ul style="list-style-type: none"> <li>• Presence of surface drinking water supply</li> <li>• Number of drinking water intakes</li> </ul>
	Recreation Use	<ul style="list-style-type: none"> <li>• Number of recreation areas in watershed</li> <li>• Stream miles with trout stocking</li> </ul>
	Protected Lands	<ul style="list-style-type: none"> <li>• Percent of watershed containing protected lands</li> </ul>
	Watershed Plans	<ul style="list-style-type: none"> <li>• Presence of watershed-based plan</li> <li>• Percent of stream miles covered by a TMDL</li> </ul>
	Planning Complexity	<ul style="list-style-type: none"> <li>• Jurisdictional complexity (number of different counties, cities, towns, etc.) in the watershed</li> </ul>

**Example Vulnerability factors**

# Clean Water Act Section 319 Program: Opportunities to Protect Healthy Waters

---



## Watershed-Based Planning:

Can serve as a protection roadmap – ID healthy waters, characterize water quality threats, & ID protection-based management strategies



## NPS Partnerships:

Coordinate with other programs (e.g., CWA 303d, US Dept of Ag) and partners (e.g., land conservation community) in joint priority areas



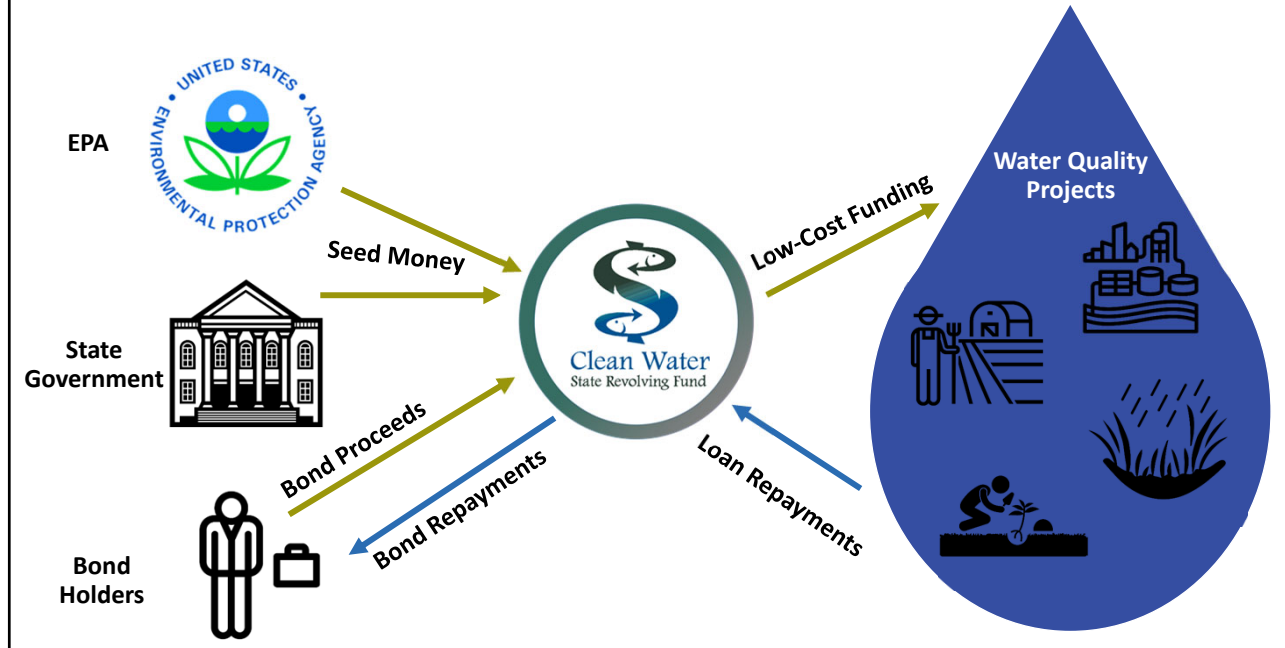
## Watershed Projects:

States may use some 319 funding to protect healthy waters

## Getting Started: Considering Protection In Water Quality Work

- Are you working in watershed(s) with healthy waters threatened by NPS pollution?
  - Check your state's NPS management program plan to see if protection priority
- Is there an existing watershed-based plan for your area?
  - If so, NPS projects may be eligible for state 319 project funding
- Are there other local partners focused on watershed protection?
  - E.g., watershed and land conservation orgs, local government agencies, water utilities

## The CWSRFs Provide Low-Cost Funding for Water Quality Projects



## NPS has been a CWSRF eligibility since the program was established...

### 1987 CWA Amendments

- 603(c)(1) Construction of publicly owned treatment works (POTW)
- ★ • 603(c)(2) Implementation of a nonpoint source management program ★
- 603(c)(3) Implementation of a national estuary program CCMP



