

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, 2010 – June 30, 2011

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
Delaware Riverkeeper Network
USDA Natural Resources Conservation Service
Pennsylvania Lake Management Society
Pennsylvania Association of RC&D Councils
Stroud Water Research Center
United States Geological Survey
Wilkes University - Center for Environmental Quality

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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 216 watershed organizations and assisted thousands of individuals. **In just the past year (July 1, 2010 – June 30, 2011), C-SAW partners have supported 61 organizations (31 new organizations and 30 continuing) and have assisted more than 2,337 individuals.** An increase in the number of new organizations assisted this year demonstrates the need for continued C-SAW support throughout Pennsylvania.

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 \$86,679, 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
DRN, Delaware Riverkeeper Network
NRCS, USDA-Natural Resources Conservation Service
PALMS, Pennsylvania Lake Management Society
SWRC, Stroud Water Research Center
USGS, United States Geological Survey
WILKES, Wilkes University - Center for Environmental Quality

C-SAW is guided by Pennsylvania's Resource Conservation & Development (**RC&D**) councils.

In 2011, the Conemaugh Valley Conservancy and its Kiski-Conemaugh Stream Team program became part of C-SAW. The Kiski-Conemaugh Stream Team will provide services within the Kiski-Conemaugh River Basin, which includes parts of Armstrong, Cambria, Indiana, Somerset and Westmoreland counties.

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
- Organizational assistance
- Enhanced capacity to implement watershed protection and restoration

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

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

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.

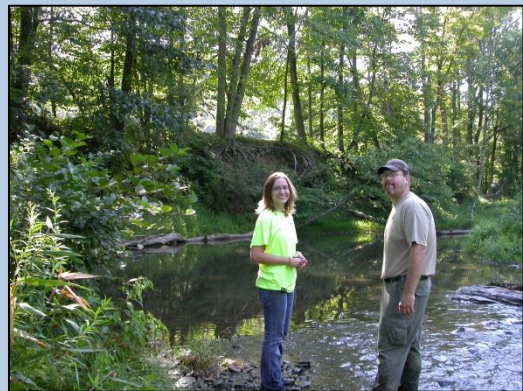
Quality Control:

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: Stream Reconnaissance

Melissa Reckner and James Eckenrode of Conemaugh Valley Conservancy pause for a picture during a reconnaissance visit of Tubmill Creek. The Conservancy is receiving C-SAW assistance from USGS so they will be able to determine appropriate locations for measurement of stage and streamflow, install staff plates, and make streamflow measurements at monitoring stations throughout the Kiski-Conemaugh River Basin.



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: Township and its Residents Green and Restore the Delaware River's Buffer

Morrisville EAC members and municipal officials hold a press conference and community field visit to highlight the restoration plans of the riparian buffer along the beautiful Delaware River running through Morrisville Borough in Bucks County. The C-SAW program has helped the EAC gain support and increase diversity of this 8.8 acre river front park that was overrun with the invasive plant, Japanese knotweed in many areas. Control of the knotweed is underway and once controlled, a diverse list of native plants to take its place are being planted to provide habitat for wildlife and people in the neighborhood who value and enjoy a healthy stream buffer and park.



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: Volunteers Help Control Norway Maples and other Invasive Plants Along Otter Marsh in Bristol Borough

Otter/Bristol marsh is one of the few remaining freshwater tidal marshes in the Delaware River Watershed. It's 17 acres is also home to six rare plant species and Natural Lands Trust, Silverlake Nature Center, and other neighbors from the borough are working hard to control invasive plants that are crowding out some the riparian buffer along the Marsh. C-SAW helped map and prioritize the problem invasive plants to set a plan in motion to control these invaders to return the buffer surrounding the marsh to a diverse and healthy habitat. Several work days, including this one held in the summer of 2010, have helped create momentum for a local community group to become "Friends of the Marsh" to watch over this important freshwater wetland and park for the long-term.



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.



Stroud Water Research Center led a macroinvertebrate workshop at the Friends of Silver Lake Nature Center in April. Participants learned the natural history of macroinvertebrates and had an opportunity to practice their identification skills.

Highlights of Services Provided through C-SAW: July 2010 – June 2011

Total number of groups assisted: **71**

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: **358**

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: **97**

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: **2,653**

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: **\$86,679**

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.

Appendix A

DELAWARE RIVER BASIN

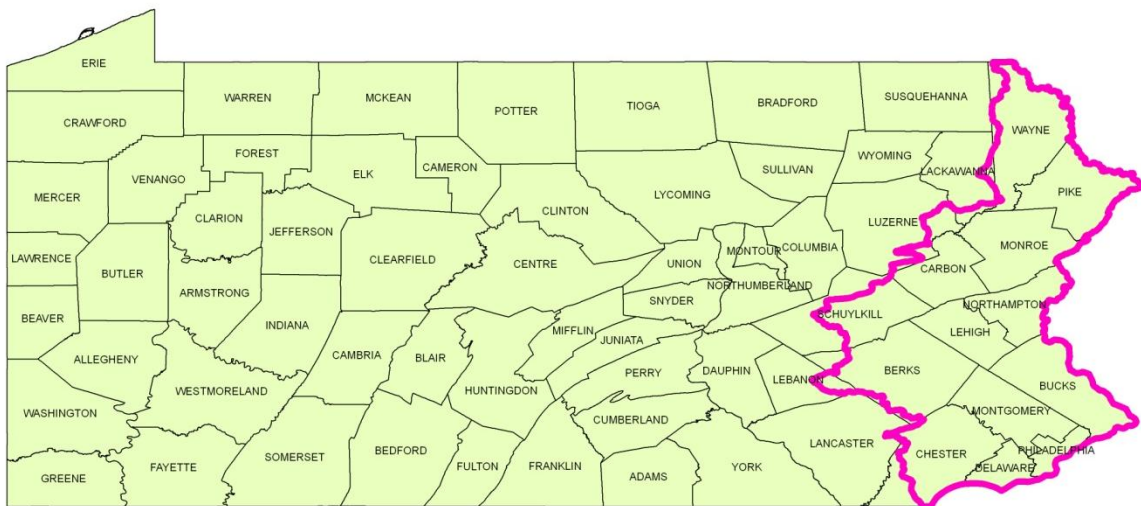
Groups receiving assistance:

Number of Groups – 43 (25 new and 18 continuing)

Consultations – 339

Trainings/Workshops – 85

Individuals Assisted – 2,346



Applicant: Abington Senior High School

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Wissahickon Watershed, Pennypack Creek, Tookany Watershed

Watershed Size: Multiple

County: Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: January 2011

DEP Approval to Proceed Date: January 2011

Date Assistance Began: January 2011

Date Assistance Completed: January 2011

Total Cost of Assistance: \$392

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **630**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **150**

Size of Watershed Assisted: **Multiple**

Assistance Provided January 1, 2011 – March 31, 2011

DRN participated in the January 17th event which brought together students from environmental groups from five school districts including Abington Senior High School. Two sessions on water quality threats were provided to the student body which consisted of about 150 students. Additional follow up and information was provided to teachers interested in engaging students on issues affecting the Delaware River.

Applicant: Abington Township

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Wissahickon Creek, Pennypack Creek, Tookany Creek

Watershed Size: N/A

County: Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: March 2011

DEP Approval to Proceed Date: March 2011

Date Assistance Began: March 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,800

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **55,000**

Total Number of Consultations Provided: **19**

Total Number of Trainings/Workshops Provided: **9**

Total Number of Individuals Assisted: **400**

Size of Watershed Assisted: **N/A**

Assistance Provided January 1, 2011 – March 31, 2011

DRN assisted Abington Township this quarter by: 1.) being a co-presenter for a “streamside living” workshop planned for this spring, 2.) providing a tour of the restored buffer at Roslyn Park answering questions about the importance, installation, and maintenance of healthy buffers, 3.) assisting with rain garden maintenance with volunteers and answering questions about stormwater BMP function, installation and maintenance; 4.) reviewing streambank stabilization plans as requested by the township to ensure ecologically-sound methods are used, 5.) providing a site visit to Roychester Park with township and neighborhood representatives to assist with development of a site plan including no-mow logistics and a planting plan, 6.) providing assistance as needed with the implementation of the no-mow and riparian buffer at Roychester Park.

Assistance Provided April 1, 2011 – June 30, 2011

DRN assisted Abington Township this quarter on removal of invasive plants from a riparian buffer and no mow zone establishment at Roychester Park with volunteers, maintenance of restored riparian buffer and rain garden at Roslyn Park with volunteers and presentation to landowners on watershed issues, streamside living, and stormwater management. A Q&A session on water quality threats to the Delaware River was also provided to the group.

Applicant: Birchwood Lakes

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Dingmans Creek

Watershed Size: 14 square miles

County: Pike

Lead C-SAW Provider: Wilkes University

Type of Assistance Provided: Watershed-Specific Technical Assistance and QA/QC

Date of Initial Contact with Group: April 2009

Date of Scoping Meeting: April 2009

DEP Approval to Proceed Date: May 2009

Date Assistance Began: May 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$4000

In-kind/Match Provided by Applicant Organization: \$4000

Overview of Assistance:

Approximate Group Membership: **1200**

Total Number of Consultations Provided: **10**

Total Number of Trainings/Workshops Provided: **3**

Total Number of Individuals Assisted: **60**

Size of Watershed Assisted: **14 square miles**

Assistance Provided July 1, 2010 – June 30, 2010

Assisted organization in developing water education program, private well owner outreach, and projects related to the implementation of BMPs within the community. Also gave presentations related to water usage and potential concerns related to Marcellus Shale Development.

Applicant: Blue Mountain Wildlife

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Schuylkill River

Watershed Size: 1912 square miles

County: Berks and Schuylkill

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: March 2011

Date Assistance Began: April 2011

Date Assistance Completed: N/A

Total Cost of Assistance: \$314

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **120**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **1**

Size of Watershed Assisted: **1912 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

Tasks included:

- Meeting to discuss Mill Creek (Hamburg) water quality, bacteria sampling and Schuylkill de-silting project
- Provide resources on PFBC approved cooperative nurseries
- Provide requested digital images on Schuylkill desilting process
- Provide resources on well water analysis, lab testing
- Provide resources on tree clearing along pipeline ROW

Applicant: Carbon County Environmental Education Center/ Carbon County Groundwater Guardians

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Lehigh River

Watershed Size: 381 square miles

County: Carbon

Lead C-SAW Provider: Wilkes University

Type of Assistance Provided: Mentoring

Date of Initial Contact with Group: March 2005

DEP Approval to Proceed Date: May 2009

Date Assistance Began: May 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$3000

In-kind/Match Provided by Applicant Organization: \$5000

Overview of Assistance:

Approximate Group Membership: **15**

Total Number of Consultations Provided: **15**

Total Number of Trainings/Workshops Provided: **7**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **381 square miles**

Assistance Provided July 1, 2010 – June 30, 2011

Worked with the organization to develop a private well owner outreach and assistance program, participated in local events in county and region, and assisted with a stormwater management program that included a series of rain barrel workshops. Discussed the development of sister or other groundwater guardian groups in Luzerne, Monroe, Potter, Wayne, and Pike County.

Applicant: Catawissa Creek Restoration Alliance

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Catawissa Creek

Watershed Size: 153 square miles

County: Columbia and Schuylkill

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: November 2009

DEP Approval to Proceed Date: August 2010

Date Assistance Began: August 2010

Date Assistance Completed: September 2010

Total Cost of Assistance: \$3,550

In-kind/Match Provided by Applicant Organization: \$328

Overview of Assistance:

Approximate Group Membership: **80**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **6**

Size of Watershed Assisted: **153 square miles**

Requested Assistance:

CSAW assistance from USGS is requested to help Catawissa Creek Restoration Alliance (CCRA) install non-recording stream-stage monitoring equipment at key water-quality sampling points to enable the collection of stream stage data with water-quality samples. USGS assistance is also requested to train CCRA members on collecting water quality and streamflow measurements.

Assistance Provided July 1, 2010 – September 30, 2010

Training on installation of equipment was provided in August –Sept. 2010. Assistance complete.

Applicant: Center in the Park Senior Environmental Corps

Applicant (new or continuing): Continuing
River Basin: Delaware
Watershed: Wissahickon Creek
Watershed Size: 64 square miles
County: Philadelphia
Lead C-SAW Provider: Stroud Water Research Center
Type of Assistance Provided: Mentoring
Date of Initial Contact with Organization: March 2002
DEP Approval to Proceed Date: May 2002
Date Assistance Began: April 2002
Date Assistance Completed: Ongoing
Total Cost of Assistance: N/A
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **30**
Total Number of Consultations Provided: **2**
Total Number of Trainings/Workshops Provided: **2**
Total Number of Individuals Assisted: **80**
Size of Watershed Assisted: **64 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

Forty students from the 6th grade class at John B. Kelley Elementary School and another forty 7th graders from Norwood-Fontbonne Academy participated in the State of Pennsylvania Water Snapshot program at Chestnut Hill College on April 15 and 29, respectively. This effort was coordinated with members of Center in the Park Senior Environmental Corp.

A SWRC educator provided a macroinvertebrate program at this event. Students learned how to determine the health of a stream by seeing what macroinvertebrates live in it. The students had a chance to look at the macroinvertebrates and try to identify them using microscopes and hand-lenses. After which, students sorted the insects into different sensitivity groups which helped them determine the health of the water sample with which they were working.

