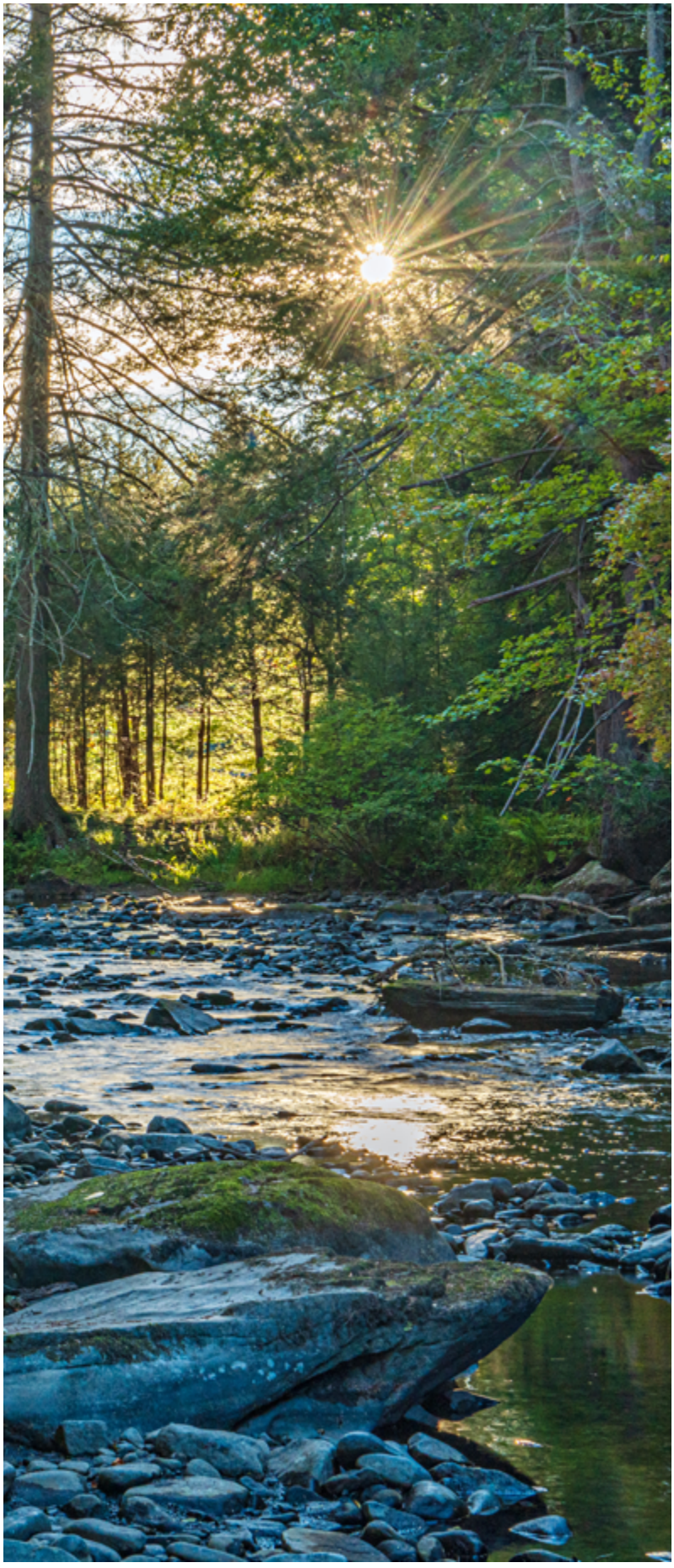
OPEN SPACE INSTITUTE

# Protecting Land for Water Quality

## Strategies for State Nonpoint Source Management Programs

2025



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## CONTRIBUTING AUTHORS


Hallie Schwab (Open Space Institute), Abigail Weinberg (Open Space Institute), Steve Epting (United States Environmental Protection Agency), and Elise Turrietta (United States Environmental Protection Agency – Oak Ridge Institute for Science & Education Fellow)


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## DISCLAIMER


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# Executive Summary

## INTRODUCTION

Nonpoint source (NPS) pollution, or polluted runoff, is the predominant cause of water quality problems in the United States. "Protecting Land for Water Quality: Strategies for State Nonpoint Source Management Programs" was developed by the Open Space Institute through a cooperative agreement with the U.S. Environmental Protection Agency (EPA) to harness land protection as a strategy to advance state-level NPS goals across the United States.

This report provides tools for state NPS staff to learn how other agencies have leveraged land protection strategies to achieve NPS program goals, and highlights current approaches and future opportunities for advancing land protection. The report is intended for use by EPA staff, land trusts, watershed associations, and other state government and non-governmental partners working to protect land for water quality.

## KEY RECOMMENDATIONS

Land protection is a powerful tool to maintain healthy water, ensure the durability of restoration investments, and leverage new partners and funding for NPS outcomes. Although land protection for NPS management is an eligible initiative for federal funding, these funding sources are underutilized. Key recommendations include:

- **Streamline Guidelines and Increase Integration:** Facilitate the development of clear funding guidelines and support further integration of land protection into watershed planning.
- **Foster Collaboration:** Build awareness among state agencies and other stakeholders on the value of land protection for water quality and share best practices from successful state approaches.
- **Expand Resources:** Create centralized NPS program webpages and other resources dedicated to tools and guidance to build the effectiveness of land protection efforts for clean water.
- **Enhance Reporting:** Develop consistent language for Best Management Practices for land protection to support consistent and coordinated reporting on projects and impacts.
- **Leverage Funding and Partnerships:** Identify opportunities to coordinate state NPS programs with aligned funding sources and partner with other agencies and non-governmental organizations to advance land protection projects that impact water quality.

## HOW TO USE THIS REPORT

This guide can be used to:

- Identify opportunities for integrating land protection into NPS programs.
- Learn how other states have successfully incorporated land protection strategies to protect and enhance water quality.
- Develop approaches to land protection for water quality by utilizing and adapting the examples provided in the report.

The report addresses strategies to advance land protection through NPS management efforts at three scales:

- Statewide nonpoint source management program planning
- Watershed-based planning
- Local watershed projects

This report supports state NPS staff in learning from each other through samples of effective language from state NPS management program plans and grant program requests for proposals. It also links to watershed-based plans with strong land protection components and describes a selection of land protection projects completed with Section 319 program funding. The report highlights opportunities and challenges in engaging land trusts and other partners that protect land and offers a robust set of recommendations to guide practice and policy.

## ABOUT THE OPEN SPACE INSTITUTE

Founded in 1974, the Open Space Institute (OSI) is a national conservation leader that has partnered in the protection of 2.5 million acres across the eastern U.S. and Canada. OSI protects land for clean drinking water, public recreation, healthy communities, wildlife habitat, and to mitigate the impacts of extreme weather such as flooding. To date, OSI has granted more than $20 million toward conservation efforts to protect and improve water quality in the Delaware River Basin; a 2024 OSI analysis of that program led to "Protecting Forests for Clean Water," a report quantifying the significant benefits of forest conservation for water quality.

Learn more at openspaceinstitute.org.