In 2014, WRRDA expanded eligibilities and flexibilities that emphasized even more creative uses of CWSRF

<https://www.epa.gov/cwsrf/overview-clean-water-state-revolving-fund-eligibilities>



## CWSRF by the Numbers

**\$163 billion** provided via the 51 CWSRF programs since 1988

**\$9.63 billion** provided by the 51 CWSRF programs in FY22

**46,224** assistance agreements (a.k.a. "projects") since 1988

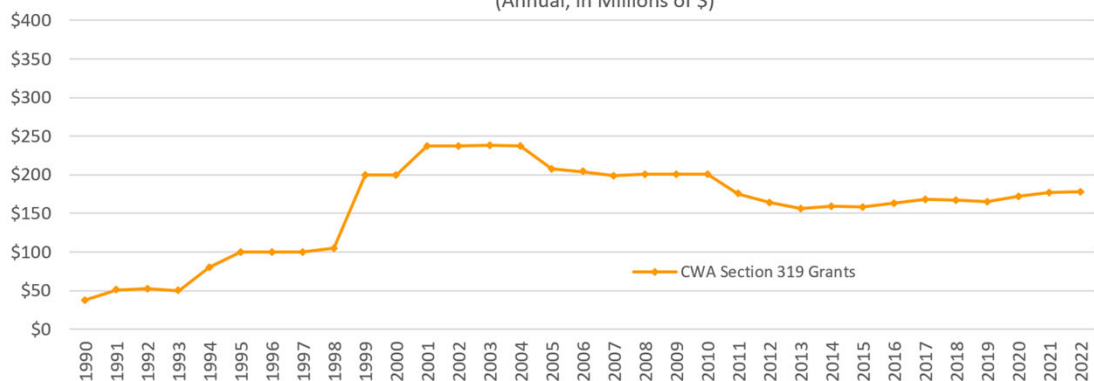
**1.2%** - National average interest rate for CWSRF loan in 2022  
(vs. 3.5% prevailing market rate)