Applicant: Chester Ridley Crum Watershed Association

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Mill Creek

Watershed Size: N/A

County: Delaware

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: October 2008

Date Assistance Began: October 2008

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$3,000

In-kind/Match Provided by Applicant Organization: \$1,188

Overview of Assistance:

Approximate Group Membership: **2,500**

Total Number of Consultations Provided: **12**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

Out of initial CSAW funded work, a second public meeting was held on September 30th, 2010 for additional landowners to learn about what they can do to better protect their streamside properties. (This work was match time for CSAW but was made possible through initial work conducted through the CSAW program). As a result, DRN and CRC will be working with several landowners to implement stream restoration projects on their property (match time).

Assistance Provided October 1, 2010 – December 31, 2010

C-SAW assisted CRC with macro benthic sampling in the upper reaches of the Crum Creek this quarter.

Assistance Provided April 1, 2010 – June 30, 2011

C-SAW assisted CRC with lab information regarding macroinvertebrate analysis conducted by the group this quarter. The group is now conducting independent macro sampling on their own without further assistance or C-SAW assistance on site. Streamside and landowner field site visits were also conducted this quarter to determine best locations for restoration projects and to engage the community.

Applicant: Chester Ridley Crum Watershed Association

Applicant (new or continuing): Continuing
River Basin: Delaware
Watershed: Chester Creek, Crum Creek, and Ridley Creek
Watershed Size: 143 square miles
County: Chester and Delaware
Lead C-SAW Provider: Stroud Water Research Center
Type of Assistance Provided: Mentoring
Date of Initial Contact with Organization: March 2003
DEP Approval to Proceed Date: March 2003
Date Assistance Began: March 2003
Date Assistance Completed: Ongoing
Total Cost of Assistance: N/A
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **110**
Total Number of Consultations Provided: **4**
Total Number of Trainings/Workshops Provided: **2**
Total Number of Individuals Assisted: **10**
Size of Watershed Assisted: **143 square miles**

Assistance Provided October 1, 2010 – December 31, 2010

On November 13, SWRC staff provided the annual Water Quality Monitoring training in use of chemistry kits and quality assurance, quality control protocols for new monitors and a review for the other volunteers. Eight volunteers attended the workshop which took place at Widener University.

On December 10, two CRC volunteers worked with SWRC staff at Mill Hollow on Crum Creek. Because of proposed development, this High Quality section of the Crum may be threatened. This has been an informal sampling site in the past but CRC wanted some more qualitative documentation and training. We analyzed two surber net samples along a riffle and the data will be available for the DEP.

Applicant: Clayton Park Recreational Area

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Lake Henry

Watershed Size: 310 acres

County: Wayne

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: March 2010

DEP Approval to Proceed Date: N/A

Date Assistance Began: N/A

Date Assistance Completed: N/A

Total Cost of Assistance: \$516

In-kind/Match Provided by Applicant Organization: \$240

Overview of Assistance:

Approximate Group Membership: **400**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **70 acres**

Assistance Provided October 1, 2010 – December 31, 2010

Scoping meeting was held June 21, 2010. Assistance needed in developing a management plan for nutrient control, riparian buffers, fishery management, data collection (lake monitoring/training), data interpretation, and selection of appropriate beneficial BMP's.

Assistance Provided April 1, 2011 – June 30, 2011

Project on hold pending input from applicant.

Applicant: Darby Creek Valley Association

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Darby Creek

Watershed Size: 77 square miles

County: Chester, Delaware County, Montgomery and Philadelphia

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: January 2010

Date Assistance Began: January 2010

Date Assistance Completed: N/A

Total Cost of Assistance: \$952

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **500**

Total Number of Consultations Provided: **7**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **77 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN helped DCVWA with outreach to local marinas regarding maintenance dredging practices for the tidal section of Darby and its importance as an ideal recreation area for large metropolitan areas.

Assistance Provided October 1, 2010 – December 31, 2010

C-SAW helped DCWA with technical issues related to dredge spoil issues near the mouth of the Darby Creek and the Delaware River.

Assistance Provided January 1, 2011 – March 31, 2011

Assistance provided related to dredge spoils in Tinicum Township, PA.

Applicant: Delaware River Fisherman's Association

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Delaware River

Watershed Size: Multiple

County: Bucks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: February 2011

DEP Approval to Proceed Date: February 2011

Date Assistance Began: February 2011

Date Assistance Completed: February 2011

Total Cost of Assistance: \$305

In-kind/Match Provided by Applicant Organization: \$166

Overview of Assistance:

Approximate Group Membership: **300**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **Multiple**

Assistance Provided January 1, 2011 – March 31, 2011

Maya van Rossum, the Delaware Riverkeeper presented to the club on 2/24/11 and there were 50 people who attended the presentation.

Applicant: Friends of Mingo Creek

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Mingo Creek

Watershed Size: N/A

County: Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: November 2010

Date Assistance Began: November 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$224

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **3**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **N/A**

Assistance Provided October 1, 2010 – December 31, 2010

Assisted with messaging around buffers and floodplains.

Applicant: Friends of Silver Lake Nature Center

Applicant (new or continuing): New
River Basin: Delaware
Watershed: N/A
Watershed Size: N/A
County: Bucks
Lead C-SAW Provider: Stroud Water Research Center
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: February 2011
DEP Approval to Proceed Date: March 2011
Date Assistance Began: March 2011
Date Assistance Completed: April 2011
Total Cost of Assistance: N/A
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **24**
Total Number of Consultations Provided: **3**
Total Number of Trainings/Workshops Provided: **1**
Total Number of Individuals Assisted: **12**
Size of Watershed Assisted: **N/A**

Assistance Provided January 1, 2011 – March 31, 2011

SWRC spoke to FSLNC over the phone a few times to determine what type of training could be provided for a group of regional environmental educators who gather several times a year for refresher training.

FSLNK is requesting a 2-3 hour macroinvertebrate refresher and I.D. practice to take place on April 15.

Assistance Provided April 1, 2011 – June 30, 2011

A SWRC educator provided a three-hour macroinvertebrate training to a group of 11 non-formal educators who are members of ACED. ACED is represented by over two-dozen environmental educators from regional nature centers. ACED members get together several times a year to provide training to/for one another so that they are always staying current and sharp on their expertise.

This particular training started with a power point presentation outlining the natural history and feeding preferences/adaptations of certain macroinvertebrates. The participants then had an opportunity to practice their identification skills using live macroinvertebrates.

Applicant: Greenbelt Overhaul Alliance of Levittown

Applicant (new or continuing): New
River Basin: Delaware
Watershed: Neshaminy Creek
Watershed Size: 236 square miles
County: Bucks
Lead C-SAW Provider: Stroud Water Research Center
Type of Assistance Provided: Mentoring
Date of Initial Contact with Group: November 2009
DEP Approval to Proceed Date: January 2010
Date Assistance Began: June 2010
Date Assistance Completed: N/A
Total Cost of Assistance: N/A
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **N/A**
Total Number of Consultations Provided: **3**
Total Number of Trainings/Workshops Provided: **3**
Total Number of Individuals Assisted: **10**
Size of Watershed Assisted: **236 square miles**

Assistance Provided July 1, 2010 – December 31, 2010

GOAL has successfully lead efforts throughout the Greater Levittown area for stream clean-ups as well as tree planting projects but are now interested in monitoring some of the streams they have cleaned or helped restore. On July 27 and again on August 31, a Stroud educator provided two presentations at the Levittown Library. These presentations, in particular, were part of an effort to educate and recruit citizens to become volunteer stream monitors for GOAL.

The focus of the presentation on July 27 was macroinvertebrates; who they are, why they matter and how to identify them. The August 31 presentation was focused on streamside forests and their influence on streams as well as background information on water chemistry testing parameters. Participants also conducted pH, nitrates, and water temperature tests on several different water samples so as to give them hands-on experiences and provide them some technical training before officially going into the field. The field day will be scheduled for sometime in late 2010 or early 2011.

Assistance Provided April 1, 2011 – June 30, 2011

The focus of the power point presentation on April 27 was on macroinvertebrates: who they are, why they matter and how to identify them. Participants practiced macroinvertebrate identification with live insects in effort to give them hands-on experiences and provide them some technical training before officially going into the field.

Seven individuals gathered at the Adventureland Day Camp in Bensalem on Saturday, May 7, for a field-experience where they had a chance to collect and identify macroinvertebrates and conduct water chemistry tests on the Neshaminy Creek.

Applicant: Gold Key Lake Estates

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Autumn, Fawn, and Gold Key Lakes

Watershed Size: 3,146 acres

County: Pike

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: April 2010

DEP Approval to Proceed Date: N/A

Date Assistance Began: N/A

Date Assistance Completed: N/A

Total Cost of Assistance: \$612

In-kind/Match Provided by Applicant Organization: \$320

Overview of Assistance:

Approximate Group Membership: **4,000**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **4**

Size of Watershed Assisted: **146 acres**

Assistance Provided October 1, 2010 – December 30, 2010

Scoping meeting was held June 29, 2010. Assistance needed in developing a management plan for nutrient control with minimum to no herbicide treatment, riparian buffers, fishery management, data collection (lake monitoring/training), data interpretation, and selection of appropriate beneficial BMP's.

Assistance Provided April 1, 2011 – June 30, 2011

Project on hold pending input from applicant.

Applicant: Hamburg Area School District

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Mill Creek

Watershed Size: 17 square miles

County: Berks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: March 2009

Date Assistance Began: March 2009

Date Assistance Completed: N/A

Total Cost of Assistance: \$28

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **100**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **17 square miles**

Assistance Provided January 1, 2011 – March 30, 2011

Teachers reached out to CSAW regarding spring macroinvertebrate sampling on Mill Creek. DRN suggested a data analysis workshop to assist the students to using the data collected the past few years for this stream at various locations to improve the water quality designation of the stream. At this time, the teachers did not want to pursue this data to action with the kids. DRN did not meet up with the teachers for another round of sampling this spring but provided materials for the teachers to hold the similar sampling lesson as past years.

Applicant: Heritage Conservancy and Bristol Borough

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Otter Creek and Marsh

Watershed Size: 17+ acres – unique tidal wetland

County: Bucks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: May 2009

Date Assistance Began: May 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,700

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **600**

Total Number of Consultations Provided: **8**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **100**

Size of Watershed Assisted: **17+ acres – unique tidal wetland**

Assistance Provided July 1, 2010 – September 30, 2010

This quarter tasks included: Assistance with publication of generated invasive plant map for Bristol Marsh and follow up with workday volunteers.

Assistance Provided October 1, 2010 – December 31, 2010

This quarter tasks included: Assistance with publication of generated invasive plant map for Bristol Marsh and follow up with workday volunteers.

Assistance Provided January 1, 2011 – March 31, 2011

Assistance to HC on invasive control, buffer planting, and monitoring plans at Bristol Marsh.

Assistance Provided April 1, 2011 – June 30, 2011

Another invasives control day with volunteers from the community was conducted this spring with assistance from CSAW along Otter Creek and Bristol Marsh.

Applicant: Honesdale Country Club

Applicant (New or Continuing): Continuing

River Basin: Delaware

Watershed: Kellows Lake/Lackawaxen Creek

Watershed Size: 1 square mile

County: Wayne

Lead C-SAW Provider: Wilkes University

Type of Assistance Provided: Mentoring

Date of Initial Contact with Group: March 2009

DEP Approval to Proceed Date: July 2010

Date Assistance Began: October 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$3000

In-kind/Match Provided by Applicant Organization: \$2500

Overview of Assistance:

Approximate Group Membership: **55**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **4**

Total Number of Individuals Assisted: **65**

Size of Watershed Assisted: **1 square mile**

Assistance Provided July 1, 2010 – June 30, 2010

The main goal of the outreach was to aid the organization in selecting and purchasing water quality monitoring equipment, preparing the equipment, and training of citizens.

Applicant: Immaculate Conception Academy School

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Hay Creek and Six Penny Creek

Watershed Size: N/A

County: Berks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: March 2011

DEP Approval to Proceed Date: April 2011

Date Assistance Began: April 2011

Date Assistance Completed: April 2011

Total Cost of Assistance: \$527

In-kind/Match Provided by Applicant Organization: \$26

Overview of Assistance:

Approximate Group Membership: **26**

Total Number of Consultations Provided: **4**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **33**

Size of Watershed Assisted: **Multiple**

Assistance Provided April 1, 2011 – June 30, 2011

A workshop was provided on April 29, 2011 for the school and parents. Tasks included: coordinate with school; prepare presentation; follow up with school after presentation, and provide copy of presentation for future use by teachers.

Applicant: Indian Mountain Lakes Community Association

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Mud Run

Watershed Size: N/A

County: Monroe

Lead C-SAW Provider: Wilkes University

Type of Assistance Provided: Mentoring and QA/QC

Date of Initial Contact with Group: April 2009

DEP Approval to Proceed Date: May 2009

Date Assistance Began: July 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$4000

In-kind/Match Provided by Applicant Organization: \$5000

Overview of Assistance:

Approximate Group Membership: **6,000**

Total Number of Consultations Provided: **12**

Total Number of Trainings/Workshops Provided: **4**

Total Number of Individuals Assisted: **N/A**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – June 30, 2010

During the period we conducted approximately 12 visits to the project area to conduct split sampling as part of a QC/QA program, aid the Association in contacting a consultant to assist with issues of bacterial contamination, provide insights into the source of bacterial contamination based on the QC/QA data, conducted education outreach program related to groundwater, surfacewater, and urban runoff. QC testing included bacteria, pH, conductivity, nitrate, and phosphates. Attendance at the outreach program was approximately 500 individuals.

