



Subject: Delaware River Watershed Initiative Survey Summary

Together with, and on behalf of its Delaware River Watershed Initiative (DRWI) partners, NFWF engaged Rutgers University's Edward J. Bloustein School of Planning and Public Policy (Bloustein) to conduct a survey in 2019. The survey population was comprised of three target groups: (1) 47 organizations that are funded by the NFWF DRWI program to implement water quality restoration and land protection projects (cluster or member organizations); (2) 969 organizations that implement water quality restoration and land protection projects but that do not receive funding or technical support as part of the DRWI project (non-member organizations); and, (3) 337 organizations that assist other entities (through funding, technical guidance, or other "hands on" assistance) with implementing water quality restoration and land protection projects but that don't own or operate such restored or protected lands themselves (assisters or consulting organizations). The purpose of the survey was to determine whether information about the water quality restoration and land protection practices funded by DRWI was reaching people beyond the clusters' targeted implementation areas and if that awareness leads to subsequent adoption. To encourage frank and open disclosure by survey participants, the answers were confidential, meaning that the identity of participants would not be shared with NFWF or its affiliates.

Delaware River Watershed Initiative
Restoration and Land Protection Practice Diffusion
Survey



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for the
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The Environmental Analysis and Communication Group (EAC) of the Edward J. Bloustein School of Planning and Public Policy (Bloustein) is a multidisciplinary team of researchers and practitioners that advances strategies and approaches designed to build communities that are healthier, greener, equitable, resilient, and more prosperous. Through research, technical assistance to communities and decision-makers, policy analyses, and facilitation of collaborative and participatory efforts, EAC develops and deploys evidence-based strategies that inform planning, policies and decision-making at the state, regional and local levels.

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“The more people – especially decision makers – hear and learn about effective clean water and stormwater management strategies and initiatives, the more accepted (and better understood) they become. It’s very important to keep getting the word out.”

Comment from survey participant

Executive Summary

The [Delaware River Watershed Initiative](#) (DRWI) was launched in 2014 with a goal to improve water quality in targeted geographies of the Delaware River Watershed. The DRWI enables highly coordinated efforts of more than 50 watershed restoration and conservation organizations to invest in projects that restore and protect water quality in targeted headwaters—and then assess the impact of those efforts. Through the [Delaware River Restoration Fund](#), the National Fish and Wildlife Foundation (NFWF) and its partners in the DRWI invest in agriculture-related conservation, green stormwater infrastructure, and stream restoration projects to improve water quality. DRWI targeted geographies and associated organizations are broken down into eight subwatershed “clusters” in which water quality improvement work is focused. It is the intent of the program that information about those restoration activities spreads throughout the entire cluster and extends beyond cluster boundaries, eventually leading to adoption of those activities across the Delaware River Watershed.

Together with, and on behalf of its DRWI partners, NFWF engaged the Bloustein team to conduct a survey to determine whether information about the funded practices (see below sidebar for Practices) is indeed reaching people beyond the clusters’ targeted implementation areas and if that awareness leads to subsequent adoption. The primary purpose of the survey was to find out if organizations that are not DRWI cluster members have undertaken restoration and land protection efforts in or near the DRWI cluster and Delaware River watershed boundaries, and the extent to which any knowledge and uptake of practices has diffused from communication from or collaboration with DRWI members. The survey also examined factors that might facilitate or hinder knowledge transfer or practice uptake. The Bloustein team utilized Qualtrics Survey Software for design and distribution of the online survey instrument to target organizations from the DRWI cluster membership (members), similar organizations that are not members (non-members), and organizations that assist with restoration practice implementation (assisters), such as extension services and consultants (see below sidebar for Respondent Types). The overall response rate for the survey was 19% with 260 surveys returned out of 1,355 surveys sent. Cluster members had an exceptional return rate of 92%.

Highlighted key takeaways of the survey were:

- Organizations were most familiar with and have implemented more practices related to stream quality improvements, stormwater management and land protection than the other practices.

- DRWI funding seems to have been more important in spurring implementation of in-stream practices and agricultural best management practices than for other practices.
- Collaborating with DRWI seems more important for non-member organizations planning to implement in-stream practices and wetland or vernal pool restorations.
- In-person meetings, conferences/seminars and websites were ranked as the most important ways for all survey respondents to learn about water quality restoration and land protection practices.
- Funding is by far the most important resource needed to help organizations to implement projects, followed by in-house personnel, technical guidance, and outside expertise.
- Almost all responding organizations agree that promoting DRWI-funded projects can help advance water quality restoration and land protection in the Delaware River basin.

Major findings within areas of questioning were:

Familiarity with Practices

- Among all respondents, there was greatest familiarity with stream quality improvements, stormwater runoff management, and land protection practices.
- Non-members were least familiar with all practices among the three sub-groups.
- A high percentage of member organizations reported that they included all listed practices in their strategic plans.

Implementation and Funding

- Stream quality improvements and stormwater runoff management were the top practices implemented among all groups.
- Land protection was the next most prevalent practice for members and non-members. Assisters' next most common practices to help in implementing were stormwater retention basins and in-stream practices.

Practices

The survey team worked closely with NFWF to select and describe the following seven water quality restoration and land protection practices that were explored throughout the survey.

- Agricultural management best practices to improve water quality including manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion
- Stormwater retention basin retrofits including installation of bioretention basins and bioswales
- Stormwater runoff management including green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches
- In-stream practices to reduce velocity or reconnect stream to floodplain including gravel bars and floodplain benches
- Stream quality improvements including riparian buffer restoration, streambank stabilization, and livestock exclusion
- Wetland or vernal pool installation or restoration
- Land protection to improve water quality through easement or acquisition

- The top three practices planned (or planned to assist with) were stream quality improvements, stormwater runoff management, and land protection practices.
- Non-members indicated that the cost of implementation was the key challenge for all practices except for agriculture and in-stream practices.
- For practices that non-member organizations have not implemented, they reported it was primarily because of the cost and need for technical expertise and staff capacity. Complexity, experimental nature, and timeframe are less significant barriers to implementation.
- A majority of member organizations used DRWI funding for all practices except stormwater retention basin retrofits, and wetland or vernal pool installation or restoration. For non-members, the highest percentage of reported use of DRWI funding for practice implementation was for in-stream practices and agricultural best management practices. We can infer that although these two practices were not among the most commonly implemented, DRWI funding seems to have been more important in spurring implementation of these practices than for other practices.
- For non-member organizations, more than a third plan to use DRWI funds for planned stream quality improvements, in-stream practices, and for land protection practices.

Information Sharing and Collaboration

- In-person meetings, conferences/seminars, and websites were ranked as the most important ways for all survey respondents to learn about water quality restoration and land protection practices.
- Member organizations found in-person meetings and conferences significantly more important than assisters and non-members did.
- Cluster members report the highest proportion of targeting communications about projects to local and county government officials, and to residents and land owners/managers. They are least likely to share

Respondent Types

The survey population was comprised of three target groups:

- **Cluster member organizations** that are funded by the NFWF DRWI program to implement water quality restoration and land protection projects
- **Non-member organizations** that implement water quality restoration and land protection projects but that do not receive funding or technical support as part of the DRWI project, and
- **Assister organizations** that assist other entities (through funding, technical guidance, or other “hands on” assistance) with implementing water quality restoration and land protection projects but that do not own or operate such restored or protected lands themselves.

information with faith communities, farmers, and land trusts.

- A high percentage of member organizations reported sharing information about all their practices.
- For non-members, more reported learning about in-stream practices, wetland or vernal pool restoration or installation, and land protection from DRWI-funded projects than about other practices.
- Almost a quarter of assisting organizations learned about agricultural best practices from DRWI-funded projects.
- Member organizations reported that the primary methods of distributing information are in-person consultation, and posting on websites and social media.
- Non-members learned about the practices they implemented from a DRWI-funded project most often through in-person meetings/consultations, through conference/seminar presentations/info tables, or through targeted e-mail.
- Smaller organizations were more likely to report that they learned about land protection from DRWI than were larger organizations.
- Members reported a high degree of collaboration (about 85% or more) in the implementation of all practices except for wetland or vernal pool restorations, and stormwater retention basin retrofits.
- Only 15 percent of non-members report known collaboration with DRWI organizations, but more than a third of assisters said that they collaborate with DRWI organizations.
- The group of practices most positively influenced by collaboration with DRWI organizations among non-members was agricultural practices.
- For planned practices, collaboration was important at a significant level for those planning in-stream practices and wetland or vernal pool restorations.
- The most referenced types of practices that all groups wanted to learn more about were stormwater management practices followed by stream quality improvements.
- Cluster members were most interested in learning more about in-stream practices.
- Non-members wanted more information about stormwater management and stream quality improvements.
- Assisters were interested in learning more about agricultural BMPs, funding, land protection measures, and stormwater management.
- Member organizations reported a high degree of collaboration (about 85% or more) in the implementation of all practices except for wetland or vernal pool restorations, and stormwater retention basin retrofits.

- Over 100 unique entities were listed by cluster member organizations as collaborating with them on water quality restoration and land protection measures. Cluster members collaborated with other organizations most often on stream quality improvements (79 collaborations) and stormwater runoff management (74 collaborations).
- Only 15% of non-members report known collaboration with DRWI-funded organizations, but more than a third of assisters said they collaborate with DRWI organizations.

Opportunities for Influence

- Funding is by far the most important resource needed to help organizations to implement projects, followed by in-house personnel, technical guidance and outside expertise.
- Members were the most sure that agricultural practices and stormwater runoff management practices were influencing similar practices.
- Non-members reported that information about DRWI-funded projects was instrumental in the implementation of a third of agricultural practices and a quarter of stormwater basin retrofits, in-stream practices, and wetland or vernal pool restoration practices. The percentages of noted practices would not have been implemented without the DRWI-project information.
- More than a third of assisting organizations indicated they would be likely to promote a DRWI-funded project as a best practice example for stream quality improvements, agricultural BMPs and land protection.
- Almost all responding organizations agree that promoting DRWI-funded projects can help advance water quality restoration and land protection in the Delaware River basin.
- For those responding affirmatively (“definitely yes” or “probably yes”) that promoting DRWI-funded projects help advance water quality restoration and land protection, the reasons included:
 - The benefit of promoting DRWI-funded projects as examples that raise awareness and inspire others;
 - That DRWI-funded projects demonstrate the method of practice/implementation, which can facilitate implementation by others;
 - Showing the value of the practice in improving water quality in the region; and
 - Demonstrating effective leveraging of funding sources (state, federal, other) and the importance of partnerships.

Findings support recommendations to increase the spread and uptake of practices in the watershed that include increasing and enhancing opportunities for in-person and direct contact between cluster member organizations and non-member organizations and assisters. Presenting information about practices at events and conferences, as well as inviting non-members to visit demonstration sites can be important ways to diffuse innovations, particularly newer or more complicated practices like in-stream and wetland or vernal pool restorations. Cluster organizations should send targeted e-mails with information about how to obtain technical guidance, where to attend events, and suggestions about funding availability and leveraging.

“Most resistance to stream improvements is due to lack of knowledge. Successful examples go a long way toward educating people.”

Comment from survey participant

This survey could be repeated periodically to evaluate changes in the member organizations’ evaluations of their own practice adoption and sharing of information. With modifications in organization targeting techniques and some questioning changes, the survey could also be redistributed to non-member organizations periodically to reveal changes in DRWI’s influence. Other types of studies could delve deeper into cause and effect of practice spread, that is, analyzing the exact pathways and networks that have the most influence in the region.

Contents

Executive Summary.....	3
Introduction	11
Organization of Report.....	11
Background on the Delaware River Watershed Initiative	11
Purpose of the Survey.....	13
Project Team	13
Survey Instrument and Population	13
Survey Results and Discussion	14
Key Takeaways	15
Familiarity with Practices	15
Implementation and Funding	15
Information Sharing and Collaboration	15
Opportunities for Influence	17
Survey Population and Respondents	18
Cluster Member Organizations.....	18
Non-Cluster-Member Organizations.....	19
Assisting or Consulting Organizations.....	19
Response Rates by Group	19
Descriptive Summary Statistics: Respondent Organization Characteristics and Distribution.....	21
Organizational Characteristics	21
Familiarity with DRWI and Affiliates	24
Familiarity with Restoration and Protection Practices	25
Implementation and Spread of Practices	28
Practice Implementation	28
Geography of Restoration Practices	38
Funding of Practices.....	39
Inclusion of Practices in Cluster Strategic Plan	51
Information Sharing	51
Collaboration Between Organizations	63
Factors Influencing Adoption.....	70
Conclusion: Findings, Recommendations and Future Study	76
List of Figures	79

List of Tables	81
Appendix A - Methodology	83
Appendix B – NFWF DRWI Survey Instrument.....	87
Appendix C – Types of Practices Respondents Want to Learn More About.....	128
Appendix D – Respondents Open-ended Comments About Their Implemented Projects.....	136
Appendix E – Organizations with Which Cluster Members Have Collaborated	140
Appendix F – Why Promoting DRWI-Funded Projects Does/Does Not Advance Improvements.....	146
Appendix G – Individual Maps	153

Introduction

Organization of Report

This report describes the intent of the survey and how the survey was developed. It will discuss the methods used to identify the survey population, conduct the survey, and analyze the survey results. It then presents the survey results followed by key findings, recommendations, and future considerations. The survey instrument, detailed methodology, maps, and some of the detailed results can be found in the appendices.

Background on the Delaware River Watershed Initiative

The [Delaware River Watershed Initiative](#) (DRWI) was launched in 2014 with a goal to improve water quality in targeted geographies of the Delaware River Watershed. The DRWI enables highly coordinated efforts of more than 50 watershed restoration and conservation organizations to invest in projects that restore and protect water quality in targeted headwaters—and then assess the impact of those efforts. Major support for the DRWI is provided by the William Penn Foundation.

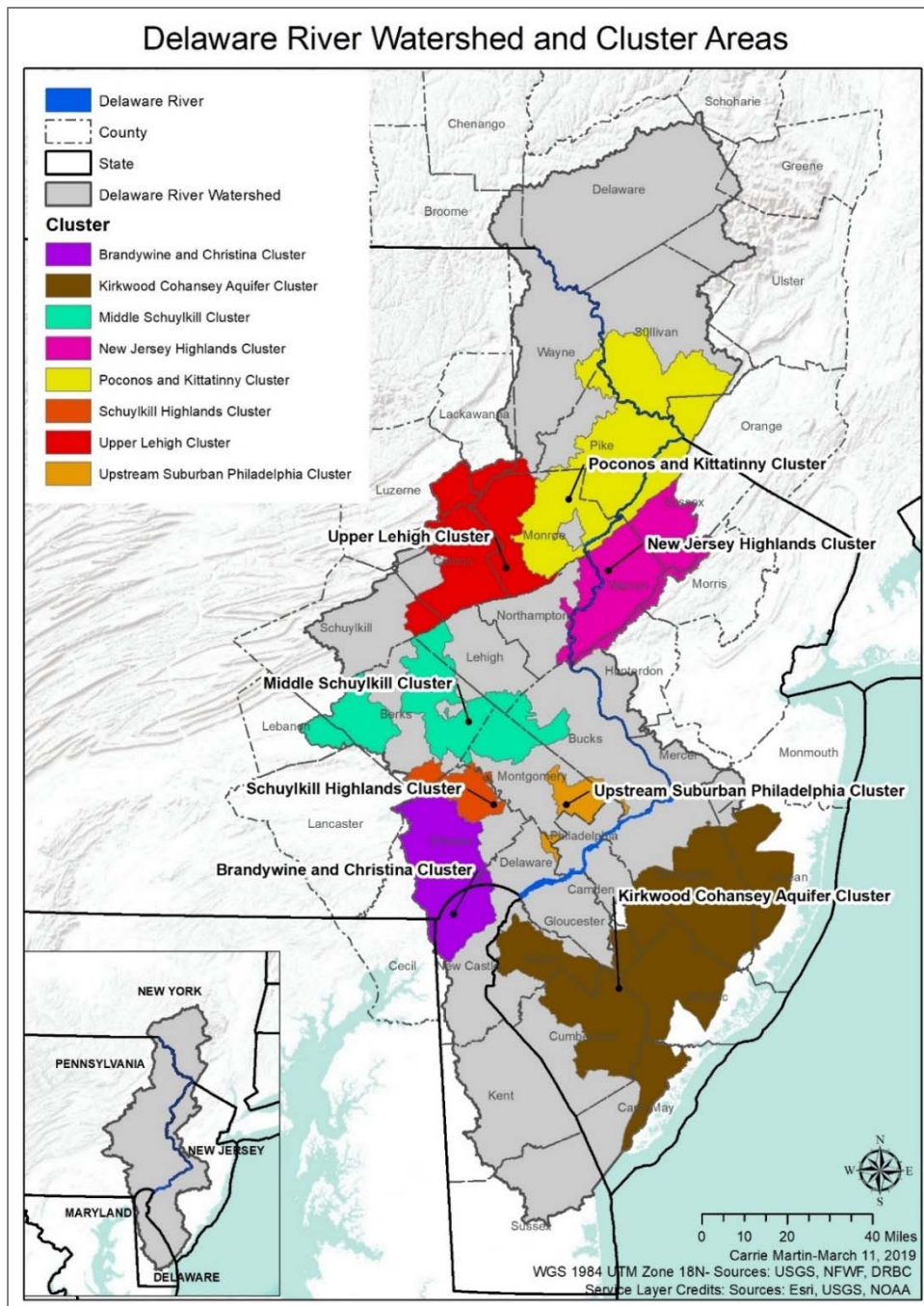
DRWI targeted geographies and associated organizations are broken down into eight subwatershed “clusters” in which water quality improvement work is focused. Cluster members include non-profit organizations, local government entities, and educational institutions that implement on-the-ground restoration projects and land protection activities to improve water quality. Cluster members are supported in their on-the-ground work by the Delaware River Restoration Fund and the Delaware River Watershed Protection Fund.

Through the [Delaware River Restoration Fund](#) (DRRF), the National Fish and Wildlife Foundation (NFWF) and its partners in the DRWI invest in agriculture-related conservation, green stormwater infrastructure, and stream restoration projects to improve water quality. Since 2014, the DRRF has awarded over 60 grants totaling roughly \$10 million. Grants are awarded to member organizations of the cluster teams to carry out water quality improvement projects throughout the watershed. To date, cluster members have implemented over 15,000 acres of best management practices to improve water quality, and restored over 169 acres of wetlands and 50 miles of riparian habitat. NFWF also manages the Delaware Watershed Conservation Fund (and other funding opportunities on occasion), providing resources for fish and wildlife habitat restoration projects throughout the watershed.

Through the [Delaware River Watershed Protection Fund](#), the Open Space Institute (OSI)—along with partners in the DRWI—strategically invest in cluster efforts to protect critical landscapes key to providing clean, abundant water in the Delaware Watershed. Through the Fund, OSI provides resources for the purchase of land and easements to permanently protect important watershed lands and to integrate water quality science into watershed protection. Since the launch of the Fund in 2014, OSI has provided funding for 47 projects that will preserve over 22,000 acres of land. These projects are expected to protect 110 miles of forested stream banks, 22,180 acres of headwaters, 7,685 acres of stream buffers and 3,600 acres of wetlands.

DRWI restoration and protection investments are guided by Cluster Action Plans for the DRWI developed by each of the clusters. While the primary purpose of those plans is to guide restoration within the targeted implementation areas of each cluster, it is the intent of the program that information about those restoration activities spreads throughout the entire cluster and even extends beyond cluster boundaries, eventually leading to adoption of those activities across the Delaware River

Figure 1. Map of Delaware River Watershed and cluster areas as presented in the survey instrument



Watershed. To foster dissemination and adoption, each cluster has engaged in various degrees of outreach and education activities since the inception of the DRWI in 2014. These are referred to as complementary strategies. Together with, and on behalf of its DRWI partners, NFWF engaged the Bloustein team to conduct a survey to determine whether information about the funded practices is indeed reaching people beyond the clusters’ targeted implementation areas and if that awareness leads

to subsequent adoption. In other words, the survey is intended to shed some early light on some of the features of key pathways for DRWI complementary strategies.

Purpose of the Survey

The primary purpose of the survey was to find out if organizations that are not DRWI cluster members have undertaken restoration and land protection efforts in or near the DRWI cluster and Delaware River watershed boundaries, and the extent to which any knowledge and uptake of practices has diffused from communication from or collaboration with DRWI members. The survey measures if and how information about DRWI funded projects has spread beyond DRWI cluster boundaries and whether similar projects are being independently implemented around the region (i.e., the survey measures knowledge diffusion and practice adoption.) The survey also examines factors that might facilitate or hinder knowledge transfer or practice uptake. The intent is to utilize the information gathered from the survey to provide a baseline for measuring the effectiveness of future outreach and education efforts as well as to inform potential funding through the NFWF DRWI program.

Project Team

The Environmental Analysis and Communications Group (EAC) of Rutgers University's Edward J. Bloustein School of Planning and Public Policy (Bloustein) is a multidisciplinary team of researchers and practitioners that advances strategies and approaches designed to build communities that are healthier, greener, equitable, resilient, and more prosperous. Through research, technical assistance to communities and decision-makers, policy analyses, and facilitation of collaborative and participatory efforts, EAC develops and deploys evidence-based strategies that inform planning, policies and decision-making at the state, regional and local levels.

The Bloustein team on this NFWF project has significant relevant experience in the areas of survey design and analysis, communicating scientific results to varied audiences, and subject matter knowledge and experience in the field of watershed management and conservation practices. The Co-Principal Investigators were Dr. Michael Greenberg and Jeanne Herb; Dr. Karen Lowrie was the Senior Project Associate and Sara Malone served as Project Manager.

Co-PI's Dr. Greenberg and Ms. Herb provided oversight, review, and strategic direction for the project. Both have significant experience conducting focus groups, interviews and various facilitated public and stakeholder forums. Together they bring more than six decades of experience in eliciting and processing input from residents, businesses, governments, and other organizations on a range of environmental planning and policy issues. Dr. Greenberg's expertise in developing and administering surveys is recognized nationwide, and he has taught courses in multivariate analysis for Rutgers planning students for decades. Sara Malone and Karen Lowrie, both of whom have experience in online survey implementation and expertise in land use and conservation planning and policy, were responsible for the survey administration, data gathering, data analysis, and report writing.

Survey Instrument and Population

This section includes a brief overview of the survey design and testing, survey population identification, and the survey administration. A more thorough description of the methodology employed is in Appendix A.

The Bloustein team worked closely with NFWF to refine the core questions and to ensure the survey solicited information about whether restoration practices implemented by DRWI members are influencing non-member organizations both within and beyond cluster boundaries and whether those non-members adopt similar practices as a result. Bloustein conducted two discussion forums of cluster members to refine the survey questions and to help identify non-member organizations to receive the survey. In consultation with NFWF, the practices to be explored were consolidated to a key seven that included agricultural management best practices, stormwater retention basin retrofits, stormwater runoff management, in-stream practices, stream quality improvements, wetland or vernal pool installations or restorations, and land protection through easements or acquisitions. The survey was pretested by conservation-related organizations outside of the survey target area.

In consultation with NFWF, the geographic survey boundary was designated as the entire Delaware River Basin boundary, extending to the county boundaries touched by the watershed boundary, as well as county boundaries touched by any DRWI cluster. Contact information for cluster members was provided by NFWF. Contact information for non-member organizations and assister organizations working in the conservation/protection and water restoration sectors was collected from internet searches and by accessing inventories of organizations kept by umbrella and member organizations.

To encourage frank and open disclosure by survey participants, the answers were “confidential,” meaning that the identity of participants would not be shared with NFWF or its affiliates. The Bloustein team utilized Qualtrics Survey Software for design and distribution of the survey instrument. To enhance survey participation and completion, the survey employed carry forward choices, skip logic, display logic, and branch logic to customize the questions according to the responding organization’s characteristics. Organizations were the unit of analysis for the research. Each organization in our target population received e-mails inviting participation, instructing how to prepare to take the survey, and asking each organization to complete one survey. After the initial contact, subsequent emails provided a direct link to the online survey. To further increase response rate, multiple reminder e-mails were sent to encourage completion of open surveys.

See Appendix A for more information about the methodology employed.

Survey Results and Discussion

The following sections describe the key findings of the survey. We describe the survey population including descriptive characteristics such as location, type, sector, and size of the responding organization. We describe their familiarity with the DRWI and its affiliates as well as with the seven water quality restoration and land protection practices around which most of the survey is built. We then delve into the implementation and spread of practices including where they implement them, funding, inclusion of practices in strategic plans, if and how they share (and get) information about practices, as well as any collaboration between groups. We end the section by looking into factors that influence implementation of practices.

For ease of review, we have pulled out and listed below a summary of the key takeaways from throughout the report. Referenced page numbers and appendices after each takeaway link to the supporting details and discussion found later in the document.

Key Takeaways

For ease of reference, we have listed the key takeaways from the data that follow and have referenced (with hyperlinks) the page number or appendix for the corresponding table, graphs and maps, or more detailed analysis.

Familiarity with Practices

- Among all respondents, there was greatest familiarity with stream quality improvements, stormwater runoff management, and land protection practices. (p.27)
- Non-members were least familiar with all practices among the three sub-groups. (p.51)
- A high percentage of member organizations reported that they included all listed practices in their strategic plans. (p.51)

Implementation and Funding

- Stream quality improvements and stormwater runoff management were the top practices implemented among all groups. (p.28)
- Land protection was the next most prevalent practice for members and non-members. Assisters' next most common practices to help in implementing were stormwater retention basins and in-stream practices. (p.28)
- The top three practices planned (or planned to assist with) were stream quality improvements, stormwater runoff management, and land protection practices. (p.30)
- Non-members indicated that the cost of implementation was the key challenge for all practices except for agriculture and in-stream practices. (p.29)
- For practices that non-member organizations have not implemented, they reported it was primarily because of the cost and need for technical expertise and staff capacity. Complexity, experimental nature, and timeframe are less significant barriers to implementation. (p.71)
- A majority of member organizations used DRWI funding for all practices except stormwater retention basin retrofits and wetland or vernal pool restoration or installations. For non-members, the highest percentage of reported use of DRWI funding for practice implementation was for in-stream practices and agricultural best management practices. We can infer that although these two practices were not among the most commonly implemented, DRWI funding seems to have been more important in spurring implementation of these practices than for other practices. (p.41)
- For non-member organizations, more than a third plan to use DRWI funds for planned stream quality improvements, in-stream practices, and for land protection practices. (p.42)

Information Sharing and Collaboration

- In-person meetings, conferences/seminars, and websites were ranked as the most important ways for all survey respondents to learn about water quality restoration and land protection practices. (p.52)

- Member organizations found in-person meetings and conferences significantly more important than assisters and non-members did. (p.53)
- Cluster members report the highest proportion of targeting communications about projects to local and county government officials, and to residents and land owners/managers. They are least likely to share information with faith communities, farmers, and land trusts. (p.70)
- A high percentage of member organizations reported sharing information about all their practices. (p.67)
- For non-members, more reported learning about in-stream practices, wetland or vernal pool restoration or installations, and land protection from DRWI-funded projects than about other practices. (p.54)
- Almost a quarter of assisting organizations learned about agricultural best practices from DRWI-funded projects. (p.55)
- Member organizations reported that the primary methods of distributing information are in-person consultation, and posting on websites and social media (p.67)
- Non-members learned about the practices from a DRWI-funded project most often through in-person meetings/consultations, through conference/seminar presentations/info tables, or through targeted e-mail. (p.67)
- Smaller organizations were more likely to report that they learned about land protection from DRWI than were larger organizations. (p.63)
- Members reported a high degree of collaboration (about 85% or more) in the implementation of all practices except for wetland or vernal pool restoration or installations, and stormwater retention basin retrofits. (p.63)
- Only 15 percent of non-members report known collaboration with DRWI organizations, but more than a third of assisters said that they collaborate with DRWI organizations. (p.64)
- The group of practices most positively influenced by collaboration with DRWI organizations among non-members was agricultural practices. (p.65)
- For planned practices, collaboration was important at a significant level for those planning in-stream practices and wetland or vernal pool restorations. (p.65)
- The most referenced types of practices that all groups wanted to learn more about were stormwater management practices followed by stream quality improvements. (p.27 and Appendix C)
- Cluster members were most interested in learning more about in-stream practices. (Appendix C)
- Non-members wanted more information about stormwater management and stream quality improvements. (Appendix C)

- Assisters were interested in learning more about agricultural BMPs, funding, land protection measures, and stormwater management. (Appendix C)
- Member organizations reported a high degree of collaboration (about 85% or more) in the implementation of all practices except for wetland or vernal pool restorations, and stormwater retention basin retrofits. (p.63)
- Over 100 unique entities were listed by cluster member organizations as collaborating with them on water quality restoration and land protection measures. Cluster members collaborated with other organizations most often on stream quality improvements (79 collaborations) and stormwater runoff management (74 collaborations). (Appendix E)
- Only 15% of non-members report known collaboration with DRWI-funded organizations, but more than a third of assisters said they collaborate with DRWI organizations. (p.65)

Opportunities for Influence

- Funding is by far the most important resource needed to help organizations to implement projects, followed by in-house personnel, technical guidance and outside expertise. (p.75)
- Members were the most sure that agricultural practices and stormwater runoff management practices were influencing similar practices. (p.73)
- Non-members reported that information about DRWI-funded projects was critical to the implementation of a third of agricultural practices and a quarter of stormwater basin retrofits, in-stream practices, and wetland or vernal pool restoration practices. The noted percentage of practices would not have been implemented without the DRWI-project information. (p.72)
- More than a third of assisting organizations indicated they would be likely to promote a DRWI-funded project as a best practice example for stream quality improvements, agricultural BMPs and land protection. (p.74)
- Almost all responding organizations agree that promoting DRWI-funded projects can help advance water quality restoration and land protection in the Delaware River basin. (p.76)
- For those responding affirmatively (“definitely yes” or “probably yes”) that promoting DRWI-funded projects help advance water quality restoration and land protection, the reasons included (see Appendix F):
 - The benefit of promoting DRWI-funded projects as examples that raise awareness and inspire others;
 - That DRWI-funded projects demonstrate the method of practice/implementation, which can facilitate implementation by others;
 - Showing the value of the practice in improving water quality in the region; and
 - Demonstrating effective leveraging of funding sources (state, federal, other) and the importance of partnerships.

Survey Population and Respondents

The survey population was comprised of three target groups: (1) 47 organizations that are funded by the NFWF DRWI program to implement water quality restoration and land protection projects (cluster or member organizations); (2) 969 organizations that implement water quality restoration and land protection projects but that do not receive funding or technical support as part of the DRWI project (non-member organizations); and, (3) 337 organizations that assist other entities (through funding, technical guidance, or other “hands on” assistance) with implementing water quality restoration and land protection projects but that don’t own or operate such restored or protected lands themselves (assisters or consulting organizations).

Cluster Member Organizations

At the time of the survey, forty-seven organizations were actively participating in the NFWF DRWI in one or more of the eight geographic clusters and received funding or technical assistance through the DRWI program. A table showing the cluster relationships for these organizations is in Appendix A.

Table 1. Cluster member organizations

- American Littoral Society
- Assn. of New Jersey Environmental Commissions
- Audubon Pennsylvania
- Berks Nature
- Brandywine Conservancy
- Brandywine Red Clay Alliance
- Brodhead Watershed Association
- Darby Creek Valley Association
- Delaware Highlands Conservancy
- East Stroudsburg University
- Eastern Delaware County Stormwater Collaborative
- French & Pickering Creeks Conservation Trust
- Friends of the Poquessing Watershed
- Green Valleys Watershed Association
- Hunterdon Land Trust
- Lower Merion Conservancy
- Musconetcong Watershed Association
- Natural Lands Trust
- Nature Conservancy of Delaware
- New Jersey Audubon Society
- New Jersey Highlands Coalition
- NJ Conservation Foundation
- North Branch Land Trust
- North Jersey Resource Conservation & Development
- North Pocono Care
- Orange County Land Trust
- Partnership for the Delaware Estuary
- Pennsylvania Environmental Council
- Pennsylvania Resource Council
- Pennypack Ecological Restoration Trust
- Pinchot Institute for Conservation
- Pinelands Preservation Alliance
- Pocono Heritage Land Trust
- Rutgers Cooperative Extension Waters Resources Program
- South Jersey Land & Water Trust
- Stroud Water Research Center
- Temple University
- The Land Conservancy of New Jersey
- The Nature Conservancy
- The Nature Conservancy - Pennsylvania
- Tookany/Tacony-Frankford Watershed Partnership
- Trout Unlimited
- University of Delaware, Water Resources Agency
- Villanova Urban Stormwater Partnership
- Wallkill River Watershed Mngmt. Group
- Wildlands Conservancy
- Wissahickon Valley Watershed Association

Non-Cluster-Member Organizations

Non-cluster member organizations were similar types of organizations to the cluster-member organizations and included watershed groups; special interest recreation or nature-based groups (e.g. Trout Unlimited, Audubon); land conservancies and land trusts; lake, stream and creek associations; other non-profits; and local and regional governmental entities.

Assisting or Consulting Organizations

Survey questions were also targeted to assisting or consulting organizations to better understand what these entities know about the DRWI and whether their practices are influenced by the program. Organizations in this category were consulting firms; regional, state, and federal regulatory agencies; academic institutions; and other entities that provide technical assistance, consulting services, or funding for water quality restoration or land protection practices.

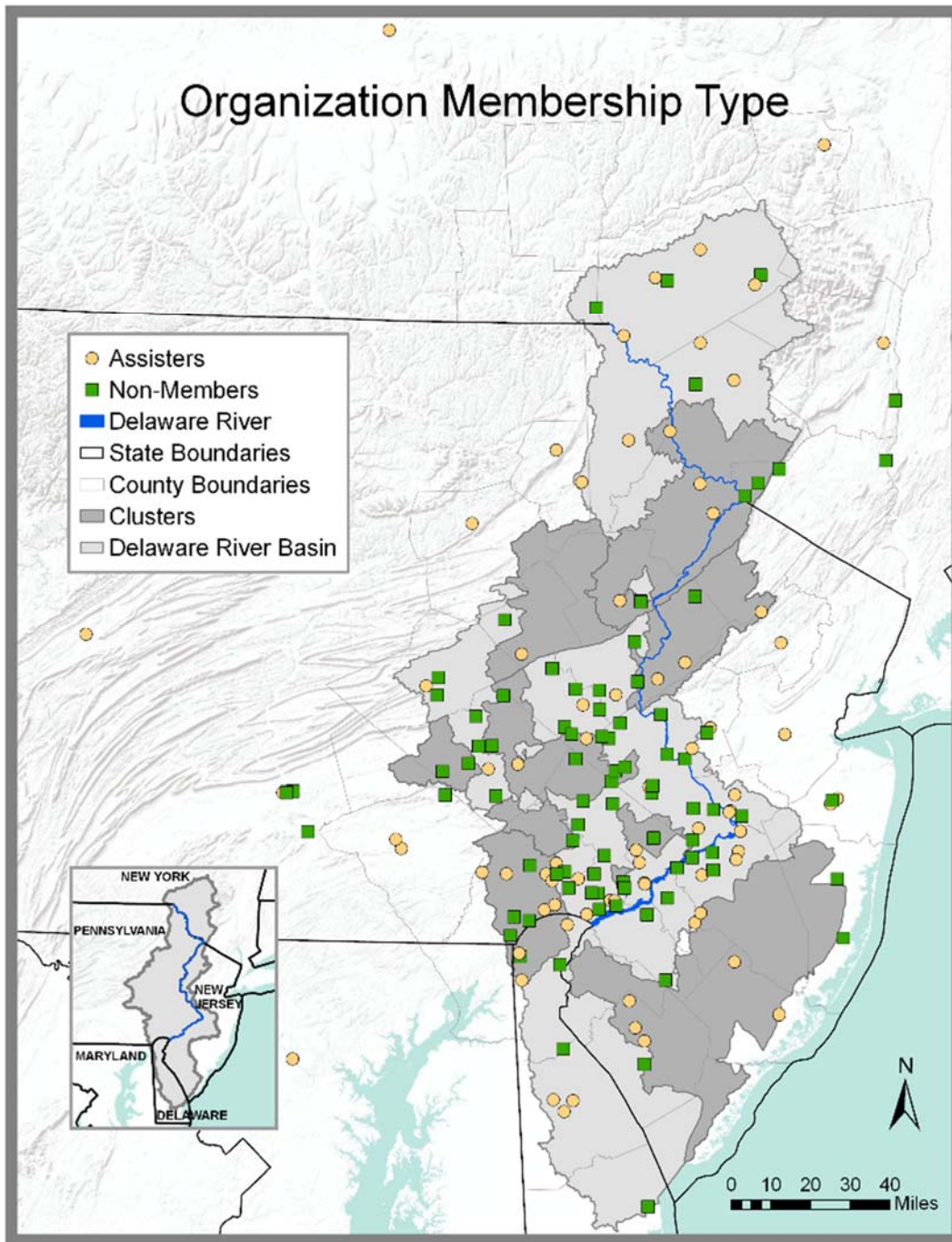
Response Rates by Group

The overall response rate for the survey was 19% with 260 surveys returned out of 1,355 surveys sent. Cluster members had an exceptional return rate of 92%. While representing only four percent of all surveys sent, the cluster members accounted for just under a fifth of the survey responses received. Table 2 provides a more complete picture of the survey population by group. Two of the cluster member organizations submitted multiple surveys. This was deemed appropriate given the size of the organizations and their activity in more than one cluster.

Table 2. Summary of surveys sent and received by target group

	Cluster	Non-member	Assisters	Total
Number of Surveys Distributed	49	969	337	1,355
Number of Surveys Received	45	133	82	260
Rate of Return	92%	14%	24%	19%
Percent of Total Surveys Distributed	4%	72%	24%	100%
Percent of Total Surveys Received	17%	51%	32%	100%

Figure 2. Map of approximate location of assister and non-member organizations



For Figure 2, and for all subsequent maps in this report, the location of the symbols corresponds to the approximate geocoded address of the organization. We note that this is not necessarily where the organization implements (or assists with implementing) practices. This would be particularly true for assisters, which are likely to be assisting other organizations that are not in the immediate vicinity of the assister's organizational office. We also note that due to the scale of the maps, the symbols for organizations that have similar geocoded addresses may overlay each other. Appendix G contains full-page high-resolution maps for each of the maps in the body of this report.

Approximately 35% of assister organizations and 28% of non-member organizations are located within cluster boundaries. Approximately, 42% of assisters and 57% of non-members are located outside of the cluster boundaries but within the Delaware River basin. The remaining organizations are located outside of the cluster and basin boundaries.

Of the 260 surveys returned by respondents, 54 surveys were excluded from the analysis that follows. The excluded surveys were (a) incomplete, (b) the respondent indicated they did not want to participate, or (c) they indicated that their organization does not do work related to water quality restoration or land protection. Of the remaining 206 surveys, 45 were submitted by cluster members, 84 by non-members, and 77 by assister organizations. Not all 206 respondents answered each of the requisite questions for their groupings. Where relevant, the number responding is noted.

Descriptive Summary Statistics: Respondent Organization Characteristics and Distribution Organizational Characteristics

Roughly, a third of respondents were municipal governments and another third were nonprofits. Of the remaining third, most were other levels of government, with about ten percent from private firms and academia.

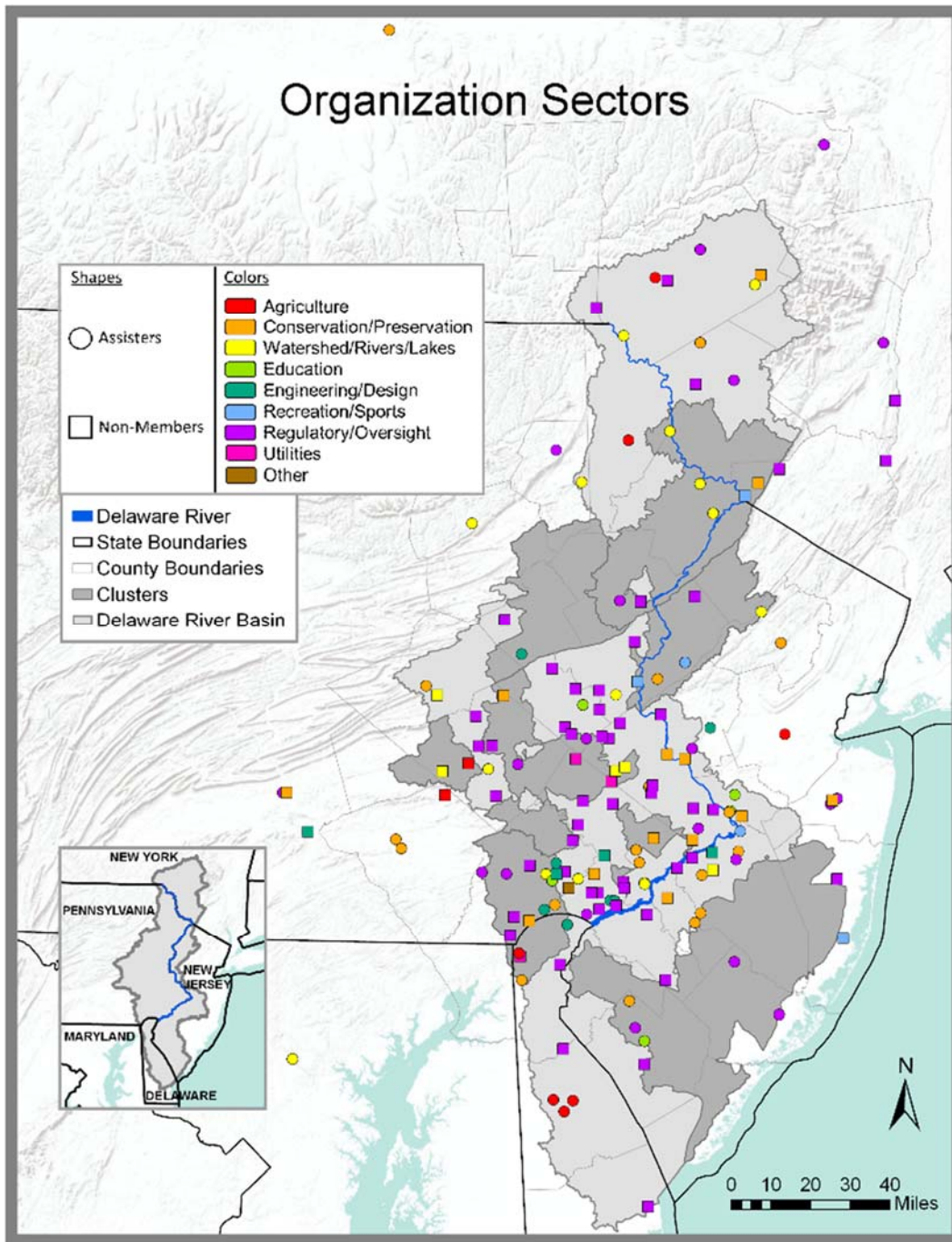
Table 3. Organization type

	Non-profit	Government - Municipal	Government - Other	Academic, for-profit, private	Total
Member	82%	2%	7%	9%	45 (22%)
Non-member	14%	75%	9%	1%	84 (41%)
Assister	30%	14%	36%	20%	77 (37%)
<i>Total</i>	71 (34%)	76 (36%)	39 (20%)	20 (10%)	206 (100%)

Table 4. Sectors

	Regulatory/ Oversight	Conservation or Preservation	Watershed/ river/lakes	Agriculture	Education	Engineering and Design	Recreation/ Sports	Utilities
Member	5%	48%	32%	2%	14%	0%	0%	0%
Non-member	62%	17%	6%	2%	0%	5%	4%	4%
Assister	26%	23%	20%	13%	7%	9%	3%	0%
<i>Total</i>	74 (36%)	53 (26%)	34 (17%)	13 (6%)	11 (5%)	11 (5%)	5 (2%)	3 (2%)

Figure 3. Map of organization sectors for assisters and non-members



In the entire set of respondents, about 36% were in the regulatory/oversight sector. Among non-member organizations, more than 60% were in the regulatory/oversight sector (matching with the high percentage of government entities), and the next highest percentage was in conservation. Among cluster members, almost half were in the conservation sector, followed by the watershed sector. For assisters, the sector split was much more even, with about a quarter in regulatory/oversight and

another quarter in the conservation sector, followed by almost 20% in the watershed sector, and 13% in the agricultural sector.

Figure 3 shows the dispersion of non-cluster member organizations around the clusters and watershed study area. See Appendix G for a full-page high-resolution map.¹

Table 5. Number of employees

	Under 5	Between 6 and 15	Between 16 and 30	Over 30
Member	18%	48%	16%	18%
Non-member	20%	22%	22%	35%
Assister	29%	28%	17%	26%
Total	47	61	39	58

There is a fairly even distribution of organizations between those with a relatively small number of employees, and those with middle-range and larger numbers of employees. A higher percentage of the member organizations are smaller (15 or fewer employees), while a higher percentage of the non-member groups are larger (16 or more).

Table 6. Acres managed

	0 acres	More than 0 and up to 100 acres	Between 101 and 1000 acres	More than 1000 acres
Member	32%	14%	16%	39%
Non-member	7%	25%	31%	36%
Assister	47%	12%	8%	33%
Total	55 (27%)	36 (18%)	39 (19%)	72 (36%)

About a third of organizations of all three types report managing more than 1000 acres of land. About a quarter of the organizations manage no land at all, including about half of the “assister” organizations. The other 37% manage somewhere between 1 and 1000 acres.

