



Bi-monthly

NEWSLETTER



Welcome USC Riparian Buffer Stewards:

The USC Riparian Buffer Establishment Program kicked off June 6th with the Buffer Steward Training. The 6 stewards (pictured above) brushed up on understanding riparian area benefits, diversity, field safety, how to evaluate the riparian area, and riparian plant ID. This crew will be scattered throughout the watershed evaluating and establishing riparian forest buffers. Through this program the USC plans to evaluate over 600 acres of riparian forest buffer and perform establishment activities on 200 acres! Funding for this program was awarded by the National Fish and Wildlife Foundation.



Above: Delaware County SWCD's buffer stewards and district technician employing the USC Buffer Protocol during training.

UPCOMING EVENTS



July:

[July 7 - 13 - Invasive Species Awareness Week](#)

[July 9 - USC Education & Outreach Meeting](#)

[July 26 - USC Bimonthly Meeting](#)

[July 31 - NY Data Entry Deadline](#)



August:

[August 6 - 8 - Empire Farm Days](#)

Add your event to our calendar by emailing Palmerm@co.tioga.ny.us

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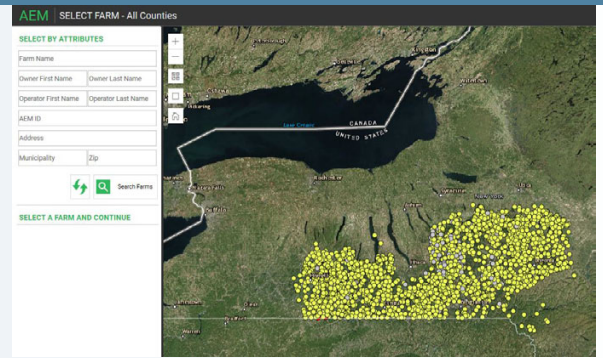
2019 BMP Data Entry & Verification:

By: Emily Dekar
USC Ag Coordinator

2019 Progress Year = July 1, 2018 – June 30, 2019

BMP Verification & Data Entry Deadline = July 31, 2019

Link to Online Database Tool = <https://aem.co.tioga.ny.us/aem/web/>



BMP verification includes all annual practices as well as the farms listed on your verification lists that you received in August of 2018. Additional data may include new practices implemented within the 2019 progress year, or any practices previously implemented that have not yet been reported.

Please contact Emily Dekar with any questions at (607)972-2346 or dekare@co.tioga.ny.us

USC Gains Seat On Bay Citizens Advisory Committee

By: Mike Lovegreen
USC Stream Team Leader

The Citizens Advisory Committee (CAC) is charged with responsibility for representing residents and stakeholders of the Chesapeake Bay watershed in the restoration effort and advising the Chesapeake Bay Program Partnership on all aspects of Chesapeake Bay restoration. In this role, they have been strong, vocal advocates for increased transparency and accountability, citizens engagement and education and independent evaluation of the restoration work of the Partnership. Members communicate with their constituencies to increase understanding of the Agreement and programs to restore and protect the Bay. The membership is broad-based with representatives from agricultural and homebuilding industries, business, conservation, environmental foundations, law and civic groups. Since 1984, this group has provided a non-governmental perspective on the Bay cleanup effort and on how Bay Program policies and programs affect citizens who live and work in the Chesapeake Bay watershed.

The USC had formerly had a seat on this committee held by Scott Fickbohm, formerly the manager of the Otsego SWCD. When Scott resigned from position as manager to take a position with Ag and Markets, the seat was left vacant for a number of years. In May, however, NY regained a seat at the table with the election of Mike Lovegreen, USC Stream Team Leader, to the Committee. Mike has served as one of the charter member of the USC and was manager at the Bradford County Conservation District for 35 years and brings a strong background in the Bay program and issues from both a NY and PA perspective.

The CAC meets quarterly and recently held their spring meeting in Baltimore. For input or questions, give Mike a call at 607-346-2718 or email him at mike.lovegreen@u-s-c.org



Upper Susquehanna Watershed Forum Save the Date

Watch for details regarding the 4th annual Upper Susquehanna Watershed Forum. The planning committee has released a tentative date of Tuesday, October 1 at Binghamton University. More details to follow!