Just **3.4 %** of overall funding pie has gone toward NPS

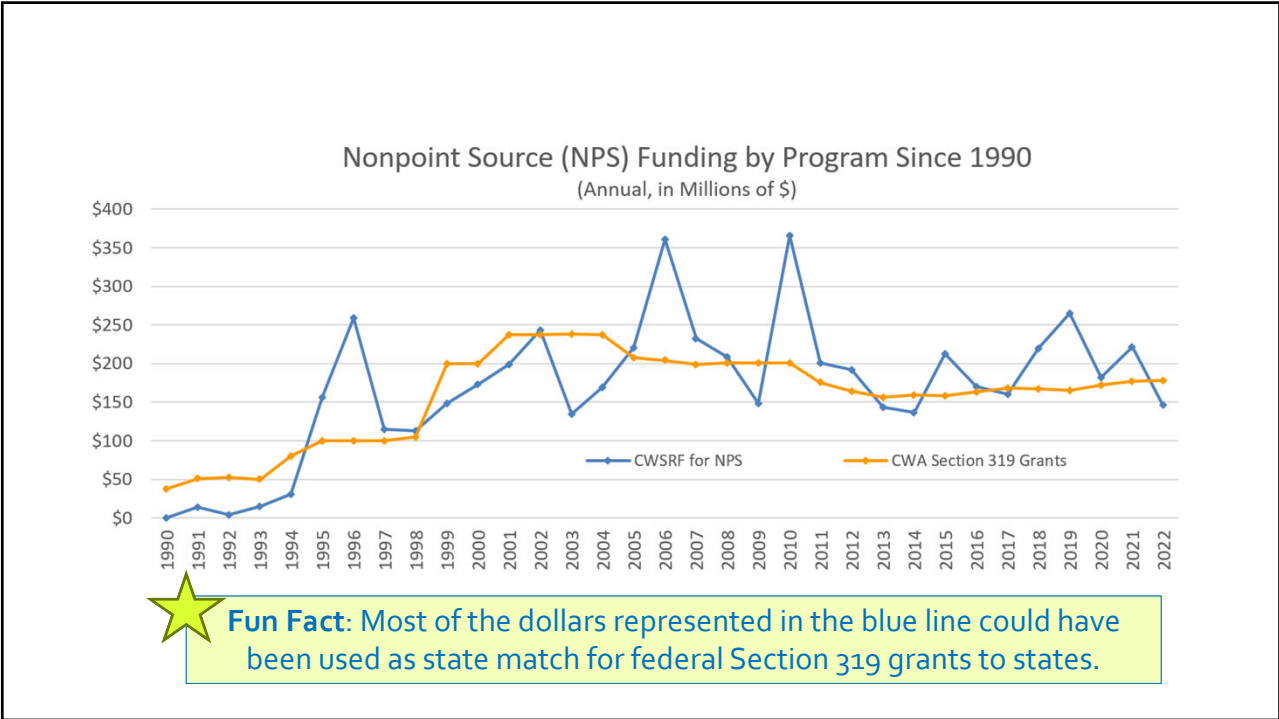
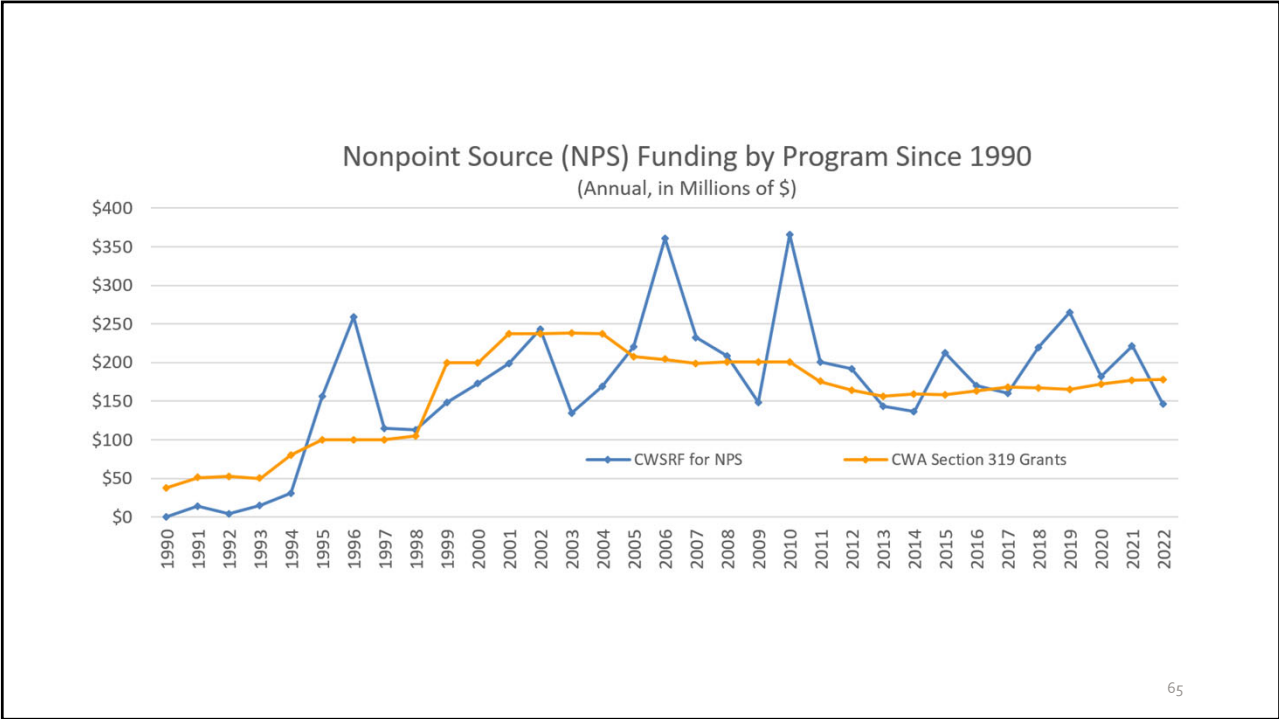
63

63

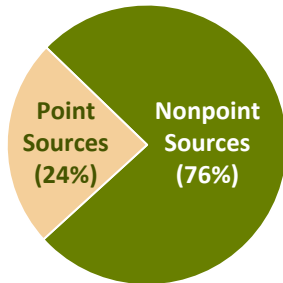
Nonpoint Source (NPS) Funding by Program Since 1990  
(Annual, in Millions of \$)



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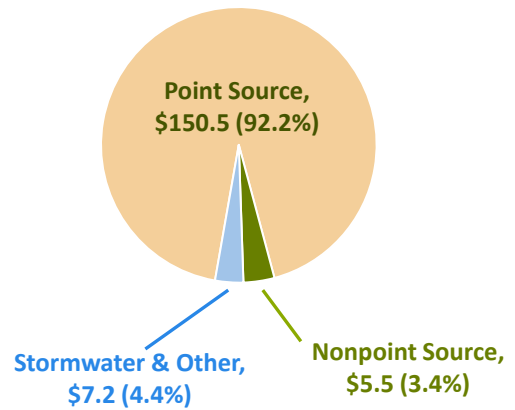
### Primary Cause of Impairment for Waterbodies with TMDLs, %



(Source: EPA, 2011, A National Evaluation of CWA § 319 Program)