Applicant: Lackawaxen River Conservancy

Applicant (new or continuing): Continuing
River Basin: Delaware
Watershed: Lackawaxen River
Watershed Size: 598 square miles
County: Lackawanna, Pike, and Wayne
Lead C-SAW Provider: Delaware Riverkeeper Network
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: N/A
DEP Approval to Proceed Date: December 2009
Date Assistance Began: December 2009
Date Assistance Completed: N/A
Total Cost of Assistance: \$3,200
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **300**
Total Number of Consultations Provided: **18**
Total Number of Trainings/Workshops Provided: **2**
Total Number of Individuals Assisted: **100**
Size of Watershed Assisted: **598 square miles**

Assistance Provided July 1 – September 30, 2010

DRN continued follow up and assistance related to the new monitoring initiative begun in March of 2010 for the Lackawaxen Watershed. As a result of the C-SAW monitoring workshop held on Sept 18th, about five more monitors will be adding stations in the Lackawaxen drainage area. This project is a multi-organization monitoring effort involving TLRC, Wayne County Conservation District, DRN, and PA Trout Unlimited. The focus is collection of conductivity, chloride, temp, salinity, and TDS to determine seasonal changes over time before gas drilling moves into this region.

Assistance Provided October 1 – December 31, 2010

DRN continued follow up assistance and QA/QC sampling was conducted this quarter.

Assistance Provided January 1, 2011 – March 31, 2011

Work on understanding a proposed water withdrawal permit on the Lackawaxen was provided to the group to inform their comment on the proposal. Meter assistance and QA/QC was also conducted.

Assistance Provided April 1, 2011 – June 30, 2011

Assistance this quarter involved pipeline surveillance as construction begins in the region. The June 25th workshop also had several members in attendance to boost their monitoring of the Lackawaxen and surrounding tributaries. Hobart Quarry expansion is also being discussed with the group to assist them with technical comments based on the quarry's expansion plan and the wet crossing planned for pipeline construction is also being discussed with the group as they plan to monitor E&S concerns related to this pipeline crossing using a visual assessment.

Applicant: Lansdowne YMCA

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Darby Creek

Watershed Size: 77 square miles

County: Delaware

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: April 2011

DEP Approval to Proceed Date: June 2011

Date Assistance Began: June 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$784

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **1,500**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **13**

Size of Watershed Assisted: **77 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

DRN met with three leaders of the YMCA to discuss potential options on the property to reduce stormwater and improve native wildlife habitat and options to incorporate projects with the YMCA child programs. A native planting day is scheduled for the 4th of July weekend to begin converting a turf area into a native plant garden and the YMCA is working to get plants donated for the project. The group has also expressed interest in a larger rain garden project on property grounds this fall and the incorporation of signage to educate camp members. The July 3rd planting will begin the process and the group will outreach to members to engage new people about protecting water quality.

Applicant: Maiden Creek Watershed Association

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Maiden Creek

Watershed Size: 216 square miles

County: Berks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: January 2009

Date Assistance Began: January 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$168

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **80**

Total Number of Consultations Provided: **7**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **216 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN assisted the group with coordination on bacteria sampling and MCWA trained an intern to collect samples at seven stations in the Maiden Creek where pollution problems are expected. Help was provided interpreting results and developing action steps to clean up pollution. Samples were collected in July, August and September.

Assistance Provided October 1, 2010 – December 31, 2010

C-SAW assisted the group with coordination on bacteria sampling and MCWA trained an intern to collect samples at seven stations in the Maiden Creek where pollution problems are expected. Help was provided interpreting results and developing action steps to clean up pollution. Samples were collected in July, August and September.

Assistance Provided April 1, 2011 – June 30, 2011

C-SAW assisted MCWA this quarter regarding water quality monitoring tasks and follow up on bacteria violations as well as invasive species removal.

Applicant: Marple Citizens United

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Crum Creek

Watershed Size: 250 square miles

County: Delaware

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: July 2010

Date Assistance Began: July 2010

Date Assistance Completed: December 2010

Total Cost of Assistance: \$224

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **250 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN corresponded with the group and visited the woods and tributary to discuss potential runoff issues related to the development. According to the current footprint of the development, affects to the tributary should be limited. Monitoring assistance will occur if additional site plans warrant a field snapshot.

Assistance Provided October 1, 2010 – December 31, 2010

Correspondence via email was conducted but limited pertaining to stormwater runoff issues at the site.

Applicant: Monroe Conservation District

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Tobyhanna Creek and Tunkhannock Creek

Watershed Size: N/A

County: Carbon and Monroe

Lead C-SAW Provider: PALMS and USGS

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: December 2010

DEP Approval to Proceed Date: N/A

Date Assistance Began: N/A

Date Assistance Completed: N/A

Total Cost of Assistance: \$625

In-kind/Match Provided by Applicant Organization: \$100

Overview of Assistance:

Approximate Group Membership: **230**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **N/A**

Size of Watershed Assisted: **N/A**

Assistance Provided October 1, 2010 – December 30, 2010

This request for assistance has two parts. The stream part will be handled by USGS, and the Lake related part will be handled by PALMS. A scoping meeting is being planned for late January/early February.

Assistance Provided January 1, 2011 – March 31, 2011

This request for assistance has two parts. The stream part will be handled by USGS, and the Lake related part will be handled by PALMS. A scoping meeting is being planned for late April.

Assistance Provided April 1, 2011 – June 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.

Applicant: Morrisville Environmental Advisory Council

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Delaware River

Watershed Size: 13,000 square miles

County: Bucks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: April 2009

Date Assistance Began: April 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,000

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **8**

Total Number of Consultations Provided: **12**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **1,300 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN provided technical assistance related to Japanese knotweed control for this riverfront park.

Through this work and the work of the EAC, this parcel of riverfront land is forever preserved and to remain as open space. A press conference and tour of the **8.8 acre park** was provided by DRN, the EAC, and municipal officials on Sept 22nd and drew over 40 residents to the park to discuss the restorations planned for this parcel. This borough values their riverfront property and the EAC is making efforts to continue work to restore the land.

Assistance Provided January 1, 2011 – March 30, 2011

DRN provided the EAC with guidance on grant writing.

Applicant: Old Marcel Lake Property Owners Association

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Dingman's Creek Watershed

Watershed Size: 2,700 acres

County: Pike

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: May 2009

DEP Approval to Proceed Date: March 2011

Date Assistance Began: August 2009

Date Assistance Completed: N/A

Total Cost of Assistance: \$1,168

In-kind/Match Provided by Applicant Organization: \$140

Overview of Assistance:

Approximate Group Membership: **120**

Total Number of Consultations Provided: **3**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **2**

Size of Watershed Assisted: **27 acres**

Assistance Provided July 1, 2010 – September 30, 2010

Scope of work with cost is in preparation.

Assistance Provided January 1, 2011 – March 31, 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 April 1, 2011 – June 30, 2011

Hanover Engineering met with the Old Marcel Lake Property Owner's Association representative to discuss the approved C-SAW Program monitoring work and training plans. Logistics were discussed, and dates were set for subsequent meetings and training events.

Applicant: Penn Township

Applicant (new or continuing): New
River Basin: Delaware
Watershed: White Clay Creek and Elk Creek
Watershed Size: N/A
County: Chester
Lead C-SAW Provider: Stroud Water Research Center
Type of Assistance Provided: Mentoring
Date of Initial Contact with Organization: May 2010
DEP Approval to Proceed Date: May 2010
Date Assistance Began: May 2010
Date Assistance Completed: N/A
Total Cost of Assistance: \$3,000
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **N/A**
Total Number of Consultations Provided: **2**
Total Number of Trainings/Workshops Provided: **N/A**
Total Number of Individuals Assisted: **N/A**
Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

On September 25, a Stroud educator brought the Stroud Water Research Center display board along with live macroinvertebrates to the Penn Township Community Picnic. Stroud's presence during this event was in effort to recruit citizens to volunteer for the township's citizen volunteer monitoring program they hope to start.

Applicant: Pike/Wayne Trout Unlimited

Applicant (new or continuing): New
River Basin: Delaware
Watershed: Zacharias Creek
Watershed Size: N/A
County: Pike and Wayne
Lead C-SAW Provider: Delaware Riverkeeper Network
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: N/A
DEP Approval to Proceed Date: July 2010
Date Assistance Began: July 2010
Date Assistance Completed: Ongoing
Total Cost of Assistance: \$4,500
In-kind/Match Provided by Applicant Organization: \$2,293.50

Overview of Assistance:

Approximate Group Membership: **200**
Total Number of Consultations Provided: **36**
Total Number of Trainings/Workshops Provided: **7**
Total Number of Individuals Assisted: **30**
Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – Sept 30, 2010

DRN assisted with kit selection and acquisition as well as protocol development. A workshop with thirty participants took place on Sept 18, 2010 in Honesdale, PA to train both TU members as well as other members from the community in natural gas monitoring techniques for streams. After the workshop, assistance with sampling locations was also conducted and TU has at least eight new stations established with the new volunteer monitors. Data collected includes conductivity, temp, salinity, TDS, and chloride as well as visual assessments.

Assistance Provided October 1, 2010 – December 31, 2010

Assistance was provided to individual monitors this quarter with protocol and sampling questions and help with site station ID. The group also conducted QA/QC through ALLARM's program through C-SAW.

Assistance Provided January 1, 2011 – March 31, 2011

Continued assistance was provided to individual monitors with sampling questions and help with site station ID. The group has their datasets compiled by DRN but also plans to sponsor more kits to expand the program. They follow standard operating procedures for volunteer monitoring.

Assistance Provided April 1, 2011 – June 30, 2011

DRN provided a monitoring workshop to Wayne County residents on June 25, 2011 and several members of TU. In addition, assistance was provided to individual monitors this quarter with protocol and sampling questions and help with site station ID. Data were also compiled for the group to assist with public comment on water withdrawal permits.

Applicant: Protecting Our Waters

Applicant (new or continuing): New
River Basin: Delaware
Watershed: Delaware River and Schuylkill River
Watershed Size: 13,539 square miles
County: Delaware and Philadelphia
Lead C-SAW Provider: Delaware Riverkeeper Network
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: January 2009
DEP Approval to Proceed Date: December 2010
Date Assistance Began: December 2010
Date Assistance Completed: Ongoing
Total Cost of Assistance: \$2,900
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **550**
Total Number of Consultations Provided: **56**
Total Number of Trainings/Workshops Provided: **8**
Total Number of Individuals Assisted: **550**
Size of Watershed Assisted: **13,539 square miles**

Assistance Provided October 1, 2010 – December 31, 2010

DRN assisted POW at four meetings and outings during this quarter and provided feedback on factsheets and other technical documents regarding water quality issues in the Basin. Monitoring related information and technical protocols were also provided to the group as they field questions from citizens living in the Upper Delaware Region.

Assistance Provided January 1, 2011 – March 31, 2011

DRN assisted POW providing feedback on factsheets and other technical documents regarding water quality issues in the Basin related to marcellus shale drilling and DRBC requirements. A presentation on the DRBC regulations was also conducted and POW members attended. Monitoring related information and technical protocols were provided to the group as they field questions from citizens living in the Upper Delaware Region.

Assistance Provided April 1, 2011 – June 30, 2011

Monitoring related information and technical protocols were provided to the group as they field questions from citizens living in the Upper Delaware Region. Assistance with a September conference on marcellus shale in Philadelphia is also underway regarding speaker selection, topic needs, and coordination with groups throughout the state of PA. Assistance with volunteer recruitment and retention also provided.

Applicant: Schuylkill Headwaters Association

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Muddy Branch

Watershed Size: 11 square miles

County: Schuylkill

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: December 2010

Date Assistance Began: December 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,900

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **600**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **11 square miles**

Assistance Provided October 1, 2010 – December 31, 2010

DRN met up with SHA in the field at the Branchdale site in December to examine the options for a proposed daylighting project.

Assistance Provided January 1, 2011 – March 31, 2011

Follow up documents and suggestions were provided to SHA on site visits performed with the group in December for daylighting and restoration options.

Assistance Provided April 1, 2011 – June 30, 2011

Follow up documents and suggestions were provided to SHA on site visits performed with the group in December for daylighting and restoration options. Information was also provided to SHA and Schuylkill County Conservation District related to marcellus shale drilling and the formation of a Schuylkill County Marcellus Shale Taskforce.

Applicant: Schuylkill Headwaters Association, Inc.

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Muddy Run

Watershed Size: 11 square miles

County: Schuylkill

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: December 2009

DEP Approval to Proceed Date: February 2010

Date Assistance Began: February 2010

Date Assistance Completed: September 2010

Total Cost of Assistance: \$3,564

In-kind/Match Provided by Applicant Organization: \$636

Overview of Assistance:

Approximate Group Membership: **70**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **3**

Total Number of Individuals Assisted: **10**

Size of Watershed Assisted: **11 square miles**

Background:

Schuylkill Headwaters Association (SHA) respectfully requests technical assistance from the U.S. Geological Survey (USGS) for oversight and training on the monitoring of the Otto Discharge and Tracy Airhole Treatment systems that were built to treat discharges from abandoned mine drainage sites in Schuylkill County. Although USGS completed a report on the first-year performance of the Otto Discharge Treatment system, the SHA would like to collect additional data to evaluate the effectiveness of the treatment system in precipitating dissolved iron with the implementation of a newly installed aeration system. For comparison, monitoring of another aeration treatment system at the Tracy Airhole discharge will also be conducted by SHA.

