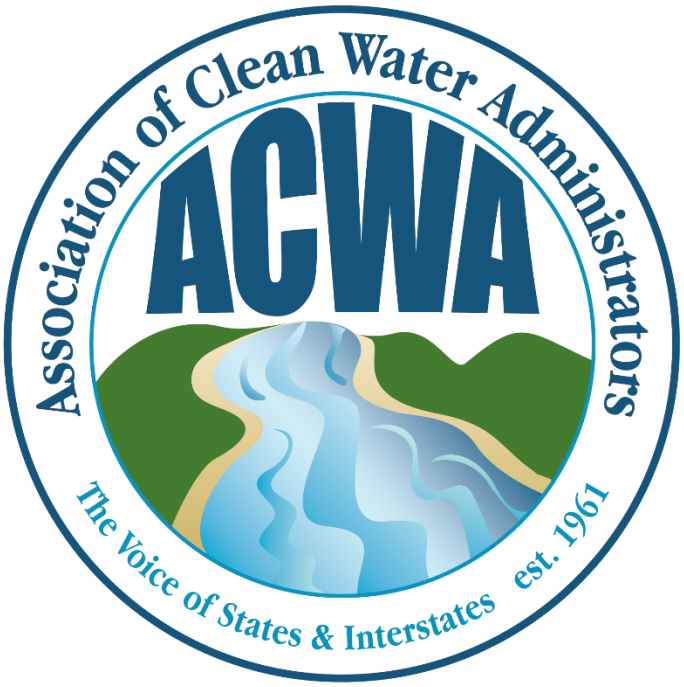
NUTRIENT REDUCTION PROGRESS TRACKER
VERSION 2.0 – 2019



REPORT

December 2022

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Introduction

The Nutrients Working Group ("NWG"), a partnership between ACWA, EPA, and ASDWA, began work in 2014 to identify a set of measures that demonstrated progress toward nutrient reduction in the nation's waters. States expressed concern that the only national metric for demonstrating progress on addressing nutrient pollution was the establishment of nitrogen and phosphorus criteria for lakes, estuaries, and flowing waters. States believed there was a potential for more robust national metrics to demonstrate state actions taken to reduce nutrient loads in conjunction with the development of nutrient criteria. The desire to demonstrate progress on nutrient reduction became more pertinent with EPA's release of Nancy Stoner's 2011 memorandum titled "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions" (the "Stoner Memo"). The Stoner Memo described a framework states could utilize to focus near term efforts on nutrient reduction while they continued to develop nutrient criteria. The 2016 Joel Beauvais memorandum, titled "Renewed Call to Action to Reduce Nutrient Pollution and Support for Incremental Actions to Protect Water Quality and Public Health" (the "Beauvais Memo"), highlighted the continued importance of these efforts.

One of the key questions posed to the NWG was how to demonstrate progress on nutrient reduction envisioned by the Stoner Memo and the Beauvais Memo. The NWG concluded that a short, easy-to-complete form of agreed-upon measures that states would complete on a routine basis would be the appropriate path forward. To that end, the NWG developed an initial survey to begin to ascertain what small, core set of outputs and outcomes states agreed would best demonstrate nutrient reduction progress. The initial survey detailing numerous possible metrics was sent to state ACWA members in 2015 with the goal of finding common threads from which to base a second, more specific survey.

Based on analysis of the responses from the first survey, the NWG spent significant time in early 2016 preparing the second survey to focus on the common threads resulting in a more specific and concise survey. The second survey was sent out in May 2016 and received a positive response from the states – 57 responses from 41 states and the District of Columbia. The NWG took the results and listed the metrics in priority order based on a simple weighting system – a weight of 1 for low priority, 2 for medium priority, and 3 for high priority responses. The weighting system was then normalized to account for the fact not every respondent answered every question. Using feedback on the top ranked metrics from the 2016 ACWA Annual Meeting and from other groups such as ASDWA, the NWG worked on a core group of items to track in a regularly scheduled tracker. It was determined that the core group would include outputs and outcomes from various program areas including permitting, assessment, and drinking water. In February 2017, the NWG finalized a beta version of the tracker and released it to Iowa, Oregon, Wisconsin, Kansas, and North Carolina for testing. Using the results from the beta test and feedback at the March 2017 ACWA Mid-Year Meeting and the August 2017 ACWA Annual Meeting, the NWG finalized Version 1.0 of the tracker. Released in September 2017, the *Nutrients Reduction Progress Tracker Version 1.0 – 2017* received responses from 31 states (including the District of Columbia).

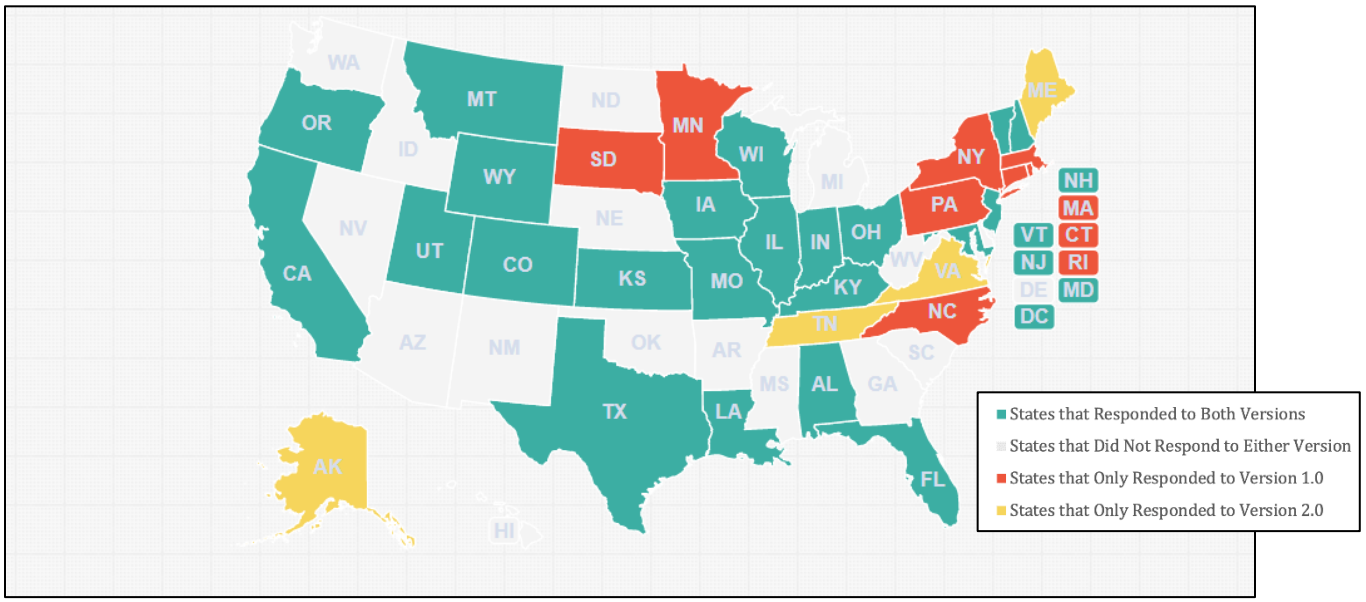
Following Version 1.0 of the Tracker, the Nutrients Working Group began the process again towards a second survey and report, designed to assess any progress made during the next 2

years. Delays in data collection due to the Covid-19 pandemic have pushed back the report from it's initial goal of a 2020 release.

This report provides an overview of the responses received, along with comparisons to the first iteration of the Tracker. The report is organized in the same manner as Version 1.0, providing graphs and narrative summaries of the data. 27 states submitted data for the second version of the Tracker, including 23 states that completed the first version as well. The *Nutrients Reduction Progress Tracker Version 2.0* was released in 2022.

Thank you to members of the NWG that assisted in crafting the *Nutrient Reduction Progress Tracker Version 2.0*, reviewing the data, and editing this report.

Background



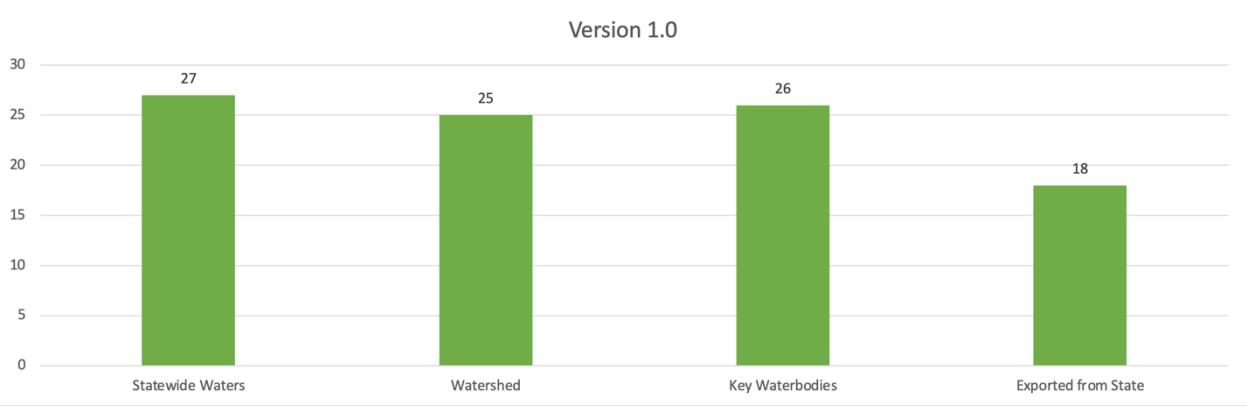
Twenty-seven (27) states, including the District of Columbia, submitted responses to the tracker. There were forty (40) questions. While completion time varied among states, the median time it took a state to complete the tracker was around two (2) hours, significantly less than the eight and a half (8.5) hours in the first version. States were asked to review the data included in these responses.

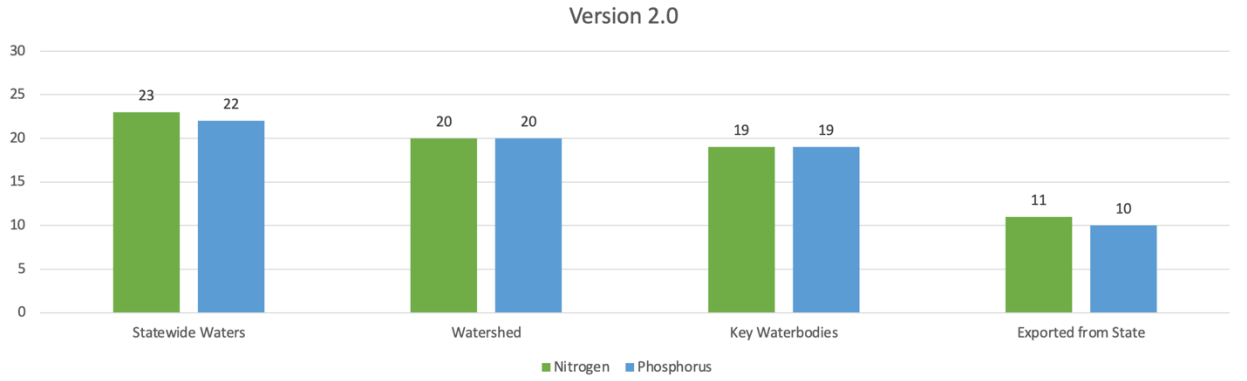
Four (4) states submitted information to the tracker in 2019 for the first time. However, eight (8) states that completed the tracker in 2017 did not submit information in 2019. Twenty-three (23) states submitted responses to the tracker in both 2017 and 2019, and fifteen (15) have never submitted responses.

Part I: Statewide Strategy/Monitoring/Assessment

Questions 1, 2, and 3 asked for the state name, contact person, and if the state completed the tracker in 2017.

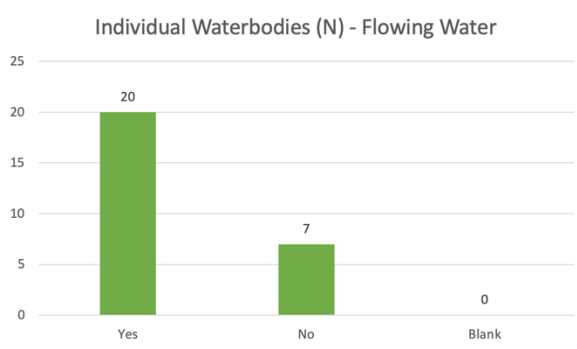
Question 4. Is ambient nutrient monitoring available in your state to assess reductions and trends (e.g., baseline, long term, flow)?

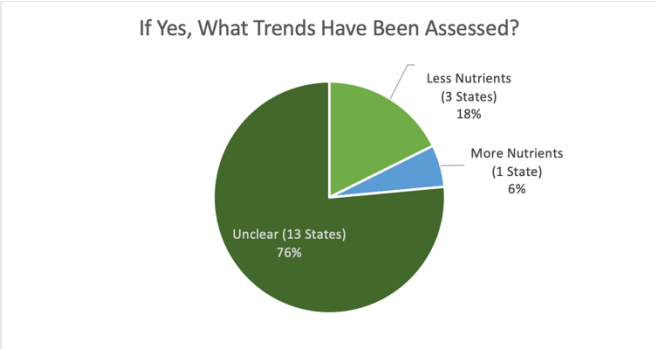


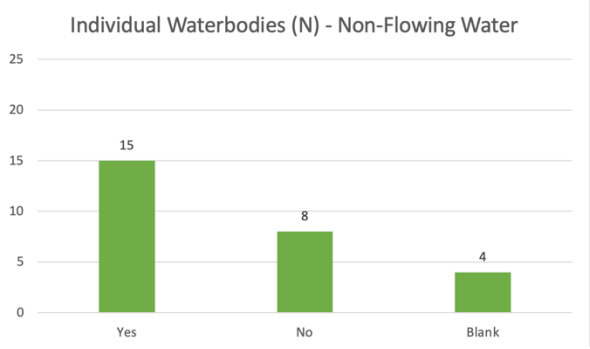


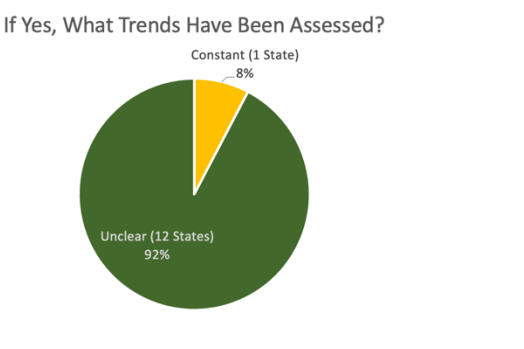
Question 5. Is your state assessing trends in nutrient loading using baseline and continued monitoring in the following range of waterbodies?
****In some cases 'no' means 'not applicable.'***

Individual Waterbodies (N):

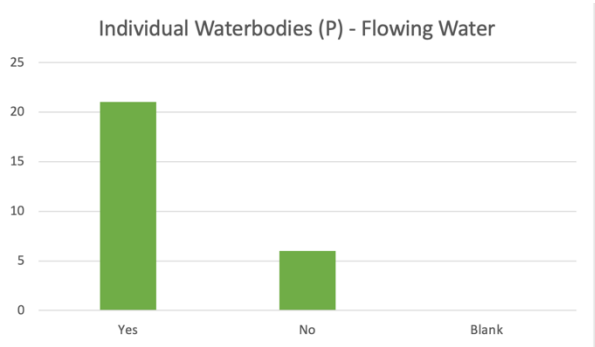


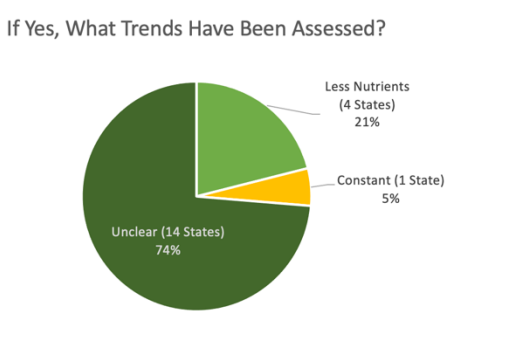


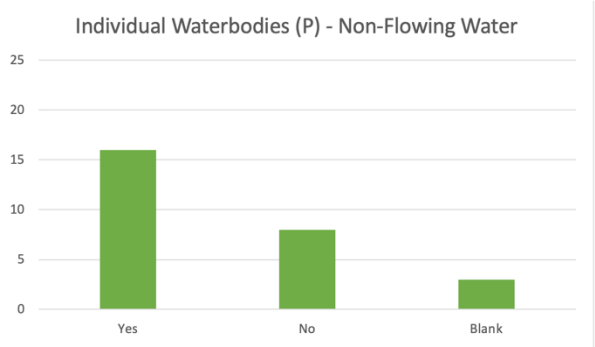


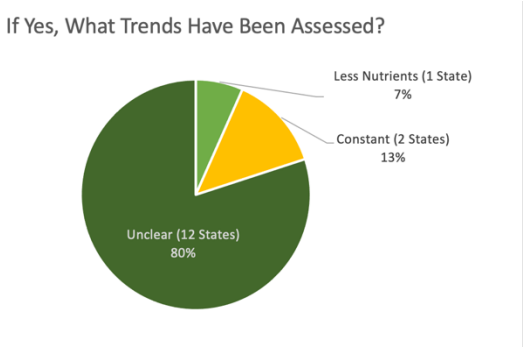


Individual Waterbodies (P):









