

The Data Underlying the Protection Story Map

Primarily from a November 2018 [questionnaire](#) to state CWA 303(d) staff

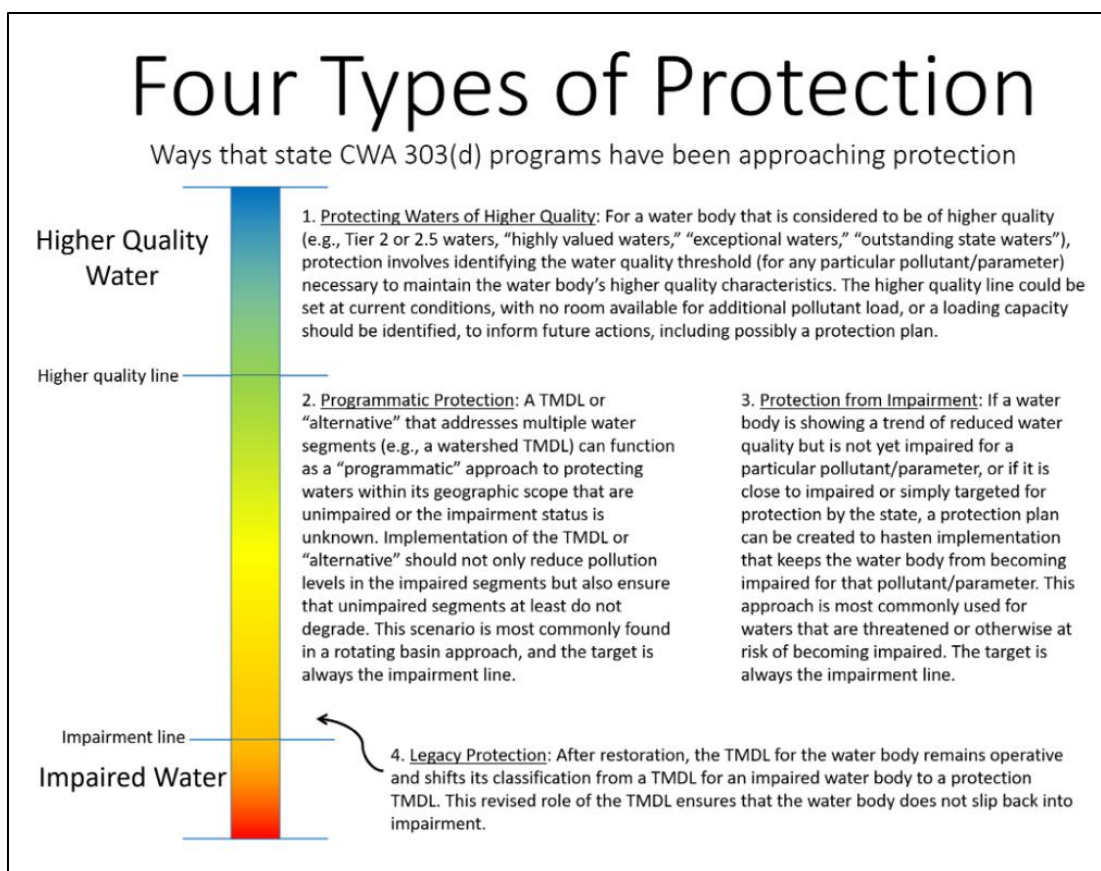
Story Map Section 2 (Four Types of Protection):

How would you characterize [your state CWA 303(d) Program's] efforts [to protect healthy waters]? (select all that apply)

[See the graphic immediately below for descriptions of these protection types]

- *Protecting waters of higher quality*
AZ, CA, CT, FL, IN, KS, KY, MD, MA, ME, MN, MO, MT, NC, NH, NJ, NM, OH, OR, PA, SD, TN, UT, VA, VT, WI, WV
- *Programmatic protection*
AK, CO, CT, FL, HI, ID, KS, KY, LA, MD, MA, MI, MS, MT, NC, NH, PA, SD, TN, WI
- *Protection from impairment*
AK, AZ, CA, CT, FL, KS, LA, MD, MA, ME, MI, MN, MT, NC, NH, NJ, NM, OH, SC, SD, TN, UT, WA
- *Legacy protection*
CO, CT, IN, KY, LA, MD, MA, MO, MS, MT, NC, NM, OH, SC, TN, WV
- *Other:*
 - MD - Coordination with other state, county, local, nonprofit/non-government, and federal entities
 - MA - Special use designation (e.g., Cold Water Fishery)

None: AL, AR, DC, DE, IL, IA, NE, ND, RI



Story Map Section 3 (Specifics):

In what ways has your state's CWA 303(d) program sought to protect healthy waters (i.e., unimpaired waters), whether preventing impairments or maintaining or improving good water quality?

Relative to Assessments:

Including trend tests for nutrients, chlorophyll a, and DO in listing decisions, which can result in listing waters that attain applicable criteria daily, but may have declining water quality trends
FL

Using the water quality and biological data collected for the 303(d) program to identify high quality waters to be designated as Category One, which provides additional protection
NJ

Identifying healthy waters in addition to impaired waters
MD, OH, UT (all existing high quality waters within the boundaries of USFS-administered areas are designated Category 1), WI (automated assessment packages allow assessment of all data across the state)

Identifying waters for protection plan development
CT, NC, WA

Relative to TMDLs:

Developing a "protection TMDL" for an unimpaired water/watershed to lay out goals/WLA
KS, NM, OH, TN (planned)

Keeping TMDLs in place in restored waterbodies
CT, IN, MO, NM, SC

Developing TMDLs/plans that protect as well as restore

- *Watershed TMDLs*
CT, KS, OH, SC
- *Addressing multiple parameters, often protecting some and restoring others*
LA
- *TMDLs can include waters that are not impaired as well as those that are impaired.*
PA
- *Prioritizing impaired waters for TMDL/"alternative" development using, among other criteria, the presence of rare, threatened, or endangered species and aquatic ecological communities of high integrity in the same 12-digit HUC as the impaired water(s)*
VA
- *Inherently incorporating in many TMDLs the concept of maintaining healthy conditions in tributaries not identified as impaired, as a component of achieving reductions elsewhere to meet a watershed-scale allocation*
MT

Local TMDLs
MD

Doing Wasteload Allocation Analysis on ONRWs for new or expanded wastewater dischargers
LA

Preparing a protection plan for unimpaired watersheds falling within a TMDL model domain
NJ (Non-tidal Raritan River Watershed Protection Plan, covers 90 HUC14 parameter combinations)

Including Outstanding State Water Resources when making selections for monitoring for TMDL development
KY

Collaboration:

Collaborating with other state agencies to characterize waterbodies and prioritize them for specific actions, including protection

AK

Collaborating with the standards program to upwardly reclassify certain high quality waters

VT

Assisting with antidegradation reviews to ensure that water quality is maintained

KS

Collaborating on a multi-purpose project (restore, improve, and protect water quality, depending on the current state of each segment) over a large area