# Introduction: Land Protection as a Nonpoint Source Management Strategy

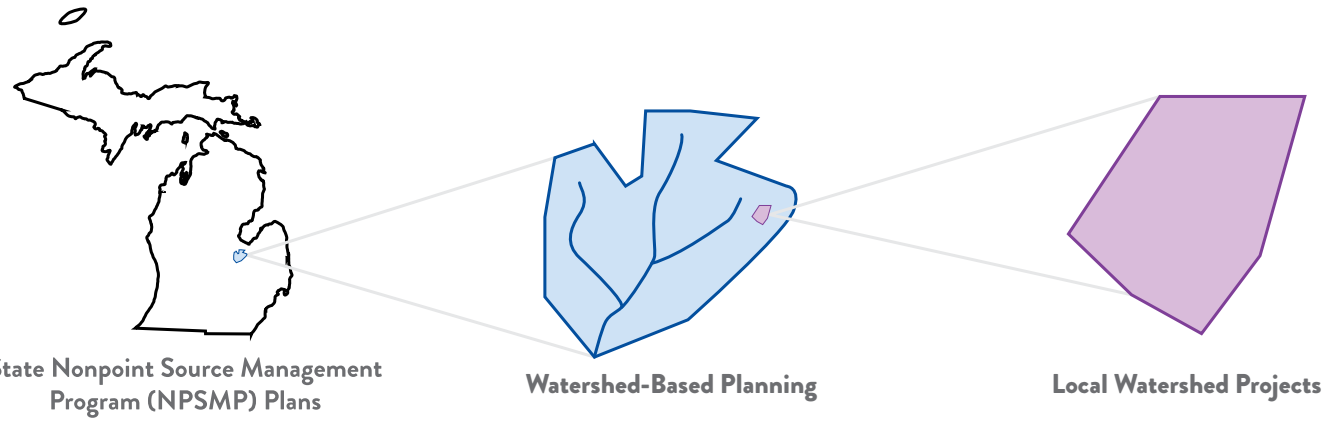
Under Clean Water Act Section 319, the U.S. Environmental Protection Agency (EPA) awards grants to states, territories, and 200+ Tribal Nations to manage nonpoint source (NPS) pollution management programs and implement local projects to restore and protect water quality.

The EPA Nonpoint Source Program and Grants Guidelines for States and Territories identify water quality protection as a national priority by placing "renewed and increased emphasis on actions to protect healthy waters" and providing states greater flexibility to invest Section 319 funding in water quality protection projects (USEPA, 2024a). In the 2024 guidelines, the EPA articulates three ways that water quality protection strategies advance NPS Program goals, specifically by:

1. supporting the durability of investments in restoration and preventing the need for future restoration;
2. helping maintain resilient watersheds; and
3. facilitating proactive strategies to engage partners in efforts to safeguard essential resources like public drinking water supplies.

Land protection can play a key role in both protecting and restoring water quality through NPS management programs. Section 319 funds can, in turn, advance land protection for water quality. States leverage Section 319 funds to support a wide variety of activities to implement their NPS programs, including local planning, project implementation, and NPS monitoring. Per the EPA guidelines, permanent land protection is an eligible use of Section 319 (and non-federal match) funds, providing states the opportunity to support projects involving the purchase of conservation easements or acquisition of fee simple interest in a property, where consistent with the state NPS Management Plan (USEPA, 2024a). This guide expands on existing EPA resources (USEPA, 2024c) to highlight current approaches and future opportunities for advancing land protection through NPS management efforts, from statewide planning to local watershed projects (Figure 1).

**Figure 1. Statewide NPSMP plans inform the development of local watershed-based plans, which help prioritize on-the-ground projects to protect and restore waters (Michigan shown for illustrative purposes).**



## HOW TO USE THIS GUIDE

This guide is meant to be used by state managers and staff interested in incorporating or elevating land protection to achieve NPS program goals. Each section includes examples illustrating how land protection has been incorporated within NPS management work at the state and local levels. Direct quotes are included in blue boxes throughout the document. These examples can provide a starting point and direct you to states that can serve as partners as you develop your own approach. At the end of each section, we identify opportunities for better integrating land protection within the national NPS Program.

# Key Definitions for Integrating Land Protection & NPS Management

**Land Protection** – In this guide, *land protection* refers to a set of strategies to secure land and permanently prevent its development and to ensure long-term stewardship of defined conservation values. Land protection is typically achieved through one of the following mechanisms:

- **Fee Simple Acquisition,** which refers to the transfer of all land rights to an entity with a conservation mission, including a land trust or a state or federal conservation agency.
- **Conservation Easements,** which are voluntary legal agreements that extinguish the development rights while private landowners retain the ownership and certain rights. Conservation easements are held by qualified third parties, such as land trusts, municipalities, or states, which monitor annually to ensure that conservation values are upheld.

**Land Conservation** – *Land conservation* includes a broad set of activities spanning land protection, restoration, and stewardship practices. Land protection is one form of conservation.

**Water Quality Protection** – *Water quality protection* includes a broad range of strategies that maintain good water quality and prevent future pollutant loads, such as land protection, land use planning, and on-the-ground structural practices.

## Find a Land Trust

According to the Land Trust Alliance, there are an estimated 1,400 land trusts nationwide. The Alliance's **Find a Land Trust** web page allows visitors to search for land trusts by name and location. See Appendix of this report for a count of land trusts by state.

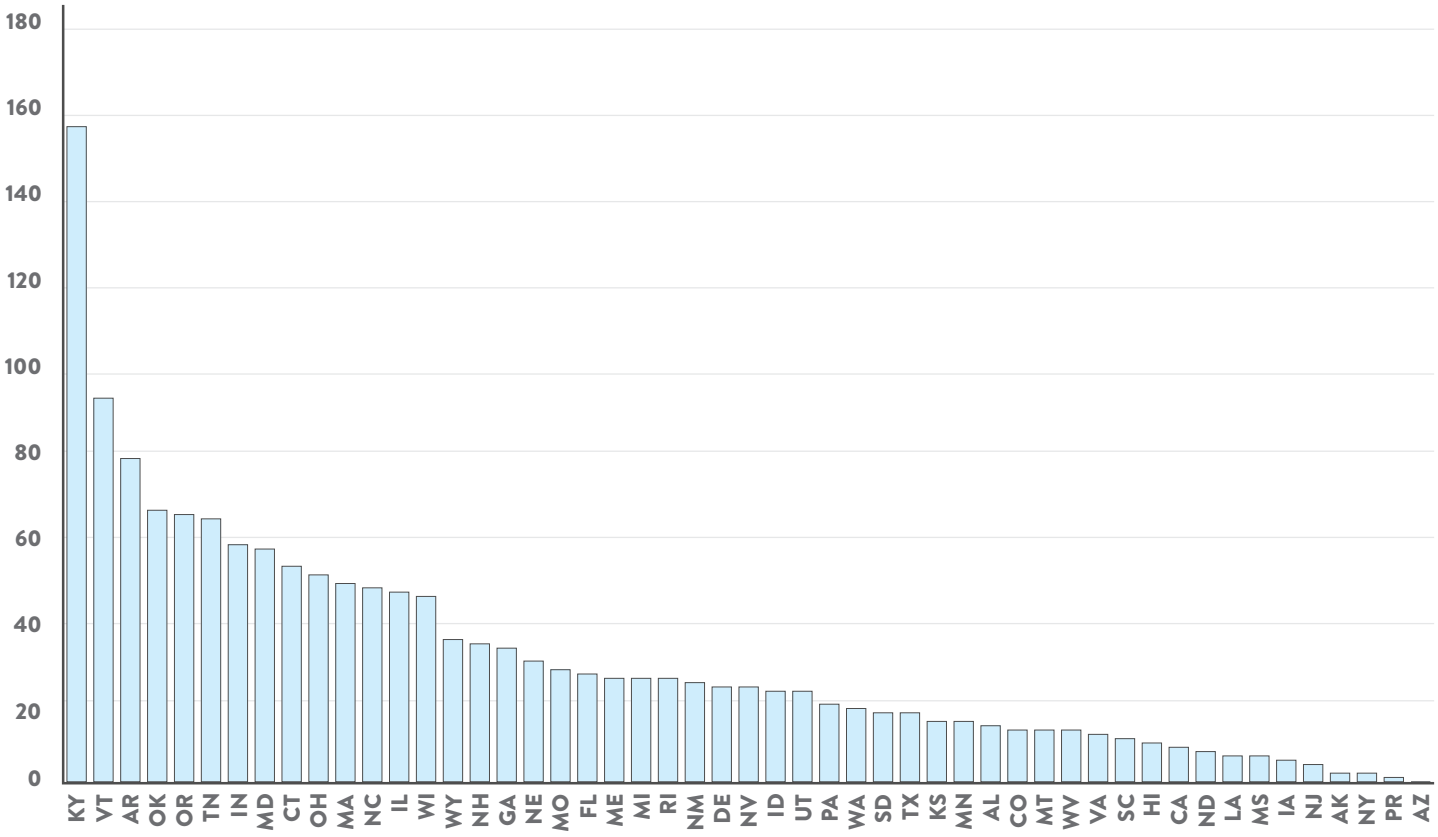
# State Nonpoint Source Management Program Plans

State Nonpoint Source Management Program (NPSMP) plans often include program strategies and partnerships to advance land protection to achieve NPS program goals. In this section, we provide examples of language that identifies land protection as a strategy for achieving water quality protection goals and describes partners that can lead or support this work.

