

White Oak River Watershed Advisory Board



June 9, 2003 **MINUTES**

www.ces.ncsu.edu/WECO

For Monday, March 18, 2003 meeting

The next WORAB meeting is scheduled for:

Monday, August 11, 2003

7:00 p.m.- 9:00 p.m.

at the Carteret County building in Cedar Point

Agenda:

- ◆ Pettiford Creek 319 project: Report back on ground-truthing of study results and Peletier meeting
- ◆ Next steps for Pettiford Creek- how to involve the community? How to move forward with implementing Best Management Practices? (BMPs)
- ◆ Update on proposed US Army Corps of Engineers White Oak River study

RIBBON CUTTING CEREMONY FOR SWANSBORO BEST MANAGEMENT PRACTICES

Monday, August 4, 2003

11:00 a.m.-11:30 a.m.

Ward's Shore Park raingarden

Please join us for a brief ceremony to celebrate the completion of the Swansboro stormwater BMPs. All site construction is complete, and educational signs are being created for the sites. Join NCSU Chancellor Marye Anne Fox in recognizing the efforts of the partners who have made this project possible, including the White Oak River Watershed Advisory Board and the Town of Swansboro.

Update on the BMPs: the permeable pavement parking lot BMP adjacent to Century 21 was completed in June. Educational signs are being created for the pervious pavement parking lot site and the Ward's Shore raingarden BMP. Patrick Beggs, WECO, and Connie Asero, WORAB member, hosted an educational booth about WORAB, the BMPs, and water quality at the Town Hall raingarden during the Arts by the Sea Festival on June 14.

PETTIFORD CREEK WATERSHED RESEARCH

Michael Holmes, NCSU College of Design, provided the results of the watershed analysis study that was completed for Pettiford Creek. Information was compiled from the field survey, the water quality monitoring, and GIS data to complete the analysis. Bill Kirby-Smith, Duke Marine Lab, presented the findings from the water quality monitoring first.

Results of Water Quality Monitoring

Bill Kirby-Smith, briefly reviewed his findings from the water quality sampling. He sampled at falling tides to get water as it was coming down the creeks towards the river. The first year of sampling was very dry, which yields water that has high salinity. High salinity kills bacteria so high bacteria would not be expected during drought. The data suggest that, in the absence of storm water runoff, fecal coliform sources would not cause closure of the areas

downstream where the significant shellfish resources are located.

In the second year of monitoring (2002), most of effort was spent sampling into the mouths of perennial streams and within the series of dredged canals that connect numerous homes and docks with the creek. Rainfall occurred at a much higher rate than the previous year, resulting in sufficient stormwater to move the pollutants throughout the watershed. Samples from the mouths of the small perennial streams and the canals were generally much higher than those in the main stream of the creek. These data suggest a large, highly variable source for FC in the watershed.

He recommends structural BMPs aimed at controlling the rate of runoff from the watershed following heavy rainfall. That approach would reduce the loading of fecal coliform into the shell fishing areas in the downstream, more open part of the creek and allow time necessary to enhance the die-off of fecal coliform bacteria. He feels that identifying the major sources of fecal coliform before spending a lot of resources on structural BMPs would be most prudent. A low-cost, non-structural BMP that could be implemented at low cost would be education aimed at addressing problems associated with urban wildlife (raccoons, ducks) and domestic pet waste.

Results of Watershed Analysis

A statistical analysis was conducted to determine potential relationships between high fecal coliform bacteria occurrence and landscape characteristics in the watershed, and with potential bacterial sources. The analysis also looked at relationships with e coli, another bacterium that can cause health problems. Michael showed maps that highlighted where potential problems were occurring based on the analysis. These maps will be available for viewing at the WECO website: www.ces.ncsu.edu/WECO click projects and then click White Oak River.

Analysis of the 2002 water sampling data:

Fecal Coliform had a SIGNIFICANT relationship with:

- Slope Classification/ Landform
- Ditch count
- Cats

So in areas where the landform only allows for

minimal infiltration of stormwater, more ditches were counted, or more cats were counted, higher levels of fecal coliform bacteria were found.