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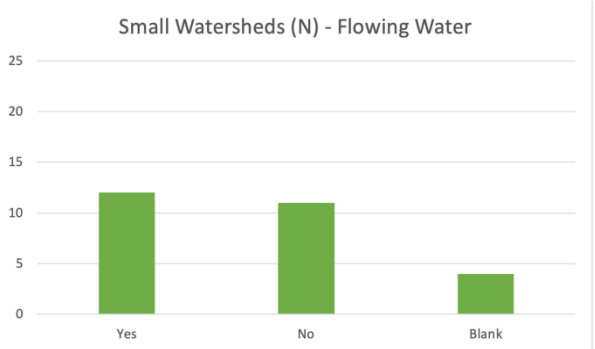

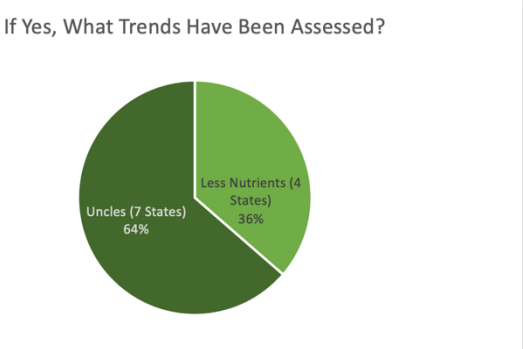

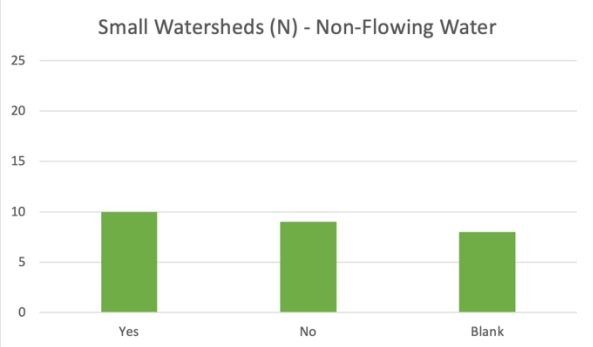

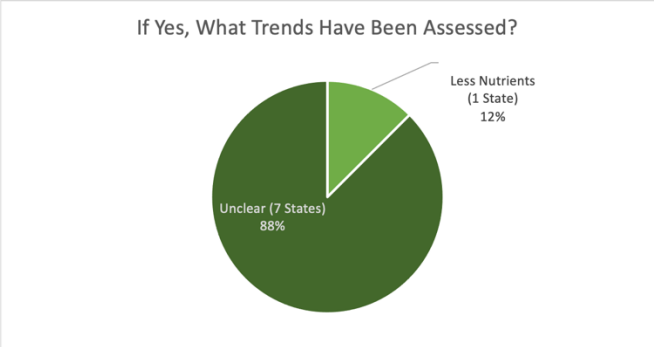

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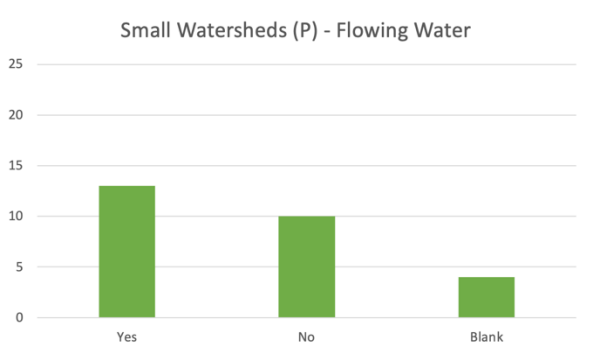

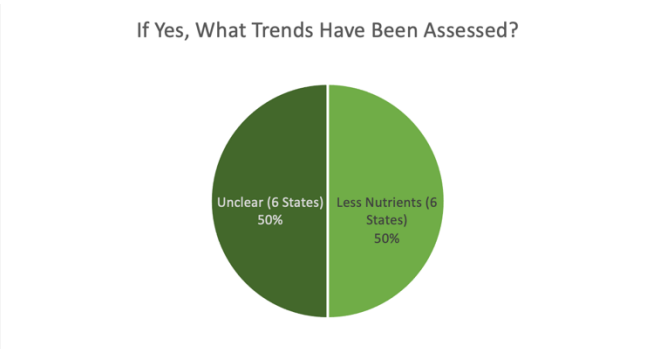

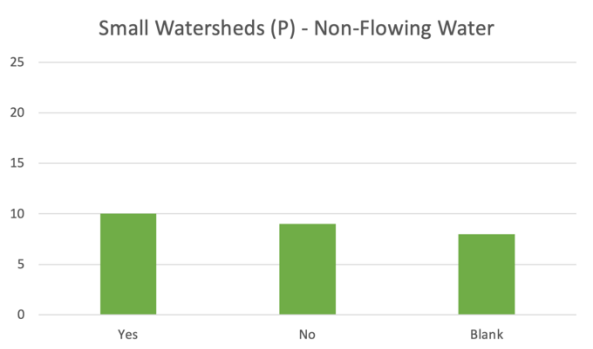

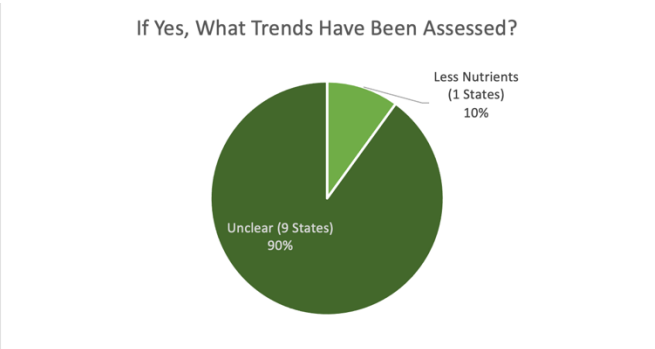

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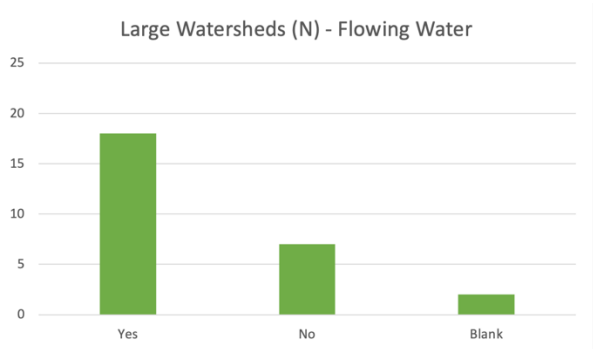

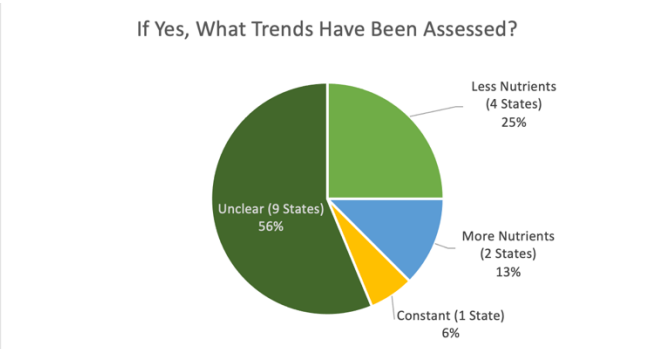

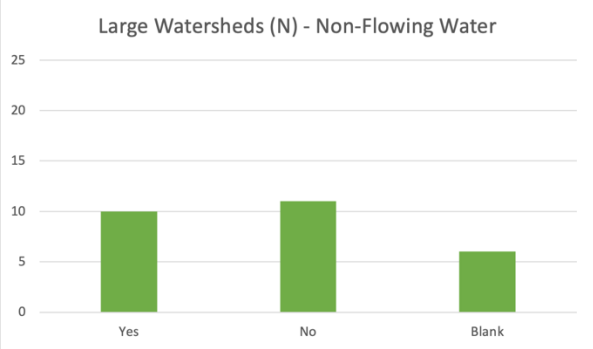

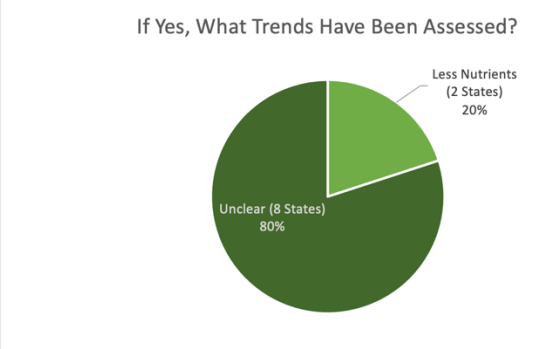

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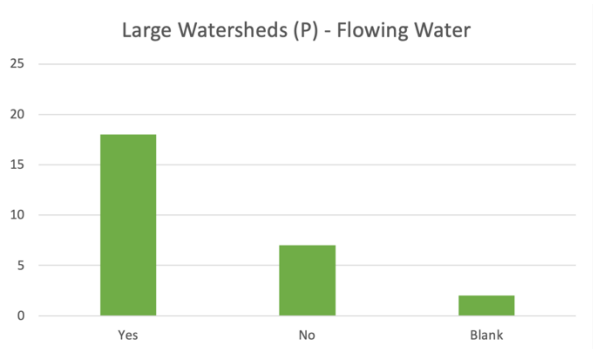

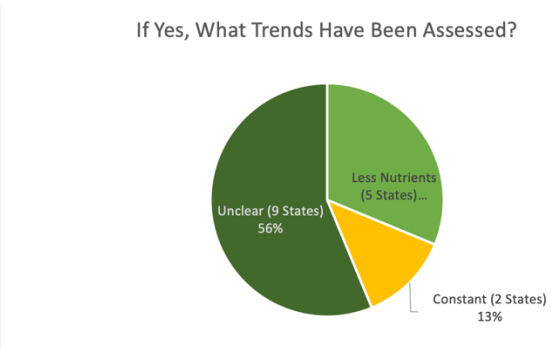

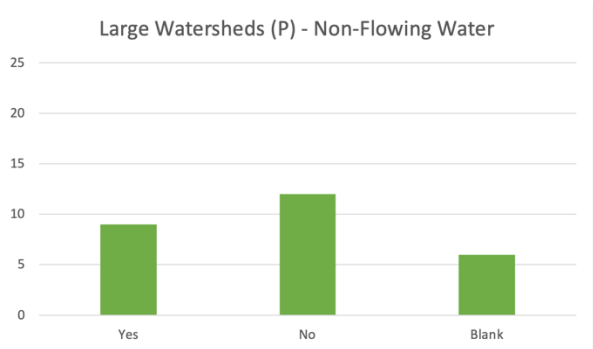

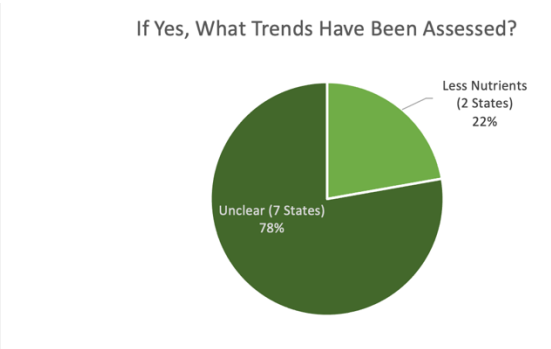

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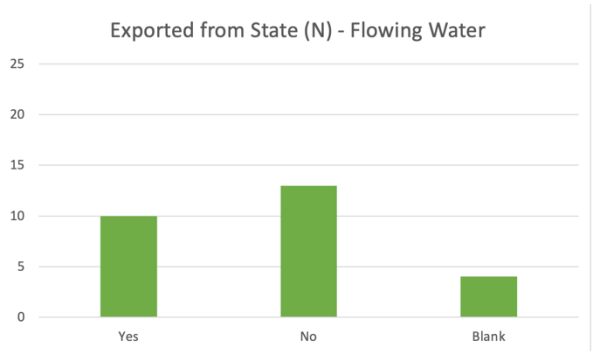

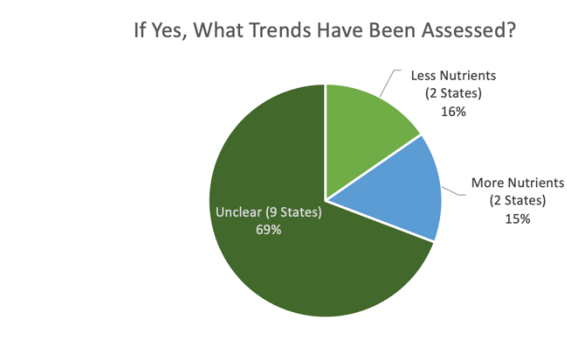

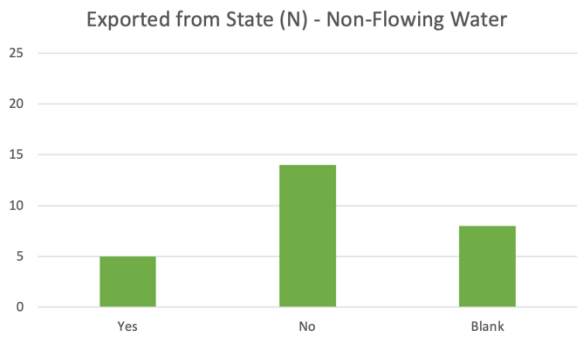

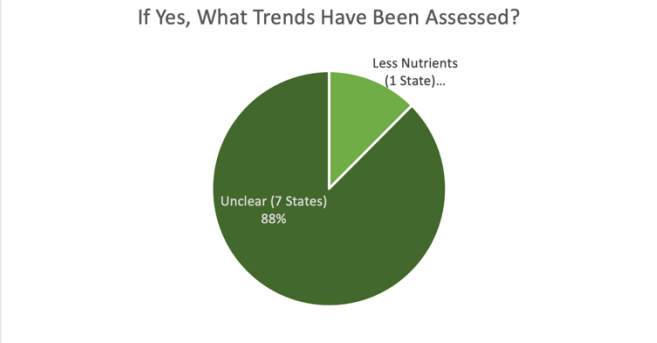

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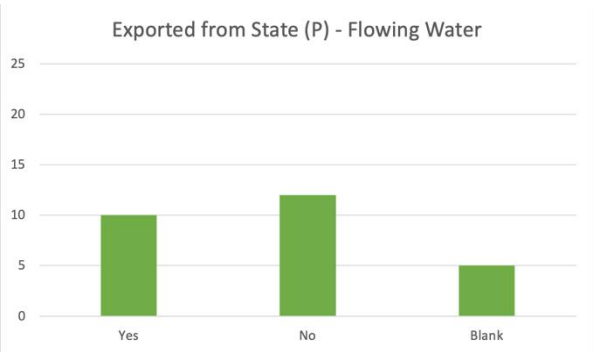

