

Consortium for Scientific Assistance to Watersheds

*Transferring knowledge and skills to watershed groups;
Building capacity to undertake watershed assessments and monitoring.*



Annual Report July 1, 2011 – June 30, 2012

C-SAW is funded in part by a Pennsylvania Department of Environmental Protection Growing Greener grant awarded to the Pocono Northeast Resource Conservation and Development Council in Partnership with:

Alliance for Aquatic Resource Monitoring at Dickinson College
Conemaugh Valley Conservancy
Delaware Riverkeeper Network
Pennsylvania Lake Management Society
Pennsylvania Association of RC&D Councils
Stroud Water Research Center
United States Geological Survey

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EXECUTIVE SUMMARY

Over 200 watershed associations and groups actively monitor water quality and realize that there is a significant amount of work needed to clean up and remediate Pennsylvania's streams and lakes. The willingness of private citizens to take action to protect and restore local streams holds real promise for improving water quality and preserving streams throughout the Commonwealth. The Consortium for Scientific Assistance to Watersheds (C-SAW) program provides technical and programmatic assistance to watershed and lake associations, townships, and others seeking assistance.

Since the conception of C-SAW in 2001, the program has provided watershed specific technical assistance, mentoring, and quality control to more than 249 watershed organizations and assisted thousands of individuals. **In just the past year (July 1, 2011 – June 30, 2012), C-SAW partners have supported 56 organizations (31 new organizations and 30 continuing) and have assisted more than 1,404 individuals.**

Citizens and local watershed organizations are critical in enhancing and improving watershed protection and restoration at the local level. Therefore, it is anticipated that demands upon the C-SAW program are expected to continue to exceed the limited resources available. **C-SAW partners have been working to help spread dollars farther by including match time and money for the program that this year equaled \$38,259, which came from volunteer time of C-SAW recipients, other funding sources of C-SAW partners, and volunteer staff time.**

Consortium Partners

ALLARM, Alliance for Aquatic Resource Monitoring
CVC, Conemaugh Valley Conservancy
DRN, Delaware Riverkeeper Network
PALMS, Pennsylvania Lake Management Society
SWRC, Stroud Water Research Center
USGS, United States Geological Survey



*Christina Medved
of Stroud Water
Research Center
gives
demonstrations
during a Leaf Pack
Workshop in
Adams County.*



Introduction

The goals of the Consortium partners over the past year have been to provide Pennsylvania watershed organizations with technical assistance in scientific assessment and monitoring and enhanced capacity to implement watershed protection and restoration programs in hopes of improving water quality and function in Pennsylvania streams.

C-SAW partners have offered technical assistance to watershed organizations in topics such as:

- Stream restoration
- Ambient and event monitoring
- Biological and habitat assessment
- Gathering background or historical data
- Data management
- Data interpretation
- Data communication and dissemination
- Quantifying measurable environmental results
- Abandoned mine discharge and treatment
- Riparian restoration
- Sediment monitoring
- Surface and groundwater resources and their interactions
- Nonpoint source impacts and treatments
- Streamflow monitoring
- Microbiology
- Threatened and endangered species
- Wetlands
- Lake management issues
- Soils and soil resources analysis
- Stream upgrade and protection of Exceptional Value and High Quality waters
- Geographic Information System (GIS) derived data and spatial data analysis



Potter County Conservation District's Watershed Specialist, Jason Childs, programs a data logger.

Consortium partners have tailored technical assistance to C-SAW recipients through:

- Regional (scheduled) and watershed-specific or specialized (on-request) training workshops
- Watershed-specific (short-term) technical assistance
- Mentoring (long-term) of selected watershed groups
- Quality assurance/quality control assistance

This annual report exemplifies the continuing success of the C-SAW program and its ability to provide the necessary programmatic and technical assistance to C-SAW recipients across Pennsylvania for the purpose of effectively addressing water quality issues.

C-SAW Assistance

Watershed-Specific Technical Assistance:

Targeted short-term skills development, designed to help answer questions on a variety of scientific topics and disciplines. In many instances, recipients may request a series of targeted watershed specific technical assistance over time.

Mentoring:

Intensive, long-term (over 2 – 5 years) assistance and capacity building, designed specifically for a watershed organization, and may include:

- New assistance - for groups just getting started
- Continuing assistance - for groups with defined goals, objectives and a restoration or monitoring study design
- Next steps assistance - for groups that have been in existence for 5 – 8 years that are moving beyond initial assessment and restoration work.

Quality Control:

Help to verify the quality of data collected and includes:

- Blind sample analysis for water quality (USGS)
- Split sample analysis for water quality (ALLARM and WILKES)
- Macroinvertebrate identification (SWRC)

C-SAW SPOTLIGHT: Riparian Buffers Enhanced with Invasive Weed Control

The success of buffer restoration projects often rely on the continued yearly care and nurturing by the community to ensure planted trees are not overtaken by invasive plant species. C-SAW has assisted many communities to learn how to identify invasive plants and control infestations effectively before they get out of hand. Volunteers spent over fourteen hours and two days controlling mile-a-minute-weed, Japanese hops, and Asiatic bittersweet from this riparian buffer along Darby Creek in the Summer of 2011.



Summer, 2011, Photo by C. Troup

The C-SAW Approach

Pennsylvania has long encouraged the development of local watershed groups in recognition of their unique position to lead efforts for improving water quality protection at the grassroots level. Financial support provided through the Growing Greener Stewardship Program and technical and capacity building assistance provided through the C-SAW program exemplify the Commonwealth's commitment to local watershed groups and its belief in their abilities to create positive change.

Over the past year, the Consortium partners have strived to provide statewide coverage and technical assistance to new watershed organizations requesting assistance as well as approved applicants who continue to request support as they evolve. The Consortium's ability to provide long-term support has come to define the C-SAW program. Although this approach requires an intensive dedication of time and resources initially, it significantly advances the effectiveness of watershed groups over time and builds strong, knowledgeable groups capable of completing scientific work independently.

Effective local watershed groups require citizens:

- who are empowered with knowledge of river systems
- who have acquired and practiced technical skills
- who have experienced watershed protection and restoration methods

C-SAW SPOTLIGHT: Potter County implements a long-term, continuous water quality monitoring program

Through C-SAW, the Conemaugh Valley Conservancy's Kiski-Conemaugh Stream Team trained Potter County Conservation District's Watershed Specialist, Jason Childs, how to develop and maintain a water quality monitoring program utilizing Solinst Data Loggers LTC. These data loggers acquire a stream's water level, temperature, and specific conductivity every 15 minutes around the clock providing valuable baseline data on streams susceptible to pollution, as well as any event data. The Stream Team helped the Conservation District program, install, and download a logger in a stream with brook trout. The Conservation District has since installed 11 more data loggers. Additionally, the Stream Team conducted a macroinvertebrate collection and identification workshop for Potter County Conservation District staff and volunteers. Macroinvertebrates provide a living history and a lot can be learned from the species found in a waterway. Another macroinvertebrate workshop in Potter County is planned for fall 2012!



Building Capacity to Protect and Restore Pennsylvania's Watersheds

Many of the groups that apply for C-SAW assistance have only recently formed and require assistance with organizational development and program management before they can effectively proceed with watershed monitoring and assessment. Even for more seasoned organizations, the request for C-SAW assistance can include organizational development and program management. Consortium partners collaborate with C-SAW recipients to build ownership, capacity, and confidence. This approach sends ripples far beyond the individuals and organizations assisted, and helps to build stronger individuals, stronger watershed organizations, and stronger communities. One can see the independence gained by groups over time as they enhance their skills and move onto other projects that build on their increased capacity. For example, seasoned groups like the Antietam Watershed Association, now conduct their own water quality trainings for new volunteer monitors.

The Consortium Partnership

The scope and depth of collaboration and cooperation that has grown among the Consortium partners enables the C-SAW program to efficiently and effectively provide a range of services to approved applicants. The Consortium partnership represents a diversity of individual and collective knowledge and skills that can be drawn upon to provide the assistance requested. The C-SAW partnership presents a model for other states to follow and the partners have emphasized this concept in other regions and states.

C-SAW SPOTLIGHT: Green Infrastructure Assistance in Built-Out Communities

The C-SAW Program is assisting the Lansdowne YMCA to suggest ways to reduce its stormwater footprint to the Darby Creek Watershed while educating its members. John Nysedt RLA, LEED and Restoration Specialist walks the property with the YMCA staff to discuss rain gardens, green roofs, bump outs, and infiltration swales. The staff plan to take these recommendations to their Board to start making plans to green their property. Over 1,000 people a week visit the YMCA so this location is a great place to educate the public about green infrastructure.



Continuing Need for Assistance

As a direct result of efforts undertaken by the Consortium partners over the last several years, the number of watershed organizations in Pennsylvania has increased significantly. However, the demands of applicant organizations continue to outpace the resources currently available through the Consortium. Consortium partners recognize that citizens, in order to be effective in their watershed protection efforts, must be informed, confident and able to overcome the disappointments and frustrations they will invariably face. However, many of C-SAW's mentored groups are new to watershed protection and require assistance not only with monitoring study design and skills-building, but also with organizational development, outreach campaigns, and workshops. More established groups require C-SAW assistance to keep their momentum strong as they enter the data interpretation and presentation stages of their monitoring programs or revisit their study design.

Many groups that originally requested watershed-specific technical assistance continue to rely heavily on Consortium partners to provide more extensive assistance as they evolve over time. In many cases, groups receive repeated watershed specific technical assistance as new issues emerge and organizations attempt to respond. As the number of groups benefiting from C-SAW assistance grows, so does the program's exposure. Watershed organizations are seeking out experienced and knowledgeable support from environmental professionals who can help shorten their group's learning curve, provide insights and expertise, and help overcome barriers. More and more groups are signing up for assistance, but resources of Consortium partners to mentor new groups are already fully committed. As a result, new groups that could benefit from mentoring have been assisted only through watershed-specific technical assistance.

Before the creation of C-SAW, the Consortium partners, working separately, struggled to assist watershed groups and concerned citizens with the limited resources available. Today, through the C-SAW program, Consortium partners work in concert to transfer knowledge and skills to grassroots groups and non-profit organizations undertaking watershed assessment and monitoring work that will make Pennsylvania watersheds better and cleaner places to live.

C-SAW SPOTLIGHT: Visual Assessment Training to Restore Streams

Worcester Elementary School has been getting assistance from C-SAW to plan rain gardens and protect the streams that run along their property. Here volunteers learn how to document a head cut along one of the streams they hope to restore during a visual assessment training and field recon conducted by C-SAW this past winter.



Highlights of Services Provided through C-SAW: July 2011 – June 2012

Total number of groups assisted: **56**

This includes all organizations directly receiving assistance from C-SAW (watershed-specific technical assistance, mentoring, and quality assurance/quality control) for which reports follow, as well as all organizations that have participated in or benefited from the services provided to principal recipients.

Total number of consultations provided: **347**

A consultation is defined as any meeting, planning session, or contact a C-SAW provider organized or participated in as part of assistance to an organization. Consultations do not include trainings and/or workshops (see definition below). Consultations do include scoping meetings, planning meetings, quarterly/monthly monitoring or other committee meetings, as well as meetings attended to facilitate, observe, or gain information to be used in providing assistance.

Total number of trainings/workshops provided: **69**

A training or workshop is defined as any hands-on or skills-oriented session in which a C-SAW partner takes the lead or facilitates skills-building in a more formal manner than at a general meeting. Examples include monitoring trainings, study design workshops, data interpretation workshops, presentations on water quality issues, etc.

Total number of individuals assisted: **1,404**

For every consultation, training, and workshop provided, the number of participants was recorded to determine the total number of individuals that received assistance. It is also realized that additional members of the organization benefit from these activities as they come into direct contact with the participants. Further, the head count for consultations and trainings may not include all individuals assisted through phone calls or through other group members directly assisted.

Total in-kind match from C-SAW assistance recipients: **\$38,259**

Match time includes a combination of time volunteered by the watershed groups enrolled in the program, volunteer staff time from C-SAW service providers, and resources available under other funding sources of the C-SAW providers that helped spread Growing Greener dollars farther.

