

Spring 2004

Cathey's Creek Newsletter

Watershed Education for Communities and Local Officials

2nd Meeting of Cathey's Creek Watershed Technical Advisory Committee

The Cathey's Creek Technical Advisory Committee met for the second time on March 8. The group heard which questions will be investigated through the watershed assessment, and heard the plan for the field assessment to be conducted by Earth Tech and NC Division of Water Quality.

The Committee provided some feedback about the proposed assessment methodology, and offered advice on how to reach

landowners regarding the assessment.

Summaries of all of these activities are included within this newsletter. You can view the complete powerpoint presentations shown at this meeting on our website at

www.ces.ncsu.edu/WECO/catheys

You can also submit anonymous comments at this site.



Watershed Assessment Focus Questions

After the first Cathey's Creek Watershed Advisory Committee meeting, the project team considered the feedback from the group along with the initial watershed characterization results to determine how to focus the remaining watershed assessment resources. Kristin Cozza, NC Ecosystem Enhancement Program, presented the questions that the assessment will seek to answer through more intense investigation and fieldwork this summer.

Stream Health

Why is stream health in the Cathey's Creek Watershed more degraded than similar streams in the area?

What is causing this difference in stream health?

Sedimentation

What are the primary sources of sediment pollution? What is their relative contribution

to the sediment load in the watershed?

Stormwater

Are typical stormwater impacts evident in the Holland's Creek drainage?

Wastewater Treatment Plant Discharge

Does the discharge from the Spindale WWTP warrant a more detailed evaluation to determine potential impacts to stream health? The team will look at existing monitoring data to see if anything unusual warrants a closer look.

Historic Gold Mining

Do these historic operations pose a risk to aquatic life and human health?

The methods that will be used to investigate these questions are outlined in this newsletter.

The Next Technical Committee Meeting will be held after the field assessment has been completed in late summer or early fall.

We will send an announcement as soon as the meeting date is scheduled.

Inside this issue:

<i>Overview of CCWAC Meeting</i>	1
<i>Assessment Focus</i>	1
<i>Field Assessment Methodologies</i>	2
<i>Water Quality monitoring plan</i>	3
<i>Notifying landowners</i>	4
<i>Project Schedule</i>	4

Watershed Assessment Methodologies for Cathey's Creek

Jane Almon shared with the group her plan for conducting a detailed watershed analysis. She first provided an overview of the assessment process:

1. **Characterization:** The first step of the study was GIS based, and determined functional status of the watershed, and identified stressors. The project team used this and the group's feedback to determine the watershed focus questions listed on page 1. The Characterization report is online at www.ces.ncsu.edu/WECO/catheys and will also be provided to the Rutherford County CES center.
2. **Detailed analysis:** to occur this summer, and will involve fieldwork, monitoring, and identifying focus areas
3. **Specific solutions:** the detailed analysis will provide information needed to target solutions such as education, restoration projects, and other management strategies.

Jane reviewed the results of the Characterization for the group. The Characterization looked at indicators of three major watershed functions—

Hydrology (water storage, moderation of flow or discharge, channel stability)

Water Quality (elemental cycling, removal of pollutants, water retention, thermal regulation)

Wildlife Habitat (plant and animal distribution and abundance, physical habitat characteristics).

The assessment looks at “indicators” of watershed functions that when measured can provide clues about the watershed's health. For example some animals such as neotropical migratory birds, need habitat with dense forest cover (interior habitat). She can look for dense forest patches of 75 acres or more to identify potential habitat areas for species.

Based on the results of the characterization, Jane categorized subwatersheds in the planning area into 4 Sub-watershed Groups. The groups can be described as:

- A** Subwatersheds with the most forested cover, such as headwater, upstream areas (3 in this group)
- B** Less forested cover, some more impervious cover (3)
- C** Similar to B, but with a little less forest and a little more impervious cover (5)
- D** Most developed subwatersheds, with the most amount of stream length classified as impaired. Found in lower end of the watershed (3)

The next step of the assessment, the detailed analysis, will involve looking closer at the water quality stressors (such as non-point sources, stream bank erosion), to try to determine specific causes and sources of impairment so that solutions can be developed to address these.

The detailed assessment will include a field-based analysis that will look at the following indicators. Tools to be used are bulleted below.

In-stream habitat

- NCDWQ Habitat Assessment Form (looks at things like amount of woody debris in water that provides cover for aquatic animals)

Stream Morphology and Function

- Bank Erosion Hazard Index, near Bank stress, Geometry (measurements to determine the erodibility of banks— stability of the stream)

Riparian Buffer condition

- Width, cover type, breaks in the buffer that allow runoff through, presence of exotics, soil type, wetland rating

Landscape Condition

- GIS analysis using newer aerial data, Field verification of GIS land cover and slope (slope is correlated with sediment)

Other documentation that will be used to assess the watershed include photos, sketches, GPS sampling location, notes on projects or BMP potential, water quality probe.

Questions for Jane:

Q: What do you consider as impervious surfaces?

A: Certain land uses that we see in GIS maps are considered to have a certain percentage of imperviousness. For example, commercial is considered 80% impervious while roadways are 100%. A lot of assumptions are made. Logging roads may not be picked up in the analysis using this land coverage data. The purpose of the GIS analysis is to get a big picture, to point us in the right directions. The purpose of the field work is to confirm that the characterization results are valid.

Q: When foresters cut logs and they fall in a stream, do you have to move them/

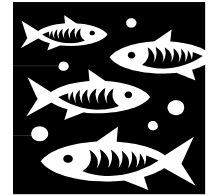
A (from G. Yates): If it is impeding the flow of the stream, the person who put it there is supposed to remove it.

