

STREAM SAMPLES: Updates on Delaware Basin Science

THE ACADEMY
OF NATURAL SCIENCES
of DREXEL UNIVERSITY

ansp.org

[Explore our website](#) | [About us](#)

February 11, 2016

February is a quieter month for the ANS DRWI team. The field crews spend 6 or 8 months a year slogging into streams, catching specimens, and collecting data. Now they are mostly indoors, busy processing samples, populating our database with new information, and writing reports, papers and presentations.

Having just finished two such reports myself, I'm constantly amazed by the amount of work getting done by DRWI partners. Last year between ANS, Stroud, and other partners, over 600 unique sampling events resulted in dozens of indicators of water quality and ecological function. Since starting work on the initiative in 2013, ANS has conducted almost 1100 sampling events.

What these numbers mean (beyond each of them representing crews being deployed for often challenging physical tasks), is an unprecedented amount of information about critical parts of the Delaware watershed. The DRWI database is already an important product of the project, and the work of all the partners is ensuring that it will be a lasting legacy for the basin.

February is also not a bad time for a little vacation. Full disclosure - I'm writing this from the Gulf Coast of Florida. And while you might not believe me, I find that this place has a lot in common with the Delaware Valley.

OK, maybe the absence of snow and the presence of palm trees be deceptive, but two features come to mind. First, is the presence - the dominance, really - of large amounts of water. All regions are dependent on water, of course, but in some places, it is a much more visible part of the culture and the economy. Like the Delaware Basin, Florida is a water rich area, with streams, rivers, bays, and

seaside all forming a vast, highly visible system supporting the life of the region.

The other similarity, also true everywhere but more visible in some places, is that Florida and the Delaware Basin are both human dominated landscapes. This is a term sometimes used in scientific literature, but it is also an easy notion to understand. As "natural" as many places may seem - whether it is the Delaware

Upcoming Events

DRB2070 Workshop Series: [Watershed Identity and Scenario Development](#)

Tuesday, February 16, 2016
Merrill Creek Reservoir
Washington/Harmony, NJ

Thursday, February 18, 2016
St. Jones Reserve Coastal
Training Center
Dover, DE

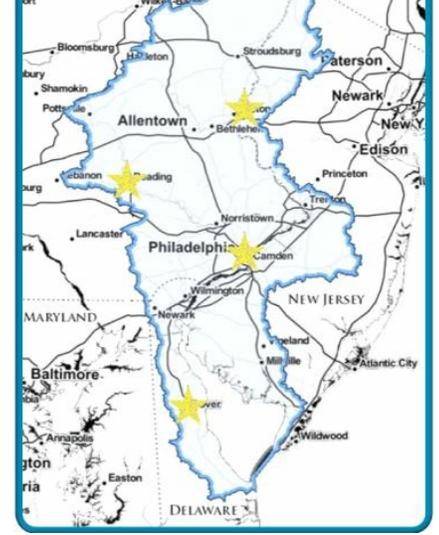


understanding is "natural" as many places may seem, whether it is the Delaware Water Gap or the Gulf of Mexico, humans manage and control much of what goes on in the natural systems.

For those of us working on the DRWI this is a serious responsibility. The natural systems of the Delaware are, in fact, overwhelmingly impacted and controlled by one species - humans. As much as we try to protect and restore natural ecological functions, it will be up to us to be proactive and make wise decisions to sustain and improve that ecology.

From managing the ski slopes of the Poconos, to deciding how to cultivate the fields of the Schuylkill valley, to cleaning up dead fish on Florida's public beaches (which I learned this week is an actual job), our species and our society has a lot of work ahead to ensure the health and vitality of our watershed.