SD

Working with the CWA 319 program to develop water quality milestones for nine-element plans, which often address protection as well as restoration

KS

Supporting the use of CWA 319 funds to protect waters threatened by nonpoint source pollution

AZ, LA, ME

Coordinating with Parks and Land Acquisition staff when purchases are being considered for conservation efforts

CT

Working with watershed associations regarding the Wild and Scenic program for waterways

CT

Relative to Multiple Aspects of the CWA 303(d) Program:

Considering Tier 3 antidegradation policies during water quality assessment, CWA 303(d) listing, and TMDL development

MO (e.g., Jacks Fork - an ONRW - even though existing bacteria levels are well below the state's water quality criterion, the stream was listed as impaired and a TMDL was developed targeting the background condition)

Using a rotating basin approach to monitoring, assessment, and restoration/protection actions

MN

Other:

Participating in the EPA Healthy Waters Program

CT

Promoting the use of more effective BMPs in targeted TMDL watersheds, raising public awareness that provides protection benefits in the long-term

RI

Chesapeake Bay Watershed Implementation Plans

MD

Submitting comments to local land use planning agencies when proposed projects could threaten high quality waters

CA

The CWA 303(d) program has focused on impaired waters, not protection

AL, AR, DC, DE, HI, ID, IL, IA, MS, NE, ND, PA

No response

CO, MA, MI, OR

Story Map Section 4 (Results):

Have those efforts thus far achieved the intended results? Why or why not?

- *Yes, waters are being protected*
CO (legacy protection), KS (via CWA 319 projects), ME, MA (public water supplies), MO (Jacks Fork), MT, NJ (Category One designation), NM (Rio Hondo & legacy TMDLs), PA, UT
- *Yes, in a general sense, but there is not much data*
CA, VT
- *Yes in some cases, no in others (mixed results)*
LA, MD, MI, NH (via implemented watershed-based plans)
- *Uncertain: do not have a system in place to evaluate the effectiveness of the efforts*
IN, MA, VA, WV
- *Too early to tell: not enough data yet*
CT, FL, KY, MN, SD, SC
- *Too early to tell: plans/projects not fully developed/implemented*
AZ (protection grant projects), CT (protection plans), KS (“protection TMDLs”), LA (“alternatives”), NJ (protection plans), NC (plans), TN (“protection TMDLs”), WA (plans)
- *Yes, but they are steps in the process*
AK (Alaska Clean Water Actions), WI (identify waters for protection or restoration)
- *No response*
OH

“Yes”

Alaska: Protection actions have been successfully implemented as part of the Alaska Clean Water Actions process.

California: In a very general sense, the protection efforts have helped prevent impairment or further degradation.

Colorado: TMDLs are intended to stay in place once water quality standards are attained, but they do not formally become protection plans. Colorado CWA 319 success stories are the only documentation of results of legacy protection.

Kansas: Yes for all permitting anti-degradation issues. Generally yes for protection TMDLs, although it is early to tell for many, as implementation is in progress. Protection efforts of CWA 319 projects have been successful, as targeted waters remain unimpaired.

Louisiana: In some cases, yes, good results have been achieved, and in other cases they have not been.

Maine: Yes, most waters that have received project funding are still in attainment.

Maryland: There has been success, but also need for further improvement. Approximately ¼ of all designated Tier II, high quality, streams have no remaining assimilative capacity, which is the measure used to determine if a Tier II stream segment had degraded.

Massachusetts: There are higher protections in place for public water supplies, and all of these waters are meeting the drinking water use. For all other waters, we do not have a system in place to evaluate the effectiveness of protection efforts.

Michigan: Results have been mixed. There is buy-in from the NPDES and NPS programs to prioritize waterbodies in TMDL watersheds for increased requirements (point sources) and funding (nonpoint sources), even if the specific waterbody is not the one impaired.

Missouri: For the Jacks Fork, an ONRW, bacteria concentrations remain low and much has been done in the watershed via education and changes in behavior that has resulted in observable improvements, although background concentrations have not yet been attained.

Montana: Several completed TMDLs are still in play even though the waterbody-pollutant combinations have been found to no longer cause impairment.

New Hampshire: Yes and no – results have depended on the watershed; the goals of the watershed-based plan; and the intensity of monitoring of the resource before, during, and after development and implementation of the plan on both high quality and impaired waters.

New Jersey: The Category 1 water designation provides the intended protection to the high quality waters, but it is too soon to know the results of protection plans.

New Mexico: The protective TMDL for Rio Hondo directly led to point source limits that continue to protect the Rio Hondo. Leaving legacy TMDLs in place has reminded the agency and stakeholders of the need to prevent those waters from becoming impaired again.

Pennsylvania: For the majority of waters, intended results are being achieved. The primary reason for this success is the remoteness of the waters (most are within state and national forest lands), or they have been protected as source waters for public drinking water.

Utah: The antidegradation provisions for Utah's Category 1 waters have protected the quality of Utah's headwaters, as evidenced by the relatively few impairments observed in these waterbodies and the targeted protection efforts in critical source water areas.

Vermont: By reclassifying a number of waters in the National Forest that remain mostly undisturbed, the state restricts certain types of disturbances in those watersheds; to date, there has been little pressure on those watersheds, so there is little to measure.

Virginia: All but 3 of the 30 Tier III waters remain unimpaired, with those 3 being considered impaired by natural causes.

“Not Yet Clear”

Arizona: It is too early to determine the impact of the protection efforts. Funds have been awarded to three protection grant projects, but they have not been fully implemented or evaluated.

Connecticut: It is too early to tell if much of the protection work has had impacts on water quality. The waters selected for protection plan development do not yet have results as the documents are still in the planning phase.

Florida: Some of the criteria are fairly new, so it is not clear yet whether they have worked.

Indiana: Follow-up monitoring has not occurred for any of the reaches that have received a TMDL or watershed-planning.

Kentucky: The protection efforts have not been properly evaluated. TMDL implementation has been limited and, in areas where there is implementation, follow-up monitoring has not been completed.

Minnesota: MPCA is completing the first ten-year cycle of watershed monitoring, to assess all 80 HUC8-scale watersheds. Lakes and streams meeting standards have been identified. In the second cycle, MPCA will identify which “protection” class waters to re-assess.

North Carolina: Plans are still under development, so intended results are not measurable yet.

South Carolina: In progress.

South Dakota: Further monitoring is needed.

Tennessee: It is too soon to tell for protective TMDLs.

Washington: Currently in the initial planning phase, it is too early to make a determination on results.

West Virginia: There is no dedicated monitoring program to evaluate TMDL implementation effectiveness.

Wisconsin: Currently the intended result is to identify waters for protection or restoration, and that has been successful.

Story Map Section 5 (How Waters Were Identified/Prioritized for Protection):

How were waters identified/prioritized for protection? What characteristics were key?

Tools / Methods

Alaska: Waters are identified for protection as part of the Alaska Clean Water Actions ranking process. These waters do not require restoration or recovery actions, but they do not have adequate stewardship programs in place to maintain and protect the waterbody.