To identify these examples, we conducted a keyword analysis of terms and phrases associated with land protection within the most recently published and EPA-approved state NPSMP plans for all 50 U.S. states and Puerto Rico as of June 2024 (Figure 2).[1]

Based on the keyword analysis results, we reviewed state NPSMP plans and synthesized the themes and examples cited in this report. **Below, we share some examples of how states included land protection as a strategy for achieving water quality protection goals and described partners that can lead or support this work.**

**Figure 2. Count of land protection terms in state NPSMP plans**




1 The following land protection-related terms and phrases were included in total keyword counts: "easement," "acqui*" (for acquire, acquisition), "parcel," "purchas*" (for purchase, purchasing), "land conservation," "land protect," "trust," "conservanc*" (for conservancy, conservancies), "fee," "conservation restrict*," "perpetual."

## Including land protection as a strategy for achieving state water quality protection goals.

### MICHIGAN

Michigan's 2019 NPSMP Plan thoroughly addresses how the program will protect high-quality waters from NPS impairments.

> *Michigan's NPS Program has long recognized the benefits of long-term protection of high quality watersheds especially since the cost of restoration is often much higher than the cost of protection. The NPS Program places a priority on long-term protection projects funded through the pass-through grant process, prioritizes water bodies for protection, and tracks measures of success related to long-term protection of high quality waters.* (p. 24)

Several of the actions laid out by the program in support of this objective, excerpted below, align well with land protection as a Best Management Practice (BMP).

*Short-Term Actions:*

- *I-6-A-1: The NPS Program will support pass-through grant projects to limit the contribution of pollutants to high quality waters due to land development. Also, the NPS Program will estimate and report (via the GRTS) sediment and nutrient load reductions that are prevented from entering high quality waters due to long-term protective measures such as conservation easements, ordinances or other protective actions that limit development of riparian land.*
- *I-6-A-4: NPS Program staff will look for opportunities to work with USEPA staff on their "Healthy Waters Initiative." Specifically, the Program will look for opportunities to develop NPS Program goals and measures of effectiveness associated with protecting the ecological health of high quality waters and watersheds.* (p. 24)

### SOUTH CAROLINA

South Carolina's 2019 NPSMP Plan highlights the multiple benefits achieved through the protection of high-quality waters, including climate resilience, flood hazard mitigation, and reduced drinking water and infrastructure costs, as justification for increasing the relative emphasis on protection over the five-year period covered by the plan. The plan calls out specific NGO and land trust partners with whom the NPS Management Program will work to develop watershed-based plans for watersheds with high-quality waters and notes a prior Section 319 implementation project that focused entirely on conservation easements. Notably, the program creates a mechanism to encourage identification of lands suitable for protection through future Section 319 grant rounds.

> *Going forward, protection best management practices will be required in DHEC [currently SCDES]-accepted WBPs and will thus allow for more protection elements to be eligible for 319 grant funding, ensuring increased protection of state high-quality waters.* (p. 22)

### GEORGIA

Georgia's 2019 NPSMP Plan includes a section on Land Acquisition and Green Space, which cites mounting development pressure and land conversion risk as forces prompting the development of a statewide land conservation plan and establishment of the Georgia Land Conservation Program to provide flexible financing for permanent land protection. The plan notes the alignment between the state's NPS management objectives and the Conservation Program's priority of protecting water quality and lays out long-term goals and activities that would support efforts to further leverage land protection as a water quality protection strategy. These include developing a process and scoring criteria to target land protection for NPS mitigation and mapping conservation lands within priority, impaired, and healthy watersheds.

> ***Long-Term Goal 1:*** *Identify high-value conservation lands, particularly those lands that if put into conservation would have the greatest impact on mitigating nonpoint source*

*pollution and protecting source waters.*

*Activity 1: Support the development of scoring criteria for applications submitted to GADNR under GOSA. Provide additional feedback as requested.*

***Timeframe:*** *Ongoing, initial feedback provided in 2019.*

***Funding:*** *Staff time.*

***Performance measure:*** *Development of a robust scoring metric that takes watershed needs into account when weighing project proposals.*

***Results:*** *Encouraging land conservation near waterbodies can provide water quality benefits by protecting stream buffers and ecosystem function. Incorporation of water quality criteria in land conservation grant programs allows nonpoint source pollution reduction to be one of many land conservation benefits, which also include recreation opportunities.*

***Deliverables:*** *Scoring metrics, summary notes of additional feedback*

***Long-Term Goal 2:*** *Support the creation of a network of linked landscape-scale green spaces throughout Georgia focused on ecosystem connectivity around waterbodies.*

***Activity 1:*** *Collect data about the location and size of lands in conservation on multiple geographic scales, including statewide and basin-by-basin.*

***Timeframe:*** *Through 2024.*

***Funding:*** *Staff time.*

***Performance measure:*** *The development of a map of public lands in conservation, connected to priority, impaired, and healthy watersheds. Summary tables of acres of land in conservation by watershed.*

***Results:*** *GAEPD does not have a current summary of land conservation information as related to waterbodies, let alone priority, impaired, and healthy watersheds. Building this data set is the first step to providing additional feedback and developing future strategies for effective land conservation.*

***Deliverables:*** *GIS map, data tables.* (pp. 70-71)

## OHIO

Ohio's 2019 NPSMP Plan highlights the role of land protection in protecting and restoring riparian habitats, particularly along high-quality streams, and collaboration with other programs to execute protection.

***Goal 2.03.01 – Restore and protect Riparian Habitat***

***Objective 2.03.01(A):*** *Provide financial assistance for the acquisition of conservation easements on riparian parcels adjacent to identified high quality streams, preferably in critically threatened areas identified in approved TMDLs and watershed action plans.*

- *Provide technical and financial assistance for the acquisition of conservation easements on more than 50 acres each year during the 5-year program period.*
- *Facilitate the fee-simple acquisition of 50+ acres of high-quality riparian habitat per year. Section 319(h) grants may not be used to acquire properties so alternative funding sources such as Clean Ohio and the WRRSP programs will need to be identified.*
- *To obtain donated conservation easements (used as match) on at least 50% of the Section 319(h) funded stream and/or wetland restoration sites.* (p. 34)

***Goal 3.03.01 – Increase the protection and restoration of riparian zones along all of Ohio's rivers and streams, but especially along high-quality streams***

*An important piece of Ohio's Healthy Waters Initiative is to increase the protection and restoration of critical high-quality riparian areas. Their benefits are numerous, and this activity represents a cost-effective tool for improving water quality. Several different methods were implemented including the acquisition of Conservation Easements using Section 319(h) subgrant funding and/or increasing eligibility for Surface Water Improvement Funding to be used for easement acquisition. However, a very critical component of Ohio's HWI was the simple acquisition of riparian areas using state funding sources such as Clean Ohio grants administered by ODNR and the Water Resources Restoration Sponsorship Program (WRRSP) administered by Ohio EPA's Division of Environmental & Financial Assistance (DEFA).* (p. 42)

## Highlighting funding programs that can be used to support land protection and key partners to support implementation.

As required by the EPA, state NPSMP plans identify appropriate federal, state, interstate, Tribal, and regional agencies as well as local entities that will be used to implement the state program (USEPA, 2024a). All 51 state NPSMP plans reviewed for this report referenced state, federal, or private funding programs, beyond Section 319, that could be leveraged to advance NPS management goals. Though land protection often was not called out by name, many plans referenced programs that fund conservation easements or fee simple acquisition.