Q: Regarding planned NCDOT Hwy 74 bypass project,

there were 4 alignments proposed. Were all studied? Has an alignment been chosen?

A: Kristin looked into this after the meeting. NCDOT has identified 4 alternatives, and are currently collecting environmental data on these alternatives. They have not selected the final alignment yet. DOT has also signed an agreement with the Historical Society to determine the extent of Gilberttown.

Comment: Please note any rare wildflowers that you come across during your fieldwork. (okay!)



Water Quality Monitoring Plan for the Assessment

Andrea Leslie, NCDWQ, shared her proposal for monitoring water quality this summer.

Overall the 2004 DWQ Monitoring plan includes:

1. Water chemistry
 - upstream-downstream of Holland's Creek
 - Urban stormwater
2. Upper Hollands Creek investigation
3. Sediment chemistry
 - mercury and arsenic
4. Fish community monitoring
5. In-stream habitat comparisons to other watersheds

1. Water Chemistry monitoring sites:

Questions to address:

- A. What pollutants are delivered during storms?
- B. Is there a difference in water quality in Cathey's Creek above and below Hollands Creek?

2. Upper Holland's Creek

Question is why was the benthic community in 2003 so poor? To be answered using water chemistry and watershed exploration.

3. Sediment metals

Question to address: Is there residual mercury and arsenic contamination in the watershed from past gold mining? To be answered using water chemistry and sediment chemistry.

4. Fish Monitoring Sites

Questions to address:

- A. Has the fish community recovered since 2000 in lower Cathey's Creek?
- B. Is there a difference above and below Holland's Creek?
- C. What is the fish community of Holland's Creek?
- D. How do fish in Holland's Creek respond to differences in habitat?

5. In-stream Habitat comparisons

Question to address: How important and widespread is in-stream habitat degradation? To be answered by comparing habitat and biological communities in the Cathey's Creek Watershed to nearby watersheds. Andrea noted

that Holland's Creek is special by having a ridge of rock at the surface, making it look similar to a rocky mountain stream. What difference does this make for the fish community?

Questions/discussion

Comment: We need another sampling site in the middle of the watershed, since gold mining occurred there. (fyi- 4-5 gold mines were near the airport)

A: Good idea, but we only have 1.5 days available to do the sampling so can only look at 4 sites in that time. We chose the sites based on surrounding land uses (disturbed, agricultural, forested, residential, urban. We will look at a sediment sample to see if there are impacts from the gold mines.

Q: I see you are doing heavy sampling in urban areas. Will you be looking at the physical degradation of streams in urban areas?

A: Yes.

Q: How will you address upstream influences? For example if there is an agricultural area outside of the 300-foot sampling area?

A: We will use GIS to identify a land use, then get out in the watershed to look at it. We will delineate mini-watersheds for each sampling point, and then will look at the land uses that drain to that sampling point.

The group had a discussion about forestry uses. The project team wants to look at forestry sites that have been managed well and poorly. If logging has increased locally because of economic reasons (mill closings) to provide a source of income, it is important to consider. Companies are also liquidating property in the area. NCDWR staff requested that the assessment shows a sample of sites where you have problems as well as positive forestry practices. Bill Swartlan, NCDWR, evaluated BMP implementation to see if installation could assume compliance, and may have some data for the area.

Watershed Education for Communities and Local Officials

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We're on the web!
www.ces.ncsu.edu/WECO/catheys



Upcoming events

April 17 Rutherford County's 225th Anniversary. Call 828-287-3509 for more information

April 22, 2004 Earth Day
Look for nearby events at
<http://earthday.envirolink.org/>
www.earthday.net
www.epa.gov/earthday/

The Month of May is American Wetlands Month

May 8, 2004 International Migratory Bird Day. See www.birdday.org

Notifying Landowners of Watershed Assessment

Jane asked the group how Earth Tech can let landowners in the watershed know that they will be out assessing the watershed and may cross private property to reach streams. Due to time and resource constraints, they do not have the ability to contact every landowner whose property they may accidentally walk across. Notification is not legally required, but she wants to make people aware of what is going on. Jane has a letter from the NC Ecosystem Enhancement Program that explains what Earth Tech is doing and where they get their authority to work in the watershed.

Ideas listed included:

- Issue a press release (Kristin did this before the meeting)
- Tap into existing communication structures to inform citizens (info will be sent to CCRC and the Rutherford County Outdoor Coalition)
- Post a flyer at Union Mill Post Office and churches in the area
- Beware of meth labs...

Participants at the September meeting included:

Pat Allen, Union Mills community
Tim Barth, Town of Spindale
Bob Brown, NC Wildlife Resources Comm.
Patrick Beggs, WECO
Kristin Cozza, NC Ecosystem Enhancement Program (NCEEP)
Duncan Edwards, resident
Nancy Ellen Ferguson, County historian
Steve Foster, Earth Tech
Andrea Leslie, NCDWQ
Jason Mayo, Rutherford County Planning Dept.
Albert Moore, USDA/NRCS
Christy Perrin, WECO
Greg Smith, NC Div. of Forest Resources
Jerry Stensland, Rutherford Outdoor Coalition and Concerned Citizens of Rutherford County
Amanda Todd, Earth Tech
Greg Yates, NC Div. of Forest Resources

Project Timeline

Public Meeting	June 2003
Biological monitoring	June 2003
Convene committee	Sept. 2003
Complete watershed Characterization	Spring 2004
Complete Detailed Assessment (monitoring and field work)	Fall 2004
Complete Watershed Plan	Winter 2005
Present plan to public	Spring 2005

Nature is just enough; but men and women must comprehend and accept her suggestions.

Antoinette Brown
Blackwell (1825 - 1921)