67

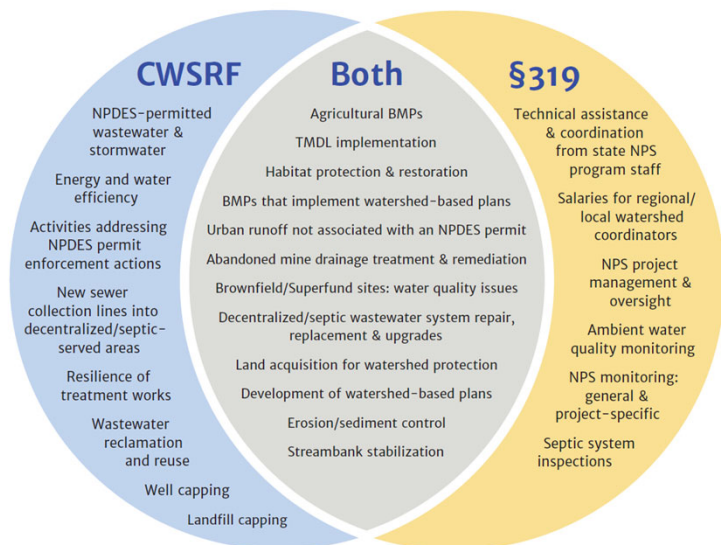
### CWSRF Investments through 2022, \$ Billions



\$163.2 billion provided via the 51 CWSRF programs since 1988

## What kinds of things can be funded with the CWSRF and CWA §319?

### The federal view...



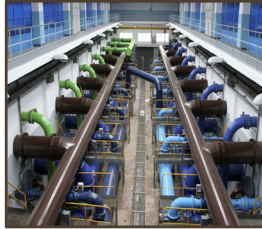
Examples of eligible uses of CWSRF and §319 funds

68

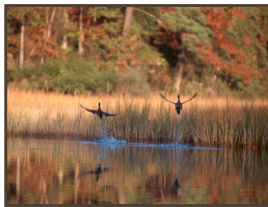


## Challenges for Using CWSRF for NPS Needs

This generates revenue



This doesn't



- Identifying a repayment source
- State-imposed restrictions on lending to NGOs and Community Development Financial Institutions (CDFIs)
- Higher administrative burdens associated with smaller loan sizes and greater # of projects (think "Ag BMPs vs POTW upgrades")
- Capacity constraints at state CWSRF agencies to explore new directions

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Hello.  
I am your friend.

EPA  
United States  
Environmental Protection  
Agency

December 2021  
EPA 841B21012

CWSRF Best Practices Guide for Financing  
Nonpoint Source Solutions  
*Building Successful Project Funding Partnerships*

Clean Water  
State Revolving Fund

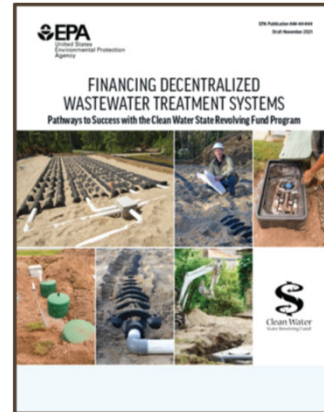
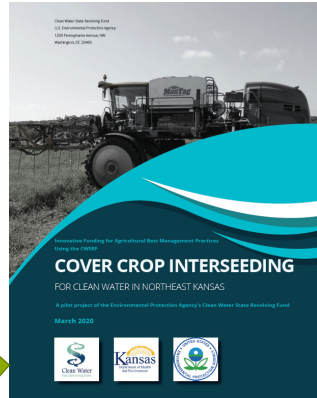
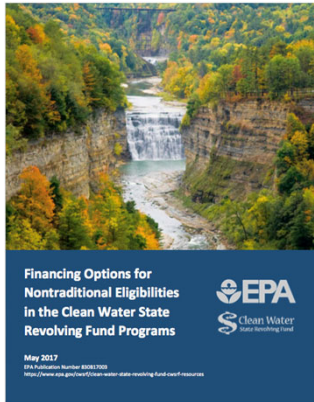
Find me at  
[www.epa.gov/cwsrf](http://www.epa.gov/cwsrf) in  
What's New.

Or [www.epa.gov/nps](http://www.epa.gov/nps)  
If you prefer.

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# Resources & Pilot Projects

Released Jan. 2022



EPA HQ has sponsored CWSRF nonpoint source pilot projects in many states. Let your EPA Regional Coordinator know if you have a nonpoint source pilot project in mind!

