



*Great Plains-Midwest HABs Forum*  
*§319 Program: HABs Prevention, Success, Partnerships*

*Lynda Hall, Nonpoint Source Management Branch Chief, EPA Office of Water*



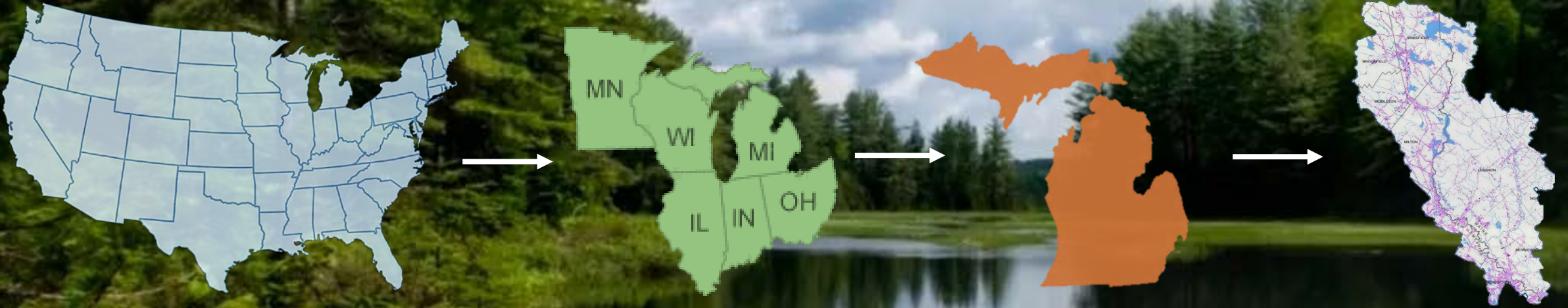
# Nonpoint Source (NPS) Pollution is Diverse

- **Agriculture**
  - **Nutrients, sediment**, pathogens, pesticides, metals
  - Pollutant losses from row crop runoff, irrigation water, animal facilities
- **Onsite septic systems** – **Nutrients**, pathogens
- **Nonregulated suburban/urban runoff**
  - Pathogens, **nutrients** (e.g., fertilizer, pet waste), oil
  - Excess water volume scours streams – **sediment**
- **Acid mine drainage** (abandoned mines) – metals, pH
- **Forestry** – **sediment** (landslides, roads), temperature
- **Hydromodification** – dams, channel straightening
  - **Sediment**, temperature, habitat destruction





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



## Funds are distributed to states annually based on formula

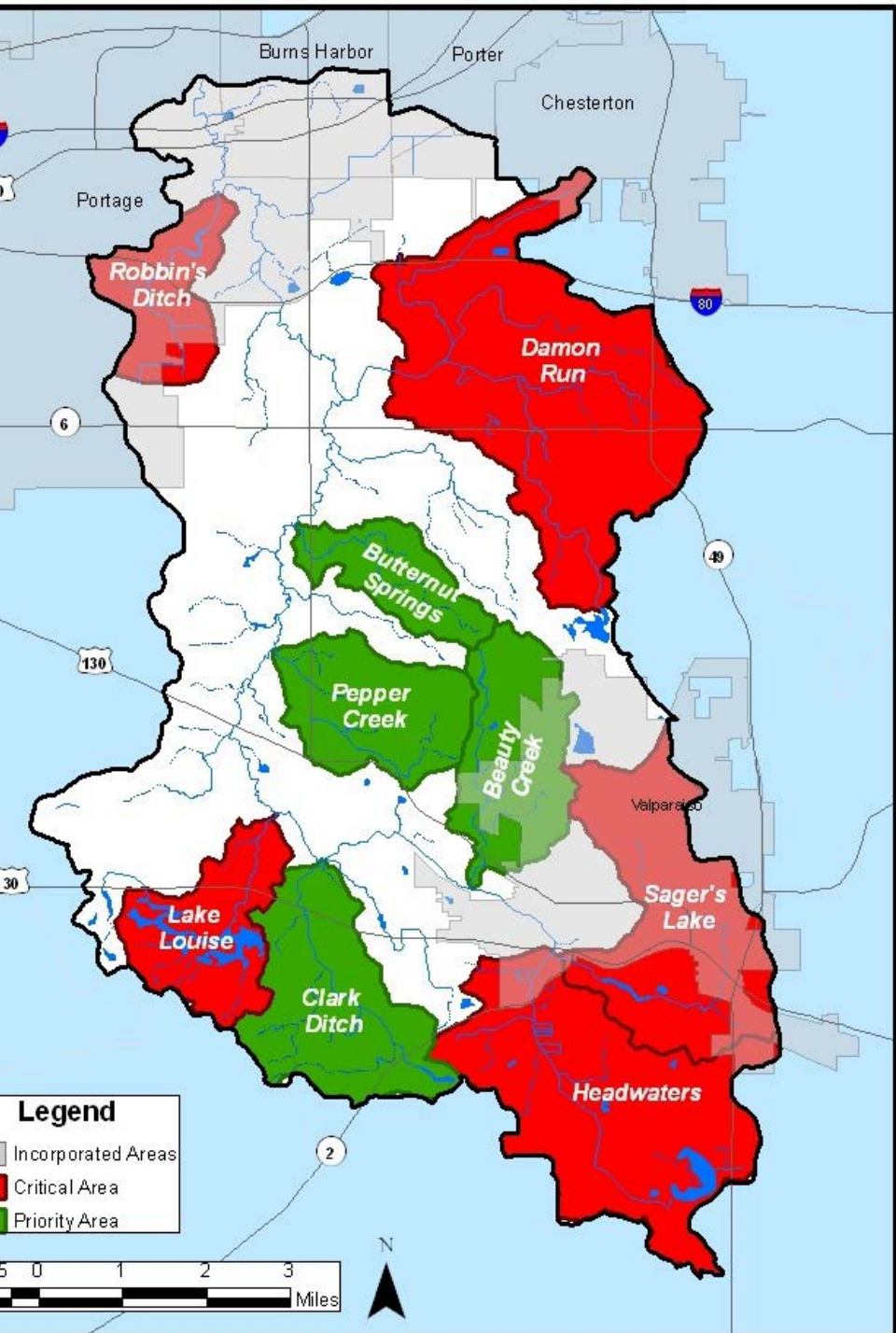
- In FY19 \$168M distributed to states (Tribes 5%); ~ \$1M to ~ \$8.3M per state
- 40% non-federal match required