Review of DroneDeploy aerial photo stitching software

By: Melissa Yearick
USC Wetlands Coordinator

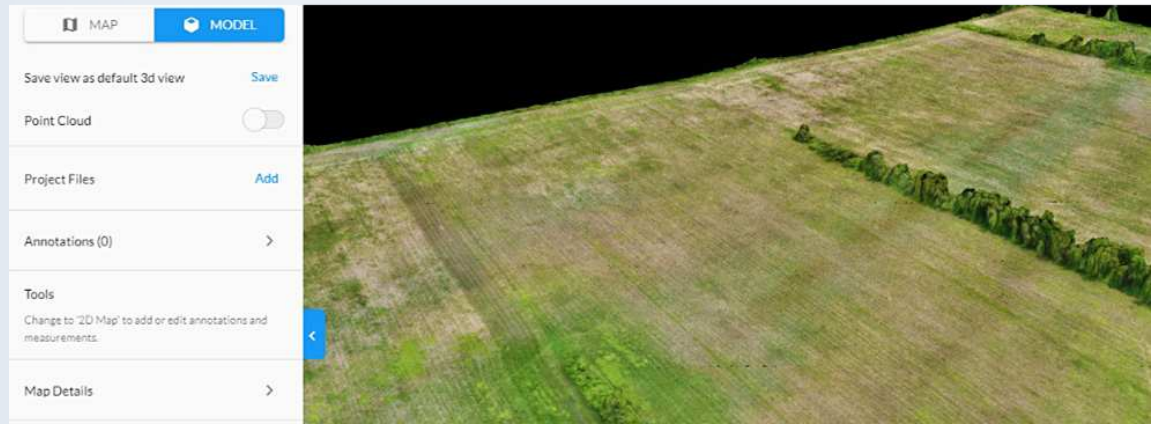
With continuing advances in drone-related technology, the USC wetland team decided to test out some software to find an option to meet our site evaluation and planning needs. Reading reviews and blog posts about the various photo stitching software options led us to a trial of DroneDeploy – touted one of the easiest programs to navigate for those of us who aren't full-time drone pilots. Unlike many internet claims, we found this to actually be true! And with a 14-day trial period, Kevin VanHine (Wetland Team's certified drone pilot) was able to fly some projects to test it out by simply setting up an account (with no credit card required) and downloading the app.

DroneDeploy works via an app and a cloud-based system where users upload a series of photos taken with a compatible drone (our DJI Mavic Pro was one of many options), and the heavy lifting of stitching hundreds of photos into a seamless image is done online in a matter of hours rather than bogging down our desktops. Once stitched, users can access the product using an account-based website where the image can be viewed, used to perform calculations and ultimately exported in a variety of formats for use in other software. Export options including jpegs, .pdfs and georeferenced geoTIFFs that import easily into ArcGIS are features of the baseline membership plan. This plan costs \$1,188 per year, or \$149 per month. The Business Plan costs quite a bit more, but export features include DEMs, contour shapefiles or contour dxf files for CAD (all interpolated from the photos), even evaluations of plant health (ag applications) among many other tools for different industries. We haven't had a chance to ground-truth the contours yet, but plan to do so this summer.

For our uses, we think our best option would be subscribing on a monthly basis when projects needing photos reach critical mass ensuring we have up to date orthophotos at minimal cost. Similarly, if once we ground-truth the contours developed for this project, we determine that they're sufficiently accurate, the \$449 monthly rate for the business plan would be an economical option to save on as-built surveys and other instances where field surveys would otherwise take 10 times as long.

With many other software options out there, some of them offering free trial periods, we would like to test some more out to compare and contrast, but our initial review of DroneDeploy is that it is a great option for using this new and exciting technology to improve our project evaluation, reports and potentially topo surveys.