Assistance is needed to help SHA to establish a monitoring protocol to evaluate the performance of the aeration treatment systems, as well as train AmeriCorps VISTA members and interns in the scientific aspects of monitoring water quality and flow at the treatment systems. The AmeriCorps VISTA member will utilize the information/training gathered through the C-SAW assistance to present the information to the SHA as well as the other five watershed associations within Schuylkill County. All the watershed associations in Schuylkill County are engaged in efforts to improve water quality affected by abandoned mine drainage. The information/training that will be provided by USGS will enable the AmeriCorps VISTA volunteers to assist these watershed associations to understand the potential benefits of aeration when treating mine discharges with near neutral pH and large amounts of dissolved iron. In addition, the Pennsylvania Bureau of Abandoned Mine Reclamation has pledged their support in the form of running lab tests on collected samples. The laboratory analyses will be especially useful when combined with carefully collected field water quality data. All collected information will be shared among

interested parties and collected data will be made available to the public/watershed organizations upon request.

Requested Assistance:

1 day in field with OSM-VISTA volunteers at Otto Discharge site to select monitoring sites and review methods for collecting stage, flow, and water-quality data. This will involve hands-on training and assistance with water-quality measurement equipment (YSI 5600), weir usage, and sample processing. While at the site we may attempt to conduct a tracer test with dye and/or sodium bromide to evaluate short circuiting.

1 day in field with OSM-VISTA volunteers at Tracy Airhole Discharge site for hands-on training and assistance with water-quality monitoring and streamflow measurements at selected sites. This will repeat some of the training from the visit to Otto but also will include streamflow measurement using wading method on Good Spring Creek. This site is more complex and requires upstream-downstream measurement as well as inflow-outflow monitoring to judge treatment performance.

1 day in the office with OSM-VISTA volunteers to help with data analysis, specifically the computation of redox characteristics, acidity, flow values, contaminant loads, and detention time within the treatment system, and the comparison of these with other water-quality data to evaluate performance.

Assistance Provided July 1, 2010 – September 30, 2010

Reviewed results from monitoring at Otto and Tracy wetlands. The lab data and flow data have recently become available, and Cravotta met with the applicant to help provide training on computing loads, retention time, and removal rates.

Applicant: St. Lukes Church and Education Group

Applicant (new or continuing): New

River Basin: Delaware River

Watershed: Wissahickon Creek, Pennypack Creek, Tookany Creek

Watershed Size: 2,000 square miles

County: Chester

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: May 2011

DEP Approval to Proceed Date: May 2011

Date Assistance Began: May 2011

Date Assistance Completed: June 2011

Total Cost of Assistance: \$542

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **500**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **44**

Size of Watershed Assisted: **2,000 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

C-SAW provided a one hour presentation to the group of about 45 people on June 5, 2011.

Applicant: Tobyhanna Creek/Tunkhannock Creek Watershed Association

Applicant (new or continuing): New
River Basin: Delaware
Watershed: Tobyhanna Creek
Watershed Size: 129 square miles
County: Carbon, Monroe, and Wayne
Lead C-SAW Provider: U.S. Geological Survey
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Organization: November 2010
DEP Approval to Proceed Date: December 2010
Date Assistance Began: December 2010
Date Assistance Completed: Ongoing
Total Cost of Assistance: \$6,200
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **230**
Total Number of Consultations Provided: **4**
Total Number of Trainings/Workshops Provided: **1**
Total Number of Individuals Assisted: **8**
Size of Watershed Assisted: **129 square miles**

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 October 1, 2010 – December 31, 2010

Consultations with Monroe County Conservation District Watershed Specialist were conducted to better define the scope of the extent of the assistance needed. Automatic samplers were picked up by the USGS for testing, upgrades.

Assistance Provided January 1, 2011 – April 30, 2011

Automatic samplers were evaluated, tested, and upgraded. A draft scope of work was prepared with input from the Monroe County Conservation District and the TC/TCWA Board of Directors. A training session on contaminants of interest, sampling strategies, sampling procedures, and operation of automatic samplers was conducted.

Assistance Provided April 30, 2011 – June 30, 2011

Phone conference held on May 13, 2011 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.

Applicant: Twin Brooks Preserve

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Ridley Creek

Watershed Size: 38 square miles

County: Chester

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: August 2009

Date Assistance Began: August 2009

Date Assistance Completed: N/A

Total Cost of Assistance: \$560

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **25**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **5**

Size of Watershed Assisted: **38 square miles**

Assistance Provided July 1 – September 30, 2010

DRN visited the potential dam removal project in July. Follow-up recommendations were provided to Twin Brooks landowner to consider for this small headwater tributary of Ridley Creek.

Recommendations for better meadow management were also provided at the request of the landowner.

Assistance Provided October 1, 2010 – December 31, 2010

C-SAW provided guidance on dam removal and followed up with suggestions for needed permitting steps to remove the remaining low head dam. DRN also assisted with information regarding the control of five leaf akebia on the property.

Applicant: Union Township EAC

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Mill Creek

Watershed Size: 7 square miles

County: Berks

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: April 2009

Date Assistance Began: April 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$550

In-kind/Match Provided by Applicant Organization: \$3,000

Overview of Assistance:

Approximate Group Membership: **2,500**

Total Number of Consultations Provided: **15**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **7 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN is assisting the EAC with the development and technical aspects of a stream upgrade petition based on the benthic survey results conducted in the spring.

Assistance Provided October 1, 2010 – December 31, 2010

C-SAW continued assistance related to Mill Creek and redesignation of this WWF. A field day to sample water chemistry with local volunteer monitors was also conducted within French Creek State Park in December. Berks County Conservation District is also involved with this work.

Assistance Provided January 1, 2011 – March 31, 2011

DRN assisted Union Township EAC with the report and submission of the stream redesignation petition which occurred this quarter based on benthic data collected for the stream. A joint meeting with French Creek State Park and Union Township EAC was also conducted. This time was considered match time for CSAW.

Assistance Provided April 1, 2011 – June 30, 2011

DRN assisted Union Township EAC with the report and submission of the stream redesignation petition which occurred this quarter based on benthic data collected for the stream and DRN presented at the EQB hearing on behalf of Union, Berks, and Chester Counties, and DCNR – all of whom were co-petitioners in the submission. Union EAC members accompanied DEP in the field to determine sampling stations for the stream in April.

Applicant: Valley Forge Trout Unlimited

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Valley Creek

Watershed Size: 23 square miles

County: Chester and Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: April 2011

DEP Approval to Proceed Date: April 2011

Date Assistance Began: April 2011

Date Assistance Completed: N/A

Total Cost of Assistance: \$840

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **500**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **50**

Size of Watershed Assisted: **23 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

A site visit was conducted to stream restoration sites and communication on stream restoration techniques and approaches were provided by E. Gutzler. Assistance on event planning and rally planning was also provided by C. Towne.

Applicant: Watershed Citizenship Learning Community Cabrini College

Applicant (new or continuing): New
River Basin: Delaware
Watershed: Schuylkill River
Watershed Size: 13,000 square miles
County: Montgomery
Lead C-SAW Provider: Delaware Riverkeeper Network
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: N/A
DEP Approval to Proceed Date: October 2010
Date Assistance Began: October 2010
Date Assistance Completed: Ongoing
Total Cost of Assistance: \$840
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **450**
Total Number of Consultations Provided: **6**
Total Number of Trainings/Workshops Provided: **1**
Total Number of Individuals Assisted: **25**
Size of Watershed Assisted: **13,000 square miles**

Assistance Provided October 1, 2010 – December 31, 2010

Workshops and presentations were discussed with faculty to be of the assistance beginning after the New Year with this college.

Assistance Provided January 1, 2011 – March 31, 2011

Preparation and presentation on sewage treatment using a Reading case study was developed for the group and conducted during this quarter – about 25 students attended the workshop. Follow up information was also provided to the class and teacher for use with other classes in the future by the professor.

Applicant: West Ward Partnership

Applicant (new or continuing): Continuing

River Basin: Delaware

Watershed: Lehigh River

Watershed Size: 1,345 square miles

County: Delaware

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: N/A

DEP Approval to Proceed Date: April 2009

Date Assistance Began: April 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$28

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **11,500**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **1,345 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

DRN will be meeting up with a local university West Ward plans to partner with to provide a presentation on water quality issues in the region and what communities and organizations like West Ward are doing to clean up the watershed.

Applicant: Whitehorse Village Residents

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Darby Creek

Watershed Size: 77 square miles

County: Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: April 2011

DEP Approval to Proceed Date: April 2011

Date Assistance Began: April 2011

Date Assistance Completed: May 2011

Total Cost of Assistance: \$285

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **150**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **75**

Size of Watershed Assisted: **77 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

A one hour presentation was held for the group about Delaware River water quality threats with Q&A following by DRN in May.

Applicant: Wissahickon Garden Club

Applicant (new or continuing): New

River Basin: Delaware

Watershed: Wissahickon Creek

Watershed Size: 64 square miles

County: Montgomery

Lead C-SAW Provider: Delaware Riverkeeper Network

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Group: April 2011

DEP Approval to Proceed Date: April 2011

Date Assistance Began: May 2011

Date Assistance Completed: May 2011

Total Cost of Assistance: \$314

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **800**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **35**

Size of Watershed Assisted: **64 square miles**

Assistance Provided April 1, 2011 – June 30, 2011

A program was provided by DRN on 5/10/2011 and 35 people were in attendance.

Applicant: Worcester Elementary School

Applicant (new or continuing): New
River Basin: Delaware River Watershed
Watershed: Zacharias Creek
Watershed Size: N/A
County: Montgomery
Lead C-SAW Provider: Delaware Riverkeeper Network
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Group: N/A
DEP Approval to Proceed Date: August 2010
Date Assistance Began: September 2010
Date Assistance Completed: Ongoing
Total Cost of Assistance: \$3,000
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **500**
Total Number of Consultations Provided: **18**
Total Number of Trainings/Workshops Provided: **3**
Total Number of Individuals Assisted: **50**
Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

DRN restoration staff met with the school and provided overview of what help the C-SAW program could provide. DRN assisted with monitoring resources and suggestions for a monitoring project that would involve the students. Protocols and parameters were shared so the group can provide information to the school board at a meeting to be held in October. DRN also shared cost estimates for different kits to help with scoping.

Assistance Provided October 1, 2010 – December 31, 2010

DRN corresponded with the group via telephone for three calls related to volunteer monitoring and shared technical resources on study design and potential monitoring projects. C-SAW helped prepare materials for a second meeting with the school board that was held in December.

Assistance Provided January 1, 2011 – March 31, 2011

DRN corresponded with the group and specific teachers on monitoring options for the group and study design options and goals with data use. A workshop is planned for this spring that will involve a site visit to school grounds and a demonstration on the importance of monitoring local streams. The group selected monitoring as an educational component of their class.

Assistance Provided April 1, 2011 – June 30, 2011

A workshop was conducted this spring that involved a site visit to school grounds and the restoration project and a demonstration on the importance of monitoring local streams for over 50 students who were in attendance.

Appendix B

SUSQUEHANNA RIVER BASIN

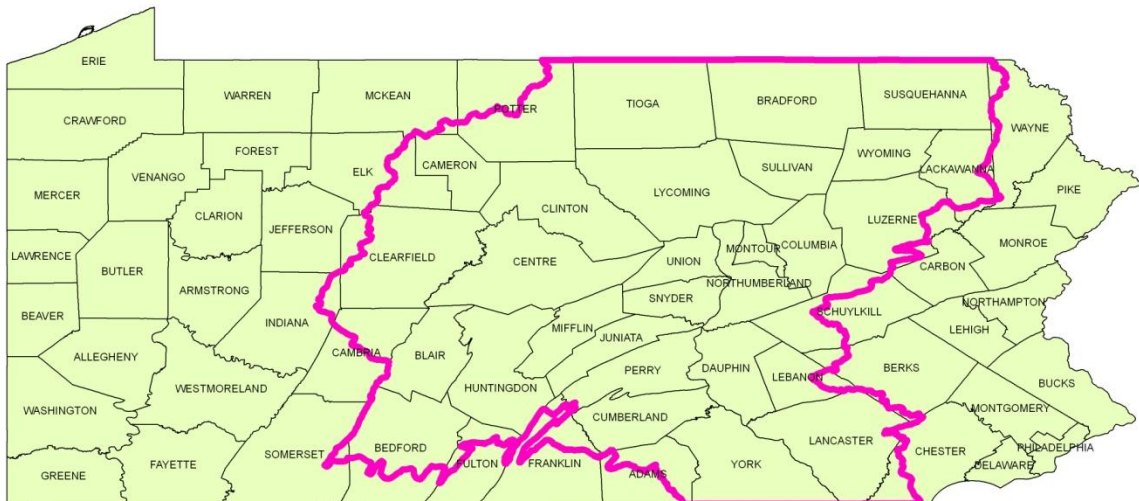
Groups receiving assistance:

Number of Groups – 17 (8 new and 9 continuing)

Consultations – 88

Trainings/Workshops – 19

Individuals Assisted – 312



Applicant: Eagles Mere Environmental Group

Applicant (New or Continuing): New

River Basin: Susquehanna

Watershed: N/A

Watershed Size: N/A

County: Sullivan

Lead C-SAW Provider: Wilkes University

Type of Assistance Provided: Mentoring

Date of Initial Contact with Group: June 2010

DEP Approval to Proceed Date: October 2010

Date Assistance Began: October 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$4000

In-kind/Match Provided by Applicant Organization: \$3500

Overview of Assistance:

Approximate Group Membership: **100**

Total Number of Consultations Provided: **12**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Directly Assisted: **30**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – June 30, 2010

Wilkes attended two organization meetings and then consulted with individual members to assist in the review of water quality data and the review of baseline data. In addition, we assisted the organization by conducting some QC samples for detergents, glycols, and phenols.