## EPA Guidelines - Use of funds:

- **NPS management program** (staff, planning, monitoring, etc.)
- **Watershed projects** 50% of funds support on-the-ground projects



# NPS Loads in a Watershed Vary Widely, *Must be Targeted* to Improve Water Quality



- A watershed approach considers all sources and prioritizes the most important control actions in **critical source areas**
- Watershed Plans provide **technical basis for water quality progress** related to pollutant loads, largest sources, critical areas and BMPs
- Watershed Plans are a **roadmap for engaging stakeholders** and landowners throughout the project. Local buy-in is essential.
- Any given Plan or critical area may include a few or many individual projects, landowner actions

# The role of §319 in HAB prevention

Recommended Actions for Jurisdictions to  
Take to Combat Harmful Algal Blooms

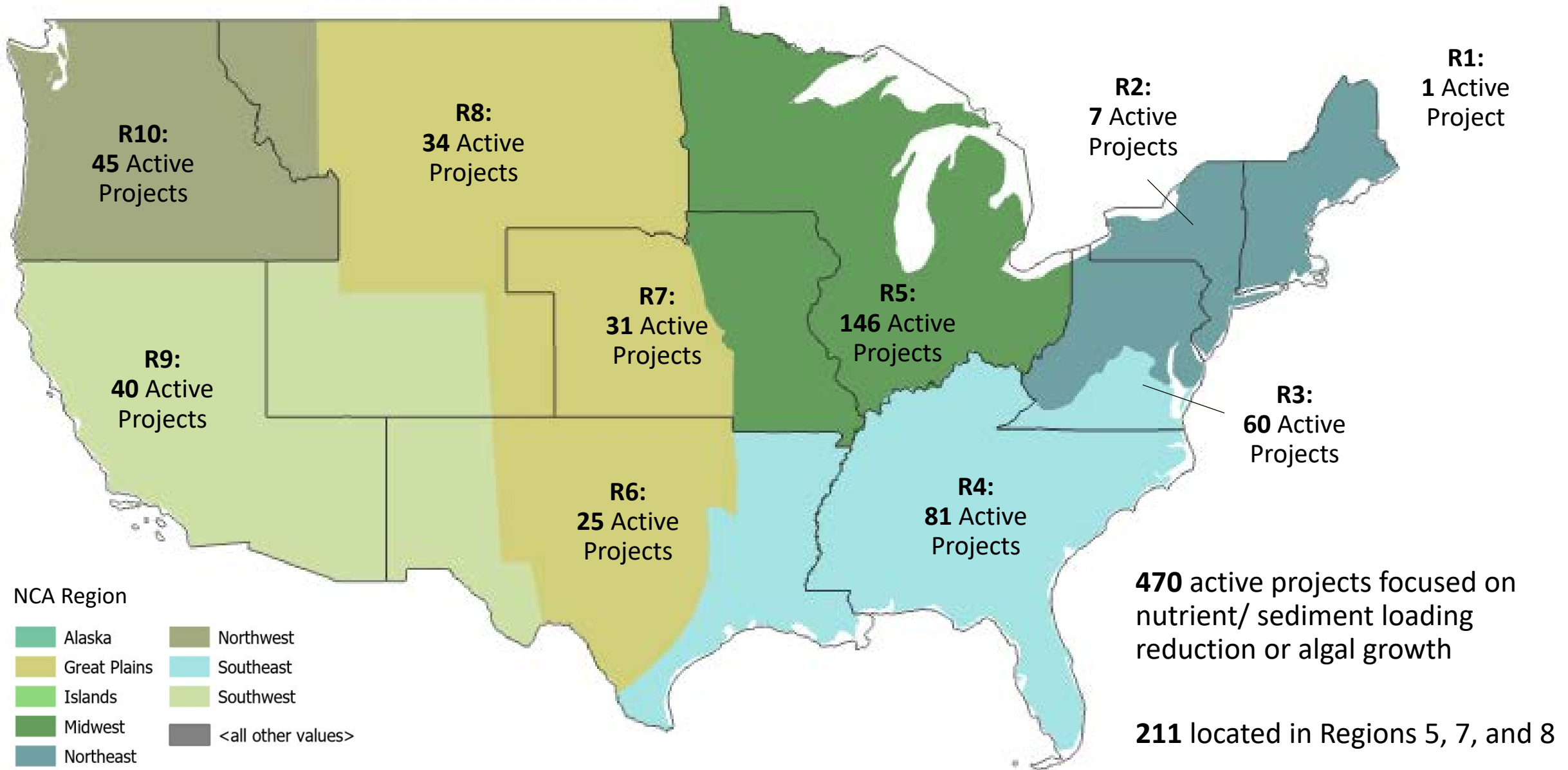
National Science and Technology Council  
Product [\*Harmful Algal Blooms And Hypoxia In  
The Great Lakes Research Plan And Action  
Strategy: An Interagency Report\*](#)