C-SAW SPOTLIGHT: Growing Native Meadows and Buffers Along the Delaware

C-SAW is providing Morrisville Borough and their community with restoration technical assistance to control invasive plants and replace them with native vegetation. In the Spring of 2012, over 30 residents came out to help rake in a native wildflower mix that was purchased by the Borough to bring back a healthy river corridor along the Delaware River.



Appendix A

DELAWARE RIVER BASIN

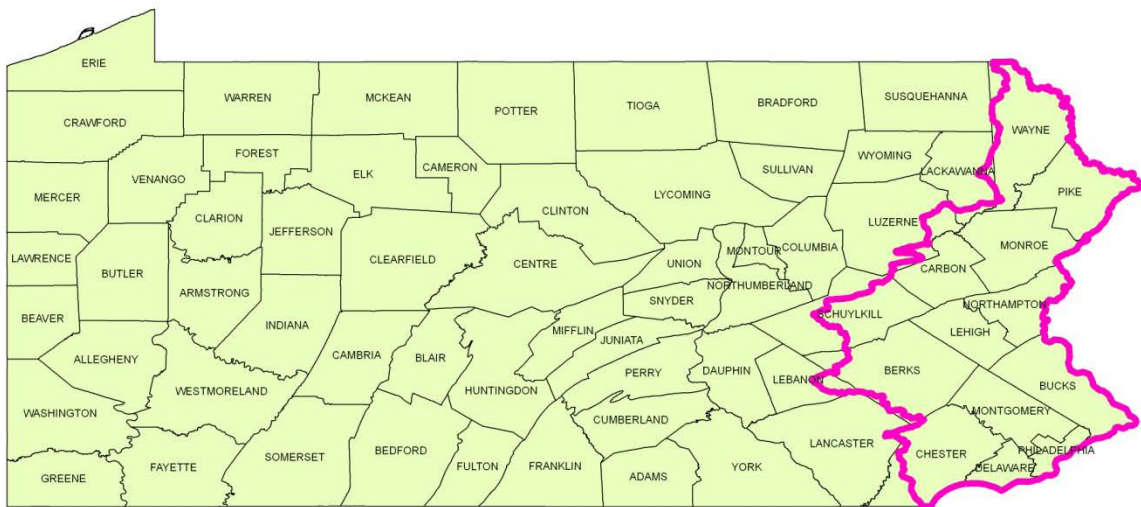
Groups receiving assistance:

Number of Groups – 32 (14 new and 18 continuing)

Consultations – 220

Trainings/Workshops – 38

Individuals Assisted – 1,018



APPLICANT: Cabrini College: Watershed Citizenship Learning Community

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	10/4/2010
Group membership	N/A	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	10/15/2010
Watershed size	1,912 mi ²	Assistance began	10/15/2010
County	Montgomery	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$770

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	7
Trainings/workshops	1
Individuals assisted	21
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

C-SAW assisted to plan and coordinate curriculum and presentations for the Cabrini students through assistance to the professor. C-SAW provided online data resources and tutorial on monitoring data sources available online through various agencies.

Assistance provided October 1 – December 31, 2011

A presentation with about 20 students was provided during this quarter.

APPLICANT: Chester County Parks & Recreation

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	11/16/2011
Group membership	1,500	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	11/17/2011
Watershed size	1,912 mi ²	Assistance began	12/15/2011
County	Montgomery	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$648

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	7
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided October 1 – December 31, 2011

Planning and preparation for a shad fest program highlighting the Schuylkill River that is scheduled for 2012 was provided via conference call.

Assistance provided January 1 – March 31, 2012

Planning and preparation for a shad fest program highlighting the Schuylkill River that is scheduled for April 28, 2012. Research conducted on Black Rock weir/Schuylkill Clean Up. Coordination with the County.

Assistance provided April 1 – June 30, 2012

DRN coordinated with the County and helped research Black Rock wier and water quality issues. DRN provided a presentation at the Phoenixville ShadFest that was held in April. About 25 people attended the session to learn about the Schuylkill clean up and water quality history.

APPLICANT: Chester Ridley Crum Watershed Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	N/A	Scoping meeting	N/A
Watershed	Crum Creek	DEP approval	10/5/2008
Watershed size	N/A	Assistance began	10/5/2008
County	Delaware	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$790

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	7
Trainings/workshops	1
Individuals assisted	30
Stream miles improved	3 stream project and buffers implemented

Assistance provided July 1 – September 30, 2011

DRN assisted with streamside landowner outreach. A new publication has been produced on streamside management (match time – not paid for through CSAW program) and is available here:

http://www.delawariverkeeper.org/Pdf/DRNs_20Ways_to_Protect_Streams_2011.pdf

This publication has benefited the Crum Creek landowners and this project among others and was inspired by some of the work begun with this group.

APPLICANT: Clayton Park Recreational Area

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	3/2010
Group membership	400	Scoping meeting	N/A
Watershed	Lake Henry	DEP approval	N/A
Watershed size	310 acres	Assistance began	N/A
County	Wayne	Assistance completed	N/A
In-kind match	\$240	Cost of assistance	\$516

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	1
Trainings/workshops	0
Individuals assisted	3
Stream miles improved	N/A

Assistance provided October 1 – December 31, 2011

Project on hold pending input from applicant.

Assistance provided January 1 – March 31, 2012

Statement of work in progress.

APPLICANT: Garrett Hill Coalition

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	3/20/2012
Group membership	60	Scoping meeting	N/A
Watershed	Darby Creek	DEP approval	3/21/2012
Watershed size	77 mi ²	Assistance began	3/21/2012
County	Delaware	Assistance completed	Ongoing
In-kind match	\$150	Cost of assistance	\$542

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	7
Trainings/workshops	1
Individuals assisted	10
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

Initial scoping by John Nysedt, Restoration Manager has begun with this group on the Macrone Park Rain Garden project to set up next steps and field visits to assist.

Assistance provided April 1 – June 30, 2012

John Nysedt, Restoration Manager has begun technical support for rain garden design and rain barrel, including issues such as soil & infiltration testing, soil mix design, native plant selection, and stormwater management.

APPLICANT: Gold Key Lake Estates

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	4/2010
Group membership	4,000	Scoping meeting	N/A
Watershed	Autumn, Fawn, & Gold Key Lakes	DEP approval	N/A
Watershed size	3,146 acres	Assistance began	N/A
County	Pike	Assistance completed	N/A
In-kind match	\$320	Cost of assistance	\$612

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	1
Trainings/workshops	0
Individuals assisted	4
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

Project on hold pending input from applicant.

APPLICANT: Green Valleys Association

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	9/9/2011
Group membership	700	Scoping meeting	N/A
Watershed	French, Pickering, Valley, Pigeon	DEP approval	10/20/2011
Watershed size	N/A	Assistance began	11/4/2011
County	Berks & Chester	Assistance completed	12/1/2011
In-kind match	N/A	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	5
Trainings/workshops	1
Individuals assisted	8
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Staff members at Green Valley Association contacted educators at SWRC about conducting a macroinvertebrate training for their staff this fall. GVA is already conducting chemical monitoring on their local streams and would like to add macroinvertebrate monitoring.

Assistance provided October 1 – December 31, 2011

On November 30, eight GVA staff members received training on macroinvertebrate identification, proper collecting techniques, and data analysis. All participants took a pre- and post-test which netted the following results:

Average correct on pre-test: 61.6%

Average correct on post-test: 87.8%

APPLICANT: Guardians for the Brandywine

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	8/16/2011
Group membership	55	Scoping meeting	1/10/2012
Watershed	Brandywine River	DEP approval	1/12/2012
Watershed size	N/A	Assistance began	1/12/2012
County	Chester	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	2
Individuals assisted	22
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Individuals from the Guardians of the Brandywine contacted an educator at SWRC about providing monitoring training for their five-person board. Earlier this year they received the first Headwaters Grant from Victory Brewing Company, to provide environmental education programming within the upper Brandywine. As of September 30, 2011, SWRC has only had phone conversations with this group.

Assistance provided January 1 – March 31, 2012

On January 10, 2012 a Stroud educator met with two board members from the Guardians of the Brandywine for a scoping meeting. Guardians of the Brandywine has a small, but active, board that would like to start monitoring the East Branch of the Brandywine in Wallace Township. Currently the reaches they would like to monitor are rated High Quality. Two large developments, including one golf course, were approved by the township. Members of this group would like to collect baseline data of current stream conditions, continue monitoring during development, as well as post development. They would also like to share this data with community members and a downstream prominent business partner of theirs, Victory Brewing Company. Members need assistance determining collection sites, macroinvertebrate identification training, water chemistry training and assistance with set up of data record keeping and data analysis.

Assistance provided April 1 – June 30, 2012

A macroinvertebrate identification training was provided to 16 individuals on April 28. Participants included high school students, undergraduate and graduate students, an environmental consultant, board members from the Guardians of the Brandywine, engineer, videographer and a teacher. The training included macroinvertebrate identification, proper collecting techniques, and data analysis. All participants took at pre- and post-test which netted the following results:

Average correct on pre-test: 46.17%

Average correct on post-test: 77.22%

On May 15, six individuals were trained in conducting water chemistry tests. They were trained in measuring dissolved oxygen, turbidity, conductivity, pH, water and air temperature.

APPLICANT: Haverford College

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	1/15/2012
Group membership	25	Scoping meeting	
Watershed	Schuylkill River	DEP approval	2/6/2012
Watershed size	1,912 mi ²	Assistance began	2/6/2012
County	Delaware	Assistance completed	2/24/2012
In-kind match	N/A	Cost of assistance	\$285

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	1
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

Maya van Rossum, Delaware Riverkeeper Network conducted the presentation with the students at Haverford College.

APPLICANT: Hay Creek Watershed Association

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	3/12/2011
Group membership	10	Scoping meeting	N/A
Watershed	Hay Creek	DEP approval	4/12/2011
Watershed size	N/A	Assistance began	4/5/2011
County	Berks & Chester	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	2
Individuals assisted	N/A
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

HCWA has a committed group of volunteers monitoring many sites within the Hay Creek watershed. HCWA is about to increase their monitoring program into an area called Hopewell-Big Woods. This will add multiple monitoring sites and need for additional volunteers. HCWA requested assistance with:

- Water chemistry review/training for current volunteers with emphasis on QA/QC
- Introduction to conductivity protocol/testing

On both July 13 and 14, SWRC educator provided a 2-hour water chemistry review for current and new volunteer monitors. This streamside training introduced volunteers to conductivity which is a measurement they are not currently monitoring, as well as focus on QA/QC.

APPLICANT: Heritage Conservancy & Bristol Borough

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	1,500	Scoping meeting	N/A
Watershed	Otter Creek	DEP approval	5/8/2009
Watershed size	17 acres	Assistance began	5/5/2009
County	Bucks	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$171

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	51
Stream miles improved	5 acres improved and invasives removed

Assistance provided July 1 – September 30, 2011

DRN provided outreach assistance for an invasives control days that were conducted in September. Minimal assistance conducted this quarter. Invasives removed included: multiflora rose, Japanese honeysuckle, and Norway maple.

Assistance provided January 1 – March 31, 2012

Assistance provided regarding wetlands restoration and workday planning for the spring.

APPLICANT: Lackawaxen River Conservancy

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	200	Scoping meeting	N/A
Watershed	Lackawaxen River	DEP approval	12/17/2009
Watershed size	598 mi ²	Assistance began	12/1/2009
County	Lackawanna, Pike, & Wayne	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$194

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	12
Trainings/workshops	1
Individuals assisted	35
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Assistance involved pipeline surveillance as construction begins in the region on various pipelines that criss cross Pike County and Wayne County, PA. An erosion and sedimentation field workshop was conducted with several concerned members to teach them what to look for and how to document potential pollution issues from pipelines. Site investigations uncovered E&S violations in Pike County and citizens were able to contact agencies for proper oversight, inspection and follow up.

Assistance provided October 1 – December 31, 2011

Follow up on pipeline E&S violations reporting was provided. Assistance with QAQC also provided.

Assistance provided January 1 – March 31, 2012

Follow up on pipeline E&S violations reporting was provided. Assistance with QAQC also provided.