- Among the most frequently referenced federal programs were those under the USDA National Resources Conservation Service (NRCS) that fund conservation easements such as the Agricultural Conservation Easement Program (ACEP), Regional Conservation Partnership Program (RCPP), or Healthy Forests Reserve Program HFRP). The National Water Quality Initiative (NWQI) is a partnership among NRCS, state water quality agencies, and the EPA to coordinate and fund NPS work. In 2019, the scope of NWQI was expanded to include source water protection, offering an additional valuable source of resources.
- Eight states, **Arkansas, Colorado, Connecticut, Kentucky, Minnesota, North Carolina, Oregon,** and **Wyoming**, mentioned the U.S. Forest Service's Forest Legacy program, one of the largest funders of permanent forestland protection in the country, which has protected over 3 million acres. This program, which funds forestland protection projects using conservation easements or fee simple acquisition, includes water quality as an explicit goal and could represent an opportunity for more states to leverage resources from a federal program that is well aligned with NPS management goals.

## Many state NPSMP plans also referenced state funding programs dedicated to land protection.

- **Connecticut** highlighted two state funding sources that have been leveraged for forestland acquisition and noted ways that watershed and NPS staff coordinate with leads at these programs to align concerning shared objectives.

> *CT DEEP has used several funding sources to increase forest preservation holdings including the Recreation and Natural Heritage Trust Program and the Open Space and Watershed Land Acquisition Grant Program. CT DEEP's watershed and NPS staff coordinate with and provide comments to CT DEEP's Open Space and Watershed Land Grant Acquisition Program, and the Recreation and Natural Heritage Trust Program.* (p. 87)

- In **Arkansas**, the Outdoor Recreation Grants Program, administered by the Arkansas Department of Parks and Tourism, funds land acquisition and development of recreation facilities. The state's NPSMP Plan (2018) notes that parks or trails projects proposed near streams, lakes, or other water resources undergo environmental review by the Arkansas Game and Fish Commission's Stream Team (p. 37).
- **Florida's** NPSMP Plan (2021) prioritizes permanent protection of land surrounding first-magnitude springs. The plan reports that 630,230 acres of land surrounding prioritized springs had been secured through the state-funded Florida Forever Program via fee simple acquisition or conservation easements (p. 63).
- **Vermont's** 2021 NPSMP Plan highlighted state-funded programs with a commitment to land and water protection, including the Agency of Natural Resources' River Corridor Easement program (a component of the state's Clean Water Initiative Program) and the Vermont Housing and Conservation Board's (VHCB) Conservation Grants. VHCB requires that projects with surface waters include water quality–related provisions such as riparian buffers and wetland protection zones within conservation easements (p. 108). This river conservation easement program recognizes that rivers are not static and allows easement buffers to move over time along with the river.

## Other states referenced public-private partnerships that advance land protection.

- **Maine's** 2020 NPSMP Plan referenced the Habitat Protection Fund Grant, administered by the Casco Estuary Partnership through a partnership with Maine Coast Heritage Trust, Maine Division of Inland Fisheries and Wildlife, and the U.S. Fish and Wildlife Service's Gulf of Maine Coastal Program, as a source of funding for land acquisition in targeted habitat areas within one of Maine's coastal watersheds (p. 87). Importantly, the grant funds can be used for transaction or stewardship costs to complement larger sources of funding for acquisitions or easements.
- **Indiana's** 2019 NPSMP Plan called out the Healthy Rivers INitiative, led by the Indiana Department of Natural Resources, which aims to protect and restore over 43,000 acres of floodplain in select watersheds to enhance flood storage, water quality, habitat values, and recreational access. Funding for land acquisition and conservation easements has come from a variety of partners, including The Nature Conservancy, Indiana Heritage Trust, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, North American Wetlands Conservation Act, and the state's Lifetime License Trust Fund and Game Bird Habitat Stamps program.

## Some state NPSMP plans also detailed partner agencies and organizations with the resources or expertise to facilitate plan implementation.

- **Kentucky's** NPSMP Plan (2019) contained a particularly robust section on land trusts, describing their role in permanently protecting natural land, including lands with important water resources. The plan included a list of 19 land trusts active across the state and their respective geographies and resources of focus (pp. 79-85).
- **Oklahoma's** NPSMP (2019) included a section titled "NGO Interests and Responsibilities," which highlighted how a specific land trust's work aligned with the state's NPS management goals.

> *Land Legacy provides expertise and experience in real estate transactions and on the ground negotiation for acquisition to aid in NPS pollution control. Land Legacy can act quickly and effectively in coordination with its agency partners to implement those land conservation measures and efforts that will accomplish the agencies' goals and objectives.* (p. 184)

## Recommendations: What would further clarify the role of land protection in the NPSMP plans?

Including a clear rationale and guidelines for how land protection is relevant to NPS goals sets the foundation for highlighting the role of land protection within Watershed Based Plans and Section 319 funding Requests for Proposals (RFPs). It is valuable to specify what types of actions support the plan goals and to introduce other partners and funding opportunities to support this work.

When updating state NPSMP plans, include or strengthen language to ensure that the plan:

- provides justification for fee and/or easement acquisition as a water quality protection strategy and justifies the need for these tools to meet state NPS management goals;
- outlines specific actions that support the implementation of land protection;
- names aligned funding sources and key implementation partners for land protection; and
- highlights approaches, such as pollutant load reductions and NPS Success Stories, for documenting the role of land protection in achieving NPS program goals.

Land protection is an effective way to grow the partners and funding invested in state NPSMP plans, since there are many NGOs and entities that focus on this work, including forestry, wildlife, and natural resource agencies. Members of the land trust community within a state may also serve as effective partners. If NPS programs identify, map, or quantify land protection goals and targets as part of the NPSMPs, or co-create them with land trusts and other partners, those partners can more easily take strategic action toward watershed protection.

You may be able to identify partners by assessing overlap between the state NPSMP plan and land protection program priorities of other agencies based on their Forest Action Plans, State Wildlife Action Plans, or other frameworks. Where possible, explore opportunities for NPS program staff to be involved in priority setting and project review within these agencies and vice versa. Natural resource agencies may value expertise on water quality in their priority setting and project review.

# Watershed Planning

Since the inception of the program in 1987, the EPA's national NPS Program has promoted the watershed approach as a coordinating framework for designing and implementing comprehensive, watershed-based efforts to protect and restore water quality (USEPA, 1987). As described in the Nonpoint Source Program and Grants Guidelines for States and Territories (USEPA, 2024a), the EPA continues to emphasize the role of local watershed planning in guiding successful implementation of watershed projects. Nine-element watershed-based plans (WBPs), typically developed at the 10-digit or 12-digit Hydrologic Unit Code (HUC) level, continue to serve as the primary planning framework in the national NPS Program. In addition, since 2013, the EPA has provided states flexibility to implement Section 319–funded projects in watersheds covered by an alternative watershed plan (i.e., a streamlined version of a WBP). Alternative plans may be permitted in several specific circumstances, including when protecting priority healthy waters (USEPA, 2024a).