- **Reduce nutrients and sediment from non-point sources** within contributing basins and watersheds
- Continue and expand ongoing complementary programs that provide **planning, knowledge dissemination, tools, and technical and financial assistance** for nutrient and sediment pollution

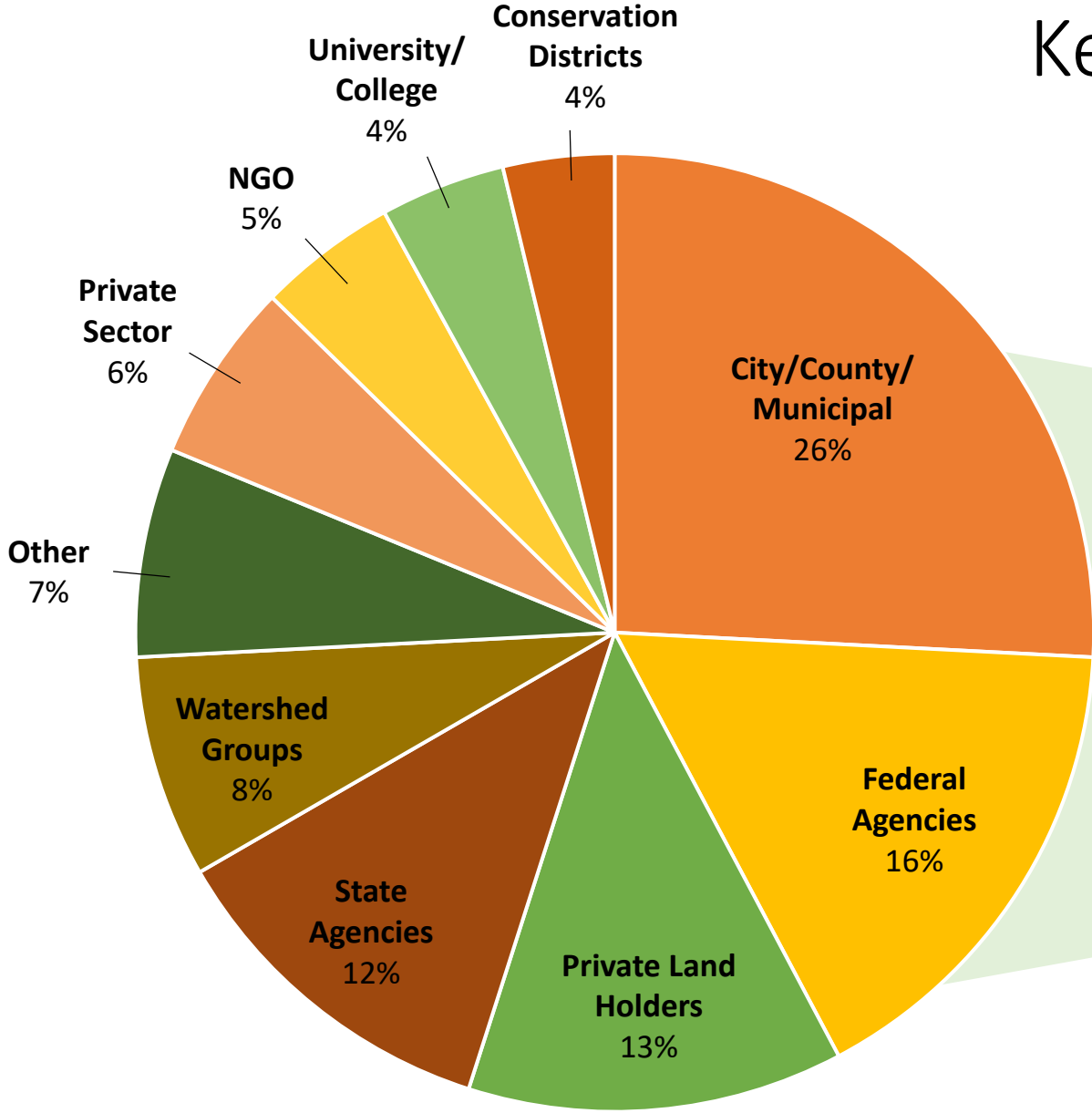




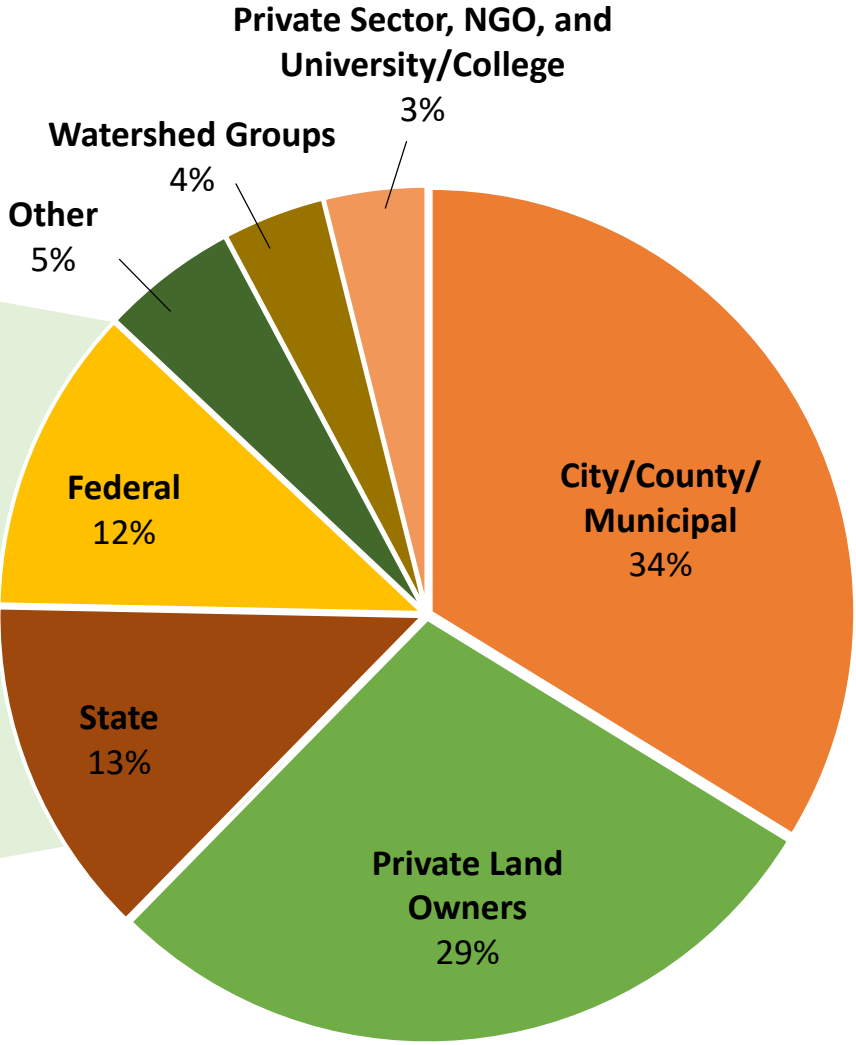
# Active §319 Projects Focused on Nutrient, Sediment, and Algal Growth



# Key Partners in Active Projects



**All Active Projects (470)**



**Active Projects (211) in Regions 5, 7, and 8**



# Section 319 NONPOINT SOURCE PROGRAM SUCCESS STORY

## Read the Success Stories

This page features stories about primarily nonpoint source pollution-impaired water bodies, where restoration efforts have led to documented water quality improvements. To view the stories, either:

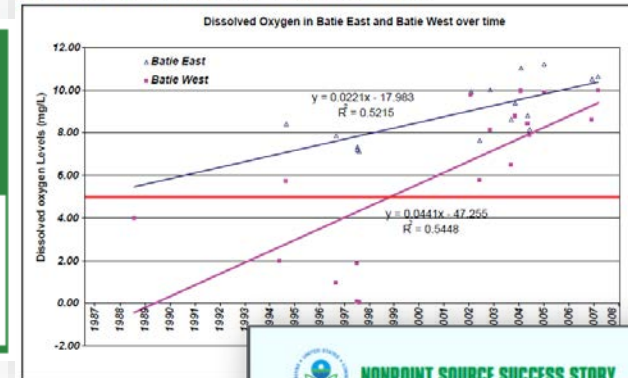
- [choose a state from the map below](#), or
- [use the table below](#).



Partially or Fully Restored Water Bodies

832

Figure 1. Regression of dissolved oxygen 1998-2007.



### NONPOINT SOURCE SUCCESS STORY

## Pennsylvania

#### Reclaiming Abandoned Mine Lands Reduces Impact of Acid Mine Drainage in the Bennett Branch Basin

**Waterbodies Improved** Acid mine drainage (AMD) degraded water quality in Pennsylvania's Bennett Branch Sinnemahoning Creek. As a result, Pennsylvania added the stream to its 1996 Clean Water Act (CWA) section 303(b) list of impaired waters for high metal concentrations. To address the AMD problem, significant partnerships were developed with the mining industry to accomplish mine reclamation and to use recoverable coal and waste coal resources. Water quality in Bennett Branch has dramatically improved after restoration, with decreased metal concentrations and increased alkalinity.