¹ As previously indicated, the location of the symbols corresponds to the approximate geocoded address of the organization. This is not necessarily where the organization implements (or assists with implementing) practices that will be discussed. This would be particularly true for assisters, which are likely to be assisting other organizations that are not in the immediate vicinity of the assister’s organizational office. Due to the scale of the map, the symbols for organizations that have similar geocoded addresses may overlay each other, or may be outside of the mapped extent.

Table 7. State

	Pennsylvania	New Jersey	Delaware, New York, Other
Member	48%	41%	11%
Non-member	65%	20%	15%
Assister	47%	30%	23%
<i>Total</i>	112 (54%)	58 (28%)	36 (18%)

More than half of the respondents overall were based in Pennsylvania (54%), with another 28% in New Jersey. Almost two thirds of the non-member organizations who responded were located in Pennsylvania. Assister organizations who responded were more evenly spread geographically, with more than twice the percentage from outside Pennsylvania and New Jersey than cluster member organizations.

Familiarity with DRWI and Affiliates

The member organizations were significantly more familiar with the DRWI (100%), DRWI clusters, the Open Space Institute, William Penn Foundation, and NFWF than both non-members and assisters. Non-members and assisters showed the least familiarity with the DRWI clusters and with the Open Space Institute.

Table 8. Familiarity with Delaware River Watershed Initiative clusters

	Very familiar	Somewhat familiar	Not at all familiar
Member	96%	5%	0%
Non-member	10%	30%	60%
Assister	21%	39%	40%
<i>Total</i>	66	56	80

Table 9. Familiarity with Delaware River Watershed Initiative

	Very familiar	Somewhat familiar	Not at all familiar
Member	100%	0%	0%
Non-member	18%	62%	20%
Assister	32%	53%	16%
<i>Total</i>	83	93	29

Table 10. Familiarity with William Penn Foundation

	Very familiar	Somewhat familiar	Not at all familiar
Member	96%	5%	0%
Non-member	27%	50%	23%
Assister	33%	49%	17%
<i>Total</i>	90	82	33

Table 11. Familiarity with Open Space Institute

	Very familiar	Somewhat familiar	Not at all familiar
Member	59%	39%	2%
Non-member	15%	47%	38%
Assister	25%	33%	43%
<i>Total</i>	58	82	66

Table 12. Familiarity with National Fish & Wildlife Foundation

	Very familiar	Somewhat familiar	Not at all familiar
Member	77%	23%	0%
Non-member	31%	55%	14%
Assister	45%	51%	4%
<i>Total</i>	95	96	15

Familiarity with Restoration and Protection Practices

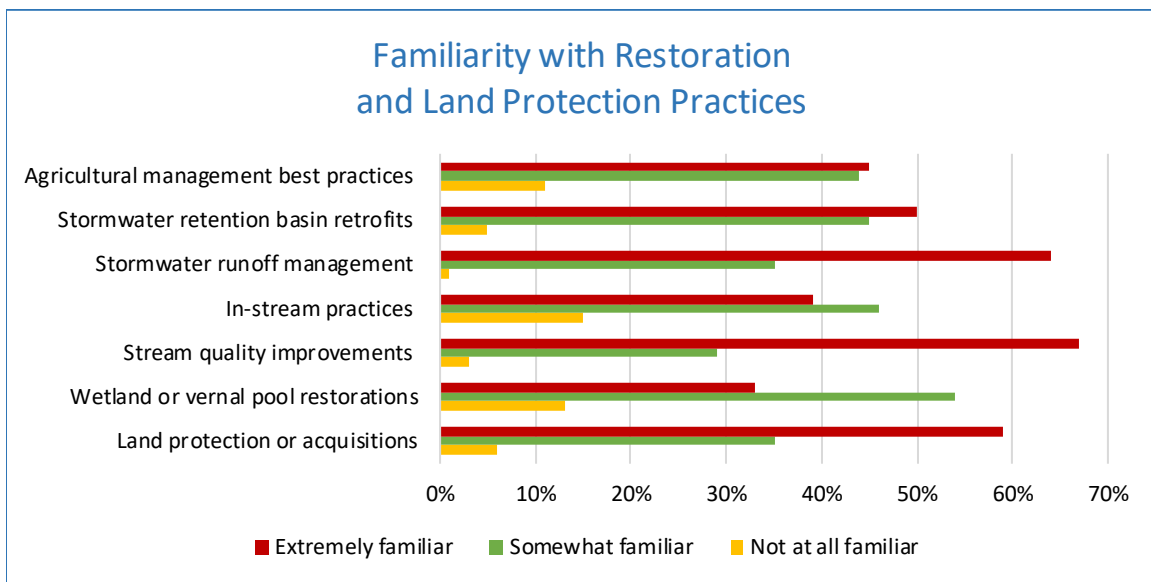
The survey team worked closely with NFWF to select and describe the water quality and land use practices to explore in the survey. The following seven practices and these definitions were provided to survey participants:

- Agricultural management best practices
 - to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion
- Stormwater retention basin retrofits
 - including (but not limited to) installation of bioretention basins and bioswales

- Stormwater runoff management
 - including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches
- In-stream practices
 - to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches
- Stream quality improvements
 - including (but not limited to) riparian buffer restoration, and streambank stabilization
- Wetland or vernal pool
 - installation or restoration
- Land protection
 - to improve water quality through easements or acquisitions

All respondents were asked the question: *How familiar are you with the following water quality restoration or land protection practices?*

Figure 4. Graph showing familiarity of restoration and land use practices by respondent type



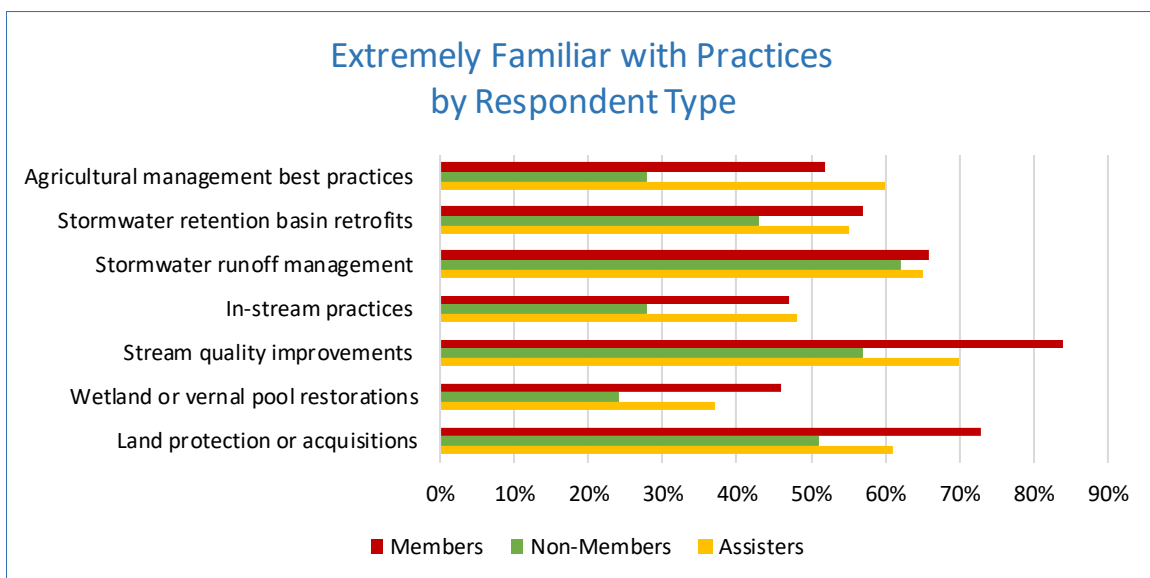
Among all respondents, there was greatest familiarity with stream quality improvements, stormwater runoff management, and land protection practices, and the least familiarity with in-stream practices and wetland/vernal pool installation/restorations.

Table 13. Familiarity with restoration and protection practices

Practice	Extremely familiar	Somewhat familiar	Not at all familiar	Total
Agricultural management best practices	45%	44%	11%	209
Stormwater retention basin retrofits	50%	45%	5%	208
Stormwater runoff management	64%	35%	1%	209
In-stream practices	39%	46%	15%	207
Stream quality improvements	67%	29%	3%	208
Wetland or vernal pool restorations	33%	54%	13%	206
Land protection	59%	35%	6%	207

When looking at the breakdown between groups, however, **non-members were the least familiar with all practices among the three sub-groups**. Members were significantly more familiar with stream quality, wetland restoration, and land protection practices than were non-members, while assisters and members were both much more familiar with agricultural, stormwater retention, and in-stream practices than were non-members.

Figure 5. Graph of familiarity with practices for "extremely familiar" by respondent type



Later in the survey, all respondents were asked an open-ended question, "What type of water quality restoration or land protection practices would you like to learn more about?" Based on a rough grouping of qualitative comments in response to this question, **the highest combined interest was for more information about stormwater management practices, followed by stream quality improvements, in-stream practices, and land protection measures**. Cluster members were most interested in learning

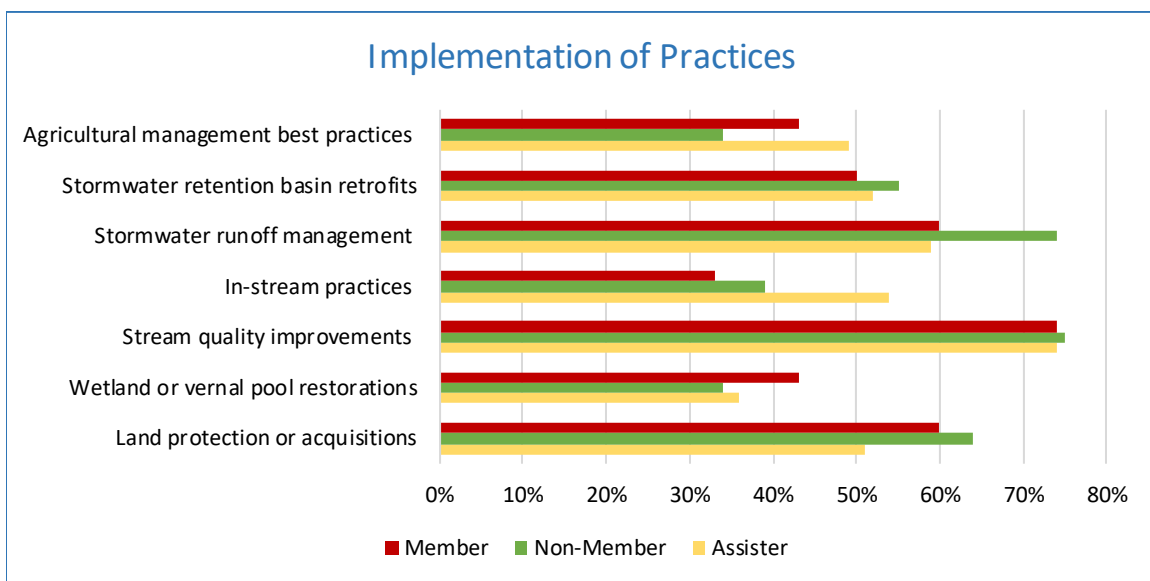
more about in-stream practices; non-members wanted more information about stormwater management and stream quality improvements; and assisters were interested in learning more about agricultural BMPs, funding, land protection measures, and stormwater management. (See Appendix C) for a summary table of responses by topic as well as the raw responses grouped by respondent type).

Implementation and Spread of Practices

Practice Implementation

All respondents were asked if they had implemented or are implementing any of the water quality restoration or land protection practices. (Assisters were asked if they had assisted organizations with planning, design or implementation of practices).

Figure 6. Graph of practices implemented or implementing by respondent type



Stream quality improvements and stormwater runoff management were the top practices among all groups. Land protection was the next most prevalent practice for members and non-members. Assisters' next most common practices to help in implementing were stormwater retention basin retrofits and in-stream practices. In-stream practices were only practiced by about a third of the restoration/conservation organizations (member and non-member), but 54% of assisting entities report implementing them.

Respondents were asked: *Are you actively planning (e.g., already have target location, design specs, seeking funding) to implement any of these practices in the future?* (Assisters were asked if they were planning to “assist” in planning the practices.) **The top three practices planned (or planned to assist with) were stream quality improvements, stormwater runoff management, and land protection.**

Table 14. Planning to implement practices - members

Question	Yes	No	Not sure
Agricultural management best practices	38%	52%	10%
Stormwater retention basin retrofits	41%	45%	14%
Stormwater runoff management	60%	29%	2%
In-stream practices	29%	55%	17%
Stream quality improvements	76%	19%	5%
Wetland or vernal pool installation or restoration	43%	48%	10%
Land protection or acquisitions	55%	36%	10%

Table 15. Planning to implement practices - non-members

Question	Yes	No	Not sure
Agricultural management best practices	20%	64%	16%
Stormwater retention basin retrofits	38%	42%	20%
Stormwater runoff management	53%	29%	17%
In-stream practices	29%	48%	23%
Stream quality improvements	60%	20%	21%
Wetland or vernal pool installation or restoration	26%	52%	22%
Land protection or acquisitions	48%	36%	16%

Table 16. Planning to implement practices - assisters

Question	Yes	No	Not sure
Agricultural management best practices	28%	55%	17%
Stormwater retention basin retrofits	38%	51%	12%
Stormwater runoff management	41%	49%	10%
In-stream practices	32%	55%	13%
Stream quality improvements	46%	36%	17%
Wetland or vernal pool installation or restoration	28%	57%	16%
Land protection or acquisitions	44%	49%	7%

The following maps show the location of organizations that indicated they implemented or are implementing the stated practices.

Caveats about interpretation from maps:

- Geographic dots do not necessarily mean that the practices spread from the adjacent cluster. The spread would depend on the communication method and channel. In other words, we cannot draw any definite conclusions about geographic spread from just looking at where organizations are reporting adopting practices. (See “learn about” maps below for representation of data collected that is more targeted to this question of influence.)
- It is also worth noting that only the organizations that responded can be shown, which is not a representative sample, and may be missing some important adopters that just did not fill out survey. Therefore, it is not valid to make comparative statements that one cluster is more or less successful than another is, or that one practice is spreading to a lesser or greater degree than another, based just on looking at the geography of the respondent sample.

Figure 7. Map of organizations that implemented or are planning to implement agricultural BMPs

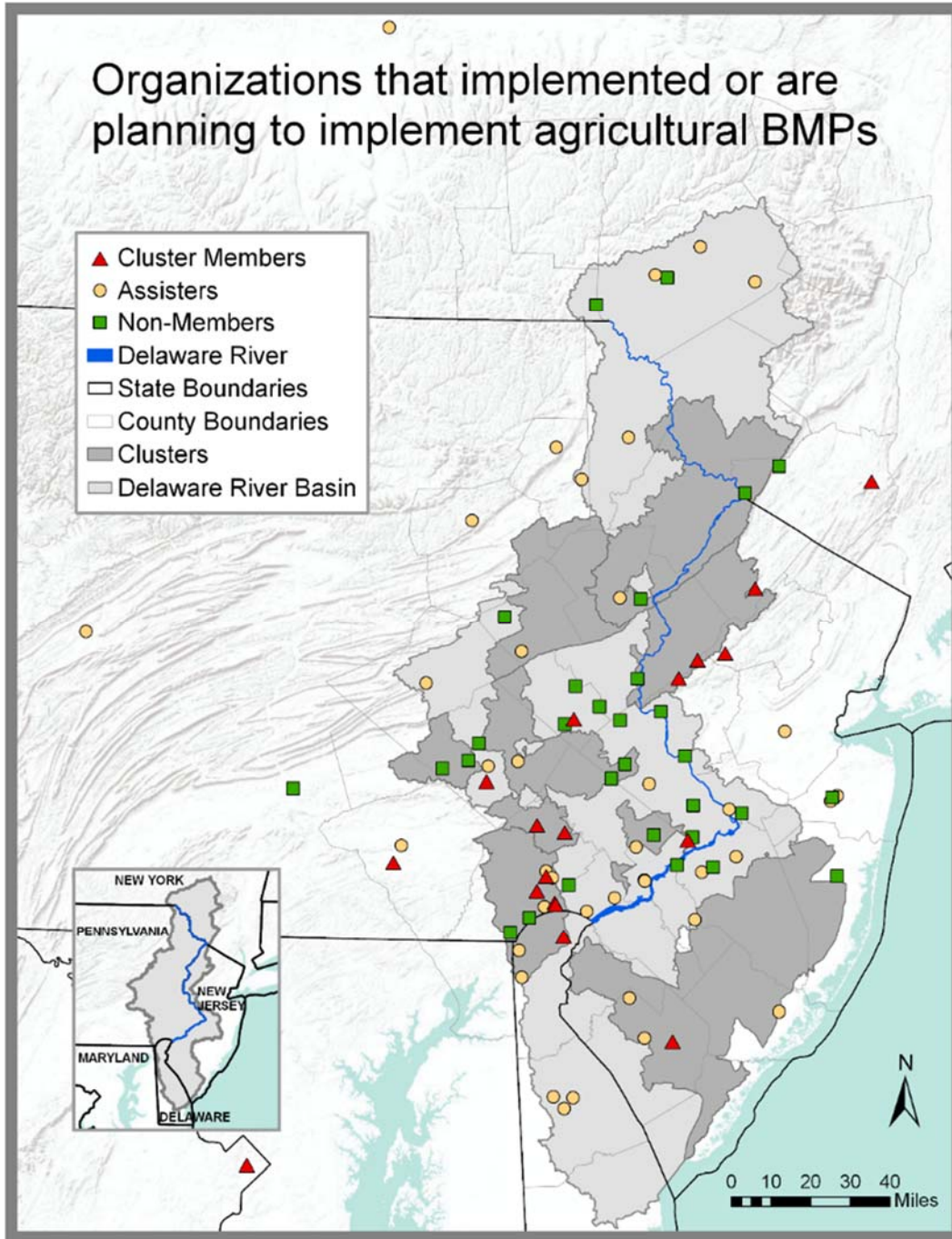


Figure 8. Map of organizations that implemented or are planning to implement stormwater retention basin retrofits

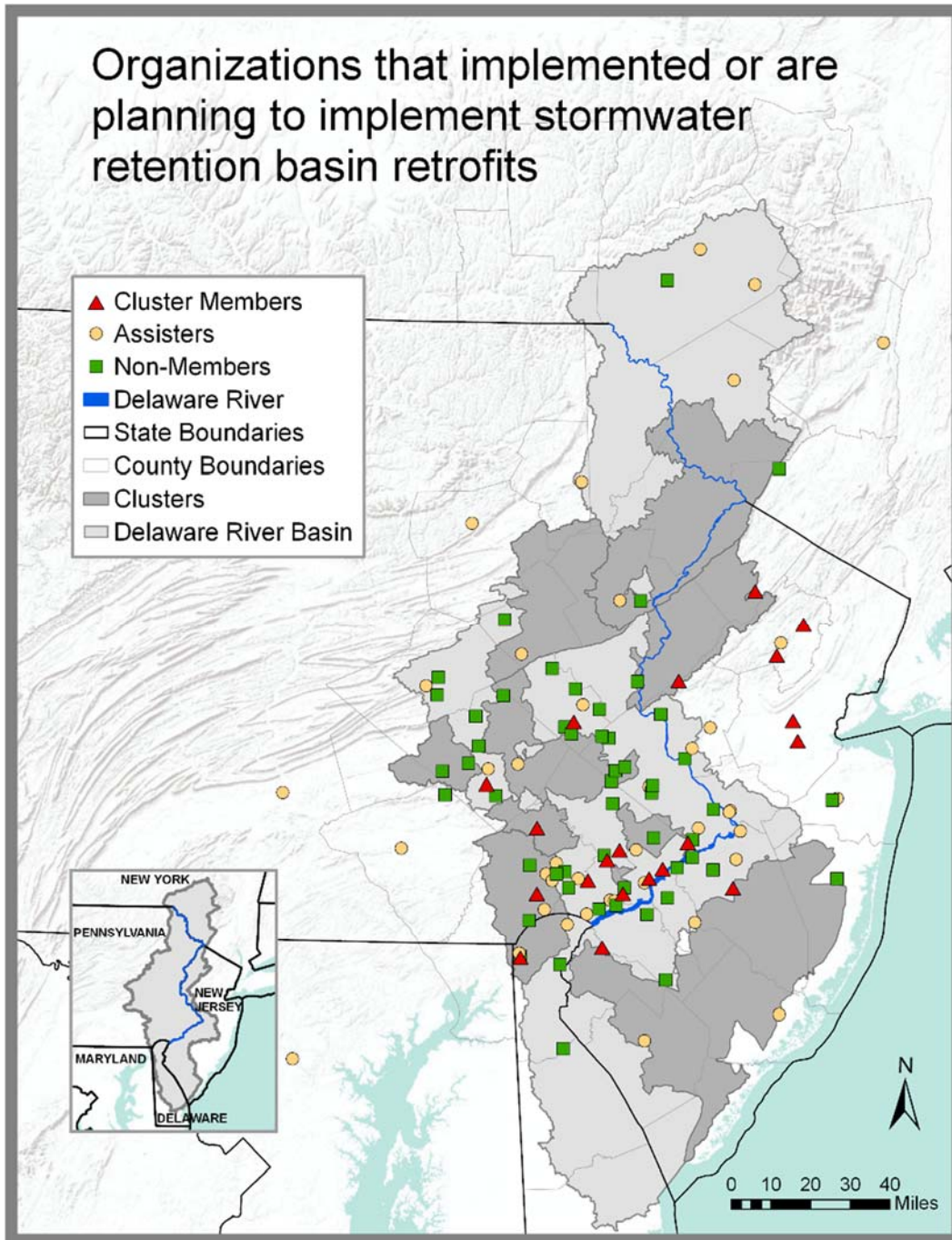


Figure 9. Map of organizations that implemented or are planning to implement stormwater runoff management

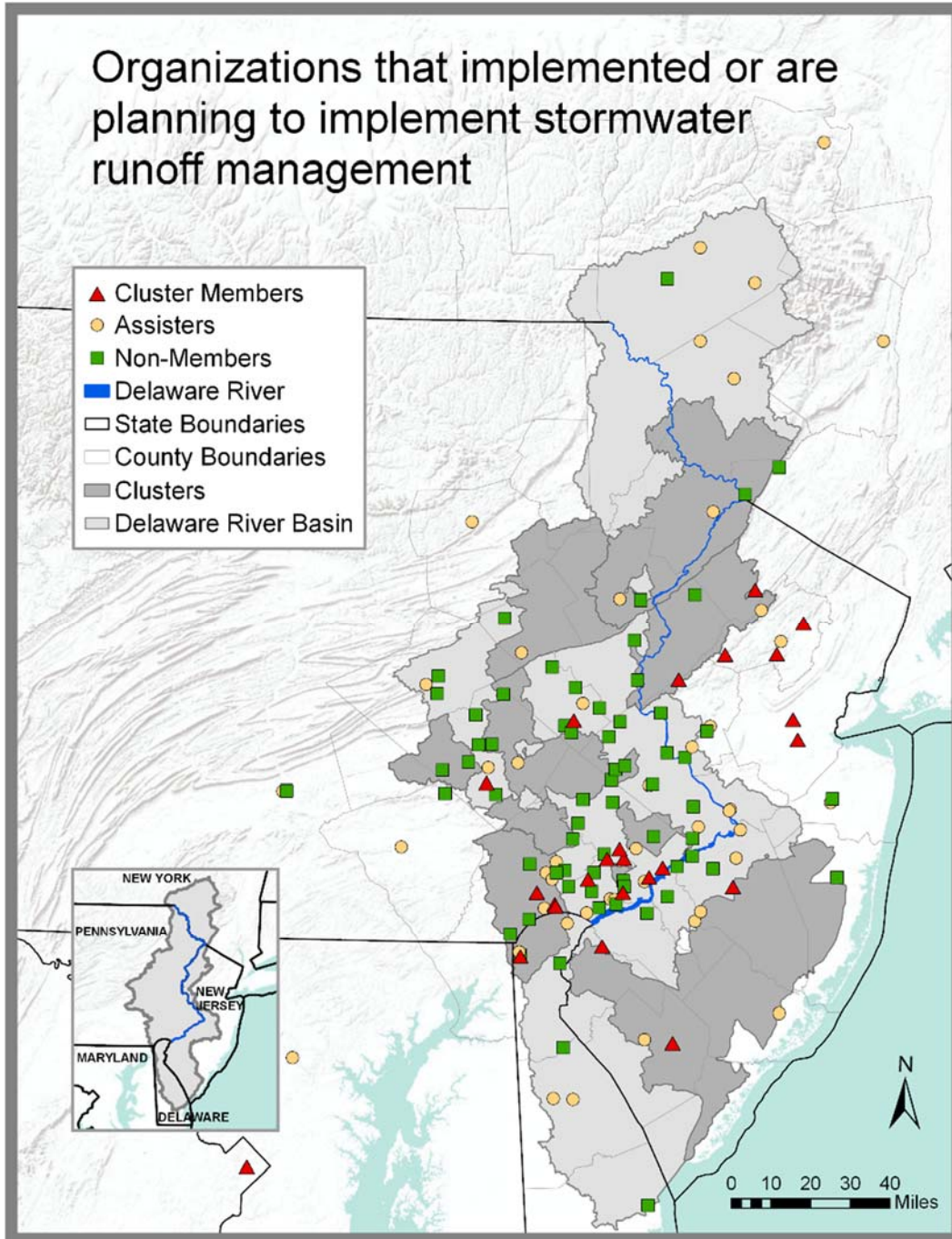


Figure 10. Map of organizations that implemented or are planning to implement in-stream practices

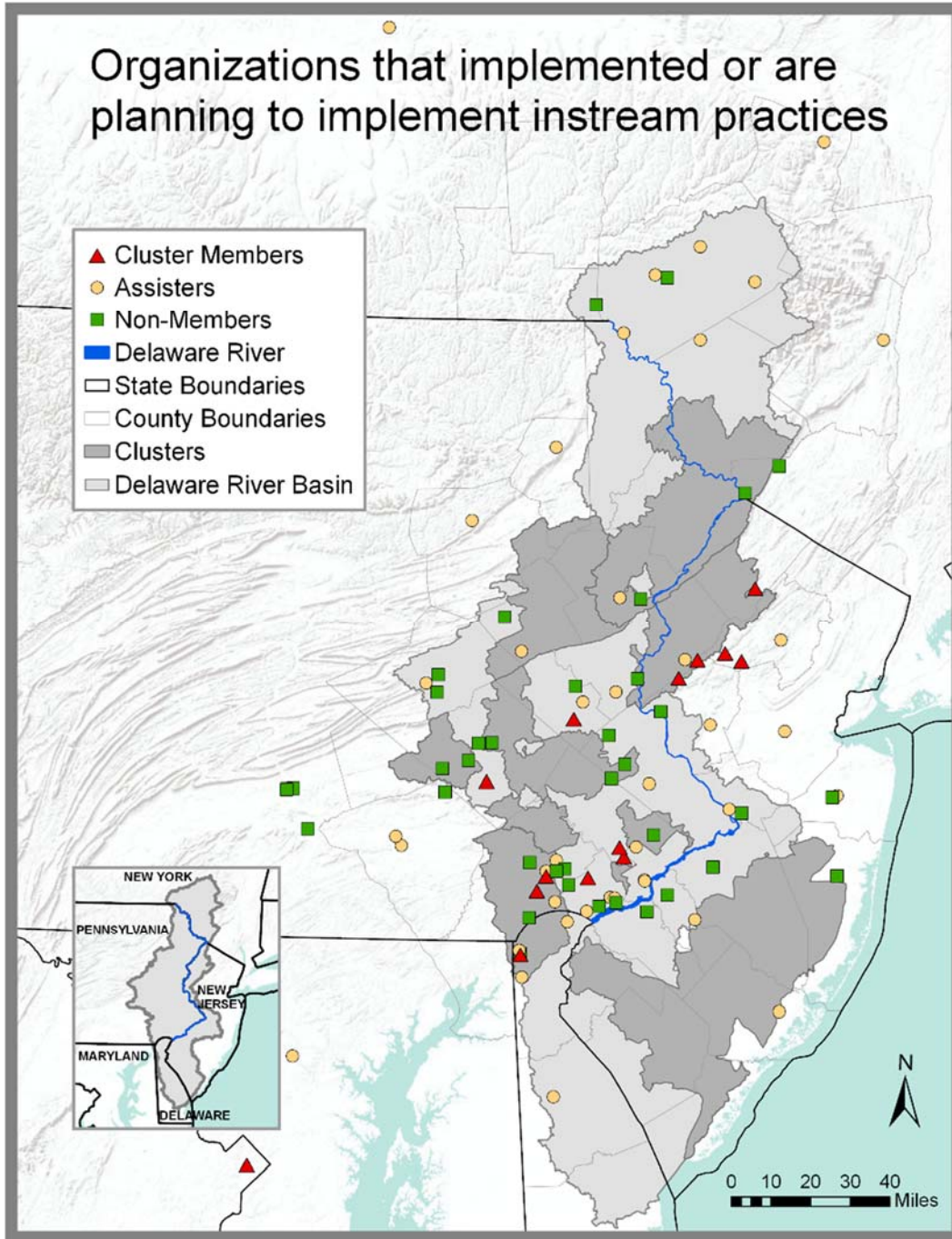


Figure 11. Map of organizations that implemented or are planning to implement stream quality improvements

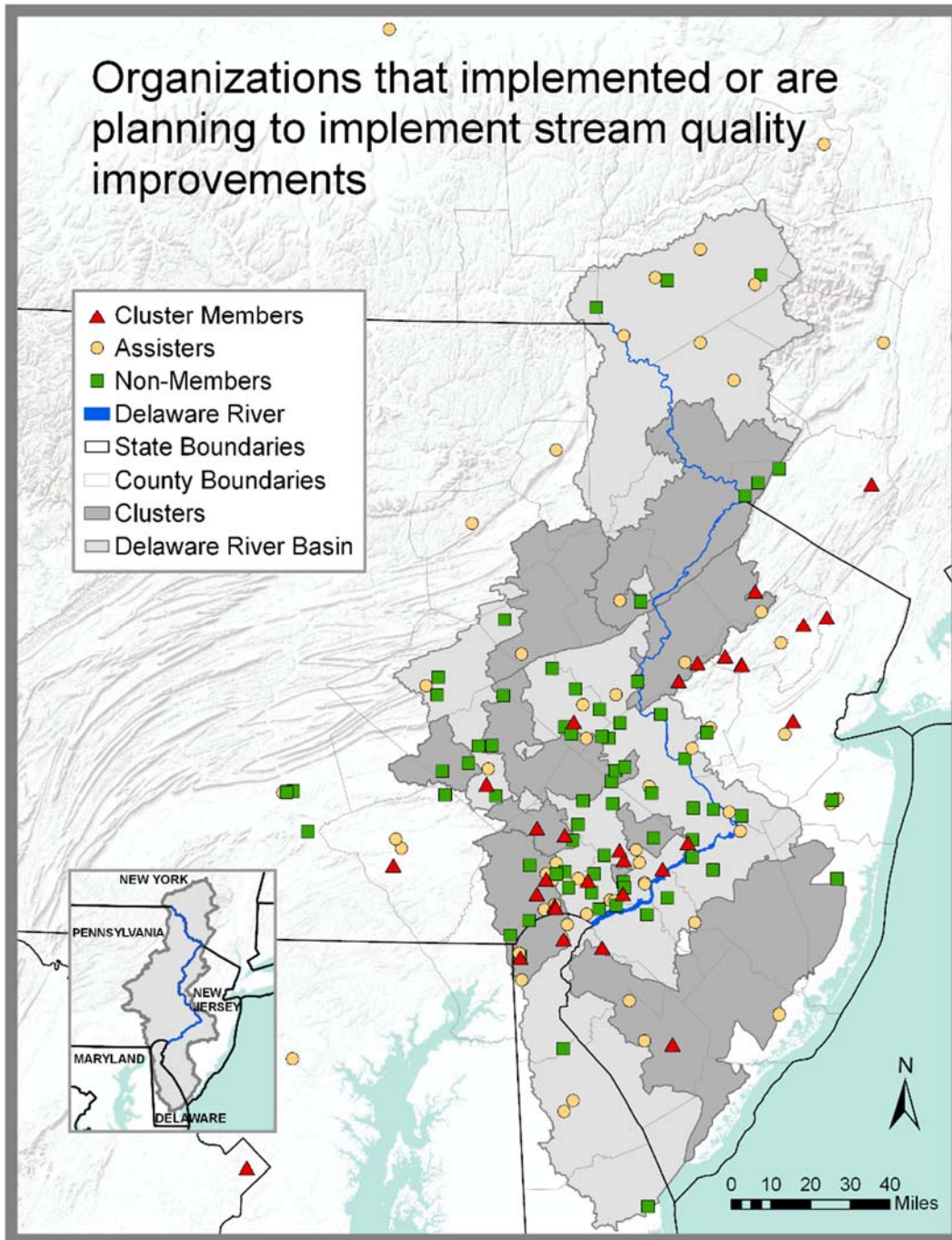


Figure 12. Map of organizations that implemented or are planning to implement wetland or vernal pool BMPs

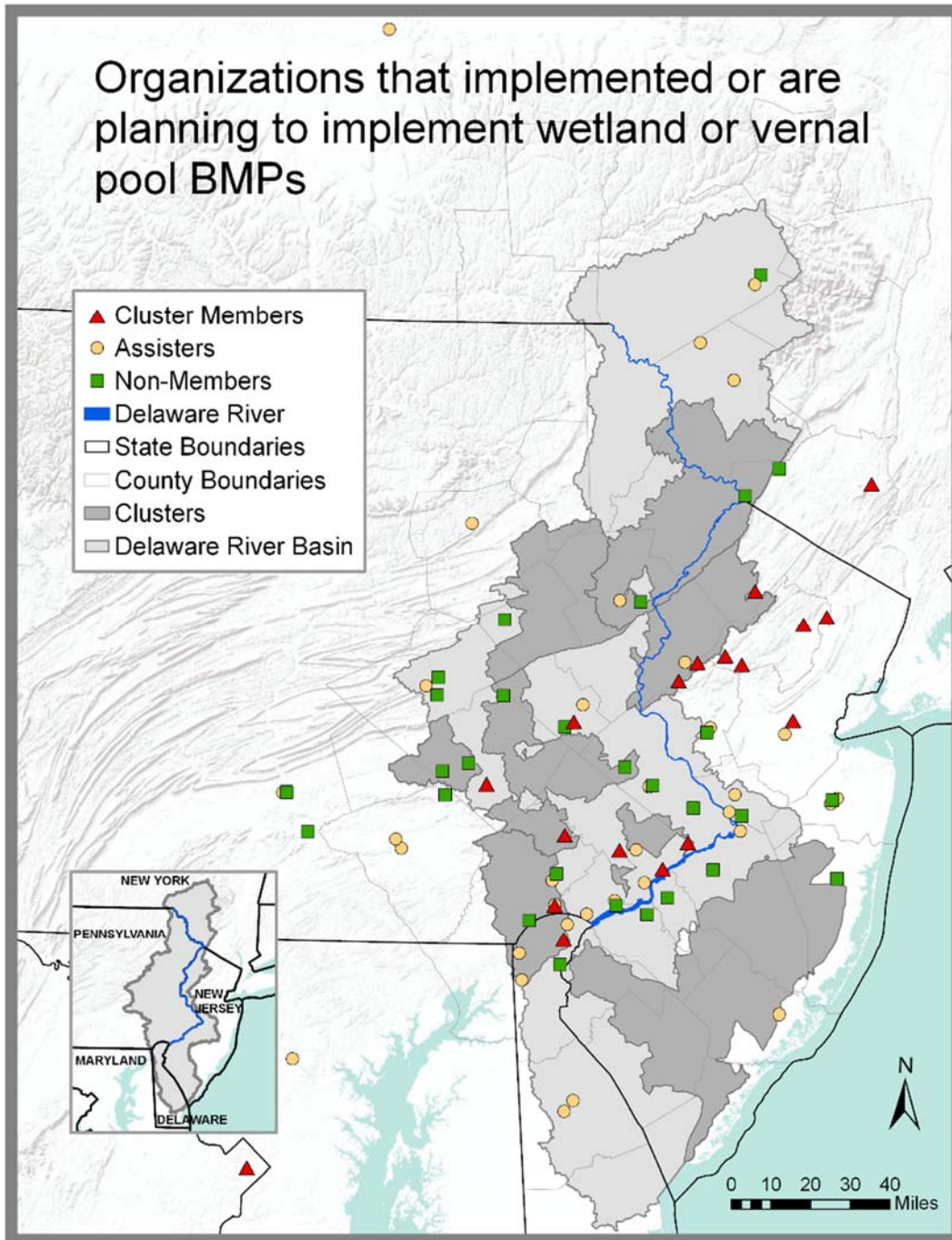
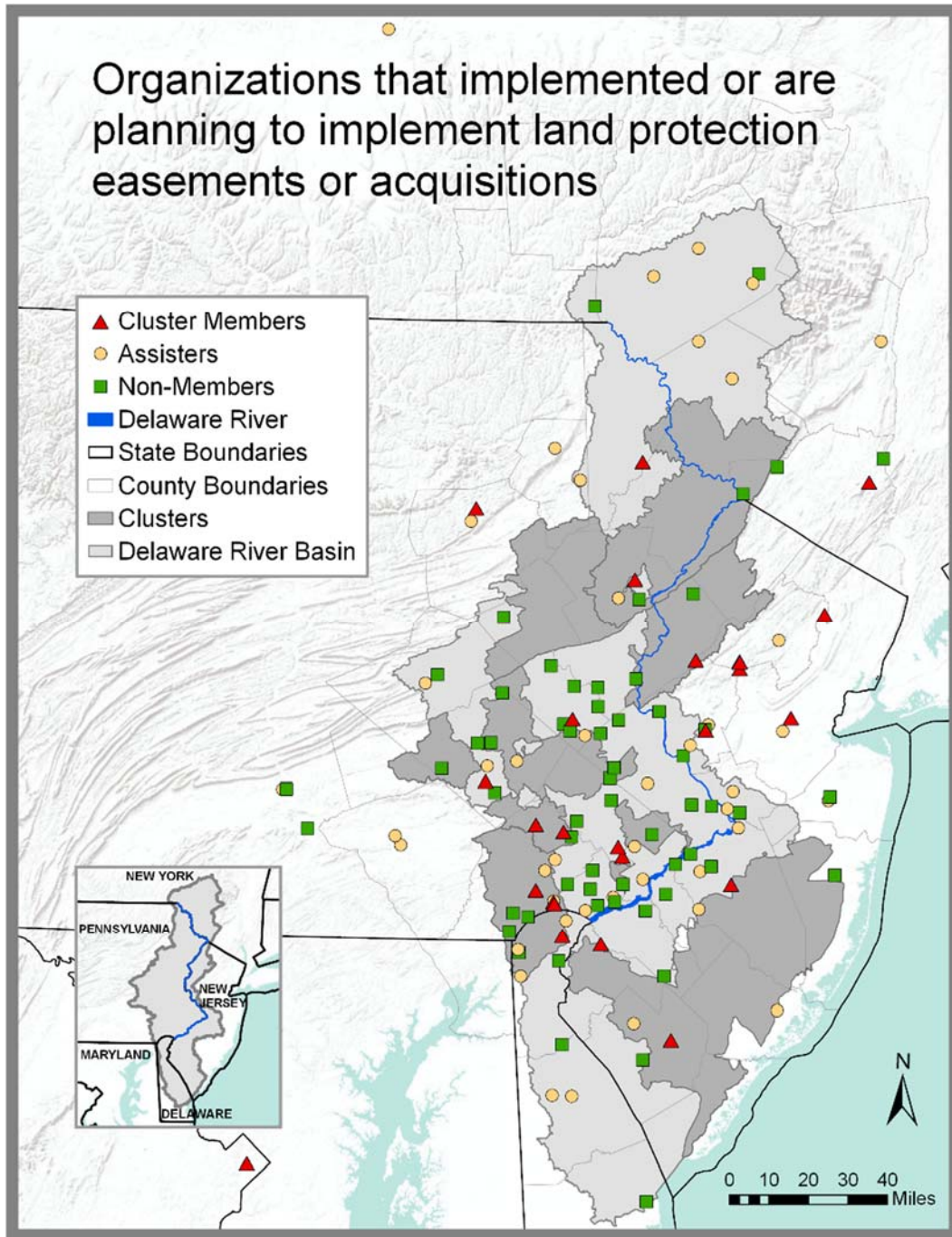


Figure 13. Map of organizations that implemented or are planning to implement land protection easements or acquisitions



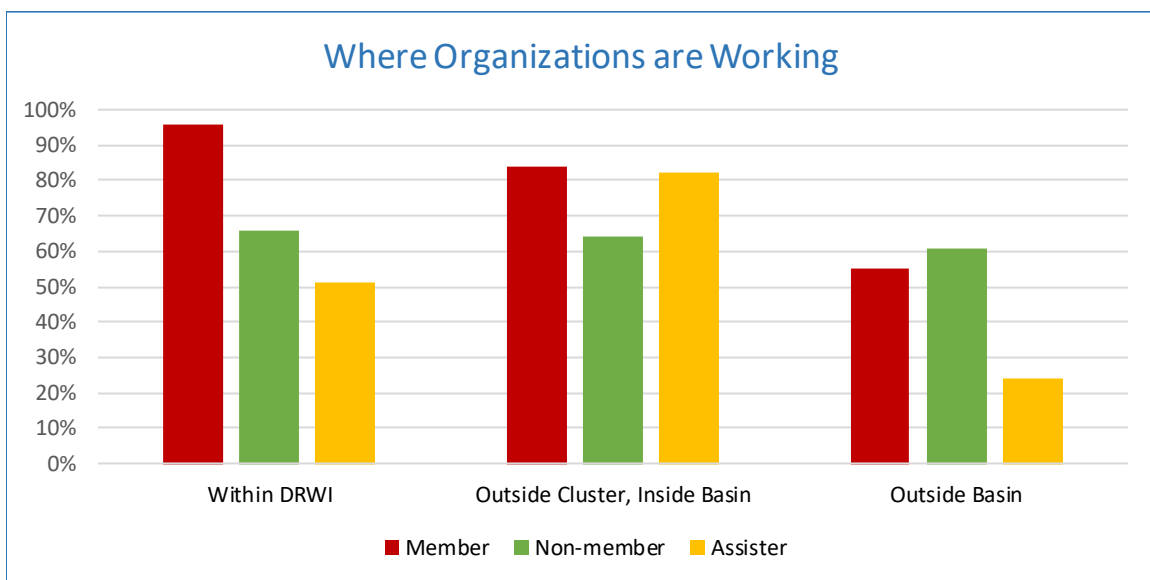
Full-page high-resolution maps can be found in Appendix G.²

² As noted previously, the symbols for the organizations on the above maps correspond to the approximate geocoded address for the organization and do not necessarily represent where the organization is implementing (or assisting with implementing) the practices indicated. It is possible that organizations with similar geocoded addresses may obscure each other.

Geography of Restoration Practices

To ascertain where organizations were implementing practices, all respondent organizations were asked the question: *Based on the map, where does your organization implement, plan to implement, or assist with implementing water quality restoration or land protection practices?* Not surprisingly, all member organizations reported implementing or planning to implement practices within a DRWI cluster boundary (or they were “not sure.”) About two-thirds of non-member organizations also reported implementing practices within a cluster boundary, and only about half of assister organizations are working within the clusters. This response clearly shows that organizations own or manage lands, or assist landowners who manage lands, at locations away from their organization headquarters.

Figure 14. Graph showing where organizations indicated they are doing work related to water quality improvements by respondent type



A high percentage (83.7%) of member organizations are also doing work outside the cluster boundaries but within the Delaware Watershed, and most of the assister organizations are also doing work in these areas. Interestingly, just over half of the member organizations are also implementing or planning to implement outside the watershed. Because of this, it is difficult to determine whether the rate of implementation is higher in the cluster or in the areas outside the clusters using the location of the office. The base number within the cluster is too small.

However, an observation of the clustering of the respondents reporting implementation or planning practices indicates that the two stormwater-based practices, stream quality, and land protection seem to have dispersed throughout the watershed boundary.

Table 17. Within a DRWI cluster boundary

	Yes	No	Not sure
Member	96%	0%	5%
Non-member	66%	26%	8%
Assister	51%	32%	17%
<i>Total</i>	130	44	21

Table 18. Outside a DRWI cluster but within Delaware River Watershed

	Yes	No	Not sure
Member	84%	12%	5%
Non-member	64%	21%	15%
Assister	82%	15%	3%
<i>Total</i>	138	30	15

Table 19. Outside the Delaware River Watershed

	Yes	No	Not sure
Member	55%	43%	3%
Non-member	61%	36%	3%
Assister	24%	64%	12%
<i>Total</i>	76	79	10

Funding of Practices

Regarding funding, respondents were asked if DRWI-Funds were utilized for practices implemented or in the process of implementation. (They were prompted that DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.) **A majority of the member organizations had used DRWI funding for all practices except stormwater retention basin retrofits and wetland or vernal pool restorations.** Interestingly, **for non-members, the highest percentage of reported use of DRWI funding for practice implementation was for in-stream practices and agricultural best management practices.** We can infer that although these two practices were not among the most commonly implemented, DRWI funding seems to have been more important in spurring implementation of these practices than for other practices.

“There is definitely value in being able to hold up examples of successful restoration at the local level to show that, not only can these projects be done, but they can truly have a meaningful impact on communities and on water quality. However, promoting these project won’t be what pushes other projects across the finish line. To do that, there has to be funding from other programs and agencies to help replicate and scale up this type of work.”