Connecticut: The state used the Recovery Potential Screening (RPS) tool from EPA to select freshwater watersheds for protection as part of the VISION goals.

New Hampshire: The priority analysis, referred to as the Protection Potential Screening Tool (PPST), adapted by NHDES from EPA's Recovery Potential Screening tool, calculated protection scores based upon ecological, stressor, and social metrics.

Water Quality

Arizona: To be considered eligible for protection funding, waterbodies must have, among other characteristics, a documentable nonpoint source pollution concern threatening water quality and not be listed as impaired/not attaining for the pollutant of concern.

Connecticut: The Biologic Condition Gradient, Macroinvertebrate Multi-metric Index, miles of streams supporting aquatic life use, and percent of free-flowing streams in a watershed were heavily weighted indicators in the Ecological category of the RPS tool.

Idaho: Protection decisions have been based on the support status in the Integrated Report.

Indiana: Category 1 waters, as well as those with other specific characteristics, are prioritized for protection.

Kentucky: To begin efforts to protect healthy waters, the CWA 303(d) program added examination of the waters designated as Outstanding State Water Resources when making selections for monitoring for TMDL development.

Louisiana: Waters were identified for protection based on, among other factors, water quality trends.

Maine: Waters are prioritized for protection when baseline monitoring of lakes identifies an increasing trophic state (lower clarity, lower DO).

Maryland: Waters were identified for protection by, among other factors, water quality data and whether they are ecologically important areas under development threat. Tier II streams also are prioritized for protection.

Minnesota: The state has a multi-step process for prioritizing lakes for protection efforts, and one for prioritizing streams. Both processes include consideration of risk of becoming impaired.

Missouri: In the case of the Jacks Fork, the waterbody was identified as needing protection due to, among other things, its being a high quality water and categorized as an Outstanding National Resource Water in state water quality standards.

New Jersey: Unimpaired waters that fall within a comprehensive modeled TMDL area or within a state-approved 9-element watershed-based plan are prioritized for protection.

New Mexico: The Rio Hondo was identified for protection due to an upcoming ski resort expansion that would necessitate a higher wastewater treatment plant capacity.

Ohio: The results of Ohio's routine biological and water quality surveys help identify high quality waters for protection.

South Carolina: Waters with a history of impairment are prioritized, simply following through with TMDL development even if attainment occurs in the interim.

Vermont: Waters are identified for protection primarily through aquatic biota assessments.

Washington: The South Skagit Bay area was identified as a potential threatened shellfish area, and the protection of shellfish is a priority per the governor's shellfish initiative.

Wisconsin: The Wisconsin Healthy Watershed Assessment's Vulnerability Assessment and Aquatic Ecosystem Health Assessment were used to identify areas for protection. Also, waters not on the impaired waters list but included in a TMDL are protected.

Geography

Indiana: Among other characteristics, watersheds that impact Outstanding State Resource Waters are prioritized for protection.

Kansas: For TMDL development, waters targeted for protection are typically either upstream or downstream of impaired segments and incorporated into the larger TMDL watershed document.

Maryland: Waters were prioritized for protection by, among other factors, contiguity with other protected areas.

New Hampshire: Priority for protection activities is given to, among other things, those watersheds that have completed, EPA-approved watershed-based plans.

New Jersey: Unimpaired waters are prioritized for protection if they fall within a comprehensively modeled TMDL area or within a state approved 9-element watershed-based plan because loading allocations already would have been calculated.

North Carolina: Waters adjacent to state park land were prioritized for protection plans in coordination with the North Carolina Park Service.

Tennessee: Waterbodies upstream from impairments are prioritized for protective TMDLs.

Wisconsin: When a TMDL is in development, the new strategy is to provide load allocations for all waters in the watershed. The waters not on the impaired waters list are covered by the TMDL as a protection plan.

Uses

Indiana: Among other characteristics, surface waters with source water intakes, with endangered species, or that are important for aquatic habitat are prioritized for protection.

Louisiana: Waters were identified for protection based on, among other factors, existing activities.

Maryland: Waters were prioritized for protection by, among other factors, public health and whether the water is a source for drinking water; whether the waters are of economic, cultural, or historic value; and whether the waters contain trout.

Missouri: In the case of the Jacks Fork, the waterbody was identified as needing protection due to, among other things, the large amounts of recreational uses that are known to occur there.

New Hampshire: Priority for protection activities is given to, among other things, 17 watersheds that fully support both aquatic life and primary contact recreation designated uses.

Ohio: Factors considered in identifying waters with exceptional ecological values include habitat for endangered/threatened or declining fish species. Waters with outstanding/unique recreation opportunities also may qualify for antidegradation protections.

Pennsylvania: The antidegradation program is incorporated in the state protected uses.

South Dakota: Several high profile/high use lakes are prioritized for protection.

Utah: Use of surface waters for drinking/culinary purposes and the extent of public exposure for recreational purposes are key considerations for protection.

Virginia: Some priority impairments were identified based on sharing a 12-digit HUC with rare, threatened, or endangered species and aquatic ecological communities of high integrity.

Washington: The South Skagit Bay area was identified as a potential threatened shellfish area, and the protection of shellfish is a priority per the governor's shellfish initiative.

Availability of Data and Measures

Alaska: Waters are identified for protection as part of the Alaska Clean Water Actions ranking process. These waters must have sufficient available data to determine the existence or extent of a current or potential problem.

Arizona: To be considered eligible for protection funding, waterbodies must have, among other characteristics, a pollutant/parameter of concern that has an applicable water quality standard or a measurable target number.

Minnesota: The state has a multi-step process for prioritizing lakes for protection efforts, and one of those steps is developing a target (generally phosphorus concentration and load reduction) to provide a goal to determine if protection efforts are effective.

External Input

Connecticut: CT DEEP Watershed Management Coordinators, CT Water Quality Monitoring Program, CT DEEP Volunteer Monitoring (RBV Program), CT Soil and Water Conservation Districts, and Rivers Alliance.

Louisiana: Waters were identified for protection based on, among other factors, local participation.

Minnesota: The state has a multi-step process for prioritizing lakes for protection efforts, and another for streams. Both include vetting prioritization results with state staff, local government, watershed districts, lake associations, tribes, and stakeholders.

Montana: Stakeholder input is the primary driver for moving forward with any significant protection activity.

Other

Alaska: Waters are identified for protection as part of the Alaska Clean Water Actions ranking process. These waters do not require restoration or recovery actions, but they do not have adequate stewardship programs in place to maintain and protect the waterbody.

Connecticut: Waters for which Healthy Watershed Grants had been given were prioritized.

Louisiana: Waters were identified for protection based on, among other factors, the potential for future growth.

Maryland: Waters were identified for protection by, among others, the Green Infrastructure Assessment, and prioritized by, among others, land use analysis, land management policies, where state and federal interests overlap, and the availability of protection funds.

