



THE BLACK CREEK WATERSHED WIRE

News from Black Creek Watershed, Cary, NC

March 2015

Visit the project website at www.ncsu.edu/WECO/blackcreek

Moving forward in the creek

Fourteen people met for a Black Creek Watershed Association winter dinner meeting January 14 at Cary Town Hall in the new Water Resources Department's conference room. They discussed current stormwater control projects, monitoring efforts in the creek, and

decided YES, we DO want to keep working together to improve Black Creek, by putting together a new grant proposal to continue work beyond 2015. Their ideas for the future are included in this newsletter, along with the summary of their discussion.



Black Creek highlights

Updates about current projects funded by the EPA grant included the following:

Godbold Park Wetland: Kris Bass of Kris Bass Engineering designed a wetland retrofit of an underperforming dry detention basin that received drainage from the upper parking lot. Town of Cary Public Works provided excavation services, and Town of Cary, Water Resources Research Institute (WRRRI) staff, Green Hope High School students, and Bass planted the wetland. A BCWA member asked if an educational sign would be installed. The Town may have a similar sign elsewhere that could be adapted for the Godbold Park site. Christy will work with Charles Brown on the design and installation of a sign.

Harvest Church Project: Located in the East Fork headwaters of the Black Creek watershed, on the corner of Reedy Creek Rd. and Chapel Hill Road, much overland and piped stormwater flow from this site flows directly into a highly eroded manmade culvert. A new congregation is managing this previously developed site. Church leaders are happy to partner on



Godbold Park wetland planting day

improvements to the site, to help freshen the grounds and help the creek.

We identified several opportunities for reducing and treating stormwater runoff, including a regenerative stormwater conveyance (see definition below) at the piped outfall, rain gardens/bioretention, permeable walkways, and bioswales. Based on the Church's preferences to improve their

Next Gathering:
BCWA tour and picnic in late spring! Keep an eye on the BCWA listserve for information! Participants will help plan a fall event to appreciate our project partners.

Membership in the BCWA is open to all with an interest in improving the creek its tributaries.

To subscribe to the BCWA listserve, contact Christy Christy_perrin@ncsu.edu with your email address.

Like us on Facebook for updates and photos:
www.facebook.com/blackcreekwatershed

Inside this issue:

Black Creek highlights	1-2
Future project ideas	3
NC Watershed Stewardship Network	3

(Continued on page 2)

Black Creek Happenings, continued

entrance by reducing flooding there, the current grant will focus on retrofitting this entranceway with bioretention, permeable walkways, and a bioswale this spring.

A regenerative stormwater conveyance (RSC) is a restoration practice for eroded stormwater outfalls. An RSC utilizes a series of shallow aquatic pools, grade controls, native vegetation and underlying sand and beds to treat, detain, and convey storm flow in a non-erosive manner (definition from state of West Virginia).

Coastal Federal Credit Union bioretention: A bioretention (rain garden) retrofit will divert runoff from the front parking lot into what is currently a raised grassy area that fronts Harrison Avenue. Jon Page, NCSU Dept BAE, is designing this and the Harvest Church retrofits.

Residential rain garden: We will work with a BCWA member to install a rain garden in Silverton this spring.

Stream Flow Monitoring:

Dan Hitchcock explained that monitoring has been ongoing in the Black Creek mainstem for 5 years now. We have five years of solid data, including rainfall data from the UGSG rainfall gauge at Lake Crabtree. He can look at individual storms and characterize how much rainfall ends up in Black Creek. In general, Black Creek is very flashy. Two additional flow sensors were installed in upper headwater streams in Northwoods and at the tributary that crosses Belhaven Drive. These sensors have collected stream flow data since July 2014, to provide information about headwater drainage areas.

We sought to concentrate our stormwater retrofits, including the bioretention upfits, in these areas. The amount of impervious surface being disconnected and stormwater treated at Harvest Church and the Credit Union will be too small to measure instream impacts at the flow monitoring sites. We will have to use the data in a modeling effort to learn more about how retrofitting efforts may impact the stream. A couple of hydrology models include HEC-HMS and Hydrocad. Delineating the upper wetlands is the tough part, since there is so much grey (manmade) infrastructure in the headwaters.

Question (Q): Why does the runoff seem worse recently?

Response (R): Last year's rainfall was 10-12 inches higher than normal!

Q: Do cisterns make an appreciable difference for runoff?

R: If there are enough of them, strategically placed where needed, and they are regularly used.



One of the Beechtree pond outfalls after rain (Amin Davis)

Beechtree dam discussion

The Beechtree Homeowners Association has a committee to evaluate and recommend maintenance options for their two ponds and dams. Would installing several rain gardens reduce the stress and maintenance requirements on the dams?

R: Since rain gardens are designed to treat and infiltrate rain from the common 1 inch storm, and are designed to overflow during large events, they would not help the dams during the types of events that could damage them. While we notice the big rain events more, 90% of our storms are <1 inch so rain gardens would still be helpful for capturing and treating most of the rainfall we receive.



Future projects ideas from BCWA:

Participants said **YES** to plugging away to improve Black Creek after the current grant ends in Dec. 2015, and provided ideas:

- ◆ Continue retrofits at Harvest Church – great site!
- ◆ Residential rain gardens with Beechtree HOA
- ◆ Kingswood Elementary School (with PTA)
- ◆ Boundary Lane Apartments (worked with TOC Phoenix Project– possible tie-in to TOC programs)
- ◆ Northwoods Elementary School bioretention
- ◆ Town Center Area Plan– talk with TOC
- ◆ Black Creek Greenway improvements– talk with TOC about seeking retrofit opportunities
- ◆ Macrobenthic invertebrate monitoring (last done in 2008)

Help with grant proposals and seeking sponsors is needed to keep this community-driven Black Creek effort going! The next EPA 319 grant proposal is due in late May. Email Christy at christy_perrin@ncsu.edu about opportunities to participate.



Eyes on erosion

BCWA members from Silverton and Beechtree are working to reduce sedimentation from a construction site that drains to Silverton’s lake. Their efforts have included speaking to Town of Cary and Town of Morrisville staff, viewing the site and practices with the developer, and researching options to improve the situation. Thanks for keeping your eyes out on erosion in Black Creek and neighboring watersheds. Remember that you can always call Town of Cary Water Resource Department (919) 469-4030 to report any unusual looking sedimentation in streams.



January BCWA Meeting Participants

Liz Adams, Silverton
 Kris Bass, Kris Bass Engineering
 Colleen Bockhan, Lake Crabtree County Park
 Charles Brown, TOC Water Resources Dept.
 Susan Davenport, Winchase/Beechtree
 Nora Deamer, NC Division of Water Resources
 Paul Eppers, Beechtree
 John Fear, Water Resources Research Institute
 Dan Hitchcock, Clemson University
 Eric Kulz, Beechtree and TOC Water Resources Dept.
 Karen Kulz, Beechtree
 Jon Page, NCSU Dept. Biological and Agricultural Engineering
 Christy Perrin, Water Resources Research Institute
 Leigh Williams, Buckhurst West and Northwoods Elementary PTA



Join the NC Watershed Stewardship Network!

The NCWSN will connect professional and volunteer stewards across NC. We aim to provide online and in-person networking and skill-building opportunities. Send your email address to Christy to join the listserv and learn about new opportunities as they roll out!

www.ncwatershednetwork.org

Phone: 919-513-1152
christy_perrin@ncsu.edu
www.ncsu.edu/wrri