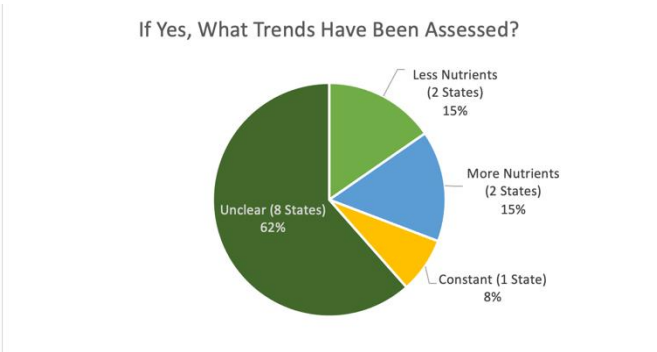

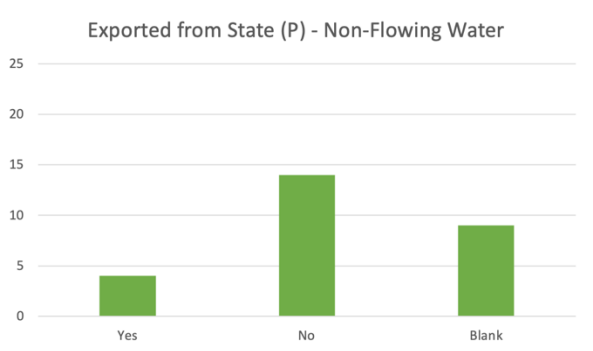

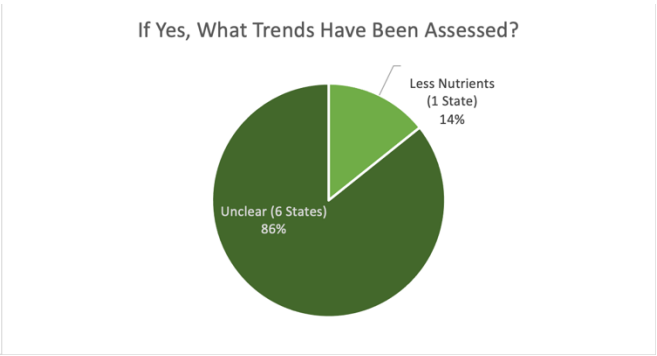

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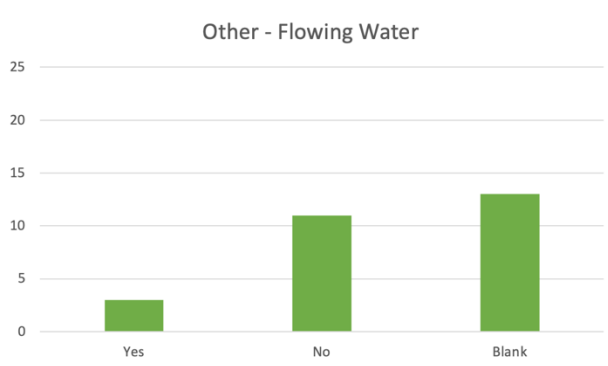
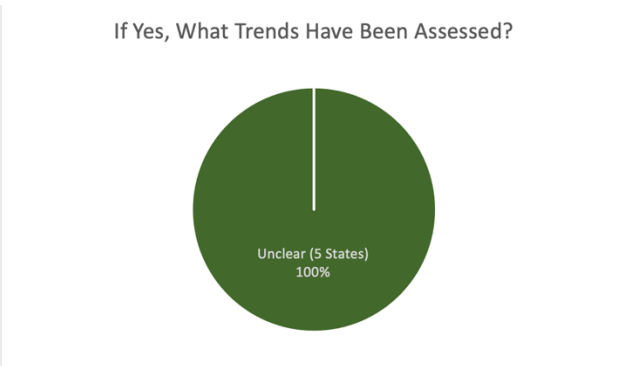
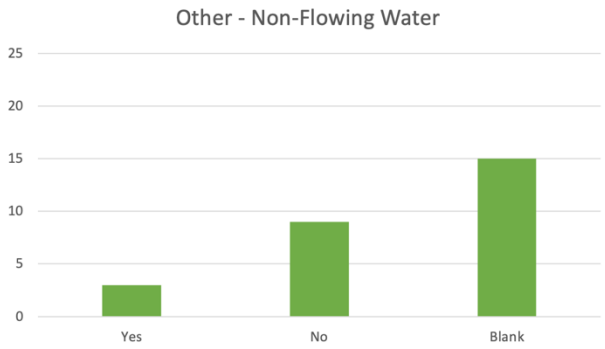
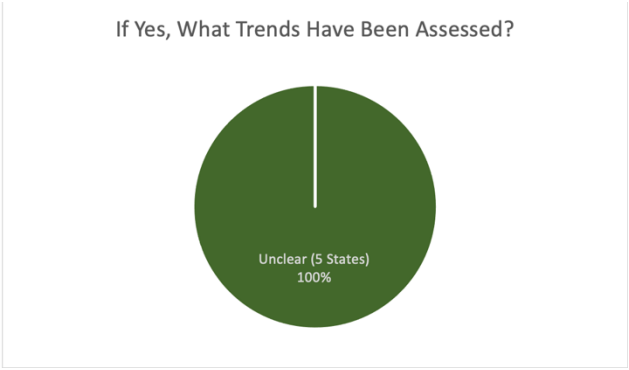
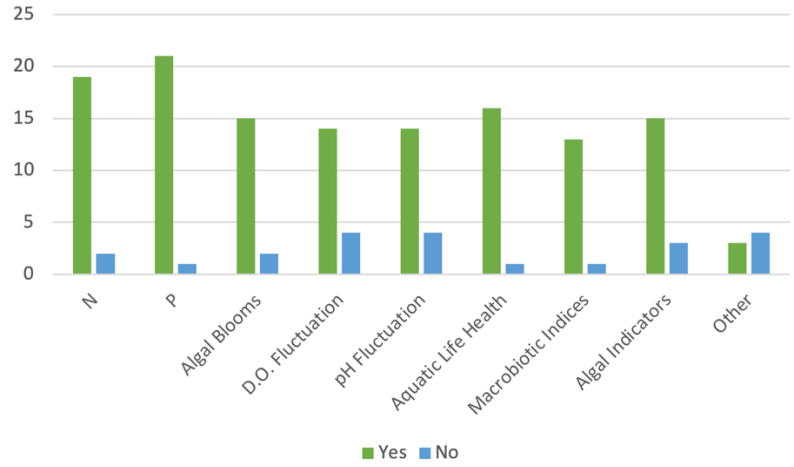


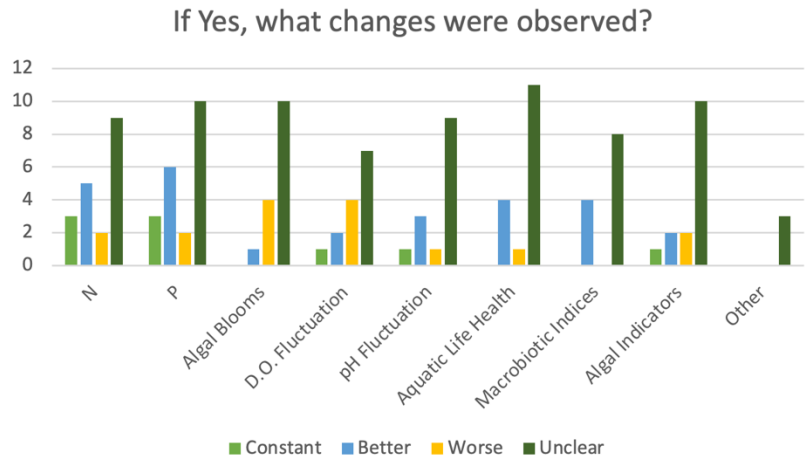






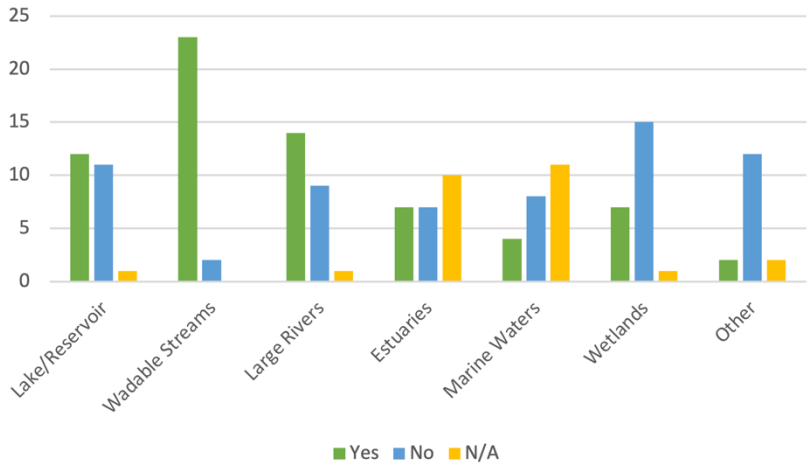
Question 6. Has your state observed and recorded demonstrated changes in water quality in state waterbodies for the following parameters?



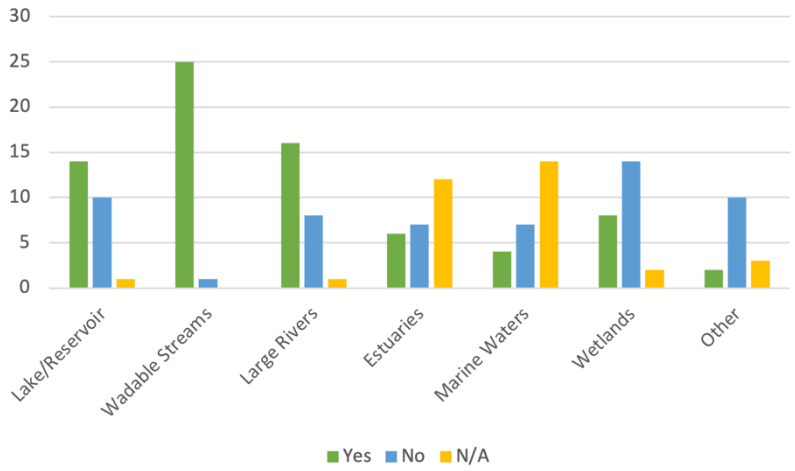


Overall, States that noticed a change, saw better changes in N, P, pH, and the health of aquatic life and microbiotics. Negative changes were seen for algal blooms and D.O.

Question 7. Are paired nitrogen (N) and biological monitoring available for the following water types in your state?



Question 8. Are paired phosphorus (P) and biological monitoring available for the following water types in your state?



Question 9. Describe in a narrative manner what your state's monitoring data is showing relative to nutrient pollution reduction.

- (AK) We are not evaluating nutrient pollution reduction as we currently don't have waterbodies with nutrient pollution concerns.
- (AR) 1. Description of Water Quality Parameters in Flowing Waters across Ecoregions Over a Period of Record Mean annual total phosphorus (TP) concentrations decreased over the period of record in streams across all ecoregions in Arkansas with the exception of streams in Boston Mountains with observable increase in concentrations over the years. While decrease in mean annual TP concentration was observed to be gradual (with no observable clear cut of continuous decrease) in most ecoregions from year to year, a noticeable reduction was observed in streams in Arkansas River Valley. Mean annual total Kjeldahl nitrogen (TN) concentrations decreased in streams in the Ozark Highlands, Boston Mountains, Ouachita Mountains, and Mississippi Alluvial Plain over the period of record

(respectively. However, there was no clear trend observed for streams in the Arkansas River Valley and South Central Plains. Dissolved oxygen concentrations were observed to be fairly steady in streams in all ecoregions with concentrations ranging between 6-9 mg/L with the exception of an increase trend in concentrations observed in streams in the Mississippi Alluvial Plain. During the period of record, there was no observable clear pattern in mean annual pH in streams in all ecoregions except for streams in the Ouachita Mountains with a decrease in pH values from 2012-2015. Mean annual pH values were however within acceptable range of 6-9 for good water quality criteria.

- (CA) Nutrient-related problems, such as HABs, are prevalent. Nutrient levels exceed thresholds established in other states to protect beneficial uses. Nutrient criteria have not been established for California.
- (CO) We are in the process of finalizing baseline information to compare future nutrient reduction efforts. We have analyzed point source data and our current regulatory strategy shows that there have been reductions in Total Nitrogen loading and we anticipate greater load reduction of Total Phosphorus in the future.
- (FL) Nutrients are variable, with some waterbodies decreasing in concentration, but others, like estuaries, increasing. See response to question 5. The Integrated Water Quality Assessment Report for Florida discusses the status and trends of nutrient pollution in rivers, streams, canals, large lakes, and small lakes. See Chapter 2 of the report.
- (IL) The Science Assessment in the NLRS 2019 Biennial Report showed a statewide increase in Nitrogen and Total Phosphorus loads for the period of 2013-2017 when compared to the baseline load (1980-1996). However, at the HUC 8 scale, some watersheds showed reductions, while others showed increases.
- (IN) It varies depending on watershed scale and from basin to basin. The 2014 USGS study referenced in question 4 found that upward trends in nutrients were identified at a few sites, but most nutrient trends were downward.
- (IA) Detailed narrative provided in the Iowa Nutrient Reduction Strategy Annual Report - pages 46-57. https://store.extension.iastate.edu/Product/15915
- (KS) Reduction in nutrient pollution can clearly be seen at low/base flow conditions in rivers and streams downstream from municipal dischargers who have invested in biological nutrient removal technologies. In watersheds primarily influenced by non-point source pollution, there can be isolated periods where nutrient loading shows abatement only to be followed by years where precipitation/runoff events and/or market conditions lead to removal best management practices resulting in the negation of previous years' gains. To put it succinctly, sustained reductions in nutrient loading to watersheds primarily influenced by non-point source pollution has not been recorded.
- (KY) The "Nutrient Loads and Yields in Kentucky" study shows an increasing trend in total nitrogen and no trend in total phosphorus across 5-year rolling averages at DOW's ambient monitoring stations from 2005-2017.
- (LA) LDEQ conducted a trend analysis for nutrient concentrations at long-term stations. Trends for total Kjeldahl nitrogen (TKN), nitrite + nitrate (NOx), total phosphorus (TP) and concentrations were analyzed for the 21 long-term monitoring sites in the Louisiana Department of Environmental Quality's (LDEQ) ambient water quality monitoring network from 1978 to 2014. These sites represent eleven of the twelve watershed basins in Louisiana. A Mann-Kendall trend test found the majority of trends (73%) to be decreasing. All sites had a decreasing trend for TKN, twelve sites showed a decreasing trend for NOx,

and thirteen sites showed a decreasing trend for TP. Only one trend, NOx for the Bogue Chitto River, was found to be increasing. The land use for the watershed of the eleven rivers included in this analysis was calculated and then analyzed along with the median nutrient value in a Kendall tau correlation analysis. Agriculture was found to be significantly correlated with higher concentrations of TKN and TP ($p<0.01$), while forested lands were found to be significantly correlated with lower concentrations of TKN and TP ($p<0.05$). Even though agriculture was found to be associated with higher nutrient concentrations, basins with the most agriculture also showed the most improvement in nutrient management as evidenced by decreasing or no observable increasing trends in nutrients. Report available at https://www.deq.louisiana.gov/page/nutrient-management-strategy.

- (ME) The majority of Maine's lakes do not have a nutrient problem as compared to the rest of the country. Problems we are seeing in a few lakes are directly related to earlier ice-out, a longer growing season, an increase in temperature and alteration of stratification patterns that promote anoxia in the hypolimnion and internal recycling of phosphorus. The only method to control this phenomenon is expensive alum treatments. For marine waters, we have insufficient data to show trends. Marine wastewater facilities only started reporting loads (selected dischargers) in 2017, and some facilities are only required to monitor for one or two years, making tracking of load changes difficult.
- (MD) Loads appear to be decreasing in most areas of our State, but in some areas we need to do more to reduce nutrient pollution.
- (MO) Nutrients are being reduced in some areas of the state and are remaining constant in the rest of the state.
- (NH) Most show a stable trend where enough data is available. There are some increases and some decreases. Mostly stable though. See comment above about decreases in rivers.
- (OH) We've observed marked reductions in certain watersheds primarily through implementation of agricultural BMPs, and in a few rivers through implementation of NPDES limits.
- (OR) Generally, nitrogen levels remain constant while phosphorus levels are getting better. This statement is nuanced because specific nutrients conditions vary by watershed and aquifer. Additional data from regional partners may help to clarify the trend in nutrients in some areas in the future.
- (TN) Unclear
- (TX) Results are indeterminate.
- (UT) A phosphorus technology-based effluent limit is resulting in ongoing upgrades to most of the state's mechanical treatment plants. Fairly large reductions in phosphorus concentrations have been observed in the discharge of those facilities where upgrades are complete. Trends in N and P loads are generally difficult to demonstrate due to high temporal variation in ambient concentrations and infrequent sampling intrinsic to statewide monitoring efforts. Biological condition has improved at several locations where BMPs have been implemented; although, the resources to address these unregulated sources are small in comparison to the extent of the problem.
- (VA) For 12 parameters analyzed, significant trends were not detected at most sites (i.e. no statistically detectable improvement or degradation was observed from 1997-2016). Chlorophyll, Fecal Coliforms, Nitrogen and Phosphorus showed improving trends at the majority of sites where significant trends were observed.