Massachusetts: In some cases, waters have been designated for environmental protection through state legislative action (e.g., certain waters in Areas of Critical Environmental Concern have been designated as Outstanding Resource Waters).

Minnesota: The state has a multi-step process for prioritizing streams for protection efforts, and one of those steps is determining the current level of protection of near shore areas and the upstream watershed, based on public land ownership/easement.

Story Map Section 6 (Coordination with the NPS Program):

Has your state's CWA 303(d) program coordinated with your state's nonpoint source program and protection?

YES: AK, AZ, AR, CA, CO, CT, DC, ID, IN, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NH, NJ, NM, NC, ND, OH, OR, PA, RI, SD, UT, WA, WV, WI

NO: DE, FL, HI, IL, IA, NE, SC, TN, VA, VT

No Response: AL

If Yes, in which of the following ways? (select all that apply)

- *Collaborative discussions*
AZ, AR, CA, CO, CT, DC, ID, IN, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NH, NM, NC, ND, OH, OR, PA, RI, SD, UT, WA, WV, WI
- *Jointly setting priorities*
AZ, AR, CA, CT, DC, ID, KS, LA, MD, MA, MN, MS, MO, MT, NH, NC, ND, OH, OR, WA
- *Collaboratively developing protection plans*
AR, CA, CT, DC, KS, LA, MS, NC, ND, OR, RI, UT, WA, WI
- *The nonpoint source program provides implementation funding for CWA 303(d)-identified protection priorities*
AR, CA, CT, DC, ID, KY, LA, ME, MA, MN, NH, ND, NJ, OH, OR, PA, RI, SD, UT, WA
- *Other:*
 - AK - In Alaska, the programs are part of the same section, so the same staff may work on both NPS and 303(d) projects.
 - ME - We do not have a separate 303(d) program; it is shared amongst several water programs including NPS.
 - MD - Project collaborations - providing in-kind services for technical assistance, implementation plan development, monitoring, etc.
 - MI - The State's NPS Program places a priority on protection oriented projects to keep water bodies off the 303(d) list. The NPS Program uses the EPA's Recovery Potential Screening Tool to help identify and prioritize high quality watersheds with high ecological stressor scores.
 - MO - TMDL staff assist with the development of watershed-based plans and can therefore model loading for other constituents beyond just the pollutant causing impairment.
 - ND - We are a small program with limited staff. Both programs are with the Watershed Management Program and staff work on TMDLs and 319 NPS projects.
 - NJ - Protection Plans will be featured in NJ's forthcoming NPS Program Management 5 year plan.
 - OR - TMDL development, TMDL implementation, NPS implementation are the same staff
 - WV - WAB provides needed data and sometimes evaluations in order to develop plans and priorities.

Story Map Section 8 (Protection Efforts More Broadly):

Regardless of the program or entity responsible, how have healthy waters been protected in your state? What have the protective activities been, whether general approaches or specific technical details?

Water quality standards

Arkansas: For some parameters, high quality waters (ERW, ESW, NSW) have more stringent criteria in the state's water quality regulations.

California: The state's antidegradation policies have created an understanding and expectation of good quality water and that quality is not allowed to be degraded past 1970s levels.

Connecticut: The state water quality standards and anti-degradation policies.

Delaware: The anti-degradation guidelines in the state's permitting section are the closest thing to protecting healthy waters.

Florida: The state's antidegradation policies help protect healthy waters.

Idaho: Application of Tier II protections through state antidegradation policy.

Illinois: Activities that have protected healthy waters have included performing Use Attainability Analyses to improve the designated uses of waters that were less than the CWA goals, developing water quality standards, enforcing antidegradation policies.

Indiana: Waters identified as part of the antidegradation rulemaking procedures, many of which were already designated as “exceptional use” or had special water quality standards related to cold-water species or as recreational waters, are protected.

Kentucky: Establishment of new Outstanding State Resource Waters and reference reaches; there are no permanent discharges issued in Outstanding National Resource Waters.

Maryland: Tier II Watershed health and vulnerability assessment; Tier II project reviews across multiple agency programs, other state agencies, and some counties; cross-state protection of Tier II waters (e.g., Deer Creek)

Massachusetts: The Department of Fish and Game identifies cold water fishery resources, which are protected under the existing use, and some are designated in the standards.

Minnesota: Antidegradation rules: the state has two categories of Outstanding Resource Value Waters (ORVWs), Prohibited (Tier 3) and Restricted (Tier 2.5).

Mississippi: The Water Quality Standards Program reviews water quality classifications and criteria on a regular basis through the triennial review process to reflect the latest science.

Missouri: For Tier 2 waters, antidegradation review for new or expanding sources includes evaluation and adoption of less-degrading technology alternatives. For Tier 3 waters, degradation is not allowed (except for temporary circumstances).

Nebraska: If a waterbody is listed as a Cold Water Class A, new Animal Feeding Operations in the watershed are prohibited within a mile of that stream segment. Existing AFOs may expand if evidence provided indicates that the expansion will not impact the stream.

New Jersey: Activities that might alter existing water quality in Outstanding National Resource Waters are prohibited. Category One waters are designated by rule for protection from measurable changes in water quality. All other waters are designated as Category Two.

New Mexico: The state has designated several waterbodies and stream reaches as Outstanding National Resource Waters.

North Carolina: The High Quality Waters and Outstanding Resource Waters programs protect excellent water quality in many areas of the state.

Ohio: Tiered aquatic life uses identify “better than CWA” goals for high-quality streams. Roughly 14 percent of Ohio’s streams already have this higher use designation. The state also has an active antidegradation process to protect existing uses.

Oregon: The Water Quality Program has protected some waters through ORW status or the equivalent of Tier 2.5 status.

Pennsylvania: Protection is being achieved, in part, through water quality standards and antidegradation policies.

Rhode Island: Tier 2.5 waters were designated as part of major revisions to the state water quality regulations (triennial review) and viewed as an opportunity for stronger protection of those waters.

South Carolina: Antidegradation policies have been protective by requiring alternatives analysis and justification before new or expanded discharges lower water quality and by implementing, through TMDLs, a maximum 0.1 mg/L DO deficit in naturally low DO waters.

Tennessee: Outstanding National Resource Waters designations.

Utah: State antidegradation policy, specifically anti-degradation reviews, ensure that all least-degrading alternatives be considered when evaluating requests for a discharge permit.

Vermont: The state has reclassified a number of waters in portions of the National Forest that remain mostly undisturbed, with the intention of causing restrictions in certain types of disturbance allowed to be permitted in those watersheds.

Virginia: The Tier III (Exceptional State Waters) designation prohibits permanent new or increased discharges from point sources, maintaining a strong anti-degradation policy.

Washington: Tier II protections for higher quality waters are implemented through the state's NPDES program, and the operating assumption is that all waters are high quality for Tier II protection unless they are on the CWA 303(d) list for a given parameter.

West Virginia: Tier III: any proposed new or expanded regulated activity that would degrade a water body designated an Outstanding National Resource Water, other than temporary lowering of water quality, is prohibited.