This project is a 75-acre field we're reviewing for wetland mitigation potential. It took Kevin probably 10 minutes to set up the project, and the software calculates the flight paths for the drone, the number of batteries needed (2) and all other variables needed for a successful flight. Our drone took 32 minutes to capture 650 images at an elevation of 250' to fully map the field.



Above left: June 5 Drone flight: 0.9" resolution, **Above center:** 2017 NYS DOQQ 1' resolution, **Above right:** Same area with interpolated 2' contours (contours can be exported at any resolution). Areas with tree canopy are filtered out automatically by the software, leaving bare earth data, but if the canopy is too thick, the true ground elevation is not captured and would require supplemental survey points for accuracy. It would be interesting to do a similar flight earlier in spring to see if leaf-off conditions would allow the software to read the ground elevation through brush.



USC Stream Team Lays Out Full Menu Of Training Options

By: Mike Lovegreen
USC Stream Team Leader

In response to requests for training opportunities for stream corridor related elements, the USC Stream Team has compiled a number of selections for both new technicians as well as those looking for further training in advanced design. The selections presented below will be based on the interest and expertise of those indicating a wish to participate. Topics, schedules, location and content are designed to be fluid to meet the needs of registrants, so it is important that anyone interested in participating contact Mike Lovegreen, Stream Team Leader, as soon as possible. The determination if and when trainings will be held is contingent upon a minimum number of participants and hearing from those participants at least 3 weeks before target dates. Cost to USC members for training (less travel and any overnight) is covered and there may be opportunities for other SWCD staff to attend, based on numbers. For more information on trainings see the flier sent to all USC members. To get on the list for any of these trainings or get more information, contact Mike at mike.lovegreen@u-s-c.org.

Training Possibilities:

Name: *Introduction to Fluvial Geomorphology*

2.5 day field and class training. Target date September.

Name: *Fish Habitat Enhancement*

1 day field and class training. Target date July.

Name: *An Overview and tour of PA Dirt and Gravel Roads Program and field practices*

1 day field and class training. Target date August.

Name: *Developing a Sound Stream Corridor Design Package*

2 day field and class training. Target date September/October.

Name: *2 Day Stream Corridor Assessment Guide Training*

2 day field and class training. Target date July.

Name: *Stream Project Quality Assurance and CBP Spot Checks*

1 day field and class training. Target date October.

USC Wetland Team Gauging Interest on Wetland Delineation Training

The USC Wetland team is looking to gauge interest in offering a 2.5-day wetland delineation training during summer of 2019 for USC partners. At this time training options include: July 31 - August 2 or August 7 - August 9. The training, led by Dr. Mike Losito a SUNY Cobleskill professor and wetland delineation trainer, would include topics such as Jurisdictional Wetlands, Wetland Plant Id, Hydric Soils Recognition, Determining Wetland Boundaries, and Wetland Classification, and would take place in New Berlin, NY.

Please share interest in attending to Melissa Yearick -

Melissa@u-s-c.org



Project Spotlight : Delaware County Soil and Water Conservation District

Submitted By: Joe LaCourt

Delaware County SWCD Planting Projects

The Susquehanna Program of the Delaware County Soil and Water Conservation District has coordinated several tree plantings this spring and summer utilizing USC funding agreements to re-establish riparian buffers along streams in the Susquehanna River Watershed.

In early May, Williams Forestry and Associates planted two buffer areas: a 3.4 acre site with 475 trees and shrubs; the second consisted of 325 trees and shrubs on a little over two acres. Williams Forestry's professionalism was evident in the quality and appearance of the plantings.

Jessica Moore of Stamford, NY, and Hunter McRee of Doylestown, PA, will serve as Buffer Stewards this summer with the Susquehanna Program, replanting three CREP buffers to bolster tree and shrub numbers to comply with requirements for CREP re-enrollment. They are eager to learn more about Riparian Forest Buffers and to meet their goal of 1600 trees on fifteen acres. The two will follow up with the USC Buffer Stewardship Program's buffer evaluation process.