Comment from survey participant

Figure 15. Graph of DRWI-funds usage for practices implemented by respondent type

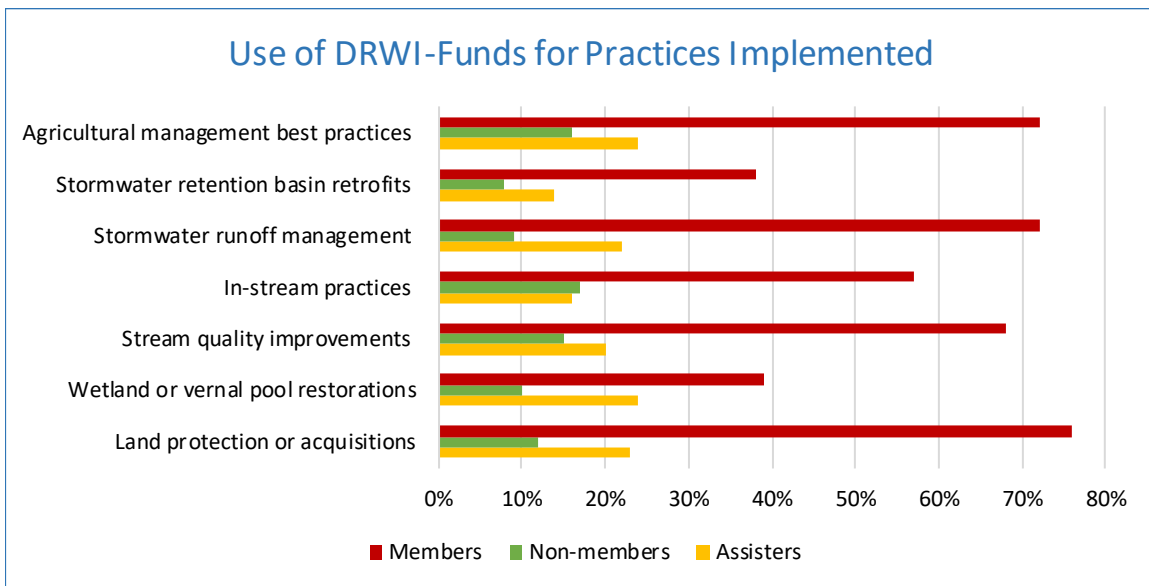


Table 20. Use of DRWI funding for practices implemented - members

Question	Yes	No	Not sure	Total
Agricultural management best practices	72%	22%	6%	18
Stormwater retention basin retrofits	38%	62%	0%	21
Stormwater runoff management	72%	28%	0%	25
In-stream practices	57%	43%	0%	14
Stream quality improvements	68%	29%	3%	31
Wetland or vernal pool installation or restoration	39%	56%	6%	18
Land protection or acquisitions	76%	24%	0%	25

Table 21. Use of DRWI funding for practices implemented - non-members

Question	Yes	No	Not sure	Total
Agricultural management best practices	16%	55%	29%	31
Stormwater retention basin retrofits	8%	75%	18%	51
Stormwater runoff management	9%	69%	22%	68
In-stream practices	17%	64%	19%	36
Stream quality improvements	15%	65%	20%	69
Wetland or vernal pool installation or restoration	10%	65%	26%	31
Land protection or acquisitions	12%	68%	20%	59

Table 22. Use of DRWI funding for practices implemented - assisters

Question	Yes	No	Not Sure	Total
Agricultural management best practices	24%	62%	15%	34
Stormwater retention basin retrofits	14%	69%	17%	36
Stormwater runoff management	22%	63%	15%	41
In-stream practices	16%	62%	22%	37
Stream quality improvements	20%	63%	18%	51
Wetland or vernal pool installation or restoration	24%	52%	24%	25
Land protection or acquisitions	23%	66%	11%	35

The survey asked the same funding question about the planned practices. A majority of member organizations reported anticipated use of DRWI funds for all of the seven practice types. **For non-member organizations, more than a third plan to use DRWI funds for planned stream quality improvements, and more than a quarter to use them for planned in-stream practices and for land protection.**

Table 23. Funding for planned practices - members

Question	Yes	No	Not sure	Total
Agricultural management best practices	75%	15%	10%	20
Stormwater retention basin retrofits	70%	13%	17%	23
Stormwater runoff management	73%	13%	13%	30
In-stream practices	53%	21%	26%	19
Stream quality improvements	76%	15%	9%	34
Wetland or vernal pool installation or restoration	67%	24%	10%	21
Land protection or acquisitions	78%	7%	15%	27

Table 24. Funding for Planned Practices - Non-Members

Question	Yes	No	Not Sure	Total
Agricultural management best practices	18%	21%	61%	33
Stormwater retention basin retrofits	19%	19%	62%	53
Stormwater runoff management	20%	25%	55%	65
In-stream practices	29%	13%	58%	48
Stream quality improvements	36%	19%	45%	74
Wetland or vernal pool installation or restoration	14%	27%	59%	44
Land protection or acquisitions	27%	17%	56%	59

Table 25. Funding for Planned Practices - Assisters

Question	Yes	No	Not Sure	Total
Agricultural management best practices	23%	23%	55%	31
Stormwater retention basin retrofits	18%	29%	53%	34
Stormwater runoff management	24%	32%	44%	34
In-stream practices	16%	32%	52%	31
Stream quality improvements	19%	40%	42%	43
Wetland or vernal pool installation or restoration	24%	28%	48%	29
Land protections or acquisitions	27%	24%	50%	34

The following figures show the distribution of non-member and assister organizations that utilized or plan to utilize DRWI-funds for specified practices. Compared to the previous set of maps (Figure 7 through Figure 13), these organizations tend to be adjacent to or within cluster boundaries and within the watershed boundaries than the general population of organizations indicating they were implementing or planned to implement the corresponding practice.

Figure 16. Map of organizations that utilized or plan to utilize DRWI-funds for agricultural BMPs.

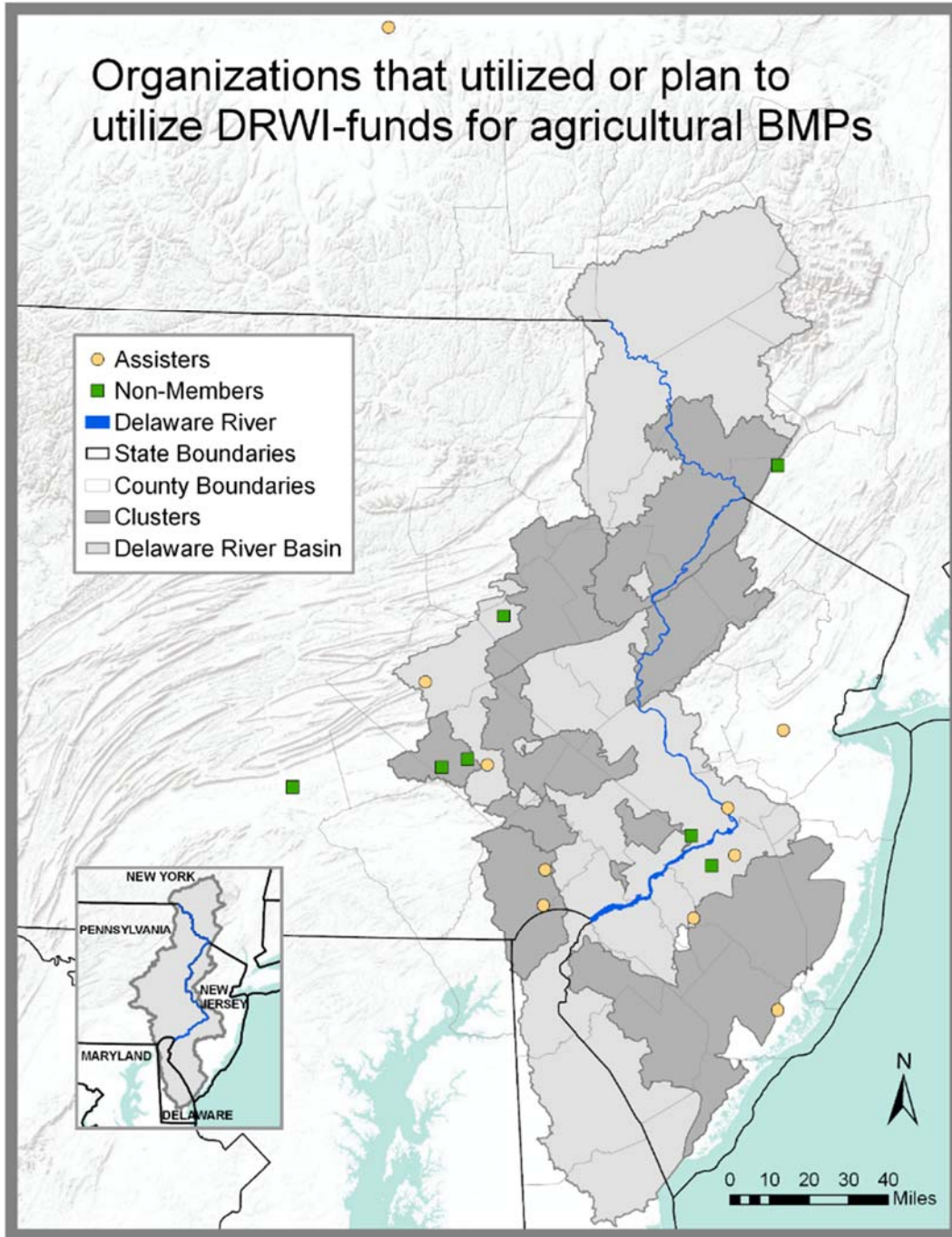


Figure 17. Map of organizations that utilized or plan to utilize DRWI-funds for stormwater retention basin retrofits

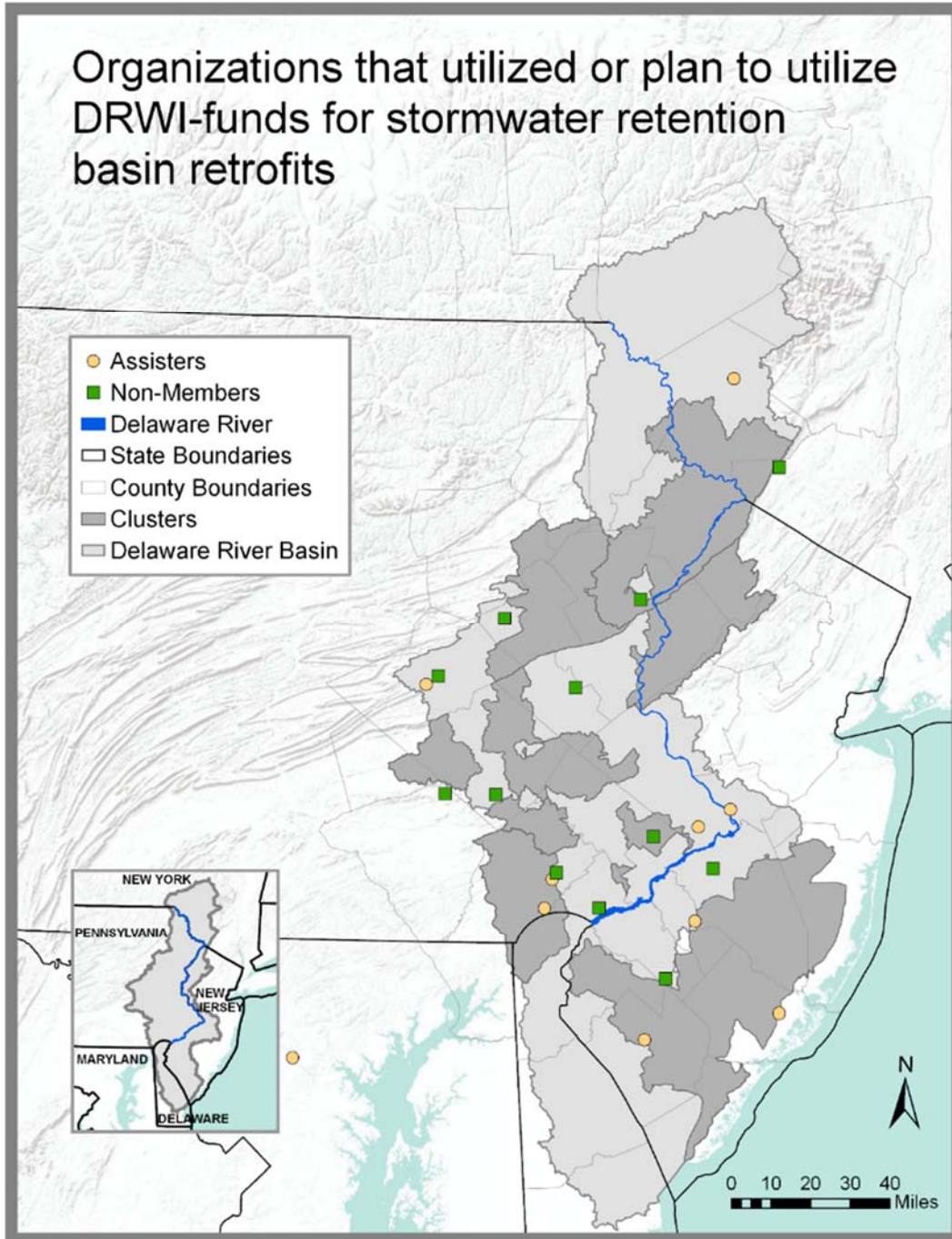


Figure 18. Map of organizations that utilized or plan to utilize DRWI-funds for stormwater runoff management

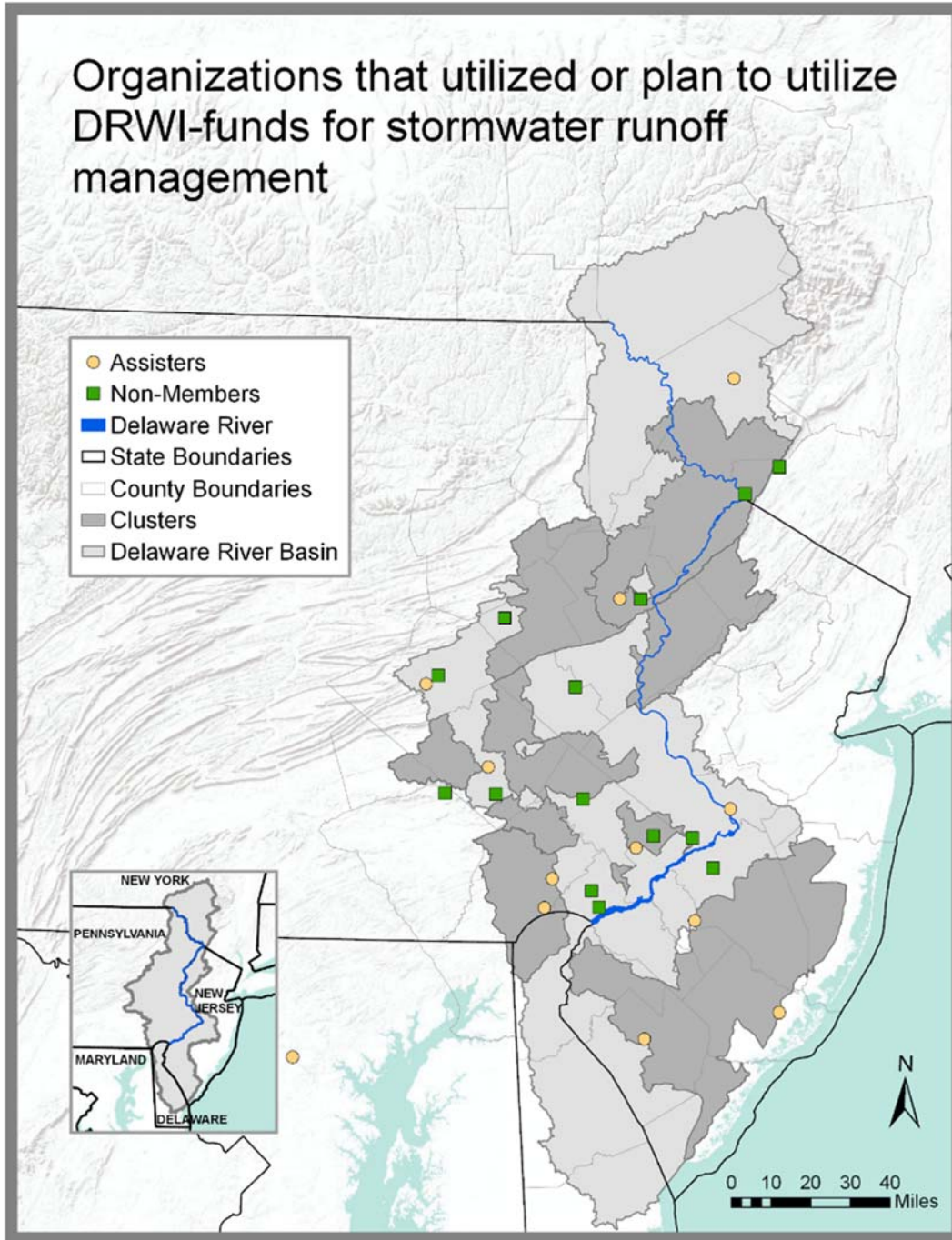


Figure 19. Map of organizations that utilized or plan to utilize DRWI-funds for in-stream practices

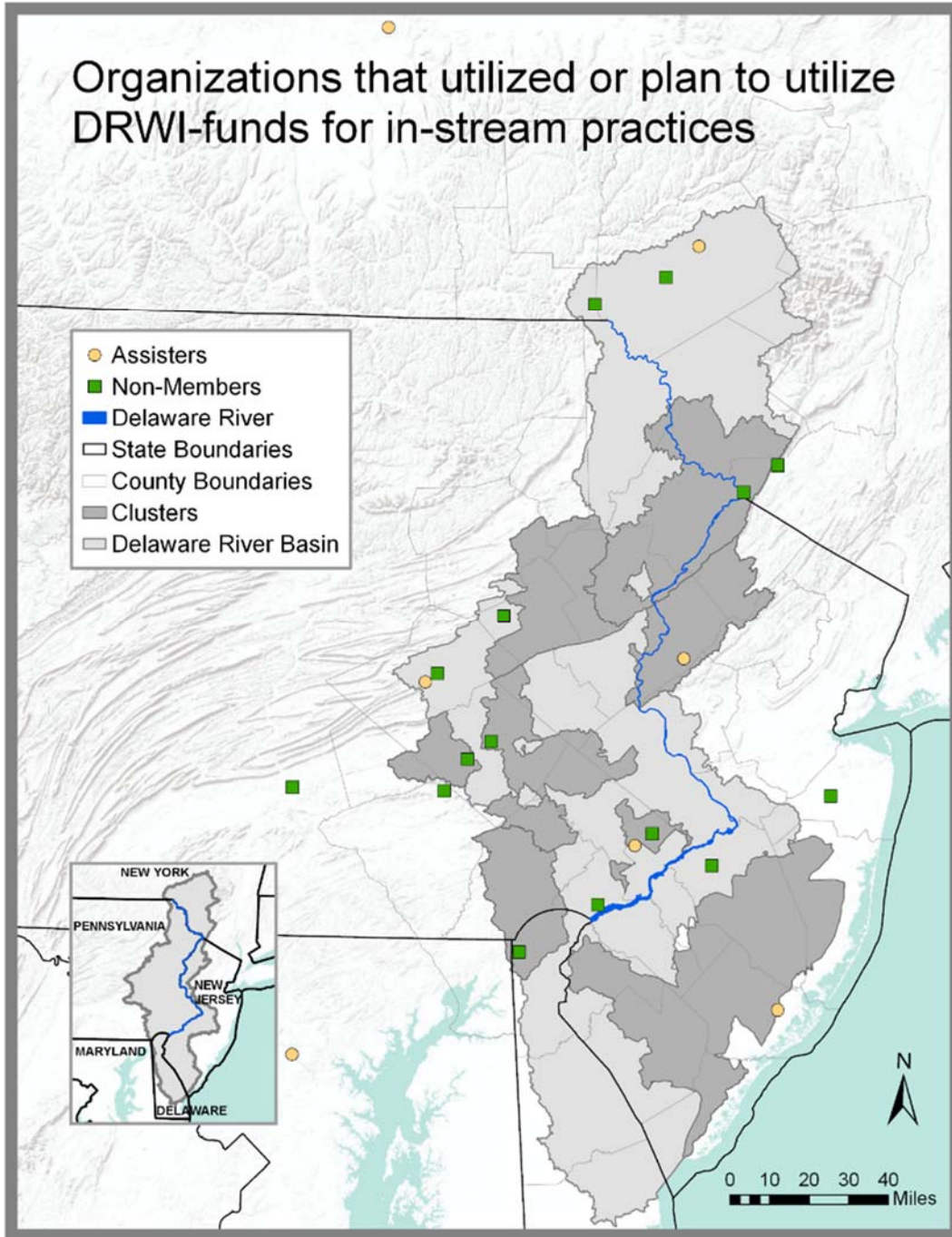


Figure 20. Map of organizations that utilized or plan to utilize DRWI-funds for stream quality improvements

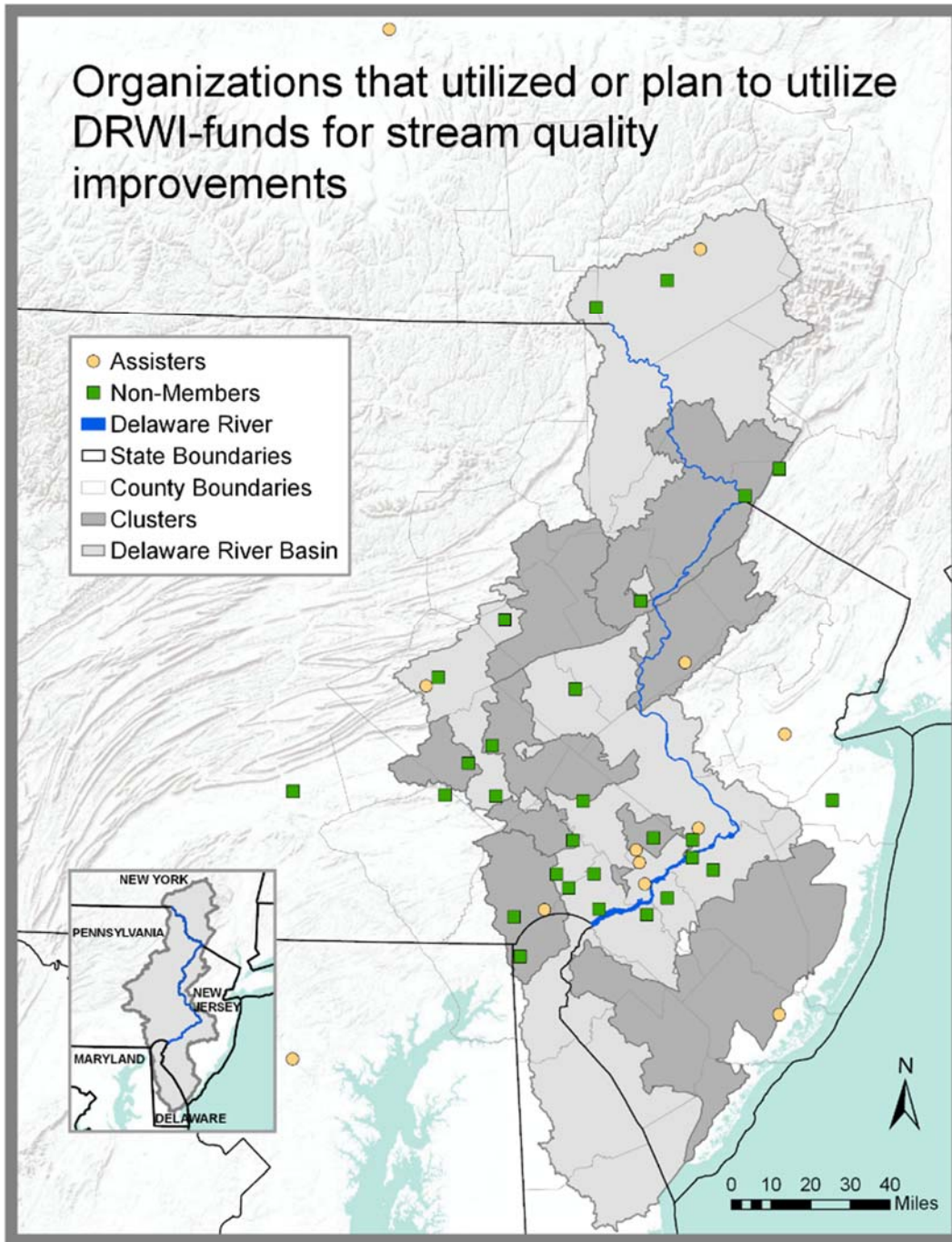


Figure 21. Map of organizations that utilized or plan to utilize DRWI-funds for wetland or vernal pool BMPs

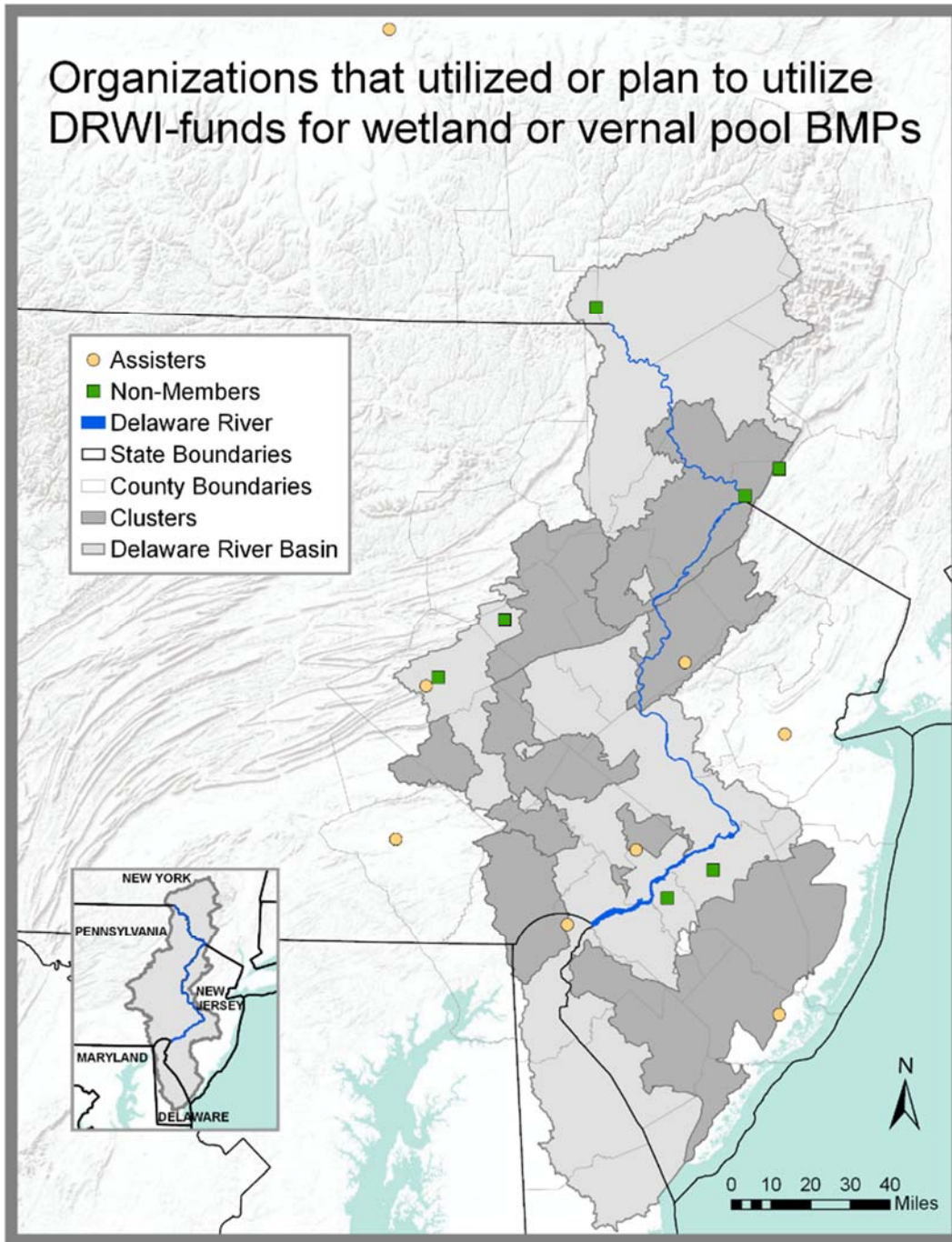
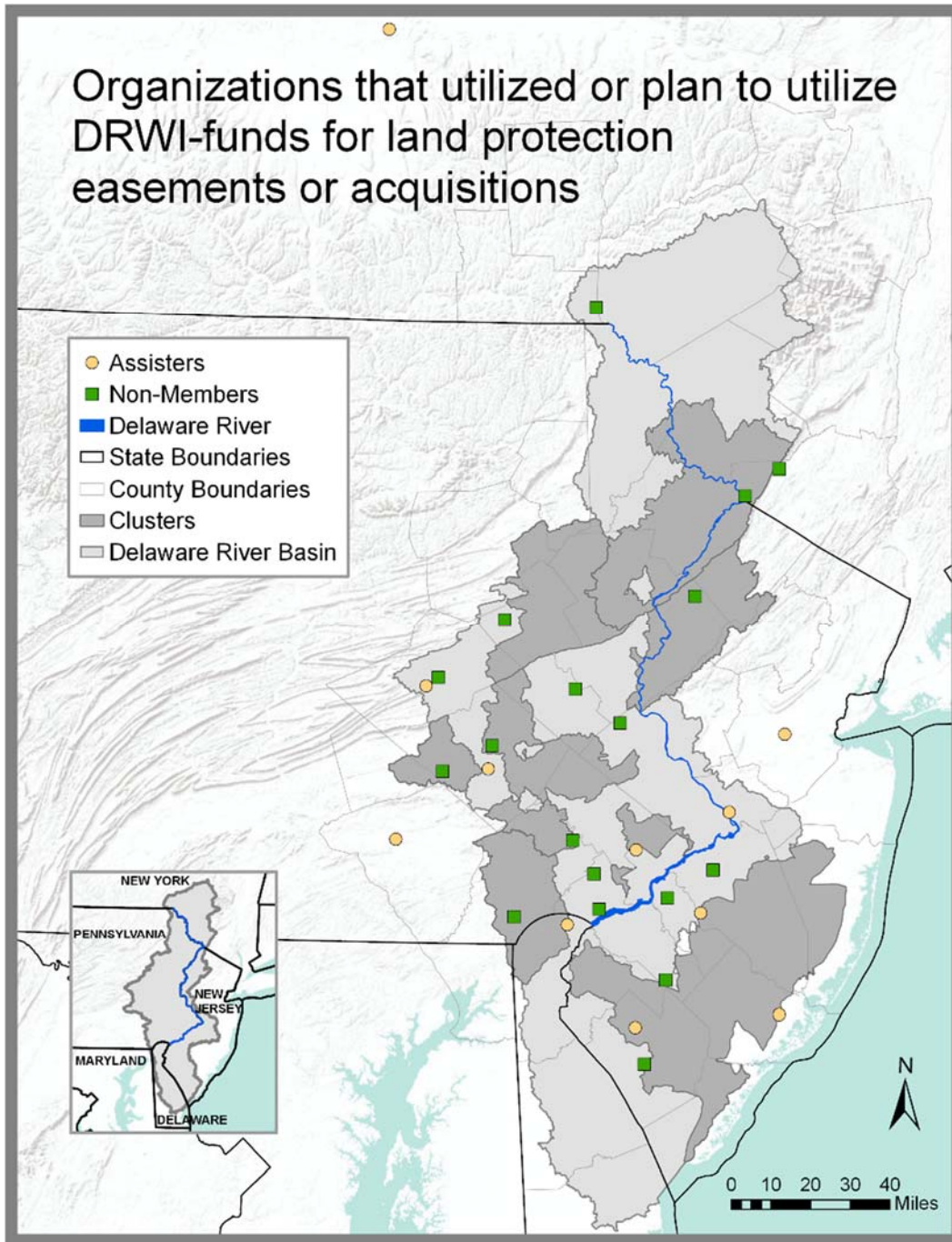


Figure 22. Map of organizations that utilized or plan to utilize DRWI-funds for land protection easements or acquisitions



Full-page high-resolution maps can be found in Appendix G.³

³ As noted previously, the symbols for the organizations on the above maps correspond to the approximate geocoded address for the organization and do not necessarily represent where the organization utilized or plans to utilize DRWI-funds for the practices indicated. It is possible that organizations with similar geocoded addresses may obscure each other.

Inclusion of Practices in Cluster Strategic Plan

In an effort to understand the breadth of water quality and land protection practices cluster members were conducting, member organizations were asked: *For the practices you have implemented or are in the process of implementing (regardless of funding source), please indicate if they are part of your cluster strategic plan.* **A high percentage of cluster member organizations reported that for all practices, they were included in strategic plans.** The practices included in the fewest strategic plans are wetlands or vernal pool restorations, and in-stream practices, but it is unclear if the reason is that the organizations are just not doing those practices or if they are doing them and not including them in their plans.

Table 26. Practices included in cluster strategic plans - members

Question	Yes	No	Total
Agricultural management best practices	94%	6%	17
Stormwater retention basin retrofits	84%	16%	19
Stormwater runoff management	88%	12%	25
In-stream practices	77%	23%	13
Stream quality improvements	97%	3%	30
Wetland or vernal pool installation or restoration	65%	35%	17
Land protection or acquisitions	84%	16%	25

Information Sharing

To inform future outreach efforts, an important component of the survey was to ascertain if and how members were sharing information about DRWI-funded projects and if and how non-cluster organizations were getting information about DRWI-funded projects.

“In the age of social media, we can reach often difficult to reach farmers and other large landowners and convince them of the benefits to their soils by implementing proper best management practices on their lands.”

Comment by survey participant

All respondents were asked the question: *Thinking about where you get information related to water quality restoration or land protection practices, how important are the following?*

In-person meetings, conferences/seminars, and websites were ranked as the most important ways to learn about practices. At the other end, social media is the least important method of learning. Printed

newsletters, news media and community events are also of less importance. In the middle range of importance are targeted e-mails and public reports.

Figure 23. Graph of importance of information sources for all respondents

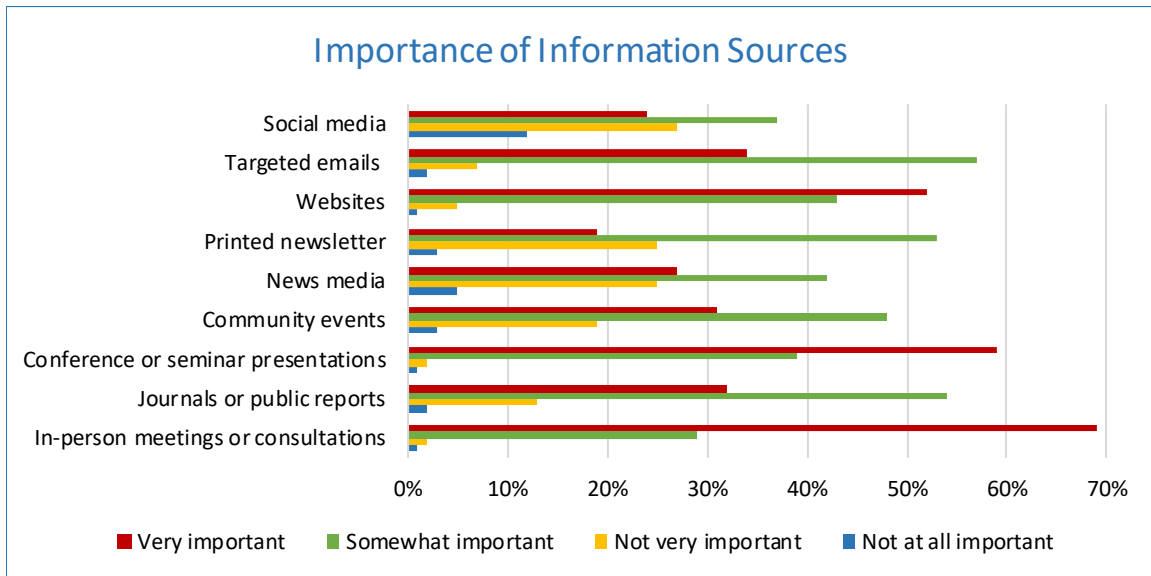


Table 27. Importance of information sources - all respondents

	Very important	Somewhat important	Not very important	Not at all important	Total
Social media	24%	37%	27%	12%	203
Targeted emails (e.g., w/electronic newsletter)	34%	57%	7%	2%	206
Websites	52%	43%	5%	1%	207
Printed newsletter	19%	53%	25%	3%	206
News media	27%	42%	25%	5%	203
Community events	31%	48%	19%	3%	206
Conference or seminar presentations	59%	39%	2%	1%	207
Journals or public reports	32%	54%	13%	2%	205
In-person meetings or consultations	69%	29%	2%	1%	206

When breaking out the respondents by group, however, we found that the **member organizations found in-person meetings and conferences significantly more important than assisters and non-**

members, while non-members rely on community events slightly more often than members for information about restoration practices.

Table 28. In-person meetings or consultations

	Very important	Somewhat important	Not very important	Not at all important
Member	93%	5%	2%	0%
Non-member	55%	40%	2%	2%
Assister	69%	29%	1%	0%

Table 29. Community events

	Very important	Somewhat important	Not very important	Not at all important
Member	27%	34%	30%	9%
Non-member	31%	48%	18%	2%
Assister	32%	55%	13%	0%

Table 30. Conference or seminar presentations

	Very important	Somewhat important	Not very important	Not at all important
Member	71%	30%	0%	0%
Non-member	53%	44%	2%	1%
Assister	58%	40%	1%	1%

Member organizations were asked: *For the practices you have implemented or are presently implementing that were supported by DRWI-Funds, did you share information about those specific practices with others outside your organization?* **A very high percentage of member organizations report that they share information about practices they have implemented.** The fewest percentage report sharing information about wetland/vernal pool installation/restorations. We could speculate that information was not shared to the same degree because there are not as many non-members involved in wetland restoration (only 26% reported planning to install or retrofit wetlands).

Table 31. Information sharing about practices - members

Question	Yes	No	Total
Agricultural management best practices	100%	0%	12
Stormwater retention basin retrofits	88%	12%	8
Stormwater runoff management	100%	0%	17
In-stream practices	100%	0%	7
Stream quality improvements	95%	5%	20
Wetland or vernal pool installation or restoration	67%	33%	6
Land protection or acquisitions	100%	0%	18

Non-members and assisters were asked: *Did you learn about the practices you have implemented or are implementing from a DRWI-funded project?* A higher percentage of assisters learned about practices from DRWI-funded projects than did non-member organizations. **For non-members, more reported learning about in-stream practices, wetland restorations and land protection from DRWI-funded projects than about other practices. Almost a quarter of assisting organizations learned about agricultural best practices from DRWI-funded projects.**

Table 32. Learning about practices from DRWI - non-members

Question	Yes	No	Not sure	Total
Agricultural management best practices	10%	61%	29%	31
Stormwater retention basin retrofits	8%	67%	26%	51
Stormwater runoff management	7%	68%	25%	68
In-stream practices	14%	67%	19%	36
Stream quality improvements	9%	71%	20%	69
Wetland or vernal pool installation or restoration	13%	74%	13%	31
Land protection or acquisitions	12%	66%	22%	59

Table 33. Learning about practices from DRWI - assisters

Question	Yes	No	Not sure	Total
Agricultural management best practices	24%	59%	18%	34
Stormwater retention basin retrofits	8%	78%	14%	36
Stormwater runoff management	17%	73%	10%	41
In-stream practices	8%	81%	11%	37
Stream quality improvements	16%	75%	10%	51
Wetland or vernal pool installation or restoration	12%	72%	16%	25
Land protection or acquisitions	17%	71%	11%	35

The scale of the entire DRWI initiative, coupled with the number and caliber of institutions involved in the initiative, have made municipal staff, elected officials, residents, and civic agencies so much more aware of best practices than before DRWI began. The commitment from these partners to implement BMPs has skyrocketed in the last two years alone.

Comment from survey participant

The following figures show the distribution of non-member and assister organizations that reported learning about the specified practice from DRWI-funded projects. In almost all instances, the organizations appear to be near clusters and within the basin boundaries. This is especially noticeable when comparing these maps to the corresponding practice maps for organizations planning to implement these same practices as shown in Figure 10 through Figure 13. This could imply that member organizations working within the clusters have been more successful in spreading information about practices to nearby organizations than they have to organizations that are located a farther distance away.