Wisconsin: Legislatively-designated Wild Rivers protect specific rivers; Areas of Special Natural Resources Interest (ASNRI) capture Outstanding and Exceptional Resource Waters designations and other waters designated for protection.

Monitoring

Connecticut: The state targets some monitoring efforts on healthy waterways and did conduct a sampling of least disturbed streams.

Florida: The state has several monitoring programs that include objectives to evaluate changes in "reference" and "non-reference" waters; data from the monitoring programs is used to evaluate and identify waters with good water quality that may be declining.

Maryland: Targeted monitoring to reduce nutrient and sediment loading.

Minnesota: Water quality monitoring has been included as part of protection strategies in WRAPS.

New Hampshire: Volunteer monitoring occurs on high quality waters as well as those undergoing restoration activities; the additional data collection can reveal negative trends in high quality waters that were previously unknown.

Ohio: Watershed surveys measure the attainment potential and status for all waters; thus, they identify waters to restore and to protect.

Water quality modeling

Mississippi: Water quality modeling approaches and the wasteload allocation program aid the NPDES permitting program and water quality certification program in evaluating and limiting potential and existing dischargers, and ultimately protecting existing uses.

CWA 303(d) listings

Oregon: The state has added impairment listings for drinking water source areas due to high levels of turbidity in order to protect those watersheds.

Pennsylvania: The state typically considers threatened waters to be impaired.

Implementing TMDLs

Connecticut: By keeping TMDLs in any restored waterbodies and planning future TMDLs on a watershed basis, they protect healthy waters.

Illinois: TMDL implementation has protected healthy waters.

Indiana: There is a TMDL for at least one segment that has been restored, and it will continue to apply to that waterbody. Also, a TMDL for a watershed with an endangered species uses a lower target value for TSS to protect the population.

Kansas: Wasteload allocations have helped protect healthy waters.

Mississippi: The wasteload allocation program and water quality modeling approaches aid the NPDES permitting program and water quality certification program in evaluating and limiting potential and existing dischargers, and ultimately protecting existing uses.

Missouri: There are several water bodies for which TMDLs have been developed to address past water quality impairments. These water bodies are now attaining water quality standards, but the existing TMDL is still considered when making permitting decisions.

New Mexico: A “protection” TMDL was developed in 2005 for an unimpaired stream reach that receives effluent from a ski resort. Also, the state usually does not remove TMDLs when a stream reach is no longer impaired, leaving legacy protection in place.

Ohio: TMDLs have included protection strategies and “informational TMDLs” to encourage protection of streams currently meeting their designated uses.

Pennsylvania: TMDLs can include waters that are not impaired as well as those that are impaired.

South Carolina: TMDLs have been used for “protecting” water quality only in cases where a watershed includes both impaired and attaining waters (inclusion of the latter being incidental) and where a waterbody has attained standards after TMDL development.

Tennessee: TMDL reports.

Permitting

Hawaii: Healthy waters are protected through the process of issuing NPDES permits.

Illinois: Issuing NPDES permits that are protective of water quality standards, inspecting facilities for compliance with permits, and enforcing permits protects healthy waters.

Kansas: Permit goals have helped protect healthy waters.

Louisiana: Healthy waters have been protected by ongoing permitting and inspection of point source dischargers under the State’s Healthy Waters Initiative.

Mississippi: The NPDES permitting program and water quality certification program evaluate and limit potential and existing dischargers, in conjunction with the wasteload allocation program and water quality modeling approaches, to protect existing uses.

New Jersey: Category One (C1) waters are implemented via NJPDES rules, per which, new/expanded wastewater discharges must maintain existing water quality of the receiving stream. Discharges upstream of a C1 water must have “no measurable change” at the C1 boundary.

Ohio: The state has issued NPDES permits to protect against water quality impairment, for example, the general construction stormwater permits for the Olentangy River and Darby Creek watersheds include measures to protect the high quality of the streams.

Pennsylvania: Protection is being achieved, in part, through the NPDES and state water quality permitting programs.

Rhode Island: Water quality-based permits for major wastewater discharges including advanced treatment for nutrients.

Nonpoint source BMPs

Connecticut: See Nonpoint source BMPs and Low-Impact Development. In the RPS tool, watersheds with a completed or in-development CWA 319 watershed plan were heavily weighted.

Kansas: Nonpoint source BMPs.

Minnesota: Agricultural watershed BMPs (e.g., livestock management, sediment and nutrient management, shoreland management).

Pennsylvania: Primary protective measures have been BMPs to reduce or eliminate nonpoint source pollution through buffers, manure management and fencing in agricultural landscapes, and forested buffer requirements in forested landscapes.

Rhode Island: Technical and financial assistance for implementation of agricultural BMPs.

Utah: Federal consistency reviews that evaluate the use of BMPs to control nonpoint source pollution from activities on federally administered lands have helped ensure consideration of water quality and consistent and appropriate application of the practices.

Wisconsin: The state has administratively defined best practices for water quality and habitat restoration and protection, and these activities are funded by the Target Runoff Management and Surface Water grants programs.

Financial and technical support

Connecticut: EPA Healthy Waters Grant.

Illinois: Administering the CWA 319 grant program protects healthy waters.

Indiana: CWA 319 funding has supported protection.

Louisiana: Healthy waters have been protected through contributions of the Nonpoint Source Program.

Maryland: CWA 319 grant program; CWA 104(b)(3) grant program; CWA 106 grant program; and state funding to improve waste water treatment plant infrastructure, connect failing systems to treatment plants, and upgrade or replace septic systems.

Michigan: The CWA 319 and CWA 205(j) grant programs are used to develop and implement protection-oriented watershed management plans.

Missouri: Waters will be considered for protection through CWA 319 funds if the entity requesting the funds can provide information showing the value or quality of the water.

Montana: By incorporating protection planning activities into watershed-based plans, CWA 319 grant funds are being allowed to be used for protection; SRF funds have been used to purchase land easements in a source water area (Whitefish).

New Hampshire: Water Quality Planning Grants (annually available to New Hampshire Regional Planning Commissions) and state revolving funds have been used to develop watershed-based plans that protect high quality waters.

Rhode Island: Technical assistance to silviculture operators in implementing practices protective of water quality; technical and financial assistance for aquatic invasive species management.

South Dakota: Section CWA 319 funding and building partnerships in the watersheds are the current avenues for protection.

Tennessee: State Healthy Watershed Initiative grants.

Washington: The Salmon Recovery Funding Board and grant programs, run out of the Governor's Salmon Recovery Office.

Wisconsin: Surface water grants fund partners to foster community-based waterbody management efforts, most of which focused on protection; the Healthy Lakes & Rivers initiative streamlines technical assistance and funding for small, simple BMPs in the shoreland zone.

Prioritization

California: In some instances, water quality control efforts in healthy waters have been given higher priority than similar work in impaired waters.

