Leadership for Midwestern Watersheds: EPA Update

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NPS Pollution

• Diverse and dominates the nation’s impaired waters

• Agriculture
  • Nutrients, sediment, pathogens, pesticides, metals
  • Row crop runoff, irrigation water, animal facilities

• Onsite septic systems – nutrients, pathogens

• Acid mine drainage (abandoned mines)

• Unregulated suburban/urban runoff
  • Pathogens, fertilizer, pet waste, oil & grease, construction sediment
  • Excess water volume scour streams – sediment

• Forestry
  • Sediment (slides, road construction), temperature

• Hydromodification
  • e.g., dams, channel straightening – sediment, temperature, habitat destruction
§319 Addresses NPS Pollution

via State/Tribal Management Programs, Watershed projects

• 2016 Funds ~ $163M allocated to states (Tribes $8M); 40% match
• Guidelines updated in 2013 focusing on program oversight, results
  • NPS Management Plans to be kept current, updated every 5 years – all state plans current as of September 2015 – NOW IS THE TIME TO TALK TO YOUR STATE AGENCY PARTNERS!
• NPS program funds support array of activities to implement state NPS management plan: programs, staff, watershed prioritization and planning, develop TMDLs, NPS monitoring
• Watershed project funds support on-the-ground projects including local staff to guide and implement – at least half of funds must go to projects
• Must have a 9-element watershed plan
• Continued emphasis on watershed planning with more regional review
National to Local

- **National** Program
  - coordinates with **Regions**
  - influences **State** Programs
  - powers **local** watershed projects
Watershed Based Plans →

Maps for Water Quality Results

• § 319 watershed projects must be guided by watershed-based plans (WBPs)
  
• WBPs provide the technical basis for implementation
  • Pollutant loads, sources, critical areas, and practices that will have greatest impact on water quality

• WBPs lay out the approach for engagement of affected stakeholders and landowners in adopting control practices
  • Without local capacity and landowner engagement, projects don’t happen

• https://www.epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters
Critical and Priority Areas – NPS loads vary widely

Critical Areas (Red)
• Higher pollutant loads - need treatment to improve poor water quality

Priority Areas (Green)
• Need protection to protect relatively good water quality, prevent future impairment

Based on:
• historic water quality data
• current water quality data
• confirmed sources
• projected future development
• causes of impairment
§319 Project Type Distribution (2008-2013)

This graph shows the source categories NPS projects have focused on from 2008–2013.

- **Agriculture**: 1,968
- **Urban**: 1,507
- **Hydrologic/Habitat Modification**: 609
- **Other**: 578
- **Waste Disposal**: 197
- **Resource Extraction**: 177
- **Legacy Pollutants**: 117
- **Marinas**: 54

- Livestock and crop production activities and facilities
- Forestry (silviculture) operations
- Stormwater runoff (e.g., motor oil and road salts) from roads and parking lots
- Stormwater runoff from lawns and gardens
- Stormwater runoff from pet waste and failing septic systems
- Stream channelization and channel modification
- Impacts from dams
- Impacts from streambank and shoreline erosion
- Some state work might not be easily captured by one defined category. Examples of recent projects in this category include technical analysis, emerging contaminant studies, and rehabilitation work after wildfires.
- Inappropriate waste disposal practices
- Malfunctioning or poorly placed septic systems
- Leaking storage tanks
- Abandoned mine drainage or former fuel extraction sites and activities
- Chemicals used historically in agricultural, manufacturing and mining activities—some of which are now banned.
- Usually these pollutants are associated with contaminated sediment.
- Boat cleaning, boat fueling or marine head (toilet) discharge
- Stormwater runoff from parking lots and hull maintenance/repair areas
Catalyst for Funds Leveraging and Coordination

• Many states leverage well beyond required 40% match
• A closer look at 400 documented water quality improvements shows that 319 funds represented ~13% of dollars invested.
  • $1.7 Billion dollars in total reported funding, 319 funds ~$197M
Load Reduction Models

• No specific model required for reporting reductions
  • Must report load reductions (WQ 9) into GRTS using any model

• Commonly used models
  • STEPL
  • Region 5
  • RUSLE or RUSLE 2
Tracking Results with GRTS: Grants Reporting and Tracking System

• Primary tool for management and oversight of EPA’s NPS Pollution Control Program

• Online database for states to fulfill their 319 reporting requirements
  • States/sub-grantees must report specific mandated elements comprised of parameters that EPA needs in order to successfully account for accomplishments of the § 319 program.
WQ 10: Water Quality Successes
Partially or Fully Restored Waters

Polluted Runoff: Nonpoint Source Pollution

Nonpoint Source Success Stories

Type 1. Stories about partially or fully restored waterbodies
Type 2. Stories that show progress toward achieving water quality goals
Type 3. Stories about ecological restoration

PA's About PDF page to learn more.
§ 319 Highlights Report

- [https://www.epa.gov/nps/highlights](https://www.epa.gov/nps/highlights)
SRF Sponsorship Programs

• Ohio, Oregon, Idaho, Iowa and Delaware all have CWSRF Sponsorship Programs

• Links to information on innovative SRF opportunities:

  • NewsNotes (also, subscribe to NewsNotes!)