Figure 24. Map of organizations that learned about agricultural BMPs from DRWI-funded projects

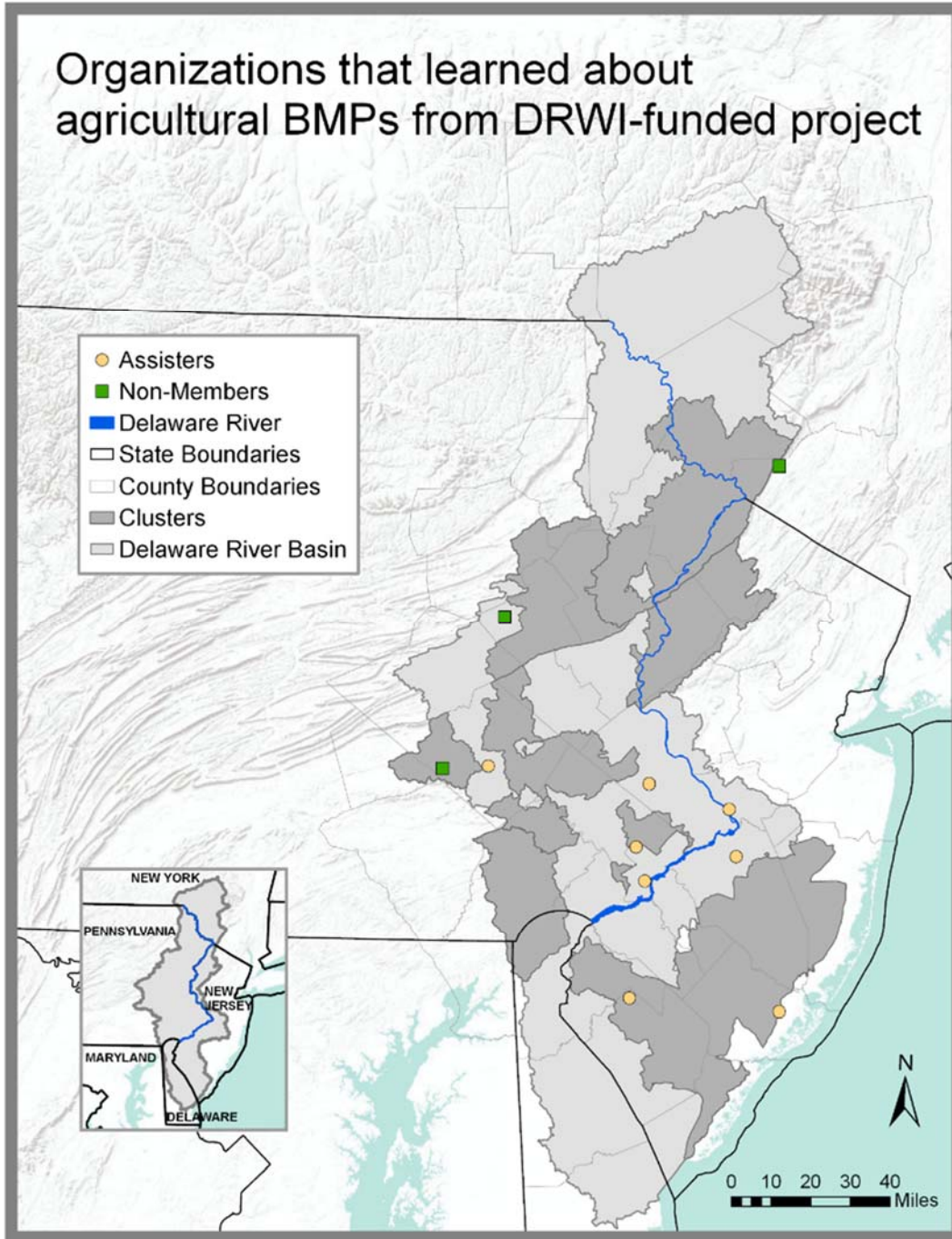


Figure 25. Map of organizations that learned about stormwater retention basin retrofits from DRWI-funded project

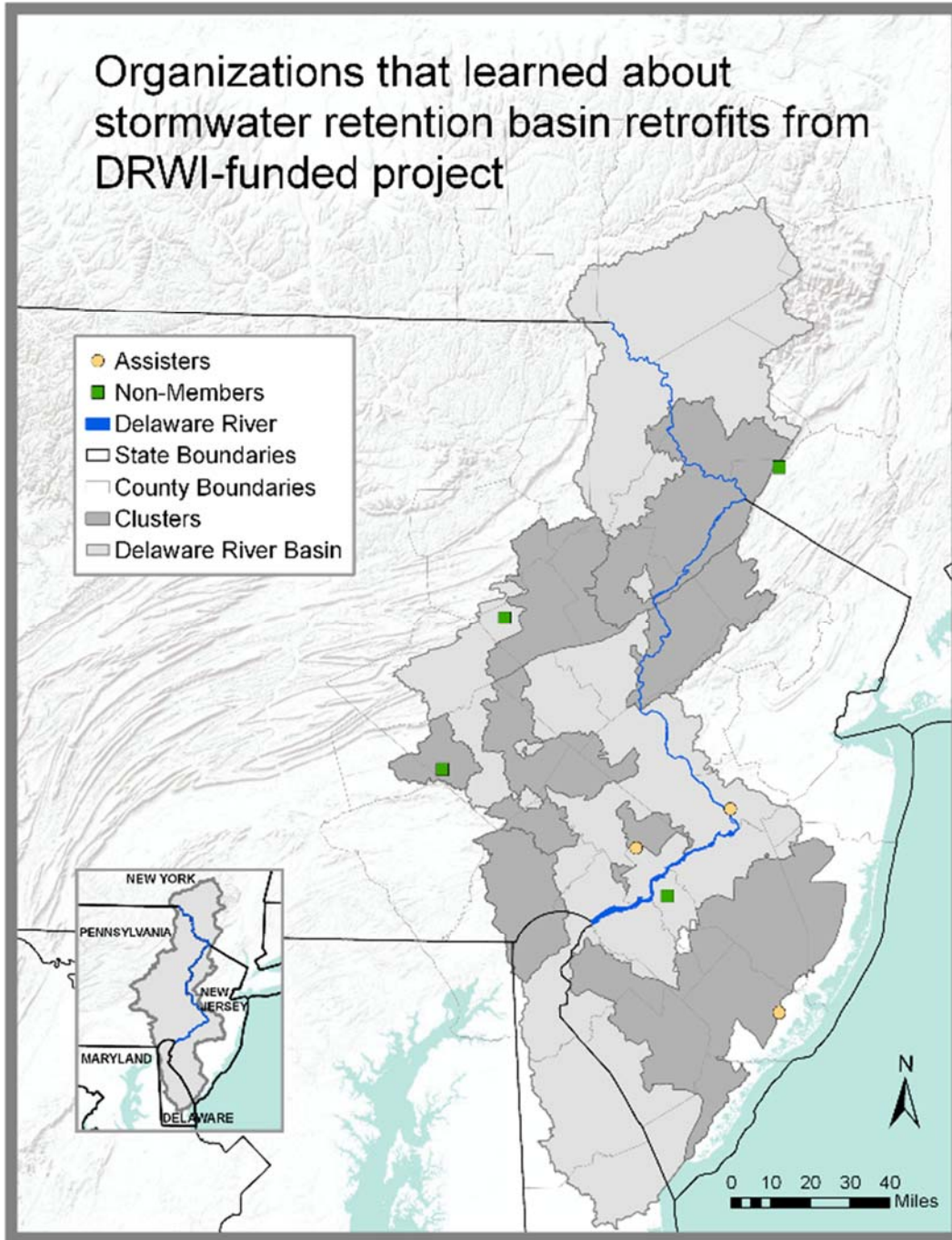


Figure 26. Map of organizations that learned about stormwater runoff management from DRWI-funded projects

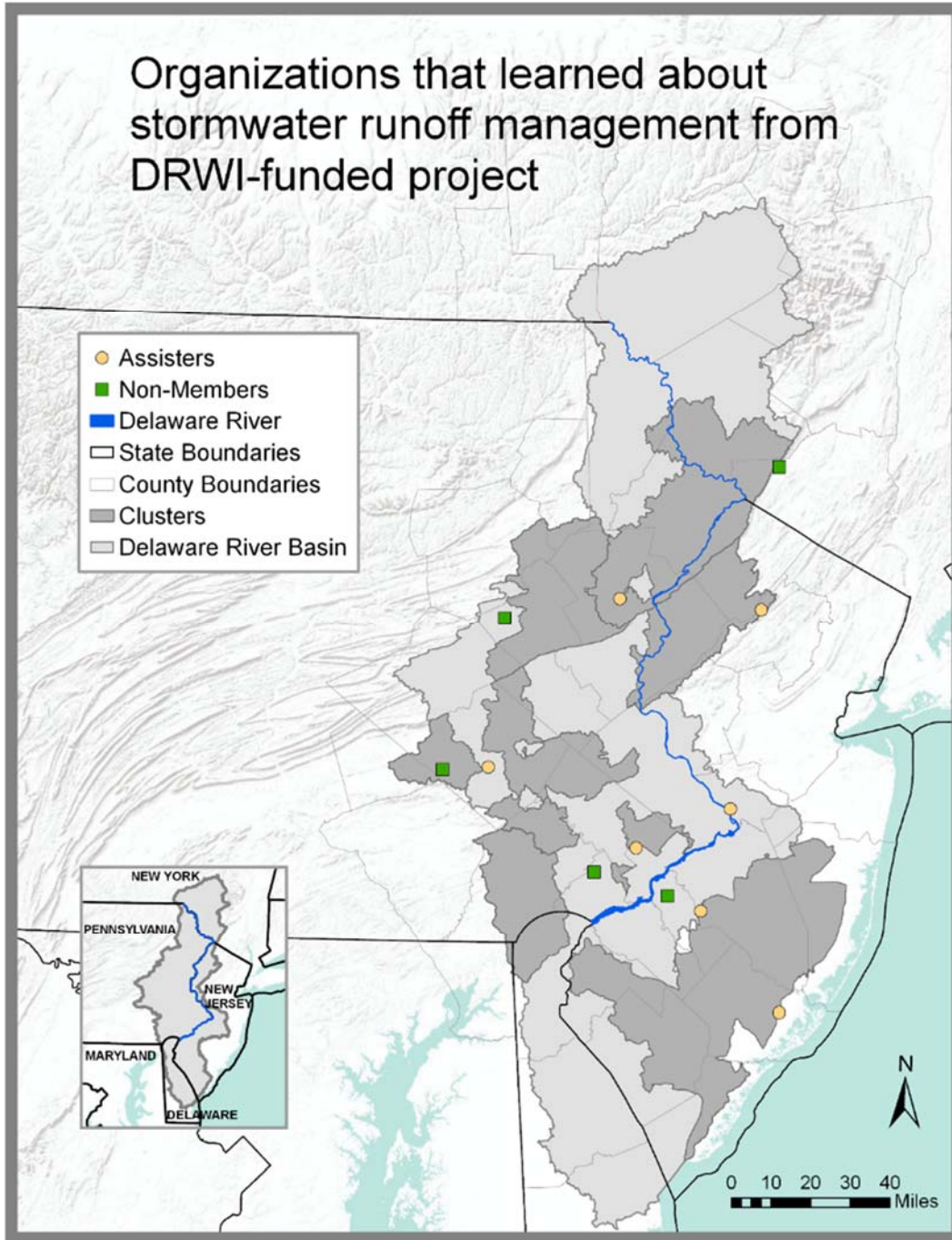


Figure 27. Map of organizations that learned about in-stream practices from DRWI-funded projects

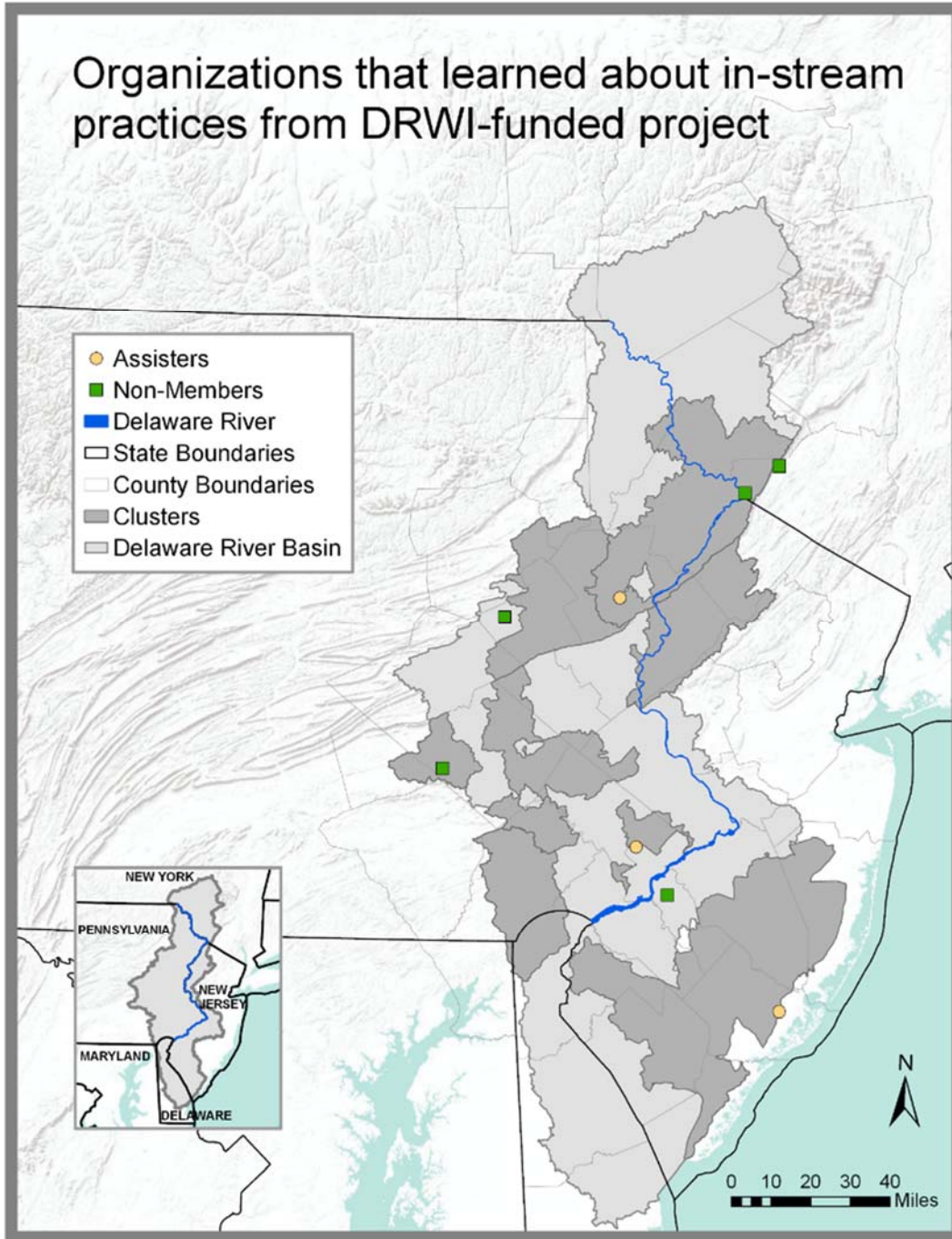


Figure 28. Map of organizations that learned about stream quality improvements from DRWI-funded projects

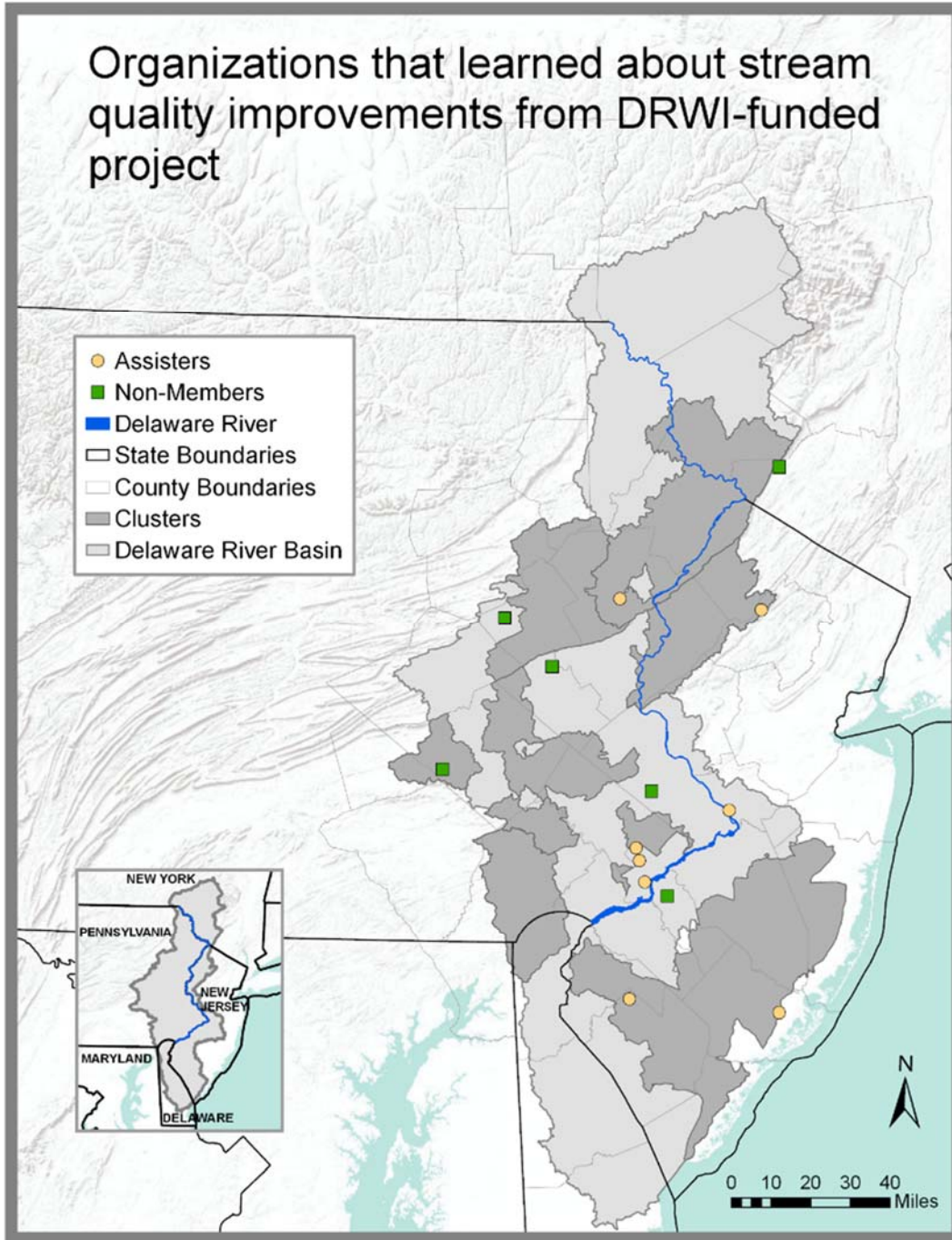


Figure 29. Map of organizations that learned about wetland or vernal pool BMPs from DRWI-funded projects

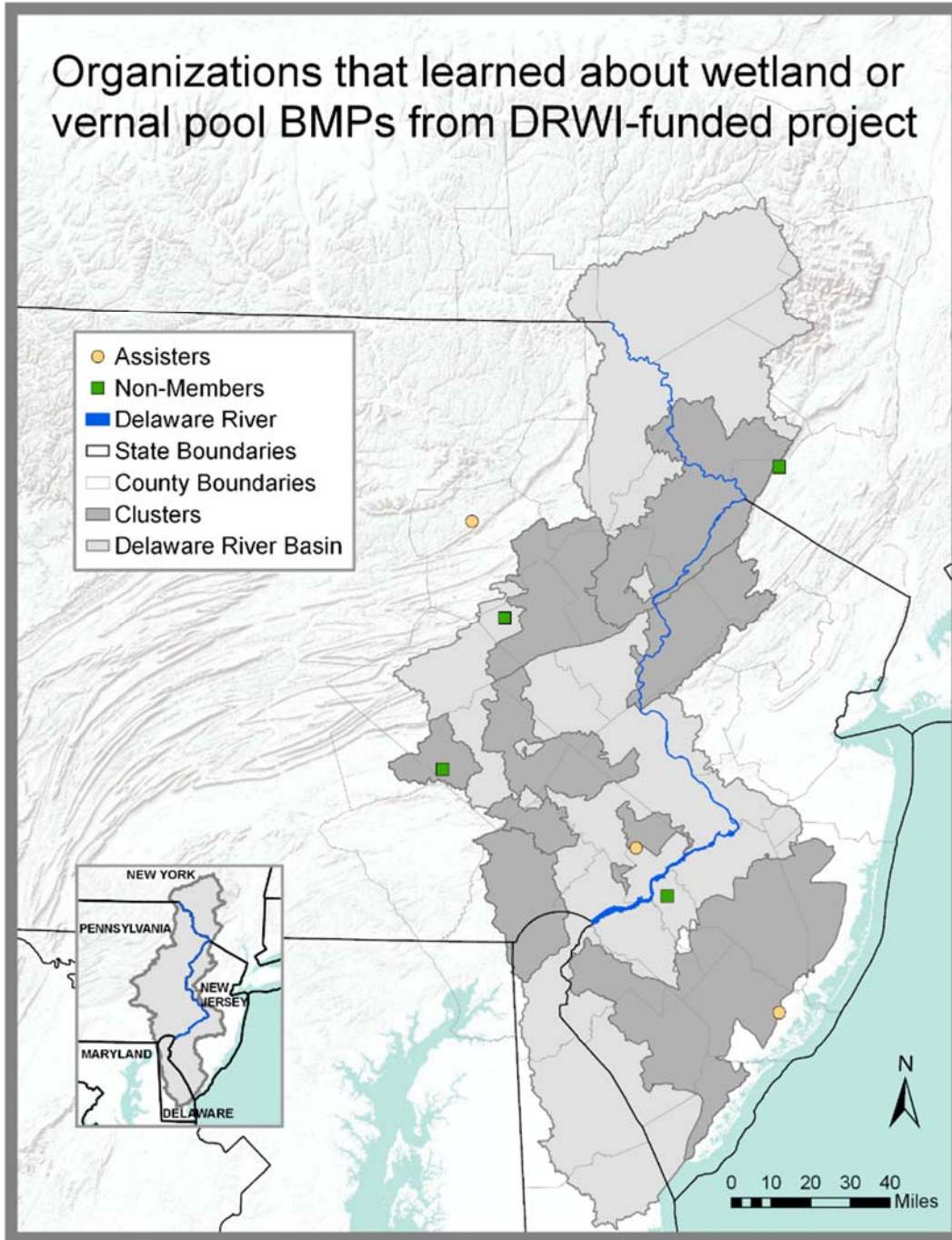
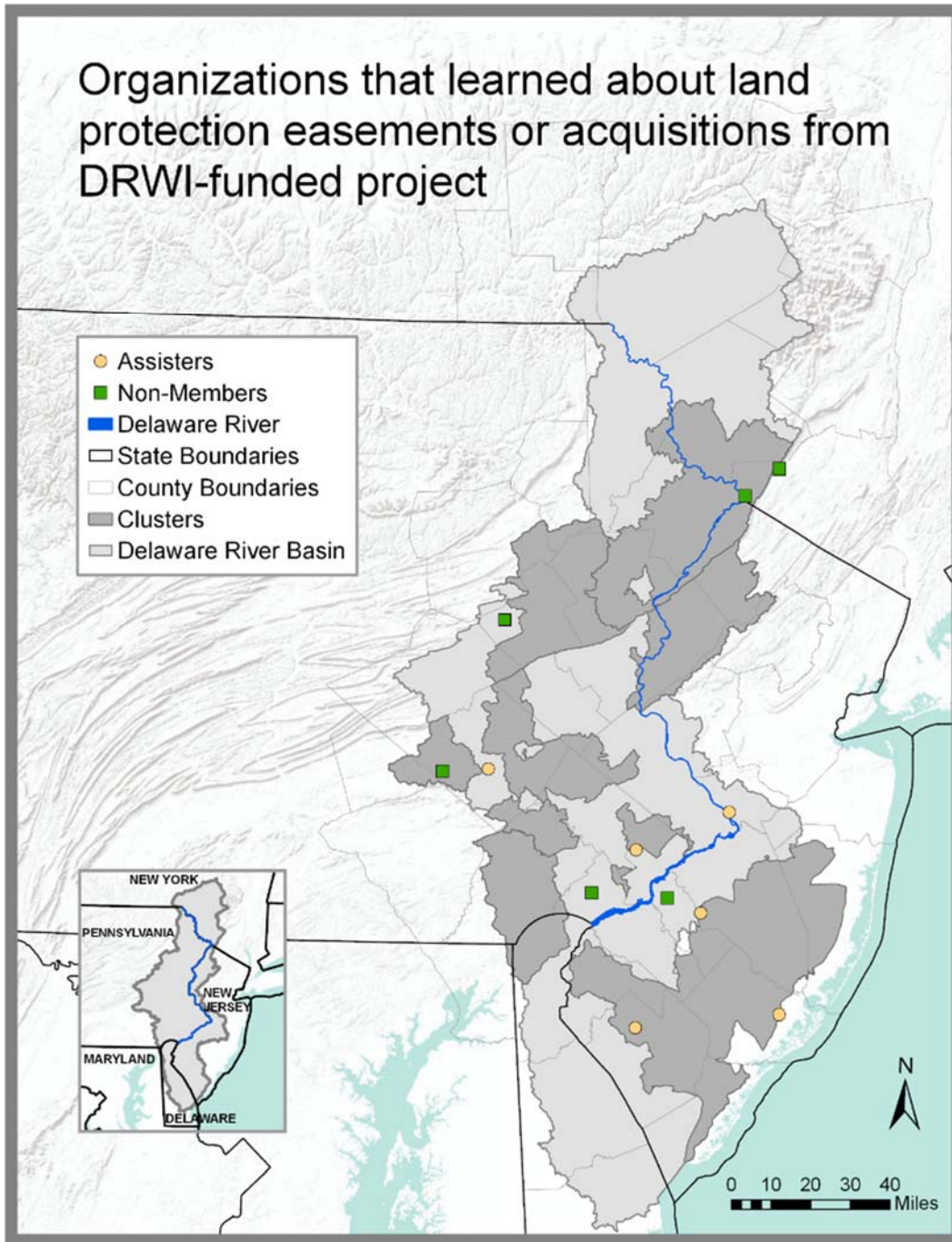


Figure 30. Map of organizations that learned about land protection easements or acquisitions from DRWI-funded projects



Full-page high-resolution maps can be found in Appendix G.⁴

⁴ As noted previously, the symbols for the organizations on the above maps correspond to the approximate geocoded address for the organization and do not necessarily represent the location of the implemented practice. It is possible that organizations with similar geocoded addresses may obscure each other. Geocoded addresses may be outside the mapped extent.

An independent variable that showed association with learning about practices from DRWI was employee size of the organization, with **smaller organizations more likely to report that they learned about land protection from DRWI than larger organizations.**

Table 34. Learned about land protection from DRWI-funded organization relative to number of employees

Number of employees	Learned from DRWI
Under 5	36%
Between 6 and 15	0%
Between 16 and 30	7%
Over 30	10%
Count	58

Collaboration Between Organizations

The success of water quality improvement efforts through the DRWI is requisite on collaboration among diverse watershed partners. In this section, we explore the degree of collaboration among groups around the various practices as well as through what methods organizations shared information about DRWI-funded projects or how they learned about them.

“Conservation organizations can collaborate and string water quality projects together. This focus and collaborative work has yielded REAL, MEASURABLE water quality improvements on impaired streams in the Delaware River watershed.”

Comment by survey participant

Member organizations were asked: *For the practices you have implemented or are in the process of implementing (regardless of funding), did you collaborate with other organizations on the planning or implementation of this practice?*

Members reported a high degree of collaboration (about 85% or more) in the implementation of all practices except for wetland or vernal pool restorations, and stormwater retention basin retrofits.

Table 35. Collaboration with other organizations - members

Question	Yes	No	Total
Agricultural management best practices	89%	11%	18
Stormwater retention basin retrofits	76%	24%	21
Stormwater runoff management	96%	4%	25
In-stream practices	93%	7%	14
Stream quality improvements	87%	13%	31
Wetland or vernal pool installation or restoration	61%	39%	18
Land protection or acquisitions	84%	16%	25

Cluster members were asked to, “Please list the organizations with which you have collaborated or are collaborating on the planning, design or implementation of your water quality restoration or land protection practices.”

“[Our projects are almost] always in partnership with others and now we have more partner options!”

Comment by survey participant

In the qualitative comments related to this question, over 100 entities were listed by cluster member organizations as collaborating with them on water quality restoration and land protection measures. (See Appendix E). The collaborating entity mentioned most often was the Natural Resources Conservation Service – though this was likely an aggregate of multiple offices. Stroud Water Research Center and Trout Unlimited were the next most referenced organizations. Cluster members collaborated with other organizations most often on stream quality improvements (79 collaborations) and stormwater runoff management (74 collaborations).

Non-members and assisters were also asked: *For the practices or projects that you have implemented/(assisted with), are currently implementing/(assisting with), or are planning to implement/(assist with) in the future, do they involve collaboration with DRWI cluster member organizations?* **Only 15 percent of non-members report known collaboration with DRWI organizations, but more than a third of assisters said that they collaborate with DRWI organizations.**

Table 36. Collaboration with DRWI organizations - non-members

Answer	%	Count
Yes	15%	13
No	31%	26
Not sure	54%	46
Total	100%	85

The practice most positively influenced by collaboration with DRWI organizations among non-members was agricultural practices, with 53% of those who said they collaborated with DRWI reporting uptake of these practices, and only 13% of those with no collaboration reporting uptake of this practice. In other words, if an organization collaborated with DRWI, it was about four times more likely to implement agricultural practices.

For planned practices, collaboration was important at a significant level for those planning in-stream practices and wetland or vernal pool restorations. In both cases, non-member organizations that collaborated with DRWI were almost twice as likely to be planning these practices.

Table 37. Collaboration with DRWI organizations - assisters

Answer	%	Count
Yes	36%	23
No	20%	13
Not sure	44%	28
Total	100%	64

Regarding the method of sharing information, members were asked: *Through what avenues do you typically share information about your DRWI-funded projects?* **Members report that the primary methods of distributing information are in-person consultation, and posting on websites and social media.** Targeted e-mails and newsletters are the next most common methods.

Figure 31. Map of organizations collaborating with DRWI cluster members

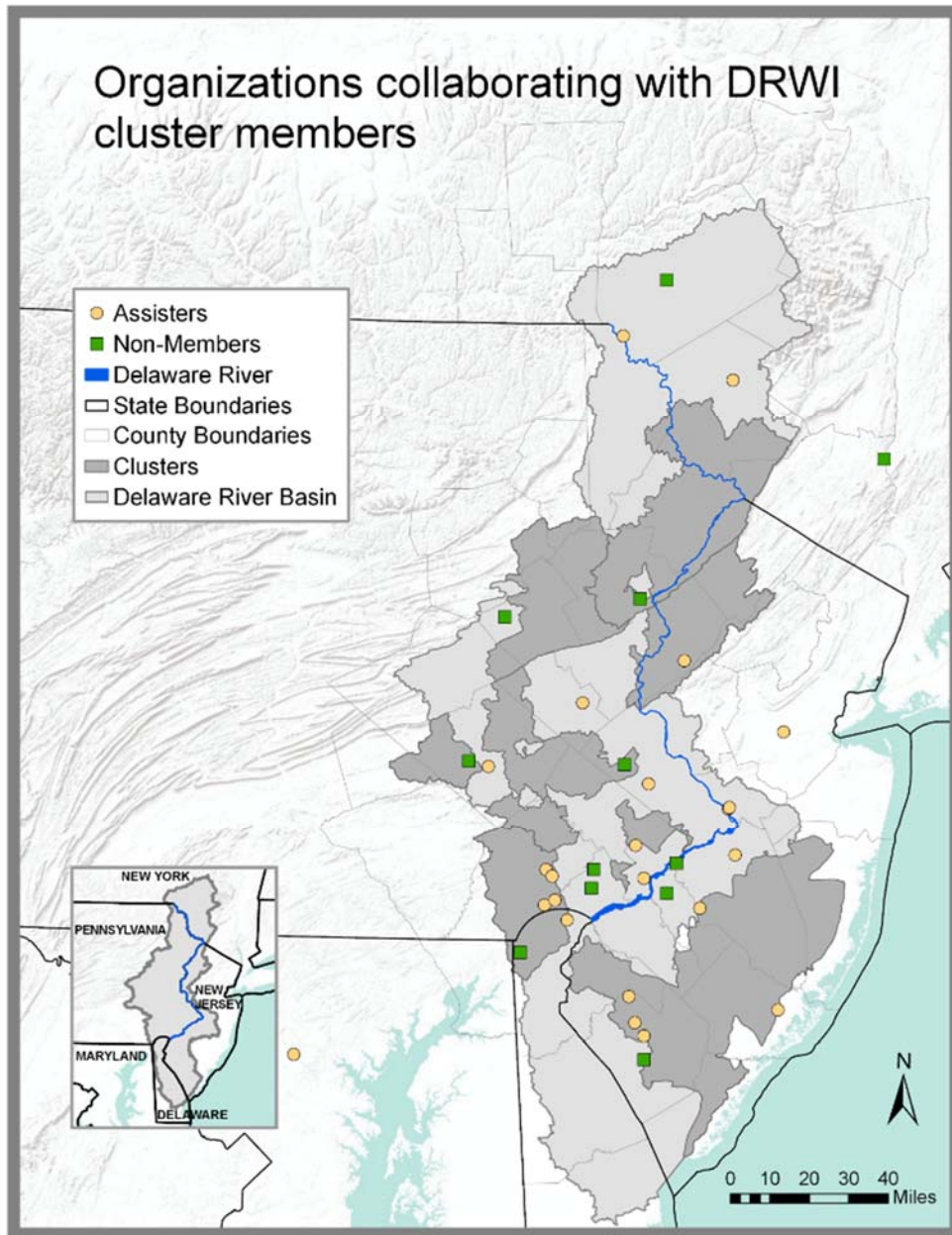


Figure 31 shows the location of the non-member and assister organizations that reported collaborating with DRWI cluster member organizations. Thirty-eight percent of non-member and 52% of assister organizations that reported collaborating with DRWI member organizations are located within clusters, while 45% of non-member and 35% of assister organizations that reported such collaborations are located outside the clusters but within the Delaware basin boundaries. The remaining organizations are located outside these two study areas.

Full-page high-resolution maps can be found in Appendix G.⁵

Table 38. Information sharing methods - members

Question	Routinely	Sometimes	Seldom	Never	Total
Social media	62%	31%	8%	0%	39
Targeted email (e.g., with electronic newsletter)	54%	41%	5%	0%	39
Posting on own website	68%	30%	3%	0%	40
Posting on a third party website (government, clearinghouse or society)	16%	40%	32%	13%	38
Printed newsletter	48%	23%	23%	8%	40
Press release - media	40%	40%	18%	3%	40
Booth at community event	28%	41%	21%	10%	39
Present or table at conference or seminar presentation	26%	59%	13%	3%	39
Publish in journal or public report	5%	18%	39%	39%	39
Through in-person meeting or consultation	74%	18%	8%	0%	39

Non-members were asked: *Through what method(s) did you learn about the DRWI-funded project(s)?* Since this question was carried forward for only those organizations who learned about a practice from a DRWI-funded project, there are few respondents. **The three highest tallies for learning methods about the practices they implemented were in-person meetings, conferences/seminars, and targeted e-mails.** For assisters, in-person methods (including meetings and conferences) were also the most frequently used, and use of DRWI organizations' websites and other websites was also used to a lesser degree by assister organizations. Notably, the news media and journal or public reports do not seem to be important learning methods.

⁵ As noted previously, the symbols for the organizations on the above maps correspond to the approximate geocoded address for the organization and do not necessarily represent where the organization collaborated with DRWI cluster members. It is possible that organizations with similar geocoded addresses may obscure each other. Geocoded addresses may be outside the mapped extent.

Table 39. Information-learning methods - non-members and assisters

Question	Non-members	Assisters
Social media	3	1
Targeted emails (e.g., with electronic newsletter or links)	4	4
DRWI organizations' websites	2	6
Other third party website (government, clearinghouse or society)	3	5
Printed newsletter	2	3
News media	1	1
Community event presentations or info tables	2	4
Conference or seminar presentations or info tables	6	9
Journals or public reports	1	2
Through in-person meetings or consultations	6	10

On the ground projects with measurable results are the best way to demonstrate the positive impacts of these efforts with multiple stakeholders

Comments from survey participant

If non-members responded that they are implementing practices not learned about from a DRWI organization, they then answered: *From what source(s) did you learn to implement these water quality restoration or land protection practices? - Select all that apply.*

Table 40. Other sources of information about practices - non-members

Question	County extension service	Soil conserv. service (USDA-NRCS)	Regulatory (government) entity	Professional org. or society	University or academic institution	In-house staff expertise	Non-profit conserve. group	Total
Agricultural management best practices	18%	22%	18%	9%	9%	16%	9%	45
Stormwater retention basin retrofits	7%	13%	22%	16%	12%	19%	10%	68
Stormwater runoff management	8%	12%	18%	17%	12%	21%	14%	78
In-stream practices	10%	15%	21%	10%	8%	19%	17%	48
Stream quality improvements	10%	11%	18%	14%	13%	20%	12%	98
Wetland or vernal pool installation or restoration	5%	21%	24%	13%	5%	24%	8%	38
Land protection or acquisitions	11%	11%	21%	8%	8%	25%	16%	73

Member organizations were asked: *If your communications about DRWI-funded projects are targeted, to whom are they directed?* **Cluster members report the highest proportion of targeting of communications about projects to local and county government officials, and to residents and land**

owners/managers. They are least likely to share information with faith communities, farmers, and land trusts.

Table 41. Targeting of communication - members

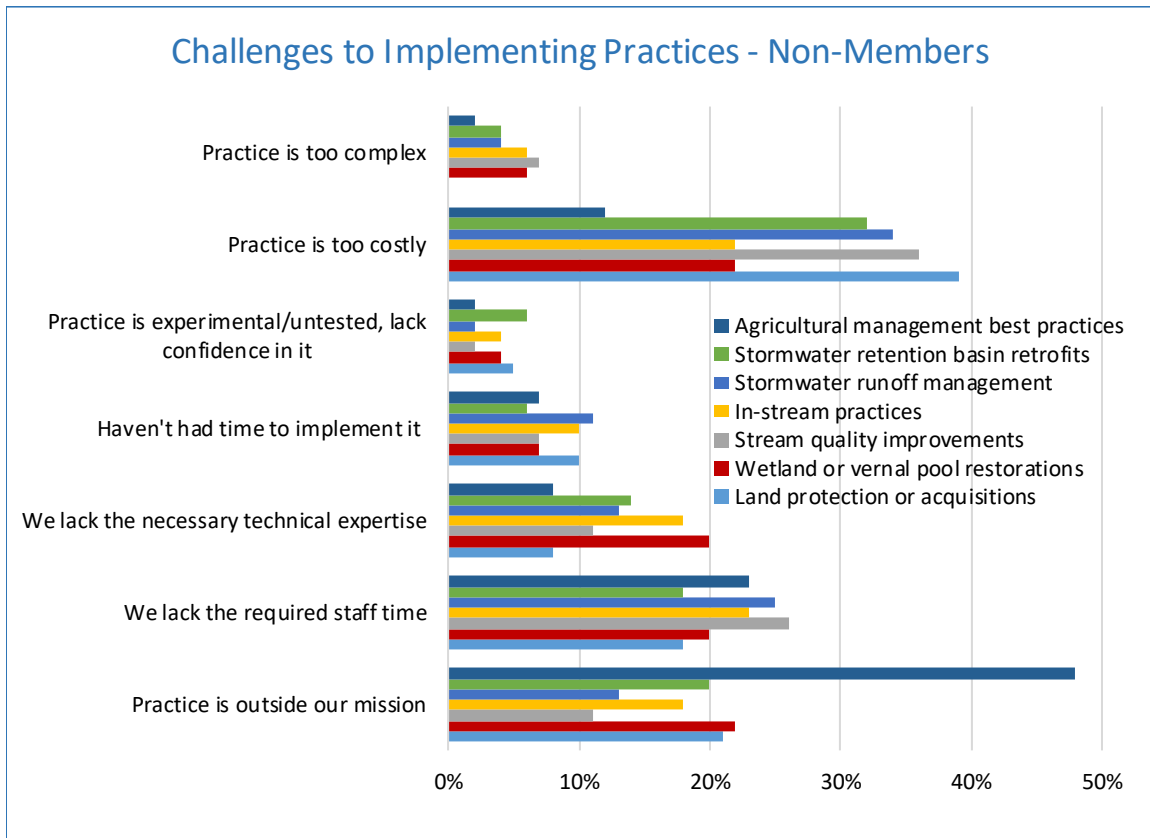
Question	Always	Frequently	Seldom	Never	Total
Farmers / producers	20%	34%	17%	29%	35
Land owners / land managers	25%	67%	6%	3%	36
Land trusts	6%	31%	51%	11%	35
NGOs and other interest groups	22%	58%	19%	0%	36
Business owners / commercial property managers	15%	38%	44%	3%	34
Residents / homeowners	31%	56%	14%	0%	36
Youth / students	19%	43%	32%	5%	37
Faith communities	3%	17%	57%	23%	35
Municipal / local officials	36%	50%	14%	0%	36
County / regional officials	33%	56%	11%	0%	36
State agency officials	19%	64%	14%	3%	36
Federal agency officials	14%	43%	34%	9%	35
Conservation districts	14%	44%	33%	8%	36
Engineers / planners	8%	44%	36%	11%	36
Tourists / recreation groups	6%	14%	69%	11%	35
Other	33%	33%	0%	33%	3

Factors Influencing Adoption

Finally, the survey asked questions aimed at understanding some of the challenges facing organizations wanting to implement restoration or protection practices and understanding factors that might influence greater adoption of practices.

Non-member organizations were asked about challenges to implementing practices with this question: *If you wanted to implement other water quality restoration or land protection practices but have been unable to do so, what has prevented you from implementing them? - Select all that apply.* **The non-members indicated that the cost of implementation was the key challenge for all practices except for agriculture and in-stream practices.** For agriculture, nearly half of respondents indicated that it was outside their mission. For in-stream practices, the key challenge was staff time followed closely by lack of expertise or not within their mission.

Figure 32. Graph of challenges to implementing practices for non-members



Non-member organizations have not implemented projects primarily because of the cost and need for technical expertise and staff capacity. Complexity, experimental nature, and timeframe are not as important.

“We currently have enough general knowledge to pursue projects that already are stretching our internal capacity (even with DRWI support). Not to say it wouldn’t be nice to be smarter – but we really don’t have the time to get smarter nor the resources to do much of anything with any additional information at this time.”

Comment from survey participant

Table 42. Challenges to implementing practices - non-members

Question	Practice is too complex	Practice is too costly	Practice is experimental, untested or we lack confidence in it	Haven't had time to implement it	We lack the necessary technical expertise	We lack the required staff time	Practice is outside our mission	Total
Agricultural management best practices	2%	12%	2%	7%	8%	23%	48%	61
Stormwater retention basin retrofits	4%	32%	6%	6%	14%	18%	20%	71
Stormwater runoff management	4%	34%	2%	11%	13%	25%	13%	56
In-stream practices	6%	22%	4%	10%	18%	23%	18%	73
Stream quality improvements	7%	36%	2%	7%	11%	26%	11%	55
Wetland or vernal pool restoration	6%	22%	4%	7%	20%	20%	22%	55
Land protection or acquisitions	0%	39%	5%	10%	8%	18%	21%	39

To explore members' perceptions of their influence on adoption of practices, members answered the following question: *For the DRWI-funded projects that you shared information about, do you believe your DRWI-funded project influenced implementation of similar practices by others?* Members were least confident that information about in-stream practices and wetland or vernal pool restorations was influencing similar practices. **Members were most sure that agricultural BMPs and stormwater runoff practices were influencing implementation of similar practices.**

Non-members were asked: *For the practices that you learned about through a DRWI-funded project, how likely is it that your organization would have implemented the practice without the information you gained from a DRWI-funded organization?* Though a high proportion of non-members indicated they would have implemented the practice with or without information about DRWI-funded projects, they reported that **a third of agricultural practices and a quarter of stormwater basin retrofits, in-stream practices, and wetland or vernal pool restoration practices would not very likely have been implemented without information about DRWI-funded projects.**

Assisting organizations were asked: *How likely would you be to promote a DRWI-funded project as an example of best practices in water quality restoration or land protection to other organizations that you work with?* **More than a third of assisting organizations said that they would be likely to promote a DRWI-funded project as a best practice example for stream quality improvements, agriculture best management practices, and land protection.**

The fairly high percentages of assister organizations not knowing enough about practices to promote them (ranging from 35% to 40%) presents an opportunity for cluster organizations to share more information about practices with assisting organizations so that they can then promote the practices.

Table 43. Influence of practices on others - member assessment

Question	Yes	No	Not sure	Total
Agricultural management best practices	83%	0%	17%	12
Stormwater retention basin retrofits	57%	0%	43%	7
Stormwater runoff management	82%	0%	18%	17
In-stream practices	29%	0%	71%	7
Stream quality improvements	63%	0%	37%	19
Wetland or vernal pool installation or restoration	0%	25%	75%	4
Land protection or acquisitions	50%	11%	39%	18

Figure 33. Graph of likelihood of implementing practice without DRWI-information - non-members

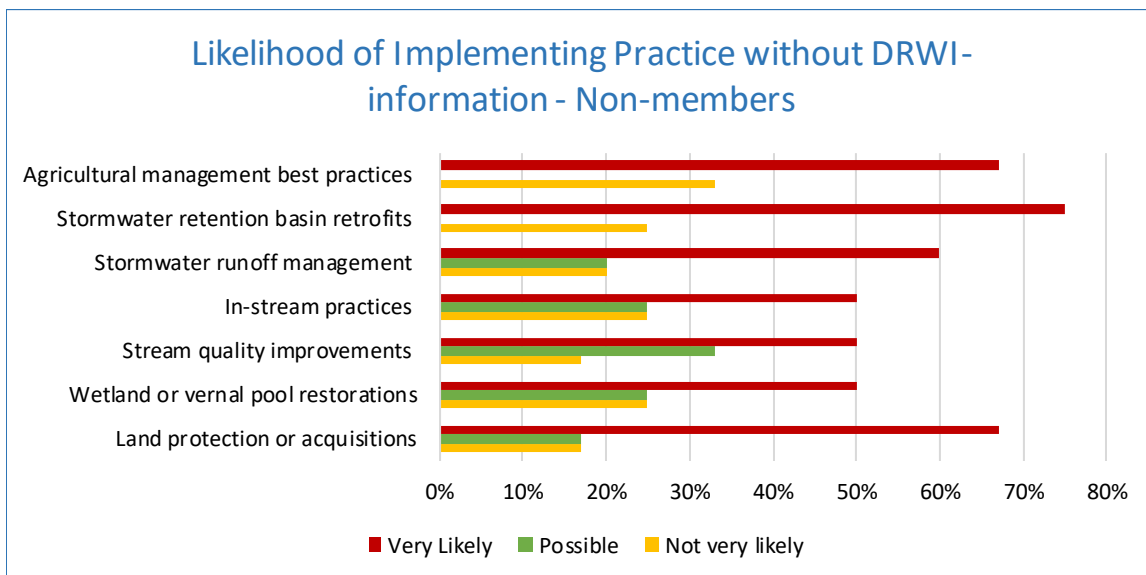


Table 44. Likelihood of implementing without DRWI information - non-members

Question	Very Likely	Possible	Not very likely	Not likely at all	Total
Agricultural management best practices	67%	0%	33%	0%	3
Stormwater retention basin retrofits	75%	0%	25%	0%	4
Stormwater runoff management	60%	20%	20%	0%	5
In-stream practices	50%	25%	25%	0%	4
Stream quality improvements	50%	33%	17%	0%	6
Wetland or vernal pool installation or restoration	50%	25%	25%	0%	4
Land protection or acquisitions	67%	17%	17%	0%	6

Table 45. Likelihood of promoting DRWI projects - assisters

Question	Very likely	Somewhat likely	Not at all likely	Don't know enough about projects to promote them
Agricultural management best practices	35%	22%	6%	37%
Stormwater retention basin retrofits	30%	18%	11%	41%
Stormwater runoff management	32%	20%	11%	38%
In-stream practices	26%	26%	6%	42%
Stream quality improvements	39%	20%	6%	35%
Wetland or vernal pool installation or restoration	29%	22%	8%	42%
Land protection or acquisitions	33%	15.%	12%	40%

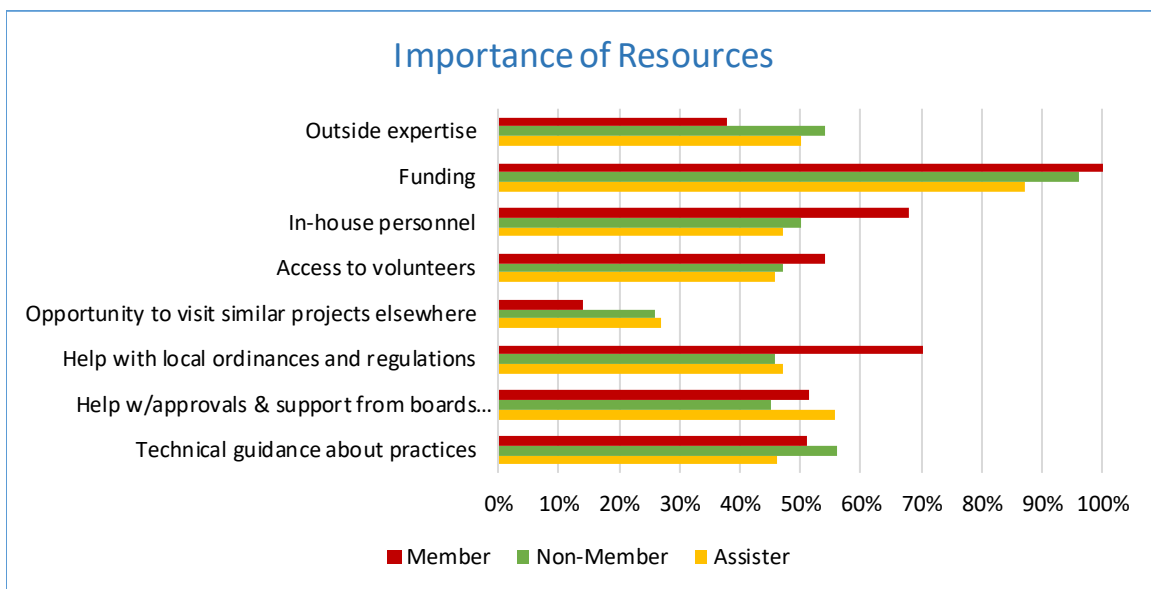
All respondents were asked the question: *If you wanted to implement a water quality restoration or land protection project but have been unable to do so, how important would the following resources be in helping you move forward?* **Funding is by far the most important resource needed to help organizations to implement projects. Next in importance are in-house personnel, technical guidance,**

and outside expertise. The least helpful resources are volunteers, help with approvals, help with local regulations, and opportunities to visit similar projects.