State CWSRF Program Contacts | x +


← → [www.epa.gov/cwsrf/state-cwsrf-program-contacts](https://www.epa.gov/cwsrf/state-cwsrf-program-contacts)

Google Advanced S... NDAA CZARA Hom... USA Performance R... FedIR: Retirement... In Office Calendar... EPA Password Self... BAP - Purchase Car... WA\_ResponseToCo... SRF Resources Swit... ForManagerialLegal...

**EPA** United States Environmental Protection Agency

Environmental Topics | **State CWSRF Program Contacts** | Laws & Regulations | Report a Violation | About EPA

Clean Water State Revolving Fund

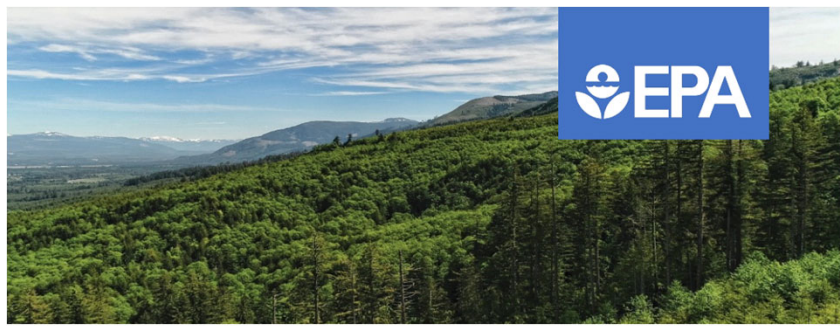
**State CWSRF Program Contacts** 

CWSRF assistance is provided directly from state agencies. Contact the CWSRF program in your state for information on how to apply.

Find your state CWSRF contact info at: <https://www.epa.gov/cwsrf/state-cwsrf-program-contacts>

State	Contact	Phone	Email	State CWSRF Website
Alabama	Eric Reidy	(334) 271-7805	<a href="mailto:eric.reidy@dem.alabama.gov">eric.reidy@dem.alabama.gov</a>	<a href="#">Alabama Department of Environmental Management</a>
Alaska	Carrie Bohan	(907) 465-5143	<a href="mailto:carrie.bohan@alaska.gov">carrie.bohan@alaska.gov</a>	<a href="#">Alaska Department of Environmental Conservation</a>
Arizona	Lindsey Jones	(602) 364-1324	<a href="mailto:ljones@azwifa.gov">ljones@azwifa.gov</a>	<a href="#">Water Infrastructure Finance Authority of Arizona</a>
Arkansas	Debbly Dickson	(501) 682-0548	<a href="mailto:debra.dickson@agriculture.arkansas.gov">debra.dickson@agriculture.arkansas.gov</a>	<a href="#">Arkansas Department of Agriculture</a>
California	Michael Downey	(916) 341-5698	<a href="mailto:michael.downey@waterboards.ca.gov">michael.downey@waterboards.ca.gov</a>	<a href="#">California Water Resources Control Board</a>
Colorado	Jim Griffiths	(303) 830-1550, Ext. 1024	<a href="mailto:jgriffiths@cwrfpa.com">jgriffiths@cwrfpa.com</a>	<a href="#">Colorado Water Resources and Power Development Authority</a>
Connecticut	Lindsay Williams	(860) 424-3140	<a href="mailto:lindsay.williams@ct.gov">lindsay.williams@ct.gov</a>	<a href="#">Connecticut Department of Energy and Environmental Protection</a>
Delaware	Greg Pope	(302) 739-9941	<a href="mailto:greg.pope@delaware.gov">greg.pope@delaware.gov</a>	<a href="#">Delaware Department of Natural Resources and Environmental Control</a>
Florida	Mike Chase	(850) 245-2913	<a href="mailto:michael.chase@floridadep.gov">michael.chase@floridadep.gov</a>	<a href="#">Florida Department of Environmental Protection</a>
Georgia	Amanda Carroll	(404) 450-8381	<a href="mailto:acarroll@gefa.ga.gov">acarroll@gefa.ga.gov</a>	<a href="#">Georgia Environmental Finance Authority</a>
Hawaii	Sina Pruder	(808) 586-4294	<a href="mailto:sina.pruder@doh.hawaii.gov">sina.pruder@doh.hawaii.gov</a>	<a href="#">Hawaii Department of Health</a>
Idaho	MaryAnna Peavey	(208) 373-0122	<a href="mailto:maryanna.peavey@deq.idaho.gov">maryanna.peavey@deq.idaho.gov</a>	<a href="#">Idaho Department of Environmental Quality</a>
Illinois	Gary Bingenheimer	(217) 782-2027	<a href="mailto:gary.bingenheimer@illinois.gov">gary.bingenheimer@illinois.gov</a>	<a href="#">Illinois Environmental Protection Agency</a>

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15% of state Drinking Water SRF dollars can be used for source water protection activities such as:

- land conservation easements;
- agricultural BMP;
- designating wellhead protection areas;
- etc.