The main goal of the outreach was to aid the organization in understanding Marcellus shale development, aid in the review of baseline data, review split samples, and educate citizens.

Applicant: E.L. Rose Conservancy

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Silver Creek

Watershed Size: N/A

County: Susquehanna

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: November 2010

DEP Approval to Proceed Date: November 2010

Date Assistance Began: November 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$4,493

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **275**

Total Number of Consultations Provided: **8**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **45**

Size of Watershed Assisted: **N/A**

Assistance Provided January 1, 2011 – March 31, 2011

ALLARM created materials and organized registration for the upcoming monitoring workshop on April 30.

Assistance Provided April 1, 2011 – June 30, 2011

On April 30, ALLARM facilitated a water quality monitoring workshop that focused on collecting baseline water quality data. The E.L. Rose Conservancy is interested in documenting changes in their watershed from natural gas extraction and is interested in looking at cumulative impacts. They have started a monitoring committee to examine these issues within their local watershed. Thirty people attended the workshop and have begun monitoring in Susquehanna County.

Applicant: Franklin County Conservation District

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Burd Run

Watershed Size: 20 square miles

County: Franklin

Lead C-SAW Provider: Stroud Water Research Center

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: January 2010

DEP Approval to Proceed Date: February 2010

Date Assistance Began: May 2010

Date Assistance Completed: N/A

Total Cost of Assistance: \$3,000

In-kind/Match Provided by Applicant Organization: \$3,838

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **26**

Size of Watershed Assisted: **20 square miles**

Assistance Provided July 1 – September 30, 2010

Twenty-six individuals participated in a two-day Leaf Pack Network® workshop which took place at Shippensburg University from August 10-11, 2010. School teachers, non-formal educators as well as PA DCNR and PA State Forestry staff 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. Teachers are already heaving involved in Envirothon or Trout in the Classroom.

Applicant: Friends of the Little Aughwick Creek

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Little Aughwick Creek

Watershed Size: 61 square miles

County: Fulton, Huntingdon

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: July 2007

DEP Approval to Proceed Date: August 2007

Date Assistance Began: August 2007

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,404

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **20**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **61 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM helped the Friends of the Little Aughwick Creek delineate subwatersheds within their basin. To follow up on the Chemical Monitoring Workshop that took place in June, the group scheduled a QA/QC event to be sure the new monitors are using the equipment correctly and collecting reliable data.

ALLARM instructed the new and existing monitors the proper ways to collect water for QA/QC purposes. ALLARM also updated FLAC's water quality database to incorporate new monitoring sites.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM helped FLAC update components of their chemical monitoring program, including new watershed maps, updated data sheets, and a new water quality monitoring database. In addition, the group had questions about sample collection and how they should clean their monitoring equipment. The group also participated in quality assurance/quality control this quarter.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM provided FLAC with information on basic water quality parameters and different techniques used by volunteers to measure them. The group is interested in looking at the effects waste water treatments plants and road salt have on the watershed, however their budget is limited, so they are going to wait until they can acquire additional funds before expanding their monitoring program to include additional parameters.

Applicant: God's Country Waterdogs

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Multiple

Watershed Size: N/A

County: Potter

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: March 2011

DEP Approval to Proceed Date: June 2011

Date Assistance Began: June 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,085

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **20**

Size of Watershed Assisted: **N/A**

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM was approached by the God's Country Waterdogs in March of 2011. They requested technical assistance from ALLARM to train them how to monitor their local streams and collect baseline data about the health of the watershed. The group is especially concerned about collecting data on streams within the Marcellus Shale region. ALLARM conducted a workshop in June and has had follow up conversations with Penn State extension and the group's leader.

Applicant: Juniata River Clean Water Partnership

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Dougherty Run, Willow Run

Watershed Size: N/A

County: Juniata

Lead C-SAW Provider: Stroud Water Research Center

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: September 2010

DEP Approval to Proceed Date: October 2010

Date Assistance Began: October 2010

Date Assistance Completed: N/A

Total Cost of Assistance: \$1,500

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **3**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **4**

Size of Watershed Assisted: **N/A**

Assistance Provided October 1, 2010 – December 31, 2010

JRCWP has a Coldwater Heritage Grant which is allowing them to measure chemical parameters along Willow Run, a high quality stream, and Dougherty Run, a tributary to Willow Run that is on the 303(d) list of impaired streams. JRCWP and Juniata County Conservation District staff are interested in delisting Dougherty Run. They would like to conduct macroinvertebrate assessments on the stream to aid they chemical monitoring and make a stronger case to PADEP for the delisting.

On November 3, SWRC staff provided a macroinvertebrate collection/sampling, identification and data analysis training to a JRCWP staff member and three JCCD staff members.

Applicant: Lackawanna Trails High School

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Tunkhannock Creek

Watershed Size: 413 square miles

County: Lackawanna

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: February 2011

DEP Approval to Proceed Date: February 2011

Date Assistance Began: February 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$4,212

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **4**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **40**

Size of Watershed Assisted: **413 square miles**

Assistance Provided January 1, 2011 – March 31, 2011

ALLARM created materials and organized registration for the upcoming monitoring workshop on April 9.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM facilitated a water quality workshop on April 9 for folks interested in monitoring the potential effects natural gas drilling will have on their watershed. Participants learned how to collect baseline water quality data (both chemical and visual), choose monitoring sites, and interpret and manage data. Thirty people attended the workshop and many have begun collecting baseline data.

Applicant: Lake Roy Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Lake Roy

Watershed Size: 61 acres

County: Susquehanna

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed Specific Technical Assistance

Date of Initial Contact with Organization: November 2007

DEP Approval to Proceed Date: October 2009

Date Assistance Began: July 2009

Date Assistance Completed: N/A

Total Cost of Assistance: \$6,595

In-kind/Match Provided by Applicant Organization: \$2,260

Overview of Assistance:

Approximate Group Membership: **30**

Total Number of Consultations Provided: **8**

Total Number of Trainings/Workshops Provided: **5**

Total Number of Individuals Assisted: **2**

Size of Watershed Assisted: **20 acres**

Assistance Provided July 1, 2010 – September 30, 2010

Preparation of a pollution budget, unofficial TDML, and watershed plan are underway.

Assistance Provided October 1, 2010 – December 30, 2010

Preparation of a pollution budget, unofficial TDML, and watershed plan continued.

Assistance Provided April 1, 2011 – June 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.

Applicant: Lebanon County Conservation District

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Multiple

Watershed Size: N/A

County: Lebanon

Lead C-SAW Provider: Capital RC&D Area Council, Stroud Water Research Center

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: March 2011

DEP Approval to Proceed Date: March 11

Date Assistance Began: April 2011

Date Assistance Completed: N/A

Total Cost of Assistance: \$2,800

In-kind/Match Provided by Applicant Organization: \$5,524

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **5**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **N/A**

Assistance Provided April 1, 2011 – June 30, 2011

A SWRC educator connected with the Watershed Specialist in Lebanon County to coordinate a date for a 2-day Leaf Pack workshop for local educators.

The Leaf Pack workshop took place June 27-28 at the H.M. Levitz Memorial Park in Grantville, PA. The fifteen participants included teachers, members of township Environmental Advisory Councils, and individuals that conduct stream restoration and conservation. Participants learned about the critical connection between streamside forests and streams, created leaf packs, removed leaf packs from the stream, identified macroinvertebrates, analyzed the macroinvertebrate data from the leaf packs they removed from the stream, and saw how and where their data can be uploaded onto the Leaf Pack Network® website at www.stroudcenter.org/lpn.

Participants conducted pre and post-tests. The class average for the pre-tests was 63% and for the post-test it was 90%. Participants also conducted an evaluation form which included some of the following comments:

- * The hands on approach was great. The material was well presented and practical information that could be shared.
- * Experimental opportunities for youth using leaf packs. We are seeking more ways to bring inquiry science into our water programs.
- * I didn't know anything about leaf packs. Now I understand.

Applicant: Lower Penns Creek Watershed Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Penns Creek

Watershed Size: 163 square miles

County: Snyder and Union

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed Specific Technical Assistance and Mentoring

Date of Initial Contact with Organization: January 2009

DEP Approval to Proceed Date: April 2009

Date Assistance Began: April 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$5,201

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **25**

Size of Watershed Assisted: **163 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM attended LPCWA's monthly meeting and started the strategic planning process with the group.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM assisted LPCWA in starting their strategic planning process. ALLARM was asked to give a presentation about C-SAW at LPCWA's last monthly meeting since other watershed organizations from surrounding counties were present at the meeting. The other groups felt that the C-SAW program could be beneficial to their group and asked for additional information after the presentation.

Assistance Provided January 1, 2011 – March 31, 2011

ALLARM met with LPCWA in February and March to engage in a strategic planning process. Members of the group filled out a membership survey, which was compiled by ALLARM for use during the strategic planning meetings. The group is making steady progress in identifying and fleshing out a strategic vision for the next couple of years.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM continued to meet with LPCWA and facilitate their strategic planning process. The group has made the decision to move into restoration of Lower Penns Creek.

Applicant: Middle Spring Watershed Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Middle Spring Creek

Watershed Size: 25 square miles

County: Cumberland and Franklin

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: June 2007

DEP Approval to Proceed Date: August 2007

Date Assistance Began: July 2007

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,404

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **60**

Total Number of Consultations Provided: **10**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **20**

Size of Watershed Assisted: **25 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM met with MSWA three times this quarter to continue facilitating their strategic planning process, which is moving forward positively. ALLARM developed a membership survey with the group, disseminated the survey, and compiled the results.

In addition, in response to monitoring questions from the MSWA volunteers, they underwent QA/QC.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM met with MSWA once to finalize the group's strategic plan.

Assistance Provided April 1, 2011 – June 30, 2011

In June, ALLARM facilitated a data interpretation session with monitors of the Middle Spring Watershed Association. Monitors were interested in learning methods to analyze their data and had questions about which values were "good" and which values were "poor". ALLARM gave them information about their stream designations and water quality criteria for those designations as well as state and federal criteria. This was a good check-in session and monitors seemed to be reenergized.

Applicant: Mountain Lake

Applicant (new or continuing): New

River Basin: Susquehanna

Watershed: Mountain Lake

Watershed Size: 165 acres

County: Bradford

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: August 2010

DEP Approval to Proceed Date: N/A

Date Assistance Began: N/A

Date Assistance Completed: N/A

Total Cost of Assistance: \$546

In-kind/Match Provided by Applicant Organization: \$180

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **N/A**

Total Number of Individuals Assisted: **N/A**

Size of Watershed Assisted: **44 acres**

Assistance Provided July 1, 2010 – September 30, 2010

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.

Applicant: North Lake Improvement Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: North Lake and Hunlock Creek

Watershed Size: 137 acres

County: Luzerne

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: July 2009

DEP Approval to Proceed Date: N/A

Date Assistance Began: August 2009

Date Assistance Completed: N/A

Total Cost of Assistance: \$205

In-kind/Match Provided by Applicant Organization: \$1,150

Overview of Assistance:

Approximate Group Membership: **30**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **N/A**

Total Number of Individuals Assisted: **28**

Size of Watershed Assisted: **39 acres**

Assistance Provided July 1, 2010 – September 30, 2010

A presentation was given 8/30/09 on principles of Lake Ecology and a discussion followed on possible courses of action needed to solve the lake's algae and aquatic plant problems. A scope of work and budget is being prepared for a lake management plan and course of action for the association.

Assistance Provided April 1, 2011 – June 30, 2011

Project on hold pending input from applicant.

Applicant: Ricketts Glen State Park

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Kitchen Creek

Watershed Size: 245 acres

County: Luzerne, Sullivan, and Wyoming

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Education and Outreach

Date of Initial Contact with Organization: April 2009

DEP Approval to Proceed Date: July 2009

Date Assistance Began: June 2009

Date Assistance Completed: September 2009

Total Cost of Assistance: \$1,846

In-kind/Match Provided by Applicant Organization: \$1,220

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **N/A**

Total Number of Individuals Assisted: **7**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

Project was completed this quarter.

Applicant: Shamokin Creek Restoration Alliance

Applicant (new or continuing): Continuing
River Basin: Susquehanna
Watershed: Shamokin Creek
Watershed Size: 137 square miles
County: Columbia, Montour, and Northumberland
Lead C-SAW Provider: U.S. Geological Survey
Type of Assistance Provided: Watershed-Specific Technical Assistance
Date of Initial Contact with Organization: 2008
DEP Approval to Proceed Date: March 2010
Date Assistance Began: April 2009
Date Assistance Completed: August 2010
Total Cost of Assistance: \$2,400
In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **35**
Total Number of Consultations Provided: **5**
Total Number of Trainings/Workshops Provided: **1**
Total Number of Individuals Assisted: **N/A**
Size of Watershed Assisted: **137 square miles**

Background:

About ten years ago, the USGS did a study of the flows and chemistry of mine drainage and stream water the Shamokin Creek Watershed. Results from that study were published in a USGS Water Resources Investigations Report entitled, "Effects of Abandoned Coal-Mine Drainage on Streamflow and Water Quality in the Shamokin Creek Basin, Northumberland and Columbia Counties, Pennsylvania, 1999-2001." Authors of the report were Chuck Cravotta and Carl Kirby. The report identified possible treatment strategies based on the flow and water-quality data, but did not attempt to compute costs for treatment.