Table 46. Importance of resources - all respondents

	Important	Somewhat important	Not important	Total
Outside expertise	49%	42%	10%	176
Funding	93%	6%	1%	182
In-house personnel	53%	38%	10%	177
Access to volunteers	33%	48%	19%	177
Opportunity to visit similar projects elsewhere	24%	59%	17%	179
Help with local ordinances and regulations	29%	51%	20%	179
Help with approvals and support from oversight boards/committees	32%	51%	18%	178
Technical guidance about practices	51%	42%	7%	180

Figure 34. Graph of importance of resources in helping to implement projects by respondent type



Breaking out these answers according to groups, it is notable that non-member organizations find outside expertise, opportunity to visit projects, and technical guidance as more important needed resources than do members. Members rely more on in-house expert resources than do non-member organizations.

All organizations were asked: *Does promoting DRWI-funded projects as examples of best practices help advance improvements in water quality restoration and land protection in the Delaware River basin?* **Almost all responding organizations agree that promoting DRWI-funded projects can help to advance water quality restoration and land protection in the Delaware River basin.** The follow-up question to this one was why they responded this way.

Table 47. Promotion of DRWI-funded projects to advance water quality restoration and land protection

Answer	%	Count
Definitely yes	43%	82
Probably yes	46%	87
Probably no	1%	2
Definitely no	0%	0
I'm not sure	11%	20
Total	100%	191

Narrative responses to why they answered “definitely yes”, “probably yes”, etc., can be found in Appendix F.

The majority of comments supported the benefit of DRWI-funded projects as examples that raise awareness and inspire others. Respondents noted that DRWI-funded projects demonstrate the method of practice/implementation, which can facilitate implementation by others, as well as show the value of the practice in improving water quality in the region. DRWI-funded projects also help to demonstrate effective leveraging of funding sources (state, federal, other) and the importance of partnerships.

“The scale of the entire DRWI initiative, coupled with the number and caliber of institutions involved in the initiative, have made municipal staff, elected officials, residents, and civic agencies so much more aware of best practices than before DRWI began. The commitment from these partners to implement BMPs has skyrocketed in the last two years alone.”

Comment from survey participant

Conclusion: Findings, Recommendations and Future Study

The key intent of this survey project is to utilize the information gathered from the survey to provide a baseline for measuring the effectiveness of future outreach and education efforts as well as to inform potential funding through NFWF’s DRWI program.

Below we summarize the key findings from the study, present recommendations flowing from these findings, and present suggestions for continued and future study.

Opportunities for Influence

1. Funding is by far the most important resource needed to help organizations to implement projects.
2. Other resources that are important to non-cluster organizations are outside expertise and technical guidance, as well as opportunity to visit similar projects.
3. Face-to-face interaction and contact are important. Community events, conferences and in-person contact are effective ways to spread information.
4. DRWI funding seems to be more important in spurring new uptake of in-stream practices and agricultural best management practices than for other practices.
5. Information-sharing has been most important in the spread of in-stream practices, wetland or vernal pool restorations, and land protections.
6. Organizations feel strongly that promotion of DRWI-funded projects will help to advance water quality restoration and land protection in the Delaware Basin.

Recommendations

1. Continue funding of projects through DRWI, as evidence suggests that information and resources shared through DRWI have influenced adoption of practices outside the cluster organizations.
2. Cluster members should be strongly encouraged to share information about restoration and protection practices through conferences, community events and in-person contact.
3. Cluster members should be encouraged to provide technical guidance and offer site visits and field trips to non-member organizations to demonstrate implementation of practices.
4. There is an opportunity to do more sharing of information about practices with assister organizations, who have the potential to promote these practices further through their direct interactions.
5. Provide help to non-cluster members about leveraging funding for restoration and preservation practices.
6. Cluster members should reach out to non-member organizations and assister organizations through targeted e-mails with information about new/innovative practices, funding opportunities and notifications of technical guidance opportunities.
7. DRWI may consider establishing a web-based social network to fill gaps in baseline data, to inform future analysis, or to inform continued outreach and program enhancements, e.g., an on-line forum to capture more information about knowledge diffusion and adoption for DRWI on an ongoing basis.

Future Study

We discuss aspects of this survey that could serve as a baseline and be repeated for measuring the effectiveness of future outreach and education efforts as well as to inform potential funding through NFWF's DRWI program. We also suggest how this survey process could be modified, as well as other types of studies that could elucidate some of the observations drawn from this analysis and enhance understanding of the innovation mechanism.

1. **Portions of this survey can serve as a baseline to be re-measured periodically.** Most appropriate for this purpose would be the information collected about the member organizations (at the front and end of the survey, plus the "members" section). Since this study captured nearly all of the members, re-surveying this population would allow direct comparison of results about members' implementation of practices, sharing of information, collaboration and challenges. It is less clear that the information collected from non-members and assisters can serve as a valid baseline since it is not a statistically representative sample.
2. **Modify the next survey** by utilizing what was learned from this survey to inform the next survey. Both the identification of the non-cluster member respondents and the questions themselves could be improved. For the next survey, researchers could consider conducting two different focus groups – one at the start to help inform the survey development and audience identification, and a second to critique the final draft of the survey with an eye towards depth and breadth of potential responses. In terms of identifying the target populations of non-members and assisters, it is always a moving target to identify changing leadership and contacts, but a way to build a database and maintain it is to build from organizations that DRWI-funded organizations contact. This would include capturing email lists from seminars, workshops, conferences, one-on-one contacts, community events, etc. Key organizations could then push the survey out to other organizations in a snowballing effect.
3. **Conducting micro-level analyses of specific methods and pathways of information sharing about practices** between cluster and non-cluster organizations, with interviewing and collection of more context-specific information about just a certain type of practice, or in a certain specific geography, could allow conclusions about factors influencing uptake in more depth with a degree of certainty regarding causation.
4. **Conducting a social network analysis or "power mapping" could be an interesting exercise** that would foster understanding of the exact pathways of information spread, i.e., which organizations have wide networks, who do they communicate with and how, and what influence of "power" do different specific players have in the network.
5. **Reach out to those who said they would be willing to have us contact them for more detailed data collection.** Even in the short-term period after this study is concluded, these contacts could be interviewed to ask:
 - a. What are specifics of successes they have had?
 - b. What do they suggest for encouraging adoption?
 - c. What challenges do they face in implementing more practices?
 - d. Who else would they recommend we talk with?

List of Figures

Figure 1. Map of Delaware River Watershed and cluster areas as presented in the survey instrument..	12
Figure 2. Map of approximate location of assister and non-member organizations	20
Figure 3. Map of organization sectors for assisters and non-members	22
Figure 4. Graph showing familiarity of restoration and land use practices by respondent type	26
Figure 5. Graph of familiarity with practices for "extremely familiar" by respondent type.....	27
Figure 6. Graph of practices implemented or implementing by respondent type	28
Figure 7. Map of organizations that implemented or are planning to implement agricultural BMPs	31
Figure 8. Map of organizations that implemented or are planning to implement stormwater retention basin retrofits.....	32
Figure 9. Map of organizations that implemented or are planning to implement stormwater runoff management.....	33
Figure 10. Map of organizations that implemented or are planning to implement in-stream practices..	34
Figure 11. Map of organizations that implemented or are planning to implement stream quality improvements.....	35
Figure 12. Map of organizations that implemented or are planning to implement wetland or vernal pool BMPs	36
Figure 13. Map of organizations that implemented or are planning to implement land protection easements or acquisitions	37
Figure 14. Graph showing where organizations indicated they are doing work related to water quality improvements by respondent type	38
Figure 15. Graph of DRWI-funds usage for practices implemented by respondent type	40
Figure 16. Map of organizations that utilized or plan to utilize DRWI-funds for agricultural BMPs.	44
Figure 17. Map of organizations that utilized or plan to utilize DRWI-funds for stormwater retention basin retrofits.....	45
Figure 18. Map of organizations that utilized or plan to utilize DRWI-funds for stormwater runoff management.....	46
Figure 19. Map of organizations that utilized or plan to utilize DRWI-funds for in-stream practices.....	47
Figure 20. Map of organizations that utilized or plan to utilize DRWI-funds for stream quality improvements.....	48
Figure 21. Map of organizations that utilized or plan to utilize DRWI-funds for wetland or vernal pool BMPs	49
Figure 22. Map of organizations that utilized or plan to utilize DRWI-funds for land protection easements or acquisitions	50
Figure 23. Graph of importance of information sources for all respondents.....	52
Figure 24. Map of organizations that learned about agricultural BMPs from DRWI-funded projects.....	56
Figure 25. Map of organizations that learned about stormwater retention basin retrofits from DRWI-funded project	57
Figure 26. Map of organizations that learned about stormwater runoff management from DRWI-funded projects	58
Figure 27. Map of organizations that learned about in-stream practices from DRWI-funded projects ...	59
Figure 28. Map of organizations that learned about stream quality improvements from DRWI-funded projects	60

Figure 29. Map of organizations that learned about wetland or vernal pool BMPs from DRWI-funded projects 61

Figure 30. Map of organizations that learned about land protection easements or acquisitions from DRWI-funded projects 62

Figure 31. Map of organizations collaborating with DRWI cluster members..... 66

Figure 32. Graph of challenges to implementing practices for non-members..... 71

Figure 33. Graph of likelihood of implementing practice without DRWI-information - non-members.... 73

Figure 34. Graph of importance of resources in helping to implement projects by respondent type..... 75

List of Tables

Table 1. Cluster member organizations	18
Table 2. Summary of surveys sent and received by target group.....	19
Table 3. Organization type	21
Table 4. Sectors	21
Table 5. Number of employees.....	23
Table 6. Acres managed	23
Table 7. State	24
Table 8. Familiarity with Delaware River Watershed Initiative clusters	24
Table 9. Familiarity with Delaware River Watershed Initiative	24
Table 10. Familiarity with William Penn Foundation	25
Table 11. Familiarity with Open Space Institute	25
Table 12. Familiarity with National Fish & Wildlife Foundation	25
Table 13. Familiarity with restoration and protection practices	27
Table 14. Planning to implement practices - members	29
Table 15. Planning to implement practices - non-members.....	29
Table 16. Planning to implement practices - assisters.....	30
Table 17. Within a DRWI cluster boundary.....	39
Table 18. Outside a DRWI cluster but within Delaware River Watershed.....	39
Table 19. Outside the Delaware River Watershed.....	39
Table 20. Use of DRWI funding for practices implemented - members	41
Table 21. Use of DRWI funding for practices implemented - non-members.....	41
Table 22. Use of DRWI funding for practices implemented - assisters.....	42
Table 23. Funding for planned practices - members	42
Table 24. Funding for Planned Practices - Non-Members	43
Table 25. Funding for Planned Practices - Assistlers.....	43
Table 26. Practices included in cluster strategic plans - members	51
Table 27. Importance of information sources - all respondents	52
Table 28. In-person meetings or consultations	53
Table 29. Community events	53
Table 30. Conference or seminar presentations.....	53
Table 31. Information sharing about practices - members	54
Table 32. Learning about practices from DRWI - non-members	54
Table 33. Learning about practices from DRWI - assisters	55
Table 34. Learned about land protection from DRWI-funded organization relative to number of employees.....	63
Table 35. Collaboration with other organizations - members	64
Table 36. Collaboration with DRWI organizations - non-members	65
Table 37. Collaboration with DRWI organizations - assisters	65
Table 38. Information sharing methods - members	67
Table 39. Information-learning methods - non-members and assisters	68
Table 40. Other sources of information about practices - non-members	69
Table 41. Targeting of communication - members.....	70
Table 42. Challenges to implementing practices - non-members	72

Table 43. Influence of practices on others - member assessment	73
Table 44. Likelihood of implementing without DRWI information - non-members.....	74
Table 45. Likelihood of promoting DRWI projects - assisters	74
Table 46. Importance of resources - all respondents	75
Table 47. Promotion of DRWI-funded projects to advance water quality restoration and land protection	76
Table 48. Cluster member organizations by cluster	Appendix A
Table 49. Practices respondents wanted to learn about by respondent type	Appendix C
Table 50. Cluster member collaboration with other organizations by practice	Appendix E

Appendix A - Methodology

Survey Design and Testing

The team worked closely with NFWF to refine the core questions and to flesh out a survey to determine whether information about restoration practices implemented by DRWI members is reaching non-members both within and beyond cluster boundaries and whether those non-members adopt similar practices as a result.

The survey included questions to confirm that the respondent is located/practicing in the targeted region as well as other descriptive information such as their population group (cluster member, non-member, or organizations that assist with project implementation) and their area(s) of interest/expertise (forestry, agriculture, etc.). Questions about the BMP's were worded in ways to determine the respondent's familiarity with the practices to ensure they understood the questions.

In order to ascertain degree of knowledge diffusion and behavior change, the survey included questions about: participants' knowledge about DRWI-related restoration efforts; whether they heard about or implemented such restoration efforts before they heard about the DRWI-related projects; whether they had implemented such restoration tools; if they had implemented them, why did they implement them; if they had not adopted them, why not and what were the barriers to adoption. Finally, the survey identified ways that NFWF could improve program knowledge diffusion and adoption by asking participants how they could best receive information (e.g., information sessions, demonstrations/site visits, partnering with local expertise, etc.).

To encourage frank and open disclosure by survey participants, NFWF and the survey team determined the survey responses would be confidential. This meant that the EAC team can identify individuals who participate in the survey but their identity will not be shared with outside entities including NFWF, the Open Space Institute, and the DWRI or their affiliates unless the individual elects to disclose their contact information as provided at the end of the survey. If the individual elects to provide their contact information, the EAC team may contact the individual to develop case studies for professional presentations or publications.

The team convened two discussion forums of cluster members to refine the survey questions and to help identify non-members to receive the survey. These focus groups were conducted in late 2018 and early 2019 via webinar.

In order to increase response rates to the survey, consideration was given to survey design parameters such as length of survey, ease of completing it, and clarity of questions. The survey took an average of 15 minutes to complete. Skip logic, carry forward choices, branch logic, and display logic (i.e., selection of one response displays specific related questions or skips certain questions) were employed to reduce survey fatigue.

The survey was pretested by conservation-related organizations known to the team in the Raritan River watershed. Survey testers contributed feedback on the clarity of questions, ease of completing the survey and length of time to take the survey. The team utilized the information, along with any open-ended comments regarding suggested wording changes, etc., to refine the final survey instrument.

Population Identification

The team worked with NFWF to define the geographic survey boundary from which survey participants would be drawn. The preferred boundary included the entire Delaware River Basin boundary extending to the county boundaries touched by the basin boundary, as well as the county boundaries touched by

any DRWI cluster, including those not wholly within the Delaware River Basin boundary (such as the Kirkwood-Cohansey Cluster that is predominately in New Jersey).

Three main target groups were identified in the development of the survey instrument and are referred to in this report as cluster or member organizations, non-member organizations, and assister organizations. They are further defined as follows:

Cluster or Member organizations actively participate in the DRWI. Forty-seven organizations were participating in the DRWI at the time of the survey. They receive funding and technical assistance through the DRWI and are actively involved in implementing water quality restoration and land preservation action plans within specific DRWI clusters. The following table shows the cluster member organizations and the clusters in which they are active:

Table 48. Cluster member organizations by cluster

Organization	Kirkwood-Cohansey	New Jersey Highlands	Middle Schuylkill	Brandywine-Christina	Suburban Philadelphia	Upper Lehigh	Poconos-Kittatinny	Schuylkill Highlands
American Littoral Society	x							
Association of New Jersey Environmental	x	x						
Audubon Pennsylvania						x		x
Berks Nature			x					x
Brandywine Conservancy				x				
Brandywine Red Clay Alliance				x				
Brodhead Watershed Association							x	
Darby Creek Valley Association					x			
Delaware Highlands Conservancy							x	
East Stroudsburg University							x	
Eastern Delaware County Stormwater Collaborative					x			
French and Pickering Creeks Conservation Trust								x
Friends of the Poquessing Watershed					x			
Green Valleys Watershed Association								x
Hunterdon Land Trust		x						
Lower Merion Conservancy					x			
Musconetcong Watershed Association		x						
Natural Lands Trust	x			x		x	x	x
Nature Conservancy of Delaware				x				
New Jersey Audubon Society	x	x						

Organization	Kirkwood-Cohansey	New Jersey Highlands	Middle Schuylkill	Brandywine-Christina	Suburban Philadelphia	Upper Lehigh	Poconos-Kittatinny	Schuylkill Highlands
New Jersey Highlands Coalition		X						
NJ Conservation Foundation	X	X						
North Branch Land Trust						X		
North Jersey RC&D		X						
North Pocono Care						X		
Orange County Land Trust							X	
Partnership for the Delaware Estuary	X		X					X
Pennsylvania Environmental Council					X			
Pennsylvania Resource Council					X			
Pennypack Ecological Restoration Trust					X			
Pinchot Institute for Conservation							X	
Pinelands Preservation Alliance	X							
Pocono Heritage Land Trust						X	X	
Rutgers Cooperative Extension Water Resources Program	X							
South Jersey Land & Water Trust	X							
Stroud Water Research Center			X	X				X
Temple University					X			
The Land Conservancy of New Jersey		X						
The Nature Conservancy		X						
The Nature Conservancy-Pennsylvania						X	X	
Tookany/Tacony-Frankford Watershed Partnership					X			
Trout Unlimited		X						
University of Delaware, Water Resources Agency				X				
Villanova Urban Stormwater Partnership					X			
Wallkill River Watershed Management Group		X						
Wildlands Conservancy						X		
Wissahickon Valley Watershed Association					X			

Non-member organizations may be actively involved in water quality restoration or land protection efforts within the Delaware River region. These are similar types of organizations as the cluster members but do not have a defined role in the Cluster Action Plans through the DRWI.

Assister organizations facilitate or assist with implementation of water quality restoration or land protection efforts in the Delaware River region. Such organizations provide consulting services, technical assistance, funding, or may have a regulatory role at the regional, state or federal level.

The contact information for the cluster member organizations was obtained from NFWF and included one or more contacts for each of the 47 organizations taking an active role in the DRWI Cluster Action Plans. To develop a list of contacts for non-member organizations and assister organizations, the team conducted a systematic process to identify organizations of a similar type/category to the member organizations that were located, or conducted work, within the previously defined geographic boundary. Using Internet searches and accessing inventories of organizations kept by umbrella and membership organizations (e.g. lists of watershed organizations, land trusts, lists of universities, etc.), the team compiled a list of upwards of 2000 potential contacts.

E-mail addresses were secured for each organization and targeted the executive director of non-profit organizations; the facilities or cooperative extension departments for educational institutions; the mayor, executive or director of public works, and other appropriate representatives for municipalities and counties; principals or restoration managers for consulting firms; and restoration-related program managers for regional and state entities. In order to gain a higher survey return rate, surveys were often emailed to more than one person in an organization. Survey instructions indicated that only one survey per organization needed to be returned and that participants should collaborate with fellow employees on completion of one survey per entity. After the survey was closed, the contact list was cleaned to remove multiple contacts per organization.

Survey Administration

In late March, we sent out a “watch for the survey” notice to all potential survey recipient e-mail addresses. The notice introduced the purpose of the survey, stressed the importance of completing the survey, and indicated when the survey would arrive. This “watch for the survey” e-mail also asked if the proper recipient had been identified and if not, for referral to the most appropriate target respondent; we adjusted our contact list accordingly.

We then worked with NFWF to finalize and approve the survey for e-mailing in early-April, 2019. Each target participant received a clickable link within the e-mail that opened to a blank survey form. We utilized Qualtrics Survey Software, a dynamic yet user-friendly cloud based service. Qualtrics surveys are highly customizable and include options for display logic, carry forward choices, skip logic, and branch logic that are customized to each respondent based on previous information and can enhance survey participation and completion. (See survey instrument in **Error! Reference source not found.**). To improve response rates, follow-up emails containing the survey link were e-mailed four additional times to (non-responding) target participants. NFWF also assisted in following up with the cluster member organizations to ensure their participation. Further, the Bloustein team directly contacted several cluster members for surveys that were started but not completed to determine if there was a problem with completing the survey. In most instances, the participant either completed the survey or provided contact information for redirecting the survey to a more appropriate respondent.

Appendix B – NFWF DRWI Survey Instrument

Survey Flow

Block: Block 1 - Opening Questions - All Respondents (18 Questions)

Branch: New Branch

If

If Has your organization implemented, assisted with implementing, or is planning to implement water... No Is Selected

Block: Block 2 - End of Survey - All Respondents (2 Questions)

Branch: New Branch

If

If Which statement best describes your organization? (select only one) Our organization is a DRWI Cluster member Is Selected

Block: Block 3 - Cluster Members (15 Questions)

Block: Block 4 - Final Questions - All Respondents (5 Questions)

Block: Block 2 - End of Survey - All Respondents (2 Questions)

Branch: New Branch

If

If Which statement best describes your organization? (select only one) We are not a DRWI Cluster member but we have implemented or are planning to implement water quality restoration or land protection practices for land we own or manage. Is Selected

Block: Block 5 - Non-Members (12 Questions)

Block: Block 4 - Final Questions - All Respondents (5 Questions)

Block: Block 2 - End of Survey - All Respondents (2 Questions)

Branch: New Branch

If

If Which statement best describes your organization? (select only one) Not sure Is Selected

Block: Block 5 - Non-Members (12 Questions)

Block: Block 4 - Final Questions - All Respondents (5 Questions)

Block: Block 2 - End of Survey - All Respondents (2 Questions)

Branch: New Branch

If

If Which statement best describes your organization? (select only one) We are not a DRWI Cluster member but we assist or consult with other organizations on water quality restoration or land protection practices on land we do not manage or own. Is Selected

Block: Block 6 - Consultant or Assisting Role (10 Questions)

Block: Block 4 - Final Questions - All Respondents (5 Questions)

Block: Block 2 - End of Survey - All Respondents (2 Questions)

Page Break

Q1.1 Informed Consent Form - Delaware River Watershed Initiative Survey

You are being asked to participate in a survey that **should take about 10 to 20 minutes to complete**. The purpose of this survey is to understand if and to what degree restoration and land protection efforts supported by the National Fish and Wildlife Foundation ('NFWF') and the Open Space Institute under the Delaware River Watershed Initiative ('DRWI') have motivated restoration and land protection efforts that were not funded by NFWF-DRWI targeted grants. This information will guide future outreach/education and potential funding efforts through NFWF's DRWI program.

The survey is being conducted by the Environmental Analysis and Communications Group of the Edward J. Bloustein School of Planning and Public Policy at Rutgers University ('investigator'). The investigator and the Institutional Review Board at Rutgers University ('IRB') are the only parties that will be allowed to see your responses, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only summarized results will be stated. All study data will be kept for three years.

As noted, the survey should take approximately 10 to 20 minutes to complete and may be adjourned and resumed up to the closing date of the survey, which is midnight on April 26, 2019. Participation in this study is voluntary. You may choose not to participate, and you may stop the survey at any time without any penalty to you.

There are no foreseeable risks if you decide to complete this survey. In addition, you will receive no direct benefit from taking the survey and you will not be compensated for taking the survey. The results of the survey will contribute to knowledge that may advance watershed management planning, restoration and land protection efforts for the Delaware River basin and may be presented in public forums and might be published in reports or journals.

This survey is confidential, which means that the investigator can identify organizations that participate in the survey but their identity will not be shared with outside entities including NFWF, the Open Space Institute, and the DRWI or their affiliates unless the organization elects to disclose their contact information as provided at the end of the survey. If the individual respondent elects to provide their contact information, the investigator may contact the individual to develop case studies for professional presentations or publications.

If you have any questions about the study or study procedures, you may contact Sara Malone by mail at the Environmental Analysis and Communications Group, E.J. Bloustein School of Planning and Public Policy, Rutgers University, 33 Livingston Avenue, Room 486, New Brunswick, NJ, 08901, by phone at 848-932-2720, or by email at sjmalone@ejb.rutgers.edu. If you have any questions about your rights as a research subject, please contact the IRB Director at (732) 235-9806.

By beginning the survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

I have read the consent form and agree to participate:

- Yes (7)
- No (8)

Q1.2 What is your organization's primary type? (select only one)

- Academic (1)
 - For-profit or private industry (2)
 - Government - Municipal (3)
 - Government - County (4)
 - Government - Regional (5)
 - Government - State (6)
 - Government - Federal (7)
 - Non-profit (8)
 - Other (9) _____
-

Q1.3 What is the primary sector for your organization? (select only one)

- Agriculture (1)
 - Conservation or Preservation (2)
 - Watershed/river/lakes (3)
 - Education (4)
 - Engineering and Design (5)
 - Recreation/Sports (6)
 - Regulatory/Oversight (7)
 - Utilities (8)
 - Other (10) _____
-

Q1.4 What is the age of your organization? (select only one)

- Less than 5 years (1)
 - Between 6 and 15 years (2)
 - Between 16 and 30 years (3)
 - Greater than 30 years (4)
-

Q1.5 How many employees work in your organization? If more than one location, at your current location. (select only one)

- Under 5 (1)
- Between 6 and 15 (2)
- Between 16 and 30 (3)
- Over 30 (4)

Q1.6 How many acres of land does your organization manage? (select only one)

- 0 acres (1)
- More than 0 but less than 10 acres (2)
- Between 10 and 100 acres (3)
- Between 101 and 1000 acres (4)
- More than 1000 acres (5)

Q1.7 In which state is your organization located? If more than one state, pick your current location. (select only one)

- Delaware (1)
- New Jersey (2)
- New York (3)
- Pennsylvania (4)
- Other (5) _____

Display This Question:

If Q1.7 = 1

Q1.8 In which Delaware county is your organization located? If more than one county, pick your current location (select only one).

- Kent County (1)
- New Castle County (2)
- Sussex County (3)

Display This Question:

If Q1.7 = 2

Q1.9 In which New Jersey county is your organization located? If more than one county, pick your current location (select only one).

- Atlantic County (1)
- Burlington County (2)
- Camden County (3)
- Cape May County (4)
- Cumberland County (5)
- Gloucester County (6)
- Hunterdon County (7)

- Mercer County (8)
- Monmouth County (9)
- Morris County (10)
- Ocean County (11)
- Salem County (12)
- Sussex County (13)
- Warren County (14)
- Other (15) _____

Display This Question:

If Q1.7 = 3

Q1.10 In which New York county is your organization located? If more than one county, pick your current location (select only one).

- Broome County (1)
- Chenango County (2)
- Delaware County (3)
- Greene County (4)
- Orange County (5)
- Schoharie County (6)
- Sullivan County (7)
- Ulster County (8)
- Other (9) _____

Display This Question:

If Q1.7 = 4

Q1.11 In which Pennsylvania county is your organization located? If more than one county, pick your current location (select only one).

- Berks County (1)
- Bucks County (2)
- Carbon County (3)
- Chester County (4)
- Delaware County (5)
- Lackawanna County (6)
- Lancaster County (7)
- Lebanon County (8)
- Lehigh County (9)

- Luzerne County (10)
- Monroe County (11)
- Montgomery County (12)
- Northampton County (13)
- Philadelphia County (14)
- Pike County (15)
- Schuylkill County (16)
- Wayne County (17)
- Other (18) _____

Q1.12 How familiar are you with the following?

	Very familiar (1)	Somewhat familiar (2)	Not at all familiar (3)
Delaware River Watershed Initiative (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delaware River Watershed Initiative Clusters (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Fish & Wildlife Foundation (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Space Institute (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
William Penn Foundation (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q1.13 Please note, for the purposes of this survey, we are utilizing the following definitions for "restoration" and "protection":

Restoration: Generating on-the-ground changes that facilitate water quality improvements, including repair or enhancement of degraded wetlands and streams, adoption of green stormwater infrastructure, and conservation-minded farming practices.

Protection: Establishing easements, acquiring or otherwise conserving critical parts of a landscape with the intention of improving or protecting downstream water quality.

Q1.14 How familiar are you with the following water quality restoration or land protection practices?

	Extremely familiar (1)	Somewhat familiar (2)	Not at all familiar (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and stream bank stabilization (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q1.15 Has your organization implemented, assisted with implementing, or is planning to implement water quality restoration or land protection practices?

- Yes (1)
- No (2)

Skip To: End of Block If Q1.15 = 2

Q1.16 Thinking about where you get information related to water quality restoration or land protection practices, how important are the following?

	Very important (1)	Somewhat important (2)	Not very important (3)	Not at all important (4)
Social media (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Targeted emails (e.g., w/electronic newsletter) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Websites (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printed newsletter (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
News media (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community events (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conference or seminar presentations (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journals or public reports (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-person meetings or consultations (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q1.17 Based on the map, where does your organization implement, plan to implement, or assist with implementing water quality restoration or land protection practices?

	Yes (1)	No (2)	Not sure (3)
Within a DRWI cluster boundary (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outside a DRWI cluster but within the Delaware River watershed boundary (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outside the Delaware River watershed boundary (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q1.18 Which statement best describes your organization? (select only one)

- Our organization is a DRWI cluster member (1)
- We are not a DRWI cluster member but **we have implemented or are planning to implement** water quality restoration or land protection practices for land we own or manage. (4)
- We are not a DRWI cluster member but **we assist or consult with other organizations** on water quality restoration or land protection practices on land we do not manage or own. (2)
- Not sure (3)

End of Block: Block 1 - Opening Questions - All Respondents

Start of Block: Block 2 - End of Survey - All Respondents

Q2.1 Would it be all right for us to follow up with you to clarify any of your responses? (select only one)

- Yes (1)
- No (2)

Skip To: End of Survey If Q2.1 = 2

Q2.2 Please provide your contact information. ***This information will not be shared with the National Fish and Wildlife Foundation, the Open Space Institute, the Delaware River Watershed Initiative, the William Penn Foundation or any of their affiliates and will only be used by the Rutgers Bloustein School survey team in the analysis of survey results.***

- Name (1) _____
- Organization (2) _____
- City (3) _____
- State (4) _____
- Email (5) _____
- Phone (6) _____

End of Block: Block 2 - End of Survey - All Respondents

Start of Block: Block 3 - Cluster Members

Q3.1 Have you implemented or are you in the process of implementing any of these practices?

	Already implemented or in process of implementing (1)	Not implementing (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (5)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (6)	<input type="radio"/>	<input type="radio"/>

Q53 Are there other water quality restoration or land protection practices you are implementing or have implemented that are not referenced above?

- Yes (briefly list) (4) _____
 - No (5)
-

Display This Question:

If Q3.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.1"



Q3.2 Did you utilize DRWI-Funds for practices you have implemented or are in the process of implementing? Please note, DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.3 Are you actively planning (e.g., already have target location, design specs, seeking funding) to implement any of these practices in the future?

	Yes (1)	No (3)	Not sure (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q54 Are there other water quality restoration or land protection practices you are actively planning to implement in the future that are not referenced above?

- Yes (briefly list) (1) _____
- No (3)

Display This Question:

If Q3.3 [1] (Count) >= 1

Or Q3.3 [4] (Count) >= 1

Carry Forward Unselected Choices from "Q3.3"



Q3.4 Do you propose or anticipate utilizing DRWI-Funds for the practices you are planning to implement in the future? Please note, DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q3.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.1"



Q3.5 For the practices you have implemented or are in the process of implementing (regardless of funding source), please indicate if they are part of your cluster strategic plan.

	Yes (1)	No (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x5)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (x10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (x6)	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q3.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.1"



Q3.6 For the practices you have implemented or are in the process of implementing (regardless of funding source), please indicate whether you collaborated with other organizations on the practice.

	Did you collaborate with other organizations on the planning or implementation of this practice?	
	Yes (1)	No (2)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x5)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (x10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (x6)	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q3.6#1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.6#1"



Q55 Please list the organization with which you have collaborated or are collaborating on the planning, design or implementation of your water quality restoration or land protection practices.

	Organizations with which you have collaborated or are collaborating on these practices. (briefly list) (1)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xx1)	
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xx2)	
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xx9)	
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xx5)	
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (xx10)	
Wetland or vernal pool installation or restoration (xx11)	
Land protection to improve water quality through easements or acquisitions (xx6)	

Display This Question:

If Q3.2 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.2"

X→

Q3.7 For the practices you have implemented or are presently implementing that were supported by DRWI-Funds, did you share information about those specific practices with others outside your organization?

	Yes (1)	No (2)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xx1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xx2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xx9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xx5)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (xx10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (xx11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easements or acquisitions (xx6)	<input type="radio"/>	<input type="radio"/>

Q3.8 Through what avenues do you typically share information about your DRWI-funded projects?

	Routinely (1)	Sometimes (2)	Seldom (3)	Never (4)
Social media (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Targeted email (e.g., with electronic newsletter) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posting on own website (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posting on a third party website (government, clearinghouse or society) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printed newsletter (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press release - media (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Booth at community event (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Present or table at conference or seminar presentation (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publish in journal or public report (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Through in-person meeting or consultation (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q3.9 If your communications about DRWI-funded projects are targeted, to whom are they directed?

	Always (1)	Frequently (2)	Seldom (3)	Never (4)
Farmers / producers (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land owners / land managers (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land trusts (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NGOs and other interest groups (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business owners / commercial property managers (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Residents / homeowners (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Youth / students (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faith communities (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Municipal / local officials (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
County / regional officials (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State agency officials (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Federal agency officials (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conservation districts (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engineers / planners (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tourists / recreation groups (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q3.7 [1] (Count) >= 1

Carry Forward Selected Choices from "Q3.7"



Q3.10 For the DRWI-funded projects that you shared information about, do you believe your DRWI-funded project had a direct influence on the implementation of similar practices by other people or organizations?

	Do you believe your DRWI-funded project influenced implementation of similar practices by others?			Please briefly list the organization(s) and their associated project(s) that you believe were implemented as a result of sharing information about your DRWI-funded project. Fill in the blank (1)
	Yes (1)	No (2)	Not sure (3)	
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xxx1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xxx2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xxx9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xxx5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (xxx10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wetland or vernal pool installation or restoration (xxx11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Land protection to improve water quality through easements or acquisitions (xxx6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Display This Question:

If Q3.10#1 [2] (Count) >= 1

Carry Forward Selected Choices from "Q3.10#1"



Q3.11 Why do you think your DRWI-funded project(s) has not influenced implementation of similar projects by others?

	<i>Select all that apply</i>						<i>Describe</i>
	Project is too complex (1)	Project is costly (2)	Project is experimental (lack of confidence by others) (3)	Project was only recently implemented (not enough time for others to follow suit) (4)	Project is very site specific and not easily adopted by others (5)	Project was not successful (6)	Other (1)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xxxx1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xxxx2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xxxx9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In-stream practices to reduce velocity or reconnect stream to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

floodplain including (but not limited to) gravel bars and floodplain benches (xxxx5)							
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (xxxx10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wetland or vernal pool installation or restoration (xxxx11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land protection to improve water quality through easements or acquisitions (xxxx6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Display This Question:
 If Q3.7 [2] (Count) >= 1
 Carry Forward Selected Choices from "Q3.7"



Q3.12 For those DRWI-funded projects for which you have not shared information, what has prevented you from doing so?

	Describe	Select all that apply				
	Other (1)	Project is experimental (wanted to wait for results) (1)	Project was only recently implemented (not enough time to tell others about it) (2)	Project is very site specific and not easily adopted by others (3)	We have limited resources for outside communications (4)	Project did not work (5)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

crops, roof runoff management, and livestock exclusion (xxx1)						
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xxx2)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xxx9)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xxx5)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, and streambank stabilization (xxx10)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wetland or vernal pool installation or restoration (xxx11)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land protection to improve water quality through easements or acquisitions (xxx6)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

End of Block: Block 3 - Cluster Members

Start of Block: Block 4 - Final Questions - All Respondents

Q4.1 If you wanted to implement a water quality restoration or land protection project but have been unable to do so, how important would the following resources be in helping you move forward?

	Important (1)	Somewhat important (2)	Not important (3)
Outside expertise (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Funding (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-house personnel (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to volunteers (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunity to visit similar projects elsewhere (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Help with local ordinances and regulations (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Help with approvals and support from oversight boards/committees (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical guidance about practices (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4.2 What type of water quality restoration or land protection practices would you like to learn more about?

Q4.3 Is there something unique or important that you want to share about one or more of the water quality restoration or land protection projects you have implemented?

Q63 Does promoting DRWI-funded projects as examples of best practices help advance improvements in water quality restoration and land protection in the Delaware River basin?

- Definitely yes (1)
- Probably yes (2)
- Probably no (3)
- Definitely no (4)
- I'm not sure (5)

Q64 Considering the previous question, please tell us why.

End of Block: Block 4 - Final Questions - All Respondents

Start of Block: Block 5 - Non-Members

Q5.1 Have you implemented or are you implementing any of the following water quality restoration or land protection practices?

	Already implemented or in process of implementing (1)	Not implementing (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (21)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (6)	<input type="radio"/>	<input type="radio"/>

Q57 Are there other water quality restoration or land protection practices you are implementing or have implemented that are not referenced above?

- Yes (briefly list) (1) _____
- No (2)

Display This Question:

If Q5.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q5.1"



Q5.2 Did you utilize DRWI-Funds for the practices you have or are in the process of implementing?

Please note, DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5.3 Are you actively planning (e.g., have targeted location, design specs, seeking funding) to implement any of these practices in the future?

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q56 Are there other water quality restoration or land protection practices you are actively planning to implement in the future that are not referenced above?

- Yes (briefly list) (1) _____
- No (2)

Display This Question:

If Q5.3 [1] (Count) >= 1

Or Q5.3 [3] (Count) >= 1

Carry Forward Unselected Choices from "Q5.3"



Q5.4 Do you anticipate securing or intend to secure DRWI-Funds for practices you are planning to implement in the future? Please note, DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not Sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q5.1 [1] (Count) >= 1

Or Q5.3 [1] (Count) >= 1

Q5.5 For the practices or projects that you have implemented, are currently implementing, or are planning to implement in the future, do they involve collaboration with DRWI cluster member organizations?

- Yes (1)
- No (2)
- Not sure (3)

Display This Question:

If Q5.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q5.1"



Q5.6 Did you learn about the practices you have implemented or are implementing from a DRWI-funded project? Please note, DRWI funded projects includes projects funded by the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q5.6 [1] (Count) >= 1

Q5.7 Through what method(s) did you learn about the DRWI-funded project(s)?

	Select all that apply (1)
Social media (1)	<input type="checkbox"/>
Targeted emails (e.g., with electronic newsletter or links) (2)	<input type="checkbox"/>

DRWI organizations' websites (3)	<input type="checkbox"/>
Other third party website (government, clearinghouse or society) (4)	<input type="checkbox"/>
Printed newsletter (5)	<input type="checkbox"/>
News media (6)	<input type="checkbox"/>
Community event presentations or info tables (7)	<input type="checkbox"/>
Conference or seminar presentations or info tables (8)	<input type="checkbox"/>
Journals or public reports (9)	<input type="checkbox"/>
Through in-person meetings or consultations (10)	<input type="checkbox"/>
Other (11)	<input type="checkbox"/>

Display This Question:
 If Q5.6 [1] (Count) >= 1
 Carry Forward Selected Choices from "Q5.6"



Q5.8 For the practices that you learned about through a DRWI-funded project, how likely is it that your organization would have implemented the practice without the information you gained from a DRWI-funded organization?

	Very Likely (1)	Possible (2)	Not very likely (3)	Not likely at all (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xx1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (xx2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xx9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xx21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (xx10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (xx11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (xx6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:
 If Q5.2 [2] (Count) >= 1
 Carry Forward Selected Choices from "Q5.6"



Q5.9 From what source(s) did you learn to implement these water quality restoration or land protection practices?

	<i>Select all that apply</i>							<i>Please list</i>
	County extension service (1)	Soil conservation service (USDA-NRCS) (2)	Regulatory (government) entity (3)	Professional organization or society (4)	University or academic institution (5)	In-house staff expertise (6)	Non-profit conservation group (7)	Other (1)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (xx1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stormwater retention basin retrofits including (but not limited to) installation of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

bioretention basins and bioswales (xx2)								
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (xx9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (xx21)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (xx10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wetland or vernal pool installation or restoration (xx11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land protection to improve water quality through easement or acquisition (xx6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Q5.10 If you wanted to implement other water quality restoration or land protection practices but have been unable to do so, what has prevented you from implementing them?

	<i>Select all that apply</i>							<i>Please list</i>
	Practice is too complex (1)	Practice is too costly (2)	Practice is experimental, it is untested or we lack confidence in it (3)	We only recently learned about the practice and haven't had time to implement it yet (4)	We lack the necessary technical expertise (5)	We lack the required staff time (6)	Practice is outside our organization's mission (7)	Other (1)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wetland or vernal pool installation or restoration (12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land protection to improve water quality through easement or acquisition (13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

End of Block: Block 5 - Non-Members

Start of Block: Block 6 - Consultant or Assisting Role

Q6.1 Have you assisted other organizations with planning, design or implementation of any of these practices?

	Already assisted or in process of assisting (1)	Not assisting (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (9)	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (21)	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (10)	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (11)	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (6)	<input type="radio"/>	<input type="radio"/>

Q60 Are there other water quality restoration or land protection practices you are assisting with implementing or have assisted with implementing that are not referenced above?

- Yes (briefly list) (1) _____
 - No (2)
-

Display This Question:

If Q6.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q6.1"



Q6.2 Were DRWI-Funds utilized to support implementation of practices that you have assisted with? Please note, DRWI-Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not Sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6.3 Are you actively planning (e.g., have targeted location, design specs, seeking funding) to assist other organizations with design or implementation of any of these practices in the future?

	Yes (1)	No (3)	Not sure (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q62 Are there other water quality restoration or land protection practices you are actively planning to assist with that are not referenced above?

- Yes (briefly list) (1) _____
- No (2)

Display This Question:

If Q6.3 [1] (Count) >= 1

Or Q6.3 [4] (Count) >= 1

Carry Forward Unselected Choices from "Q6.3"



Q6.4 Do you anticipate that DRWI-Funds will be secured for practices you are actively planning to assist with in the future? Please note, DRWI Funds include funding from the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not Sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q6.1 [1] (Count) >= 1

Or Q6.3 [1] (Count) >= 1

Q6.5 For the practices or projects that you have assisted with, are assisting with, or are planning to assist with in the future, have they involved (or will they involve) collaboration with DRWI cluster member organizations?

- Yes (1)
- No (2)
- Not sure (3)

Display This Question:

If Q6.1 [1] (Count) >= 1

Carry Forward Selected Choices from "Q6.1"



Q6.6 Did you learn about the practices you have assisted with or are planning to assist with implementing from a DRWI-funded project? Please note, DRWI-funded projects includes projects funded by the National Fish & Wildlife Foundation, Open Space Institute, and William Penn Foundation for the purposes of water quality restoration or land protection.

	Yes (1)	No (2)	Not sure (3)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (x21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (x10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (x11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Q6.6 [1] (Count) >= 1

Q6.7 Through what method(s) did you learn about the DRWI-funded project(s)?

	<i>Select all that apply (1)</i>
Social media (1)	<input type="checkbox"/>
Targeted emails (e.g., with electronic newsletter or links) (2)	<input type="checkbox"/>
DRWI organizations' websites (3)	<input type="checkbox"/>
Other third party website (government, clearinghouse or society) (4)	<input type="checkbox"/>
Printed newsletter (5)	<input type="checkbox"/>
News media (6)	<input type="checkbox"/>
Community event presentations or info tables (7)	<input type="checkbox"/>
Conference or seminar presentations or info tables (8)	<input type="checkbox"/>
Journals or public reports (9)	<input type="checkbox"/>
Through in-person meetings or consultations (10)	<input type="checkbox"/>
Other (11)	<input type="checkbox"/>

Q65 How likely would you be to promote a DRWI-funded project as an example of best practices in water quality restoration or land protection to other organization that you work with?

	Very likely (1)	Somewhat likely (2)	Not at all likely (3)	I don't know enough about DRWI- funded projects to promote them (4)
Agricultural management best practices to improve water quality including (but not limited to) manure storage, nutrient management, filter strips to capture runoff, cover crops, roof runoff management, and livestock exclusion (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater retention basin retrofits including (but not limited to) installation of bioretention basins and bioswales (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stormwater runoff management including (but not limited to) green roofs, porous pavement, rain gardens, rain barrels, and infiltration or percolation trenches (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-stream practices to reduce velocity or reconnect stream to floodplain including (but not limited to) gravel bars and floodplain benches (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stream quality improvements including (but not limited to) riparian buffer restoration, streambank stabilization, and livestock exclusion (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetland or vernal pool installation or restoration (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land protection to improve water quality through easement or acquisition (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 6 - Consultant or Assisting Role

Appendix C – Types of Practices Respondents Want to Learn More About

Appendix C contains information about the survey question, **“What type of water quality restoration or land protection practices would you like to learn more about?”**

Identified practices are roughly grouped by topic. The values in the columns indicate the number of times that practice group (rows) was referenced by the respondent type (columns). Full responses to this question (including those not specifically related to a practice) are grouped by respondent type following the table. Organization names and other identifiers have been redacted in accordance with the confidential nature of the survey.