- Roland Wall



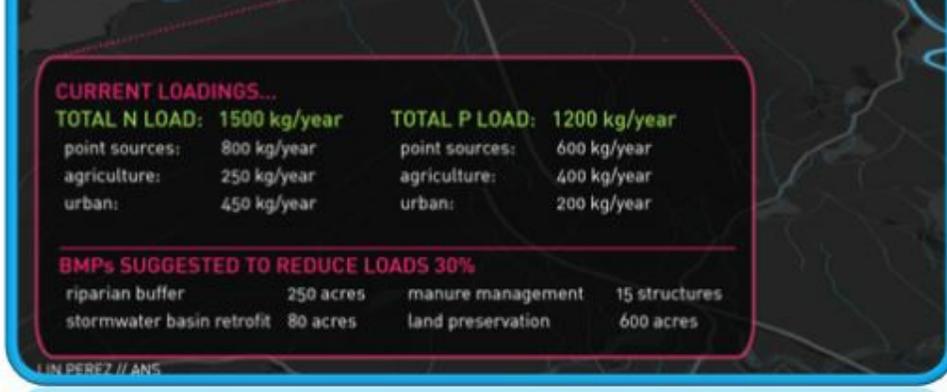
Winter Gathering Recap: Stream Reach Assessment Tool

Join the **Delaware River Basin (DRB) Land Use Dynamics** team at **Shippensburg University** for their **Watershed Identity and Scenario Development** workshops, as they gather information to model land use in the Delaware River Basin. The project, "A Land Cover Mapping, Modeling and Monitoring System for the DRB in Support of Maintaining and Restoring Water Resources," is supported by the William Penn Foundation. These workshops are targeted toward professionals with an interest in land use change in the DRB. Travel reimbursement is available, and lunch will be provided. Learn more and [register online](#) or contact [Antonia Price](#) for more information.

Geotourism on the Delaware

National Geographic and the National Parks Conservation Association (NPCA) are partnering with local organizations to launch a new geotourism initiative, "[Scenic, Wild Delaware River](#)." This interactive MapGuide will highlight spots and attractions unique to the upper and middle Delaware River region to promote tourism that "sustains or enhances the





Ability to Produce Clean Abundant Water Score = 20

As part of DRWI, it is important to show that land use decisions determine the quality of our downstream waters. For example, for a small headwaters stream, a few thousand acres of land can determine the quality of the stream, while for larger tributaries, as many as 2 million acres can affect the river's chemical and biological properties.

In preparation for the Phase II Planning process of the DRWI, the Coordinating Committee is in the midst of developing a digital Stream Reach Assessment Tool. This tool is being created to help the eight Sub Watershed Cluster organizations update their individual conservation strategies by visualizing the impacts of land use in upstream areas. The Assessment Tool is intended to create a consistent, regionally scaled scientific baseline to inform restoration and land protection decisions and assign priorities. This tool should be combined with local data and analyses as part of the comprehensive approach to adjust existing focus areas.

The results of this tool will offer users a final pollutant load score by a stressor. This stressor can be from point sources such as farms or urban runoff and will create a combined "[Ability to Produce Clean Abundant Water](#)" score. Users will then be able to color-code stream segments according to the estimated ecological integrity or estimate pollutant loading in a stream segment. When paired with information about best management practices (BMPs), the tool allows users to estimate the number of acres of land on which BMPs are needed to obtain a resulting, specific water-quality target.

Webinars, input sessions, and progress updates about the tool will be made available to the cluster groups by The Institute for Conservation Leadership (ICL) as it is developed. The tool is expected to be completed and available for use by July 2016. For more information about the tool, please contact the DRWI Coordinating Committee.

Out and About...

On Land

ANS Stream Team members have attended several gatherings this month, those including the American Rivers' Trees for Water: Assessing Riparian Buffers for Pennsylvania's Communities forum



"sustains or enhances the geographical character" of the Delaware River. Click [here](#) to nominate your favorite go-to's!