Assistance provided April 1 – June 30, 2012

Follow up on pipeline E&S violations reporting was provided. Assistance with QAQC also provided.

APPLICANT: Land Conservancy of Southern Chester County

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	1/12/2012
Group membership	200	Scoping meeting	N/A
Watershed	Red Clay Creek	DEP approval	3/20/2012
Watershed size	N/A	Assistance began	3/20/2012
County	Chester	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	2
Trainings/workshops	N/A
Individuals assisted	N/A
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

The Land Conservancy of Southern Chester County (TLC) has requested technical assistance to give guidance on monitoring design, determination of water resource issues, training volunteers, assistance with riparian restoration, and assistance with nonpoint source impacts and treatments.

TLC is a 501(c) (3) non-profit land trust whose mission is to ensure the perpetual preservation and stewardship of open space, natural resources, historic sites, and working agricultural lands throughout Southern Chester Co. Founded in 1995, with a membership of 200, they partner with the PA Institute of Conservation Education to train citizens to become Master Naturalists. Their more immediate needs are to train these volunteers in making water quality and habitat assessments.

TLC holds conservation easements on 16 properties and owns and manages 4 independent nature preserves. They intend to offer training to landscape professionals as well as citizen groups using these properties and are looking for program management and scientific technical assistance.

APPLICANT: Lansdowne YMCA

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	4/2/2011
Group membership	1,500	Scoping meeting	6/2011
Watershed	Darby Creek	DEP approval	6/10/2011
Watershed size	77 mi ²	Assistance began	6/8/2011
County	Delaware	Assistance completed	Ongoing
In-kind match	\$1,159	Cost of assistance	\$855

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	12
Trainings/workshops	5
Individuals assisted	19
Stream miles improved	0.25 acres

Assistance provided July 1 – September 30, 2011

DRN helped select native plants for a small native plant garden that replaced turf on YMCA grounds to reduce stormwater and improve native wildlife habitat for pollinators. DRN assisted with a native planting day that was held on the 4th of July weekend to begin converting a turf area into a native plant garden and the YMCA was able to secure donated plants for the planting. Five volunteers assisted with the planting. YMCA staff has also expressed getting camp children involved with larger rain garden projects on the property if they are able to find donations for plantings. DRN suggested other avenues for getting plants donated and also discussed maintenance needs with YMCA groundskeepers.

Assistance provided October 1 – December 31, 2011

YMCA staff has requested assistance to look at stormwater projects that would green their property and alleviate high flows from the property entering Darby Creek. Possible options could incorporate rain gardens or dry wells as part of a program to also educate the YMCA membership and summer camp programs held there. A site visit on the property is scheduled for 2012 to help discuss potential options.

Assistance provided January 1 – March 31, 2012

DRN conducted a pre-visit and follow up field visit with the YMCA Executive Director to discuss possible options to infiltrate more rainwater on site. John discussed tree plantings, converting several unused parking spaces into rain gardens, use of rain barrels near the YMCA entrance, green roofs, and use of roof planters on the existing playground reinforce roof. Duane has requested continued technical assistance on key components to present to the YMCA Board this year. C-SAW is also working with the camp program staff to incorporate greening of the property into the summer curriculum that involves school age children.

Assistance provided April 1 – June 30, 2012

DRN reached out to YMCA to check on the status of meeting to set up and discuss restoration options and plans the YMCA may want to investigate. A gardening day is being planned for this fall to involve community members to seed native plants along the property.

APPLICANT: Limerick Township Historical Society

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	11/14/2011
Group membership	1,500	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	12/15/2011
Watershed size	1,912 mi ²	Assistance began	12/15/2011
County	Montgomery	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$746

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	9
Trainings/workshops	1
Individuals assisted	33
Stream miles improved	N/A

Assistance provided October 1 – December 31, 2011

Preliminary discussion and guidance on the environmental legacy of the Schuylkill Watershed was provided.

Assistance provided January 1 – March 31, 2012

Preparation for the 4/9/2012 presentation that will involve the environmental history of the Schuylkill River and coordination with the group contact.

Assistance provided April 1 – June 30, 2012

DRN provided a presentation to the group and there were 30 people in attendance. DRN told the story of the Schuylkill River clean up and the desilting project – perhaps the first environmental cleanup in the country – intended to restore what was then considered the country's dirtiest river.

APPLICANT: Mengel Natural History Society

Applicant information:		Procedure information:	
New group?	Pending	Initial contact with group	6/7/2012
Group membership	40	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	Pending
Watershed size	1,912 mi ²	Assistance began	6/13/2012
County	Berks	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$43

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	0
Individuals assisted	1
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

The historical society is interested in a presentation about water quality. This request is still pending.

APPLICANT: Monroe County Conservation District

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	12/13/2010
Group membership	230	Scoping meeting	N/A
Watershed	Tobyhanna & Tunkhannock	DEP approval	N/A
Watershed size	N/A	Assistance began	N/A
County	Carbon & Monroe	Assistance completed	N/A
In-kind match	\$720	Cost of assistance	\$1,055

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	N/A
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

This request for assistance has two parts and involves the Tobyhanna Creek/Tunkhannock Creek watershed in Monroe County. The stream part will be handled by USGS, and the Lake related part by PALMS. An initial telephone conference was held with the Monroe Conservation District in December to discuss roles and responsibilities with the various parties involved with the RFA. A scoping meeting was held April 18 to determine specific assistance required for the lake issues to formulate a proposed scope of work and budget to cover the request..

Assistance provided October 1 – December 31, 2011

During June 2011, Hanover Engineering prepared equipment, forms, and presentation materials and conducted a training session with members of the Tobyhanna Creek/Tunkhannock Creek Watershed Association. The meeting and training session were held at Lake Naomi near Pocono Lake, Pennsylvania. The handout and presentation materials developed above were assembled into folders for distribution to members of the Tobyhanna Creek/Tunkhannock Creek Watershed Association receiving training.

Assistance provided January 1 – March 31, 2012

Final report for project is being prepared.

APPLICANT: Morrisville Borough and Morrisville EAC

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	10,023	Scoping meeting	2/15/2011
Watershed	Delaware River	DEP approval	3/1/2011
Watershed size	13,539 mi ²	Assistance began	3/1/2011
County	Bucks	Assistance completed	Ongoing
In-kind match	\$1,159	Cost of assistance	\$501

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	9
Trainings/workshops	1
Individuals assisted	60
Stream miles improved	2 acres

Assistance provided July 1 – September 30, 2011

Communication and assistance to Borough on control of Japanese knotweed, buffer restoration and potential grant options for supplemental plantings.

Assistance provided October 1 – December 31, 2011

No assistance provided this quarter.

Assistance provided January 1 – March 31, 2012

Assistance with native seed mix selection was provided in regard to replacing the treated Japanese knotweed stand with native vegetation. A planting will occur during April and C-SAW will assist.

Assistance provided April 1 – June 30, 2012

Assistance with native seed mix selection was provided in regard to replacing the treated Japanese knotweed stand with native vegetation. A planting occurred on April 21st, 2012 and DRN helped with that effort and was present for technical assistance at the planting day. A video was created by DRN that day to highlight the importance of river restoration and trees along riverbanks (through other funding). It can be viewed at: <http://www.youtube.com/watch?v=Fvi2z9CI8Pk>.

APPLICANT: North Coventry Township

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	1/23/2012
Group membership	7,381	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	2/6/2012
Watershed size	1,912 mi ²	Assistance began	2/6/2012
County	Chester	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$813

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	8
Trainings/workshops	2
Individuals assisted	34
Stream miles improved	0.2 miles and 11 acres (planning)

Assistance provided January 1 – March 31, 2012

DRN's John Nysedt walked and visually assessed the stream corridor with the group for riparian issues including habitat, buffer, erosion control, invasive plants, and stormwater management. A construction site was being actively utilized in support of an off-site bridge project; DRN provided guidance on the issues applicable to restoring the site.

Assistance provided April 1 – June 30, 2012

On June 29th, DRN's John Nysedt met with park officials to brainstorm on possible restoration concepts and ideas. This was follow up after the site visit conducted the first quarter. Concepts including habitat improvement with natives, buffer creation and expansion, erosion control, invasive plants, and stormwater management were discussed. Assistance with planning restoration underway.

APPLICANT: Old Marcel Lake Property Owners Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	5/18/2009
Group membership	120	Scoping meeting	8/15/2009
Watershed	Dingman's Creek	DEP approval	3/4/2011
Watershed size	2,700 acres	Assistance began	8/15/2009
County	Pike	Assistance completed	N/A
In-kind match	\$4,070	Cost of assistance	\$4,271

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	6
Trainings/workshops	4
Individuals assisted	11
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

During this quarter, Hanover Engineering completed a Scope of Work designed to best meet the applicant's needs, as determined in 2009 Scoping Meeting. The Scope of Work was reviewed by applicant and applicable C-SAW partners, and was approved for completion. The applicant was contacted to set a date and time for a project kick-off meeting.

Assistance provided October 1 – December 31, 2011

Raw water quality data received from the laboratory for lake monitoring were reviewed and discussed with Tom Baker of Old Marcel Lake Property Owners Association. Applicable management recommendations were reviewed, specifically with regard to treatment of aquatic plants and algae, as well as the possible impacts of on-lot septic systems surrounding the lake. Chemical treatments were discouraged due to relatively low nutrient concentrations within the water column and substrate characteristics (which showed rocky bottom for much of the lake area. Approximately one-half (0.5) hour was required to review the water quality data and one-half (0.5) hour was required for a telecom discussion on management recommendations.

Assistance provided January 1 – March 31, 2012

Final report for project is being prepared.

APPLICANT: Pike/Wayne Trout Unlimited

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	300	Scoping meeting	N/A
Watershed	Delaware	DEP approval	7/16/2010
Watershed size	13,539 mi ²	Assistance began	7/2/2010
County	Pike & Wayne	Assistance completed	Ongoing
In-kind match	\$342	Cost of assistance	\$399

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	14
Trainings/workshops	2
Individuals assisted	35
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Assistance was provided to individual monitors this quarter with protocol and sampling questions and help with site station ID was provided. Volunteer recruitment and retention tips were also shared.

Assistance provided October 1 – December 31, 2011

Limited QA/QC assistance was provided this quarter to individual volunteer monitors.

Assistance provided January 1 – March 31, 2012

QA/QC assistance was provided this quarter to individual volunteer monitors as well as visual assessment guidance for Tennessee Gas Pipeline. Vernal pool and wetland monitoring was also conducted in the field in March with partial C-SAW assistance.

Assistance provided April 1 – June 30, 2012

Monitoring assistance and Q&A was provided this quarter to individual volunteer monitors as well as visual assessment guidance for future and past pipeline projects. Volunteers requested assistance documenting current conditions pre-pipeline.

APPLICANT: Primrose Creek Watershed Association

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	5/9/2012
Group membership	90	Scoping meeting	N/A
Watershed	Delaware River	DEP approval	5/15/2012
Watershed size	13,539 mi ²	Assistance began	5/15/2012
County	Bucks	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	N/A
Individuals assisted	N/A
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

Primrose Creek Watershed Association is already conducting some monitoring on their local streams and would like to add macroinvertebrate monitoring. Members requested training on macroinvertebrate identification, proper collecting techniques, and data analysis. This one-day training for their volunteers and other citizen group volunteers in the area, is scheduled for September 22, 2012.

APPLICANT: Protecting our Waters

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	1/1/2010
Group membership	550	Scoping meeting	10/2010
Watershed	Delaware River	DEP approval	12/10/2010
Watershed size	13,539 mi ²	Assistance began	12/10/2010
County	Philadelphia	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,938

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	27
Trainings/workshops	3
Individuals assisted	300
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Assistance was provided to coordinate and select speakers for a marcellus shale workshop held in Philadelphia in September of which about 300 citizens attended (500 planned to attend but massive flooding kept over 200 at home).

Assistance provided October 1 – December 31, 2011

No assistance provided this quarter.

Assistance provided January 1 – March 31, 2012

Assistance was provided regarding water quality sampling and groundwater sampling resources available for citizens. DRN assisted with the planning and forum on water quality.

Assistance provided April 1 – June 30, 2012

Assistance was provided regarding water quality sampling and groundwater sampling resources available for citizens. Guidance on lab packages available and resources were provided to three different citizens seeking advice.