- (WI) General trends for Wisconsin large rivers show a trend of decreasing phosphorus, with the most progress in the 1970s and 1980s, with slower but significant progress since. Nitrogen loading appears to be slowly increasing throughout the State, most of which is attributed to nitrate. Organic nitrogen trends are variable with slightly increasing trends in very low concentration sites and decreasing trends in high concentrations sites, but overall fairly constant. Most Wisconsin lakes do not exhibit a trend in phosphorus over time. Among lakes with 5+ years of data, phosphorus is increasing in about 10% of lakes and decreasing in about 10% of lakes
- (WY) Wyoming's program has also not yet begun implementing specific nutrient reduction projects.

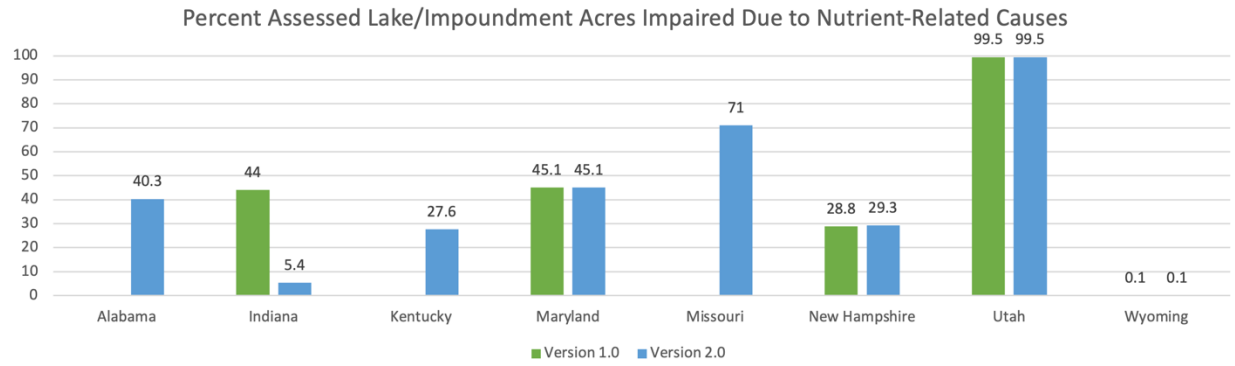
Questions 10, 11, and 12. Does your state have a nutrient reduction strategy? If your state has a nutrient reduction strategy, does the strategy identify quantitative goals? If your state does have a nutrient reduction strategy, provide detail on your state's plan and list observed water quality effects.

Of the states that responded to the second version of the Tracker, 22 have some form of nutrient reduction strategy. 15 of these have strategies that identify quantitative goals. Comparatively to the first iteration, fewer states with strategies responded, but a higher percentage identify quantitative goals.

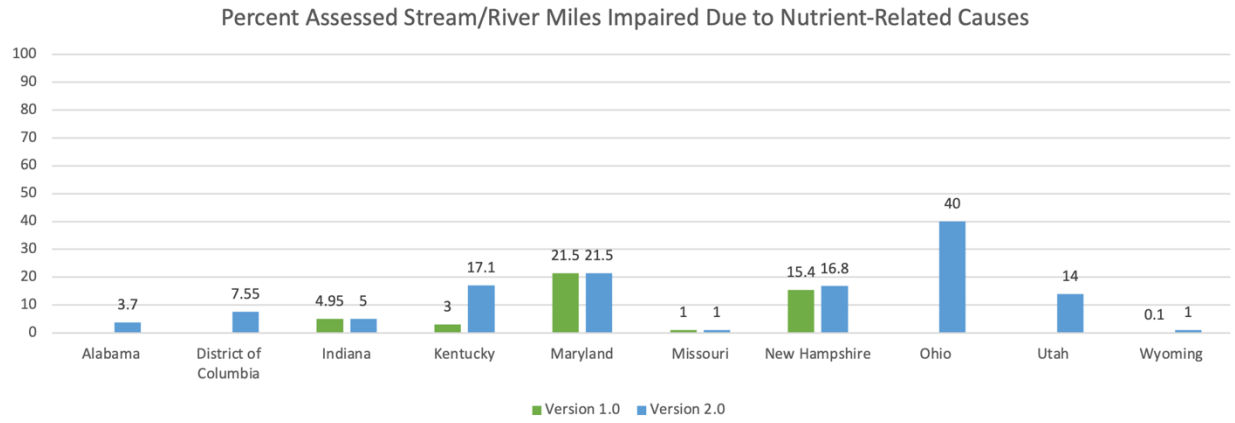
- States along the Mississippi River Basin generally have specific reduction strategies, while others are more general.
- New Jersey has a *Nutrient Criteria Enhancement Plan* that provides a detailed description of the NJDEP's strategy for enhancing the existing nutrient criteria for freshwaters and developing new nutrient criteria for other waters of the state (i.e., estuarine and marine). In addition, New Jersey's *Nonpoint Source Management Program Plan 2015-2019* highlights the key actions that the state and its partners will use to address water quality issues caused by nonpoint sources to achieve water quality objectives.
- Maryland and the District of Columbia manage nutrients through the Chesapeake Bay Program and TMDL.
- Florida's 2013 *Implementation of Florida's Numeric Nutrient Standards* document describes how numeric nutrient standards in Florida Administrative Code (F.A.C.), Chapters 62-302 (Water Quality Standards) and 62-303 (Identification of Impaired Surface Waters), are implemented by Florida DEP. The major topics in the document include the hierarchical approach used to interpret the narrative nutrient criterion on a

site-specific basis; a summary of the criteria for lakes, spring vents, streams, and estuaries; floral measures and the weight of evidence approach in streams; example scenarios for how the criteria will be implemented in the 303(d) assessment process; and a description of how the Water Quality Based Effluent Limitation ("WQBEL") process is used to implement the nutrient standards in wastewater permitting.

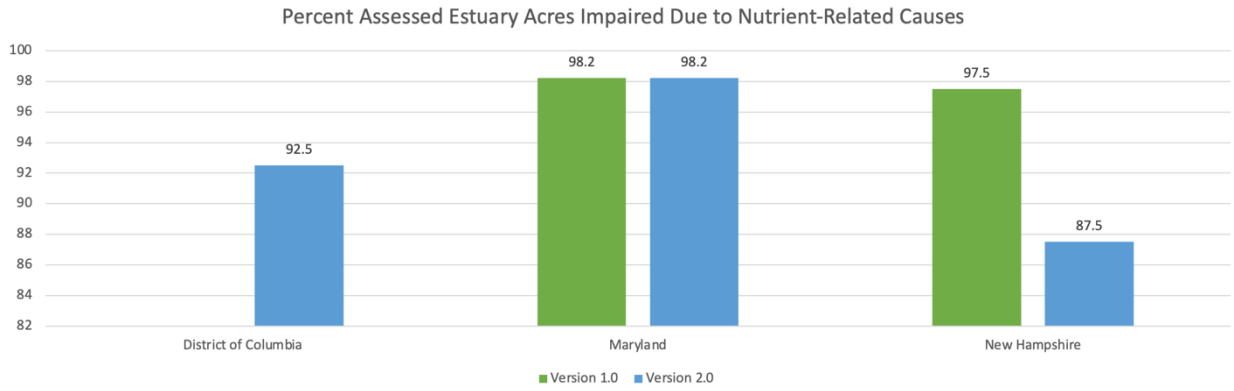
Question 13. What is the percent of assessed lake/impoundment acres impaired due to nutrient-related causes (e.g., hypoxia, algal blooms, fish kills, etc.) in your state?



Question 14. What is the percent of assessed stream/river miles impaired due to nutrient-related causes (e.g., hypoxia, algal blooms, fish kills, etc.) in your state?

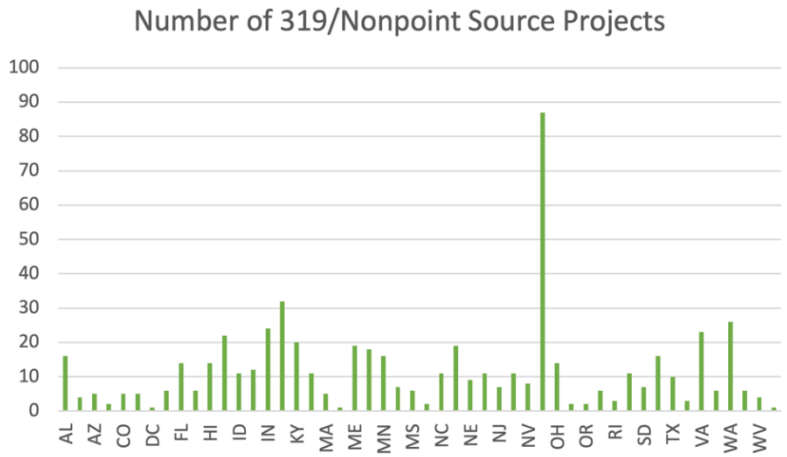


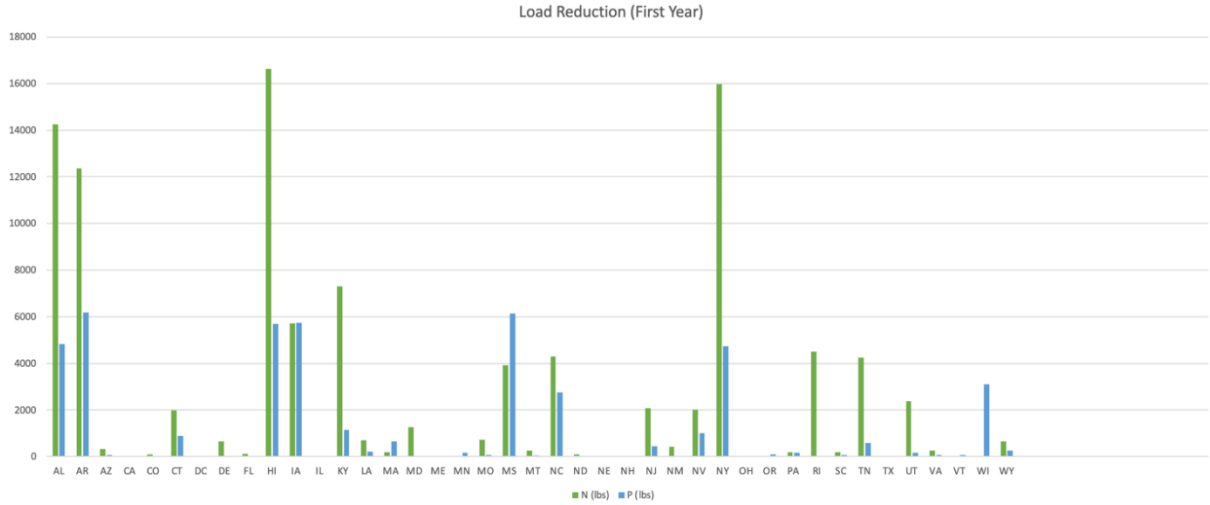
Question 15. If applicable, what is the percent of assessed estuary acres impaired due to nutrient-related causes (e.g., hypoxia, algal blooms, fish kills, etc.) in your state?

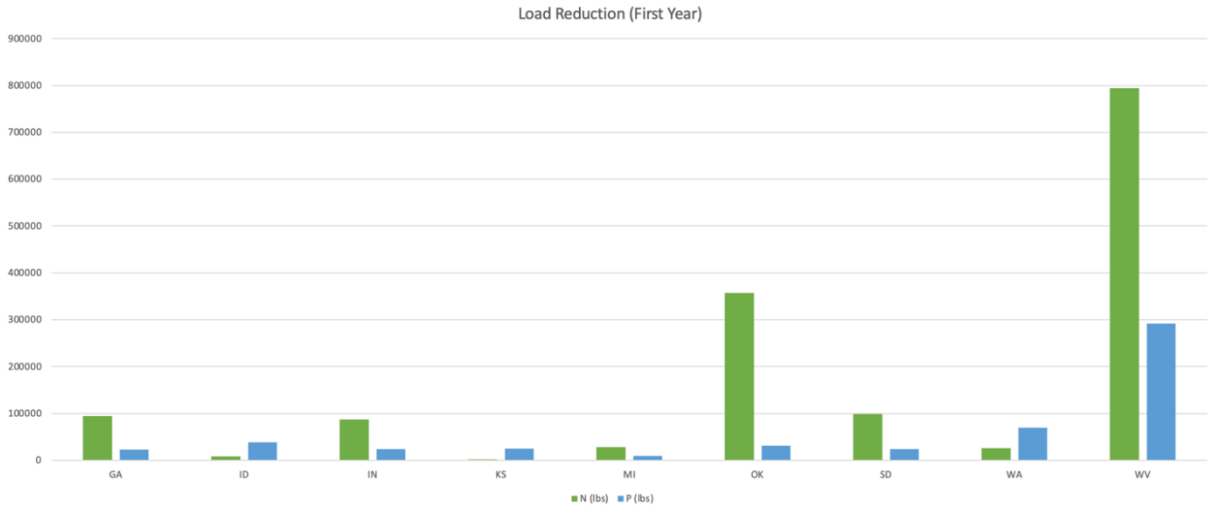

Percent Assessed Estuary Acres Impaired Due to Nutrient-Related Causes
100
98
96
94
92
90
88
86
84
82
92.5
98.2
98.2
97.5
87.5
District of Columbia
Maryland
New Hampshire
Version 1.0
Version 2.0

Part II: Nonpoint Source

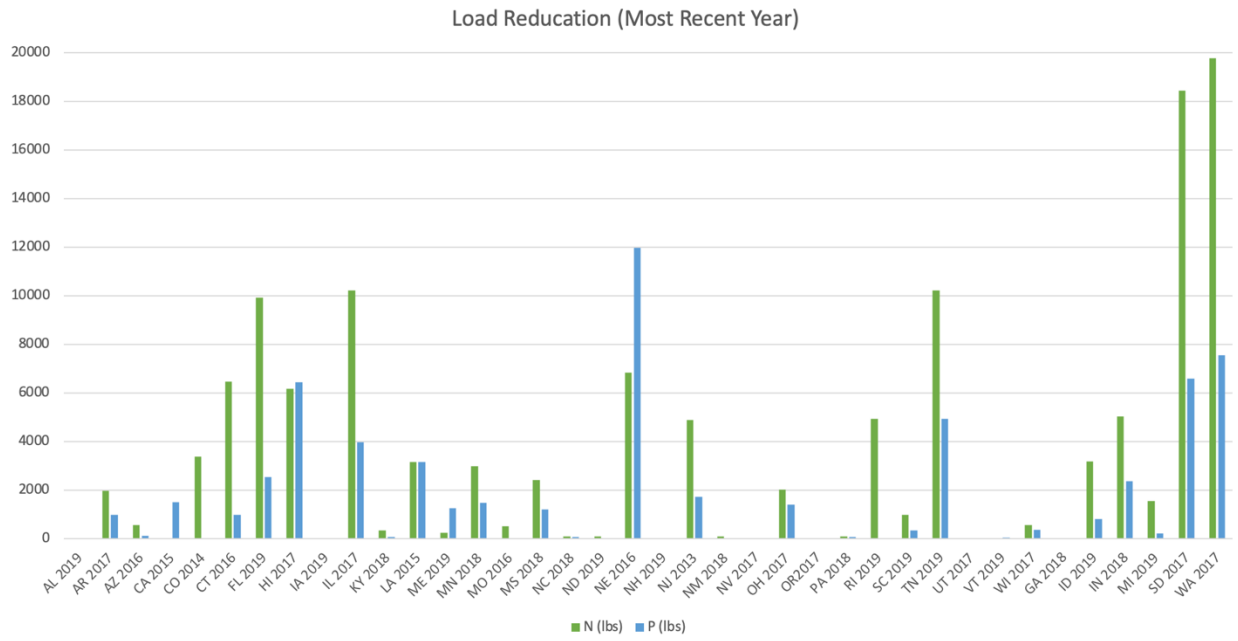
Question 16. Provide the number of 319/Nonpoint Source projects, and first year load reduction estimates per 319 Grant Reporting and Tracking System (GRTS).