The SCRA is interested in applying for funding from the Bureau of Abandoned Mine Reclamation (BAMR) to correct mine discharges in the Shamokin Creek Watershed. BAMR recently issued new guidelines <http://www.portal.state.pa.us/portal/server.pt?open=18&objID=503101&mode=2> for expenditure of AMD set-aside funding that requires an evaluation of the cost/benefit of treatment strategies. Data from the Cravotta and Kirby work can be used to estimate the costs for treatment facilities using the AMD Treat Program. Chuck would provide the C-SAW assistance.

Requested Assistance:

The Shamokin Creek Restoration Alliance (SCRA) has requested C-SAW support in data retrieval, database management, and data analysis. Once the data are on hand and in the proper format, flow and chemistry values would be used as input to a computer model called AMD Treat. The model is used to estimate the size of AMD treatment facilities and associated costs for constructing and operating the facility.

Tasks:

1. Assist SCRA with retrieving data from USGS files (1/2 day).
2. Assist SCRA with putting the data into spreadsheets suitable for input into the AMD Treat program (1/2 day).
3. Instruct SCRA with a few applications of AMD Treat in designing treatment facilities for mine discharges (2 days).
4. Consult with SCRA as they run the AMD Treat program for other discharges in the Shamokin Creek Watershed (1 day).

Assistance Provided July 1, 2010 – September 30, 2010

Assistance provided on task 4 (above) in August of this quarter.

Applicant: Shermans Creek Conservation Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Shermans Creek

Watershed Size: 244 square miles

County: Perry

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: April 2006

DEP Approval to Proceed Date: May 2006

Date Assistance Began: May 2006

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$1,404

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **25**

Total Number of Consultations Provided: **4**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **244 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

A subset of volunteers participated in QA/QC.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM facilitated SCCA's contact with Stroud to receive a macroinvertebrate training.

Applicant: Yellow Breeches Watershed Association

Applicant (new or continuing): Continuing

River Basin: Susquehanna

Watershed: Yellow Breeches

Watershed Size: 219 square miles

County: Cumberland

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Organizational Assistance and Mentoring

Date of Initial Contact with Organization: April 2009

DEP Approval to Proceed Date: June 2009

Date Assistance Began: July 2009

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$542

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **60**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **20**

Size of Watershed Assisted: **219 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM attended YBWA's September meeting and talked about collaborative MS4 stormwater education opportunities. The group seems very interested in working in their watershed in this capacity. ALLARM worked on volunteer recruitment material development to assist the group with attracting new members.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM assisted YBWA with stormwater education material design.

Appendix C

POTOMAC RIVER BASIN

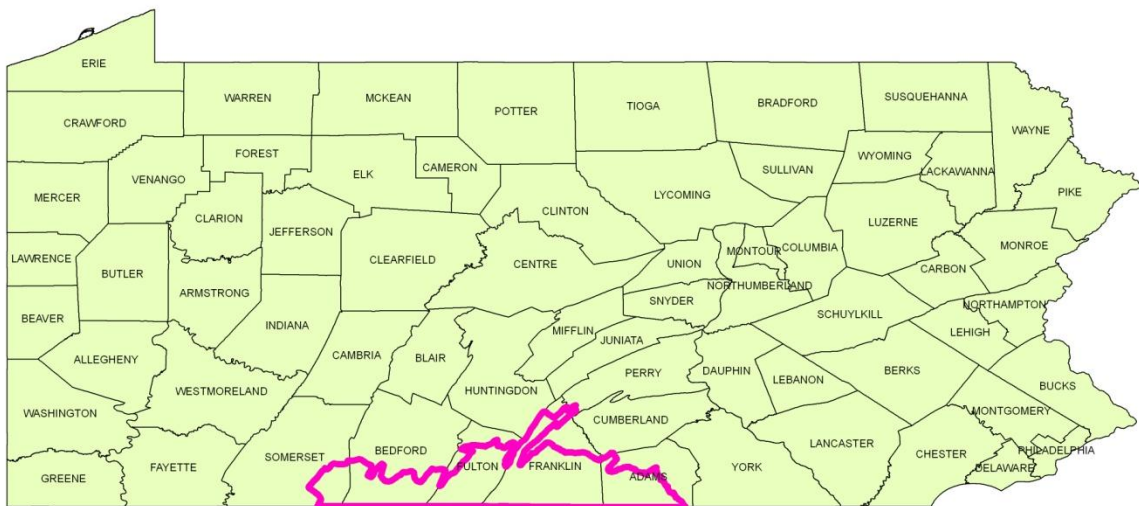
Groups receiving assistance:

Number of Groups – 4 (4 continuing)

Consultations – 32

Trainings/Workshops – 5

Individuals Assisted – 115



Applicant: Antietam Watershed Association

Applicant (new or continuing): Continuing

River Basin: Potomac

Watershed: Antietam Creek

Watershed Size: 94 square miles

County: Franklin

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: June 2003

DEP Approval to Proceed Date: October 2003

Date Assistance Began: October 2003

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$7,020

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **80**

Total Number of Consultations Provided: **15**

Total Number of Trainings/Workshops Provided: **3**

Total Number of Individuals Assisted: **40**

Size of Watershed Assisted: **94 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM provided AWA with chemical monitoring assistance this quarter and scheduled their yearly QA/QC event. ALLARM also helped the group with data communication strategies.

Assistance Provided October 1, 2010 – December 31, 2010

ALLARM helped AWA update their chemical monitoring program by providing them with updated datasheets and processing their hazardous waste/expired reagents. AWA also participated in QA/QC.

Assistance Provided January 1, 2011 – March 30, 2011

ALLARM assisted AWA in developing products to aide in communicating the results of their monitoring data. The group is also interested in using these communication products as a way of raising awareness about the watershed association and monitoring program – they will be giving PowerPoint presentations to local organizations and presenting a poster at community events. ALLARM also provided AWA with information on dam removal monitoring.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM gave AWA information and advice on how to properly wash monitoring glassware as well as order reagents for their monitoring kits. ALLARM also continued to help the group with their data communication strategies – the end products included an up-to-date water quality database, a poster, and a PowerPoint presentation. The presentation highlights the efforts of the groups as well as the issues they face in the watershed. They have used the PowerPoint to give presentations to the local community.

Applicant: Conococheague Watershed Alliance

Applicant (new or continuing): Continuing

River Basin: Potomac

Watershed: Conococheague Creek

Watershed Size: 503 square miles

County: Franklin

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance and Mentoring

Date of Initial Contact with Organization: February 2003

DEP Approval to Proceed Date: May 2003

Date Assistance Began: May 2003

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$562

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **20**

Total Number of Consultations Provided: **3**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **15**

Size of Watershed Assisted: **503 square miles**

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM provided CWA with information on study design, strategic planning, and chemical monitoring upon request.

Applicant: Ridge and Valley Streamkeepers

Applicant (new or continuing): Continuing

River Basin: Potomac

Watershed: Sideling Hill Creek and Town Creek

Watershed Size: 252 square miles

County: Bedford and Fulton

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance, Mentoring, and QA/QC

Date of Initial Contact with Organization: September 2003

DEP Approval to Proceed Date: October 2003

Date Assistance Began: October 2003

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$5,616

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **35**

Total Number of Consultations Provided: **11**

Total Number of Trainings/Workshops Provided: **2**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **172 square miles**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM attended RVS's annual meeting and presented information on volunteer monitoring efforts focused around the development of natural gas in the Marcellus Shale. ALLARM also helped the group develop educational materials about their chemical monitoring program for an educational event within their watershed.

Assistance Provided October 1, 2010 – December 30, 2010

ALLARM provided RVS with information on measuring pH – including recommendations on pH strips. ALLARM also put together user-friendly directions for the TDS meter the group is using after a monitor reported that the factory directions were hard to comprehend.

Assistance Provided January 1, 2011 – March 31, 2011

ALLARM provided RVS with information on different types of monitoring equipment. The group is considering adding another branch to their monitoring program which would focus on looking at the impacts of natural gas drilling. RVS also participated in QA/QC this quarter.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM answered questions about monitoring for natural gas development and explained what organizations are doing throughout the state to monitor for potential impacts. RVS is interested in learning more, so a workshop is being scheduled for July.

Applicant: Watershed Alliance of Adams County

Applicant (new or continuing): Continuing

River Basin: Potomac

Watershed: Multiple

Watershed Size: N/A

County: Adams

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: July 2007

DEP Approval to Proceed Date: July 2007

Date Assistance Began: July 2007

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$562

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **100**

Total Number of Consultations Provided: **3**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **30**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM provided WAAC with options for obtaining a flow meter in order for the group to begin their flow monitoring program. Types and costs of flow meters as well as grant programs that may be of assistance were compiled and given to the group.

Appendix D

OHIO RIVER BASIN / MULTIPLE RIVER BASINS

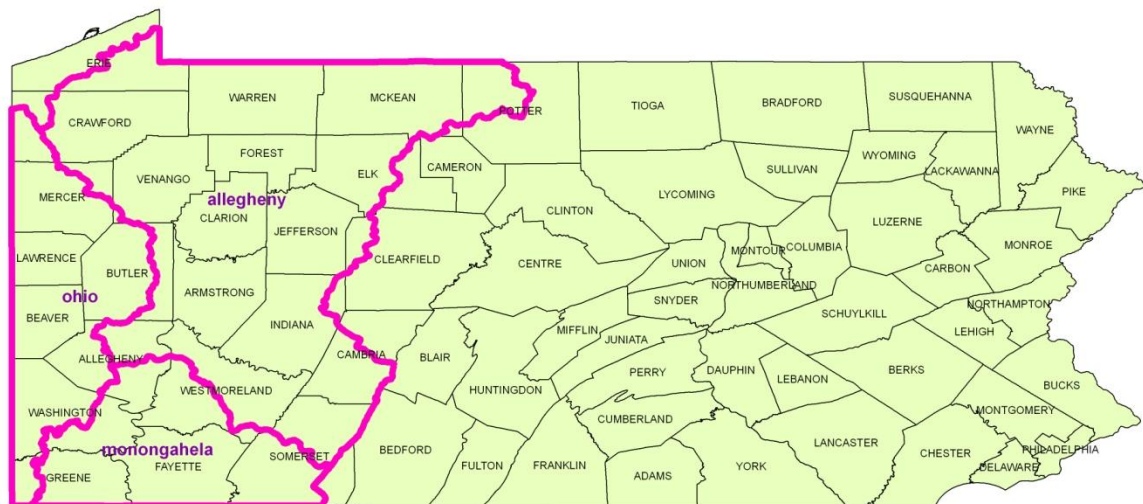
Groups receiving assistance:

Number of Groups – 7 (3 new and 4 continuing)

Consultations – 22

Trainings/Workshops – 8

Individuals Assisted – 374



Applicant: Aquatic Invasive Species Workgroup

Applicant (new or continuing): Continuing

River Basin: Multiple

Watershed: Multiple

Watershed Size: N/A

County: Multiple

Lead C-SAW Provider: PALMS

Type of Assistance Provided: Planning

Date of Initial Contact with Organization: March 2007

DEP Approval to Proceed Date: April 2007

Date Assistance Began: April 2007

Date Assistance Completed: N/A

Total Cost of Assistance: \$2,663

In-kind/Match Provided by Applicant Organization: \$2,950

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **7**

Total Number of Trainings/Workshops Provided: **N/A**

Total Number of Individuals Assisted: **N/A**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

Activity during this time period consisted of attending and supporting PISC meetings, reporting progress to PALMS and other C-SAW partner and IS organizations, and supporting development of AIS task modules as needed. (See Ricketts Glenn application for assistance.)

Assistance Provided October 1, 2010 – December 30, 2010

Activity during this time period consisted of attending and supporting PISC meetings, reporting progress to PALMS and other C-SAW partner and IS organizations, and supporting development of AIS task modules as needed. (See Ricketts Glenn application for assistance.)

Assistance Provided January 1, 2011 – March 31, 2011

Activity during this time period consisted of attending and supporting PISC meetings, reporting progress to PALMS and other C-SAW partner and AIS organizations.

Assistance Provided April 1, 2011 – June 30, 2011

Activity during this time period consisted of attending and supporting PISC meetings, reporting progress to PALMS and other C-SAW partner and AIS organizations.

Applicant: Chestnut Ridge Trout Unlimited

Applicant (new or continuing): New

River Basin: Ohio

Watershed: Laurel Hill Creek

Watershed Size: 125 square miles

County: Somerset

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: November 2010

DEP Approval to Proceed Date: December 2010

Date Assistance Began: July 2011

Date Assistance Completed: Ongoing

Cost of Assistance this quarter: \$1,000

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **367**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **1**

Total Number of Individuals Assisted: **2**

Size of Watershed Assisted: **125 square miles**

Requested Assistance:

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

Assistance Provided April 30, 2011 – June 30, 2011

Dan Galeone conducted a reconnaissance visit. This is the initial work for the request.

Applicant: Conemaugh Valley Conservancy

Applicant (new or continuing): New

River Basin: Ohio

Watershed: Multiple

Watershed Size: 3,260 square miles

County: Armstrong, Cambria, Indiana, Somerset, and Westmoreland

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: March 2011

DEP Approval to Proceed Date: May 2011

Date Assistance Began: August 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$100

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **200**

Total Number of Consultations Provided: **1**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **1**

Size of Watershed Assisted: **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 (relationship between water level and streamflow) is developed. Training through C-SAW is requested for installation of staff plates and measurement of streamflow. Under this C-SAW request, the 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:

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

Assistance Provided April 30, 2011 – June 30, 2011

No assistance provided other than phone calls to coordinate a reconnaissance visit by Chaplin planned for August 26, 2011. Installation of staff plates is planned on September 8 and 9, 2011.