APPLICANT: Radnor Residents Against Round Up

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	2/11/2012
Group membership	4	Scoping meeting	N/A
Watershed	Darby Creek	DEP approval	3/23/2012
Watershed size	77 mi ²	Assistance began	3/12/2012
County	Delaware	Assistance completed	Ongoing
In-kind match	\$1,775	Cost of assistance	\$1,126

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	8
Trainings/workshops	N/A
Individuals assisted	40
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

DRN provided technical assistance, informing the group regarding the goal of reducing the use of pesticides during maintenance of town property. DRN provided a white paper describing restoration and maintenance issues applicable to the herbicide reduction concern, with links to further resources. During the Board of Health meeting, and during the Environmental Advisory Council meeting, DRN provided technical advice on the alternatives to using herbicides as part of routine maintenance.

APPLICANT: Reading Area Community College

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	3/1/2012
Group membership	35	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	3/12/2012
Watershed size	1,912 mi ²	Assistance began	3/12/2012
County	Montgomery	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$143

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	5
Trainings/workshops	0
Individuals assisted	1
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

Consultations with group just began this quarter to determine topics to be discussed.

Assistance provided April 1 – June 30, 2012

Limited coordination with RACC on upcoming presentation was provided. Presentation will be about the water quality/environmental history of the Schuylkill River.

APPLICANT: Schuylkill Headwaters Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	600	Scoping meeting	N/A
Watershed	Muddy Run	DEP approval	12/22/2010
Watershed size	11 mi ²	Assistance began	12/20/2010
County	Schuylkill	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$827

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	12
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Information was provided to SHA and Schuylkill County Conservation District related to marcellus shale drilling and water withdrawal information.

Assistance provided October 1 – December 31, 2011

A presentation was provided to SHA and about 20 people attended the presentation about the environmental history of the Schuylkill River and implications today.

APPLICANT: Seven Generations Charter School

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	3/15/2012
Group membership	65	Scoping meeting	N/A
Watershed	Schuylkill River	DEP approval	3/19/2012
Watershed size	1,912 mi ²	Assistance began	3/19/2012
County	Lehigh	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$228

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	40
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

Preliminary coordination with the school. Presentation took place April 10, 2012. Maya van Rossum delivered the presentation.

Assistance provided April 1 – June 30, 2012

DRN presented to the students on April 10, 2012. Forty students were in attendance to learn about the endangered species, the Atlantic sturgeon, which still survives in the Delaware River in small populations.

APPLICANT: Silver Lake Nature Center

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	3/15/2011
Group membership	300	Scoping meeting	N/A
Watershed	Otter Creek	DEP approval	3/30/2011
Watershed size	N/A	Assistance began	3/15/2011
County	Bucks	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$214

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	7
Trainings/workshops	0
Individuals assisted	12
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

CSAW assisted the group with protocol and sampling techniques as they get their volunteer monitoring program underway. Assistance was also conducted to teach the group about iron oxide and how to effectively report pollution concerns to the proper agencies. Protocols were also shared to standardize techniques and assistance on spent reagents and hazardous waste programs was also provided.

APPLICANT: Tobyhanna & Tunkhannock Creek Watershed Associations

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	11/2010
Group membership	230	Scoping meeting	N/A
Watershed	Tobyhanna Creek	DEP approval	12/10/2010
Watershed size	129 mi ²	Assistance began	12/10/2010
County	Carbon, Monroe, & Wayne	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,000

Assistance provided by: United States Geological Survey (USGS)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	7
Stream miles improved	N/A

Requested Assistance

For ten years, the Tobyhanna Creek/Tunkannock Creek Watershed Association (TC/TCWA) has been collecting monthly monitoring data through its volunteer Stream Watchers Program. This Program includes over 20 sites which are monitored for pH, temperature, flow, and water chemistry. In an effort to gather information on the types and potential sources of nonpoint-source pollution in the watershed, the TC/TCWA applied for and received a Growing Greener grant in 2004 to purchase and use 4 automatic stream sampling units. These units include two ISCO samplers and two Global Water samplers. The TC/TCWA volunteers never received proper training on the use of the samplers due to circumstances with the project consultant. Initially, the samplers were deployed and left streamside during a complete winter season. That was about two years ago. Now, the samplers have been retrieved and are safe and secure in protected housing. These samplers need to be incorporated into a planned sampling program to evaluate the water quality of the watershed.

The TC/TCWA is requesting training in the use of the samplers. The TC/TCWA is also asking for assistance in knowing what parameters to target for monitoring and training on why those parameters are important. Guidance also is requested on station selection and monitoring frequency. In addition, a sampling protocol is needed so that the TC/TCWA volunteers can conduct the monitoring once the C-SAW support has ended.

Assistance provided July 1 – September 30, 2011

Phone conference held on May 13 with Chaplin, Langland, and Trish Attardo to discuss resolution to problems the group was having with the ISCO samplers. Langland visited in July to program the samplers and improve the piping at both installations.

Assistance provided October 1 – December 31, 2011

Assistance was minimal and consisted of follow up technical help from previous efforts.

APPLICANT: Union Township EAC

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	8	Scoping meeting	N/A
Watershed	Mill Creek	DEP approval	4/22/2009
Watershed size	7 mi ²	Assistance began	4/23/2009
County	Berks	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$342

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	5
Trainings/workshops	1
Individuals assisted	13
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

No assistance conducted this quarter. PADEP approved the Mill Creek stream upgrade petition supplied by Union Township that incorporated macro invertebrate data collected under the CSAW program and is considering this stream for a potential upgrade.

Assistance provided January 1 – March 31, 2012

Assistance provided to Union Township EAC regarding stream data monitoring program to collect more data for Mill Creek through a long-term program.

Assistance provided April 1 – June 30, 2012

Assistance provided to Union Township EAC regarding stream data monitoring program to collect more data for Mill Creek through a long term program. Volunteers are collecting stream temperature data and monitoring for nutrients and dissolved oxygen. CSAW assisted with site selection and helped develop a report summarizing data from a stream snapshot that was conducted in late May 2012 for the Mill Creek. DRN also helped visually assess the headwaters of the Mill Creek to determine potential impacts from dams. Volunteers assisted with benthic and water chemistry monitoring.

APPLICANT: Valley Forge Trout Unlimited

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	4/20/2011
Group membership	N/A	Scoping meeting	N/A
Watershed	Valley Creek	DEP approval	4/28/2011
Watershed size	23 mi ²	Assistance began	4/28/2011
County	Chester & Montgomery	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$256

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	12
Trainings/workshops	1
Individuals assisted	100
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

- Provide general information to assist with program planning of Public Lands Day (September 23rd and 24th, 2011)
- Help identify possible speakers
- Assist with bioblitz program held in September that drew over 100 participants
- Help prepare and present presentation

APPLICANT: Worcester Elementary School

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	N/A
Group membership	500	Scoping meeting	N/A
Watershed	Zacharias Creek	DEP approval	8/27/2010
Watershed size	N/A	Assistance began	9/1/2010
County	Montgomery	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,142

Assistance provided by: Delaware Riverkeeper Network (DRN)

Assistance type: Watershed-specific technical assistance

Consultations	12
Trainings/workshops	2
Individuals assisted	53
Stream miles improved	0.15 miles & 2 basins naturalized/enhanced

Assistance provided July 1 – September 30, 2011

DRN restoration manager reached out to Worcester to assist with next steps as the school is interested in installing several rain gardens on school grounds for education and reduction of stormwater impacts from property. The school is also seeking funding through programs to acquire needed materials to plan and implement.

Assistance provided October 1 – December 31, 2011

Technical assistance related to rain gardens to reduce stormwater on school property was provided. A site visit may be planned for next quarter. The school is also seeking funding through programs to acquire needed materials to plan and implement.

Assistance provided January 1 – March 31, 2012

During this reporting period, DRN assisted the Meadowwood retirement community by providing advice on the repair and improvements needed at the primary stormwater management basin (1 acre); observed erosion problems at the stream and provided guidance (0.2 miles long); reviewed the wetlands and informed the group about restoration issues (1.5 acres); and gave advice regarding riparian buffer improvement (0.5 miles long). Subsequently, when the group obtained funding for the riparian buffer improvement, DRN provided training and guidance on tree placement and tree selection for a portion of the stream 0.15 miles long. DRN advised on soil erosion control techniques; provided guidance to the maintenance crew regarding the riparian buffer; and provided advice regarding re-construction and restoration of an eroded gully (300 LF). Throughout the period DRN provided verbal and email assistance and guidance as requested.

Assistance provided April 1 – June 30, 2012

Assistance on E&S control and matting techniques continued with this group this quarter to assist with school property restoration projects.

Appendix B

SUSQUEHANNA RIVER BASIN

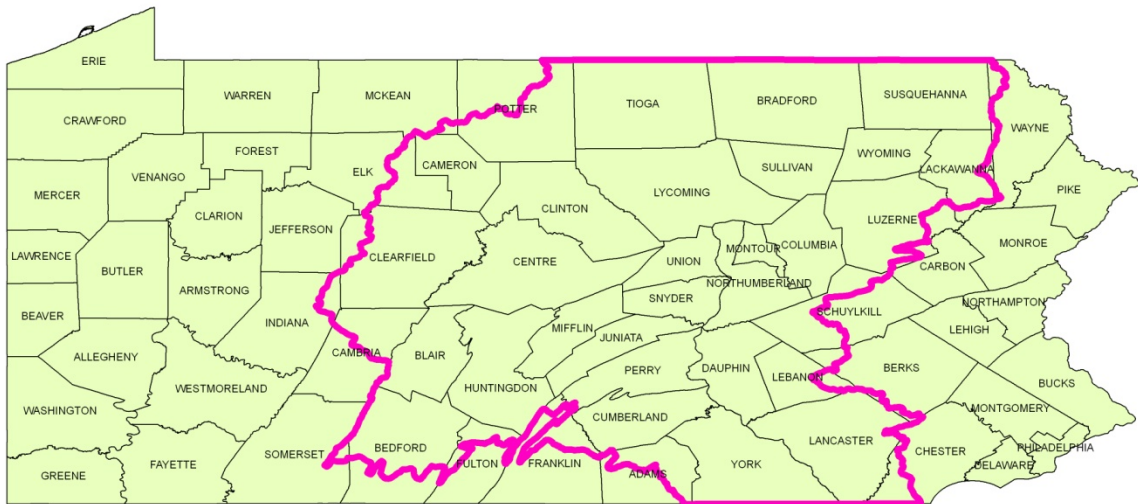
Groups receiving assistance:

Number of Groups – 11 (2 new and 9 continuing)

Consultations – 58

Trainings/Workshops – 12

Individuals Assisted – 159



APPLICANT: Buffalo Creek Watershed Alliance

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	7/5/2011
Group membership	200	Scoping meeting	10/6/2011
Watershed	Buffalo Creek	DEP approval	1/20/2012
Watershed size	134 mi ²	Assistance began	8/29/2011
County	Union	Assistance completed	1/19/2012
In-kind match	N/A	Cost of assistance	\$1,130

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	6
Trainings/workshops	1
Individuals assisted	20
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

The Buffalo Creek Watershed Alliance contacted ALLARM for organizational capacity building assistance. The group has been around for several years and feels like they do not have a good sense of direction. ALLARM has spent this quarter learning about the group and will attend a scoping meeting next quarter.

Assistance provided October 1 – December 31, 2011

ALLARM attended a scoping meeting and a BCWA board meeting this quarter. ALLARM will be helping BCWA develop a set of organizational goals and give feedback about the efficiency of the group. The group has a large membership base and a vibrant board, which helps them implement several projects at one time.

Assistance provided January 1 – March 31, 2012

ALLARM attended BCWA's annual meeting and provided feedback on how the group can succeed further. ALLARM also provided them with materials on volunteer recruitment. The group may be interested in going through a strategic plan or at least following up with assistance on how to recruit people for specific roles in the organization.