## Protecting Source Water with the Drinking Water State Revolving Fund Set-Asides

States and communities may use the Drinking Water State Revolving Fund (DWSRF) set-asides to safeguard sources of drinking water.

### BACKGROUND

Protecting sources of drinking water can proactively safeguard the water we drink and improve our public health. Taking steps to manage potential sources of contamination and to prevent pollutants from reaching sources of drinking water can often be more efficient and cost-effective than treating drinking water downstream.

The Safe Drinking Water Act (SDWA) Amendments of 1996 required each state to develop a comprehensive Source Water Assessment Program and to complete

origins of pollution to reduce levels of contamination, establish partnerships for SWP, and develop recommendations for long-term SWP strategies.

### DWSRF ASSISTANCE

The DWSRF can provide financial assistance to publicly-owned and privately-owned community water systems, as well as non-profit non-community water systems, for drinking water infrastructure projects. Projects must either facilitate the system's compliance with national primary drinking water regulations or significantly further the health protection objectives of



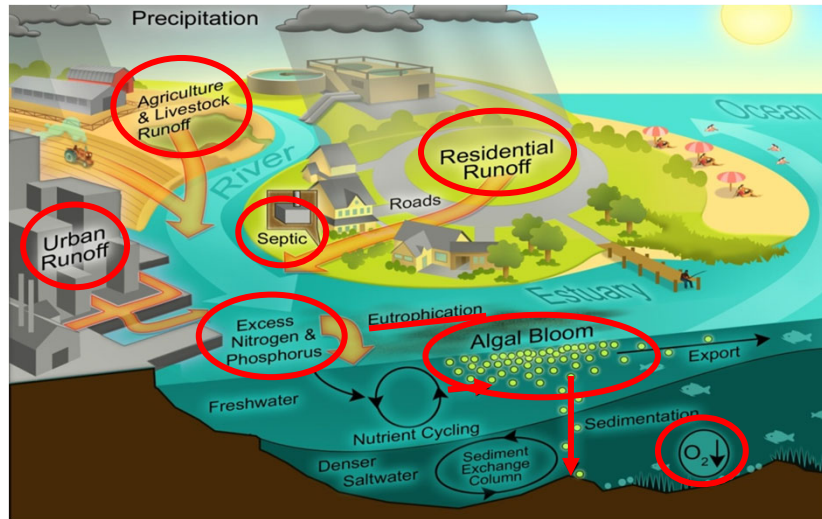
Learn more at:

<https://www.epa.gov/dwsrf/protecting-source-water-dwsrf-set-asides>



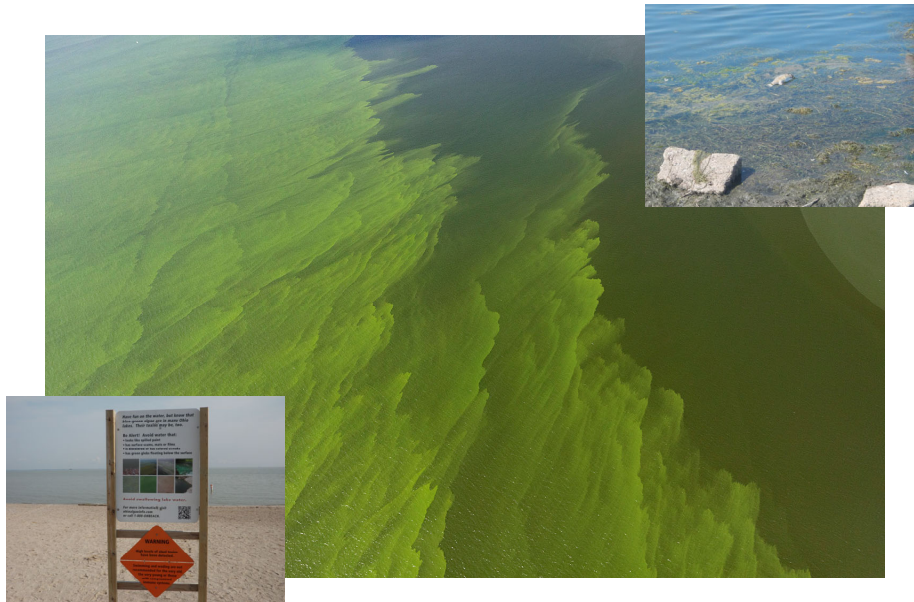


# Hypoxia 101



Source: Hans Paerl, UNC-Chapel Hill Institute of Marine Sciences

# Consequences Algal Blooms



Source (all images): [https://www.flickr.com/photos/noaa\\_glerl/albums/72157639592150973/with/16832101051/](https://www.flickr.com/photos/noaa_glerl/albums/72157639592150973/with/16832101051/)