Stream Stewards in Delaware

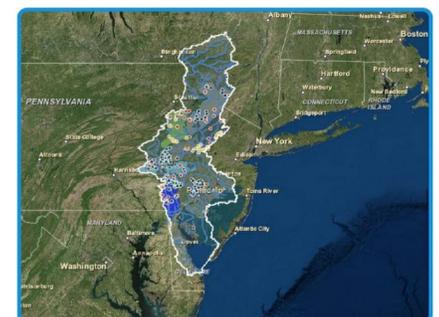
The Nature Conservancy is looking for the perfect applicant to lead their new citizen-scientist stream monitoring program, **Stream Steward**. Click [here](#) for more information.

Call for Submissions



Have a **cool photo to share** with DRWI partners? Need us to help **spread some important news**? Contact [Kathryn Christopher](#) for possible inclusion in an upcoming issue of *Stream Samples*.

DRWI Mapper



Quick Link

The [DRWI Mapper](#) is available whenever you need it. Contact [Lin Perez](#) with any questions or comments.

and the Monitoring Advisory and Coordination Committee Meeting held by the Delaware River Basin Commission (DRBC).



Research Assistants, Rick Searfross(left) and Stephen Dench(right), measure discharge at French Creek with a Sontek FlowTracker.

Hosted by American Rivers in partnership with Brandywine Conservancy and the Clean Water Fund, the Trees For Water forum featured speakers from various organizations such as Stroud Water Resource Center, Environmental Finance Center, TTF Watershed Partnership, Natural Lands Trust, and Resource Media. With each talk, the speakers shared their experiences with riparian buffer assessment, some with the successes and challenges of implementing a riparian buffer and others with alternative ways of communicating the importance of riparian buffers. The forum ended with an active Q&A discussion that engaged all the speakers and encompassed the multidisciplinary viewpoints of riparian buffer assessment.

The Monitoring Advisory and Coordination Committee Meeting was held to discuss various monitoring activities and opportunities for collaboration on monitoring. Several agencies, such as USGS and the Partnership for the Delaware Estuary (PDE), discussed their monitoring efforts, where their monitoring efforts will be directed in the future, and where to access the data collected, if available. Attendee ANS' Greg Barren was impressed by the number of projects in the area. In this single meeting about 20 different monitoring projects were discussed where presenters were working hard to collaborate and make their data available to other scientists and the public.

And in the Field

The ANS Stream Team has been braving the cold this past month for the winter segment of seasonal chemistry sampling. Biogeochemistry crews have traveled all throughout the Delaware River Watershed to collect water samples, HOBO logger data, and water discharge measurements at each of the project's 35 Integrative sites.



Derron LaBrake(far right) of Wetlands and Ecology, Inc. and ANS staff members (from left) Stephen Dench, Hayley Oakland, and Sylvan Klein preparing mesh leaf pack bags.

Year two of the Japanese knotweed project is underway! Led by Kathryn Christopher of ANS and Derron LaBrake of Wetlands and Ecology, Inc., this project explores the potential impact of the invasive plant Japanese knotweed (*Fallopia japonica*) on stream conditions, beginning by determining whether in-

stream macroinvertebrates show any difference in preference for colonizing native versus knotweed leaves. Continuing last year's leaf pack study, mesh leaf bags were prepared in November (with help from ANS staff members Stephen Dench, Sylvan Klein and Hayley Oakland) and deployed in three streams in December. They will be collected over the next several weeks and any macroinvertebrates

Stream Samples Archive

Miss an issue?

Access past *Stream Samples* updates on the [newsletter page](#) of our website.

Contact Us

Monitoring:

[Kathryn Christopher](#)
kac388@drexel.edu

Data Access:

[Meg O'Donnell](#)
mjo63@drexel.edu

Project Science or Research:

[Stefanie Kroll](#)
sak345@drexel.edu

present will be identified. We are looking forward to picking through this year's samples!

Stay Connected



The Academy of Natural Sciences of Drexel University | 215-299-1000

<http://www.ansp.org>

1900 Benjamin Franklin Parkway

Philadelphia, PA 19103

[Subscribe to this newsletter](#)

You are receiving this email because of your interest in protecting water quality in the Delaware Basin.

Copyright © 2014. All Rights Reserved.