**Problem** Bennett Branch Sinnemahoning Creek (Bennett Branch) is a Brook Trout habitat and scenic river in Clearfield, PA and Cameron counties in north-central Pennsylvania (Figure 1). Bennett Branch flows into the Susquehanna River, which empties into the Chesapeake Bay. Restoring Bennett Branch is a priority because the watershed contains much of the state's growing oil production and still has enormous potential for growth in tourism and other outdoor recreation.

Coal mining in the area began in the late 1800s. Extensive underground mining was underway by the early 1900s, surface and strip mining began in the 1940s. Both continue to a limited extent today. Many established mines were eventually abandoned and left unattended. Drainage from these abandoned mine lands contribute dissolved metals to Bennett Branch.

The Pennsylvania Department of Environmental Protection (PA DEP) first designated Bennett Branch as impaired for metals in 1980, and placed much of the stream on the CWA section 303(b) list of impaired waters. PA DEP conducted additional sampling in the early 2000s. At present, 18 segments of Bennett Branch are on the impaired water list.

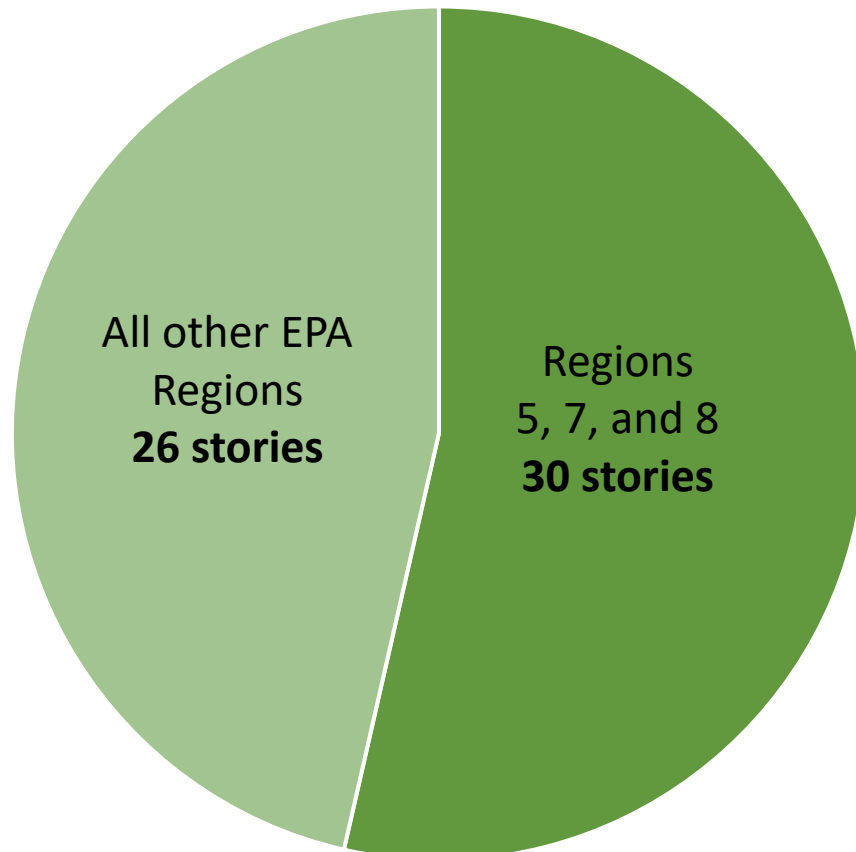
In July 2004, PA DEP and the Bennett Branch Watershed Association completed a "watershed snapshot" study to identify critical areas of AMD pollution. The study identified three distinct watershed drainage areas in need of AMD treatment—Mellows, Dennis Run and Callahan. The polluted area tributaries collectively contributed 41 percent of the acid load to Bennett Branch.

Total maximum daily loads (TMDLs) were approved for Bennett Branch in 2003 and consisted of load allocations for iron, manganese, aluminum and acidity to seven sampling sites on Bennett Branch (BR01, BR02, BR03, BR04, BR05, BR06 and BR07). The TMDLs require aluminum and iron concentrations to be below 0.70 and 1.5 milligrams per liter (mg/L) respectively, and for pH values to be between 6 and 9.