# Hypoxia & the Mississippi River Basin



Source: <https://www.epa.gov/ms-htf/mississippi-at-chalapa-river-basin-marb>



## HTF Members

### 5 Federal Agencies and Tribes

- US Environmental Protection Agency
- National Oceanic and Atmospheric Administration
- US Army Corps of Engineers
- US Department of Agriculture
- US Department of Interior
- National Tribal Water Council

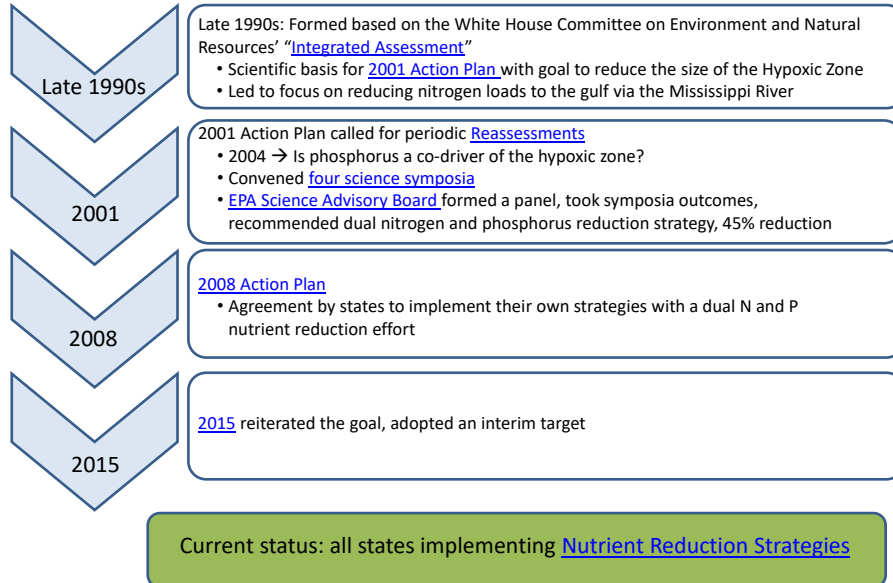
### 12 States

- |           |             |
|-----------|-------------|
| Arkansas  | Ohio        |
| Missouri  | Louisiana   |
| Iowa      | Illinois    |
| Tennessee | Mississippi |
| Minnesota | Kentucky    |
| Indiana   | Wisconsin   |



Each state member represents one of the following state agencies, with multiple agencies engaged with the Coordinating Committee:  
 Agriculture, Environmental Quality, and/or  
 Natural Resources agencies

## Background



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## Gulf Hypoxia Action Plan Goals

### Coastal Goal

Reduce the "...extent of the Gulf of Mexico hypoxic zone to **less than 5,000 square kilometers by the year 2035**.... An Interim Target of a **20 percent reduction of nitrogen and phosphorus loading by 2025** is a milestone for immediate planning and implementation actions."

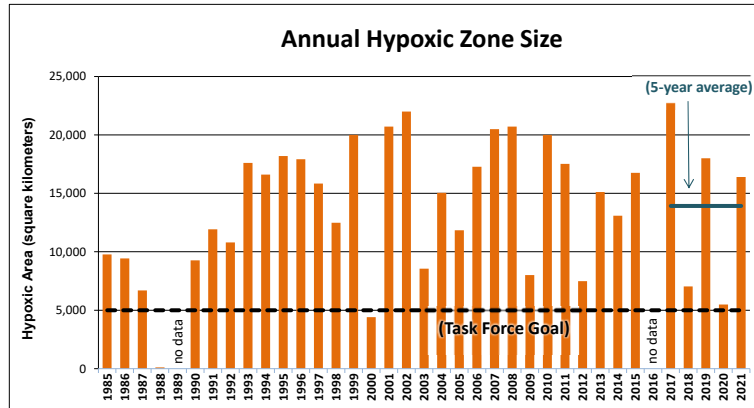
### Within Basin Goal

"To **restore and protect the waters of the 31 states and tribal lands** within the MARB through implementation of nutrient and sediment reduction actions to **protect public health and aquatic life** as well as reduce negative impacts of water pollution on the Gulf of Mexico."

### Quality of Life Goal

"To **improve the communities and economic conditions** across the MARB, in particular the agriculture, fisheries and recreation sectors, through improved public and private land management and a cooperative, incentive-based approach."