APPLICANT: E.L. Rose Conservancy

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	6/15/2010
Group membership	275	Scoping meeting	N/A
Watershed	Silver Creek	DEP approval	11/8/2010
Watershed size	N/A	Assistance began	11/11/2010
County	Susquehanna	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,582

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and QA/QC

Consultations	10
Trainings/workshops	0
Individuals assisted	15
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM provided follow-up assistance to E.L. Rose members – answered questions about calibrating and using monitoring equipment, data interpretation, and data management. E.L. Rose volunteers also participated in quality assurance/quality control.

Assistance provided October 1 – December 31, 2011

E.L. Rose volunteers participated in quality assurance/quality control and ALLARM answered volunteers' monitoring questions.

Assistance provided January 1 – March 31, 2012

ALLARM created materials to enhance E.L. Rose's monitoring program including new visual assessment techniques, decision criteria, and a new data management system. The group is going strong and is looking to bring on more volunteers in the coming months.

Assistance provided April 1 – June 30, 2012

ALLARM touched base with E.L. Rose monitors and helped them order equipment for their monitoring program. They have new volunteers interested in getting involved and hope to hold another monitoring workshop in the fall.

APPLICANT: Friends of the Little Aughwick Creek

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	7/15/2007
Group membership	20	Scoping meeting	N/A
Watershed	Little Aughwick Creek	DEP approval	8/28/2007
Watershed size	61 mi ²	Assistance began	8/28/2007
County	Fulton & Huntingdon	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$452

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Mentoring

Consultations	2
Trainings/workshops	0
Individuals assisted	2
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

ALLARM touched base with FLAC to get an idea of the group's progress. There has been some significant turnover in the monitoring program and the group is unsure whether or not they will be able to support a monitoring program this year.

APPLICANT: God's Country Waterdogs

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	3/22/2011
Group membership	50	Scoping meeting	N/A
Watershed	Multiple	DEP approval	6/2/2011
Watershed size	N/A	Assistance began	6/3/2011
County	Potter	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$6,778

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance, mentoring, and QA/QC

Consultations	12
Trainings/workshops	1
Individuals assisted	20
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM provided QA/QC assistance to the group.

Assistance provided October 1 – December 31, 2011

ALLARM had several follow up phone calls with the group in December answering monitoring questions and scheduling an additional workshop for the spring.

Assistance provided January 1 – March 31, 2012

After a series of follow-up phone calls with the coordinators of God's Country Trout Unlimited and God's Country Water Dogs, the decision was made to hold another monitoring workshop for newly interested volunteers. ALLARM conducted a workshop on March 24 for thirty volunteers, bringing the number of baseline monitoring sites up to 70 in the county.

Assistance provided April 1 – June 30, 2012

ALLARM has worked with both God's County Trout Unlimited and Water Dogs to provide follow up assistance after the March workshop. A number of volunteers are participating in QA/QC.

APPLICANT: Lackawanna Trails High School

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	2/4/2011
Group membership	50	Scoping meeting	N/A
Watershed	Tunkhannock Creek	DEP approval	2/17/2011
Watershed size	413 mi ²	Assistance began	3/4/2011
County	Lackawanna	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$678

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	0
Individuals assisted	8
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM provided follow-up assistance to volunteer monitors – checked in to see how their monitoring program was progressing and answered questions about calibrating and using monitoring equipment, data interpretation, and data management.

Assistance provided January 1 – March 31, 2012

ALLARM created new materials to enhance LTHS monitoring program and provided tips on maintaining their monitoring equipment. Volunteers in this group are still actively monitoring and are interested in using their data to educate the community on the health of their watersheds.

APPLICANT: Lake Roy Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	11/2/2007
Group membership	30	Scoping meeting	4/5/2008
Watershed	Lake Roy	DEP approval	10/8/2009
Watershed size	61 acres	Assistance began	7/17/2009
County	Susquehanna	Assistance completed	N/A
In-kind match	\$2,260	Cost of assistance	\$6,595

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	5
Individuals assisted	2
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

The Lake Roy Association requested assistance to determine the cause of heavy algae blooms experienced over the last four years.. The association is requesting help on study design, data base design, data interpretation, non-point source impacts and treatments, etc., and, in general, is trying to figure out what to do about their algae problem. A proposal was submitted and approved for requested assistance. Phase 1 of the project was completed in 2009 and the report was submitted on April 4, 2010. Phase 2 is scheduled for completion in 2011. Project on hold pending selection of a succeeding lake manager.

Assistance provided October 1 – December 31, 2011

Project on hold pending selection of a succeeding lake manager.

APPLICANT: Lower Penns Creek Watershed Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	1/29/2009
Group membership	50	Scoping meeting	3/19/2009
Watershed	Penns Creek	DEP approval	4/3/2009
Watershed size	163 mi ²	Assistance began	4/9/2009
County	Snyder & Union	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$2,259

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	6
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM continued to facilitate LPCWA's strategic planning process. The group has decided to focus on stream restoration and has put together a three-year timeline for completing different tasks. The group continues to think through different area partners that can assist with program implementation and hopefully aid in volunteer recruitment.

Assistance provided October 1 – December 31, 2011

ALLARM has worked with LPCWA to finish their strategic planning process! The group has a very clear vision of what they would like to achieve in the next three years. Now ALLARM is assisting the group with volunteer recruitment.

Assistance provided January 1 – March 31, 2012

ALLARM met with LPCWA twice during this quarter to help them develop a volunteer recruitment strategy. ALLARM helped to develop several summary documents with the group that outlines the group's key activities and when they need volunteers.

Assistance provided April 1 – June 30, 2012

ALLARM finished LPCWA's volunteer recruitment and strategic planning process. LPCWA has already started to implement recruitment and outreach strategies.

APPLICANT: Middle Spring Watershed Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	6/15/2007
Group membership	70	Scoping meeting	N/A
Watershed	Middle Spring Creek	DEP approval	8/17/2007
Watershed size	25 mi ²	Assistance began	7/16/2007
County	Cumberland & Franklin	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$2,259

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	8
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM followed up with MSWA after the data interpretation workshop and provided the group with information on how to interpret their data in the future, including relevant values for parameters in their watershed.

Assistance provided October 1 – December 31, 2011

ALLARM touched base with the volunteer monitors in MSWA to see how monitoring was going and to answer any questions they had.

Assistance provided January 1 – March 31, 2012

ALLARM was asked by MSWA to attend a monthly meeting in March. They have a couple of new volunteers that was asking questions about the monitoring program, which brought about study design questions. ALLARM met with the group and determined it was time to revisit the study design process. MSWA then outreached to all of the monitoring stakeholders in the watershed.

Assistance provided April 1 – June 30, 2012

MSWA held a monitoring stakeholders meeting in May that ALLARM helped to facilitate. ALLARM attended a second stakeholders meeting in June.

APPLICANT: Mountain Lake

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	8/17/2010
Group membership	N/A	Scoping meeting	8/17/2010
Watershed	Mountain Lake	DEP approval	N/A
Watershed size	165 acres	Assistance began	N/A
County	Bradford	Assistance completed	N/A
In-kind match	\$180	Cost of assistance	\$546

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	1
Trainings/workshops	1
Individuals assisted	N/A
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

A scoping meeting was held on August 17, 2010 to review past monitoring efforts and discuss approaches to achieve the overall objectives of developing a lake management program to correct watershed problems, maintain, and improve water quality, and to train association personnel on monitoring equipment collection techniques, data interpretation, and specie identification. Additional concerns were expressed at the meeting about the possible impact of nearby Marcellus Shale extraction on the lakes water quality and assistance to identify any additional unique parameters needed to monitor the extraction process.

Assistance provided October 1 – December 31, 2011

Training was conducted on lake sample collection equipment and water samples were taken and sent to a certified lab for analysis. With assistance from the project consultant, collection results and recommendations for short and long-term watershed management strategies are being reviewed by the association to formulate a watershed protection plan.

Assistance provided January 1 – March 31, 2012

Project is complete. Final report is being prepared.

APPLICANT: North Lake Improvement Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	7/3/2009
Group membership	30	Scoping meeting	8/30/2009
Watershed	North Lake & Hunlock Creek	DEP approval	N/A
Watershed size	137 acres	Assistance began	8/30/2009
County	Luzerne	Assistance completed	N/A
In-kind match	\$1,150	Cost of assistance	\$205

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	1
Trainings/workshops	N/A
Individuals assisted	28
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

Project on hold pending input from applicant.

APPLICANT: Potter County Conservation District

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	9/6/2011
Group membership	N/A	Scoping meeting	N/A
Watershed	Multiple	DEP approval	9/26/2011
Watershed size	1,081 mi ²	Assistance began	9/26/2011
County	Potter	Assistance completed	Ongoing
In-kind match	\$2,447	Cost of assistance	\$3,865

Assistance provided by: Conemaugh Valley Conservancy

Assistance type: Mentoring & Watershed-specific technical assistance

Consultations	6
Trainings/workshops	2
Individuals assisted	14
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

CVC provided technical assistance and shared data logger program information. CVC arranged C-SAW assistance and scheduled a training date in cooperation with PCCD.

Assistance provided October 1 – December 31, 2011

CVC provided PCCD a training on the use of in-stream data loggers for a long-term water monitoring program, explaining the evolution of the program, lessons learned, and its projected future. CVC helped install Potter County's first logger.

Assistance provided January 1 – March 31, 2012

CVC processed Potter County Conservation District's request for a macroinvertebrate training and consulted on programming and training dates.

Assistance provided April 1 – June 30, 2012

CVC worked with PCCD to prepare and implement a macroinvertebrate collection and identification training to PCCD staff and volunteers, who are acquiring knowledge to obtain baseline and future samples of macroinvertebrate from county streams, especially those vulnerable to development. A training was held on May 24 at the Potter County Conservation District office and in the field at Dingman's Run. PCCD would like to schedule another training this fall for additional volunteers.

Appendix C

POTOMAC RIVER BASIN

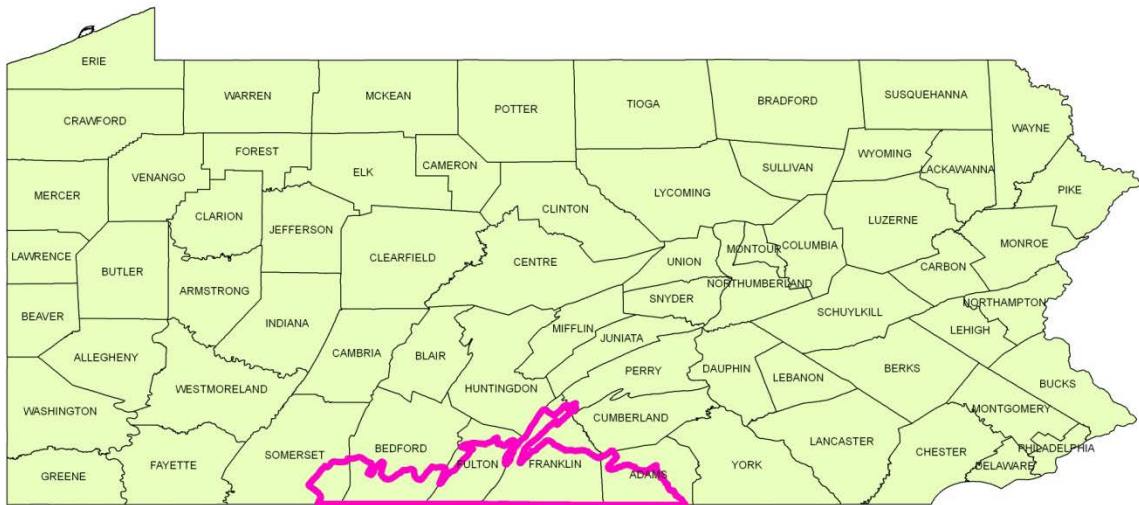
Groups receiving assistance:

Number of Groups – 5 (5 continuing)

Consultations – 47

Trainings/Workshops – 7

Individuals Assisted – 118



APPLICANT: Antietam Watershed Association

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	6/30/2003
Group membership	80	Scoping meeting	N/A
Watershed	Antietam Creek	DEP approval	10/31/2003
Watershed size	94 mi ²	Assistance began	10/31/2003
County	Franklin	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$3,389

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	16
Trainings/workshops	1
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM was asked to co-present at the quarterly AWA meeting with the volunteer monitoring group on data communication strategies. Volunteers recently learned techniques of how to communicate their water quality results to the public. A poster was created that they used at a community event to showcase the volunteer monitoring program and the results they have achieved over the past five years. A PowerPoint presentation was also created.