You can find examples of WBPs across the country that incorporate land protection as an NPS management strategy to achieve water quality goals. Plans often provide protected lands data in watershed maps, summarize land cover and emphasize the need to protect remaining forest cover, prioritize parcels for protection based on the presence of water resources, and establish land protection acreage targets, milestones, and costs to achieve WBP goals. Below we provide several examples of WBPs developed since 2010 that provide a strong foundation for advancing local land protection efforts (Table 1). These examples were identified through a web search.

**Table 1. Selection of Watershed-Based Plans that Incorporate Land Protection**

| State | Plan Name (Year) | Notes |
|---|---|---|
| CO | Uncompahgre Watershed Plan (2018) | Identifies local partners and programs available to secure conservation easements in riparian buffers, wetlands, and environmentally sensitive areas. |
| CT | Mill River Watershed Based Plan (2018) | Includes several recommended actions to preserve and protect open space. |
| IL | Land Conservation and Water Quality Protection Plan for the Illinois Portion of the Raccoon Creek Watershed (2019) | Builds off existing Total Maximum Daily Load (TMDL) to address nine WBP elements. Identifies priority areas for protection. |
| KY | The Banklick Watershed Based Plan: A Holistic Approach to Watershed Improvement (2010) | Includes milestones and budget cost estimates for conservation easements to achieve plan goals. |
| MI | Coastal Grand Traverse Bay Watershed Plan (2021) | Identifies protection priority areas, as well as local partners and costs needed to achieve specific land protection milestones. |
| MI | Elk River Chain of Lakes Watershed Management Plan (2022) | Includes parcel prioritization for land protection. |
| MI | Black River Watershed Management Plan (2021) | Includes strategic land conservation plan for the Black and Paw Paw River watersheds. |
| NH | Lake Winnisquam Watershed-Based Plan (2022) | Includes milestone targets for number of parcels conserved. |
| NM | Watershed Based Plan for the Mora River – Upper Canadian Plateau (2016) | Includes section on critical area protection, specifically focused on priority wetlands to conserve via easements. |

| State | Plan Name (Year) | Notes |
|---|---|---|
| NY/CT | Ten Mile River Watershed Management Plan (2022) | Includes overview of land protection strategies (easements, Purchase of Development Rights program) and partners that can advance this work. |
| OH | Lower Mosquito Creek Watershed Balanced Growth Plan (2011) | Includes Transfer of Development Rights program overview. |
| OK | Illinois River Watershed-Based Plan (2010) | Identifies local partners and budget cost estimates for conservation easements to achieve plan goals. |
| RI/MA | Barrington-Palmer-Warren Rivers Watershed Plan (2012) | Includes local case studies of completed easements. |
| SC | Watershed Based Plan for the South, Middle, and North Tyger Subwatersheds (2018) | Includes parcel prioritization for land protection. |
| SC | Watershed Plan for the Waccamaw and Great Pee Dee Rivers (2024) | Includes parcel prioritization for land protection. |

## Land trusts can play a key role in watershed planning efforts.

Land trusts can leverage their own conservation plans, staff expertise, and relationships with local communities to help develop and implement WBPs inclusive of land protection. The Land Trust Alliance, the accrediting body for land trusts in the U.S., names strategic conservation planning as a best practice in its Land Trust Standards and Practices. While there is no single broadly recognized standard or format for the land conservation plans developed by land trusts, such plans typically identify land protection priorities within the organization's service area. These areas vary widely in scale and are more often defined in terms of local or regional jurisdictions than by watershed boundaries.

Land conservation plans typically lay out a suite of resource values that the organization seeks to protect. These often include values like clean water, wildlife habitat, farmland, and recreational access. In a typical planning process, land trusts will assess the spatial co-occurrence of these resources on the landscape and identify focus areas or parcel-level targets for land protection, restoration, or other activities. A selection of land conservation plans developed by land trusts is included in the References section of this guide. Land trust staff typically have the legal, financial, or real estate background needed to complete land protection but rarely have deep water quality expertise. This can be a barrier to engaging in watershed-based planning, underscoring the importance of partnering with watershed associations or other local watershed groups.

Drawing on Open Space Institute's experience as a longtime funder of and contributor to land trust plans focused on water quality, the project team reviewed the nine elements of the EPA's watershed-based planning framework and assessed how well the requirements align with land protection and the type of planning done by land trusts. Each element was evaluated according to the degree of alignment, and we noted challenges and opportunities for greater land trust engagement with watershed-based planning. As noted in Table 2 below, the WBP 9-element framework presents both opportunities and challenges for land trusts interested in developing WBPs. For example, while many land trusts prioritize water quality, they tend to focus on broad watershed health indicators, such as acres of headwaters or miles of stream buffer protected, and not the pollutant loads that are the primary currency of the EPA.

West Virginia's Safe Water Conservation Collaborative represents a network of over 25 partners, including land trusts, water utilities, and community groups, working to protect land for drinking water in the Eastern Panhandle of West Virginia. This story map walks through the datasets and approach behind the Collaborative's prioritization model, which identifies the most important parcels to target with land protection efforts.


## Table 2. Nine-Element WBP Framework: Summary of Opportunities & Obstacles to Land Trust Engagement

| Well Aligned with Land Protection | More Challenging Fit for Land Protection | Potential Barrier for Land Protection |
|---|---|---|

| Minimum Elements of a WBP | Comments |
|---|---|
| **Element a.** The identification of causes of impairment and pollution sources. | This type of analysis of pollutant sources and causes is less relevant to protection strategies and is not commonly present in land conservation plans. If the language of this element were edited to assess the "level of pollutants" and data were provided to make the assessment, it may be possible for some high-capacity land trusts to address this within the context of a land conservation plan. |
| **Element b.** An estimate of the load reductions expected from management measures. | Land trusts are generally not accustomed to estimating pollutant load reductions (or loads avoided) from protection unless they are working within a specialized water quality context. Review of a subset of WBPs reveals the use of models like the EPA's Pollution Load Estimation Tool (PLET), but the complexity of these tools is likely a barrier to entry for others. There is a need for simple tools and guidance, as well as EPA-accepted approaches for developing defensible estimates of loads avoided or reduced through land protection. |
| **Element c.** A description of the NPS management measures that need to be implemented to achieve load reductions in element b and a description of the critical areas in which those measures will be needed to implement this plan. | This plan element – which could be addressed through mapping identifying priority areas or parcels for land protection – is well aligned with standard land conservation plans developed by land trusts. |

| Minimum Elements of a WBP | Comments |
|---|---|
| **Element d.** An estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied on to implement this plan. | Land trusts typically lay out this type of information regarding funding needs and sources in land transaction grant proposals. |
| **Element e.** An information and education component that is used to enhance public understanding of the plan and encourage early and continued participation in selecting, designing, and implementing the NPS management measures. | Review of WBPs shows that this element is often addressed through efforts to educate landowners about permanent land protection options. This seems well aligned with how many land trusts already conduct proactive outreach to cultivate project pipelines. |
| **Element f.** A schedule for implementing the NPS management measures identified in this plan that is reasonably expeditious. | This is a standard feature of many land conservation plans developed by land trusts. |
| **Element g.** A description of interim measurable milestones for determining whether NPS management measures or other control actions are being implemented. | This is a standard feature of many land conservation plans developed by land trusts. |
| **Element h.** A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards. | The language of this element is limiting for protection efforts that seek to maintain existing good conditions. It can be challenging to develop meaningful metrics for success in the context of land protection because it entails an avoided impact on water quality. There would be value in building out an expanded set of measures that go beyond reporting on acres protected to provide meaningful indicators of impact on water quality. It would be useful to revise the language to include "maintenance" and offer examples of criteria that are appropriate to measure maintenance of high water quality. |
| **Element i.** A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under element h. | Where permanent protection is achieved through a conservation easement, annual easement monitoring likely satisfies this requirement. |

# Recommendations: How can land protection be better integrated within watershed-based planning?

## Build Collaboration:

- Increase awareness among EPA and state NPS staff and other watershed planners about land protection transactions, costs, and timing mechanics through workshops, webinars, and shared resources.
- Build opportunities to connect land trusts, watershed planners, and NPS staff to coordinate priorities and streamline processes for land protection as part of watershed-based planning.
- Engage watershed organizations to serve as a valuable bridge between clean water programs and land protection.
- Leverage the 9-element planning process to mobilize partner and community support for land protection and broaden its role in WBPs.
- Share tools and resources that can help land trusts identify WBPs that overlap with their service areas.