## Gulf Hypoxia Action Plan Goals



Historic size of hypoxia from 1985 to 2021. No data for 1989 and 2016. 1988 value is 100 sq. km.  
[\(N. Rabalais, LSU/LUMCON & R. Turner, LSU\)](#)

## Implementing State Nutrient Reduction Strategies

[HTF Newsletters](#) Headlines

### January 2022

Ohio Announces \$5 Million for H2Ohio Projects in the Ohio River Basin  
 Arkansas Develops Septic Remediation Pilot Project  
 Minnesota Uses CWSRF to Provide Reliable and Sustainable Funding for AgBMP Loan Program

### May 2022

Newly Hired Watershed Managers Will Collaborate with H2Ohio Initiative  
 The Indiana Science Assessment will Support the State Nutrient Reduction Strategy

### June 2022

EPA Announces \$60 Million Over the Next Five Years to Fund Nutrient Reduction Efforts through the Gulf Hypoxia Program

### October 2022

Kentucky Publishes Two New Hypoxia Task Force Success Stories  
 Environmental Review of Louisiana's Mid-Barataria Sediment Diversion Moves Forward  
 Illinois Invests in Agricultural Conservation and Nutrient Management  
 Ohio Renews CREP Agreement for the Scioto River Watershed

## A Transformational Opportunity

### 2021 Infrastructure Investment & Jobs Act

- ~\$50 billion to EPA for water infrastructure and water resource protection
- \$60 million to support HTF Action Plan

### Gulf Hypoxia Program

- 12 HTF states
- Tribes & Nations in the Mississippi River Basin
- Sub-Basin Committees and Land Grant Universities

## Gulf Hypoxia Program Priorities & Progress

### Ensure that GHP benefits are realized by disadvantaged communities

- OH: Home Septic Treatment System Program in DACs
- MO: Watershed Stewardship Workshop
- IN: Soil Sampling Program

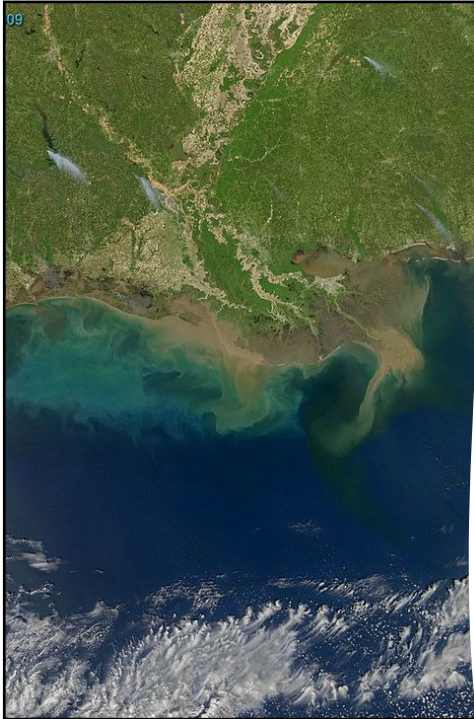
### Advance water quality actions that have climate adaptation or mitigation co-benefits

- IL: Cover Crop Premium Discount Program
- TN: WWTP Optimization

### Support states as they scale up implementation of their nutrient reduction strategies

- AR: Implement Conservation Practices in High Priority Areas
- MN: Scaling up Conservation Practice Adoption





## How to Get Involved & Learn More

- [HTF Newsletters](#)
- [Biennial Report to Congress](#)
- Annual HTF meetings
- Get involved at the state level
- EPA [HTF Website](#)
  - HTF History
  - State Nutrient Reduction Strategies
  - Success Stories
  - GHP workplans
  - And much more...

## Participation Certificate

- If you would like to obtain a participation certificate you can access the PDF in the **Handouts** section of your control panel.

Questions?

## Watershed Academy Webcasts

More webcasts coming soon!

The slides from today's presentations are posted on the Watershed Academy webpage.

A recording of the webcast will be posted within the next month.

[www.epa.gov/watershedacademy](http://www.epa.gov/watershedacademy)

## Contact Information

- **Ellie Flaherty**, U.S. EPA
  - [Flaherty.ellie@epa.gov](mailto:Flaherty.ellie@epa.gov)
- **Adrienne Donaghue**, U.S. EPA
  - [Donaghue.Adrienne@epa.gov](mailto:Donaghue.Adrienne@epa.gov)
- **Don Waye**, U.S. EPA
  - [Waye.don@epa.gov](mailto:Waye.don@epa.gov)
- **Jake Greif**, U.S. EPA
  - [Greif.Jacob@epa.gov](mailto:Greif.Jacob@epa.gov)
- **Steve Epting**, U.S. EPA
  - [Epting.steve@epa.gov](mailto:Epting.steve@epa.gov)
- **Margot Buckelew**, U.S. EPA
  - [Buckelew.margot@epa.gov](mailto:Buckelew.margot@epa.gov)

Thank You!