Connecticut: Watersheds designated for protection are areas that currently meet water quality goals and may be high quality waters or other areas of special concern. Watersheds designated for restoration may contain waters targeted for protection, and vice versa.

Mississippi: The nonpoint source/basin management approach brings together resource agency partners and the public to identify priority issues, including the protection of healthy waters.

Pennsylvania: A qualifier for Tier 3 is ecological significance or uniqueness that is independent of water quality. For example, Serpentine Barrens streams are ecologically unique but their water quality is not very high due to geology and mineral composition.

Planning

Alaska: Conservation action planning.

Connecticut: As part of the IWRM process, CT DEEP identified focus scenarios for water quality planning activities based on current programs and public comments on reports and action plans. Scenarios were evaluated in the context of watershed restoration or protection.

Indiana: Several watershed-based plans include priorities for protection, and the State Nonpoint Source Management Plan includes a protection goal.

Maine: Watershed protection plans developed with CWA 319 and 604(b) Program support.

Maryland: Watershed protection plans; Comprehensive County Growth Plans that include sections to address long-term growth, water resources, and water and sewer planning.

Michigan: Protection-oriented watershed management plans.

Mississippi: The Nonpoint Source Management Plan identifies priority areas for protection that are high quality waters (i.e., outstanding state and national waters), and waters having high recreational or ecological value.

Montana: Habitat Conservation Plans by the Department of Natural Resources and Conservation; the 2017 Nonpoint Source Management Plan incorporates protection of unimpaired/high quality waters into watershed restoration plans.

New Hampshire: Development and implementation of watershed-based plans.

North Carolina: The state has identified several waters for protection plan development through WQ-27.

Ohio: A section of the state's Nonpoint Source Management Plan focuses on high quality waters protection strategies.

Rhode Island: Integrated watershed planning; water supply source water protection plans; state special area management plans in coastal watersheds; strengthened local comprehensive land use planning requirements linked to state protection policy.

Utah: The Great Salt Lake Water Quality Strategy; source water protection zones also are a high priority for protection and involve local-level watershed planning in coordination with drinking water providers and other local, state, and federal partners.

Virginia: The state has developed nine criteria adapted from EPA's Nine Key Elements of Watershed Planning to create Healthy Watersheds Implementation Plans for protecting aquatic integrity.

Wisconsin: The state has produced multiple large-scale conservation plans addressing environmentally sensitive lands and fish and wildlife habitat, and they often intersect with water resource protection.

Programs

Louisiana: Inspection of on-site disposal systems by the Nonpoint Source Program.

Maryland: Program Open Space, which targets land for conservation and restoration.

Minnesota: Programs that promote proper lawn management have been included as protection strategies in WRAPS.

Missouri: Protection occurs through the Source Water Protection Program (focusing on voluntary local efforts to protect drinking water sources) and the Soil and Water Conservation Program (providing financial incentives to landowners to implement certain practices).

New Hampshire: The Certified Salt Applicator Program or Green SnowPro; the Rivers and Lakes Management and Protection Programs, which enlist a state-wide group of volunteers representing a wide array of interests to guide management of the surface waters.

Ohio: The Scenic Rivers Program helps insure that high quality streams are being protected from decline.

Oregon: Some municipalities have protected waters through source water protection programs. The state's Drinking Water Protection Program assists public water systems and communities with protecting their sources of drinking water from contamination.

Rhode Island: Clean Marina Program; marine and riverine debris clean-up programs; used oil recycling and household hazardous waste collection programs; on-site wastewater management programs; programs to promote proper lawn and turf management.

Virginia: The state Healthy Waters Program, a partnership of the Department of Conservation and Recreation, Department of Environmental Quality, and Virginia Commonwealth University, identifies aquatic resources with high ecological integrity for protection.

Washington: The Forest Practices Program.

Functions of other entities

Indiana: TNC is active in high-quality waters protection on a landscape level, and land trusts and other nonprofit groups buy land parcels or help to put conservation easements on vulnerable lands near high quality waters.

Maryland: The USDA Conservation Reserve Enhancement Program (CREP) helps with practices such as buffer improvement and livestock exclusion fencing.

Montana: USFS activities, including road decommissioning; thinning/timber sales that mitigate catastrophic forest fires; coldwater fishery management, including culvert upgrades and removal and efforts to identify future refugia under modeled climate scenarios.

Virginia: The Virginia Coastal Zone Management Program, a network of state agencies and local governments, coordinates and supports a number of coastal resource management initiatives that help protect state waters and their surrounding watersheds.

Specific actions

Hawaii: Funding fencing projects in the upper portions of watersheds (conservation land) to restrict feral ungulate migration.

Maryland: The purchase of conservation easements by the Maryland Environmental Trust.

Michigan: Activities implementing protection-oriented watershed management plans include purchasing conservation easements, developing onsite septic ordinances, developing land-use ordinances (e.g., set-backs), and restoring natural shorelines.

Minnesota: Examples of protection strategies included in WRAPS: land conservation practices such as easements; land use controls and ordinances; septic system upgrades; hydrology management; in-lake plant and fish management; and forestry management.

Montana: Instream flow leasing; irrigation efficiency projects (reducing water use, leaving more instream); land reservations (Federal Wilderness Areas, National Parks and Refuges, State Wildlife Management Areas); conservation easements; and land trust purchases.

Rhode Island: Land acquisition, both for habitat and water supply protection, at local, state, and federal levels; regulation of water withdrawals to prevent stream depletion; pet waste management and outreach; waterfowl management projects.

Virginia: The state's Clean Water Financing program put forth \$34.4 million for land conservation from 2004 through 2018, including 10 projects that purchased land with the intent of protecting and restoring adjacent and downstream waterbodies.

Wisconsin: The state has worked with forestry/paper companies and counties to purchase the development rights on large land tracts (e.g. Brule St. Croix Legacy Forest) to protect high-value habitat, including lakes and rivers.

Education and outreach

Louisiana: Education and outreach by the Nonpoint Source Program.

Maryland: Outreach programs to reduce nutrient and sediment loading.

Wisconsin: More recent waterbody and watershed assessments, including identification of Healthy Watersheds and improved wetland mapping are used for, among other things, educational and outreach purposes.

Tools

Maryland: Stream Health, Stormwater Print, and Greenprint web-mapping and outreach products.

North Carolina: The Conservation Planning Tool, which synthesizes and shares the priorities of the state's conservation agencies and organizations with planners in government and the private sector to inform decisions and guide conservation efforts statewide.

Virginia: Streams have been identified as "outstanding", "healthy", or "restoration candidate" through the Interactive Stream Assessment Resource (INSTAR) and then prioritized to inform land conservation decisions and the Environmental Review of over 2,500 projects.

State laws and policies

Colorado: Watershed protection control regulations for total phosphorus from point and nonpoint sources are in place for four reservoirs; the regulations are reviewed every three years.

Maryland: Forest Conservation Act, Forest Restoration Act, Wetlands Protection Act.

Massachusetts: Stormwater regulation and wetlands regulation have stricter requirements in place for high quality waters (e.g., shellfishing use, ORWs, CWF).