## Provide Resources:

- Create a centralized EPA NPS Program web page dedicated to land protection featuring resources, case studies, funding opportunities, and tools.
- Develop land protection–focused sections on state NPS program pages highlighting relevant portions of the state plan, supporting resources, and information for land trusts and other implementation partners
- Recommend scoring and prioritization models, including guidance on estimating avoided development impacts and other ecosystem benefits, for targeting land protection to optimize water quality for groups that may not have this expertise or experience.
- Provide funding to help land trusts conduct water-focused parcel prioritization and engage in watershed-based planning.
- Review and revise the descriptions of the 9-element planning process elements in yellow and orange in Table 2, above, to better accommodate relevant measures and outcomes provided by land protection.

# Local Watershed Projects

Local watershed projects, including fee and easement land protection projects, are where the planning comes to life. Per EPA guidelines, states are required to pass at least 50 percent of their Section 319 grant through to local watershed projects to implement watershed plans[2].

Land protection is an eligible use of federal Section 319 funds (USEPA, 2024b). Specifically, Section 319 funds can be used to purchase conservation easements (i.e., land development rights) and "fee" simple land purchases. In addition, Section 319 funds can be used for "transactional costs," which include appraisals, surveys, and other due diligence completed as part of a land protection transaction. Transactional costs represent a relatively small portion of the overall project cost yet are critical to advancing land protection. Section 319 funds can also be used for stewardship and easement monitoring.

Though conservation easements and land purchases are eligible for Section 319 funding under federal EPA guidelines, states and territories have the discretion to determine priorities and state-specific eligibilities for Section 319 and non-federal match funding, consistent with their EPA-approved state NPSMP plans. It is important for states to be clear about whether they are soliciting land protection project proposals in their Requests for Proposal documents and to have clear eligibility information. It is also ideal to offer guidance on how states will measure impact from land protection projects. This section reviews three aspects of land protection projects:

1. Models for how states have described the eligibility of land protection within Requests for Proposals for Section 319 funds
2. Examples of land protection projects that have used Section 319 funding based on practitioner interviews and review of projects in the EPA's Grant Reporting and Tracking System (GRTS) database
3. How states are reporting on land protection projects within the GRTS database.

## Soliciting Land Protection Projects Through State NPS Program Requests for Proposals

In August 2024, we reviewed the most recently available RFPs from 30 state NPS programs to explore how states are soliciting land protection projects. This analysis revealed considerable variation in the manner and extent to which land protection is referenced when states solicit project proposals. These documents vary in length and level of detail, from a single page to several dozen pages of program information and supplemental guidance.

Most states included general language describing the program's objective to restore and protect waters in a manner consistent with the goals of approved watershed-based plans. Many also included references to "water quality protection"; protection of "high-quality," "unimpaired," or "healthy" waters; or projects that "protect watersheds from future impacts." In some instances, states clarified that protection strategies were eligible but had lower priority for funding than projects focused on restoration of impaired waters. It is important to note that "protection" strategies, as defined by the EPA, include a suite of Best Management Practices (BMPs) that is considerably broader than the definition of permanent land protection typically used by land trusts, making it important to clarify whether land

2 To encourage states to leverage additional state or local funding sources or recycled Clean Water State Revolving Funds, states may qualify for an exemption to the 50 percent watershed project funding allocation requirement where additional state and local funding will double the invest-ment in on-the-ground watershed projects (USEPA, 2024a).

## Easing Application Burdens Through Combined Funding Solicitations

The State of Washington's Water Quality Combined Funding Program provides a single application through which applicants can apply for funding, including Section 319 grants, for projects that improve or maintain water. The program also provides technical assistance to help applicants complete the application process. Such a model reduces barriers to accessing clean water programs, making funding more accessible to nontraditional applicants like land trusts and other groups that may be advancing land protection projects.

protection through fee and easement acquisition is eligible.

Few RFPs mentioned whether conservation easements, land purchases, or fee acquisitions were eligible for funding through the state NPS management grant program, leaving this unclear to potential land trust partners and other interested parties.

- Six states, **Ohio, Delaware, Missouri, North Carolina, New Jersey,** and **Wyoming,** clearly stated that purchase of land or real property was ineligible for funding.
- Eight states included the word "easement" in their RFPs.
  - Two states, **Michigan** and **South Carolina**, clearly stated that land protection through a conservation easement was an eligible use of Section 319 program funding.
  - **Delaware** indicated that Section 319 funding could not be used for purchase of easements or acquisition of land, but that these activities could be counted as a match in some instances.
  - **Nevada's** 2024 RFP specifically called out interest in Watershed Based Plans aiming to incorporate or coordinate implementation of conservation easements.
  - The references to easements in the other four states were not focused on conservation easements as a form of permanent land protection but were included in the context of historic preservation or accessing a property for installation of other BMPs.

- One of the strongest examples of language related to land protection was seen in the RFP from **Michigan**. **Michigan's** nonpoint source program RFP (2023) included an entire section on land protection projects that "*prevent NPS pollution due to land use changes that may impact water quality*." Permanent conservation easements and development of local conservation ordinances were offered as examples of past funded projects. The document provided further clarification on the expected focus and reporting measures for protection projects in addition to other details about requirements for applicants and how projects would be evaluated.

  - *Projects must be primarily based on preventing future water quality impacts from nonpoint source pollution but may also consider secondary factors such as endangered species.*
  - *Applicants must provide reporting measures directly related to the watershed management plan goals and water quality conditions addressed by the proposal. For example, a proposal intended to address phosphorus and sediment impacts to designated uses must project phosphorus and sediment loads that will be avoided by the proposed project.*
  - *Proposed conservation easements must be selected based on potential water quality benefits and must permanently protect the proposed area.*
  - *NPS Program staff will inspect all proposed easement sites prior to signing a grant contract.*
  - *Proposals including conservation easements that will be paid for or used to match NPS Program funds must provide maps and aerial images showing each parcel of interest overlain with a proposed easement boundary.* (pp. 7-8)

Michigan's RFP further specified the kind of outcomes required of protection projects, emphasizing the importance of quantifying benefit to water quality and/or working toward targets established in a watershed management plan. Projects in this category are required to produce one or more of the following outcomes:

1. *Result in measurable water quality improvement at NPS impacted sites in high quality watersheds.*
2. *Achieve or make substantial progress toward achieving the land use protection targets of an approved watershed management plan. This can include perfecting permanent conservation easements or enacting changes to local ordinances or zoning.* (p. 12)

Additionally, the RFP clearly laid out where protection fell within the state's funding priorities, including in the highest-priority Tier 1 projects with "measurable water quality improvement at NPS-impacted sites in high quality watersheds" and those that "achieve or make substantial progress toward achieving the land use protection goals of an approved watershed management plan through permanent easements or changes to local ordinances/zoning" (p. 13).