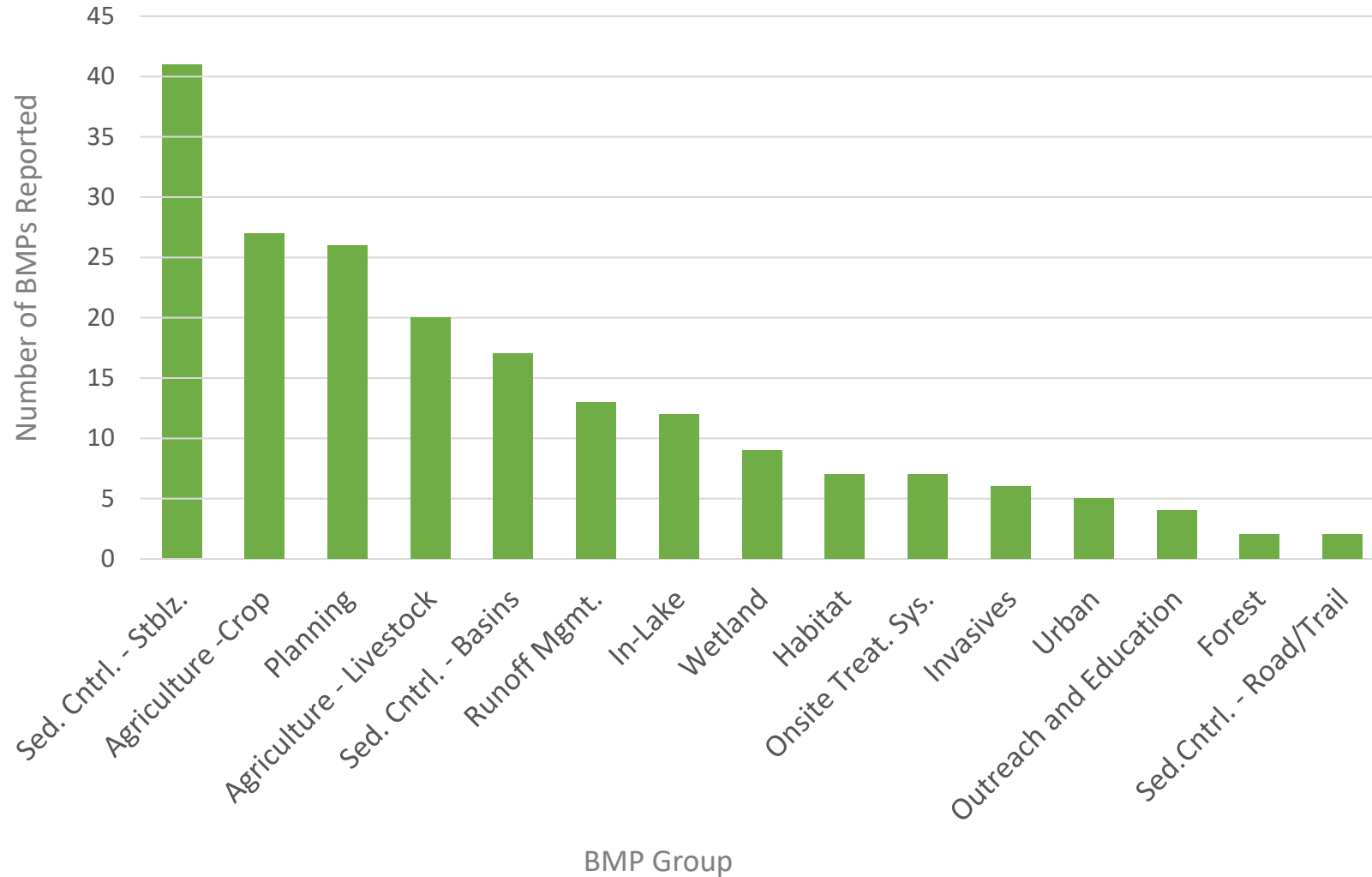
# NPS Success in addressing Nutrients, Sediment, and Algal Growth/Toxins in Lakes

## Nutrient, Sediment, and Algal Growth/Toxin Success Stories in Lakes



- 80 NPS Success Stories focus on waterbody improvements in lakes.
- **56** of these lake stories focus on **nutrient, sediment, and/or algal growth/toxin** reduction
- **30** successes are based in **Regions 5, 7, and 8**

# BMPs adopted in Region 5, 7, and 8 Nutrient, Sediment, and Algal Growth/Toxin Lake Success Stories



- Five most frequently reported BMPs include **Sediment Control** (bank/shoreline stabilization and filtration basins) **Agricultural Practices** (both crop and livestock), and **Planning**
  - watershed plans, nutrient management plans, etc.



# BMPs adopted: Tri-Regional Nutrient, Sediment, and Algal Growth/Toxin Lake Success Stories

Targeting management practices in the right places on-land prior to pursuing in-lake work is critical to enduring water quality results.