  • Webinar (scroll to the bottom)

  • Financing Options for Nontraditional Eligibilities in the CWSRF
A focus in the Mississippi River Basin (MARB) and Gulf Hypoxia
**HTF Science Based Goal**

**Coastal Goal:**
By 2035, reduce 5-year running average size of the Gulf hypoxic zone to 5,000 km²

**Interim Target:**
20% reduction of nitrogen and phosphorus loading by 2025

Data source: Nancy N. Rabalais, LUMCON, and R. Eugene Turner, LSU
Funding sources: NOAA Center for Sponsored Coastal Ocean Research and U.S. EPA Gulf of Mexico Program
Annual TN and total phosphorus loads in the Mississippi/Atchafalaya River basin transported to the Gulf of Mexico from 1980 to 2015. (USGS 2017)
Current HTF Focus Areas

• Tracking progress towards the goal
• Nutrient Reduction Strategies
• SERA-46 Priorities for Collaboration
• Collaboration and Partnerships
• Communicating Success
HTF Focus: State Nutrient Strategies

HTF Progress to Date

• All twelve states have developed draft or completed strategies
• Implementation on the ground in state priority watersheds
• Point Source Measures Report
• NPS Measures Report
• Federal Accomplishments and revised Federal Strategy, 2016
• Continue to build and leverage partnerships
Tracking Progress Towards Our Goal

- NOAA Annual Hypoxic Zone Monitoring
  - Decadal Trends
    - USDA CEAP
    - USGS SPARROW
  - Regional Loading Trends
    - SPARROW
    - SWAT
    - State Models
  - Biennial Loading Trends
    - Point Source Measures
    - NPS Measures
  - VariedWQ Statistical Trends
    - NARS, WQX data, USGS NAWQA
    - Monitoring Collab
Tracking Progress Towards Our Goal

- Develop basin-scale nonpoint source measures
  - This year, develop and report on common NPS metrics by state

- Point source measures
  - First report out in March 2016
  - Second report early next year
  - Continue to develop PS metrics

- Modeling considerations
  - How can state information and data be used by federal and regional modelers in MARB scale nutrient reduction tracking models?
Minnesota

(Christiansen et al 2015)
Priorities for Collaboration with SERA-46

- [https://www.epa.gov/ms-htf/hypoxia-task-force-partnerships](https://www.epa.gov/ms-htf/hypoxia-task-force-partnerships)

- [https://mrbconservationnetwork.net/](https://mrbconservationnetwork.net/)

- The 12 Land Grant Universities are represented by one research scientist and one extension specialist.

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**Hypoxia Task Force and LGU SERA-46**

**Priorities for Collaborative Work**

**Working DRAFT**

**May 2015**

This document outlines emergent opportunities for potential short- and long-term collaborative work between the Hypoxia Task Force and LGU SERA-46. It is a work in progress, reflecting the most recent thinking of HTF and SERA-46 members about where collaboration will contribute most to state-level nutrient strategies and reducing the hypoxic zone in the Gulf of Mexico.

Each item in this summary can be tied to the three broad, proposed objectives:

**Objective 1:** Establish and strengthen relationships that can serve the missions of multiple organizations addressing nutrient movement and environmental quality.

**Objective 2:** Expand the knowledge base through the discovery of new tools and practices as well as the continual validation of recommended practices.

**Objective 3:** Improve the coordination and delivering of educational programming and increase the implementation effectiveness of nutrient management strategies that reduce nutrient movement for agricultural and non-agricultural audiences.

Additional information will be necessary to operationalize these ideas, such as:

- How will SERA-46 and HTF integrate these ideas with existing efforts?
- How will these ideas be resourced (e.g., funded, staffed)?

Answering these questions will be important next steps in moving priorities for land-grant HTF collaboration forward.
What is SERA-46 Doing For the HTF?

• Using Social and Civic Engagement Indicators to Advance Nutrient Reduction Efforts
  • Refining and improving existing social indicators to guide, evaluate, and accelerate implementation of state-level nutrient reduction strategies through a regionally inclusive and consistent expansion of the use of the SIPES/SIDMA tools throughout the MARB
  • Developing civic engagement indicators to assess and encourage non-government stewardship of state-level nutrient reduction strategies

• Building Capacity for Watershed Leadership and Management in HTF States
  • Assessment of existing watershed training programs that include farmers; identify successful methodologies and gaps
  • Host leadership summits of watershed practitioners, farmers, and farm advisors from MARB states
  • Develop training modules based on needs assessment for watershed leadership and nutrient management

• Transforming Drainage (bringing in an additional state to an ongoing project)
  • Develop strategies and tools to apply the research findings in decision-making on the farm, in watersheds, and in state and national policy
  • Extend the strategies and tools to agricultural producers, the drainage industry, watershed managers, agencies, and policy makers to bring about transformation of drainage strategies
  • Educate the next generation of engineers and scientists to design drainage systems that include storage in the landscape

• MARB Nutrient Reduction Measurement Framework
• Cross-MARB communication of science directly to state agencies for translation to policy
2017 Report to Congress

https://www.epa.gov/ms-htf
Appendix
NWQI Readiness Phase and Pilot Project Approach—assist with watershed planning

• Focus on watershed level assessments through watershed planning and conservation planning

• Watershed assessments to identify and target critical source acres for treatment

• Develop outreach Strategy by prioritizing the critical areas and engage producers
Watershed-Based Plans

EPA Nine Elements for Watershed-Based Planning

1. Identify causes & sources to be controlled
2. Estimate load reductions expected from BMPs
3. Describe Nonpoint source management measures (in agriculture areas, conservation practice systems) & targeted critical areas
4. Identify related loading/water quality success criteria or indicators
5. Describe interim, measurable implementation milestones
6. Describe load reduction/water quality monitoring program
7. Describe info & education needed to promote BMPs
8. Estimate technical assistance, funding, & sources required for implementation
9. Schedule implementation of BMPs, assign tasks

Source: US EPA 319 Supplemental Guidelines