Ohio: The state scenic river law.

Pennsylvania: The state's Clean Streams Law predates the CWA by 45 years.

Rhode Island: Regulatory limits on siting solid and hazardous waste facilities, USTS, and UICs; state wetland regulations that deter alteration of wetlands and protect riparian buffers; strengthened state and local regulatory requirements for stormwater management.

Washington: The Growth Management Act (and critical areas protection within that Act) and the Shoreline Master Planning Act can provide protection to healthy watersheds.

Wisconsin: Various statewide shoreland management regulations establish minimum standards that work to minimize the impacts of development near all waterbodies.

Other

Alaska: The addition of waters to the Alaska anadromous waters catalogue.

Maryland: State Growth Tiers designed for sustainable growth and agricultural preservation; Environmental Site Design for Stormwater Management; Chesapeake Bay Program Goal Implementation Teams (including for stream health, habitat, healthy watersheds).

Minnesota: Stormwater Minimal Impact Design Standards.

Rhode Island: No-discharge zone designations in coastal waters; modernized zoning ordinances that embrace conservation development and low impact development policies.

Utah: Collaboration among land management agencies and the DWQ; the Provo River Watershed Council, which draws on a diverse assemblage of key stakeholders to be a vocal and effective proponent for protecting the watershed.

Story Map Section 9 (The Impact of Antidegradation Policies on Protection):

Do you see state antidegradation policies as a useful tool in implementing protection?

YES: AK, AZ, CA, CO, CT, DC, DE, FL, HI, ID, IL, IN, IA, KS, KY, LA, MD, MA, MI, MN, MS, MO, MT, NH, NJ, NM, ND, OH, OR, PA, RI, SD, UT, VA, WA, WV [include the “sometimes” answers here too: AL, NC, SC]

Have you found antidegradation to be a useful tool in implementing permitting requirements?

YES: AK, AZ, CA, CO, CT, DC, DE, FL, HI, ID, IL, IN, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NJ, NM, ND, OH, OR, PA, RI, SC, TN, UT, VA, WA, WV, WI [include the “sometimes” answer here too: NC]

How have your state’s antidegradation policies and implementation methods caused or otherwise supported the protection of healthy waters?

Alabama: For new and expanded discharges to Tier 2 waters, applicants must demonstrate that the proposed discharge is necessary for important economic or social development.

Alaska: The state adopted and received approval of a revised antidegradation policy in 2018. While the policy is fundamental to the protection of Alaska’s waters, its implementation still being in the early stages makes further elaboration difficult.

Arizona: The antidegradation policies require additional data analysis and restrictions to protect perennial and intermittent waters from significant degradation. New or expanded discharges directly to Outstanding Arizona Waters are prohibited.

California: The state’s antidegradation policies have created an understanding and expectation of good quality water, and that water quality shall not be degraded past 1970s levels.

Connecticut: An existing discharger cannot increase its impacts to a waterbody beyond what is already allocated for in the permit limits and language. Part of antidegradation implementation also is requiring stormwater infiltration for the first inch of a storm event.

Florida: The state’s antidegradation policies help protect healthy waters. The policies are implemented via the permitting programs.

Hawaii: The state’s antidegradation policies are implemented through its NPDES permitting program, helping to maintain the current level of water quality and preventing decisions that may degrade water quality, except for important socioeconomic reasons.

Idaho: The state identifies Tier 2 waters independently by aquatic life or recreation use; waters fully supporting the use are given Tier 2 protection.

Illinois: Illinois EPA’s regulations (35 IAC 302.105(c)) assume that all waters are high quality waters.

Iowa: The state’s antidegradation policies resulted in a list of Outstanding Iowa Waters, and they could form the pool of candidate waters to choose from when selecting protection projects.

Kansas: Antidegradation policy supports protection with expanded or new dischargers as water quality reviews are conducted to ensure water quality will be maintained in the receiving stream, requiring studies and alternatives to be proposed when necessary.

Maryland: The NPDES and Water Supply programs use Tier 2 reviews to modify permit limits or add conditions. Impacts to Tier 2 waters with no assimilative capacity require more review, mitigation, and justification. County comprehensive plans have Tier 2 protections.

Massachusetts: The antidegradation policy provides a tiered review procedure for all new and increased point source discharges requiring a permit, protecting high quality waters, Outstanding Resource Waters, and existing uses in all waters.

Michigan: The antidegradation policy includes the minimum level at which all surface waters should be protected. State water quality standards also include protection for designated uses in high quality waters and Outstanding State Resource Waters.

Minnesota: The lowering of high water quality is prohibited unless the MPCA finds that a new or expanded discharge cannot be avoided (is necessary to accommodate important economic or social change). Where a discharge is allowed, it must be minimized.

Mississippi: All new or expanding discharges (or others as required) must conduct an antidegradation analysis. The antidegradation program also requires a robust alternatives analysis (any feasible alternative to protect existing designated uses must be considered).

Missouri: Degradation of Tier 3 waters is prohibited, except for temporary circumstances. Antidegradation review for Tier 2 waters involves evaluating and adopting technology alternatives, and the review is used to establish the effluent limits (enforced by permit).

Montana: Since the nondegradation policy only applies to newer point sources, and because of very few new point sources in Montana, it does not play a major role in protection. Yet, it will be important moving forward.

Nebraska: Antidegradation really only applies to Class A State Resource Waters, in which certain new activities are prohibited.

New Hampshire: Antidegradation policies (and specifically assimilative capacity modeling aspects) are key to every watershed-based plan developed in the state.

New Mexico: The antidegradation policies ensure that management decisions are based on the status of the state's waters. The antidegradation analysis ensures that water quality is protected and any degradation benefits the economy/development of the community.

North Carolina: Higher class waters (ORW, WS, SA, NSW, and HQ) have various discharge restrictions or require stricter treatment standards. Zero flow stream restrictions apply to oxygen-consuming waste in zero-flow streams.

North Dakota: Typically, antidegradation policies and implementation methods are only applied to NPDES permits.

Ohio: The state has an active antidegradation process to protect existing uses, including exceptional ecological values and outstanding or unique opportunities for recreational boating, fishing, or other personal enjoyment.

Oregon: The antidegradation policies have supported designation of ORWs. The antidegradation implementation policies are being modified to further protect healthy waters.

Pennsylvania: The state has incorporated antidegradation into protected uses through the High Quality and Exceptional Value (equivalent to Outstanding National Resource Water) designations, covering approximately 28% of the state's surface waters.

Rhode Island: The antidegradation policies are applied through the permitting programs (applicable to land development and discharges) in certain circumstances.

South Carolina: The antidegradation policies require an alternatives analysis and justification before new or expanded discharges lower water quality. In addition, there is a maximum 0.1 mg/L DO deficit due to point sources and other activities in naturally low DO waters.

South Dakota: The state has one large nonpoint source protection project. Some lakes and streams in the project area are fully supporting uses, and the financial and technical assistance is an investment towards antidegradation.