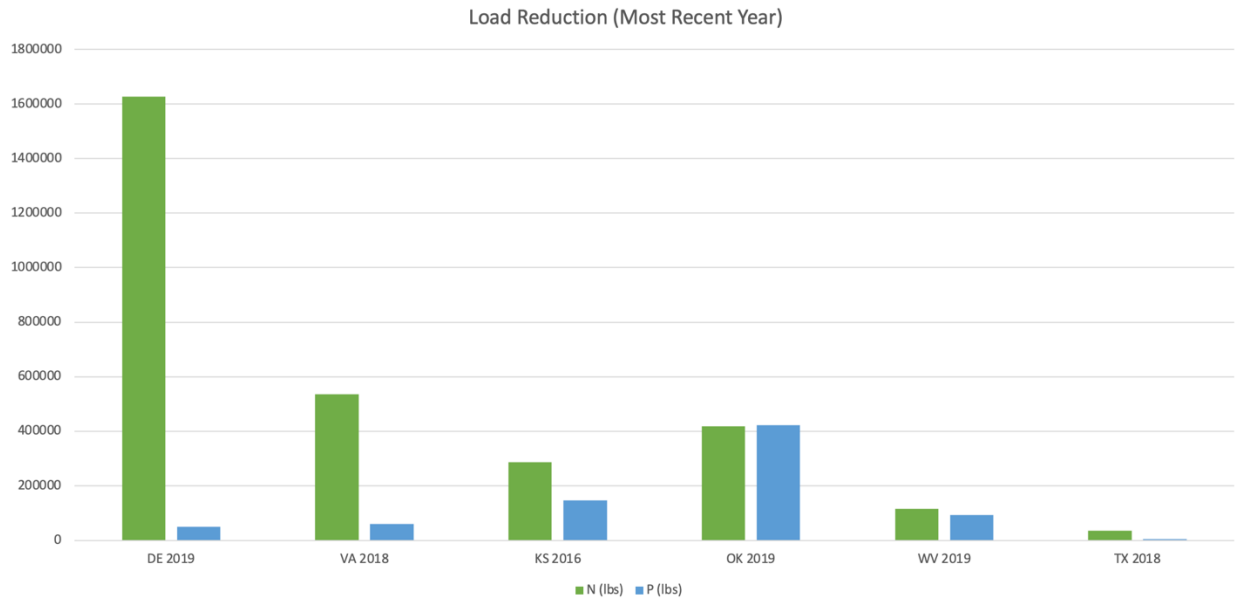






Question 17. Provide the estimated pound of TP and or TN/TIN load reduced from 319 projects in your state in the last calendar year.





Questions 18 and 19. Does your state clean water department have a relationship with its corresponding state agriculture or state conservation agency? If yes, describe how that relationship has helped to reduce nutrient pollution (e.g., market-based methods, partnerships, monitoring, etc.), if at all.

- (AL) ADEM coordinates with Ag & Industries and ADCNR on restoration projects in the state. / Partnerships for prioritization methods and monitoring.
- (AR) meetings 2 to 4 times per year with agencies / 319 priority watershed rubric takes into account impaired waters, TMDL waters, and Tier 3 use waters
- (CA) Department of Food and Agriculture, Department of Pesticide Reduction, Natural Resources Conservation Service, local Regional Conservation Districts
- (CO) We meet regularly with department of agriculture and NRCS representatives. We have collaborated on pilot projects. / We have piloted best management practices projects and edge of field monitoring efforts in collaboration with department of agriculture.
- (FL) Florida DEP develops Basin Management Action Plans to meet adopted water-quality targets (Total Maximum Daily Loads). Where FDEP adopts a Basin Action. State clean water staff at the Florida DEP routinely interact with the Florida Department of Agriculture and Consumer Services staff within their Office of Agricultural Water Policy (OAWP). The agencies collaborate on water quality restoration plans, agricultural best management practice manuals, tracking and reporting of agricultural areas employing BMPs, compliance and enforcement for failure to implement BMPs within restoration plan areas, and other related topics. Florida DEP also engages in outreach activities with individual conversation district directors as well as the Association of Florida Conservation Districts. Management Plan that includes agriculture, producers must either implement applicable FDACS-adopted best management practices (BMPs) or conduct monitoring (prescribed by FDEP) to show they are not violating water-quality standards. http://www.freshfromflorida.com/Business-Services/Water/Agricultural-Best-Management-Practices / See answer to question 18. Outreach builds support for agricultural producers to employ BMPs, both voluntarily and in areas where doing so is a requirement of a restoration plan. Florida DEP works with partners (agriculture agency, water management districts) to make cost share dollars available for producers to support BMP implementation.
- (IL) The Illinois EPA and Illinois Department of Agriculture (IDOA) are Co-leads on the Illinois Nutrient Loss Reduction Strategy. IDOA staff sit on the NLRS Steering Committee

and chair the Agriculture Water Quality Partnership Forum. / The relationship provides an opportunity for collaboration on efforts to implement the NLRS, exchange of ideas and data, and streamline efforts in developing our NLRS Biennial Report.

- (IN) Yes! ISDA is the lead and IDEM co-author of the Indiana State Nutrient Reduction Strategy. Additionally, Indiana's Conservation Partnership (ICP) is excellent! It is comprised of 8 agencies (NRCS, FSA, IDEM, ISDA, IDNR, PU Extension, Indiana State Soil and Water Conservation Districts, and the Indiana State Soil Conservation Board). It's mission is to provide technical, financial and educational assistance needed to implement economically and environmentally compatible land and water stewardship decisions, practices and technologies. It develops an annual work plan for collaborative endeavors. / Please see: http://icp.iaswcd.org/ 2029 ICP Conservation Accomplishments Report https://storymaps.arcgis.com/stories/afec6e0bfc814279997d9cdd2352d656 ICP 2020 Plan of Work https://storymaps.arcgis.com/stories/afec6e0bfc814279997d9cdd2352d656
- (IA) Yes. We have a strong partnership with the Iowa Department of Agriculture and Land Stewardship as well as Iowa State University. Together, we make up the 3 principal organizations responsible for implementation and coordination of Iowa's Nutrient Reduction Strategy / Yes, this partnership has helped reduced nutrient pollution in many ways. Details can be found at http://www.nutrientstrategy.iastate.edu/ Prior to the creation of the INRS, there was an existing partnership to implement Iowa's 319 program.
- (KS) KDHE sustains a relationship with sister water agencies in the state: Kansas Dept. of Agriculture (KDA), the Kansas Water Office (KWO), and the Kansas Dept. of Parks, Wildlife, and Tourism (KDWPT). KDA is responsible for managing the Kansas Water Appropriation Act that protects people's right to use Kansas water and the state's supplies of groundwater and surface water for the future. KDWPT is responsible for managing many of the public lakes and wetlands in Kansas as well as the park areas and crop/pasture/grassland that surrounds many of the federal reservoirs in the state. KWO is the water planning, policy, coordination and marketing agency for the state with the primary function of formulating, on a continuing basis, a comprehensive State Water Plan for the management, conservation, and development of the state's water resources. / Although water quantity has the spotlight in Kansas, the importance of water quality, specifically nutrient loading to surface waters, has captured the attention of our sister agencies as well as Kansas landowners in recent years with the occurrence of HABs in both public and private waters. The increase in awareness of the effects of excessive nutrient loading has led to increased opportunities for partnership with our sister agencies such as the Milford Lake Regional Conservation Partnership Program project that is supported by the NRCS. Additionally, KDHE was awarded $450,000 during the 2018 legislative session to apply toward developing HAB mitigation strategies.
- (KY) DOW has an excellent working relationship with the Division of Conservation (DOC) and collaborate routinely on nonpoint source projects. / DOW and DOC often collaborate on watershed issues through awarding of DOW 319(h) and DOC State Cost Share funds that reduce nutrient pollution through BMPs.
- (LA) NPS provides baseline monitoring of nutrients and other WQ data prior to BMP implementation to help target BMP locations. NPS shares monitoring results with LDAF quarterly, holds quarterly interagency meetings to discuss issues, and attends SCWD meetings. Additionally, NPS provides LDAF with comprehensive provide watershed

implementation plans. / LDAF cannot spend 319 funds to implement BMPs without the NPS watershed plan. Because the state agency knows producers, master farmers, district personnel, they are better able to garner producer participation. NPS data and planning provides data on loading and critical areas, and LDAF producer interaction maximizes implementation.

- (ME) Dept of Agriculture, Conservation & Forestry is an active partner in Maine's NPS Management Program. Ag compliance staff coordinate with Maine DEP. A DEP staff member sits on the Nutrient Management Review Board. / Ag/DEP relationship helps reduce nutrient pollution through regulatory programs, technical assistance to landowners, monitoring support and joint outreach programs.
- (MD) The two agencies coordinate closely on a number of issues, particularly on our annual Chesapeake Bay nutrient reduction progress and strategies for reducing pollution in the Bay. / It's allowed us to open the door for funding partnerships, technical coordination, and the establishment of a new water quality trading program. Being the Department of Agriculture's partner allows us to advocate for them to get assistance they need.
- (MO) Yes. The Department has a good relationship with the state Departments of Agriculture and Conservation. The Department's Soil and Water Districts Commission has ex-officio members from both the Missouri Department of Agriculture (MDA) and the Missouri Department of Conservation (MDC). The Department of Agriculture has a representative serving as a coordinating committee member to the Hypoxia Task Force. Both departments have participated in RCPP projects as partners. MDC and MDA participate in the Water Protection Forum hosted by the department to discuss current programmatic and policy initiatives by the clean water program. In addition, the Department coordinates closely with MDC regarding physical, chemical, biological, and fish tissue monitoring of Missouri's waters. This data and information are used to develop the state Section 305(b) integrated report and Section 303(d) List of impaired waters. The Department also partners with MDC and the Conservation Federation of Missouri to sponsor the Missouri Stream Team Program, which includes volunteer water quality monitors. / The MDC provides additional payments to the Department's cost-share program for certain practices such as buffers that reduce nutrient transport. As ex-officio members on the Soil and Water Districts Commission both MDC and DOA provide input on adoption of conservation practices (recently added as new practices are saturated buffers, bioreactors and 4R Nutrient Stewardship). DOA provides loans with funding from the Department's State Revolving Fund for animal waste facilities. The Department partners with MDC to monitor the state's waters and identify those waters that may be impacted or impaired by nutrients. These activities help to also identify and target those areas that may be adding to nutrient pollution. Collaboration with MDA allows the department to identify programs and initiatives that when implemented can reduce nutrient pollution to the state's waters. The department also partners directly with commodity groups, such as Missouri Soy and Corn Grower's Associations, to monitor and determine the efficacy of best management practices in reducing nutrient pollution.
- (NH) The NHDES Watershed Assistance Section updates and implements the New Hampshire Nonpoint Source Management Program Plan every five years. Agriculture is recognized as one of the seven Major NPS Pollutant Categories recognized in the Plan and it also fosters a strong relationship between NHDES and our corresponding state agricultural agency partners among others engaged in agricultural practices, policy, and management

across the New Hampshire. During the development of the New Hampshire 2020-2024 NPS Management Program Plan, the NH Department of Agriculture, Markets and Food, the New Hampshire Farm Bureau Federation, University of New Hampshire Cooperative Extension, and the New Hampshire Association of Conservation Districts all dedicated staff to serve on a subcommittee of authors for the Agriculture chapter within the Plan. Not only do these agricultural leaders assist in drafting the chapter, identifying priorities for NPS management among agricultural operators and industry, but they serve as critical Plan partners for the five-year implementation schedule of the NH NPS Management Program Plan. / The ongoing relationships between the NHDES Watershed Assistance Section and the partners listed above continue to serve as a catalyst for achieving nutrient load reductions from the agricultural land use sector. It is important to note that agricultural lands in New Hampshire account for only three percent of total land use in the state. When compared to other states across the country, it can be extremely challenging in New Hampshire to achieve trust, partnerships, collaboration, and nutrient load reductions from agricultural operators. Through our strong network of agricultural agency and institutional partners, we are continually striving for reductions in nutrient pollution, but results are often hard to quantify due to a lack of monitoring funding and the geographic spread and small to mediums-scale operations that dominate the agriculture industry in the state. For example, there is only one Concentrated Feed Lot Operation registered in New Hampshire at this time. The relationship among the agricultural agency leaders and NHDES achieves incremental nutrient pollution reductions through implementation of various grant and loan programs administered by partner agencies/entities, technical assistance provided through the partnership on the development of nutrient management plans, and strategic watershed management with local, trusted, agricultural industry partners on the ground securing the trust of agricultural operators to accept federal assistance in the form of pass-through grants and technical support from state agency staff in order to achieve nutrient load reductions while simultaneously improving efficiencies and/or herd, and crop health on these properties.

- (OH) We coordinate on our nutrient reduction strategy. / Primarily through the implementation of agricultural BMPs.
- (OR) DEQ has a Memorandum of Agreement with the Oregon Department of Agriculture / The Oregon Department of Agriculture (ODA) is the lead state agency that implements TMDLs on agricultural lands. Their role is to develop rules and voluntary area plans that will achieve TMDL load allocations and water quality standards. The Memorandum of Agreement between ODA and Oregon Department of Environmental Quality (ODEQ) identifies how the two agencies will work together on reviewing and revising the rules and areas plans, and that compliance with the rules and implementation of the areas plans are evaluated. As part of the MOA, ODEQ develops water quality status and trend reports that the ODA and agriculture stakeholders use to help plan and evaluate progress on meeting TMDL load allocations and water quality standards. The two agencies also coordinate on monitoring and other water quality related assessment projects.
- (TN) Tennessee Department of Agriculture / Tennessee Department of Agriculture administers Tennessee's 319 program and uses an incentive-based strategy. Conference calls bimonthly.
- (TX) Yes. A memorandum of understanding ("MOU") between the Texas State Soil and Water Conservation Board (TSSWCB) and the Texas Commission on Environmental Quality

(TCEQ), which sets forth the coordination of jurisdictional authority, program responsibility, and procedural mechanisms for point and nonpoint source pollution programs currently exists. / The Texas Nonpoint Source Management Program (Management Program) is required under Clean Water Act (CWA), §319(b). The Management Program outlines Texas' comprehensive strategy to protect and restore water quality impacted by nonpoint sources of pollution. The Management Program is jointly administered by the TCEQ and the TSSWCB. Nitrogen load reductions associated with the implementation of CWA §319 projects are reported into the U.S. Environmental Protection Agency (EPA) Grants Reporting and Tracking System (GRTS) and annually into Appendix A of the Texas Nonpoint Source Annual Report. CWA §319(h)(11) requires that state nonpoint source annual reports include, to the extent that appropriate information is available, reductions in nonpoint source pollutant loading and improvements in water quality resulting from implementation of the management program. This specifically applies to the water bodies that have previously been identified as requiring nonpoint source pollution control actions to attain or maintain applicable water quality standards or the goals and requirements of the Clean Water Act. The three primary ways of measuring improvement in water quality are through: 1) measuring actual results from implementing management measures; 2) calculating estimated load reductions with the help of models or other calculations; and 3) long-term monitoring of the water body.

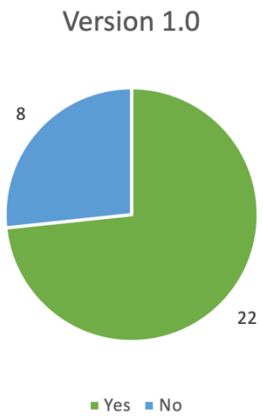
- (UT) Utah's Division of Water Quality (UDWQ) maintains an active relationship with Utah's Department of Agriculture and Food (UDAF). The UDWQ meets monthly to discuss relevant topics such as agricultural regulations, development and management of grant programs focused on reducing nonpoint source pollution on agricultural land and current projects that are taking place around the State. UDAF is also a very active participant on the Utah Water Quality Task Force, and sits on the subcommittee that assists with the ranking of NPS grant applications. UDWQ currently contributes funding for 6 full time employees at UDAF. This includes one individual that oversees the AgVIP program, a program focused on the development of nutrient management plans from around the state, and 5 local watershed coordinators that help put 319 projects on the ground. / The partnership between UDWQ and UDAF has resulted in many projects and grant programs around the state to help improve water quality. Many great programs have been developed through this program including the AgVIP, a program that gives incentive payments to individuals that develop and implement nutrient management plans. The ARDL buy down program is a mechanism where the Utah Water Quality Board buys down the interest on ARDL loans, effectively making the loans interest free. This program is specifically for AFO/CAFO operations. UDWQ and UDAF have also worked to develop the Don't Share campaign that is focused on improving water quality on small urban operations as well https://www.dontshareutah.org/.
- (VT) Partners and coordination are critical to success in achieving water quality goals. Each agency/organization has its own strengths in reaching clients for improvements and accountability. Examples: Vermont Agency of Agriculture, Food and Markets (AAFM) has developed a partner database that allows all state and NGO partners to input individual farm data to ensure consistency, coordination and tracking. AAFM and DEC both provide funds directly to NGO partners to allow them to coordinate directly with landowners/farmers for project identification, development and implementation.