Based on this rough grouping of the responses, the highest combined interest is in more information about stormwater management practices followed by stream quality improvements, in-stream practices and land protection measures. Cluster members were most interested in learning more about in-stream practices; non-members wanted more information about stormwater management and stream quality improvements; and assisters were interested in learning more about agricultural BMPs, funding, land protection measures and stormwater management.

Table 49. Practices respondents wanted to learn about by respondent type

Requested by:	Cluster	Non-Cluster	Assister
Agricultural management best practices, including <ul style="list-style-type: none"> • Barriers to implementation of BMPs and methods to overcome them • High efficiency agricultural irrigation systems • Livestock exclusion (cattle exclusion) • BMPs for concentrated “flow paths” off of farmland to streams (not captured through other conservation practices) 	1		5
Beaver dam analogs – new, up & coming “nature-based” solutions	1		
C1 water designation in Atlantic white cedar swamp (State of NJ) in tidal buffer zone		1	
Capacity building <ul style="list-style-type: none"> • For entities to begin to own and manage natural lands • Access to partners/experts to help advance/expand projects • Concern for organizational capacity to absorb new information or implement new practices • Know more about projects happening within DRW and how best to position volunteers to assist them • Construction project planning and management 	4		1
Climate related, including <ul style="list-style-type: none"> • Bio-char 	2		1

Requested by:	Cluster	Non-Cluster	Assister
<ul style="list-style-type: none"> BMPs with highest co-benefits for emerging contaminants and climate mitigation Carbon credits 			
Dams <ul style="list-style-type: none"> Dam preservation (flood prevention) Dam removal 		1	1
Data support, including <ul style="list-style-type: none"> Data storage and decision making/policy frameworks or entities to hold water data and guide public conversation 			1
Economic analysis of conservation practices as a tool to help sell conservation			1
Eco-tourism concepts for local rivers to maintain public's sense of value, which is essential for maintaining and restoration work support		1	
Fisheries, including <ul style="list-style-type: none"> Native and wild trout Technical info from marine biologist for managing natural shad spawning/hatching tank Optimum water conditions for hatching tank Advice on collecting, stripping, and fertilizing American shad eggs 	1		1
Flood control/mitigation		1	
Floodplain restoration and protection	1	1	2
Forest restoration and repair			1
Freshwater/head-of-tide living shoreline	1		
Funding <ul style="list-style-type: none"> Alternative conservation funding (outside grants and loans) Stormwater basin retrofits Any emerging practices that have funding programs to aid implementation/action Explore how DRWI funds can be used on farmland preservation projects while supporting agriculture use of property... Like to know why participation in (or funding of) water quality restoration and land conservation projects is contingent on accreditation by trade organization – should be alternative means for organizations to prove qualifications to funder Cost share on open space and agricultural preservation easements and fee simple purchases 	1	1	5

Requested by:	Cluster	Non-Cluster	Assister
Green infrastructure, including <ul style="list-style-type: none"> • Successful installations • Rain gardens • Green roofs • Green buildings (ways to make our office buildings more “green” and environmentally friendly in regards to water quality) • Problem solving for BMP failures including rain gardens 	1	2	3
In-stream restoration practices, including <ul style="list-style-type: none"> • Aid stormwater management and reduce flooding • Stream restoration • Large wood implementation • Road stream crossing connectivity 	6	1	1
Invasive species management (feasible)			1
Lake and pond management and restoration, including <ul style="list-style-type: none"> • Reducing salt intrusion into lakes • Improve lake quality to have less silt, not as brown water • Mitigation of pond impacts to streams (temperature/sediment) 			3
Land protection, including <ul style="list-style-type: none"> • Use of regulations to strengthen land protection • Adoption and implementation of local zoning in rural areas • Easements and ordinances • Floodplain land protection • Successful urban green infrastructure ordinances • Sources to assist small land trust negotiate with property owners for easements/greater protection measures • Also, barriers to landowners accepting federal easement funding and how to overcome barriers 	2		6
Public outreach <ul style="list-style-type: none"> • Assist and educate private landowners w/management of areas adjacent to water bodies (including streams/ditches) • Around Stormwater BMPs 		2	
Roadside protections and road maintenance, including <ul style="list-style-type: none"> • Parking area water quality restoration • Water filtration gardens along the curb • BMPs including salt reduction and other less damaging roadway maintenance practices • Innovative practices around ditches 		2	2
Source water protection			1

Requested by:	Cluster	Non-Cluster	Assister
Stormwater management, including runoff management and retention basin retrofits, etc. <ul style="list-style-type: none"> • Basin retrofits • Nonpoint source controls, metric gathering strategies for stormwater retention, capture, erosion • Regenerative S/W conveyance • Redesign of outfall pipes • State of the art S/W management BMPs • Use of wetlands for S/W filtration • Improvements to existing runs • Metric gathering strategies for S/W retention, capture, erosion • Bioswales • Erosion control of adjacent steep bluffs • MS4s including BMP implementation and regulations • Dealing with S/W runoff 	2	7	6
Stream quality improvements, including <ul style="list-style-type: none"> • Stream-bank restoration/stabilization • Riparian corridor restoration and protection • Ecological restoration BMPs • Riparian buffer creation • Stream embankment preservation 	1	6	3
Urban retrofits, urban infrastructure and gsi	1		
Watershed improvement		1	
Wetland and vernal pool, including <ul style="list-style-type: none"> • Creation or restoration techniques • Ecological restoration BMPs • Wetlands as stormwater filtration 	3	1	1

The following are full unedited responses to this question (including those not specifically related to a practice) grouped by respondent type (cluster member, non-member or assister). As previously noted, organization names and other identifiers have been redacted in accordance with the confidential nature of the survey.

Cluster Member Responses:

- any emerging or existing practice that has a funding program associated with it so that it has potential for implementation/action
- As a watershed association, we do a lot of these projects, information on new BMP's such as bio-char, etc. would be useful.
- beaver dam analogs - new, up & coming "nature-based" solutions
- carbon credit
- Capacity building for entities to begin to own and manage natural lands

- Construction project planning and management
- Floodplain restoration.
- I would be interested to learn more about what resources are available through DRWI to assist land trusts, such as the [redacted], with large land protection projects. [Redacted] hold 185 acres under easement in a very densely developed township. We are currently working on a 70+ acre easement very close to the Schuylkill River. The sensitivity of easements in general on privately held property often leads a small land trust such as ours to figure things out on our own. More resources available to help with the negotiations with the property owner, to perhaps include greater protections in the easement document, would be helpful.
- I would like to better understand where the priority acquisition boundary lines are and why they have been drawn. It is difficult to obtain information about whether a potential acquisition falls within one of the priority cluster areas and how to access funding if it does.
- In stream restoration
- In-stream restoration practices.
- In-stream wood placement; stormwater concentrated "flow paths" off of farmland to streams, that are missed or hard to treat even with conservation planning
- Large wood implementation, road-stream crossing connectivity, native and wild trout
- Not our area of expertise, but were we to undertake any of these practices, we would have to amend our mission and hire appropriate personnel. We don't compete in these areas with our Coalition member organizations, or DRWI Ccuster partners.
- Not sure
- not sure
- regenerative stormwater conveyance
- Stormwater Basin Retrofits
- Stream Restoration
- Streambank & In-Stream Restoration
- There is definitely more to learn from partners about maximizing the efficiency of practices along with the overall value added to the landowner for stormwater projects. For example, being able to work with the staff at the [redacted], we were able to confirm that rainwater harvesting cisterns could have attachments added to pressurize hoses. This allowed us to begin conversations with a local ambulance corps on a property adjacent to a major stormwater restoration project we're planning, expanding the overall footprint of the project. Access to the expertise of partners is critical to successful project implementation.
- Urban retrofits, dealing with urban infrastructure and gsi
- Use of regulations to strengthen land protection, bank stabilization and wetland restoration techniques.
- We currently have enough general knowledge to pursue projects that already are stretching our internal capacity (even with DRWI support). Not to say it wouldn't be nice to be smarter - but we really don't have the time to get smarter nor the resources to do much of anything with any additional information at this time.
- Wetland creation
- wetland restoration
- wetland restoration, green roofs and freshwater/head of tide living shoreline

Non-Member Responses:

- All that pertaining to us

- Alternative conservation funding (outside of grants and loans). Bonds, mitigation, carbon/nutrient trading, etc...
- Bioswales and redesign of stormwater outfall pipes
- C1 Water designation in Atlantic White Cedar Swamp connection to State of NJ, State Natural Area inside a tidal buffer zone
- Different concepts promoting eco-tourism on our local rivers, thus maintaining the public's sense of value which is essential for maintaining and restoration work support.
- Ecological Restoration Best Management Practices for riparian corridors and wetlands.
- Flood prevention, dam preservation
- Floodplain restoration
- Have existing projects already on the list. So any practices that open doors to funding sources.
- How to assist and educate private landowners with management of areas adjacent to small waterbodies (streams, ditches)
- In stream restoration.
- Protecting riparian buffers and still more public outreach regarding storm water best practices.
- Rain Garden, Parking area water quality restoration, Improvements to existing Stormwater runs.
- Recreational use has gone way up while enforcement is effectively non existent. Volunteer rescue squads are getting more and more calls for river rescue. What efforts are being done to control, regulate, monitor or enforce existing laws for the recreational use?
- riparian buffer creation
- Stormwater basin retrofits ---- flood mitigation projects
- Stream embankment preservation
- Stream restoration
- Streambank restoration & stormwater basin retrofits
- The correlation between all the regulatory activity we've implemented and the health of the watershed. Whether all the effort is worth it. Our local government has some pretty stringent regulations about stormwater management. There's some public resistance to them. For the most part, people try to keep their projects below the regulatory triggers. We've been at this for 20 years. The [redacted] watershed we have is still slipping according to some folks. But there never seems to be long period interval studies of watershed health one can use as a report card. This requires expertise and money on a larger scale than most municipalities can handle.
- unsure
- Water filtration gardens along the curb.
- Watershed improvement
- Ways to make our office buildings more "green" and environmentally friendly in regards to water quality
- We anticipate doing stream bank stabilization, retro-fitting basins.
- We are currently implementing BMPs to meet MS4 regulations and would benefit by learning more.
- We will take any information available on flood control and land protection that can be available to us.

Assister Responses:

- Access to funding for stormwater basin retrofits
- adoption and implementation of local zoning in rural areas.

- Agricultural practices
- Any innovative practices around ditches
- Anything you have planned in Delaware County and Upper Sullivan County, New York.
- As a [redacted] for [redacted] I am not fully aware of the funding streams for the Delaware River Cluster systems. This questionnaire has brought more to light for me than I realized before. We are working with the [redacted] Commission on wildlife management areas in improving wetland systems and are looking at watersheds to identify water quality issues in the Upper Lehigh River Cluster. We have very little agricultural lands in the Upper Lehigh Cluster.
- Barriers to implementation of ag BMPs and methods to overcome barriers
- Economic analysis of conservation practices as a tool to help sell conservation
- Barriers to landowners accepting federal easement funding and how to overcome barriers
- Been doing this for 20 plus years
- [Redacted] is in the beginning stages of developing a plan to remediate the PCBs, pesticides and heavy metals in the sediments of the Christina River and Lower Brandywine Creek. [Redacted] is funding the initial step, a June 2019 technical workshop to bring potential partners together and share information on current remediation and ecosystem restoration projects and how their organizations will be interested in assisting with this much larger sediment remediation project. Anticipate this is a 10 year project. We have experts on our team from [redacted] who have participated in large-scale river sediment cleanups in Washington State, Wisconsin and New Jersey.
- Continue to explore how DRWI funds can be used on farmland preservation projects, while supporting the agricultural use of the property. Acknowledging agriculture as an industry and a business for the landowner while crafting processes that won't affect the bottom line for a farmer, yet support the objecting of improved water quantity and quality.
- Cost share on open space and agricultural preservation easement and fee simple purchases.
- DELAWARE RIVER LAND PROTECTION FROM FLOODING CAUSED BY MISMANAGEMENT OF NYC DELAWARE RESERVOIRS. BY NOT HAVING 10% YEAR ROUND VOIDS TO ALLOW FOR NEW RAIN. FLOODS OF 04,05,06.... ALL NYC RESERVOIRS WERE FULL AND SPILLING WHEN RAIN CAME. WE HAD MUCH HIGHER RAINFALL DURING HURRICANE FLOYD, BUT DID NOT FLOOD AS THERE WAS LARGE VOIDS IN ALL THREE HURRICANES. THE MODEL THAT THE 4 STATES AND NYC PAID 750,000 FOR SHOWED THAT IF THEIR HAD BEEN VOIDS IN THE RESERVOIRS, FLOOD CREST WOULD HAVE BEEN 4-6FT. LOWER.
- IT WOULD BE VERY BENEFICIAL FOR OUR LAND AND VEGETATION IF THE ENVIRONMENTAL GROUPS WOULD HELP IN PREVENTING MAN-MADE FLOODS THAT DESTROY THEM BOTH.
- Easements and Ordinances
- Erosion control of adjacent steep bluffs.
- Floodplain restoration
- Funding
- High efficiency agricultural irrigation systems
- I would like to know more about the projects happening within the Delaware River Watershed and how we can best position our volunteers to assist with them.
- I would like to know why participation in (or funding of) water quality restoration and land conservation projects is contingent on accreditation by a trade association. There should always be alternative means for an organization to prove their qualifications to a funder, or public agency.
- I'd like to learn about practices with highest co-benefits for emerging contaminants and climate mitigation

- land protection in floodplains.
- Livestock exclusion. Evaluate and determine if any efforts needed on [redacted name] level to help protect the small area of the Delaware watershed in Schoharie County.
- N/A as we are experts in the field of river restoration and wetland pond creation. We are not involved in land acquisition.
- nonpoint source controls, metric gathering strategies for stormwater retention, capture, erosion
- data storage and decision making/policy frameworks or entities to hold water data and guide public conversation
- impaired waterway recovery models in other parts of the world (the Rhine, etc.)
- Not sure
- pond management and restoration, feasible invasive management, problem solving for rain garden and other BMP failures
- Restoration of riparian corridors
- restoring or repairing forest; dealing with stormwater runoff; reducing salt intrusions into lakes; how to improve lake quality to have less silt, clearer, not as brown water
- riparian restoration, dam removal, cattle exclusion, mitigation of pond impact to streams (e.g., temperature and sedimentation impacts)
- rural applications for roadside protections and road maintenance - salt reduction and other opportunities to be less damaging with our roadway maintenance.
- SOURCE WATER PROTECTION
- State of the art storm-water management best practices
- Stream bank restoration.
- Successful in-stream projects that aid storm water management and reduce flooding
- Successful urban green infrastructure ordinances and installations.
- Technical information from marine biologists for managing our natural shad spawning hatching tank. Optimum water conditions for hatching tank.
- Advice on collecting, stripping, and fertilizing American shad eggs.
- Use of wetlands as stormwater filtration.
- what types are out their
- Willing to assist with more stormwater projects. Naturalization of basins. Wetland enhancement.

Appendix D – Respondents Open-ended Comments About Their Implemented Projects

Appendix D includes the raw responses to the open-ended question, **“Is there something unique or important that you want to share about one or more of the water quality restoration or land protection projects you have implemented?”** Responses are grouped by type of respondent (cluster member, non-member or assister). Organization names and other identifiers have been redacted in accordance with the confidential nature of the survey.

Cluster Member Responses:

- Agricultural BMP's have shown interest in those communities, it takes time to build trust and respect, then others want to join in. Funding provides the incentive needed to implement a project, a "whole farm" approach helps to leverage other less enticing BMP's such as fencing and buffers that farmers may not see a direct benefit to themselves compared to manure management. Similarly, there is a lot on concern about stream bank erosion among residents who live along streams, many have open space with stream banks, riparian areas (mowed and unmowed) wetlands, detention basins and yet have little understanding of the issues and BMP's to manage these. Many want to do more to improve them, some willing to contribute \$, but most have little funding, so funding is needed. Process requires education, planning and implementation. A focus on operation and maintenance is needed to maintain BMP's, inspect them, etc.
- Almost always in partnership with others and now we have more partner options!
- Each land protection project is unique.
- First-ever heritage strain brook trout reintroduction is happening as a result of improved water quality through the DRWI
- Generally speaking, we feel that all projects we implement or support provide important lessons learned that can be shared among our partners and with potential landowners/stakeholders. As we implement GSI practices, we are trying to quantify triple bottom line benefits that would attract non-traditional partners (e.g. private large landowners, facility managers, commercial property owners.)
- Having funding in hand to hire a highly technically skilled consultant who had also done assessment of the area (and was familiar with the menu of hydrological challenges and opportunities in the study area as well as our organization, our capacity and priorities - was critical to us. We already own the land in part via OSI/Wm Penn funding and have other hydrologically connected landowners (whose land is also preserved by our organization) are also positive about the project so if we succeed initially - it will be an excellent demonstration site. None of this would be possible without the technical assistance we received and that - in turn - would not have been available without the DRWI funds. (We are a five-person organization with no staff expertise in this area - just a generally comprehension). so that was good.
- It is important to be adaptive when working with landowners. Often goals change along the way and it is critical to build long term relationships.
- Perception of long-term commitment to the project or project area/region is key to credibility, trust, relationship building, and organizational learning to provide better service and project outcomes.
- Providing municipalities with free expertise and design services, they enthusiastically provide and deliver.

- The [redacted] recently executed a pay-for-success contract with the City of Newark, Delaware, that will result in Newark seeking regulatory credit for agricultural restoration work in Pennsylvania. which would pave the way for increased municipal funding for water quality conservation activities.
- We are not allowed to seek funds for contingency or adaptive management so get stuck with unfounded costs coming from unanticipated project needs.
- We are working on a set of land protection projects that would protect both a local surface drinking water system and the tributaries flowing to the Delaware.
- we have learned quite a bit and have had to adaptively manage certain projects during construction. We have used infiltrators to better drain clayey soil in and around farm-fields, etc.
- We're trying to advance two restoration projects, one advancing Legacy Sediment Restoration approaches and the other advancing woody habitat restoration approaches.
- work within a collective like DRWI and Schuylkill Action Network and Kittatinny Coalition for partnering, developing mutual initiatives, and funding streams
- Working with a collaborative municipalities approach can provide more opportunities urban areas with limited funding.
- Yes - it is very feasible to convince a high number of farmers and other landowners to include riparian forested buffers > 35 ft wide per side as part of whole farm conservation projects

Non-cluster Responses:

- Coordination with the funding agency is critical for a successful project. We had a streambank restoration project that didn't fit within the grant budget, but were able to secure approval for a scope adjustment and additional funds from PADEP to complete the project.
- Gabion basket and rock mat restoration along streambanks are effective stabilization techniques contrary to what regulatory people believe.

Assister Responses:

- As an aside, I was involved in studying changes in a DOT tidal freshwater mitigation wetland and making an inventory of invasive plants of nearby areas. Most of the 94-acre mitigation site was dominated by Phragmites in less than 10 years; in 17 years more than 80% was estimated to be dominated by Phragmites. The vegetation was not as diverse as in reference marsh areas. Wetland mitigation is chancy at best. In my experience, preservation beats restoration in preserving diversity. The inventory, not surprisingly, showed that disturbed areas were the most likely to be invaded by invasives. The created wetland, by virtue of its existing as a site for sedimentation, helped purify water. Once the channels are filled that function may decrease, but that function may persist with sea level rise.
- CONTAINING, WORKING WITH FARMER RUN-OFF HAS HELPED US.
- Follow up and financially supported maintenance for the first several years is critical to success of most projects
- our organization has worked within the 2000 square mile NYC watershed for over 22 years protecting the Towns and doing BMP for over 22 years. We have an education program and teach/promote state of the art in wastewater, storm water, flooding, and more. all 41 Town are members. Its a grass root organization.
- our partnering with local governments and organizations to support restoration projects
- Shad in Schools is a study, raise, and release program for all intermediate through college levels where classrooms receive information on the American shad and receive fertilized shad eggs to hatch in their classrooms. The project involves record keeping, water testing for chlorine,

nitrates, ammonia, pH, and temperature to obtain optimal conditions for the shad eggs to hatch. Students give oral reports to other classrooms and invite classes to observe the hatching process. Art and Power Point projects emphasize facts, problems, and possible solutions to shad restoration and survival. Publicity is a major objective to gain support for environmental improvements.

- state wide web based database /warehouse of all stormwater management basins built since mid 1980's . Engineering design data, pdf site plans, gis enabled locations, ownership and the ability to inspect individual basins and record inspection results, photos, reports, in perpetuity. <https://hydro.rutgers.edu>
- The language we use to promote and advance stream restoration in rural areas.
- The project cannot end at installation. Maintenance and long term monitoring is essential to the success of projects making local stewardship essential to the overall success.
- The South Wilmington Wetland Park is a \$25M City of Wilmington, DE initiative, funded by the City itself, the State of Delaware (DNREC), and NFWF (\$3M). The SWW is a 20-acre degraded marsh, that was filled with contaminated soil many years ago. Over the past 10 years, [redacted], has been working with the City of Wilmington and DNREC to investigate the soil, groundwater, surface water and sediment contaminants, and to develop remediation plans. The City's engineer, [redacted] designed the hydraulic and ecologic plans and specifications. The City put the project out to bid in January, and a contractor was selected. Construction is anticipated to begin in May 2019 and be completed in 1 year. The wetland park has 3 objectives: stormwater management, habitat creation for fish and wildlife, and passive recreation for city residents, most importantly the underserved environmental justice community of Southbridge, which is adjacent to the wetland, and is most impacted by current and past flooding, including sewage backup. As the wetland itself moves into the construction phase, the next step is design and bidding of the sewer separation project in the western half of Southbridge. Currently there is a combined sewer system. The sanitary and stormwater flows will be disconnected. A new stormwater pipe system will be constructed and will flow by gravity to the new wetland. Sanitary waste going to the WWTP will remain in the old pipe system, which will have larger capacity after the stormwater is removed. The environmental remediation components of this project include removal of PCBs from a dump area, and capping of that area; use of activated carbon pellets and PCB-degrading bacteria in a channel that connects the wetland with the Christina River, and removal of 90,000 yards of contaminated soil/sediment from the wetland. This project has been a heavy lift and will be a showcase for urban wetlands, along with the Russell Peterson Urban Wildlife Center, also in Wilmington, DE upstream on the Christina River.
- The water leaving our streams and flowing into the Delaware is very clean and silt free. If there are problems in the river they are coming from the upriver farms (silt) and from down river municipalities.
- We are a national organization and work to implement large scale conservation across the county. So we are familiar with many ecosystems and methods for water quality improvements. But our primary goal is habitat wildlife, not water quality (but the two are very much interconnected).
- We are dealing with an invasive species, *Myriophyllum heterophyllum* that is creating non-beneficial monocultures in several wildlife and fisheries management areas. Funding to the PA Game Commission is critical. We are looking at Acid Deposition impacts to the coldwater fisheries in the Lehigh River Headwaters however, the data collection has not begun.

Abandoned and operating coal mine drainage impacts to the Lehigh River tributary in Sandy Run is a critical concern needing attention.

- we did rain barrels new construction retention
- We focus on restoration of the entire riparian corridor and not just in-stream habitat. This creates a biological lift for the entire river system and the plants and animals that require that habitat type.
- We have just ended 13 years of negotiations with the PA Turnpike over storm-water management of the section they are planning on widening from mile post 320 to 326 (Tredyffrin Township, Chester County). The settlement outcomes are significant and should be publicized since the roadway project probably will not happen for several years.
- We have only been able to complete one project with a willing landowner that somewhat met the goals of the DRWI. The landowner was hesitant to buy into more of the recommended practices, i.e. filter strips due to the tenant farmer losing land from production.
- We recently completed the 90 acre Kittatiny Wildlife Management Area Kenco Tract restoration project along the Pequest River using NJ Wetland Mitigation Council funding. It included wetland and riparian restoration, instream structures, stream restoration, vernal habitat creation, riparian bench establishment to improve connection of the Pequest River with its floodplain, conversion of a former sod farm to wetlands forest and meadow, wildlife structures, public access, etc. See our website [redacted] a documentary about the project will be posted shortly.
- Would like to see more use of floating wetland islands. In stream treatment is also good. Better BMP implementation. Better litter control practices. Pennsylvania DOT needs better BMPs and housekeeping practices in the Delaware watershed. Route 1 and Route 295 corridors draining to the Delaware roads are very dirty. Litter is also an issue in Trenton. Needs better maintenance and retrofitting of catchbasins.

Appendix E – Organizations with Which Cluster Members Have Collaborated

Cluster members were asked to, “Please list the organizations with which you have collaborated or are collaborating on the planning, design or implementation of your water quality restoration or land protection practices.”

Over 100 entities were listed by cluster member organizations as collaborating with them on water quality restoration and land protection measures. The collaborating entity mentioned most often was the Natural Resources Conservation Service – though this was likely an aggregate of multiple offices. Stroud Water Research Center and Trout Unlimited were the next most referenced organizations. Cluster members collaborated with other organizations most often on stream quality improvements (79 collaborations) and stormwater runoff management (74 collaborations).

The values in the columns indicate the number of times the organization was mentioned by cluster member organizations as collaborating on the given practice.

Table 50. Cluster member collaboration with other organizations by practice

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
Abington Friends School		1	1		1		
Abington Monthly Meeting			1		1		
Abington School District					1	1	
Abington Township		1	1		1		
American Littoral Society	1		1		1		
American Rivers				1			
Amy Greene						1	
ANJEC			1				
ANS, ESU etc.				1	1	1	

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
Berks County Conservation District	2	1	1	1	2	1	
Berks County Department of Ag	1						1
Berks Nature	1				1		
PA Bureau of Forestry							1
Brandywine Conservancy	2		2				1
Brandywine Red Clay Alliance	2		2		3		
Cerulean		1	1				
Cheltenham Township					1	1	
Chester County							1
City of Newark		1					
City of Wilmington				1	1		
Conservation District	5		1	1	1		
Crow & Berry					1		
Darby Creek Valley Association		1	2	1	1		
Delaware County Planning and Conservation District		1					
Delaware Department of Natural Resources & Environmental Control			1				
Delaware Highlands Conservancy							1
Design firms		1	1		1		
Ducks Unlimited					1	1	
Eastern Delaware County Stormwater Collaborative			4	1	2		

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
Foundations (private)			1		1		1
Friends of Poquessing Watershed			1				
Green Valleys Association	1				1	1	
Haverford Township EAC			1				
Hawk Mountain Sanctuary							1
Hunterdon Land Trust							1
Land owners (private & public)		1	1		1		
Lopatcong Creek Initiative			2				
Lower Merion Conservancy		1	1				
Manor College			1				
Mitigation Companies					1	1	
Mowery Environmental	1						
Musconetcong Watershed Association			1	1	1		1
Natural Lands	1		3				6
Natural Resources Conservation Service	6	1	2	3	5	2	2
New Jersey Audubon	4		1	1	5		
NJ Conservation Foundation							3
New Jersey Conservation Fund							1
New Jersey Highlands Coalition		1	2				
New Jersey Water Supply Authority			1				
NJ Department of Agriculture	1				1		

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
NJ Department of Environmental Protection	1	1	1	3	3	1	1
NJ Department of Fish & Wildlife				1			
North Jersey Resource Conservation & Development	3		2	1	2	2	
Open Space Institute							2
Orange County Land Trust							1
Other non-profits		1	1		1		
Others				1	1	1	
PA Department of Conservation and Natural Resources	1				2	1	2
PA Department of Environmental Protection	1	1	1	1	3	1	
PA Environmental Council			1				
PA Resources Council		1	2		1		
Partners for Fish & Wildlife				1	1	1	
Partnership for Delaware Estuary	2	1			1		
PennVest	2						
Pennypak Ecological Restoration Trust			1				
PGC							1
Philadelphia regional watershed		1	1		1		
Philadelphia Water Department		1	1				
Pineland Preservation Alliance		2	2				
Pocono Heritage Land Trust							1
PRC				1			

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
Rancocas Conservancy							1
Ridge & Valley Conservancy							1
Rutgers Cooperative Extension		3	7		1		
Sisters of Saint Basil					1		
South Jersey Land & Water Trust	1		1		1		
State Agricultural Development Committee	1						
State of PA							1
Stroud Township							1
Stroud Water Research Center	5		1	1	6		
Temple		1	3	1	1		
The Nature Conservancy					2	2	5
Tookany/Tacony-Frankford Watershed Partnership			2				
The Land Conservancy							1
Townships/municipalities	1	2	2		1		1
Trout Unlimited	3			4	4	2	
Universities		1	1		1		
Upper Darby Township					1		
US Fish & Wildlife Service				2	3	1	2
US Forest Service				1		1	
US Geological Service					1		
Villanova			2	1	1		

Cluster member organizations collaborated with the following organizations on these practices	Agricultural management best practices	Stormwater retention basin	Stormwater runoff management	In-stream practices	Stream quality improvements	Wetland or vernal pool installation or restoration	Land protection or acquisitions
Walkkill River Watershed Management Group					1		
Walkkill Watershed Association			1				
White Clay Wild & Scenic	1		2		1		
Wildlands Conservancy							1

Appendix F – Why Promoting DRWI-Funded Projects Does/Does Not Advance Improvements

Survey participants were asked, **“Does promoting DRWI-funded projects as examples of best practices help advance improvements in water quality restoration and land protection in the Delaware River basin?”** The possible answers to the question were “Definitely Yes”, “Probably Yes”, “Probably No” and “I’m not sure”.

Appendix F includes the responses as to why survey recipients responded as they did to that question. Responses are grouped below by their respondent type (cluster member, non-member and assister). Organization names and other identifiers have been redacted in accordance with the confidential nature of the survey.

For those responding “definitely yes” or “probably yes”, the majority of comments supported the benefit of DRWI-funded projects as examples that raise awareness and inspire others. Respondents noted that DRWI-funded projects demonstrate the method of practice/implementation, which can facilitate implementation by others, as well as show the value of the practice in improving water quality in the region. DRWI-funded projects also help to demonstrate effective leveraging of funding sources (state, federal, other) and the importance of partnerships. For those survey participants responding they were “not sure”, the majority indicated they were uncertain about what was or was not DRWI-funded.

Cluster Responses to Why “Definitely Yes”

- I think that many people see the symptoms, effects of poor water quality, erosion, traditional ag practices, few know or understand the possible solutions. Bus tours and one-on-one meetings are most effective to actually see the sites, before and after, causes and symptoms. These also tend to inspire people to act.
- Innovators are/have already adopted and previously innovative practices are now becoming standard as they are broadly adopted. Word-of-mouth farmer/landowner-to-farmer/landowner or municipality-to-municipality is common and lends credibility when shared by peers.
- We have generated a great deal of interest and enthusiasm about improvements in water quality restoration and land protection by sharing our project successes as well as potential projects (ones we are pursuing).
- Municipal officials and school boards are more likely to implement a project that has been successful elsewhere
- Demonstrating that property can be preserved without providing public access is especially important in an area where private hunting and fishing clubs control large tracts of land and water.
- Promoting the practices helps to educate and make familiar to the general public what is trying to be accomplished, garners interest and support which can lead to more projects.
- A rising tide raises all boats. The more people hear about it going on, the more people feel comfortable with it. The more it becomes status quo.

- Sharing any best practices is useful for inspiring and helping to advance other similar projects, and since there is now pretty good awareness of the DRWI across the basin, that gives additional 'clout' to WPF-supported projects.
- Demonstration/examples of best management practices (including land protection) and successful implementation of projects leads to more success. Projects must be successful with conservation results and from financial/budgetary aspect both for organizations and landowners; anything less is unsuccessful
- One by one it all collectively adds up. The strength of the collective is based on the value of each individual project or pieces.
- We are utilizing DRWI funded projects as examples in presentations and sharing knowledge about approach, successes, and needs.
- Leveraging of funding sources; commitment of funding
- Raising awareness in the local communities promotes more projects and thus advances more improvements in water quality and land protection
- Landowners look to other landowners' properties to see how BMPs function and are maintained.
- We have seen many examples of increased conservation because of the DRWI
- It's a watershed approach that stretches across four states.
- These projects familiarize key stakeholders and the general public in and beyond the DRWI geography with best practices for stormwater management, with which they often would not be otherwise familiar at the current time.
- We feel there is a direct correlation between restoration best practices and investment to water quality benefits measured by typical WQ parameters such as DO, TSS and P.
- It constitutes a demonstrable success.
- It's obvious
- The scale of the entire DRWI initiative, coupled with the number and caliber of institutions involved in the initiative, have made municipal staff, elected officials, residents, and civic agencies so much more aware of best practices than before DRWI began. The commitment from these partners to implement BMPs has skyrocketed in the last two years alone.
- People need success stories
- Because they are effective at reducing pollution and removing sediment and are relatively easy to maintain.
- Leading by example is the best way to influence behavior
- Municipalities face compliance requirements for runoff control and will partner with non-profit organizations for implementation.
- Promotion of these efforts (DRWI-funded or not) increases visibility and engagement of practices that can improve water quality. Public buy-in is essential for making progress
- We continue to learn from other projects and use that knowledge to grow from those projects and apply to our designs to further successful outcomes.

Non-Cluster Responses to Why “Definitely yes”

- As previously state, DRWI money helps leverage Federal and State funding sources. DRWI approach on Focus Area's helps local or regional conservation partners funnel money to a specific watershed. Conservation organizations can collaborate and string water quality projects together. This focus and collaborative work has yield REAL, MEASURABLE water quality improvements on impaired streams in the Delaware River watershed.
- Awareness
- Because water is important
- Funding and technical assistance
- It brings recognition to the effort
- It is difficult to have regional models of restoration as a reference so local examples would be of great help.
- Lets the public know what the project goals are and raises awareness,
- Most resistance to stream improvements is due to lack of knowledge. Successful examples go a long way toward educating people.
- Our regional agency provides education and outreach on these topics...often using seminars on specific issues in cooperation with Pace Land Use Law Center to provide the legal basis for activities. We do not physically do the projects ourselves. We do offer pass-through funding for green infrastructure and water quality planning projects through a partnership with our Soil & Water Conservation District Regional Coalition. We serve 7 counties and are located in the Hudson River Watershed as well as the Delaware River Watershed. The counties we serve provide drinking water to over 15 million people...NYC, the Hudson Valley, Philadelphia , etc.
- Our Township is within the Delaware Watershed basin. Two of our Rivers, The Musconetcong and the Pequest feed into the Delaware further downstream. It is essential that all areas conform to proper treatment of water issues for the immediate areas quality of life and thus also for the downstream's quality of life.
- promoting is the best way to reach folks
- Sharing Best Management Practices and providing funding sources are critical for the restoration and protection that needs to be done.
- The more awareness of the benefit of projects, the more acceptance there is for the expenditure of funds.
- There is a lack of funding and personal
- They improve stream bank erosion and water quality
- We can do more projects with more funding. We have a limited budget in our municipality so that slows our progress

Assister Responses to Why “Definitely yes”

- "1-People need to see successful projects in action before they are willing to spend the time and money to do more of these projects.

- 2-The more successful projects can be designed, funded, constructed and demonstrate to be working for their intended and also be amenities to their communities (of humans and wildlife), the more these types of projects will be designed and built in other areas. Also, the lessons learned can be applied to other projects in the future."
- At least some of the DRWI-funded restoration and protection work is innovative and unique, providing both technical leadership and concrete examples to help expand restoration and protection efforts.
- Best practices are important
- every opportunity to protect and improve the waters of the commonwealth is an opportunity to protect the health, welfare and safety of our residents
- Generally, these projects are performed by groups that have water quality improvements in mind not just developing a landscape.
- Greater advertisement of successful practices typically leads to wider adoption of these practices
- Having good project examples, landowners and project implementers, and actual places to visit, are extremely helpful in getting others onboard with implementation.
- I'm a [redacted] of [redacted] and have supported their efforts in the Paulinskill to restore the river and its floodplain. There has been much publicity about this project and has raised public and professionals' knowledge about these types of projects.
- In the age of social media, we can reach often difficult to reach farmers and other large landowners and convince them of the benefits to their soils by implementing proper best management practices on their lands.
- It is much easier to promote when current projects exist
- mainstream awareness builds public will to have these practices integrated into local municipal and state policy decisions.
- Maintaining diverse vegetation in wetlands is critical to maintaining diverse wildlife habitats and wetland function. With each species lost, unknown links to water quality may also be lost. On a tangent, improving water quality will make fish consumption safe. There are virtually no bodies of water in NJ where a person can eat fish safely for the long term....and pregnant women need to be beware.
- On the ground projects with measurable results are the best way to demonstrate the positive impacts of these efforts with multiple stakeholders.
- Schools are an investment in the future. A concern for good environmental practices is a lifelong achievement and asset.
- SHOWS HOW IMPORTANT THE TASK IS WHEN PEOPLE SEEING THE CONCERN FROM THE TOP.
- successful projects with community support will ensure adaptive management actions can be implemented on other projects, and will also ensure future federal funding to deliver additional work in the watershed.
- They highlight the importance of partnerships and diversity in the funding contributors.
- very small town about 1/2 sq. mile not strong tax base

- Water is the most important resource on the planet. Making sure our watersheds and aquifers are protected is key to their quality and quantity.
- Yes because all water quality issues need education, planning and implementation of BMPs in order for the watersheds to be improved. The funding sources are critical however without knowledge of the existing funding sources, nobody will apply.

Cluster responses to Why “Probably yes”

- Promoting land protection projects leads to local communities caring more about protecting Delaware tributaries.
- sharing should help to build the knowledge and awareness of others. there is a gap in the knowledge, expertise and awareness among the partners in the DRWI that would benefit from more attention in order to increase knowledge, awareness and ultimately skills.
- Landowners have reached out to us for projects on their property because they saw others.
- Promotion of projects in general helps to garner more interest in completing more which creates needed momentum to improve water quality. Change in perspective is a slow process so the more on the ground change people see in a positive light the more change can be made in the future.
- people will follow the examples of others, if they respect them and trust them.
- It helps to show examples but examples alone won't improve the water quality. Policy changes, behavior changes, and greater protections all are needed as well. There isn't a one size fits all.
- There is definitely value in being able to hold up examples of successful restoration at the local level to show that, not only can these projects be done, but they can truly have a meaningful impact on communities and on water quality. However, promoting these projects won't be what pushes other projects across the finish line. To do that, there has to be funding from other programs and agencies to help replicate and scale up this type of work.

Non-cluster responses to Why “Probably yes”

- Any BMPs help improve the water quality
- Building public support
- "drawing positive attention is important to these projects"
- Good to have practices in the ground as a point of reference. Even better if it comes with pollutant reduction numbers achieved from the practice - "real world" numbers.
- If it opens up funding opportunities to conduct projects.
- media coverage and funding result in projects in the ground
- Municipalities still need the funds and we were turned down for a grant from DWCF
- Public awareness is essential to progress.
- Regulatory agencies have to consider implemented and successful projects when reviewing similar proposals.
- Seeing impact of work done on properties helps landowners see the benefits of doing the work on their own land.

- The implementation of any best practice with respect to improvements that will benefit water quality will, without doubt, have a positive impact on the DR basin
- Those projects can be used as models for other organizations to help develop projects
- until this survey didn't know there was funding available from DRWI
- Water runs down hill
- Way too many organizations take ownership for the river.
- When an entity is provided with knowledge of past accomplishments made by others and with the hope that they may receive funding for their project, it makes the project more real and doable.

Assister Responses to Why “Probably yes”

- Although every little bit helps, but the DRB is big and, for example, a rain garden that treats runoff from 500 sq. ft. of impervious doesn't make much of a difference
- Any projects that promote the overall water quality initiatives and provides connectivity throughout the basin is a key component to making the overall river better protected.
- Clean Water
- DRWI is a recognized organization which improves the likelihood that proposed projects will be supported
- Easier to learn by example.
- Educational outreach by the DRWI continues to be a critical person. The more people hear about how our waterways are being protected, the more likely they are to get involved.
- even though I don't know much about DRWI funded projects, it seems our area needs projects that help our region become more resilient to climate change
- Examples of successful projects are always helpful to show what can potentially work elsewhere
- If there are successful projects, it is important to share. Others want to see something work first before doing it themselves...see that the kinks are worked out!
- It is often difficult to convey the benefits of a project without being able to point to a precedent
- it is the goal of the DRWI
- It will depend on also changing behaviors. For all the site specific projects we do, the overall care of the watershed needs to change. BMPs on a regular, visible basis are needed.
- "The more people -- especially decision makers -- hear and learn about effective clean water and stormwater management strategies and initiatives, the more accepted (and better understood) they become. It's very important to keep getting the word out."
- There are many organizations which promote 'projects' of various kinds in NJ however almost all of them lack any kind of meaningful metric to determine whether or not the project had the impact which was envisioned.
- There is a lot of funding and expertise behind many of the DRWI-funded projects that I am familiar with, therefore they tend to be larger scale and well planned.
- Water protection is necessary for people, habitats, and wildlife.
- without the dollars no project!

- Yes, but there is some skepticism about a 'best practice' approach in widely different social and environmental settings.

Assister Response to Why "Probably no"

- THEY DO NOT CONSIDER THE DAMAGE DONE, CAUSED BY OVERFILLING THE NYC RESERVOIRS ...NOT ALLOWING FOR VOIDS TO ACCOMMODATE NEW RAINFALL. RESERVOIRS FULL AND SPILLING BEFORE RAINFALL. WHEN I BOUGHT MY HOME IN NEW HOPE IN 1985 . IT HAD FLOODED IN 1910 OR 12. NEXT TIME MAJOR FLOOD 1955. I ASSUMED IN 1985 I WOULD EXPERIENCE AT LEAST ONE MAJOR FLOOD. I DID NOT BELIEVE I WOULD RECEIVE 3 MAJOR FLOODS IN 21 MONTHS!. WE COLLECTED OVER 17,000 SIGNATURES REQUESTING 20% YEAR VOIDS FROM RESIDENTS WHO LIVE ALONG THE DELAWARE RIVER.

Non-cluster Responses to Why "I'm not sure"

- I'm not sure how projects have been funded.
- Our primary problem is funding. Our agency needs to continue to provide present services and find ways to fund 800K a year for implementation of a plan we have laid out to improve water quality.

Assister Responses to Why "I'm not sure"

- I am not sure which of our partners' projects that we match our volunteers to are DRWI funded; however, I do know that many of our partners do receive DRWI funding.
- I have not seen any DRWI funded projects other than the 1 done using some DRWI funding. A tour of sites restored sites would be a useful way to promote these sites.
- Not involved directly with DRWI funded projects directly.
- Of the many restoration and protection efforts on-going, I don't know which are DRWI funded. I suspect that the accreditation requirement is limiting the scope of implementation.
- Your clusters are not in my area. I don't see much information about your initiatives in Delaware County, New York.

Appendix G – Individual Maps

For all maps in the report, the location of the symbols corresponds to the approximate geocoded address of the organization. We note that this is not necessarily where the organization implements (or assists with implementing) practices that are discussed. This would be particularly true for assisters, which are likely to be assisting other organizations that are not in the immediate vicinity of the assister's organizational office. We also note that due to the scale of the maps, the symbols for organizations that have similar geocoded addresses may overlay each other and the visual content may underrepresent the full population.

While these maps show the proximity of respondent organizations to the cluster boundaries, they do not necessarily imply that the practices spread from the adjacent cluster. The survey did not relate knowledge about practices to specific clusters. That said, it is interesting to compare the location of organizations that implemented practices to the adjacent clusters. It is also interesting to compare the maps of implemented practices (Figures 7 through 13) to the corresponding practice maps for organizations planning to use DRWI-funds (Figures 16 through 22) and for organizations that learned from DRWI-funded projects (Figures 23 through 29). For example, comparing the organizations implementing agricultural BMPs (Figure 4) to those that are interested in DRWI-funding for agricultural BMPs (Figure 16) to those that indicated they learned about agricultural BMPs from DRWI-funded projects (Figure 23), we see those that learned about a practice from a DRWI-funded project are more closely grouped within the basin and around the clusters than are those planning to implement practices or those interested in funding.

The map in Figure 1 was created in ArcGIS by Caroline Martin, a graduate student at Rutgers University in the Master of City and Regional Planning program at the Edward J. Bloustein School of Planning and Public Policy. The remaining maps were created in ArcGIS by Julie Blum, a graduate student in the Ecology and Evolution program at Rutgers School of Environmental and Biological Sciences.