Assistance provided October 1 – December 31, 2011

ALLARM attended AWA's quarterly meeting and met with the volunteer coordinator and volunteer monitors to discuss their monitoring program. The group has recently recruited new volunteer monitors and would like to hold a monitoring workshop for the entire group in the spring.

Assistance provided January 1 – March 31, 2012

ALLARM touched base with AWA to determine the upcoming needs of the monitoring program. The group is still going strong and is actively recruiting new volunteers to monitor additional sites within their watershed. ALLARM also answered questions about monitoring techniques and types of volunteer-friendly kits.

Assistance provided April 1 – June 30, 2012

ALLARM helped the group address some unusually high nutrient readings, including where to strategically sample and how frequent to sample. The group is interested in monitoring bacteria and ALLARM gave them information on volunteer-friendly kits.

APPLICANT: Conococheague Watershed Alliance

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	2/24/2003
Group membership	20	Scoping meeting	N/A
Watershed	Conococheague Creek	DEP approval	5/1/2003
Watershed size	503 mi ²	Assistance began	5/5/2003
County	Franklin	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$678

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	3
Stream miles improved	N/A

Assistance provided October 1 – December 31, 2011

ALLARM met with members in Franklin County to give monitoring advice for a DEP Environmental Education grant. A teacher would like to introduce her students to stream monitoring and ALLARM provided information and direction on how to compose a monitoring program for high school students.

APPLICANT: Franklin County Conservation District

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	1/2010
Group membership	N/A	Scoping meeting	N/A
Watershed	Conococheague Creek	DEP approval	2/5/2010
Watershed size	503 mi ²	Assistance began	5/20/2010
County	Franklin	Assistance completed	N/A
In-kind match	\$6,090	Cost of assistance	N/A

Assistance provided by: Stroud Water Research Center (SWRC)

Assistance type: Watershed-specific technical assistance

Consultations	10
Trainings/workshops	2
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Sixteen individuals participated in a two-day Leaf Pack Network® workshop which took place at Wilson College from August 3-4, 2011. School teachers took the workshop in effort to further educate themselves on stream ecology but also to be introduced to a new method of sampling streams, using leaf packs.

FCCD obtained additional funding to provide Leaf Pack Experiment Stream Ecology kits to each participant contingent on the completion of an implementation form which will outline for them and us how they plan on incorporating this monitoring tool into their classroom. Some of the participating teachers are already heavily involved in Trout in the Classroom.

Participants took a pre and post-test. Pre-test scores averaged 66% while the post-test average increased to 95%.

Helping recruit and host this workshop were the watershed specialists from Adams and Cumberland County as well as PA DCNR Foresters.

Assistance provided January 1 – March 31, 2012

For the last two years, the watershed specialists at Franklin, Adams, Cumberland and Lebanon County Conservation Districts collaborated on a request for CSAW assistance in providing stream monitoring training, specifically the leaf pack methodology, for teachers. In 2010, 20 teachers were trained at Shippensburg University and in 2011, 16 Teachers were trained at Wilson College. In both 2010 and 2011 the watershed specialists secured matching grants to be able to provide leaf pack kits to each participating teacher. The intent of the leaf pack trainings was for teachers to integrate stream monitoring, specifically the leaf pack experiment, into their school curriculum as many of the items covered in this experiment are topics that must be covered by teachers for the state standardized tests (specifically in the Watershed & Ecology and Science & Technology sections). Participating teachers were required to fill out an implementation plan before they were given a leaf pack kit (valued at \$190).

The watershed specialists from Franklin, Adams, and Cumberland County Conservation Districts are again requesting CSAW assistance to provide another Leaf Pack workshop this summer at Gettysburg College. Through the 2-day leaf pack workshop, participants will learn: basic stream ecology, topographic map reading and watershed delineation, leaf pack methodology, macroinvertebrate identification, macroinvertebrate data analysis, habitat assessment, why riparian buffers are critical for stream health, how to enter their data on the Leaf Pack Network® Website (www.stroudcenter.org/lpn) and learn how they can make data comparisons with other streams, sites up or downstream from their sample location, or seasonal differences within the same stream.

Stroud will provide the training and follow-up support to teachers. The Leaf Pack kits for the trainings will be provided through matching grants from local sources identified by the watershed specialists.

Assistance provided April 1 – June 30, 2012

Nine individuals participated in a two-day Leaf Pack Network® workshop which took place at Gettysburg College from June 19-20, 2012. School teachers took the workshop in effort to further educate themselves on stream ecology but also to be introduced to a new method of sampling streams, using leaf packs.

FCCD provided Leaf Pack Experiment Stream Ecology kits to each participant contingent on the completion of an implementation form which will outline for them and us, how they plan to incorporate this monitoring tool into their classroom.

Participants took a pre and post-test. Pre-test scores averaged 70% while the post-test average increased to 97.7%.

Helping recruit and host this workshop were the watershed specialists from Adams and Cumberland County as well as PA DCNR Foresters.

APPLICANT: Ridge and Valley Streamkeepers

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	9/15/2003
Group membership	30	Scoping meeting	N/A
Watershed	Sideling Hill Creek & Town Creek	DEP approval	10/7/2003
Watershed size	252 mi ²	Assistance began	10/7/2003
County	Bedford & Fulton	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,582

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	9
Trainings/workshops	2
Individuals assisted	25
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM trained volunteers on basic water quality monitoring – including chemical, visual, and physical monitoring. Citizens are interested in assessing and documenting whether recent land use changes related to the development and operation of a new natural gas storage facility impact their local watersheds. Volunteers learned how to properly calibrate and use monitoring equipment, how to monitor chemical, visual, and physical parameters, and how to interpret and manage water quality data.

Assistance provided October 1 – December 31, 2011

ALLARM followed up with members of RVS who attended the water quality monitoring workshop. Some volunteers have begun monitoring and some are in the process of choosing their monitoring sites.

Assistance provided January 1 – March 31, 2012

ALLARM answered questions about monitoring for nitrate and specifically about volunteer-friendly kits. Based on feedback from monitors, ALLARM looked into the different types of kits on the market for nutrient analysis and plans to test the quality and usability of the kits for future recommendations.

Assistance provided April 1 – June 30, 2012

ALLARM touched base with RVS and put together cleaning solutions for their monitoring kits.

APPLICANT: Watershed Alliance of Adams County

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	7/15/2007
Group membership	100	Scoping meeting	N/A
Watershed	Multiple	DEP approval	7/12/2007
Watershed size	N/A	Assistance began	7/12/2007
County	Adams	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,808

Assistance provided by: Alliance for Aquatic Resource Monitoring (ALLARM)

Assistance type: Watershed-specific technical assistance and mentoring

Consultations	9
Trainings/workshops	1
Individuals assisted	40
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

ALLARM helped WAAC develop a rating curve to infer stream discharge values using stage measurements. The group is particularly concerned about low flow and has chosen sites throughout the county to begin monitoring. They have used techniques learned at a previous workshop to measure stream discharge using a velocity meter at different flow levels and now wish to correlate those readings to stage readings in order to infer discharge values at various stage levels.

Assistance provided October 1 – December 31, 2011

ALLARM helped WAAC members with data management, including providing a template for volunteers to record weekly stage measurements. New volunteers have been recruited and the group is interested in holding a refresher stage monitoring workshop in the summer.

Assistance provided January 1 – March 31, 2012

WAAC is stilling planning to hold a flow monitoring workshop this summer and is actively recruiting volunteers to help with their monitoring program.

Assistance provided April 1 – June 30, 2012

ALLARM worked with the WAAC monitoring coordinator to schedule a flow monitoring workshop.

Appendix D

OHIO RIVER BASIN / MULTIPLE RIVER BASINS

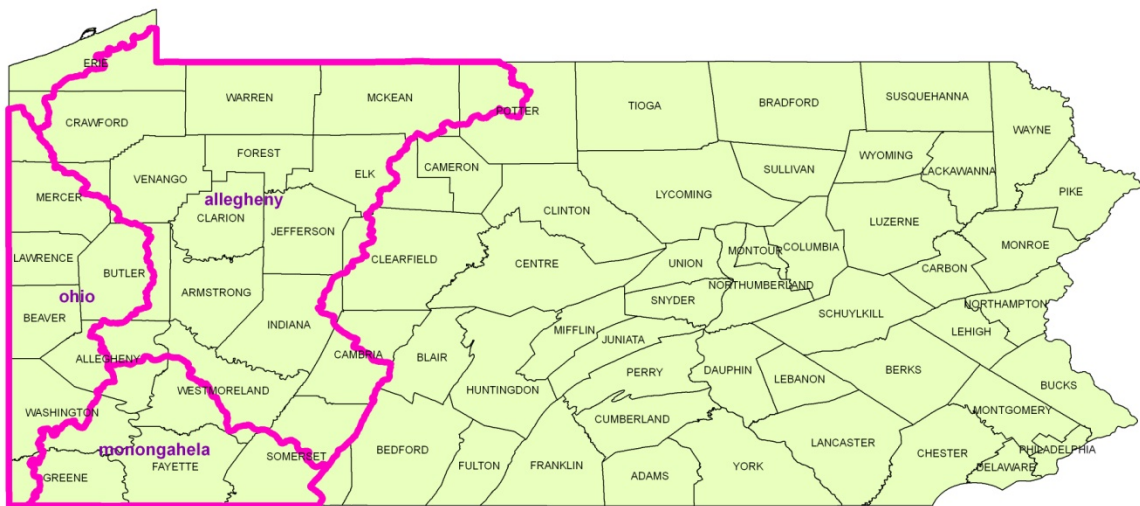
Groups receiving assistance:

Number of Groups – 8 (6 new and 2 continuing)

Consultations – 22

Trainings/Workshops – 12

Individuals Assisted – 109



APPLICANT: Allegheny County Conservation District

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	4/18/2012
Group membership	N/A	Scoping meeting	N/A
Watershed	Allegheny & Monongahela Rivers	DEP approval	5/1/2012
Watershed size	18,960 mi ²	Assistance began	5/7/2012
County	Allegheny	Assistance completed	Ongoing
In-kind match	\$40	Cost of assistance	\$60

Assistance provided by: Conemaugh Valley Conservancy

Assistance type: Mentoring & Watershed-specific technical assistance

Consultations	5
Trainings/workshops	N/A
Individuals assisted	1
Stream miles improved	N/A

Assistance provided April 1 – June 30, 2012

CVC processed the Conservation District's request for assistance and corresponded with the group regarding training needs and logistics. CVC also advised the group on monitoring equipment to purchase with the Growing Greener grant the Conservation District received for their monitoring project. A training is scheduled for August.

APPLICANT: Chestnut Ridge Trout Unlimited

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	11/2010
Group membership	N/A	Scoping meeting	N/A
Watershed	Multiple	DEP approval	N/A
Watershed size	N/A	Assistance began	7/2011
County	Multiple	Assistance completed	Ongoing
In-kind match	N/A	Cost of assistance	\$1,000

Assistance provided by: United States Geological Survey (USGS)

Assistance type: Watershed-specific technical assistance

Consultations	N/A
Trainings/workshops	N/A
Individuals assisted	N/A
Stream miles improved	N/A

Requested Assistance

Continuous monitoring of specific conductance. Training requested for meter calibration, maintenance, and quality control.

Assistance provided July 1 – September 30, 2011

Dan Galeone conducted a reconnaissance visit the week of July 7. This is the initial work for the request.