## Recommendations: What would further clarify the eligibility of land protection in Requests for Proposals?

Because of the EPA's historic and ongoing focus on restoration of impaired waters, applicants may not be aware that land protection is eligible for funding. Where states are interested in soliciting proposals with a land protection component, it is essential to:

- clearly specify in the RFP whether land purchase, conservation easements, or costs associated with permanent land protection, such as transaction costs, are eligible for Section 319 funding;
- where permanent land protection is eligible for grant funding, provide applicants with clear guidance on how to develop a proposal that meets program requirements; and
- offer guidance on how to measure the water quality benefits of protection projects.

## How have Section 319 and match funding been used to advance land protection?

### 1. Conservation Easement Purchases

Some state programs have used Section 319 grants or non-federal match funds for the purchase of conservation easements, either as a stand-alone BMP or in concert with other practices.

- **Michigan's** Battle Creek River Watershed Protection, Phase 2 project (2017) supported the Southwest Michigan Land Conservancy in completing three conservation easements, protecting a total of 321 acres. The Conservancy purchased two of these easements using Section 319 funds, and the third easement was donated by the landowner, providing a source of match funding. Together, the easements protect nearly a mile of frontage along the Wanagoda Creek and will avoid potential future loads of nutrients and sediment entering the creek on an annual basis. The Wanagoda Creek sub-watershed had been identified as a high priority for protection within the Battle Creek Watershed, and these specific properties had been identified as high priorities for protection in the 2015 Kalamazoo River Land Conservation Plan. The project report underscored the land trust's ongoing role in ensuring the project's sustainability through annual easement monitoring and the creation of a Water Quality Management Plan laying out opportunities for further water resource protection practices on the conserved properties.

- **Iowa's** Black Hawk Lake Watershed Project - Conservation Easement project (2010) supported the Sac County Conservation Board in placing a conservation easement on 39.7 acres of land containing 3,850 feet of streambank and 15 acres of highly erodible land. The project report emphasized the property's risk of development or conversion to row crop production and provided an estimate of the pollutant loads avoided through permanent protection, stating, "If the 39.7 acre parcel were converted to row crop, which could happen without the easement, erosion from the property could increase by 258 tons per year and sediment delivery to Black Hawk Lake could increase by over 10 tons per year. Phosphorus delivery could increase by over 21 pounds per year." The easement contains provisions that restrict uses that would be incompatible with the project's goals around reducing pollutants to waterways, including prohibitions against altering or manipulating wetlands, altering vegetative cover, crop protection, or grazing livestock.

Several states, Vermont, Michigan, Ohio, South Dakota, and North Carolina, reported projects supported by non-federal match dollars to GRTS that included conservation easements.

- **Vermont's** Wild Branch Easements (2012) protected 22.5 acres through a river corridor easement held by the Vermont River Conservancy. The project was completed with $68,270 in state funding and reported to GRTS as a match-only project. In providing the rationale for the water quality benefits of the project, the subgrantee explained, "This section of the Wild Branch has a very high sensitivity to channel adjustment and is a high priority for conservation due to the value of this area for sediment attenuation and natural floodplain development."
- **Michigan's** Grand Traverse Bay Watershed Protection - Match Project (2006) leveraged $1,621,403 in state and local funds to acquire conservation easements on three properties within the Grand Traverse Bay Watershed. The project description noted, "The easements protect vital headwaters, tributaries and wetland buffers which play a critical role in protecting water quality of this unique watershed."

## 2. Land Protection Transaction Costs

In several states, applicants used Section 319 grants to cover "transaction costs" or administrative and legal due diligence fees associated with the completion of conservation easement or land acquisition projects. These expenses may include project development and initiation fees, surveys, appraisals, baseline documentation, environmental assessments, title search, recording fees, and other closing costs.

Given the limited funding allocated through the Section 319 program, funding transaction costs, rather than the full price of an easement or land purchase, may be an effective way for states to facilitate land protection projects with a more modest investment of Section 319 funds.

- **South Carolina's** Lake Keowee Watersheds Project (2022) combined elements of protection and restoration to address issues related to bacterial, nutrient, and sediment pollution in the Lake Keowee Watershed. The project set goals of repairing 50 septic systems and permanently protecting over 150acres of land within the watershed through conservation easements. Project partner Upstream Forever used Section 319 funds to cover transactional costs such as baseline assessments, surveys, closing fees, wetland delineation, and Phase 1 Environmental Assessments needed to secure two conservation easements on private land.

## 3. Land Purchase or "Fee Simple" Acquisition

We found several instances of Section 319 grants used for the fee simple purchase of land to be permanently held by a land trust or public entity for a conservation purpose.

- **Kentucky's** Banklick Creek: Wolsing Woods Wetland Construction project (2017) was a partnership between the Banklick Watershed Council and the Kenton Conservancy. The focus of the Section 319 grant was originally on the construction of a wetland on the

Wolsing Woods property; however, unanticipated cost savings on the restoration presented an opportunity to secure additional land protection within the Banklick Creek Watershed. The partners were able to reobligate a portion of the Section 319 grant to purchase 56 acres of wetland, floodplain, and upland forest just upstream from Wolsing Woods. The acquisition represented the last piece of an assemblage that completed the vision of aggregating 100 acres of land as part of the Brushy Fork Nature Preserve, held and managed by the Kenton Conservancy.

## 4. BMP "Stacking" or Layering Conservation Easements with Other Best Management Practices

We found many examples where conservation easements were paired with other restoration or protection BMPs in a single project. Layering multiple BMPs can provide a means to deepen impact or address more than one pollutant source.

- **South Carolina's** Three & Twenty Creek Watershed BMP Implementation Project (2020), led by Upstate Forever, combined multiple BMPs to achieve the goals of reducing bacteria, nutrient, and sediment pollution and preventing pollutant loading that would result from development. The specific practices employed included the repair and replacement of septic systems, streambank restoration, restricting livestock access to waterways, improving cropland management, and the protection of 100 acres of land via conservation easements. The land trust cites increasing development pressure projected in the region in coming decades and identifies the properties that are the subject of this project as those that would have an outsized negative impact on water quality if developed. The project reporting goes on to explain, "These priority parcels tend to be larger tracts containing or adjacent to important waterways and upstream of reservoirs. Developing these properties would reduce the watershed's natural absorption capability, leading to significant increases in runoff and impacting flood behavior."
- **West Virginia's** Back Creek Watershed Protection project (2016), led by the West Virginia Conservation Agency, paired 155 acres of conservation easements on priority agricultural parcels with 915 feet of natural channel restoration and 1,100 square feet of porous pavement. The restoration of an eroding streambank resulted in measurable reductions in sediment, while the project's location within a high-quality watershed rendered it a priority for protection as a strategy to avoid further degradation.

The addition of a conservation easement can also be a tool to provide a measure of durability or permanence to investments in restoration. Some state program guidance or RFPs require conservation easements on private lands where restoration will occur.

- According to a practitioner in **Minnesota**, per state program guidance, applicants are not permitted to use Section 319 program funding to purchase conservation easements but are required to demonstrate that permanent easements are in place to receive Department of Natural Resources funding for restoration projects on privately owned land.
- Similarly, the 2024 Section 319 funding RFP in **Ohio** indicates that "environmental covenants for at least the useful life of the installed conservation practice are required for conservation installations done on private property" (p. 6). The guidance further specifies that Section 319 funding cannot be used to compensate landowners for reduced property value associated with the environmental covenant, but that "certain administrative costs" accrued while establishing the covenant may be eligible for funding. Outright (fee simple) purchase of land with Section 319 funding is explicitly forbidden.