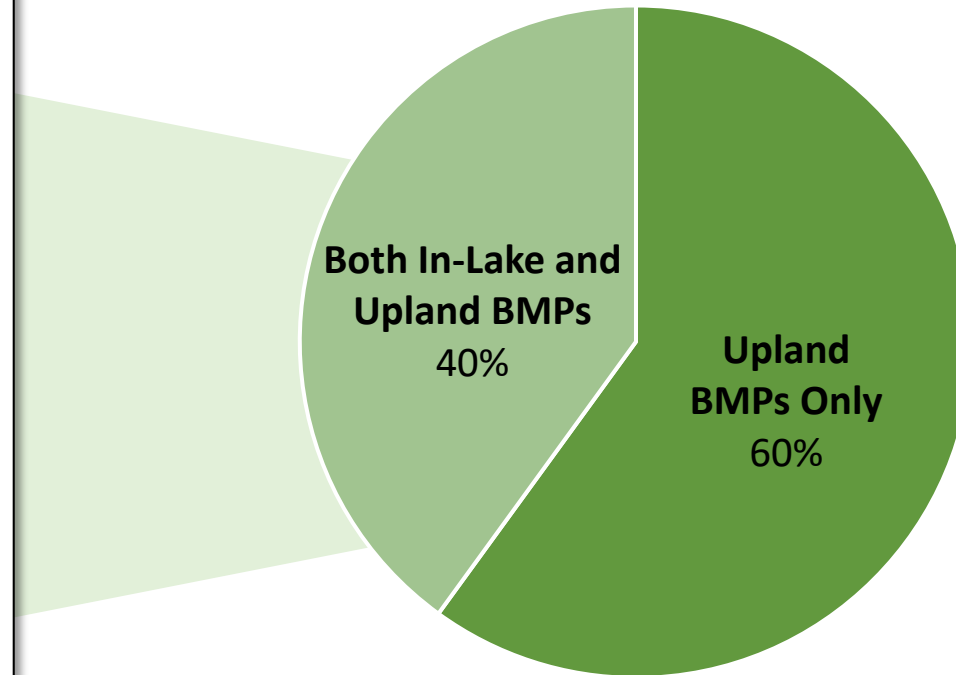
## Sequence of Upland and In-Lake Work in Region 5, 7, and 8 Success Stories

- 5 stories adopted **upland BMPs first**
- 1 story adopted **in-lake treatment first**
- 6 **did not report** on the sequence of upland vs in-lake work

The following in-lake BMPs were used:

- **Dredging:** 6 stories
- **Alum treatment:** 6 stories

All Nutrient/Sediment/Algal Growth Lake Success Stories



Nutrient/Sediment/Algal Growth Lake Success Stories in Regions 5, 7, and 8

## Success Story Case Study – Big Indian Reservoir 11A, Nebraska

<b>BMPs Implemented</b>	
<b>Cropland Practices</b>	Conservation tillage (130 ac), cover crops (343 ac), grass waterways (6 ac), sediment and grade control structures, terraces (96,784 linear feet [ft] controlling 725 ac), and wetland rehabilitation (1 ac).
<b>Pasture Practices</b>	12 alternative water supply, exclusion fencing (21,014 ft), invasive species control (130 ac), and prescribed grazing (728 ac).
<b>Stream Practices</b>	Riparian zone grass planting (13 ac), three sediment/nutrient basins, riparian zone planting (400 ft), and wetland/floodplain reconnection (8 ac).
<b>Shoreline Practices</b>	Bio-engineered and rip-rap shoreline stabilization (570 ft), and nine shoreline breakwaters
<b>In-Lake Practices</b>	Sediment removal (277,490 cubic yards)
<b>Other</b>	On-site wastewater system upgrade, recreational area camper dump station

**Waterbody Size:** 76 acres

**Pollutants Addressed:** Phosphorus and Sediment-Siltation

**Primary Impairment source:** Agricultural Runoff

**Year Delisted:** 2016

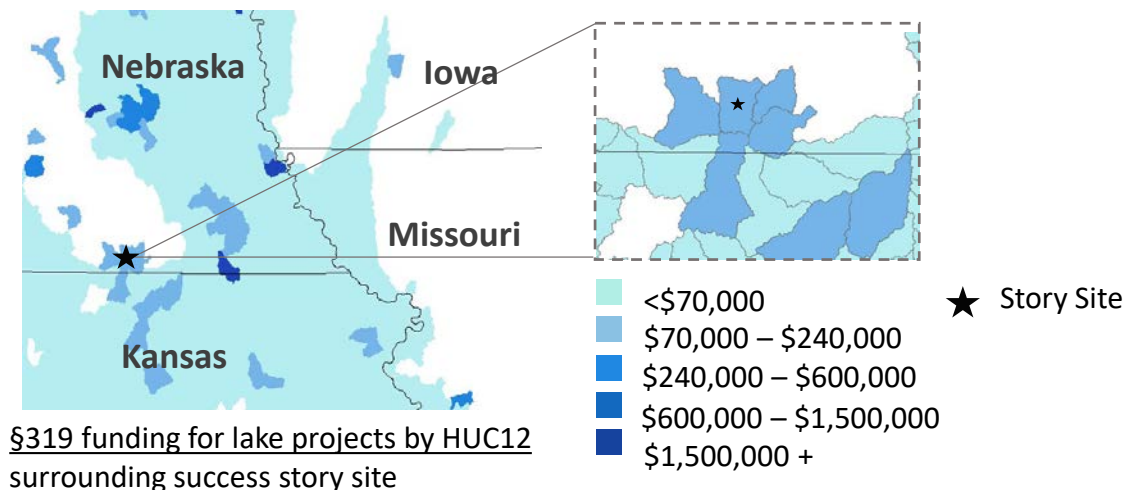
**Pollution Load Reductions:**

- Phosphorus loading reduction: 3,146 lbs/year (71.1% reduction)
- Sediment loading reduction: 5,821 tons/year (72.3% reduction)

**Partner Types:**

- Federal: EPA §319; USDA EQIP
- State: NE Game and Parks Commission; Lower Big Blue Natural Resources District; Univ. Nebraska Cooperative Extension
- Other: NGO; landowners

