

**2012**

As of October 2011, the WV Save Our Streams (SOS) Program has a new coordinator. [Glenn Nelson](#) brings 13 years of experience in aquatic ecology and research under the U.S. Geological Survey. With the well-established program the focus thus far has been on outreach and education, networking, and planning. As part on an ongoing duty the volunteer assessment database (VAD) gets a face lift. Note: WVDEP’s NPS program supports and supervises the activities of SOS but the program funded with 106 and water quality management grant funds.

SOS is our long-term volunteer monitoring program that encourages citizen’s groups, schools and many others of all ages to become involved in monitoring their own local waterways. The program not only teaches procedures but assists groups in developing long-term monitoring plans and provides a wide variety of technical assistance. SOS conducted a total of 16 workshops in 2012 in the Shenandoah River, Potomac Direct Drains, South Branch of the Potomac, Middle and Upper Ohio River, Lower and Upper Kanawha River, Lower New River and Coal River. SOS reached over 3,000 individuals in 2012.

**Table 1.** SOS outreach-training-support (2011-2012)

Technical support	Water festivals/outreach	Training/conferences
NSD project benthics – Davis Creek	Hurricane water festival	DEPs WAB training
Benthic collections – Lost River projects	Boys & Girls club water festival	Wetland construction class
AMD sampling NF Blackwater	Charleston water festival	Applied fluvial geomorphology
Arbuckle Creek fecal sampling	Wyoming County water festival	ArcGIS basics
WPP/WBP support (Back/Morris Creek)	Nicholas County water festival	Mon River Quest
Canon Envirothon	Camp Virgil Tate outdoor classrooms	WV Water Research Institute
Watershed Celebration Day	Pocahontas & Hampshire 4H	Eastern Panhandle Gathering
Mitigation tours	DOH Ward Hollow wetland	WV Watershed Network

**2013**



*Students gather around and sort an SOS benthic collection*

SOS has taken an active role in providing technical support for various watershed organizations. He has been responsible in training the newly formed Arbuckle Creek Watershed Organization to document bacteria loads to the New River. Collaboration will be with the New River Clean Water Alliance, National Park Service, and National Parks Conservation Agency. Additionally, he will offer technical support to the Morris Creek Watershed in revising their watershed based plan with the intent to reduce AMD loads using limestone fines.

SOS assisted with a study on Elkhorn Creek in regards to recovery of the benthic community following a diesel spill. SOS protocol designates workshops to be conducted between the months of April and October. However, several instances have arisen which will require monitoring outside of this designated time. With stream restoration projects slated to

begin on Davis Creek and Knapp Creek, SOS would like to document benthic communities before and after to measure success by way of recovery. While still early for scheduling events, thus far seven workshops are set with others tentatively planned. Renewal of existing monitoring groups will also be conducted.

## WV Save Our Stream activities

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SOS worked in partnership with the SBC in the highest ranked aquatics section for the Envirothon teaches the teacher's day. SOS collaborated with Project Wet to teach the benthic aspect of the program. Additionally, SOS played a significant role in the Mid Atlantic Stream Restoration conference.

### 2014

SOS continues to maintain strong relationships with partners while forging and encouraging new partnerships and watershed groups. This year well over 3,000 people actively took part in SOS training. Numbers are significantly higher but hard to quantify due to water festivals where students rotate through stations and mass school presentations. The Charleston MCHM chemical spill sparked a huge desire in the public for knowledge in testing our state's water resources. As such SOS stepped easily into the role of water quality educator.



*SOS in the news – WBOY interview at Jackson Mills*



*Volunteers from the MCWA, DEP-AML, DEP-NPS and others install the Nelson tank in the upper AMD treatment cell along Morris Creek.*

SOS hosted a shale gas monitoring workshop in response to most watershed groups requesting such. The meeting included hands on procedures and showcased partnerships with ALLARM, Trout Unlimited Shale Gas Program, WV University – Water Research Institute, WV Rivers Coalition, and the Environmental Advocates Office. SOS attended two conferences this year - the National Water Quality Monitoring Conference and WRI's Mid- Atlantic Water Conference.

In response to AMD affecting stream water quality in Morris Creek SOS took the lead as project manager in designing a different approach to treat low pH high iron seeps. The system cost \$8,500 and is premised on a low technical approach using seep water to fluidize the bed which encourages a reaction. Data is being recorded and while the system shows promise it will need to be further designed to lower maintenance. The project emphasizes the importance of strong partnerships which are essential to seeing these projects to fruition. WVDEP's AML agreed to

fund the project while the watershed constructed the tank system.

### 2015

SOS continues to maintain strong relationships with partners while forging and encouraging new partnerships and watershed groups. This year well over 3,500 people actively took part in SOS training. Numbers are significantly higher but hard to quantify due to water festivals where students rotate through stations and mass school presentations.