In 2002, e coli had a SIGNIFICANT relationship with:

- Impervious surface (sq. feet)
- Dogs
- Wildlife

In areas where there was greater square footage of impervious surface, more dogs counted, or signs of wildlife, higher levels of e coli were counted.

Analysis of the 2001 water sampling data:

Fecal coliform had a WEAK relationship with:

- % of vegetative class
- Ditch count
- Dogs
- Other
- Wildlife

A logical factor that contributes to the relationship being weaker in 2001 is the low levels of rainfall that occurred during monitoring season resulting in low levels of stormwater and bacteria. Even though these relationships between the landscape characters are not as strong as in the 2002 data, it is important to note the overlap in landscape characteristics found in both the 2001 and 2002 results.

Some Discussion points following Michael's presentation:

- One area that shows up as a hot spot on multiple maps is a horse farm adjacent to Pettiford Creek. Bill Kirby-Smith volunteered to sample drainage from the property if he can find public access.
- A large natural area adjoining the Star Hill golf Course has been purchased for conservation. We should get the location of this area from the NC Coastal Federation and include it in our maps.
- Water quality problems started 30 years ago when more people began moving here.
- Are there any developed areas that flow through the Croatan National Forest, so we could partner with them on projects? (No)

For more information about the White Oak River Watershed Advisory Board, or to be removed from this mailing list, please contact Christy Perrin at 919-515-4542.

- The SWCD can work with farmland owners upstream to implement agricultural best management practices.

Opportunities for Addressing Pollutants in Pettiford Creek

Three main types of solutions exist for addressing the pollutant problems in Pettiford Creek:

- 1) **Restoration:** On the ground projects, also called engineered Best Management Practices (BMPs). (Some demonstration BMPs were constructed in Swansboro as part of this project)
- 2) **Education:** Can educate elected officials and citizens on how to prevent further degradation, how to minimize pollutants getting into the River
- 3) **Policy Changes:** Local governments can enact policies to minimize impacts from development.

The group discussed various ways to proceed and thought of some ideas:

Involve Town of Peletier: The group discussed presenting the results of the research study to Peletier elected officials and the Planning Board, particularly since Peletier is currently undergoing a land-use planning process. They would like to explore what types of BMPs might be acceptable in Peletier. For example, widening ditches is a good way to allow for slowing down water and killing off bacteria before it reaches the creek.

Some discussion occurred about how Peletier could be a model planning area for minimizing impacts on shellfish harvest areas. The new pizza restaurant in Peletier was mentioned as a potential location for BMPs.

The group also asked to check if Cape Carteret officials could also be included in the presentation to Peletier. (Answer: No- Peletier would rather that be done separately).

Note- the group wanted to share with Peletier the work that has been completed in Swansboro.

Decision: The group asked Christy to present the results to Peletier to educate them and seek ways to involve them in the restoration effort. Christy will present the results at the August 4 Town Council Meeting.

Follow up on Research Results:

The Pettiford Creek Project Team met on July 7 and drove to the various identified "hot spots" for pollutant loading to field-verify the results. A few potential best management practice sites that could help reduce stormwater runoff were identified during the tour. These potential sites will be presented to the Peletier officials on August 4, and to the WORAB at their next meeting on August 11.

Next steps include contacting landowners to discuss BMPs and determining how to involve the community with restoring the watershed.

WORAB Member Notes:

Our deepest condolences go out to friends and family of Bob Wolfe, who represented the Isaac Walton League on the WORAB. Bob died in a car accident on May 25. He will be deeply missed by fellow WORAB members and project staff.

WORAB chair Jane Hoveland became a new grandmother on June 9. Congratulations to Jane on the addition of Michael Patrick Hoveland to her family!

June Attendance:

Connie Asero, Crystal Coast Canoe & Kayak Club
David Bidelsbach, Dept. of BAE, NC State University
Gene Heath, Owner Flying Bridge and White Oak Bistro
Michael Holmes, NCSU Design School
Todd Kelly, Carteret SWCD
Bill Kirby-Smith, Duke Marine Lab
Bill Norris, Onslow SWCD
Christy Perrin, WECO
Thurman Upchurch