**Total Funding (§319 and other):** \$1,735,925

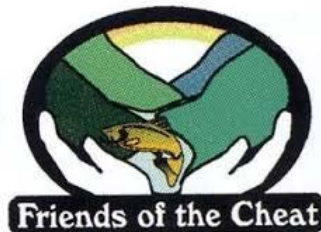




# Partnership, Coordination, and Funds Leveraging

Given magnitude of NPS problems and limited resources, NPS programs build connections and leverage funding

- **USDA** - especially NRCS conservation programs
- **FEMA** – hazard mitigation planning and grants; nexus of water quality projects and reduced risk from natural hazards (drought, floods)
- **CWSRF and DWSRF** - has authorities for SRF-funded NPS projects and receptive to innovative NPS approaches



# Water Quality and Hazard Mitigation Planning (HMP)

## Basics of HMP

- States & localities prepare HMPs to be eligible for FEMA grants
- HMPs focus on all hazards including natural hazards (e.g., flood, drought)
- FEMA policies and grants now put more emphasis on **pre-disaster mitigation, resilience** and **nature-based approaches**
- Projects with “co-benefits” may compete better for FEMA funding

## Growing recognition of HABs as a hazard in HMPs

- Some state HMPs include HABs
- H.R. 414 would explicitly include algal blooms as basis for ‘major disaster’ declaration and funds



# Water Quality BMPs with Hazard Mitigation Co-Benefits

Opportunity for water quality BMPs and nature based solutions(e.g., GI/LID, soil health practices) to help achieve HMP goals, creating co-benefits

Significant co-benefits can garner hazard mitigation funding





# HABs in state hazard mitigation plans

Some states have included HABs in their HMPs: **Michigan, Missouri, Ohio, Wisconsin**

- MI, MO, and WI include HABs in their **risk analysis**:
  - MI includes HABs as a Great Lakes shoreline hazard
  - OH and MO list HABs as a future risk that will be exacerbated by climate change
- WI includes HABs in **risk analysis and HMP action items**:
  - HABs included as a climate hazard
  - **Prioritizes green infrastructure** in evaluating local hazard mitigation grant applications
- Getting a hazard and associated water programs/actions in the HMP is first key step for potential funds leveraging



# Connecting with your State Hazard Mitigation Program

Reach out to your  
State Hazard  
Mitigation Officer  
(SHMO)



Meet to discuss the NPS program/watershed planning, and the nexus of water quality programs and co-benefits in state HMP



Encourage the SHMO to include general information on water quality program/projects in state HMP



Connect with state agencies involved with hazard mitigation planning

# Connecting with your State Hazard Mitigation Program

## Points of Interest for your SHMO



Integrated planning processes – water quality and hazard mitigation – more efficient



Leveraging of FEMA funding with other funds



Water programs offer access to nature-based solutions to hazards



Adopted broadly, nature-based solutions can help reduce flood insurance rates



# Resources: Integrated HMP, Watershed Planning

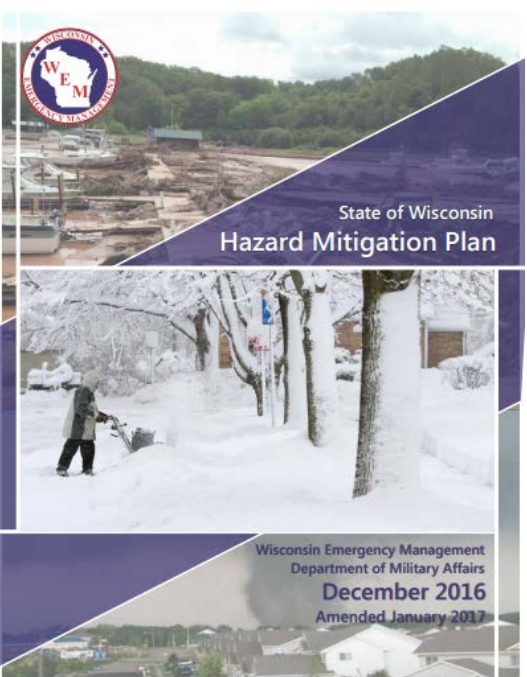

- [319 HMP Resources:](#)
  - General Information
  - Planning Resources
  - Funding Resources
- [Watershed Planning Resources](#)

Nonpoint Source Program - Home

This SharePoint site can be used to access relevant NPS 319 program resources including:

- Grant Guidelines
- Frequently Asked Eligibility Questions
- Historical Guidance

Use the Quick links to the right to access the Libraries and other pages.



State of Wisconsin  
Hazard Mitigation Plan

Wisconsin Emergency Management  
Department of Military Affairs  
December 2016  
Amended January 2017



An aerial photograph of a river system. In the foreground, a large, vibrant green algal bloom covers a significant portion of the water. In the middle ground, a multi-span concrete bridge crosses the river. The background shows a lush green landscape with trees and some buildings under a clear sky.

# Summary

- With support from the §319 program, state NPS programs are actively working to address nutrient pollution and prevent HABs
- With partners and perseverance, success can be achieved
- NPS programs are well situated to leverage partners
  - FEMA is an important yet under-utilized partner for water quality programs
  - Planning processes, funds can be leveraged to achieve water quality goals including addressing HABs