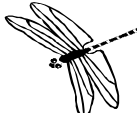


White Oak River Watershed Advisory Board



May 13, 2002 MINUTES

www.ces.ncsu.edu/WECO

For Monday, May 13, 2002 meeting

PLEASE NOTE: THE WORAB WILL NOT MEET IN JUNE OR JULY!

The next WORAB meeting is scheduled for
Monday, August 12, 2002
7:00 p.m.- 9:00 p.m.

- ◆ Panel on Storm Debris and Beaver Dams in Upper White Oak River
- ◆ Updates on Pettiford/Town of Swansboro 319 Project

Attendance:

WORAB members/alternates and guests:

Al Fox	Jane Hoveland
Michael Banks	Steve Malay
Elmer Eddy	J.D. Potts
Gene Heath	Bob Fox

Technical/support staff:

Christy Perrin, WECO
Jason Jolley, WECO
Lisa Wimpfheimer, NC CES
Bill Kirby-Smith, Duke University Marine Lab
Lu Garrigan, NCSU Marine Science Lab

The summary for the May 13 meeting includes the following items:

- Update on EPA Project
- Update on Pettiford Creek Watershed Assessment
- Update on Town of Swansboro BMPs
- Overview/Visual of Group History
- Discussion of Upper Watershed Issues

Update on EPA Project

Water Quality Monitor: Grab Sampling Update

Presented by Bill Kirby-Smith. DUML

Bill distributed a map of Pettiford Creek, highlighting grab sample monitoring site locations and associated fecal coliform and E.Coli. counts. Bill noted that a count above 14 colonies per 100 million was high enough to close a shellfish bed. Bill informed the group that fecal coliform counts were low at the mouth of Pettiford Creek where open water is present. Counts began to rise in an area near the narrows and were high in the middle of the creek near development. The upper area of the creek had low to moderate fecal coliform counts. The Croatan appeared cleaner than Bill expected.

Bill reminded the group that the fecal coliform counts were concentration numbers and not loading numbers. Loading is calculated by multiplying the concentration by the flow. It should be noted that a high fecal coliform count with a low flow does not have as great of an impact on water quality as a high flow with a moderate count. Fecal coliform can come from a variety of sources and fecal coliform is filtered by oysters, clams, and shellfish and eaten by amoeba.

Grab samples indicated that water from the golf course had low fecal coliform, so it is probably not a source of fecal coliform. High counts of fecal coliform could include runoff after rainfall, animals in marsh, and high counts that go up stream and do not die off. Any development increases runoff and this could contribute to fecal, as could failing septic

tanks or undiscovered straight piping to the creek or its tributaries. One area under a dock had very high counts because of the presence of ducks. More in-depth monitoring and bacteria tracking is necessary to determine the source of fecal coliform.

Questions

Q: Is there an E.Coli. standard?

A: No, it just helps to determine where fecal coliform comes from.

Q: When water tests positive for fecal coliform, what is the germ most often found?

A: E. Coli. is most often found in water tests. E. Coli. is found in the intestines (in varying amounts) in all warm-blooded animals. It is not found in cold blooded animals.

Q: Is the decrease in oysters and other shellfish the reason fecal is so high?

A: It is a theory, since oysters filter fecal.

A: J.D. Potts: Calico creek is full of oysters and it is still polluted. It could depend on a variety of factors.

Q: Why are there no longer any large oysters.

A: They are harvested or die of disease before they reach a large size.

Q: Has any one repopulated oyster beds in this area?

A: Not that I know of at the state level. Some neighbors have done this themselves. If people are going to do this themselves by dumping shells, they need to do so in late May or early June to catch the big "set" (where oysters release young into the water column).

Q: Why did some of these counts rise sharply in a short time period?

A: Maybe a result of rain, but I cannot tell you how much rain we had during this period.

Q: What is the water source for little ditches?

A: Tidal sources.

Q: Does the fire at Croatan affect water quality?

A: It could scare wildlife away from the area and maybe this could contribute to less fecal coliform, but that is just a hypothesis. It would also probably add phosphorus.

Q: How long does fecal coliform live?

A: In fresh waters, it lives 12 hours to 5 days. In saltwater, it dies in about 3 hours. Sunlight can kill fecal coliform in about 3 hours, that is why shallow ponds are used for treatment because sunlight can penetrate the water. Temperature, salinity, and light are all factors that affect the survival of bacteria.

Q: What is the next step in your monitoring?

A: We will keep monitoring 10 sites every 2 weeks. We are also open to other suggestions.

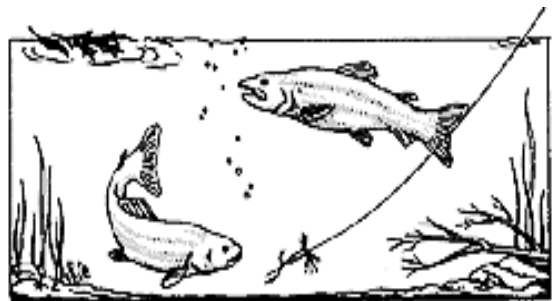
Q: What about beavers and fecal coliform?

A: They are so far up stream that it takes several cycles for fecal coliform to make its way down the creek. They probably do not affect fecal coliform this far down. Beaver ponds can have a positive effect on water quality by trapping and slowing down water.