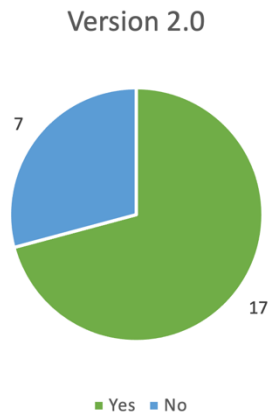
- (VA) The NPS program works closely with the Dept of Conservation and Recreation. We fund numerous positions with them through our 319 grant. They do a lot of BMP work that parallels our NPS implementation projects. / DCR has a lot more funding for BMP installation that we do. They're a great partner for tackling the ag sector. They also do a lot with policymaking (BMP specifications, etc) and partnering with local soil and water districts.
- (WI) WDNR works closely with the Wisconsin Department of Agriculture, Trade, and Consumer Protection in implementing the state NPS program. / Joint allocation of funding for county staff and BMP implementation, annual reporting, collaboration with producer led groups, NR 151 (state ag runoff standards and prohibitions) implementation.
- (WY) Wyoming DEQ partners with the Wyoming Department of Agriculture as needed. Coordination with WDA often occurs through the conservation districts (e.g., DEQ and WDA both contributing funds to a conservation district project). DEQ partners strongly with the Wyoming Association of Conservation Districts and individual conservation districts; conservation districts sponsor the majority of NPS grant-funded projects. / - Partnerships - Increased dialogue and information-sharing on issues - Education and training, public outreach - Discussions about leveraging funding toward priority nutrient issues - Discussions about coordinated monitoring activities

Question 20. Does your state (i.e., departments of clean water, environment, natural resources, agriculture, etc.) have a working relationship with your state NRCS office and/or local conservation district (e.g., data sharing agreement, MOU, etc.)?

Most states have a working relationship with their state NRCS office. However, the relationships vary. Some states have signed MOUs, agreements, or sit on committees with NRCS. Other states work through multiple state offices with NRCS or in an informal manner with NRCS. These relationships are generally strong and have resulted in significant collaboration on water quality improvement initiatives.

Question 21 and 22. If yes to Question 20, has the relationship helped with locating BMPs and quantifying associated nutrient reductions? Describe how that relationship has helped to reduce nutrient pollution.





(AL) ADEM regularly partners on the NWQI and other NPS water quality restoration projects to place Ag/BMPs to reduce pollutant sources. / This relationship has assisted with locating BMP sites / NRCS has provided technical support for BMP implementation.

(CA) Partnerships on 319 grants

(CO) Not at this time - this is an area we hope we can explore in the future.

(IL) While Illinois EPA and Illinois NRCS do not have a formal data sharing agreement or MOU, the Illinois EPA is a member of the NRCS State Technical Committee, where updates on the NLRS are regularly given. NRCS works with Illinois EPA in providing and interpreting nationally-accessible conservation practice data implemented through NRCS financial assistance programs. / It has helped with reporting NRCS conservation practice data at the state and HUC 12 watershed level. Associated nutrient reductions are not quantified. / Local questions contained in applications for programs such as EQIP and CSP give additional points if the land is in priority watersheds identified in the NLRS.

(IN) An extremely strong relationship. Please see the answer to question 19. / All ICP partners provide BMP information at the 12-digit HUC level and the ISDA does an annual load reduction report for sediments, P, & N using the Region 5 model. / We collaborate in many ways to optimize technical, educational, and financial resources for nutrient reduction.

(IA) Yes, our dep. of ag and land stewardship has an MOU for data sharing and a close working relationship on other issues. We partner with NRCS with our 319 and Source Water Protection programs. / No question, NRCS has also shared aggregate data via the HTF that has been very helpful to quantify practice tracking and associated nutrient reductions. Additionally, Iowa's relationship with USDA NLAE ARS has allowed use of the Agricultural Conservation Planning Framing (ACPF) that helps locate BMPs and can help quantify nutrient reductions. Relationship with USDA office of Env. Markets has resulted in the use of the Nutrient Tracking Tool (NTT) as we explore market based approaches. / The relationship with the NRCS has benefitted Iowa significantly. Iowa seeks to take full use of NRCS programs and grants. Details are laid out in our NRS Annual Reports. Iowa has been the fortunate recipient of RCPP, EQIP, MRBI, NWQI, etc $$$ to put practices in the ground to reduce nutrient pollution.

(KS) KDHE has a working relationship that allows KDHE 319 staff to request implemented conservation practices from several state and federal agencies implementing within targeted areas

of our EPA 9 Element watershed plans. On an annual basis, KDHE requests BMPs implemented from Kansas Department of Agriculture: Division of Conservation (DOC), the National Resources Conservation Service (NRCS), and the Farm Service Agency (FSA). Additionally, KDHE has collaborated on several grants with Conservation Districts and the State Association of Conservation Districts to help implement BMPs with 319 funding in targeted watersheds. / The Kansas Watershed Restoration and Protection Strategy (WRAPS) groups is the primary mechanism for identifying target areas for BMP implementation. WRAPS funding is guided by the presence high priority for implementation TMDLs in the respective watersheds with BMP implementation guided by local stakeholders. Having a local conservation district or NRCS staff person can be very helpful in locating BMPs. It can also be detrimental to program success where good local partnerships are not formed, or 319's demonstration nature is frowned on. Quantification of the associated nutrient reduction is supported by KDHE Stream, Lake and Sub-Watershed Monitoring Programs with load reductions estimated via NRCS Region 5 modeling, completed by KDHE staff. / Collaboration with local, state and federal partners is fundamental to reducing nutrient pollution. Federal monies allocated to state programs are distributed to local stakeholder groups such as WRAPS and County Conservation Commissions then fund targeted BMP implementation by landowners.

(KY) Though no formal agreement is in place, the Kentucky Division of Water has an excellent working relationship with the state NRCS office. DOW and NRCS work together on water quality improvement projects. / DOW tracks water quality improvements and successes from these collaborative efforts. Databases are maintained for completed nonpoint source projects which include watershed BMP adoption totals from NRCS. / Currently DOW coordinates with NRCS to track BMP adoption rates. DOW hopes to work more closely with NRCS on BMP promotion in future high priority watersheds.

(LA) LDEQ NPS monitors water quality throughout the watershed to provide baseline data in support of NRCS targeted activity (NWQI, MRBI, etc). This data is used to identify critical areas in a watershed where implementation can be targeted to assist with nutrient reductions. LDEQ shares watershed implementation plans with NRCS as available, and holds quarterly meetings with NRCS to discuss watershed issues and share data. / Data sharing as part of this partnership provides NRCS with information on where critical pollutant loading areas are for targeting BMPs. It also provides periodic updates for tracking progress. This enables the most effective use of implementation spending for nutrient reduction.

(ME) DEP staff members participate on the NRCS State Technical Committee (STC) and coordinate closely on the NWQI Program. / Through NWQI, NRCS provides summaries and maps of participating farms and associated BMPs. No quantification of nutrient reduction has been provided, however. / NWQI has targeted two watersheds for focused BMP installation. DEP provides input to the STC to focus NRCS BMPs on nutrient reduction.

(MD) MD Dept. of the Environment has a relationship via NWQI. MD Dept. of Agriculture works closely with NRCS. MD Dept. of Natural Resources works with Soil Conservation Districts and NRCS technical staff. / The relationship has expedited BMP implementation in some watersheds and helped to address nutrient hot spots in others.

(MO) The Missouri Department of Natural Resources (MDNR) is part a of joint Cooperative Working Agreement (CWA) with the State Soil and Water Districts Commission, each county soil and water conservation district and NRCS that addresses roles and responsibilities of the conservation

partnership in Missouri. The CWA addresses common areas such as sharing of work space and vehicles at the local district offices, data related to implementing conservation practices in compliance with the Privacy Act and Freedom of Information Act and other technical equipment and support needed to assist in voluntary conservation practice implementation. This agreement is currently being updated with a target for completion of December 31, 2019 The Department's Soil and Water Conservation Program also has a contribution agreement with NRCS for soil and water district staff positions, and district engineers. / The MDNR has worked cooperatively with NRCS on multiple initiatives that address nutrients such as the Mississippi River Basin Healthy Watersheds Initiative (MRBI), Regional Conservation Partnership Program (RCPP) and the National Water Quality Initiative (NWQI). Some of the work includes edge-of-field water quality monitoring and jointly funding practices. / NRCS provides technical assistance i.e. engineering, design, conservation planning, and training soil and water conservation district staff for the state cost-share program. The program focuses on implementing structural and management practices for nonpoint source pollution reduction to include sediment and nutrients. There are many practices that are specific to nutrient reduction such as cover crops, nutrient management including 4R, animal waste systems, buffers for sensitive areas (streams, wetlands, sinkholes), livestock exclusion, bioreactors, saturated buffers, and streambank stabilization.

(NH) The NHDES Watershed Assistance Section staff have developed strong partnerships with our state NRCS offices and local conservation districts over the last decade and NRCS representatives dedicated staff time to the recent update to the 2020-2024 NH NPS Management Program Plan. A key partnership between NHDES and NRCS is our joint agreement to partner on the National Water Quality Initiative (NWQI) to maximize funding opportunities to address NPS pollution derived from agriculture. The NWQI partnership has evolved over several years and is now culminating in alignment between NHDES, USEPA, and NRCS watershed prioritization efforts and grant funding cycles in order to develop watershed-based plans. The development of a watershed-based plan for the Clark and Oliverian Brook watersheds in the Connecticut River basin are an excellent example of this partnership and prioritized planning in two of the most agriculture-intensive watersheds in the state. Similar efforts are also underway in the Saco River watershed and the Kearsarge Brook subwatershed to the Saco River. These projects will develop water quality goals focused upon nutrient reductions achieved through BMP implementation above and beyond the Nutrient Management Plans already established for these operations. A proposed monitoring program will establish baseline water quality conditions and allow for tracking measurable results once BMPs are implemented in these NWQI priority watersheds. / Without strong partnerships between NHDES and our counterparts within the NH Department of Agriculture, the County Conservation District Offices, the NH Association of Conservation Districts, the UNH Cooperative Extension, the NH Farm Bureau, and especially NRCS and their District Engineers and other specialists, it would be nearly impossible to identify BMP opportunities within the agricultural community in the state. Given that just over three percent of land use in the state is in active croplands or dairy operations, there is a limited population to engage with and unlike partnerships with municipalities or nonprofit environmental organizations that both have financial resources to contribute, the agricultural community in New Hampshire is struggling severely with finances and they have little to no chance of providing their own cash match when leveraging of grants is required. Therefore, even when BMP sites are located, it can be a struggle to finance their design, permitting, engineering, and construction in New Hampshire. We look forward to strong collaboration with NRCS in the Clark and Oliverian Brook watersheds to establish a model for working with agricultural operators on BMP implementation and trust-building to achieve water quality goals

that align with sustainable management of agricultural industries. / Over the past year, BMPs installed as partially funded through the Watershed Assistance Grant Program under Section 319 of the U.S. EPA Clean Water Act have focused upon stormwater management primarily from urban, residential, and rural land uses within many watersheds across the state. However, it is important to mention that Watershed Assistance Grants combined with a close partnership with NRCS Conservationists and District Engineers over the past decade or more have resulted in significant agricultural BMP implementation across the state that yielded significant nutrient load reductions that have been previously documented. Much effort and grant funding support has been dedicated to design and installations of manure pits, heavy use areas, manure lagoons, water diversion projects, stream crossings for livestock, heavy use area roofing projects, etc. The partnership with NRCS engineers was key for all of these projects for design and construction oversight that ensured agricultural BMPs were designed with the agricultural operation owners alongside in order to ensure these practices would fit into their daily operations and be maintained with the equipment available on site. The NHDES Watershed Assistance Section staff expect to follow this same model in the NWQI watersheds once watershed-based plans have been developed and it is time to design, engineer, and install BMPs targeted at reduction nutrient pollution.

(OH) Ohio EPA works with the local SWCDs to direct 319 funds to target waterbodies with impairments. / The SWCD has more trust among the farming community, and that has helped with the adoption of BMPs to reduce nutrient pollution.

(OR) NRCS shares information on a watershed scale. / NRCS shares information on a watershed scale. / ODEQ along with other state agencies shares priorities and results of monitoring and assessment information including evaluation of load reductions from implementation of BMPs. This collaboration and sharing of information may help NRCS make more informed decisions about how and where to direct their Farm Bill watershed funding.

(TN) Cooperation on MRBI and NWQI watersheds. Participation on NRCS technical Advisory Committee meetings. Bimonthly calls. / NRCS is not allowed to share locations of BMPs.

(TX) Yes. A memorandum of agreement ("MOA") between the United States Department of Agriculture (USDA)-Natural Resources Conservation Service (NRCS) and Soil and Water Conservation Districts (SWCDs), which sets forth the cooperation for SWCDs to furnish technical assistance to farmers and ranchers in the preparation of soil and water conservation plans currently exists. NRCS has a unique partnership with SWCDs. All 216 SWCDs in Texas have working mutual agreements with the USDA to provide grassroots input to USDA through NRCS. / SWCDs assist federal agencies in establishing resource conservation priorities for federal Farm Bill and CWA programs based on locally-specific knowledge of natural resource concerns. SWCDs work with the USDA NRCS, USDA Farm Service Agency, EPA, Texas AgriLife Extension Service, Texas A&M Forest Service, and others when necessary to assist landowners and agricultural producers in meeting natural resource conservation needs. SWCDs are actively involved in promoting outreach and education programs such as sponsoring pesticide applicator workshops, agricultural producer field days, land and range judging contests for students, scholarships, and securing funds for the construction of outdoor classrooms.

(UT) NRCS is a member of the State of Utah's Water Quality Taskforce which is focused on addressing NPS issues and the State Division of Water Quality participates in the NRCS' State Technical Advisory Committee. UDWQ and the NRCS meet annually to discuss the location of

National Water Quality Initiative (NWQI) Watersheds in the State of Utah. The Utah NRCS has always followed the guidance from DWQ to allocate NWQI funding. The NRCS has also agreed to allow the Local Watershed Coordinators, funded with Section 319 funding, to be stationed in their field offices, allowing the watershed coordinators to have access to agricultural producers throughout the state. / The NRCS collaborates closely with UDWQ to identify NWQI watersheds throughout the State of Utah. UDWQ has conducted intensive water quality monitoring in these watersheds in an attempt to document project effectiveness. Many of these projects have been so successful that success stories have been submitted to EPA, highlighting the successes of the pollutant reductions in these watersheds. / The additional funding awarded to the NWQI watersheds has helped fund more projects than UDWQ could have funded using 319 funding alone. The Upper Sevier watershed has been awarded over $1 million in NWQI funding to continue riparian improvement projects that would have taken several years to fund with 319.

(VT) DEC staff continue to coordinate and share information with USDA Natural Resources Conservation Service (NRCS), Vermont Agency of Agriculture, Food and Markets (AAFM), Vermont Association of Conservation Districts (VACD), Lake Champlain Basin Program (LCBP), U.S. Fish and Wildlife Service (USFWS), and UVM Extension under an MOU. DEC, NRCS, and EPA continue to coordinate implementation and tracking of the Lake Champlain TMDL and its implementation plans. DEC has just completed a five-year Regional Conservation Partnership Program (RCPP) grant and is starting another 5-year extension that includes additional privacy/data sharing agreements under the federal 1619 agreements. These agreements allow for complete sharing of on-farm data for the sole purpose of increased implementation of best management practices on ag and forestland and increased easements and restoration. DEC coordinates an Agricultural BMP Tracking and Accounting Workgroup comprised of DEC, AAFM, NRCS, and EPA staff. The workgroup reviews and recommends agricultural best management practices tracking and accounting methodologies, and seeks expert input as needed. Methods are used to consistently collect and manage agricultural BMP data (tracking) and estimate nutrient pollutant reductions associated with those BMPs. Annually, DEC compiles agricultural BMP data from AAFM and NRCS (along with other clean water projects funded by state and federal agencies and/or implemented through regulatory programs) and reports progress in the Vermont Clean Water Initiative Annual Performance Report. For more information on State of Vermont clean water projects, including the Annual Performance Report and tracking and accounting methods, visit: https://dec.vermont.gov/water-investment/cwi/projects. NRCS committed approximately $18.5 million in Federal Fiscal Year 2020 to fund conservation practices in the State of Vermont, including $1.9 million of Environmental Quality Incentives Program (EQIP) funds set aside solely for agricultural improvement practices in four priority subwatersheds in the Lake Champlain basin, including the NWQI subwatershed, Rock River. Additional NRCS funds were spent in these watersheds on agricultural land easements, nutrient management plans and forestry practices, all of which achieved direct water quality benefits. Two additional HUC- 12 watersheds were selected as NWQI pilot projects for new assessments in FY2017, including the East Creek in the South Lake Champlain basin and Hungerford Brook in the Missisquoi River basin, with $545,506 allocated directly to projects in these subwatersheds in FY20. DEC is coordinating with NRCS on the Lake Champlain and Lake Memphremagog Regional Conservation Partnership Program (RCPP) grants. NRCS supports seven edge-of-field monitoring sites in the Lake Champlain basin. / USDA-NRCS has worked very closely with DEC to track federally funded agricultural BMPs and estimate associated phosphorus reductions. State funding, federal funding, and regulatory programs achieved an estimated cumulative total phosphorus load reduction of 28.2 metric tons in the Lake Champlain

basin in SFY 2020 – of which, 97% were associated with the agricultural sector. / The State's relationship with NRCS has been of especially high value in addressing the TMDL. This collaboration resulted in direct allocation of funds to the State's highest priority areas for agricultural best management practices implementation. In FY2021, DEC and NRCS coordinated to provide a spatial layer for NRCS's project ranking process (CART) that will allow NRCS to further prioritize funding to practices in areas with impaired waters or listed on the state's 303(d) list. This required substantial work to integrate digitally and is a major improvement in coordinated prioritization.