# Recommendations: How can Section 319 and match funding be used more effectively to advance land protection?

States have developed a range of creative ways to deploy Section 319 and match funding for land protection as an NPS strategy. Often 319 funding is not sufficient on its own to advance large land protection projects. The following recommendations could facilitate efforts to share successful models and strengthen the infrastructure, funding, and reporting mechanisms needed to support these approaches:

- Leverage EPA NPS Success Stories to highlight the role that land protection projects have played in restoring (Type 1 stories), improving (Type 2), and protecting (Type 4) water quality.
- Feature land protection as a water quality restoration and protection strategy in national training or webinar series, such as EPA's Healthy Watersheds Learning Exchanges, Nonpoint Source Pollution Technical Exchange Webinars, or Watershed Academy.
- Create opportunities for states to discuss obstacles and opportunities to advance land protection to achieve program goals, such as at national and regional NPS training workshops.

## How are states reporting on land protection projects in the Grants Reporting and Tracking System?

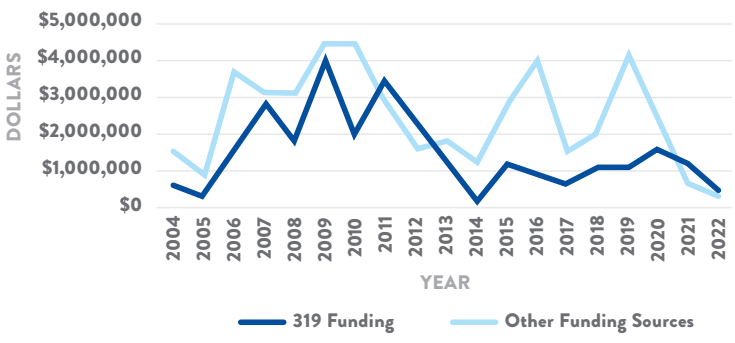
The EPA's Grants Reporting and Tracking System (GRTS) houses information on where NPS projects are being implemented, describes how effective projects are at meeting goals, and highlights success stories. States are required to report Section 319 and match-funded projects to GRTS. The information available in GRTS is likely an undercount of land protection projects supported by the national NPS Program due in part to limitations on how GRTS currently tracks these projects. In addition, state NPS programs frequently leverage additional funds for NPS work beyond the required non-federal match that is not required to be reported to GRTS. Further, the definition of a "project" is flexible enough that multiple easements or land transactions may be grouped under a single source, leaving uncertainty about the size and cost of individual land protection projects.

Between 2004 and August 2024, 18 states reported a total of 131 projects containing 958 conservation easements as a BMP to GRTS. These projects protected a total of 102,154 land acres and were supported with a total of $27,180,130 from the Section 319 program and $45,560,211 in funding from other sources.

Two states, **Michigan** (44) and **Ohio** (39), led the field in terms of the number of projects submitted to GRTS, followed by **Iowa** and **Vermont**, which had the next two highest project counts of 7 each. Five states have protected more than 1,000 acres: **South Dakota** (74,240), **Michigan** (12,635), **Kansas** (8,000), **Nebraska** (2,267), and **Oklahoma** (1,168). A subset of projects in **Vermont**, **Michigan**, **Ohio**, **South Dakota**, and **North Carolina** in the database used no Section 319 funding but were completed using other state or local funds and submitted as match or other leveraged funds.

The number of projects in GRTS containing easements peaked in 2009, with 14 projects. That year, projects containing easements received nearly $4 million in funding from the Section 319 program, the most in any year (Figure 3). The most land was conserved though easements in 2013, with the protection of 72,814.76 acres through eight projects.

**Figure 3. Section 319 funding and match or other leveraged funds for projects with conservation easements, 2004-2022**



# Recommendations: What would improve the accounting of land protection in the national NPS Program?

Insight into the impact and use of land protection as a water quality strategy is obscured in part by the lack of consistent language and reporting on these projects. The limited repertoire of BMPs available to identify land protection projects hampers the ability to pool and report on overall impacts from land protection.

We recommend developing consistent language for BMPs for land protection practices, including conservation easements, fee acquisition, and transactional costs. This will help account for and report on land protection achieved with Section 319 funding and projects that are advanced through matching sources.

To more effectively assess the costs and benefits of these projects, it would help if GRTS provided the ability to track how much funding goes into these specific practices. Land protection projects often take one to two years to be completed, and the acreage under protection may evolve during that time. Ensuring the final acres protected are updated in the system at the end of the project will help ensure the project impact is accurately reported.

We further recommend improving existing options for how land protection impact is evaluated, ensuring audiences understand these options, and developing additional metrics to ensure the full value of the projects is accounted for within the national NPS Program:

- Develop and recommend clear and appropriate measures to integrate land protection into watershed planning, including simple measures of stream miles, wetlands, and headwater acres protected. These measures are strongly correlated with water quality and are not considered part of pollutant load models.
- Report additional ecosystem service benefits, including the habitat, carbon, and recreation benefits of land protection projects, to express the full value of these projects. InVEST is a popular calculator that could be used to estimate these values.
- Develop easy-to-use estimates of avoided pollutant loads per acre of expected forest loss to create a ready-made approach for translating development risk into pollutant load avoided.
- Provide training on the use of publicly available data and tools that estimate watershed pollutants, such as the Pollutant Load Estimation Tool (PLET) and Model My Watershed, to ensure they are accessible and their application to land protection is understood by conservation actors.
- Identify the most suitable models for assessing long-term development trends, and incorporate land cost and parcel size to avoid directing protection to areas that may be more appropriate for infill development.
- Provide one-on-one technical assistance to land trusts, and encourage evolution of programs addressing obstacles.

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# Appendix: Count of Land Trusts by State

Source: Land Trust Alliance (May 2025)

| EPA Region | State | # Land Trusts |
|---|---|---|
| 1 | Connecticut | 101 |
| 1 | Maine | 71 |
| 1 | Massachusetts | 124 |
| 1 | New Hampshire | 27 |
| 1 | Rhode Island | 30 |
| 1 | Vermont | 30 |
| 2 | New Jersey | 30 |
| 2 | New York | 107 |
| 2 | Puerto Rico | 1 |
| 2 | Virgin Island | 2 |
| 3 | Delaware | 4 |
| 3 | District of Columbia | 5 |
| 3 | Maryland | 44 |
| 3 | Pennsylvania | 85 |
| 3 | Virginia | 31 |
| 3 | West Virginia | 12 |
| 4 | Alabama | 12 |
| 4 | Florida | 34 |
| 4 | Georgia | 26 |
| 4 | Kentucky | 12 |
| 4 | Mississippi | 5 |
| 4 | North Carolina | 38 |
| 4 | South Carolina | 22 |
| 4 | Tennessee | 15 |
| 5 | Illinois | 30 |
| 5 | Indiana | 24 |
| 5 | Michigan | 34 |

| EPA Region | State | # Land Trusts |
|---|---|---|
| 5 | Minnesota | 6 |
| 5 | Ohio | 33 |
| 5 | Wisconsin | 41 |
| 6 | Arkansas | 4 |
| 6 | Louisiana | 5 |
| 6 | New Mexico | 6 |
| 6 | Oklahoma | 4 |
| 6 | Texas | 36 |
| 7 | Iowa | 5 |
| 7 | Kansas | 4 |
| 7 | Missouri | 18 |
| 7 | Nebraska | 6 |
| 8 | Colorado | 24 |
| 8 | Montana | 12 |
| 8 | North Dakota | 0 |
| 8 | South Dakota | 1 |
| 8 | Utah | 8 |
| 8 | Wyoming | 3 |
| 9 | Arizona | 15 |
| 9 | California | 158 |
| 9 | Hawaii | 7 |
| 9 | Nevada | 2 |
| 10 | Alaska | 8 |
| 10 | Idaho | 13 |
| 10 | Oregon | 23 |
| 10 | Washington | 38 |