Q: Since beaver ponds are deeper and located in shady areas, how does sunlight penetrate to kill fecal coliform. Do beaver ponds filter water.

A: The beaver pond has a large volume of water, so water remains longer. This slows water and allows for sediments to settle and allows algae to take up nutrients. Less light may penetrate, but surface area is larger, so more water may be exposed. Beaver ponds could be high in fecal coliform if wildlife is present. No research has been done on the filtering effect of beaver ponds.

ACTION ITEM: Michael Banks volunteered to take grab samples above and below beaver dams to help Bill Kirby-Smith's students determine if they impact water quality.



Stormwater Monitoring

Christy informed the group that Dan Line and Nancy White will be conducting more in-depth monitoring at 3 sites. One is in the Croatan. Another is located near Wheels 'N Keels. The landowners are out of town and we are having difficulty contacting them and their representatives regarding monitoring. Gene Heath offered to assist in contacting Wheels 'N Keels.

The other property is in Star Hill and we are having difficulty contacting that landowner too. Steve Malay knows the landowner and he volunteered to contact her. J.D. Potts will follow up with the landowner with specifics. The Star Hill property will monitor for the whole development and golf course.

UPDATE: We received approval from the landowner in Star Hill and from Wheels 'N Keels to access their property for monitoring and monitoring equipment.



Pettiford Creek Watershed Assessment

**Written Report Provided by Michael Holmes,
NCSU College of Design**

Michael provided the group with an update on the watershed assessment that began in February. Watershed assessment forms were developed to document characteristics of a landscape that effect water quality. These characteristics included **land cover** (impervious surface, disturbed area and vegetative patches), **hydrology** (creek, buffer, slope, hydrologic modification) and **potential pollutants** (pets, wildlife, etc) Parcels data for the county was obtained for the county and the parcel was used as the unit of assessment. The developed part of the watershed was divided into ten areas. Assessment teams comprised up of professionals and volunteers were assigned to each area. Assessment forms were completed for approximately 70% of the parcels in the watershed.

To date, the data from the assessment forms has been input into a spreadsheet. This database will be queried to obtain general information for the watershed. For example, how much of the watershed remains undeveloped? How much impervious surface is there in the watershed? What is the percentage of the creeks buffers are currently being maintained as lawn? Additional, at the top of each

assessment form is a Parcel ID that will allow the database to be integrated with the GIS data. This will provide for a spatial analysis, based on factors such as location, proximity and the clustering of the data. This assessment database will also serve as the baseline data for land use / land cover change analysis will be based on. Results form this analysis will include the identification of areas / site that have undergone extensive hydrological modification as well as help identify opportunities for mitigation. This analysis will also help identify the location / habitat of pollutant.



Town of Swansboro

Christy updated WORAB BMPs on town property in Swansboro. The design for the BMPs will be done by NCSU rather than sending out request for proposals (RFP). NCSU will then send out an RFP for construction.

Group History

Christy provided WORAB with a visual timeline of the group's history. Each WORAB member made additions to the visual timeline, including the date they joined the group. Group members suggested that WECO take a digital photograph of the timeline and display it on the WECO website. The timeline can be viewed at <http://www.ces.ncsu.edu/depts/agecon/WECO/>

Upper Watershed Issues

Christy reminded the group that the WORAB focus had recently shifted to the mouth and lower watershed. WORAB is seeking to determine the interests of the upper parts of the Watershed. The majority of the issues surround storm debris and beaver dams in the White Oak River.

Members of the Izaak Walton league informed the group that the Izaak Walton league was formed in the watershed 25 years ago to focus on clearing out the White Oak River because it was clogged and unusable for people. It was noted that in 1996, Jones and Onslow Counties allocated money to pay for clean-up. They agreed to share the clean up since the river is their county boundary line. Some problems arose and clean up did not occur as planned.

Beavers are also a problem in the upper White Oak River beginning at Belgrade Rock Quarry. Some WORAB members were concerned that beavers contribute to economic loss in the form of timber losses and loss of recreational use of the river. Concern was also expressed that sediment maybe a problem in the river because it settles out of beaver ponds to reduce flow and flushing. Some WORAB members also noted the need for a stream maintenance program.

Questions

Q: How do you remove storm debris?

A: Mike Banks: Most clearing is done by hand. Debris is cleared by chainsaws and deposited 35-50 feet up the river bank. New equipment is also available to cut debris and place on the back of a barge.

Q: Is there a source of funding for removal of beaver dams?

A: Mike Banks: Since both counties (Jones and Onslow) reach joint decisions on the White Oak River, they can possibly seek funding. Previous funding came from FEMA to clean up storm debris.

ACTION ITEM: WORAB decided to bring together a panel of experts over the next several meetings to discuss beavers. Suggestions for the panel include:

- **A hydrologist from ECU**
- **A beaver expert from the Wildlife Commission**
- **The New River Keeper**
- **Eco-tourism representative**
- **Natural Heritage Program representative**

Al Fox will also provide history of the Izaak Walton league.

Bill Kirby-Smith will present data on beaver dams that his student will collect.

*"It is our task in our time
and in our generation to hand
down undiminished to those
who come after us, as was
handed down to us by those
who went before, the natural
wealth and beauty which is
ours."*

-John F. Kennedy

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