Photo Above: Williams Planting Site # 1



Photo Above: Williams Planting Site # 1



Photo Above: Williams Planting Site # 2



Photo Above: Buffer Intern Planting



Project Spotlight : Otsego County Soil and Water Conservation District

Submitted by: Mark Kugler

Otego Creek Riparian Buffer

Riparian buffers are vegetated areas along streams that provide a wide variety of benefits to aquatic organisms, terrestrial organisms, and landowners alike. Strong-rooted vegetation such as trees and shrubs help to stabilize banks and reduce the affects of erosion. They help to shade streams, which keeps water cooler during vulnerable months, and improves in-stream habitat. Riparian buffers also help to reduce sedimentation, they absorb excess nutrients from runoff, and they create habitat for wildlife and migratory songbirds.

In May 2019, staff and interns from the Otsego County Soil and Water Conservation District planted trees and shrubs to create a riparian buffer along a section of Otego Creek in Mt. Vision, NY. The planting was part of the Natural Resources Conservation Service's (NRCS) "Environmental Quality Incentives Program" (EQIP). The land had previously been used as a permanent hay field, and had no strong-rooted vegetation along that section of the stream. In addition, severe bank erosion prompted the necessity for a streambank restoration which included the construction of 3 stream barbs, and an armored bank protected by riprap.

Trees and shrubs were selected according to suitability for the soil types present, as well as the potential benefits each species could provide. The goal of the planting was to create a functional buffer with sufficient species diversity. Species planted included: Butternut, Buttonbush, Norway Spruce, Red Maple, Red Osier Dogwood, Sugar Maple, White Oak, and White Spruce. Trees and shrubs were planted within 20ft of the stream in 12ft spacing, and a 15ft grass buffer was flagged beyond that (which could still be mowed). Hardwood trees were protected with 5ft vented tree tubes, secured by oak stakes that were pounded into the ground and zip-tied to the tubes. Three foot square weed mats were ground stapled around all trees and shrubs. It is the goal of the program to maintain at least a 60% survival rate for all trees and shrubs planted. Monitoring and maintenance will be conducted by the Soil and Water Conservation District staff and interns for 3-5 years in an effort to get trees past their critical stage of growth, and replanting will be conducted as needed.



Photo Above: Streambank restoration after construction.



Photo Above: Riparian buffer after planting.



Project Spotlight : Tioga County Soil and Water Conservation District

Submitted by: Laura Grant and Danielle Singer

Little Nanticoke Creek Riparian Buffer Implementation

Nestled in a valley in the Town of Owego sits Twin Brook Farm. Running through the beef operation is Little Nanticoke Creek, a tributary to the Susquehanna River. Owner and operator Marvin Moyer preaches the importance of soil health to all those around, and his farm echoes this message. Moyer keeps a rigid grazing plan to ensure his cattle are 100% grass-fed, keeps tabs on his soil biota and continues to improve forage quality through various no-tilled pasture mixes. Most recently he acquired adjacent farmland that has been traditionally row cropped for many years which he plans to convert to permanent grasses for grazing. This spring he installed a five acre riparian forest buffer with cattle exclusion on both sides of the 1,400 foot stream reach on this new property. The installation of forest buffers can be quite difficult and the Moyer buffer was no exception. Step one was to remove the berm on either side of the constrained stream. Once the floodplain was reconnected to the stream, a buffer was planned out with a minimum width of 35 feet, extending in some areas to 70 feet. This buffer will reduce runoff of nutrients and sediment into Little Nanticoke Creek creating a healthier ecosystem in the stream, as well as, the Chesapeake Bay. As a result of implementing a riparian forest buffer, Moyer was also able to install 11,000 feet of fencing and 4,800 feet of waterline for three watering systems throughout his newly acquired 65 acres surrounding the stream. This additional 65 acres will allow Moyer to rotationally graze all of his animals at the home farm and eliminate his need for rented pastureland. All of this work was done utilizing the USC Water Quality Program which uses National Fish and Wildlife Foundation funding to implement best management practices on farms in the watershed.



Above and Below Before Buffer Planting



Above and Below After Buffer Planting