Utah: The state's antidegradation policy, specifically antidegradation reviews, ensure that all least-degrading alternatives are considered (and the economic cost balanced against the environmental benefit) when evaluating requests for a discharge permit.

Virginia: Exceptional State Waters (Tier 3) are in a location of outstanding scenic beauty, have exceptional aquatic communities, and/or have superior recreational opportunities. This designation prohibits permanent new or increased discharges from point sources.

Washington: The Department of Ecology assumes that all waters are high quality for Tier 2 protection unless the waterbody is on the CWA 303(d) list. Tier 2 protections are implemented through the NPDES program. There currently is no list of Tier 3 waters.

West Virginia: Any proposed new or expanded regulated activity that would degrade an Outstanding National Resource Water is prohibited, other than temporary lowering of water quality.

Wisconsin: Currently, the state's antidegradation reviews are required for significant new or expanded discharges to any waterbody, whether high quality or not. These policies could be useful for protection, once refined.

Has your state identified Tier 2.5 waters (a level of antidegradation protection between that for “high quality” waters and for Outstanding National/Natural Resource Waters)?

YES: DE, FL, IN, IA, KS, KY, MA, MN, NJ, NC, OH, OR, RI, TN

NO: AL, AK, AZ, CA, CT, DC, HI, ID, IL, LA, ME, MD, MI, MS, MO, MT, NE, NM, ND, PA, SD, UT, VA, WA, WV, WI

No Response: AR, CO, NH, SC, VT

If yes, what prompted development of this new tier, and is the state using this designation?

Delaware: The state has a water class called Waters of Exceptional Recreational or Ecological Significance (ERES), which are the best of what are available in the state. They effectively are Tier 2.5, though the state does not have tiers per se in their regulations.

Florida: The Tier 2.5 classification has been successful at precluding new or expanded discharges.

Indiana: Tier 2.5 waters were identified as part of the state's antidegradation rulemaking procedures. Many of those waters already were designated as “exceptional use” or had special water quality standards related to cold-water species or as recreational waters.

Iowa: The classification was prompted by a desire to highlight good waters, since there were no nationally recognized waters in the state.

Kansas: The classification was developed for waters classified as Exceptional State Waters.

Kentucky: The classification was developed to implement better protection. The state is using it. The implication is that there is to be no zone of initial dilution for Tier 2.5 waters, and the general construction permit requires enhanced BMPs for such waters.

Massachusetts: The state has designated all public water supplies and their tributaries thereto as ORWs. It also has designated areas of critical environmental concern (ACECs), many of those acres being designated as ORWs.

Minnesota: The state's equivalent to Tier 2.5 is the Restricted category of Outstanding Resource Value Waters (ORVWs), which have been designated in rule since 1984.

New Jersey: The state's equivalent to Tier 2.5 is Category One (C1). C1 waters are designated through rulemaking for protection from measurable changes in water quality because of their exceptional nature (water supply, ecological significance, recreation, fisheries).

North Carolina: The state does not label it as such: all ORW waters that are part of federal property where there will never be a point source discharger.

Oregon: The equivalent of Tier 2.5 status was designated for three watersheds that serve as municipal drinking water sources for a large segment of Oregon's population. This status has been used to limit new point sources in these three watersheds.

Rhode Island: Waters were designated as Tier 2.5 as part of major revisions to the state water quality regulations (triennial review) and viewed as an opportunity for stronger protection of those waters.

Tennessee: The classification was prompted by political reality.

Story Map Section 10 (Results of Protection Efforts More Broadly):

Have those protection efforts thus far achieved the intended results? Why or why not?

Yes / Somewhat: AK, CO, KS, LA, ME, MD, MA, MI, MT, NH, NJ, NM, OH, PA, RI, TN, UT, WI

Not Yet Clear: CT, DE, FL, HI, ID, IN, MN, NE, NC, SD, VT, WA, WV

Alaska: On a small scale.

Colorado: The control regulations focus on phosphorus management. Progress is continual and ongoing.

Connecticut: Too early in implementation to tell.

Delaware: It is hard to say one way or the other.

Florida: Yes, although no actions have really resulted from these evaluations.

Hawaii: The project has only recently begun.

Idaho: Our antidegradation implementation policy is still relatively new, so we do not yet know.

Indiana: Unaware of the results.

Kansas: To some degree. These follow-up assessments have not been a priority at this point, due to resources and a focus on assessments in impaired watersheds to measure improving water quality.

Louisiana: Yes, in many cases, but it is uncertain in others because Louisiana does not actively track specific efforts or assessments for healthy waters.

Maine: Yes, most waters are still in attainment.

Maryland: There have been some successes, but using large watersheds for impairment listings makes it hard to separate out good quality waters, and the results of some actions can take decades to be realized. Also, climate change and population growth hurt results.

Massachusetts: All public water supplies are meeting uses.

Michigan: There are documented site-specific improvements in high quality watersheds following BMP projects.

Minnesota: It is too early to assess success. Large variations in weather patterns between monitoring cycles will make this analysis difficult.

Montana: Some protection efforts addressed immediate concerns and accomplished discrete protection goals. However, the state has not looked at the cumulative impact of those projects.

Nebraska: The state does not have data assessments to make this determination.

New Hampshire: Any reduction in nutrient loading to surface waters is seen as a success, and in that respect all of the state's watershed-based plans being implemented have achieved some degree of their intended results.

New Jersey: Yes. The water quality and biological data indicates a direct proportional relationship between the riparian zone and the downstream water quality and biological health.

New Mexico: Overall, success with protection from nonpoint sources remains a challenge due to the watershed-size scale of some problems. Despite the protections afforded ONRWs, it appears that some have degraded.

North Carolina: It is too early to tell.

Ohio: Overall, Ohio's surface waters have improved in attainment of water quality standards.

Pennsylvania: Yes, the protection efforts in most of the protected waters are preventing degradation of the resource.

Rhode Island: Certain protection strategies have been very successful, such as land purchases, water quality-based wastewater permits, infrastructure upgrades, and no-discharge zones in coastal waters. The urban landscape and stormwater are big challenges to protection.

South Dakota: The state is still working on collecting the long-term data to determine effectiveness.

Tennessee: Yes for Outstanding Natural Resource Waters, but it is too soon to tell for TMDLs and the Tennessee Healthy Watershed Initiative.

Utah: Yes, protection efforts (including the consideration of least damaging alternatives and implementation of effective BMPs) have been successful in large measure due to the engagement of key stakeholders and the public support for them.

Vermont: It is difficult to tell, as it is still early in the process.

Washington: The state has not completed analysis of the effectiveness of protection programs/efforts.

West Virginia: It is difficult to say. It is fair to assume that the “advanced BMPs” that are required for stormwater construction activities in and above Tier 3 streams do help minimize the runoff of sediment and related pollutants.

Wisconsin: While Wisconsin has had successes planning for and protecting healthy waters, there is no coordinated strategy with performance measures to evaluate and report results.