Applicant: Evergreen Conservancy

Applicant (new or continuing): New

River Basin: Ohio

Watershed: Blacklick Creek, Crooked Creek, Little Mahoning Creek, Plum Creek , Two Lick Creek, and Yellow Creek

Watershed Size: 800 square miles

County: Indiana

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: June 2010

DEP Approval to Proceed Date: February 2011

Date Assistance Began: February 2011

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$8,150

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **50**

Total Number of Consultations Provided: **2**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **2**

Size of Watershed Assisted: **800 square miles**

Requested Assistance:

The Evergreen Conservancy has received a Growing Greener Grant to install and operate continuous water-quality monitors for streams in Indiana County. These monitors would provide a continuous record of specific conductance in several Indiana County streams and would serve as an early-warning system for impacts from Marcellus Shale gas exploration and development. The amount of the Growing Greener grant awarded is much less than the amount requested but the Conservancy has garnered support from other partners including Trout Unlimited, the Indiana County Conservation District, the Western Pennsylvania Conservancy, and the Central Indiana County Water Authority to make up part of the shortfall. In addition, the Kiski-Conemaugh Stream Team has joined the effort to provide much of the needed technical expertise and data-management support to make the project a success. Yet C-SAW assistance is still needed to train volunteers on staff plate installation and for GIS support. C-SAW assistance is requested to provide this support.

Assistance Provided January 1, 2011 – April 30, 2011

Consultations with the Evergreen Conservancy were conducted to better define the scope of the extent of the assistance needed. GIS products have been prepared and transmitted to the Conservancy. Arrangements for support on installation of staff plates have been coordinated within the USGS. Staff plate installation and training is projected for April, 2011.

Assistance Provided April 30, 2011 – June 30, 2011

Mapping assistance was completed by Scott Hoffman this quarter.

Applicant: Pennsylvania Council of Trout Unlimited

Applicant (new or continuing): Continuing

River Basin: Multiple

Watershed: Multiple

Watershed Size: N/A

County: Multiple

Lead C-SAW Provider: ALLARM

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: January 2010

DEP Approval to Proceed Date: February 2010

Date Assistance Began: February 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: N/A

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **12,000**

Total Number of Consultations Provided: **6**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **90**

Size of Watershed Assisted: **N/A**

Assistance Provided July 1, 2010 – September 30, 2010

ALLARM provided technical assistance to PA Council of Trout Unlimited on chemical and flow monitoring.

Assistance Provided January 1, 2011 – March 31, 2011

ALLARM assisted PATU in developing monitoring documents and materials for their Coldwater Conservation Corps monitoring program.

Assistance Provided April 1, 2011 – June 30, 2011

ALLARM continued to help PATU develop and implement monitoring strategies for their Coldwater Conservation Corps program.

Applicant: Penn State University: Pond & Lake Workshops 2011

Applicant (new or continuing): Continuing

River Basin: Multiple

Watershed: Multiple

Watershed Size: N/A

County: Multiple

Lead C-SAW Provider: PALMS

Type of Assistance Provided: N/A

Date of Initial Contact with Organization: February 2011

DEP Approval to Proceed Date: March 2011

Date Assistance Began: March 2011

Date Assistance Completed: N/A

Total Cost of Assistance: \$1,073

In-kind/Match Provided by Applicant Organization: \$4,610

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **N/A**

Total Number of Trainings/Workshops Provided: **7**

Total Number of Individuals Assisted: **270**

Size of Watershed Assisted: **2,343 acres**

Assistance Provided January 1, 2011 – March 30, 2011

The first pond and lake workshop with C-SAW assistance was completed on March 26 in Monroe County. Thirty-five participants attended the workshops with approximately half being pond/lake owners and half being pond/lake managers or agency personnel. The workshop participants represented over 2,000 acres of ponds and lakes. The next workshop will be held April 16 in Lebanon County with numerous other workshops scheduled in late April and early May.

Assistance Provided April 1, 2011 – June 30, 2011

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 Penn State Extension personnel. 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.

The 2011 schedule of workshops was completed this quarter. Post workshop evaluations were given to all attendees using TurningPoint response cards. Results of evaluations are given below:

- Approximately 50% of attendees were pond/lake owners and 50% were lake managers, consultants, or pesticide applicators.
- The workshop participants own or manage 2,343 acres of ponds and lakes.
- About 40% of attendees have never tested their pond/lake water quality.
- 60% felt the workshops was excellent, 38% rated it very good and 2% felt it was good.
- All attendees indicated that they learned some new pond/lake management concepts at the workshop.
- Over 92% of all attendees planned to take actions to better manage their ponds and lakes after attending the workshop. The most common actions planned were:
 - Explore non-chemical methods to control nuisance plants/algae (51%)
 - Properly identify aquatic plants and algae in pond/lake (49%)
 - Visit pond/lake web site (81%)
 - Make accurate measures of pond/lake (55%)
 - Take steps to reduce nutrients entering pond/lake (58%)
 - Test pond/lake water (49%)
 - Change management of pond/lake fishery (57%)
 - Use the state permit for aquatic herbicides (31%)
 - Hire a professional to help with pond/lake management (36%)
 - Take steps to fix a leaking pond/lake (11%)
- About 40% of attendees felt that the program saved them money that they would spend on pond/lake management.
- About half of the attendees felt the program saved them time in future pond/lake management.

Applicant: Somerset County Conservation District

Applicant (new or continuing): Continuing

River Basin: Ohio

Watershed: Casselman River, Laurel Hill Creek, Stoneycreek River, and Wills Creek

Watershed Size: 1,333 square miles

County: Somerset

Lead C-SAW Provider: U.S. Geological Survey

Type of Assistance Provided: Watershed-Specific Technical Assistance

Date of Initial Contact with Organization: 1998

DEP Approval to Proceed Date: February 2010

Date Assistance Began: April 2010

Date Assistance Completed: Ongoing

Total Cost of Assistance: \$2,500

In-kind/Match Provided by Applicant Organization: N/A

Overview of Assistance:

Approximate Group Membership: **N/A**

Total Number of Consultations Provided: **4**

Total Number of Trainings/Workshops Provided: **0**

Total Number of Individuals Assisted: **9**

Size of Watershed Assisted: **1,333 square miles**

Background:

Recently, elevated concentrations of dissolved constituents have highlighted the need for the development of a county-wide stream water-quality monitoring program. This proactive approach to monitoring will reduce the potential for catastrophic events such as what has recently occurred in Dunkard Creek located in Greene County, Pa. Possible sources of elevated levels of dissolved constituents would be waste discharge from gas-production well sites, acid-mine drainage, salt applications for de-icing roads, and agricultural application of excessive fertilizers. The Somerset County Conservation District (SCCD) would like to partner with the U.S. Geological Survey (USGS) in order to adequately address the monitoring requirements on a county-wide scale. The primary water-quality parameter of concern for this monitoring program is specific conductance. Specific conductance can be measure continuously and be used to determine if additional sampling is required. Spikes in specific conductance would indicate the inflow of dissolved contaminants upstream of the monitoring site.

Requested Assistance:

The SCCD would like to work with the USGS in order to design and implement the county-wide stream water-quality monitoring program. Technical assistance needs:

- Guidance on monitoring design and protocols
- Assistance with development of a study design
- Assistance with selection of appropriate equipment
- Assistance in scientific aspects of monitoring
- Assistance with database design and database management

The assistance needed would include the following:

1. Site selection and network design (2 day) – The USGS currently has stream gages at four locations that would be optimum sites for installation of specific conductance probes for the proposed monitoring program. SCCD would like to work with USGS to review the current sites to determine if specific conductance probes could be retrofitted to the current site configuration. Each of the USGS gaging locations currently transmits data on a real-time basis. There is a critical need to install the specific conductance probes at locations where real-time data are available so that water-quality problems can be indentified as quickly as possible. In addition to the four locations currently being gaged by the USGS, an additional 3-5 sites across the county need to be instrumented. SCCD would like the help of USGS in indentifying the best locations for these additional sites and the best configuration for instrumentation.
2. Equipment requirements (1.5 day) – It will be necessary to review the types of equipment that will be compatible with instrumentation at the four current USGS gage locations. There are specific types of probes that work best with the data loggers currently installed in the USGS gages. Each of the four USGS gages has different configurations in both the structural design of the gage house and the scientific instrumentation. Therefore, USGS personnel will have to review each site with SCCD personnel and determine the best approach for instrumentation retrofitting. In addition, SCCD personnel would like to overview the new (3-5) site locations with USGS personnel in order to determine the structural and equipment requirements.
3. Instrumentation maintenance (1 day) – There will be a need to review and train responsible personnel on the calibration requirements and other types of necessary maintenance for the specific conductance probes. Data from the probes will be logged and transmitted using standard USGS gaging equipment at the four sites currently being gaged by the USGS. SCCD personnel will need to be trained and given an overview on operation of particular equipment within the USGS gage houses. In addition, USGS will provide training on the maintenance of equipment at the other 3-5 sites that are not currently being gaged.
4. Data management and record keeping (0.5 day) – Specific conductance data transmitted real time via the four existing USGS gages will be automatically stored in the USGS database. Retrieval of these data from external sources is a common practice, but the necessary steps will need to be overviewed by USGS so that SCCD personnel can access the data in a format that can be easily stored in an external database. Also, standard USGS procedures will be discussed related to the use of calibration data for a probe and how those data are used to correct the raw data collected by the specific conductance probe.

For this request, it is likely that the work will need to be conducted in blocks. The three items listed for assistance will be addressed in the order that they are listed. The site selection and network design will be the first task conducted. It may be anywhere from one to four weeks after completing the first task before the third or fourth tasks are addressed.

Assistance Provided July 1, 2010 – September 30, 2010

Dan Galeone provided assistance on Task 2 (above) in August.

Appendix E

QUALITY CONTROL

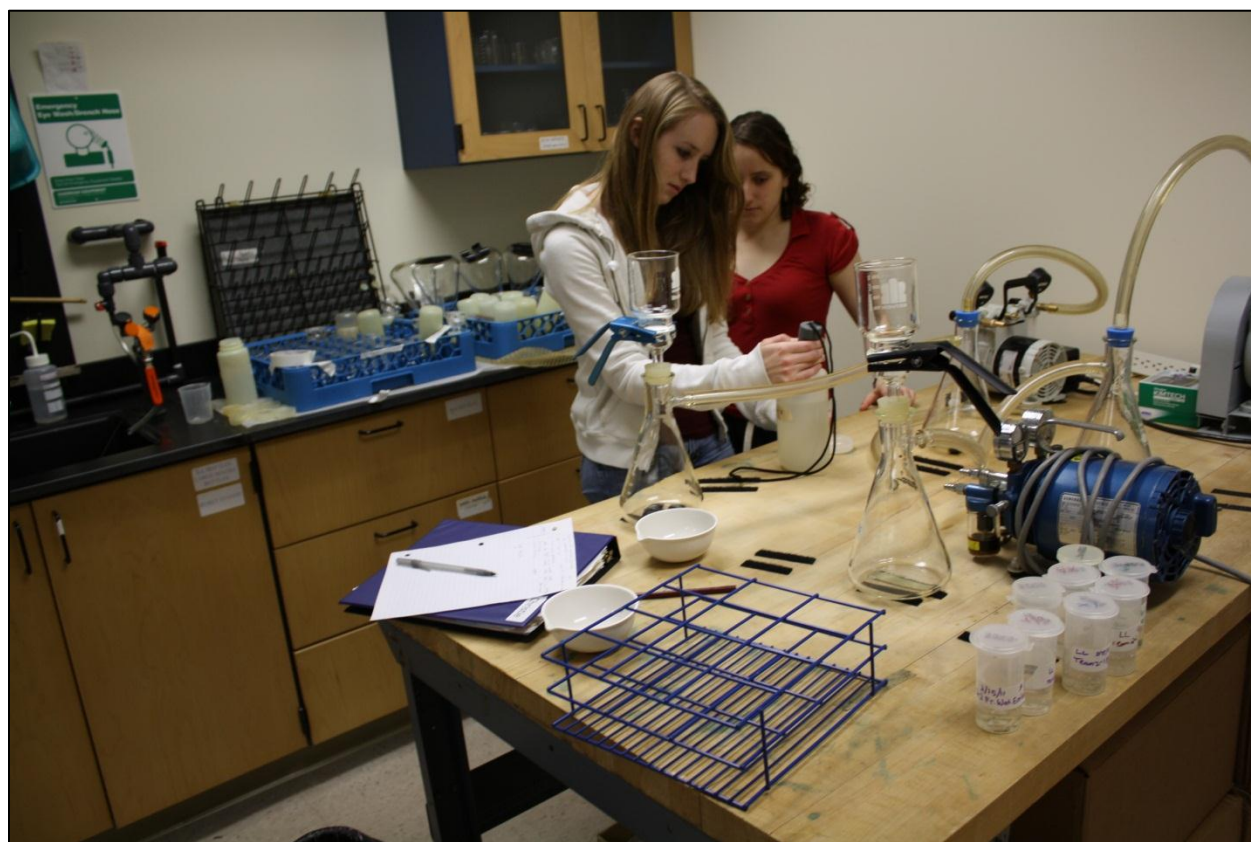
Quality Control & Other Activities

Groups receiving assistance:

Number of Groups – 6

Individuals Assisted – 70

Total Water Samples Processed – 768



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: **6**

Number of Individuals Assisted: **70**

Water Samples Processed: **768**

Groups Assisted from July 1, 2010 – June 30, 2011:

Date	River Basin	Group	Parameters	# of Monitors	Total Samples Processed
September 2010	Susquehanna	Shermans Creek Conservation Association	Alkalinity • ALLARM kit Nitrate • Hach kit • Hach spec pH • EM Science • Oakton	3	30
September 2010	Susquehanna	Middle Spring Watershed Association	Nitrate • Hach kit • Hach spec pH • EM Science • Oakton Phosphate • Hach kit • Hach spec	4	48
October 2010	Susquehanna	Friends of the Little Aughwick Creek	Nitrate • Hach kit • Hach spec pH • EM Science • Oakton Phosphate • Hach kit • Hach spec	4	48

Date	River Basin	Group	Parameters	# of Monitors	Total Samples Processed
November 2010	Potomac	Antietam Watershed Association	Alkalinity <ul style="list-style-type: none"> • ALLARM kit Nitrate <ul style="list-style-type: none"> • Hach kit • Hach spec pH <ul style="list-style-type: none"> • EM Science • Oakton Phosphate <ul style="list-style-type: none"> • Hach kit • Hach spec Turbidity <ul style="list-style-type: none"> • LaMotte kit 	6	96
March 2011	Potomac	Ridge and Valley Streamkeepers	Alkalinity <ul style="list-style-type: none"> • ALLARM kit Nitrate <ul style="list-style-type: none"> • Hach kit • Hach spec pH <ul style="list-style-type: none"> • EM Science • Oakton Turbidity <ul style="list-style-type: none"> • LaMotte kit 	8	96
2010 – 2011	Delaware	Delaware Riverkeeper Network	Chloride <ul style="list-style-type: none"> • LaMotte kit Conductivity <ul style="list-style-type: none"> • Hach spec • LaMotte kit TDS <ul style="list-style-type: none"> • YSI meter • LaMotte kit 	45	450

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2010 – 6/30/2011

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Begun	Assistance Completed	RC&D Office
DELAWARE									
Abington Senior High School	Pennypack, Tookany, Wissahickon Creeks	N/A	Montgomery	Delaware	DRN	WSTA	1/2011	1/2011	Southeastern
Abington Township	Pennypack, Tookany, Wissahickon Creeks	N/A	Montgomery	Delaware	DRN	WSTA	3/2011		Southeastern
Birchwood Lakes	Dingmans Creek	14	Pike	Delaware	Wilkes	WSTA, QC	5/2009		Pocono Northeast
Blue Mountain Wildlife	Schuylkill River	1912	Berks, Schuylkill	Delaware	DRN	WSTA	4/2011		Southeastern
Carbon County Groundwater Guardians	Lehigh River	381	Carbon	Delaware	Wilkes	M	5/2009		Pocono Northeast
Catawissa Creek Restoration Alliance	Catawissa Creek	153	Columbia, Schuylkill	Delaware	USGS	WSTA	8/2010	9/2010	Southeastern
Center in the Park SEC	Wissahickon Creek	64	Philadelphia	Delaware	SWRC	M	4/2002		Southeastern
Chester Ridley Crum Watershed Association	Mill Creek	N/A	Delaware	Delaware	DRN	WSTA	10/2008		Southeastern
Chester Ridley Crum Watershed Association	Chester, Crum, Ridley Creek	143	Chester, Delaware	Delaware	SWRC	M	3/2003		Southeastern
Clayton Park Recreational Area	Lake Henry	310 acres	Wayne	Delaware	PALMS	WSTA	N/A		Pocono Northeast
Darby Creek Valley Association	Darby Creek	77	Chester, Delaware, Montgomery, Philadelphia	Delaware	DRN	WSTA	1/2010		Southeastern
Delaware River Fisherman's Association	Delaware River		Bucks	Delaware	DRN	WSTA	2/2011	2/2011	Southeastern
Friends of Mingo Creek	Mingo Creek	N/A	Montgomery	Delaware	DRN	WSTA	11/2010		Southeastern
Friends of Silver Lake Nature Center	N/A	N/A	Bucks	Delaware	SWRC	WSTA	3/2011	4/2011	Southeastern
Greenbelt Overhaul Alliance of Levittown	Neshaminy Creek	236	Bucks	Delaware	SWRC	M	1/2010		Southeastern
Gold Key Lake Estates	Autumn, Fawn, Gold Key Lakes	3,146 acres	Pike	Delaware	PALMS	WSTA	N/A		Pocono Northeast

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2010 – 6/30/2011 (cont.)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Begun	Assistance Completed	RC&D Office
DELAWARE									
Hamburg Area School District	Mill Creek	17	Berks	Delaware	DRN	WSTA	3/2009		Southeastern
Heritage Conservancy and Bristol Borough	Otter Creek	17 acres	Bucks	Delaware	DRN	WSTA	5/2009		Southeastern
Honesdale Country Club	Lackawaxen Creek	1	Wayne	Delaware	Wilkes	M	10/2010		Pocono Northeast
Immaculate Conception Academy School	Hay, Six Penny Creek	N/A	Berks	Delaware	DRN	WSTA	4/2011	4/2011	Southeastern
Indian Mountain Community Association	Mud Run	N/A	Monroe	Delaware	Wilkes	M, QC	7/2010		Pocono Northeast
Lackawaxen River Conservancy	Lackawaxen River	598	Lackawanna, Pike, Wayne	Delaware	DRN	WSTA	12/2009		Pocono Northeast
Landsdowne YMCA	Darby Creek	77	Delaware	Delaware	DRN	WSTA	6/2011		Pocono Northeast
Maiden Creek Watershed Association	Maiden Creek	216	Berks	Delaware	DRN	WSTA	1/2009		Southeastern
Marple Citizens United	Crum Creek	250	Delaware	Delaware	DRN	WSTA	7/2010		Southeastern
Monroe Conservation District	Tobyhanna, Tunkhannock Creek	N/A	Carbon, Monroe	Delaware	PALMS	WSTA	N/A		Pocono Northeast
Morrisville EAC	Delaware River	13,000	Bucks	Delaware	DRN	WSTA	4/2009		Southeastern
Old Marcel Lake Property Owners Association	Dingman's Creek	2,700 acres	Pike	Delaware	PALMS	WSTA	8/2009		Pocono Northeast
Penn Township	White Clay, Elk Creek	N/A	Chester	Delaware	SWRC	M			Southeastern
Pike/Wayne Trout Unlimited	Multiple	N/A	Pike, Wayne	Delaware	DRN	WSTA	7/2010		Pocono Northeast
Protecting Our Waters	Delaware River	13,539	Delaware, Philadelphia	Delaware	DRN	WSTA	12/2010	12/2010	Southeastern
Schuylkill Headwaters Association	Muddy Run	11	Schuylkill	Delaware	DRN	WSTA	12/2010		Southeastern
Schuylkill Headwaters Association, Inc.	Muddy Run	11	Schuylkill	Delaware	USGS	WSTA	2/2010		Southeastern
St. Lukes Church and Education Group	Pennypack, Tookan, Wissahickon	2,000	Chester	Delaware	DRN	WSTA	5/2011	6/2011	Southeastern

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2010 – 6/30/2011 (cont.)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Begun	Assistance Completed	RC&D Office
DELAWARE									
Tobyhanna Creek/ Tunkhannock Creek Watershed Association	Tobyhanna Creek	129	Carbon, Monroe, Wayne	Delaware	USGS	WSTA	12/2010		Pocono Northeast
Twin Brooks Preserve	Ridley Creek	38	Chester	Delaware	DRN	WSTA	8/2009		Southeastern
Union Township EAC	Mill Creek	7	Berks	Delaware	DRN	WSTA	4/2009		Southeastern
Valley Forge Trout Unlimited	Valley Creek	23	Montgomery	Delaware	DRN	WSTA	4/2011		Southeastern
Watershed Citizenship Learning Community Cabrin College	Schuylkill River	13,000	Montgomery	Delaware	DRN	WSTA	10/2010		Southeastern
West Ward Partnership	Lehigh River	1,345	Delaware	Delaware	DRN	WSTA	4/2009		Southeastern
Whitehorse Village Residents	Darby	77	Montgomery	Delaware	DRN	WSTA	4/2011	5/2011	Southeastern
Wissahickon Garden Club	Wissahickon Creek	64	Montgomery	Delaware	DRN	WSTA	5/2011	5/2011	Southeastern
Worcester Elementary School	Zacharias Creek	N/A	Montgomery	Delaware	DRN	WSTA	9/2010		Southeastern
SUSQUEHANNA									
Eagles Mere Environmental Group	N/A	N/A	Sullivan	Susquehanna	Wilkes	M	10/2010		Endless Mountains
E.L. Rose Conservancy	Silver Creek	N/A	Susquehanna	Susquehanna	ALLARM	WSTA, M, QC	11/2010		Endless Mountains
Franklin County Conservation District	Burd Run	20	Franklin	Susquehanna	SWRC	WSTA	5/2010		Capital
Friends of the Little Aughwick Creek	Little Aughwick Creek	61	Fulton, Huntingdon	Susquehanna	ALLARM	WSTA, M, QC	8/2007		Southern Alleghenies
God's Country Waterdogs	Multiple	N/A	Potter	Susquehanna	ALLARM	WSTA, M, QC	6/2011		Headwaters
Juniata River Clean Water Partnership	Dougherty, Willow Run	N/A	Juniata	Susquehanna	SWRC	WSTA	10/2010		Community Partnerships
Lackawanna Trails High School	Tunkhannock Creek	413	Lackawanna	Susquehanna	ALLARM	WSTA, M, QC	2/2011		Pocono Northeast
Lake Roy Association	Lake Roy	61 acres	Susquehanna	Susquehanna	PALMS	WSTA	7/2009		Endless Mountains
Lebanon County Conservation District	Multiple	N/A	Lebanon	Susquehanna	SWRC	WSTA	4/2011		Capital

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2010 – 6/30/2011 (cont.)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Begun	Assistance Completed	RC&D Office
SUSQUEHANNA									
Lower Penns Creek Watershed Association	Penns Creek	163	Snyder, Union	Susquehanna	ALLARM	WSTA, M	4/2009		Community Partnerships
Middle Spring Watershed Association	Middle Spring Creek	25	Cumberland, Franklin	Susquehanna	ALLARM	WSTA, M, QC	7/2007		Capital
Mountain Lake	Mountain Lake	165 acres	Bradford	Susquehanna	PALMS	WSTA	N/A		Endless Mountains
North Lake Improvement Association	North Lake	137 acres	Luzerne	Susquehanna	PALMS	WSTA	8/2009		Pocono Northeast
Ricketts Glen State Park	Kitchen Creek	245 acres	Susquehanna	Susquehanna	PALMS	WSTA	6/2009		Endless Mountains
Shamokin Creek Restoration Alliance	Shamokin Creek	137	Columbia, Montour, Northumberland	Susquehanna	USGS	WSTA	4/2009	8/2010	Pocono Northeast
Shermans Creek Conservation Association	Shermans Creek	244	Perry	Susquehanna	ALLARM	WSTA, M, QC	5/2006		Community Partnerships
Yellow Breeches Watershed Association	Yellow Breeches	219	Cumberland	Susquehanna	ALLARM	M	7/2009		Capital
POTOMAC									
Antietam Watershed Association	Antietam Creek	94	Franklin	Potomac	ALLARM	WSTA, M, QC	10/2003		Capital
Conococheague Watershed Alliance	Conococheague Creek	503	Franklin	Potomac	ALLARM	WSTA, M	5/2003		Capital
Ridge and Valley Streamkeepers	Sideling Hill and Town Creeks	252	Bedford, Fulton	Potomac	ALLARM	WSTA, M, QC	10/2003		Southern Alleghenies
Watershed Alliance of Adams County	Multiple	N/A	Adams	Potomac	ALLARM	WSTA	7/2007		Capital
OHIO/MULTIPLE									
Aquatic Invasive Species Workgroup	Multiple	Multiple	Multiple	Multiple	PALMS	WSTA	4/2007		Multiple
Chestnut Ridge Trout Unlimited	Laurel Hill Creek	125	Somerset	Ohio	USGS	WSTA	7/2011		Southern Alleghenies

TABLE 1: GROUPS RECEIVING ASSISTANCE FROM C-SAW, 7/1/2010 – 6/30/2011 (cont.)

Applicant	Watershed	Watershed Area (mi ²)	County	River Basin	C-SAW Provider	Type of Assistance	Assistance Begun	Assistance Completed	RC&D Office
OHIO/MULTIPLE									
Conemaugh Valley Conservancy	Multiple	3,260	Armstrong, Cambria, Indiana, Somerset, Westmoreland	Ohio	USGS	WSTA	8/2011		Penn's Corners
Evergreen Conservancy	Multiple	800	Indiana	Ohio	USGS	WSTA	2/2011		Penn's Corners
PA Council of Trout Unlimited	Multiple	N/A	Multiple	Multiple	ALLARM	WSTA	2/2010		Multiple
Penn State University: Pond & Lake Workshops	Multiple	Multiple	Multiple	Multiple	PALMS	WSTA	3/2011		Multiple
Somerset County Conservation District	Multiple	1,333	Somerset	Ohio	USGS	WSTA	4/2010		Southern Alleghenies