Figure 1. Map of Delaware River Watershed and cluster areas as presented in the survey instrument

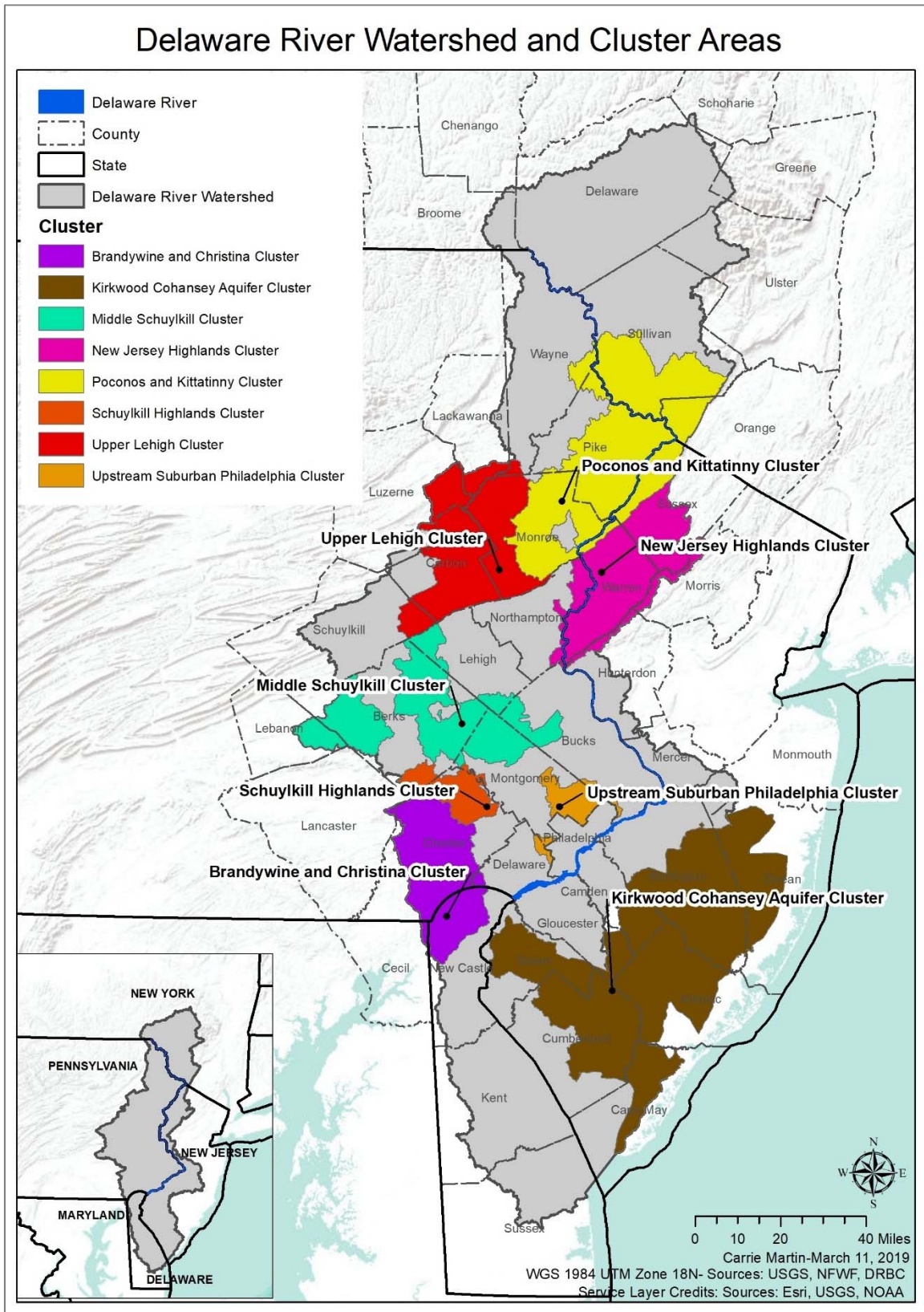


Figure 2. Map of approximate location of assister and non-member organizations

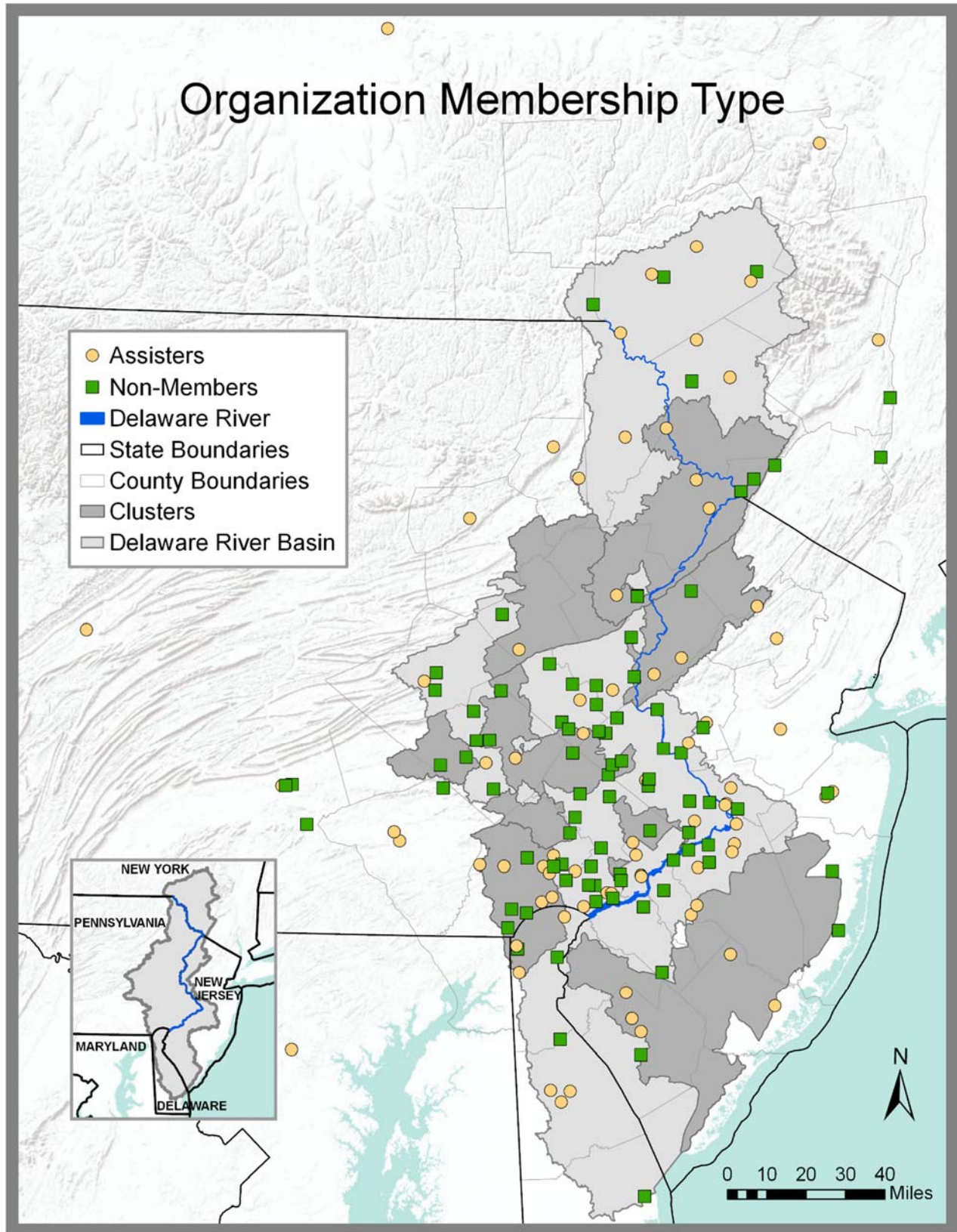


Figure 3. Map of organization sectors for assisters and non-members

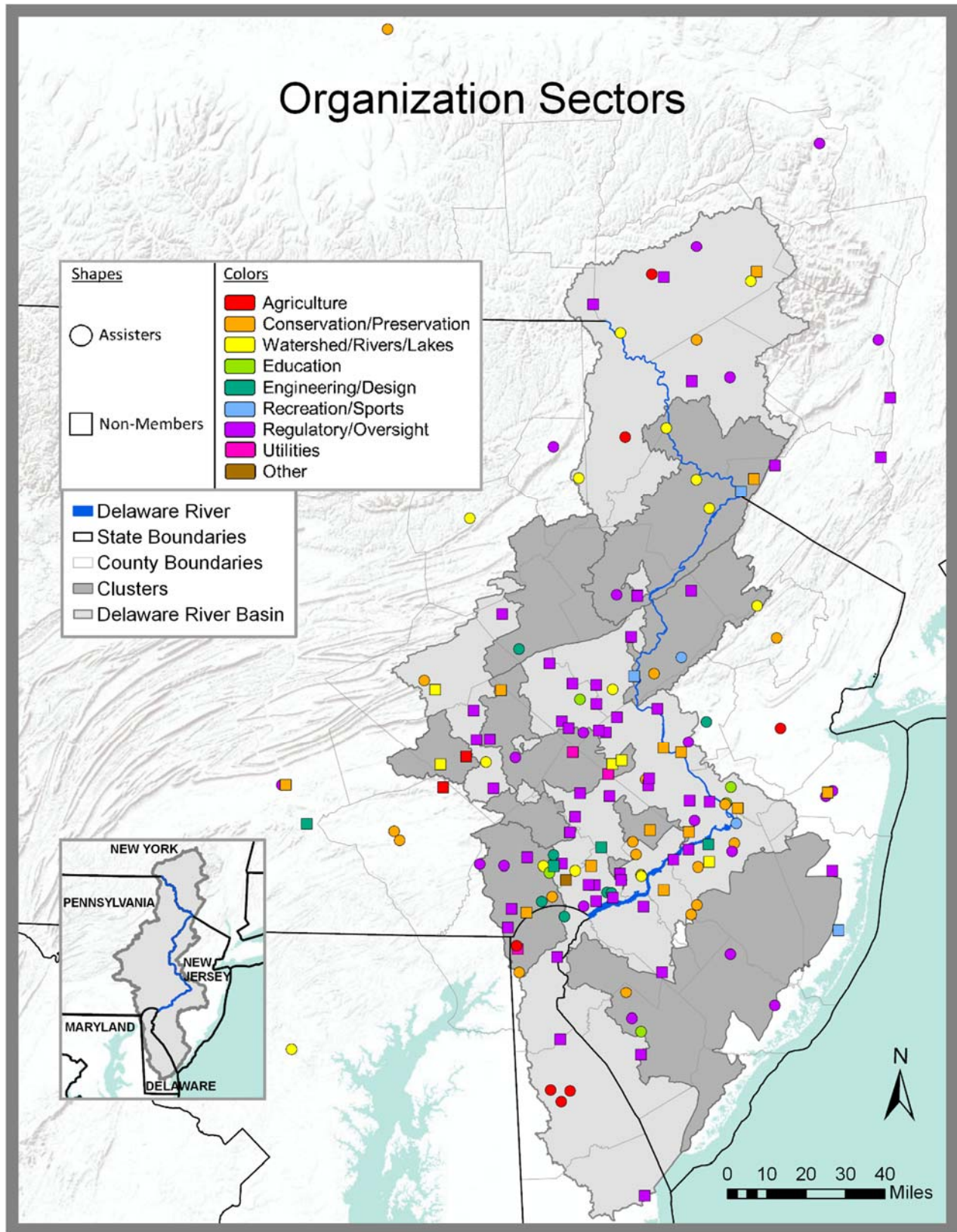


Figure 7. Map of organizations that implemented or are planning to implement agricultural BMPs

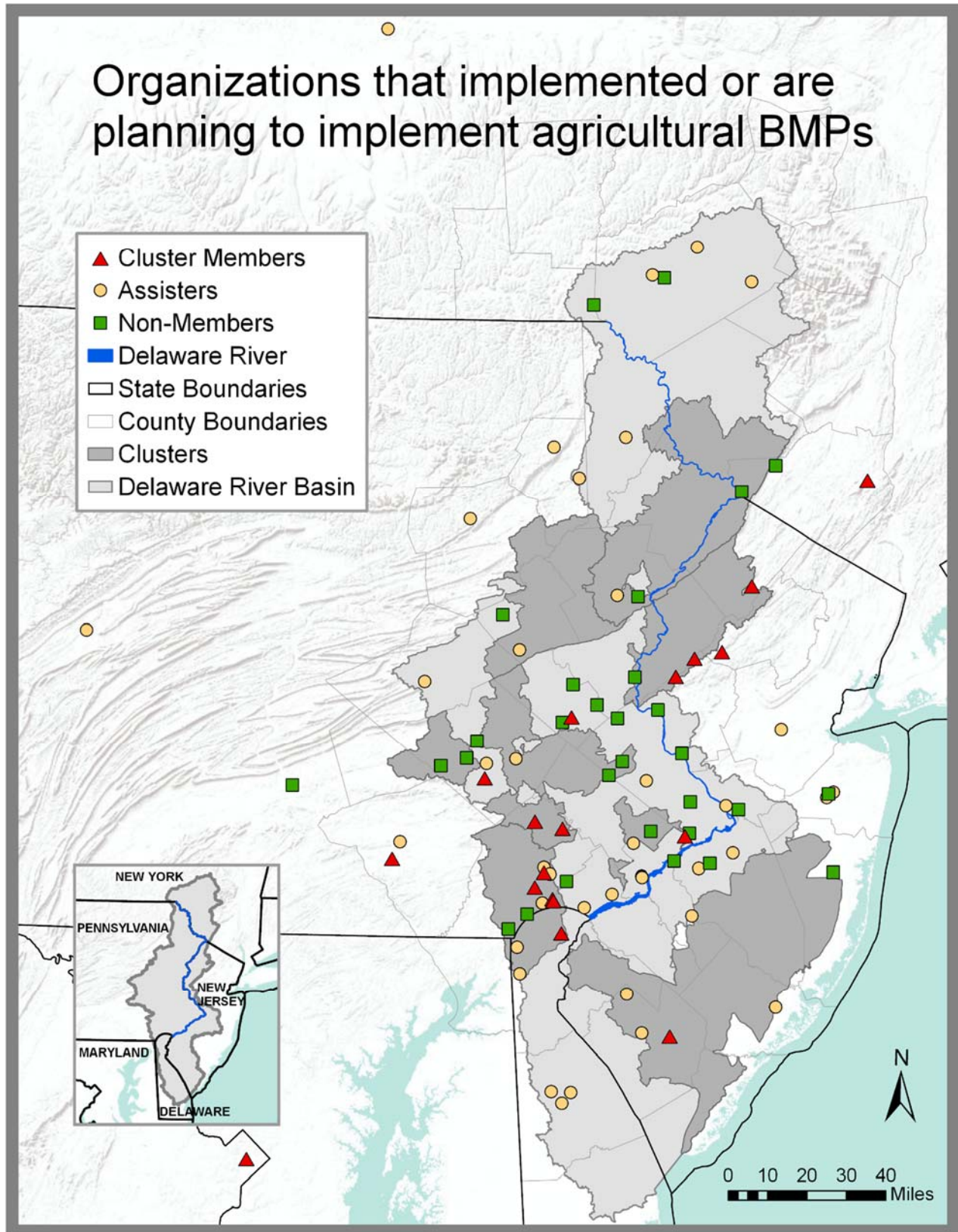


Figure 8. Map of organizations that implemented or are planning to implement stormwater retention basins

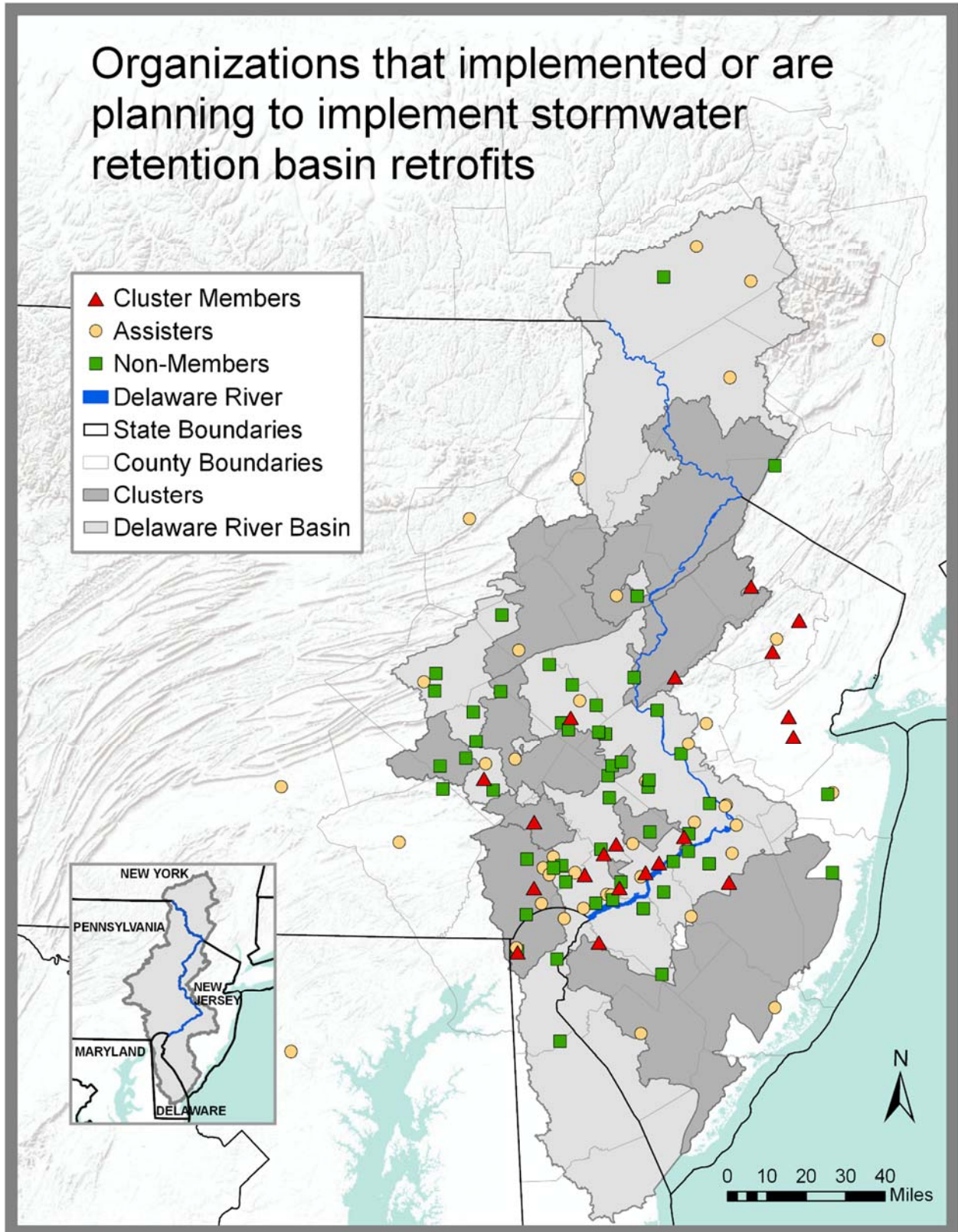


Figure 9. Map of organizations that implemented or are planning to implement stormwater runoff management practices

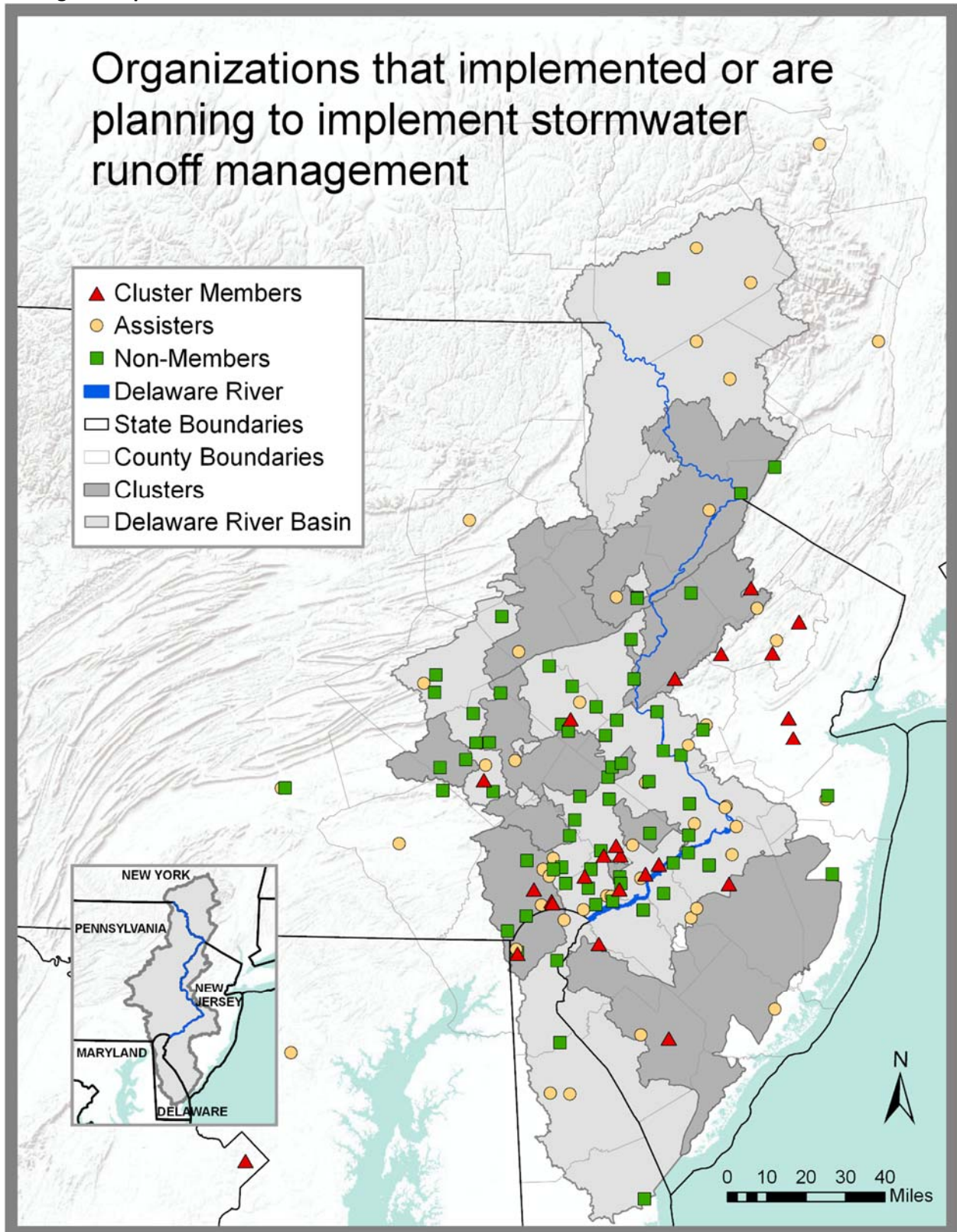


Figure 10. Map of organizations that implemented or are planning to implement in-stream practices

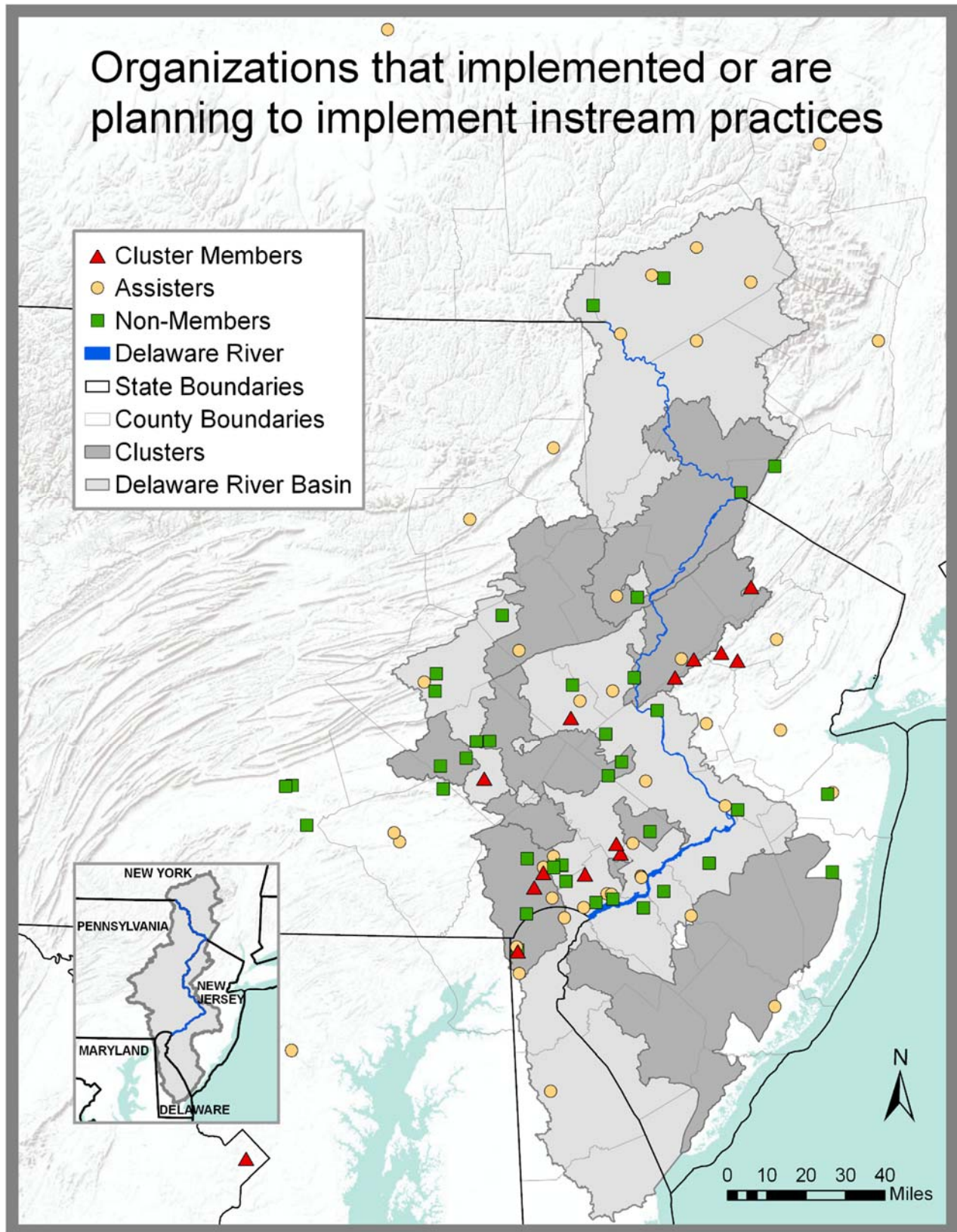


Figure 11. Map of organizations that implemented or are planning to implement stream quality improvements

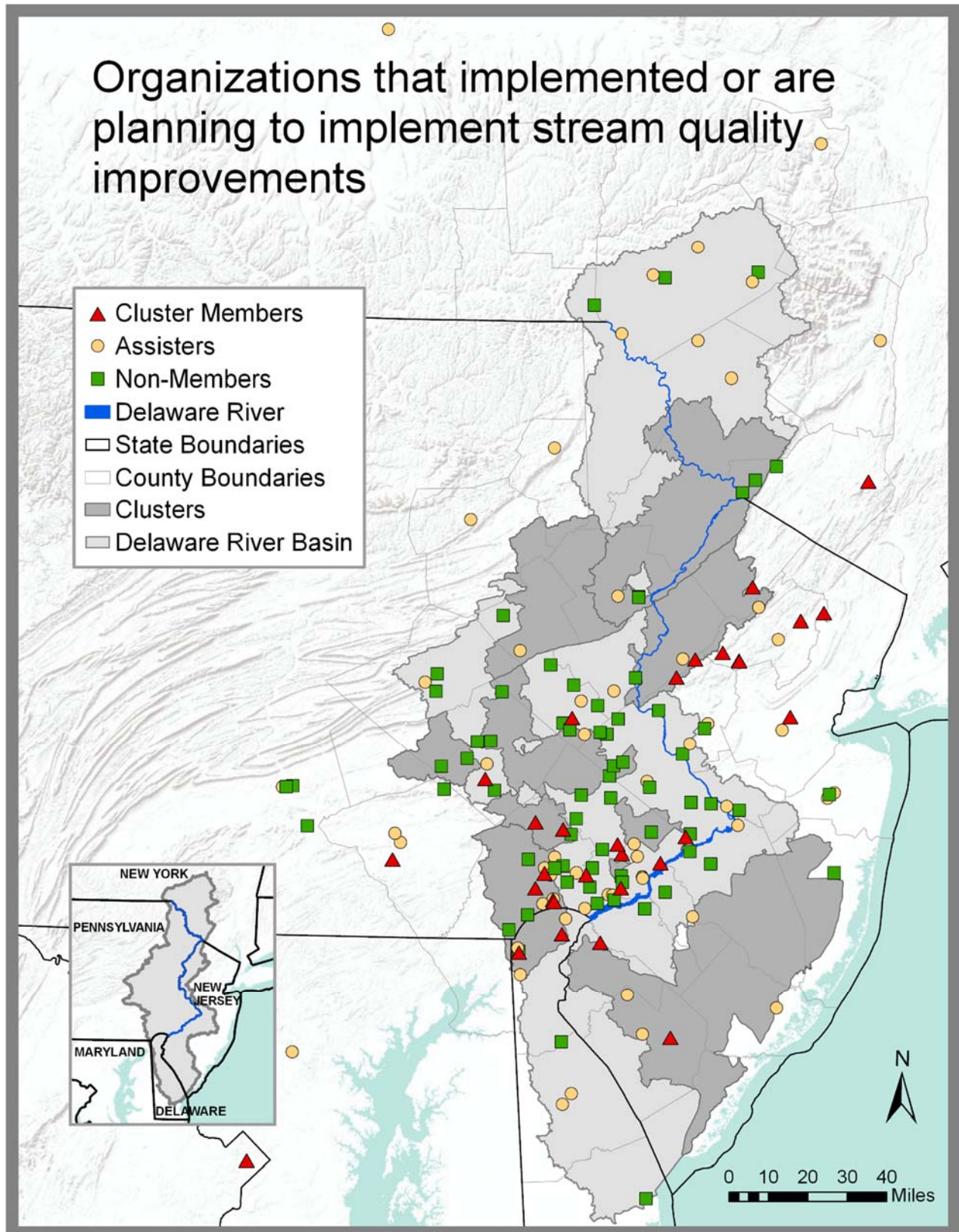


Figure 12. Map of organizations that are implementing or planning to implement wetland or vernal pool BMPs

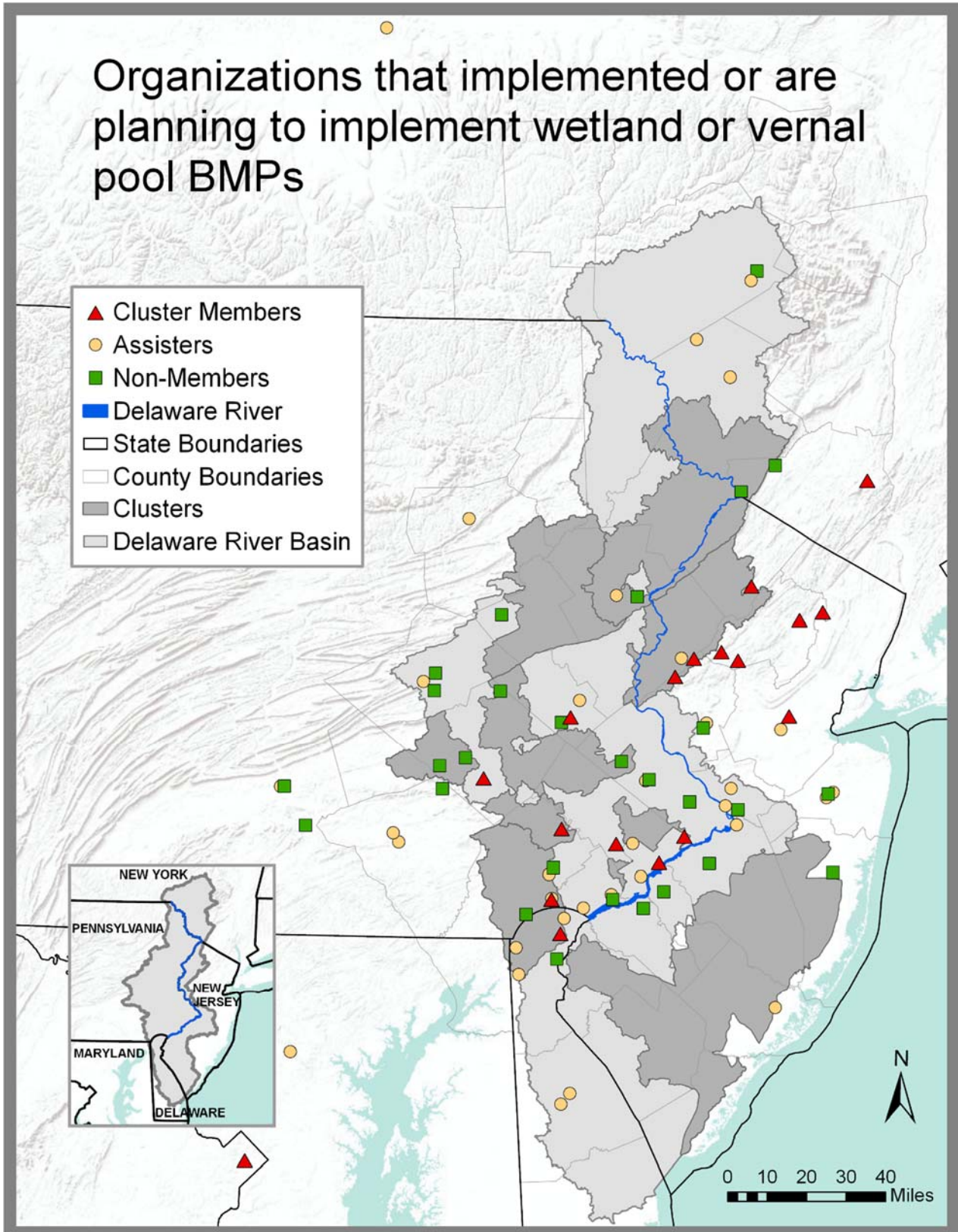


Figure 13. Map of organizations implementing or planning to implement land protection easements or acquisitions

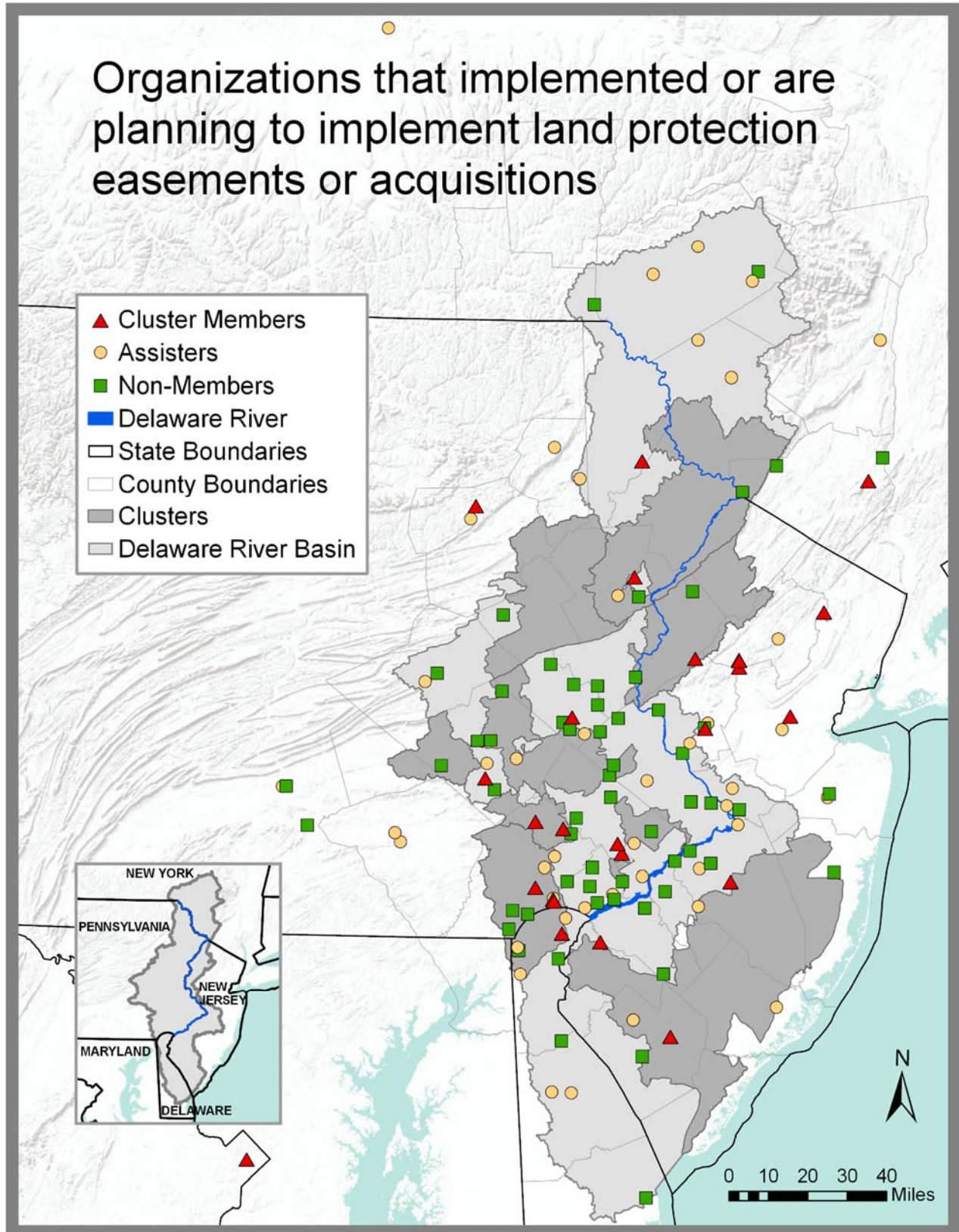


Figure 16. Map of organizations utilizing or planning to utilize DRWI-Funds – agricultural BMPs

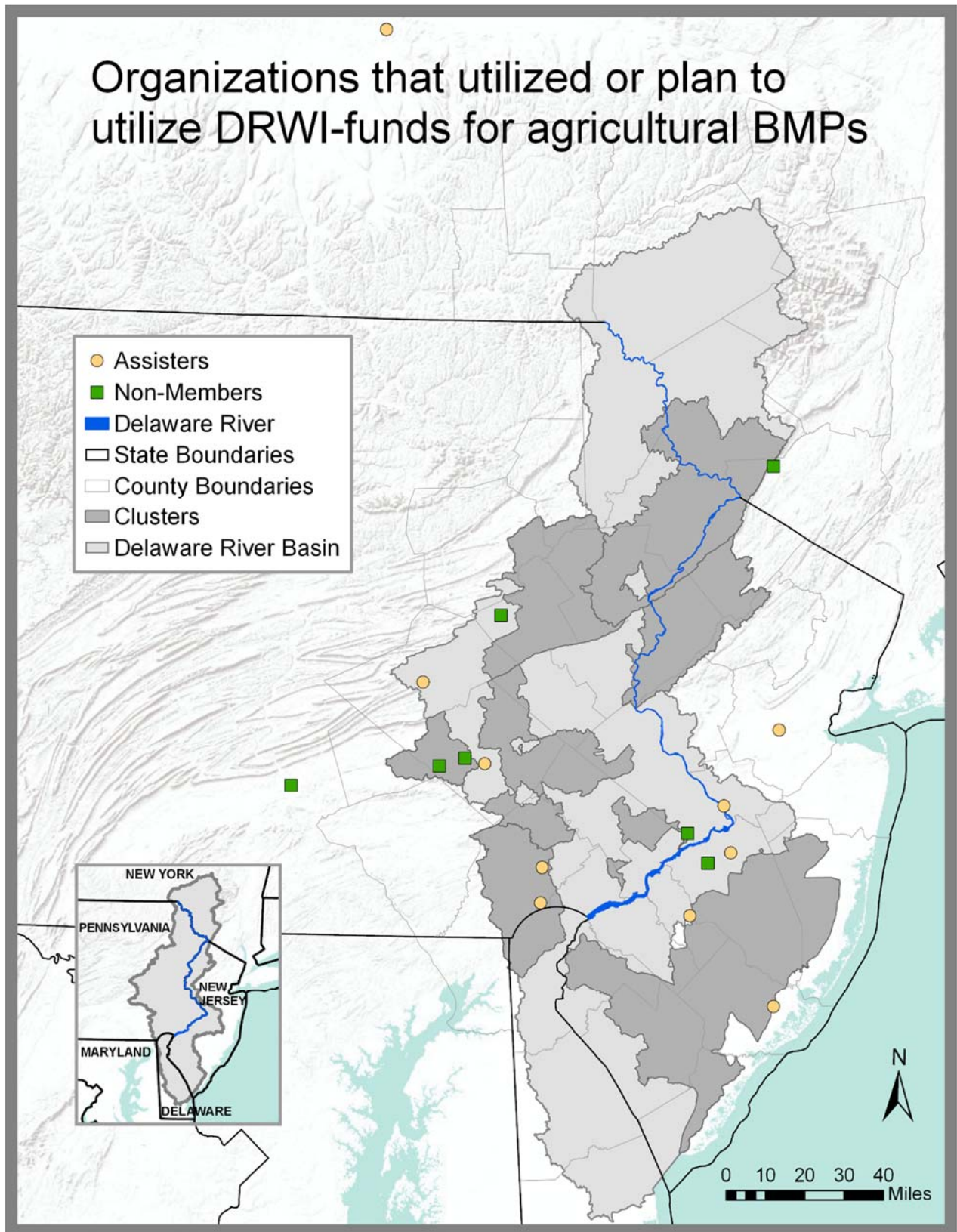


Figure 17. Map of organizations utilizing or planning to utilize DRWI-Funds – stormwater retention basin retrofits

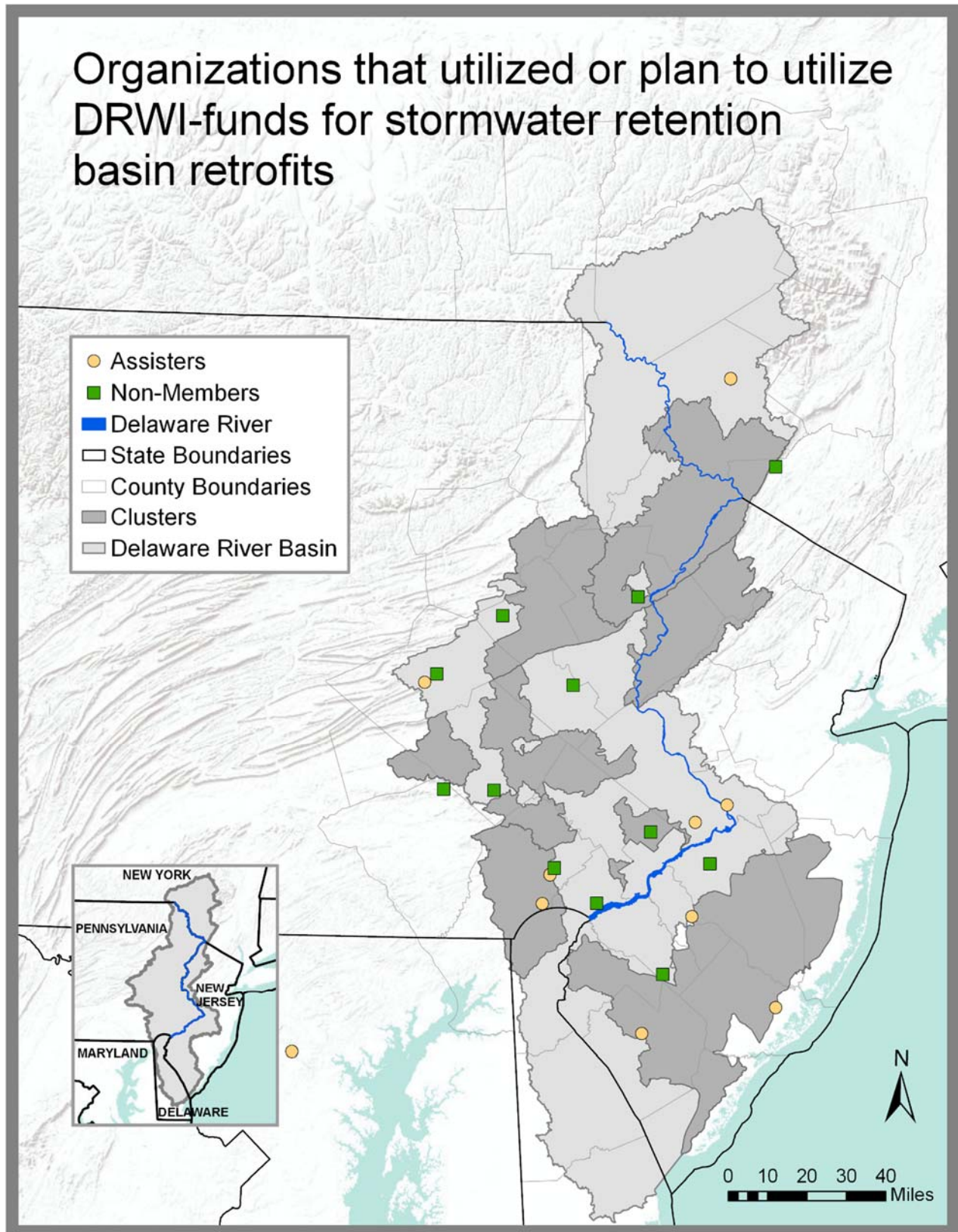


Figure 18. Map of organizations that utilized or plan to utilize DRWI-Funds – stormwater runoff management