Twenty-five workshops were conducted in 2015. A wide variety of groups/areas were serviced including but not limited to Sleepy Creek, Spring Creek, Roan-Jackson Technical Center, TMI's Appalachian Watershed Stream Monitors, WV River Coalition/Trout Unlimited Shale Monitoring Program, Kanawha State Forest, Montessori School, Twin Branch, Blue Mountain, Shannondale, Ohio Island Refuge, National Park Service, Friend of the Hughes, and the Pocahontas County water task force.



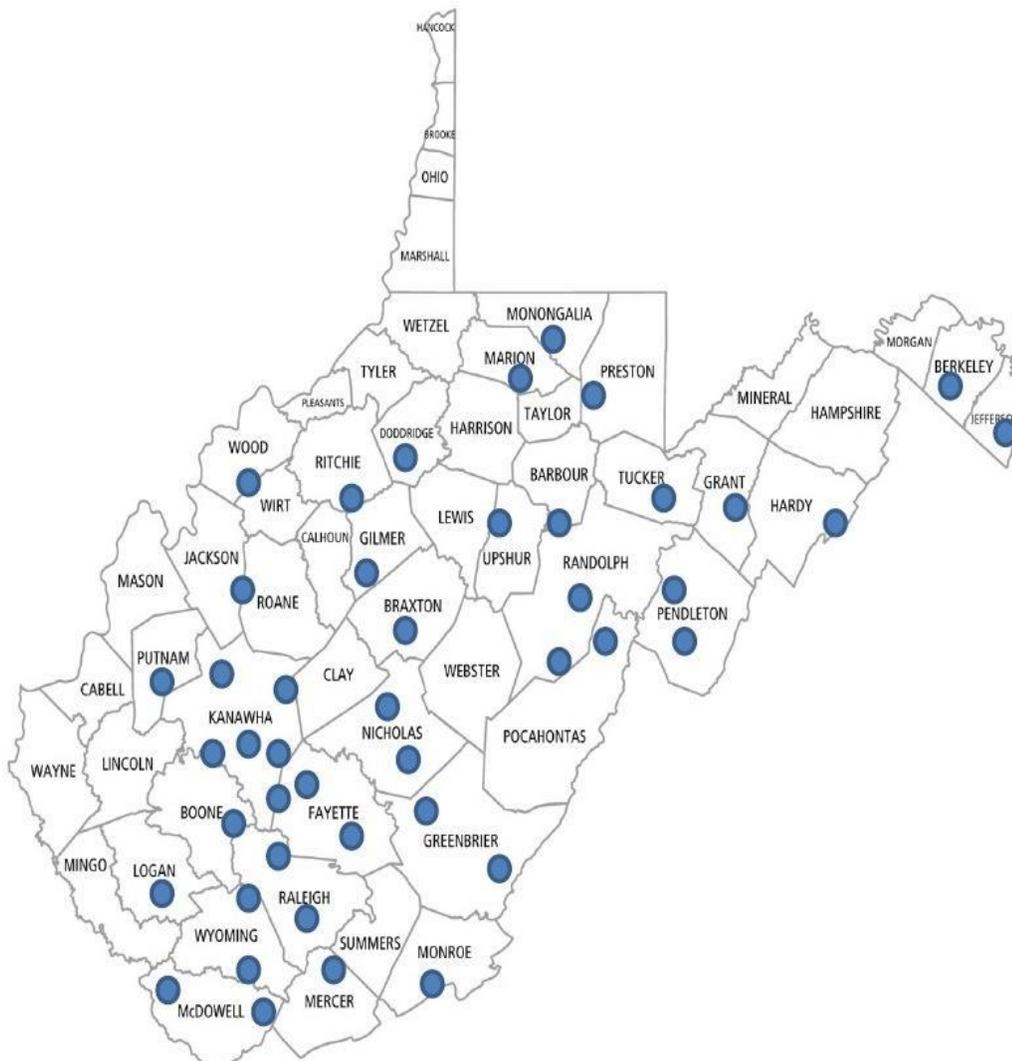
Morris Creek water festival

SOS was an instructor for WV Division of Natural Resources (WVDNR) Master Naturalist Program. The program presented at multiple TU meetings, Seneca Discovery Day, Clay Center, Piney Creek, Dartmouth University at Morris Creek, Gesundheit Institute, Holly River State Park, and 10 water festivals.

SOS assumed technical roles in a variety of ways. Most notable are the WV Envirothon and partnerships with The Mountain Institute and Trout Unlimited. SOS is also advisor for mussel surveys with WVDEPs dive team, New River Consortium, North Bend wetland delineation, Rainforest Alliance and Regional Appalachian Improvement League.

While conducting business as usual certain topics take front line which tends to lead discussion. Therefore, it is pertinent to keep abreast of the most up to date topics and events. While this year didn't see the events as observed during the past two years SOS remained quite busy with water quality issues. The most addressed issues this year stem from shale gas and pipeline explorations.