(VA) DEQ doesn't interact with NRCS much, except for the NWQI program. However, sister agency DCR has a strong relationship with both NRCS and local SWCDs, and often share office space in the localities. DCR recently entered a data sharing agreement with NRCS to address BMPs that are reaching the end of their lifespan, in order to allow them to be re-verified and continue to be credited towards Chesapeake Bay efforts. / The data sharing agreement will help to renew nutrient credits for certain BMPs. / The data sharing agreement will help to renew nutrient credits for certain BMPs.

(WI) WDNR has an MOU with Wisconsin NRCS, covering multiple overlapping conservation topics, including Conservation Cooperator status for when WDNR assists NRCS in monitoring, assessing, and evaluating their conservation programs, such as NWQI. / BMP information is used to quantify nutrient reductions and plan water monitoring locations to measure BMP benefits to water quality.

(WY) WDEQ has a working relationship with NRCS. NRCS has been willing to formalize coordination activities and has been supportive of pursuing partnership positions. DEQ briefly pursued a potential MOU with NRCS to get conservation cooperator status for data sharing as part of the National Water Quality Initiative. We were not able to set up such an MOU. / Not yet, as we are still early in the process. We anticipate that our relationship with NRCS will continue to improve and result in BMP identification and nutrient reductions. The partnership thus far has resulted in improved dialogue, information sharing, education, public awareness, and project planning. For example, we have discussed the potential of selecting an NWQI watershed that would be the focus for nutrient pollution reduction to a priority waterbody. We've also had discussions on the importance of monitoring to evaluate trends over time.

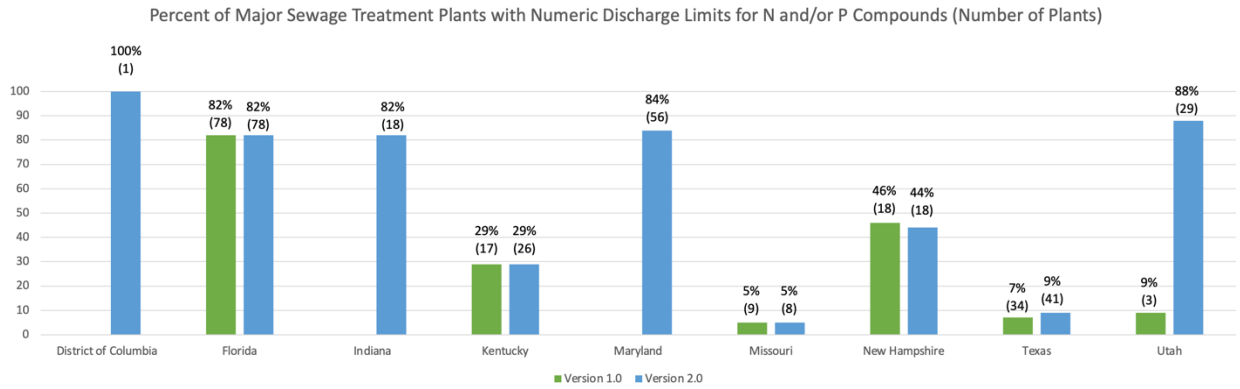
Question 23. Does your state have nutrient management planning programs relative to fertilizer and manure (either state or local) beyond federal minimum CAFO permit requirements?

Most states have some sorts of nutrient management programs relative to fertilizers and manure beyond federal minimum CAFO permit requirements, which has stayed relatively consistent in the years since the first iteration of the Tracker.

- Some states, like Missouri, New Hampshire, New York, and Rhode Island, have voluntary programs of various forms.
- Other states, like Florida, Illinois, North Carolina, Oregon, South Dakota, and Wisconsin, have mandatory programs codified through legislation or otherwise.
- Some states, like Alabama, Iowa, Texas, and Utah, offer technical assistance, information, and training through land grant university extension programs.
- Louisiana explained that while they do not have a program specifically for fertilizers and manure, they are covered under their state nonpoint source management plan.

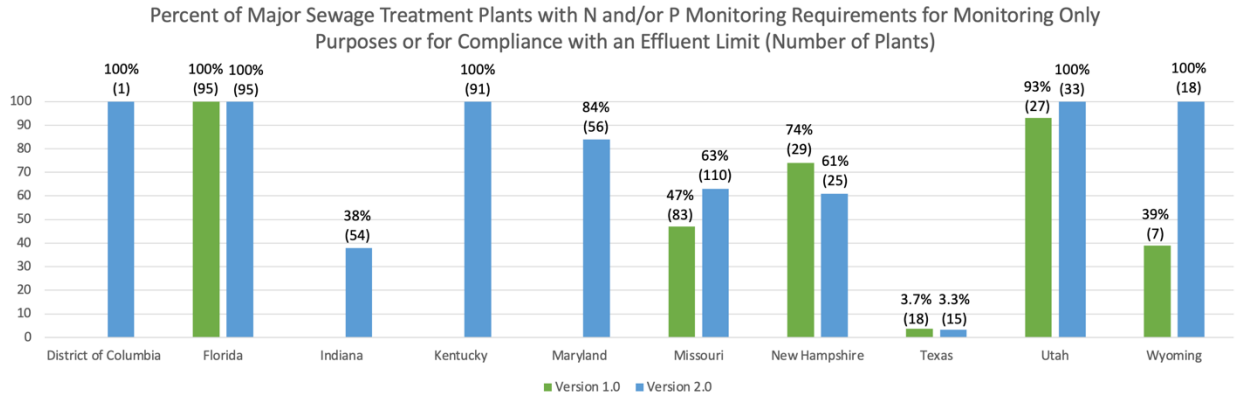
Part III: Point Source

Question 24. Provide the number and percent of major sewage treatment plants with numeric discharge limits for N and/or P compounds.



With the exception of Utah, which saw a significant increase, the percentages of major sewage treatment plants in states that responded to both Trackers has stayed relatively consistent. Kentucky's number excludes industrial treatment plants.

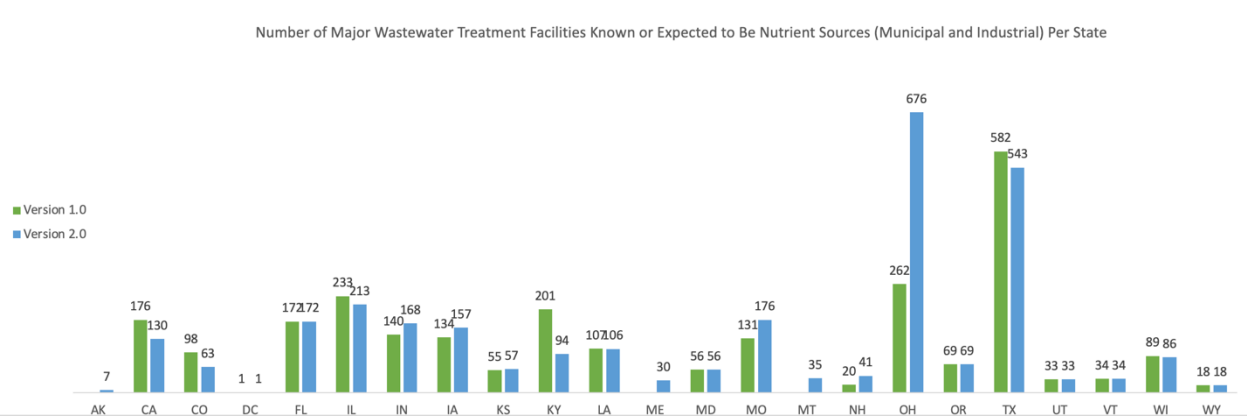
Question 25. Provide the number and percent of major sewage treatment plants with N and/or P monitoring requirements for monitoring only purposes or for compliance with an effluent limit.



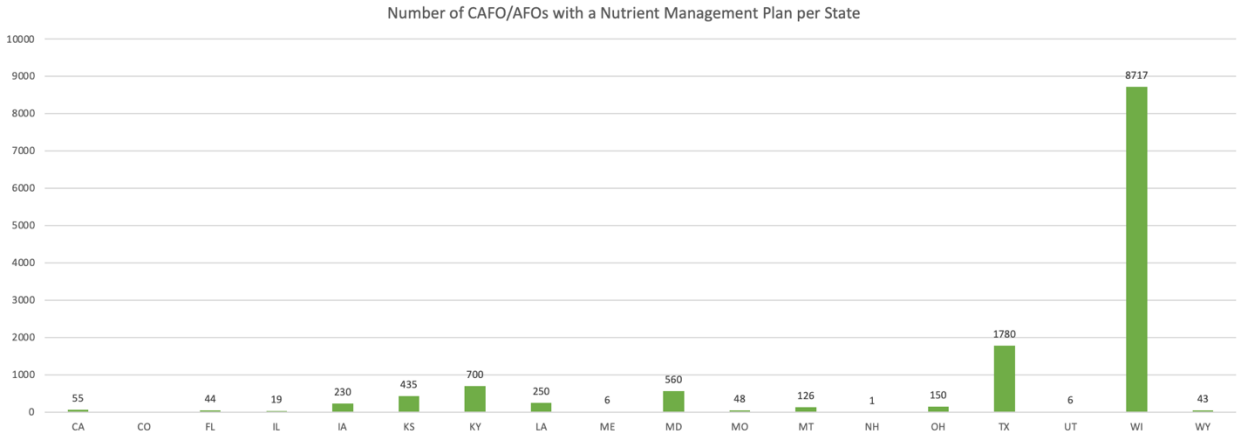
States that provided responses to this question vary greatly compared to the first Tracker. Missouri, Utah, and Wyoming have shown sizeable increases in the number and percentages of plants with monitoring requirements for monitoring only purposes or for compliance with an effluent limit, while New Hampshire and Texas have shown decreases. Kentucky's 100% excludes industrial treatment plants.

Indiana noted that their number comprised of facilities monitoring Total P until final limits become effective, and those monitoring Total N with no limitations applicable.

Question 26. How many major wastewater treatment facilities known or expected to be nutrient sources (municipal and industrial) are in your state?



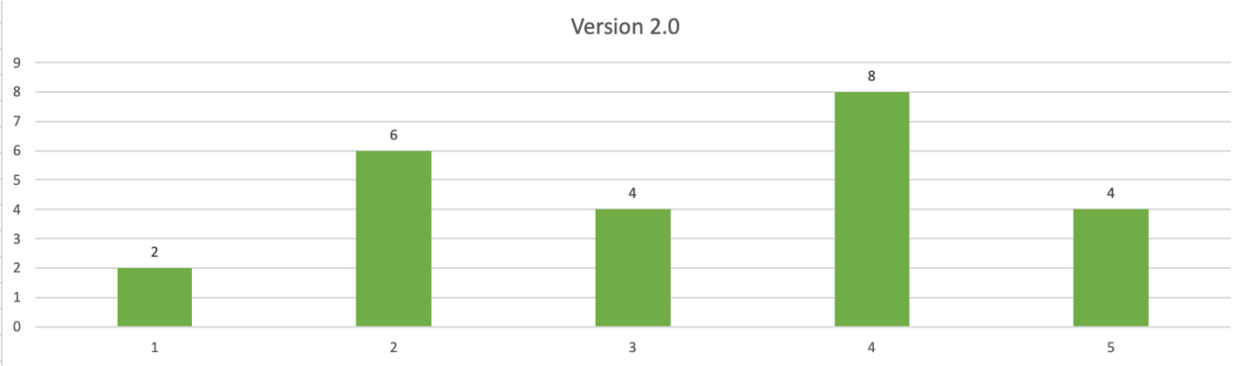
Question 27. How many CAFOs/AFOs are in your state that have Nutrient Management Plans?



- Colorado and Ohio noted that all CAFOs/AFOs in state should have a nutrient management plan.
- Illinois noted that large CAFOs are not required to have an NMP, but must maintain documentation to show compliance with the nutrient management plan requirements.

Part IV: Drinking Water

Question 28. On a scale of 1 through 5, (1 least, 5 greatest), in your state how significant of a concern is nutrient pollution in drinking water sources (groundwater and/or surface water)?



Questions 29 and 30. Does your state clean water program have a relationship with its corresponding safe drinking water program? If yes, describe how that relationship has helped reduce nutrient pollution, if at all.

100% of the 26 respondents confirmed that their state does have a relationship with the corresponding safe drinking water program.

- (AL) Both programs work within the same Division of the Alabama Department of Environmental Management. The CWA program designates drinking water sources as public water supply use classifications and establishes criteria for the waterbodies. The CWA program coordinates sampling of these waterbodies and determines whether they are meeting its designation. / It has reduced the nutrient loading by prohibiting the number of point sources within the watershed.
- (CA) Yes, each DDW regional office meets between 3 and 4 times each year with their Clean Water program partner (i.e. Regional Board) to discuss areas of concern regarding water quality. / This is still a work in progress but the interaction allows for the Water Boards to focus on efforts on those areas more significantly impacted by contamination.
- (CO) The Colorado Department of Public Health and Environment's Water Quality Control Division includes both the safe drinking water program and clean water act program in the same organization. / The linkages to protecting drinking water are clear and understood between both programs.
- (DC) Coordination with DC Water and US Army Corps of Engineers / N/A; drinking water sources for DC are not located within the District.
- (FL) The CWA and SDWA programs work closely together and communicate often. / By working together to protect and monitor water resources.
- (IL) Yes, both programs operate in the Illinois EPA Bureau of Water. / Illinois EPA 303(d) listing methodology designates watersheds with impaired public water supplies as high priority, leading to Total Maximum Daily Load development. Many of the causes of impairment for drinking water supplies include nutrients.
- (IN) The drinking water source water protection program shares PWS source water intake locations and other applicable data that the clean water program can utilize. The clean

water program also helps the drinking water HABs sampling project by running sample analyses via ELISA.