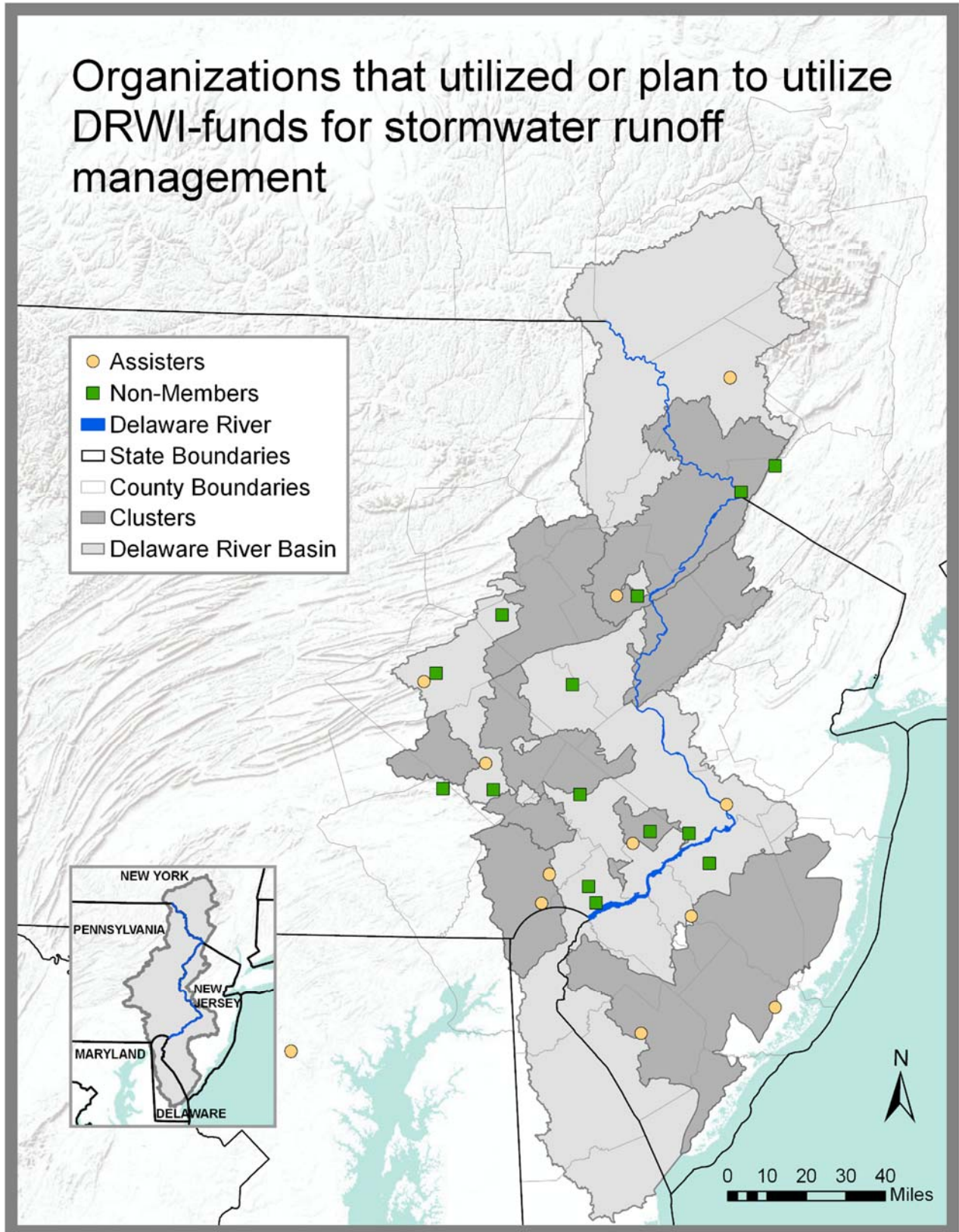


Figure 19. Map of organizations that utilized or plan to utilize DRWI-Funds – in-stream practices

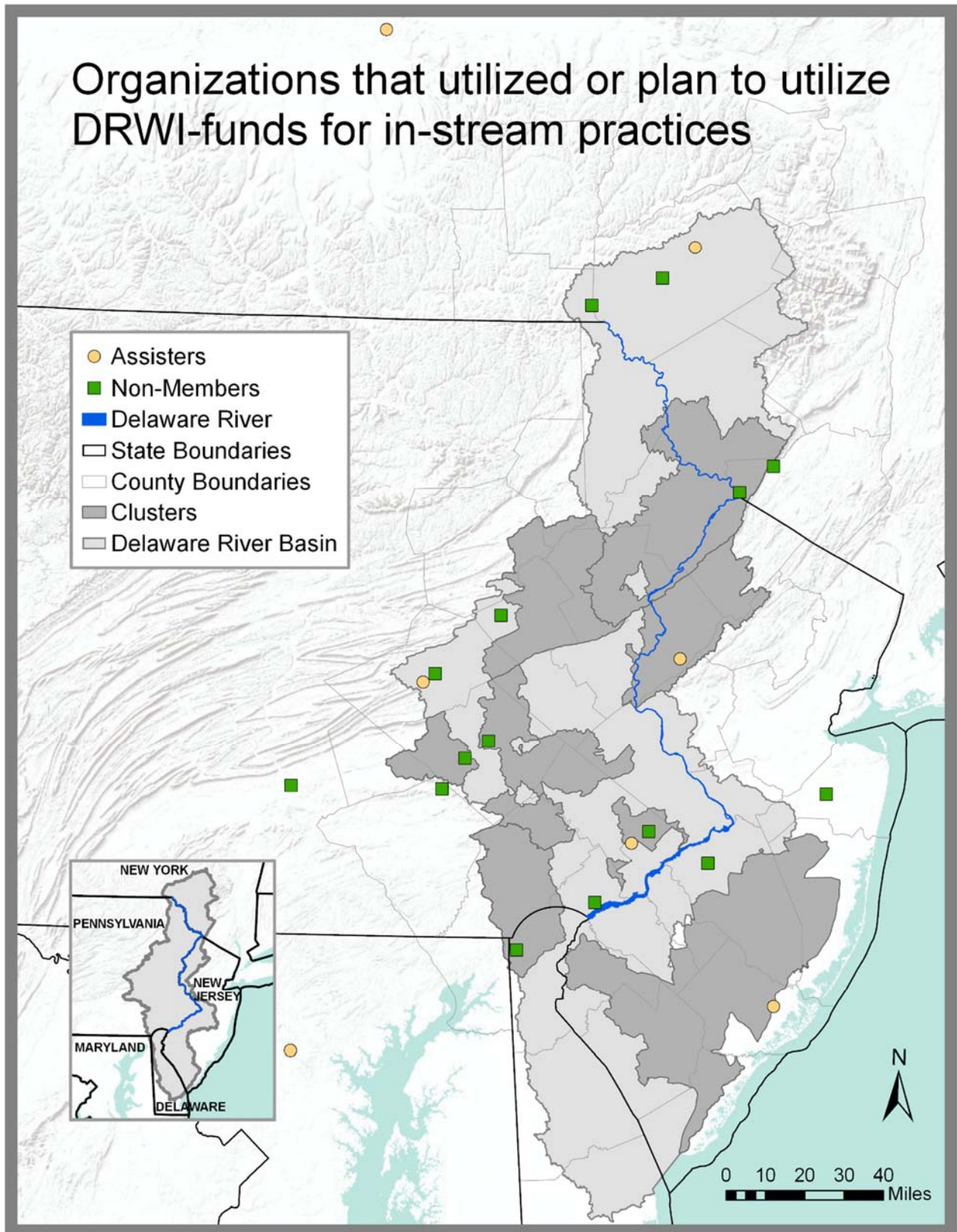


Figure 20. Map of organizations that utilized or plan to utilize DRWI-Funds – stream quality improvements

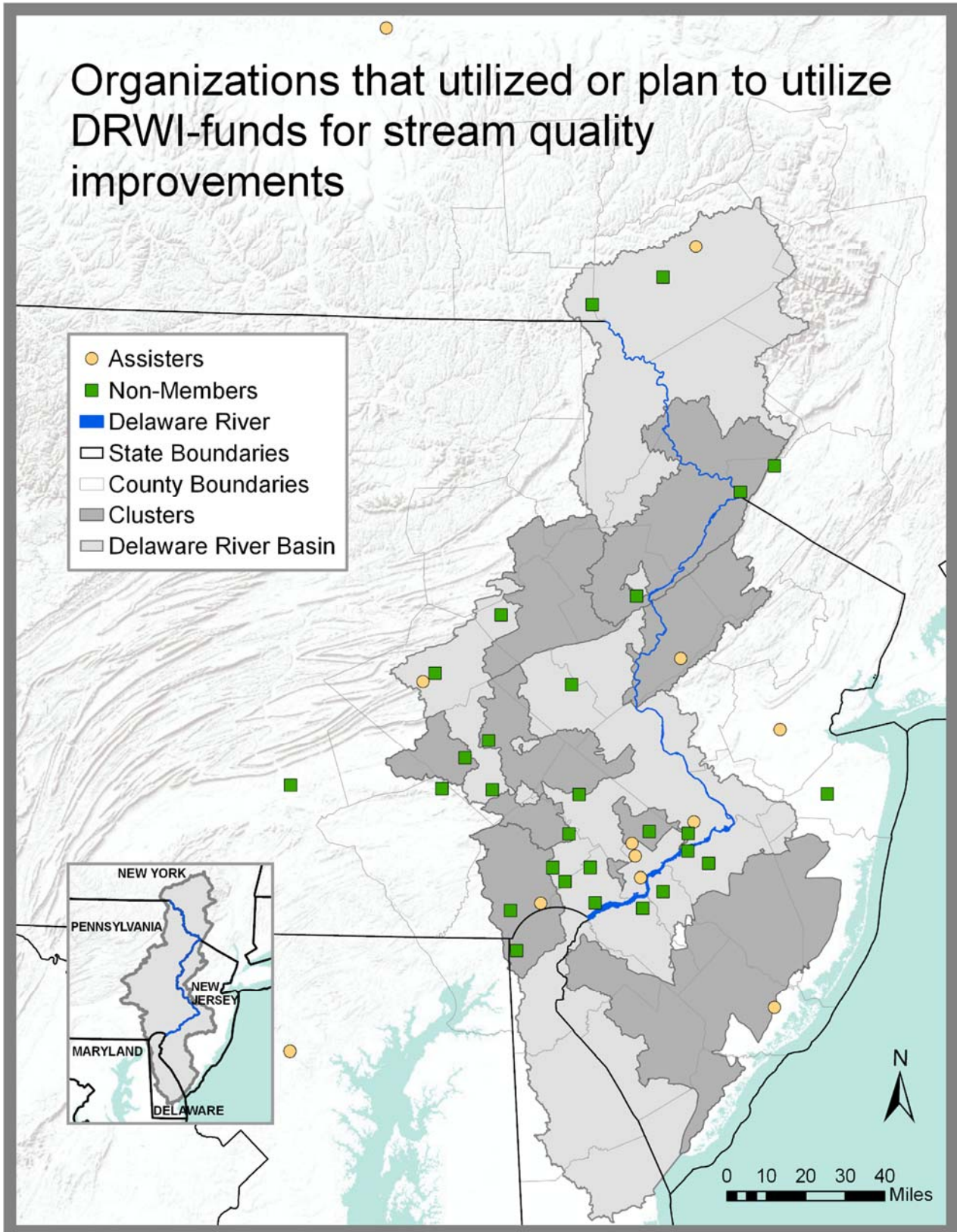


Figure 21. Map of organizations utilize or plan to utilize DRWI-Funds – wetland or vernal pool BMPs

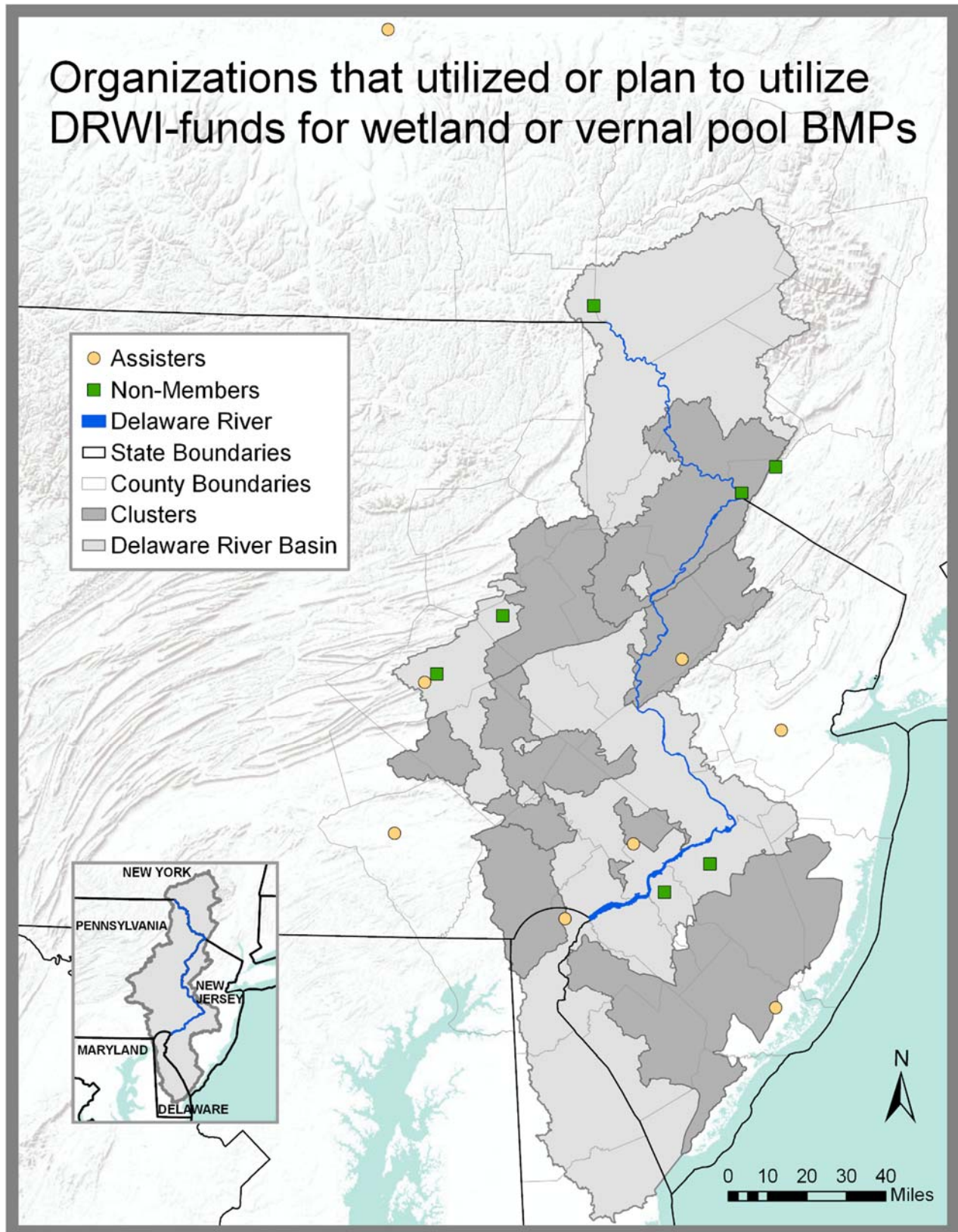
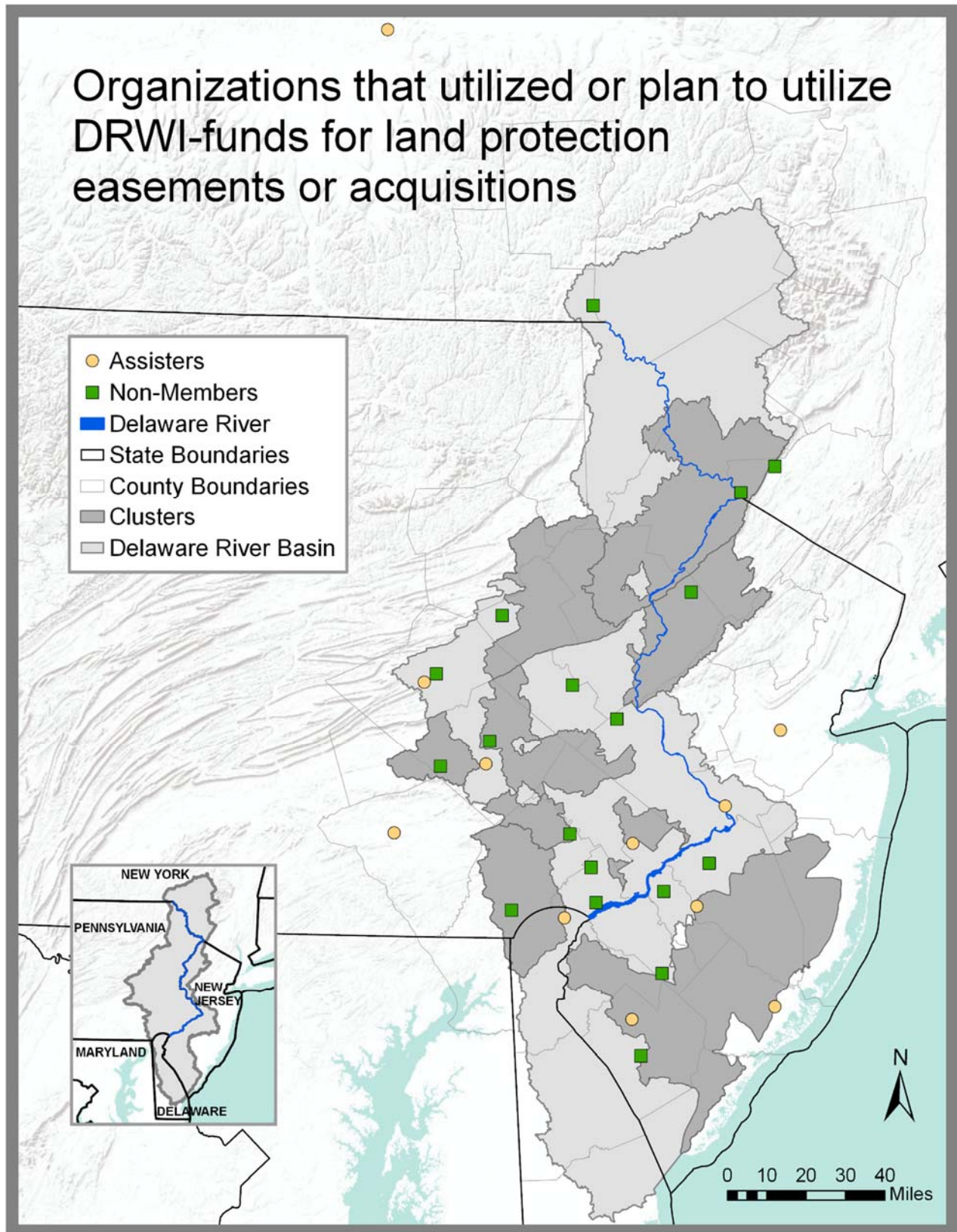


Figure 22. Map of organizations utilize or plan to utilize DRWI-Funds – land p easements or



acquisitions

Figure 24. Map of organizations that learned about agricultural BMPs from DRWI-funded projects

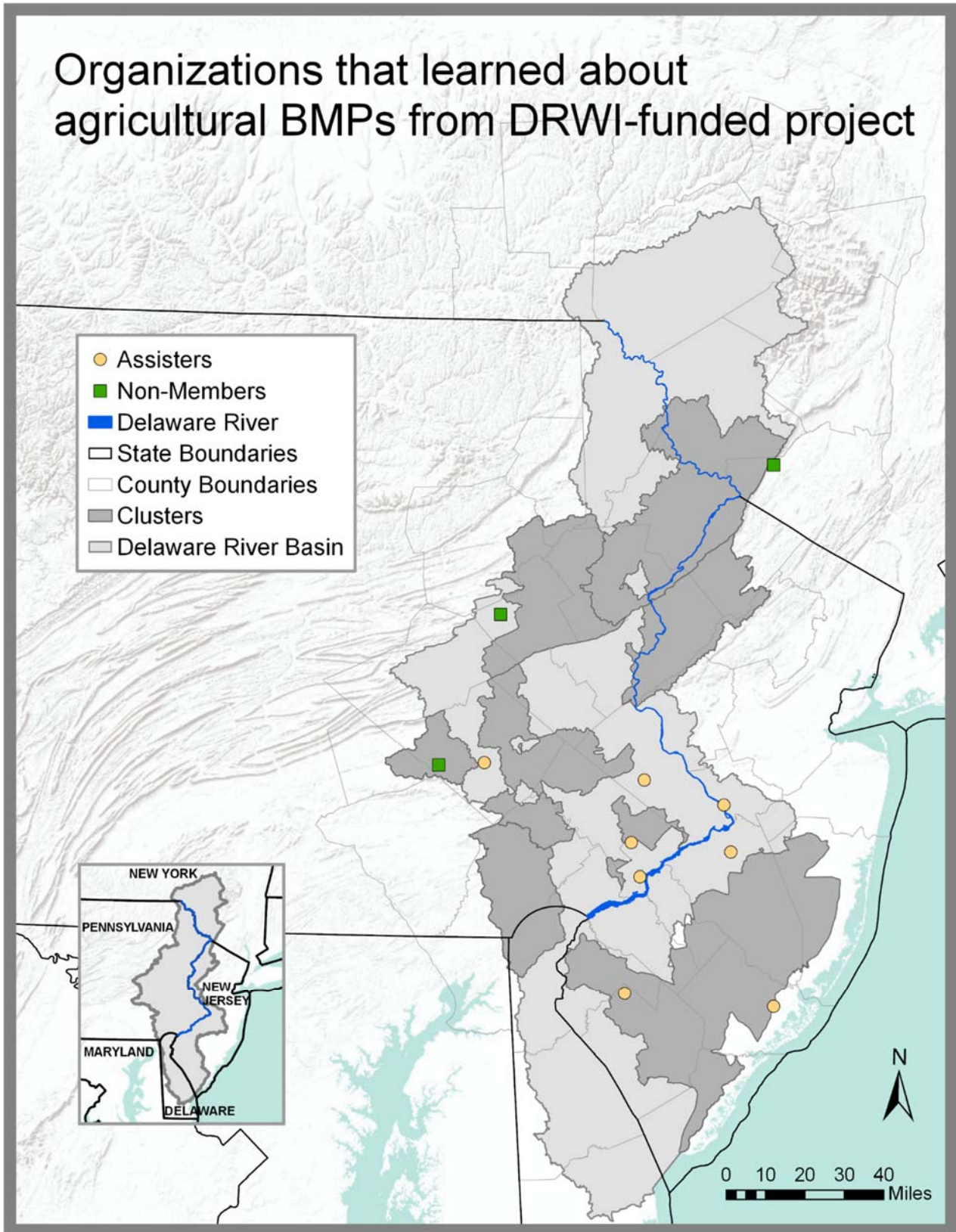


Figure 25. Map of organizations that learned about stormwater retention basin retrofits from DRWI-funded projects

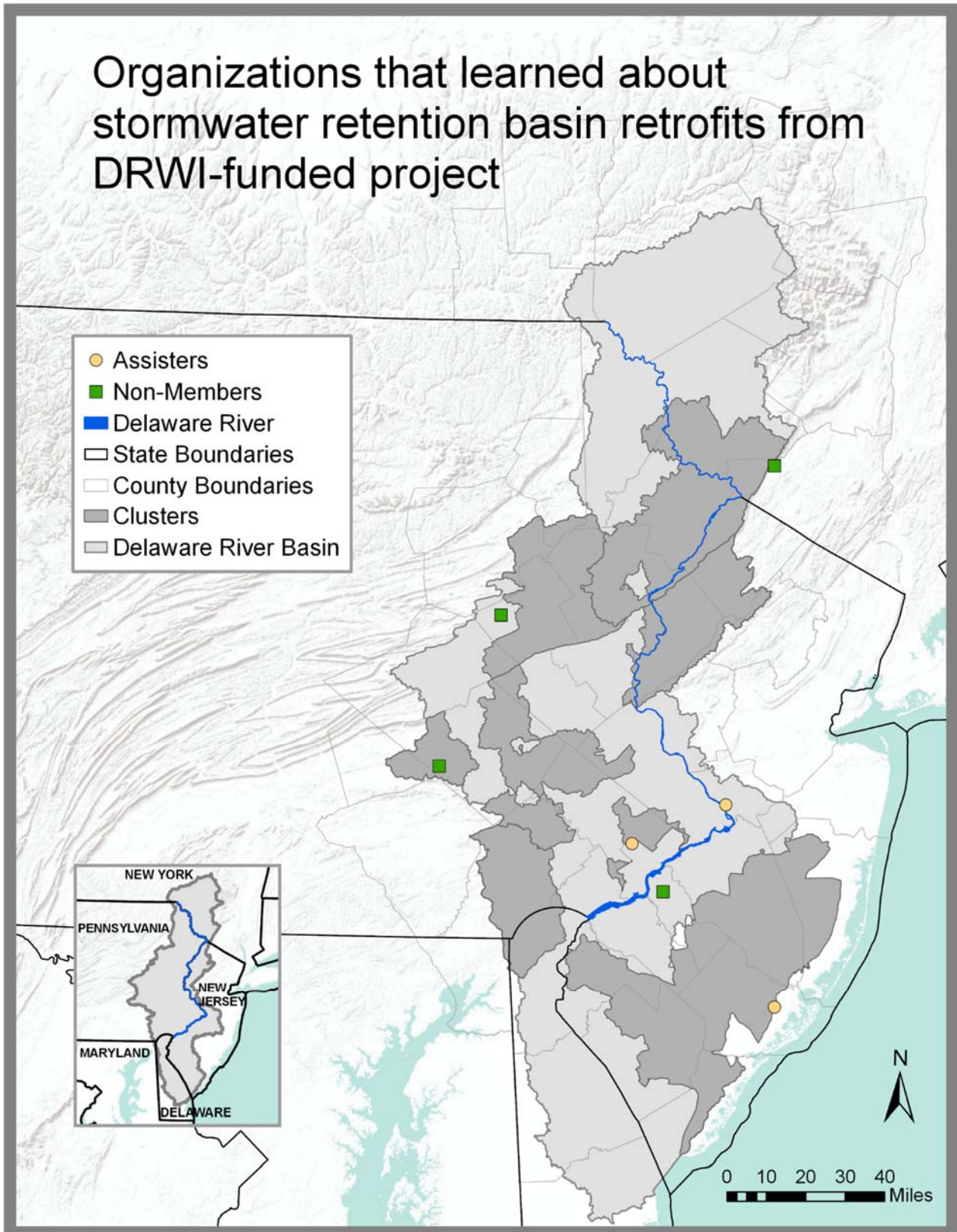


Figure 26. Map of organizations that learned about stormwater runoff management from DRWI-funded projects

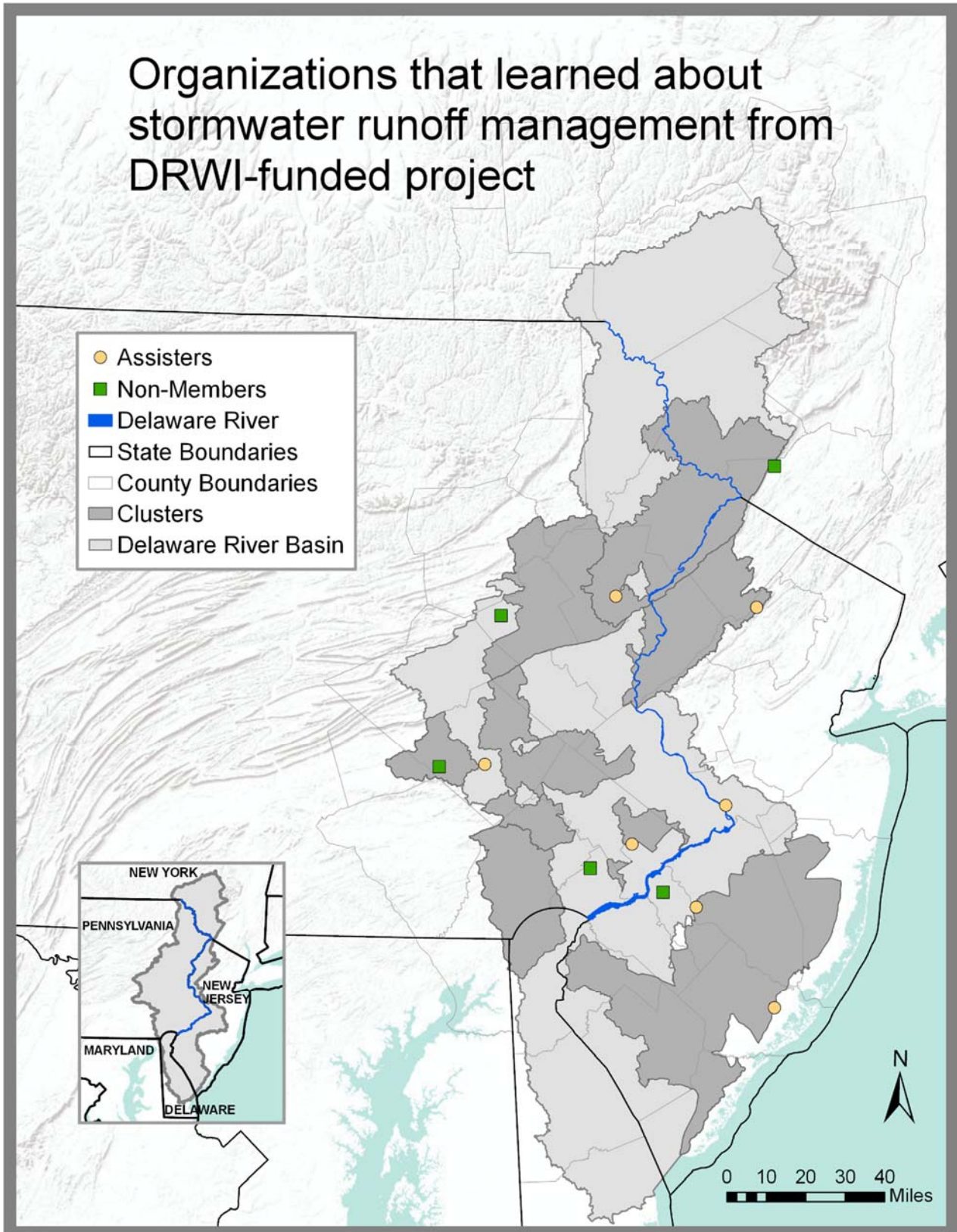


Figure 27. Map of organizations that learned about in-stream practices from DRWI-funded projects

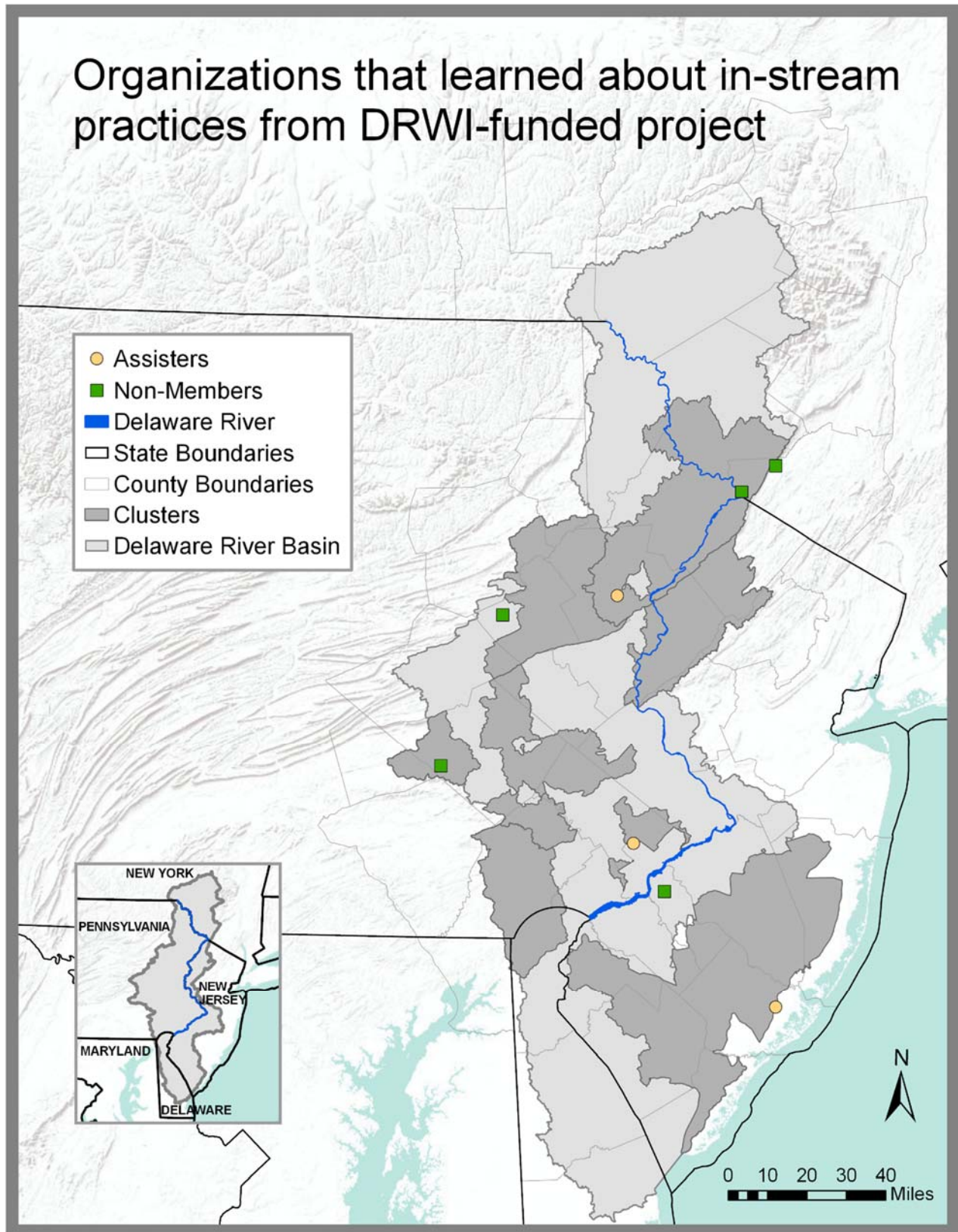


Figure 28. Map of organizations that learned about stream quality improvements from DRWI-funded projects

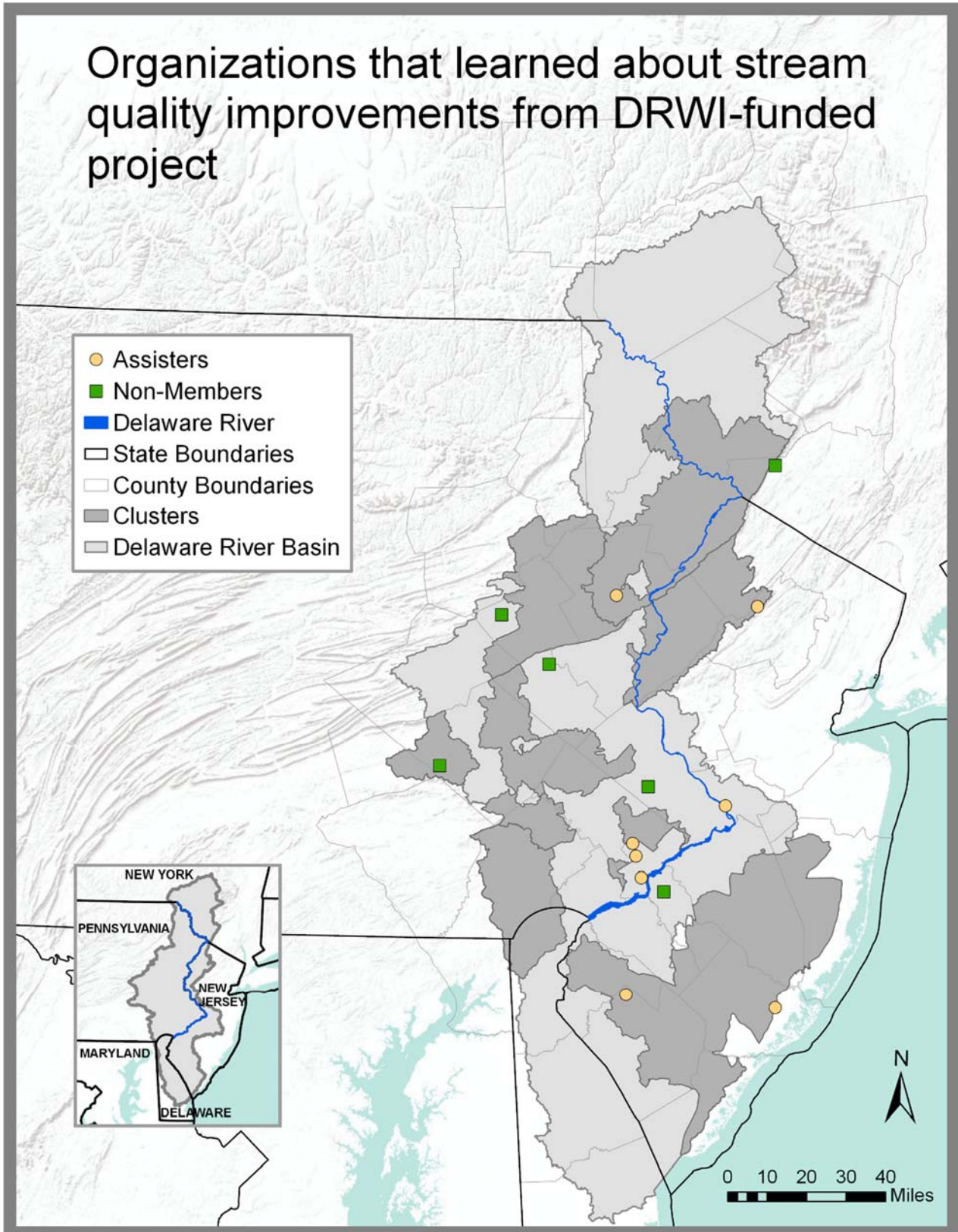


Figure 29. Map of organizations that learned about wetland or vernal pool BMPs from DRWI-funded projects

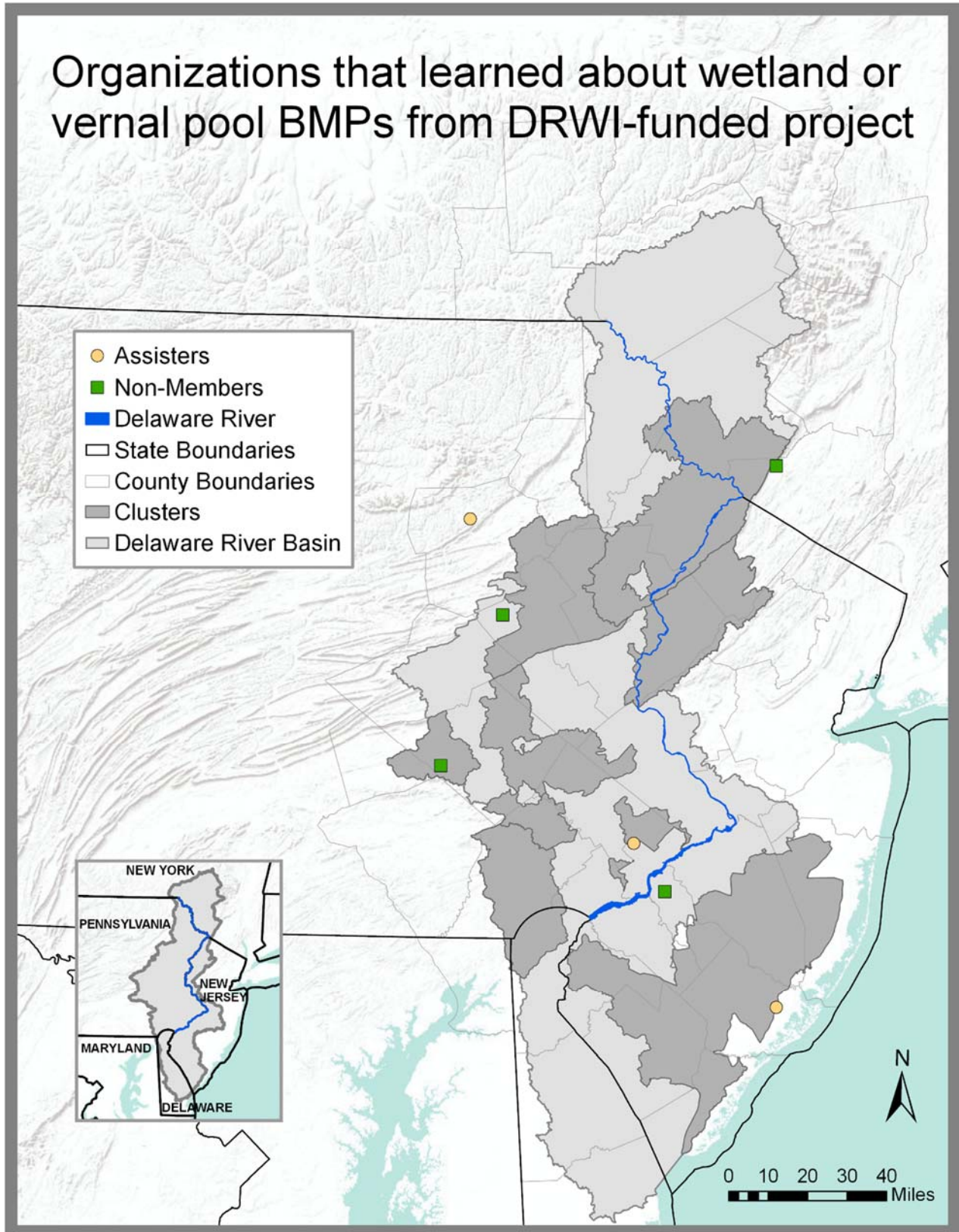


Figure 30. Map of organizations that learned about land protection easements or acquisitions from DRWI-funded projects

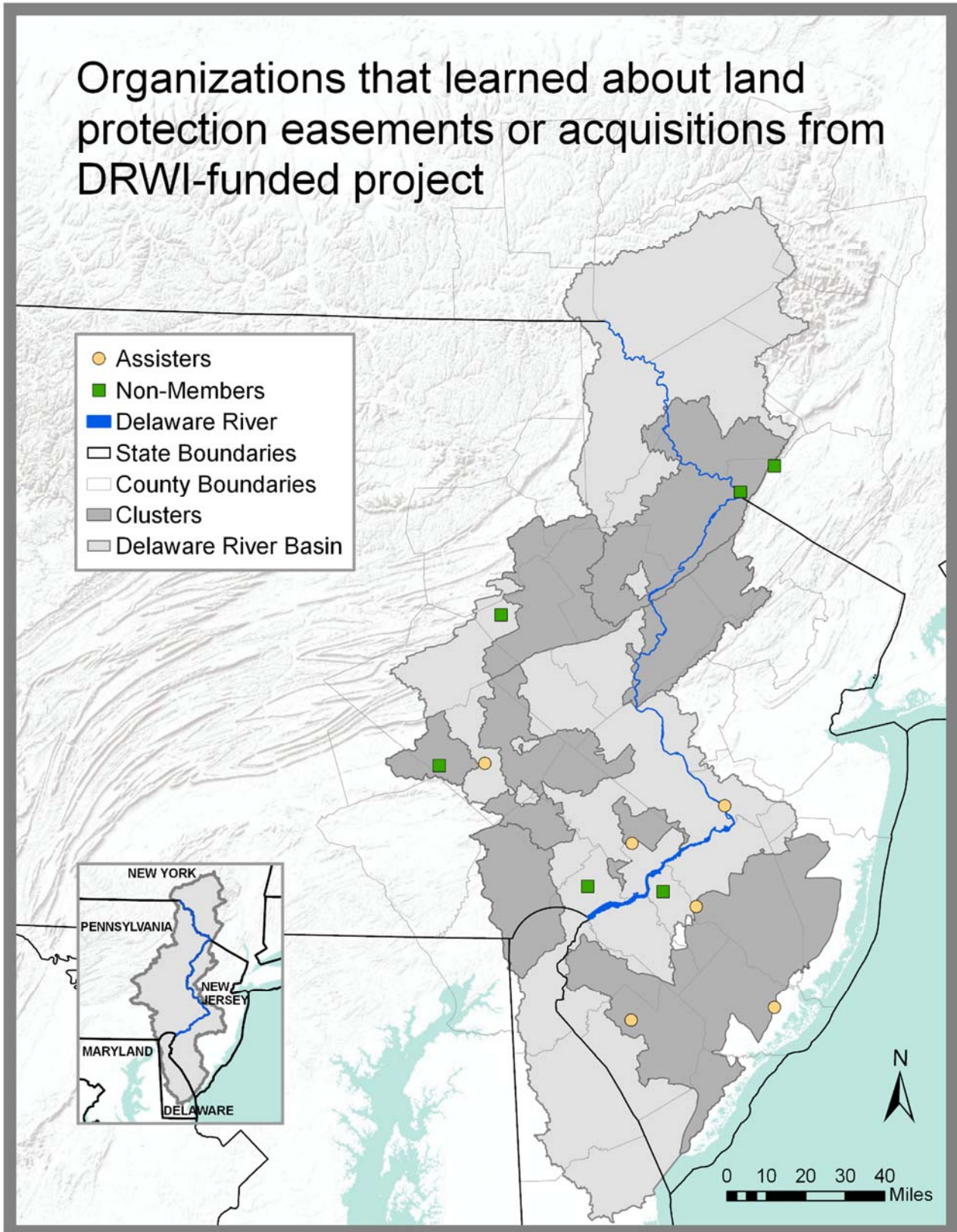


Figure 31. Map of organizations collaborating with DRWI cluster members