Figure 1. Select SOS activity locations (2012-2014)



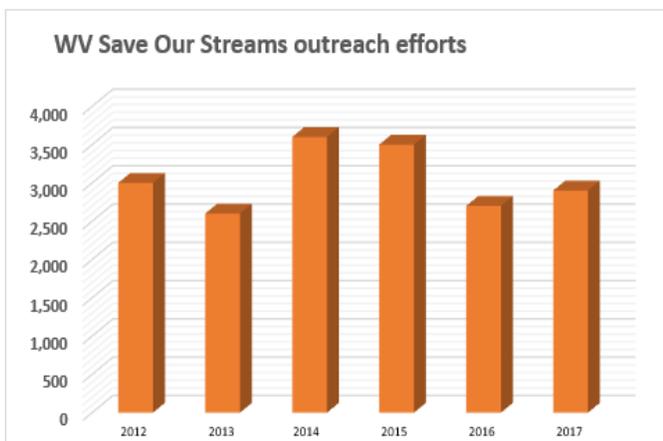
Strong partnerships are central to the mission of SOS. Most notable this year, SOS teamed with Trout Unlimited to teach a stream ecology course. The course was well received with numerous agencies present. The course resulted in WV DOH voluntarily replacing culverts within the study reach. WVDNR called upon SOS to be part of a mussel survey on the Kanawha.

SOS remains project consultant for Morris Creek Liming Project to treat AMD. Furthermore, SOS has taken advisory role with several basin coordinators, River of Promise, WV Environmental Education Association, and Hughes Creek.

**Figure 2.** Select Stream Monitoring Workshops 2012-2013 (> 650 participants)

- WV Master Naturalist ([Indian Run](#))
- New River Clean Water Alliance and Concord University ([Arbuckle](#) and [Dunloup](#) Creek)
- Envirothon ([Buckhannon River](#))
- Petersburg Technical School ([Spring Run](#))
- WV Conservation Agency Staff Training ([Camp Dawson](#))
- WVCA Southern District ([Milligan Creek](#))
- Friends of the Hughes ([Flint Creek](#))
- The Mountain Institute's BWET ([Lunice Creek](#))
- Dartmouth Energy Tour ([Morris Creek](#))
- Trout Unlimited ([Pond Fork](#))
- The Mountain Institute ([Whitethorn Creek](#))
- Richwood High School ([North Fork of the Cherry](#))
- Twin Branch Adventure Facility ([Twin Branch](#))
- Friend of the Blackwater River ([North Fork of the Blackwater](#))
- Glennville State College ([Cedar Creek](#))
- Warm Springs and Sleepy Creek Watershed Associations ([Indian Run](#))
- Roane Jackson Technical School ([Mill Creek](#))
- Outdoor Classrooms ([Camp Virgil Tate](#))
- Homeschool group ([Brushy Creek](#))
- Homeschool group ([Tygart Junction](#))
- Trout Unlimited and various groups ([Seneca Creek](#))
- The Mountain Institute - AWSM ([Big Run](#))
- Piney Creek Watershed Association ([Piney Creek](#))
- Jackson's Mill, various groups ([West Fork River](#))

2016 – 2017



**Figure 3.** Estimated numbers served through outreach other than monitoring workshops.

In 2016 SOS conducted **17 monitoring** workshops. Workshops were completed at Roane Jackson technical school, in partnership with numerous watershed groups, with NGOs and schools such as TMI, Elkins Middle, Montessori and more. SOS assumed the role of instructor bringing live specimens to various water festivals across the state. Outreach events include Trout Unlimited's (TU's) [Trout in the Classroom](#), Seneca Discovery Day, [Envirothon](#), [WV Science Teachers Association](#) (WVSTA), 13 water festivals, Wild School, five outdoor classrooms, Cheat Fest, HOB0 deployment, Monongahela Forest snorkel event, and several wetland activities. Partnerships remain strong with TMI, TU, WVDNR, WVDEP's [WAB](#), WVCA, academia and many more. SOS continues its role as instructor in WVDNR's Master Naturalist Program, Envirothon, WVSTA, and at the first West Virginia [CitSci](#) conference. The newest

partnership formed is [Fishing Report WV](#) (FRWV). FRWV featured SOS in a recent [magazine article](#); and SOS input was critical in the development of a new angler driven stream clean-up program. The program uses existing services from WVDEP's [REAP](#), and leverages additional support from TU, businesses, anglers, watershed groups etc.

In 2017 SOS conducted **11 monitoring** workshops for 210 people and nine outdoor classrooms that educated over 1,200 people. Through Project WET (Water Education for Teachers) five educator workshops were held certifying 121 educators, and one Wonders of Wetlands workshop certifying 21 teachers. Fourteen (14) Water Festivals were also conducted for more than 2,700 students across the state.