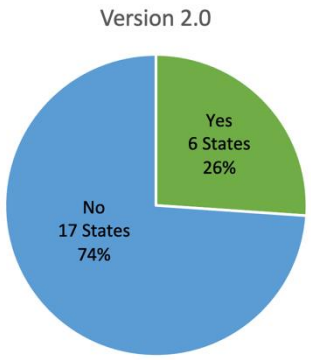
- (IA) Both Clean Water Act and Safe Drinking Water Act programs our housed within the Iowa DNR Water Quality Bureau / Yes, especially in the area of Source Water Protection. Many of the same BMPs called for under our NRS are same BMPs called for in cities SWP plans and with NRCS directing a portion of the Farm Bill Conservation Title to SWP presents a great opportunity to achieve multiple objectives.
- (KS) The Kansas Public Water Supply (PWS) program pays for a coordinator position for the Source Water Protection Program that is housed within the Watershed Management (319) Section. PWS provides technical oversite and targets groundwater systems with rising nitrate levels before violations occur and also works with local stakeholders to assess local solutions to lower nitrate movement within groundwater systems. / The Source Water Protection Program is too new to assess its impact.
- (KY) The safe drinking water program and clean water programs are within the Division of Water. In particular, the Drinking Water Branch and Watershed Management Branch's Water Supply Section work together. The Drinking Water Branch also coordinates with the Field Office Branch, Water Infrastructure Branch and Water Quality Branch on issues that overlap. We hope to continue to build a more extensive relationship to protect and raise awareness of source water for citizens and Public Water Systems in the future. / By prioritizing watershed planning in source water areas.
- (LA) LDEQ operates and manages the state's Source Water Protection program with one of its main activities being the assessment of risk of contamination to all drinking water sources. LDEQ is better able to achieve this through established practices with the Safe Drinking Water program operated by the Louisiana Department of Health. These practices provide two-way communication for contaminant notification and data and information sharing. / Nutrient pollution has little or no impact on Louisiana's drinking water sources.
- (ME) Maine DEP and the Drinking Water Program communicate regularly. / We strive to coordinate the funding of combined projects. We don't believe there is a direct relationship to nutrient removal.
- (MD) CWA and SDWA staff at the state level routinely interact regarding nutrient issues in drinking water sources (e.g., TMDL development and implementation; wastewater and stormwater permitting and management activities). For example, MDE staff administering various components of both SDWA and CWA are active participants on advisory committees such as the Reservoir Technical Group (metro-Baltimore surface water supply) and the Patuxent Reservoirs Technical Advisory Committee (suburban Maryland metro-DC surface water supply). These groups, which have been active for decades, serve as cooperative, interjurisdictional advisory bodies to coordinate and inform activities such as planning, TMDL development and implementation, and implementation of MS4 permits. While the exact amounts may be difficult to quantify, these groups' efforts have undoubtedly reduced nutrient loadings to these major water-supply reservoirs from what these loads otherwise would be.
- (MO) Yes, both programs are housed and administered together as co-branches of Missouri's Water Protection Program. / The Department's clean water nonpoint source program and drinking water source water protection program routinely coordinate information regarding drinking water systems with nonpoint-related water quality issues in drinking water watersheds; however, there are currently no metrics available to assess

nutrient pollution reductions. Targeting nutrient pollution reduction in drinking water watersheds is a shared goal for both programs and an objective of the Water Protection Program's nutrient reduction strategy.

- (MT) Safe Drinking Water programs are in the same division and share some staff.
- (OH) Drinking water is a division within our environmental protection agency. Surface and Drinking water coordinate closely on monitoring and assessment. / The relationship focusses attention on public water supplies.
- (OR) Nitrate is the most frequently chemical detection for Oregon's public water systems using groundwater. A 2011 DEQ study using finished water data identified 70 public water systems with elevated or trending nitrate levels. This study only included community and non-transient non-community water systems and did not include water systems that already had nitrate removal treatment installed. There were many more transient non-community and state regulated non-public systems that also met the screening criteria but were not analyzed for the project. Nitrate pollution is also one of the top causes for drinking water source closures or partial closures. / The Oregon Health Authority (administering the safe drinking water act) and DEQ (administering the clean water act) have a long-standing relationship addressing drinking water protection in Oregon. Through joint efforts between the OHA and DEQ we have developed and implemented a robust voluntary plan for Source Water Assessments and protection. A number of public water systems in Oregon are implementing strategies that address nutrient pollution from non-point sources including septic systems, crops, animals, and erosion. Activities focused on drinking water source areas that reduce nutrient pollution are included in DEQ's Non-Point Source Plan and annual reporting.
- (TN) They are both in the Division of Water Resources in the Tennessee department of Environment and Conservation. / Not yet
- (TX) Yes. The state's clean water programs and drinking water program are under the TCEQ's Office of Water. Staff communicate and coordinate when applicable. / TCEQ drinking water staff coordinate with wastewater permitting staff to evaluate direct potable reuse projects which can include source water characterization, Reverse Osmosis backwash and reject water discharges. Nitrogen is generally abundant in wastewater effluent used for direct potable reuse; therefore, coordination with wastewater permitting staff to ensure discharges from treatment plants are only permitted to have a concentration of nitrogen that can be lowered below the primary drinking water standard by a subsequent treatment plant or environment to which it is discharged, aiding in the general reduction of nutrient pollution.
- (UT) The Division of Water Quality and the Division of Drinking Water are part of the same departments and frequently collaborate on projects where our programmatic goals and objectives overlap (e.g., source water protection). / The partnership has helped identify waterbodies where harmful algae blooms threaten drinking water sources, which has helped the Division prioritize watershed planning efforts. Utah's Water Quality Board has supported septic density studies that help local health departments properly permit onsite systems to avoid nitrate issues in groundwater sources. For example, interagency collaboration was instrumental in the denial of an ASR UIC permit and then ultimately required a city to sewer to stop nitrate discharges that were affecting local and downstream drinking water systems.

- (VA) Va Dept of Health (VDH) provides funding for Source Water projects as an incentive for waterworks to create and implement a Source Water protection plan. / VDH reviews NPDES permits, however don't really do much with them, nutrient pollution isn't really a big focus/issue for ODW.
- (WI) Both programs are in the same Environmental Management Division with same reporting chain. Opportunities for collaboration are frequent and easy. / Collaboration on impact of discharging nutrient sources on drinking water sources; watershed planning includes source water protection. Drinking water program is working on a nitrogen decision support tool for farmers to address nitrate impacts on groundwater.
- (WY) Yes, EPA Region 8 directly implements the National Primary Drinking Water Regulations in the state of Wyoming. the clean water program in Wyoming is run by Wyoming DEQ. EPA Region 8 and WY DEQ coordinate on a number of different issues. / EPA has been coordinating with DEQ on potential drinking water supplies that may be impacted by nutrient pollution, however this has not been a priority and has not resulted in any reductions in nutrient pollution. Although this information sharing has not moved toward nutrient reduction efforts thus far, the information has been used to help prioritize waterbodies for nutrient reduction efforts.

Questions 31 and 32. In the past year, have harmful algal blooms/cyanotoxins caused a significant issue in any of your public water systems (i.e., aid necessary to mitigate the bloom in finished drinking water, advisories, etc.)? If yes, describe how your state responded to the algal bloom issues.



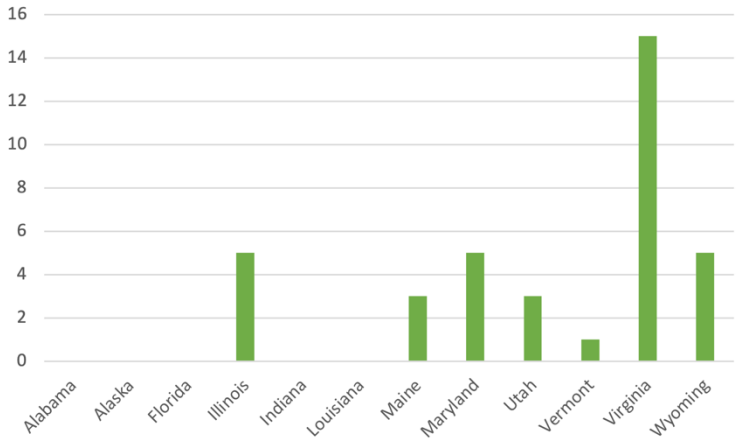
States responded to these issues by providing public advisory notices, upgrading public outreach materials, performing additional monitoring on source water, providing technical assistance to public water systems, and partnering with EPA to establish SWP planning efforts.

Questions 33 and 34 asked states to provide the state's best estimate of the number and percent of public water systems actively operating to meet the nitrate MCL, and to indicate how many facilities fall into the listed categories (installed treatment, blending, both, or other).

Fifteen (15) out of twenty-seven (27) states currently have systems operating to meet the nitrate MCL, a decrease from Version 1.0, in which twenty-one (21) out of thirty (30) states reported these systems. According to the data collected for the tracker, approximately 14,925 systems nationally are doing so.

Of the facilities actively operating to meet the nitrate MCL, 13 states have Installed Treatment facilities, 10 states have Blending facilities, and 3 listed uncategorized facilities. These responses included putting a high nitrate well offline and a new well online, using an alternative nitrate level to comply, fixing the facility's septic system, and finding alternative water sources.

Question 35. Provide your state's best estimate of the number of systems that have had to abandon wells due to nutrient pollution.



Question 36. Describe any other partnerships or mechanisms active in your state addressing nutrient pollution for drinking water.

- (CA) California addresses contaminant problems in small, disadvantaged community water systems and contaminated areas served by individual well owners
- (IL) Coordination with the USDA-FSA and their funded Source Water Protection Specialist, through the National/Illinois Rural Water Association, including annual training needs workshop and sharing of Illinois EPA source water protection areas via GIS; Development of Public Water Supply Use-Assessments under the federal 305(b), which leads to listing under 303(d) and results in TMDLs where implementation projects are reported; Coordination with the of USDA-NRCS State Conservationist to develop priority source water protection areas for the "National Water Quality Initiative (NWQI) Watershed and Source Water Protection Area Selection" related to the provisions of the new Farm Bill; Development and implementation of Illinois Nutrient Loss Reduction Strategy; and Conduct outreach and educational efforts related to non-point source and agricultural best management practices with the following stakeholders: Interagency Coordinating Committee on Groundwater; Groundwater Advisory Council; and the four Priority Groundwater Protection Planning Committees.
- (IN) The drinking water source water protection program works closely with NRCS on the conservation nutrient management plans. For example, IDEM staff created maps and locations of PWSs for NRCS to utilize in their conservation nutrient management plan. We also frequently meet with ASDWA, Region 5 states and EPA to discuss source water protection issues.
- (IA) TMDL, Source Water Protection, and the Lake Restoration programs have had a role in addressing nutrient pollution for drinking water.
- (KS) Nutrient planning for livestock waste land application and lagoon permeability testing. Water quality testing of lakes and streams by the Watershed Planning, Monitoring, and Assessment section. The Drinking Water Protection Programs reducing surface to

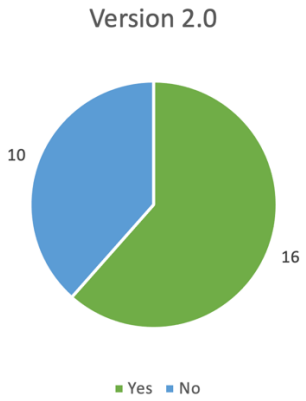
groundwater nutrient transfer near public water systems. NPDES Permitting of industrial, commercial and municipal wastewater systems. Watershed protection through WRAPS program and non-point source strategies. Stormwater permitting and monitoring.

- (KY) Kentucky protects drinking water through source water protection programs including the Wellhead Protection Program and the Source Water Assessment and Protection Program. When available, funding through the Source Water Protection Assistance Program helps communities fund source water protection projects. DOW maintains public geospatial maps of source water protection areas and reported harmful algal blooms throughout the state.
- (ME) The Drinking Water Program has a variety of active partnerships such as the Saco River Collaborative and Salmon Falls River Watershed Collaborative. These collaboratives work towards protecting drinking water quality, local ecosystems, and public health. The DWP also works with Maine Rural Water Association (MRWA) on source water protection efforts. With MRWA, we are able to cooperatively provide technical assistance and education to water systems throughout Maine. Lastly, the DWP works with public water suppliers, as well as the foresters and growers in their source protection areas, to connect them with USDA source protection funding opportunities.
- (MD) Baltimore Reservoir Group, Washington Suburban Sanitation Commission (WSSC) Group
- (MO) The Department contracts with technical experts from MRWA, also known as circuit riders, to assist public drinking water systems facing technical, managerial, and financial capacity challenges. Circuit riders provided assistance with water loss, rates and reserves, treatment, disinfection, asset management, distribution mapping, natural disasters, operator certification, and source water protection. During assistance visits, circuit riders often address more than one issue encountered at the system. MRWA also receives funding from other sources, such as USDA, to assist systems in developing source water protection plans for endorsement by the Department's drinking water source water protection program. These efforts help systems obtain and maintain compliance with national primary drinking water standards, optimize operations, and reduce long-term cost associated with treatment and distribution.
- (OR) Over the past two years, Oregon has developed a strong relationship with NRCS implementing the NWQI Source Water Protection objectives. This relationship has resulted in significant collaboration on water quality assessment within drinking water source areas that will likely lead to improvement initiatives. We have developed good partnerships with local soil and water conservation districts, watershed councils and land trusts that help implement protection strategies that address drinking water source areas. In addition, there are several grant opportunities available to public water systems and their communities to help fund protection strategy implementation.
- (UT) There is an active partnership between the Utah Division of Drinking Water (UDDW) and the National Resource Conservation Service (NRCS) or USDA. The Division of Drinking Water also has an active partnership with its Clean Water Act counterparts within the Division of Water Quality. UDDW also holds a position on the Water Quality Task Force that includes multiple partners and deals mainly with non-point source pollution. This task force includes partners like UDSA, NRCS, multiple divisions within the Department of Natural Resources, including Water Resources, Department of Agriculture and Foods, the Forest Service, State Forestry and Fire, local conservation groups, local universities, and drinking water wholesalers, drinking water systems, and wastewater systems.
- (VT) Federally required nitrate sampling requirements; work with Agency of Agriculture Farms and Markets upon identifying elevated results.

- (WI) Working with USGS and researchers at UW Madison to develop nitrate decision support tools. We are also working with Wisconsin Land and Water to connect with county conservation staff across the state to include source water protection (nitrate issues) in county water quality plans.
- (WY) DEQ has included drinking water supplies and potential impacts of nutrient pollution on drinking water supplies as part of our process for prioritizing waterbodies for nutrient reduction efforts. We are still working to get our first priority watershed work off the ground, however, we anticipate that this model can be used to address nutrient pollution in other waterbodies in Wyoming.

Part V: Other

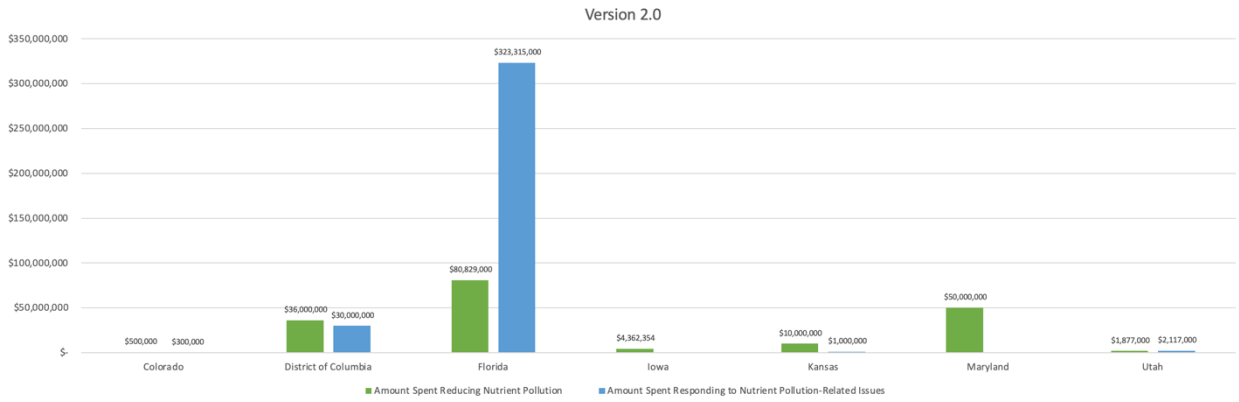
Question 37: Is your state utilizing market-based methods (e.g., water quality trading) to reduce nutrient pollution?



Question 38. Briefly describe any other efforts your state is employing to make progress on reducing nutrient pollution in state waters.

States are employing various other efforts to make progress on reducing nutrient pollution in their waters. These include TMDLs, MS4 permitting, optimization for nutrient reduction, urban non-point source pollution management, state tracking of BMPs, and other innovative approaches.

Questions 39 and 40. Provide an estimate of how much money your clean water department spends responding to nutrient pollution-related issues. Provide an estimate of how much money your clean water department spends working to reduce nutrient pollution.



Several states clarified that these amounts are estimates and vary year to year depending on available funding.

Part VI: Conclusion

This is the second report in what is designed to be a series of reports on state nutrient reduction progress. ACWA and the NWG will continue to refine the tracker questions and dig deeper on certain results as the project moves forward. The tracker will look to continue building upon itself with each iteration, allowing for a better understanding of state nutrient reduction progress and trends nationwide.

While there was not a perfect overlap in respondents, the results make it clear that states are making progress in their efforts to reduce nutrient loads in their waters, and taking significant, yet varied, actions to do so. States are also collaborating with their publicly owned treatment facilities, state drinking water partners, state agriculture departments, federal agencies, conservation offices, NGOs, the private sector, and other entities to reduce nutrient pollution.