APPLICANT: Conemaugh Valley Conservancy

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	N/A
Group membership	N/A	Scoping meeting	N/A
Watershed	Multiple	DEP approval	5/4/2011
Watershed size	N/A	Assistance began	9/2011
County	Multiple	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$7,600

Assistance provided by: United States Geological Survey (USGS)

Assistance type: Watershed-specific technical assistance

Consultations	N/A
Trainings/workshops	1
Individuals assisted	4
Stream miles improved	N/A

Requested Assistance

CVC currently is operating a number of continuous water-quality monitors measuring specific conductance for selected streams in the basin. Streamflow data are needed to assist with interpretation of specific conductance data that are being collected. Staff plates will allow volunteers to quickly determine a water level, which is a surrogate for streamflow once a rating is developed. Training through C-SAW is requested for installation of staff plates and measurement of streamflow. USGS would provide instruction and support for staff plate installation and streamflow measurement with the idea that CVC members would install additional staff plates and make streamflow measurements, using knowledge transferred from USGS. The following C-SAW support is requested:

- Reconnaissance visit to determine appropriate locations for measurement of stage and streamflow.
- Demonstration and training for installation of staff plates at 2 selected locations.
- Training on how to make streamflow measurements. For instruction purposes, two streamflow measurements at each site are proposed.

Assistance provided July 1 – September 30, 2011

Chaplin met Melissa Reckner, James Eckenrode in Windber, Pa. on August 26 to conduct reconnaissance. The first site visited was on Little Paint Creek. The stream through list reach was approximately 20 feet wide and the bed was composed of gravel, cobbles, and scattered large boulders. CVC had previously installed a monitoring unit in PVC pipe with a transducer and specific conductance probe. A boulder was selected as the preferred location for staff-plate installation since it was within an area of relatively deep slow-velocity water. The second site visited on August 26 was on Tubmill Creek. This stream at this location was approximately 30ft wide and was on a meander. The bed was much finer material, requiring a different approach for staff-plate installation than at Little Paint Creek. Since CVC wanted to also install a continuous monitor at this site, USGS suggested mounting it to the staff-plate backing that would be secured to the streambed. On September 14-15, USGS revisited Little Paint Creek and Tubmill Creek to 1) install staff plates and demonstrate the procedure for making streamflow measurements with two types of flow meters.

APPLICANT: Penn State University – Pond & Lake Workshops 2012

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	2/1/2012
Group membership	N/A	Scoping meeting	N/A
Watershed	Multiple	DEP approval	3/4/2011
Watershed size	Multiple	Assistance began	2/7/2012
County	Multiple	Assistance completed	N/A
In-kind match	\$5,180	Cost of assistance	\$0

Assistance provided by: PA Lake Management Society (PALMS)

Assistance type: Watershed-specific technical assistance

Consultations	N/A
Trainings/workshops	9
Individuals assisted	64
Stream miles improved	N/A

The PALMS/C-SAW workshops will be conducted in accordance with the guidelines issued on February 22, 2008. PSU requested assistance to prepare and implement a series of pond and lake management workshops throughout the state. The workshops involved collaboration among PALMS members and speakers from several government agencies across the state. Workshops are generally scheduled for a Saturday early in the spring to assist pond and lake owners with proper management strategies for pond and lake problems for the ensuing year. Each workshop is unique, but most covered the following broad topics:

- Pond and Lake Ecology – an introductory look at the components and functions of lakes and ponds along with an understanding of the importance of nutrients, dissolved oxygen and other water quality parameters.
- Dredging, Shoreline Stabilization and Permitting – an explanation of the various permits that may be necessary for pond and lake management activities with an emphasis on sediment dredging and control.
- Aquatic Plant Identification and Control – how to identify common nuisance aquatic plants and algae and the various physical, biological and chemical
- Control strategies that can be used for common problem plants.
- Fisheries Management – identification, stocking and management of common pond and lake fishes in Pennsylvania.
- Pond and Lake Wildlife – how to identify and encourage or discourage common wildlife that occur in and around ponds and lakes

Assistance provided April 1 – June 30, 2012

Penn State Extension and C-SAW sponsored nine pond and lake workshops throughout Pennsylvania in 2012 for 433 pond and lake owners or managers. These workshops ranged from one hour to six hours in length. Two workshops (Stroudsburg and the statewide webinar) included PALMS contractors through the C-SAW program. One other workshop in Washington, PA was cancelled due to low registration. Dates, locations and attendees for the completed workshops are listed below:

Date	County	Number of participants
January 2012	Butler	130 golf course superintendents
January 28, 2012	Erie	39 pond & lake owners
March 31, 2012	Monroe	44 lake owners & managers (including Ed Molesky, PALMS)
April 14, 2012	York	12 pond owners
April 25, 2012	Statewide	22 lake owners & managers (including Joe Gallagher, PALMS)
May 5, 2012	Mercer	40 pond & lake owners
May 5, 2012	Crawford	105 pond & lake owners
May 8, 2012	Susquehanna	20 pond & lake owners
June 18, 2012	Centre	21 golf course superintendents

Workshop Evaluation Results

Post workshop evaluations were given to 288 workshop attendees using TurningPoint response cards or paper evaluations. Results of evaluations are given below:

- Approximately 62% of attendees were pond/lake owners and 38% were lake managers, consultants, or pesticide applicators (including golf course superintendents).
- The workshop participants own or manage 1,322 acres of ponds and lakes.
- About 83% of attendees had never tested their pond/lake water quality.
- Over 93% of all attendees planned to take actions to better manage their ponds and lakes after attending the workshop. The most common actions planned were:
 - Properly identify aquatic plants and algae in pond/lake (48%)
 - Visit pond/lake web site (60%)
 - Take steps to reduce nutrients entering pond/lake (40%)
 - Test pond/lake water (51%)
 - Test pond/lake water (51%)
 - Change management of pond/lake fishery (30%)
 - Test pond/lake water (51%)
 - Change management of pond/lake fishery (30%)

APPLICANT: Shade Creek Watershed Association

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	1/3/2012
Group membership	55	Scoping meeting	N/A
Watershed	Shade Creek	DEP approval	2/24/2012
Watershed size	34 mi ²	Assistance began	2/25/2012
County	Somerset	Assistance completed	4/30/2012
In-kind match	\$50	Cost of assistance	\$574

Assistance provided by: Conemaugh Valley Conservancy

Assistance type: Watershed-specific technical assistance

Consultations	8
Trainings/workshops	1
Individuals assisted	3
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

Processed SCWA's request for a macroinvertebrate training and consulted on programming and training dates.

Assistance provided April 1 – June 30, 2012

Prepared PowerPoint presentations to complement a field component of a macroinvertebrate collection and identification training requested by SCWA. Approximately 10 people registered for the training through SCWA, but on the day of the event, no one showed up. SCWA's president later caught up to CVC and helped with a macroinvertebrate study.

APPLICANT: Stonycreek Conemaugh River Improvement Project

Applicant information:		Procedure information:	
New group?	No	Initial contact with group	2/14/2011
Group membership	90	Scoping meeting	N/A
Watershed	Little Conemaugh & Stonycreek	DEP approval	8/4/2011
Watershed size	659 mi ²	Assistance began	9/1/2011
County	Cambria & Somerset	Assistance completed	Ongoing
In-kind match	\$475	Cost of assistance	\$195

Assistance provided by: Conemaugh Valley Conservancy

Assistance type: Mentoring

Consultations	6
Trainings/workshops	0
Individuals assisted	30
Stream miles improved	N/A

Assistance provided January 1 – March 31, 2012

CVC is working with Saint Francis University, which has developed a Center for Watershed Service and Research that places students in work study or internship positions with local watershed associations. A student was placed with CVC and tasked with compiling historical and recent water quality data for summarization and presentation. A Saint Francis University professor also supervises the student. Unfortunately, the student has been slow to accomplish this task. CVC provides water quality reports at SCRIP's monthly meetings.

Assistance provided April 1 – June 30, 2012

The aforementioned work-study failed to fully complete his assigned tasks, so CVC did what it could in the time available to prepare and convey the dramatic improvements in the Stonycreek River to participants in the Stonycreek River of the Year celebration held June 16.

APPLICANT: Trout Run Watershed Association

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	5/23/2011
Group membership	19	Scoping meeting	N/A
Watershed	Trout Run	DEP approval	6/2/2011
Watershed size	7 mi ²	Assistance began	6/2/2011
County	Cambria	Assistance completed	8/31/2011
In-kind match	\$2,017	Cost of assistance	\$1,117

Assistance provided by: Conemaugh Valley Conservancy

Assistance type: Mentoring, QA/QC, & Watershed-specific technical assistance

Consultations	3
Trainings/workshops	1
Individuals assisted	7
Stream miles improved	N/A

Assistance provided July 1 – September 30, 2011

Prepared and conducted a macroinvertebrate collection and identification training for members. This included a field component where bugs and water chemistry were collected above and below the Puritan discharge on Trout Run. CVC confirmed identification of macroinvertebrates collected and identified bugs to Genus level. A summary report was prepared and provided to the Trout Run Watershed Association.

APPLICANT: Youghiogheny Riverkeeper

Applicant information:		Procedure information:	
New group?	Yes	Initial contact with group	7/2011
Group membership	N/A	Scoping meeting	N/A
Watershed	Multiple	DEP approval	10/4/2011
Watershed size	1,367 mi ²	Assistance began	N/A
County	Multiple	Assistance completed	N/A
In-kind match	N/A	Cost of assistance	\$1,000

Assistance provided by: United States Geological Survey (USGS)

Assistance type: Watershed-specific technical assistance

Consultations	N/A
Trainings/workshops	N/A
Individuals assisted	N/A
Stream miles improved	N/A

Overview of Assistance

The Youghiogheny Riverkeeper is charged with protecting and preserving the integrity and natural environment of the Youghiogheny River and its tributaries in Pennsylvania. The watershed covers 1,367 square miles in Pennsylvania, and there has never been a detailed monitoring plan implemented for this expansive area. Numerous entities have collected and are collecting data within the watershed. It is necessary to compile the water-quality data currently available for the basin to determine existing gaps in data collection. Once gaps are identified, a monitoring plan for the main stem and tributaries can be developed. USGS can provide assistance by helping to compile current and historical data, using GIS to spatially locate sampling points and compile attributes about the sample locations, and then help to determine a study design for a basin-wide monitoring program that would integrate with current sampling locations and avoid redundancy with other programs.

Requested Assistance

1. Help in the compilation of current and historical water-quality data.
2. Guidance with the development of a study design to implement a basin-wide monitoring program.

Assistance provided July 1 – September 30, 2011

For this period, assistance consisted primarily of planning through conference calls and email. The request to proceed is based on the information gathered during these planning efforts.

Assistance provided October 1 – December 31, 2011

Dan Galeone assisted with database compilation and design of monitoring programs.

Appendix E

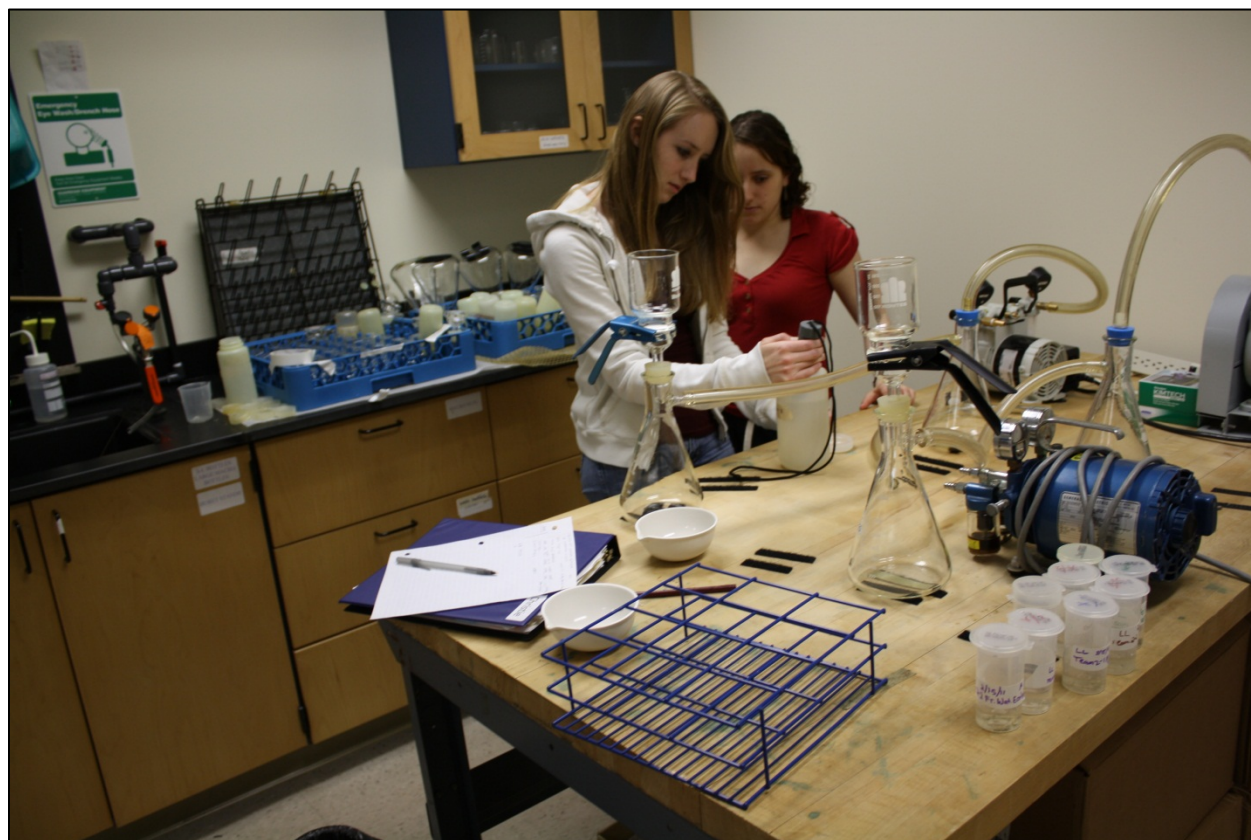
QUALITY CONTROL

Groups receiving assistance:

Number of Groups – 3

Individuals Assisted – 42

Total Water Samples Processed – 352



Water Chemistry Split Sampling

Provided by: Alliance for Aquatic Resource Monitoring at Dickinson College

Overview of ALLARM'S Quality Control Services Provided: The Highlights

Number of Groups Assisted: **3**

Number of Individuals Assisted: **42**

Water Samples Processed: **352**

Quality Assurance/Quality Control

Groups Assisted from July 1, 2011 – June 30, 2012:

Date	River Basin	Group	Parameters	# of Monitors	Total Samples Processed
July 2011	Susquehanna	EL Rose Conservancy	Conductivity • LaMotte • YSI TDS • LaMotte	2	12
September 2011	Susquehanna	God's Country Waterdogs	Conductivity • LaMotte • YSI TDS • LaMotte pH • EMD Science • YSI	2	20
October 2011	Delaware	Delaware Riverkeeper Network	Conductivity • LaMotte • YSI Chloride • Hach kit TDS • LaMotte	1	8
November 2011	Delaware	Delaware Riverkeeper Network	Conductivity • LaMotte • YSI Chloride • Hach kit TDS • LaMotte	12	96

Date	River Basin	Group	Parameters	# of Monitors	Total Samples Processed
December 2011	Susquehanna	EL Rose Conservancy	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI TDS <ul style="list-style-type: none"> • LaMotte 	2	12
December 2011	Delaware	Delaware Riverkeeper Network	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI Chloride <ul style="list-style-type: none"> • Hach kit TDS <ul style="list-style-type: none"> • LaMotte 	1	8
March 2012	Delaware	Delaware Riverkeeper Network	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI Chloride <ul style="list-style-type: none"> • Hach kit TDS <ul style="list-style-type: none"> • LaMotte 	4	32
April 2012	Delaware	Delaware Riverkeeper Network	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI Chloride <ul style="list-style-type: none"> • Hach kit TDS <ul style="list-style-type: none"> • LaMotte 	2	16
April 2012	Susquehanna	God's County Waterdogs	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI TDS <ul style="list-style-type: none"> • LaMotte pH <ul style="list-style-type: none"> • EMD Science • YSI 	1	10
May 2012	Susquehanna	God's County Waterdogs	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI TDS <ul style="list-style-type: none"> • LaMotte pH <ul style="list-style-type: none"> • EMD Science • YSI 	7	70

Date	River Basin	Group	Parameters	# of Monitors	Total Samples Processed
May 2012	Delaware	Delaware Riverkeeper Network	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI Chloride <ul style="list-style-type: none"> • Hach kit TDS <ul style="list-style-type: none"> • LaMotte 	2	16
June 2012	Susquehanna	God's County Waterdogs	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI TDS <ul style="list-style-type: none"> • LaMotte pH <ul style="list-style-type: none"> • EMD Science • YSI 	2	20
June 2012	Delaware	Delaware Riverkeeper Network	Conductivity <ul style="list-style-type: none"> • LaMotte • YSI Chloride <ul style="list-style-type: none"> • Hach kit TDS <ul style="list-style-type: none"> • LaMotte 	4	32

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2011 – 6/30/2012

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Began
DELAWARE							
Cabrini College: Watershed Citizenship Learning Community	Schuylkill River	1912	Montgomery	Delaware	DRN	WSTA	10/15/2010
Chester County Parks & Recreation	Schuylkill River	1912	Montgomery	Delaware	DRN	WSTA	12/15/2011
Chester Ridley Crum Watershed Association	Crum Creek	N/A	Delaware	Delaware	DRN	WSTA	10/5/2008
Clayton Park Recreational Area	Lake Henry	310 acres	Wayne	Delaware	PALMS	WSTA	N/A
Garret Hill Coalition	Darby Creek	77	Delaware	Delaware	DRN	WSTA	3/21/2012
Gold Key Lake Estates	Autumn, Fawn, Gold Key Lakes	3,146 acres	Pike	Delaware	PALMS	WSTA	N/A
Green Valleys Association	French, Pickering, Valley, Pigeon	N/A	Berks, Chester	Delaware	SWRC	WSTA	11/4/2011
Guardians for the Brandywine	Brandywine River	N/A	Chester	Delaware	SWRC	WSTA	1/12/2012
Haverford College	Schuylkill River	1912	Delaware	Delaware	DRN	WSTA	2/6/2012
Hay Creek Watershed Association	Hay Creek	N/A	Berks, Chester	Delaware	SWRC	WSTA	4/5/2011
Heritage Conservancy & Bristol Borough	Otter Creek	17 acres	Bucks	Delaware	DRN	WSTA	5/5/2009
Lackawaxen River Conservancy	Lackawaxen River	598	Lackawanna, Pike, Wayne	Delaware	DRN	WSTA	12/1/2009
Land Conservancy of Southern Chester County	Red Clay Creek	N/A	Chester	Delaware	SWRC	WSTA	3/20/2012
Landsdowne YMCA	Darby Creek	77	Delaware	Delaware	DRN	WSTA	6/8/2011
Limerick Township Historical Society	Schuylkill River	1912	Montgomery	Delaware	DRN	WSTA	12/15/2011
Mengel Natural History Society	Schuylkill River	1912	Berks	Delaware	DRN	WSTA	6/13/2012
Monroe County Conservation District	Tobyhanna, Tunkhannock	N/A	Carbon, Monroe	Delaware	PALMS	WSTA	N/A
Morrisville Borough & Morrisville EAC	Delaware River	13,539	Bucks	Delaware	DRN	WSTA	3/1/2011
North Coventry Township	Schuylkill River	1912	Chester	Delaware	DRN	WSTA	2/6/2012
Old Marcel Lake Property Owners Association	Dingman's Creek	2,700 acres	Pike	Delaware	PALMS	WSTA	8/15/2009
Pike/Wayne Trout Unlimited	Multiple	N/A	Pike, Wayne	Delaware	DRN	WSTA	7/2010
Primrose Creek Watershed Association	Delaware River	13,539	Bucks	Delaware	SWRC	WSTA	5/15/2012
Protecting Our Waters	Delaware River	13,539	Philadelphia	Delaware	DRN	WSTA	12/10/2010

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2011 – 6/30/2012 (continued)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Began
Radnor Residents Against Round Up	Darby Creek	77	Delaware	Delaware	DRN	WSTA	3/12/2012
Reading Area Community College	Schuylkill River	1,912	Montgomery	Delaware	DRN	WSTA	3/12/2012
Schuylkill Headwaters Association	Muddy Run	11	Schuylkill	Delaware	DRN	WSTA	12/20/2010
Seven Generations Charter School	Schuylkill River	1,912	Lehigh	Delaware	DRN	WSTA	3/19/2012
Silver Lake Nature Center	Otter Creek	N/A	Bucks	Delaware	DRN	WSTA	3/15/2011
Tobyhanna Creek/ Tunkhannock Creek Watershed Association	Tobyhanna Creek	129	Carbon, Monroe, Wayne	Delaware	USGS	WSTA	12/10/2010
Union Township EAC	Mill Creek	7	Berks	Delaware	DRN	WSTA	4/23/2009
Valley Forge Trout Unlimited	Valley Creek	23	Chester, Montgomery	Delaware	DRN	WSTA	4/28/2011
Worcester Elementary School	Zacharias Creek	N/A	Montgomery	Delaware	DRN	WSTA	9/2010
SUSQUEHANNA							
Buffalo Creek Watershed Alliance	Buffalo Creek	134	Union	Susquehanna	ALLARM	WSTA, M	8/29/2011
E.L. Rose Conservancy	Silver Creek	N/A	Susquehanna	Susquehanna	ALLARM	WSTA, QC	11/11/2010
Friends of the Little Aughwick Creek	Little Aughwick Creek	61	Fulton, Huntingdon	Susquehanna	ALLARM	M	8/28/2007
God's Country Waterdogs	Multiple	N/A	Potter	Susquehanna	ALLARM	WSTA, M, QC	6/3/2011
Lackawanna Trails High School	Tunkhannock Creek	413	Lackawanna	Susquehanna	ALLARM	WSTA	3/4/2011
Lake Roy Association	Lake Roy	61 acres	Susquehanna	Susquehanna	PALMS	WSTA	7/17/2009
Lower Penns Creek Watershed Association	Penns Creek	163	Snyder, Union	Susquehanna	ALLARM	WSTA, M	4/9/2009
Middle Spring Watershed Association	Middle Spring Creek	25	Cumberland, Franklin	Susquehanna	ALLARM	WSTA, M	7/16/2007
Mountain Lake	Mountain Lake	165 acres	Bradford	Susquehanna	PALMS	WSTA	N/A
North Lake Improvement Association	North Lake	137 acres	Luzerne	Susquehanna	PALMS	WSTA	8/30/2009
Potter County Conservation District	Multiple	N/A	Potter	Susquehanna	CVC	M, WSTA	9/26/2011
POTOMAC							
Antietam Watershed Association	Antietam Creek	94	Franklin	Potomac	ALLARM	M, WSTA	10/31/2003
Conococheague Watershed Alliance	Conococheague Creek	503	Franklin	Potomac	ALLARM	WSTA	5/5/2003
Franklin County Conservation District	Conococheague Creek	503	Franklin	Potomac	SWRC	WSTA	5/20/2010
Ridge and Valley Streamkeepers	Sideling Hill and Town Creeks	252	Bedford, Fulton	Potomac	ALLARM	M, WSTA	10/7/2003

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2011 – 6/30/2012 (continued)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Began
Watershed Alliance of Adams County	Multiple	N/A	Adams	Potomac	ALLARM	M, WSTA	7/12/2007
OHIO/MULTIPLE							
Allegheny County Conservation District	Allegheny, Monongahela	18,960	Allegheny	Ohio	CVC	M, WSTA	5/7/2012
Chestnut Ridge Trout Unlimited	Multiple	N/A	Multiple	Ohio	USGS	WSTA	7/2011
Conemaugh Valley Conservancy	Multiple	N/A	Multiple	Ohio	USGS	WSTA	9/2011
Penn State University: Pond & Lake Workshops	Multiple	N/A	Multiple	Multiple	PALMS	WSTA	2/7/2012
Shade Creek Watershed Association	Shade Creek	34	Somerset	Ohio	CVC	WSTA	2/25/2012
Stonycreek Conemaugh River Improvement Project	Little Conemaugh, Stonycreek	659	Cambria, Somerset	Ohio	CVC	M	9/1/2012
Trout Run Watershed Association	Trout Run	7	Cambria	Ohio	CVC	M, QC, WSTA	6/2/2011
Youghiogheny Riverkeeper	Multiple	1,367	Multiple	Ohio	USGS	WSTA	N/A