

Cathey's Creek Newsletter

Watershed Education for Communities and Local Officials

First Meeting of Cathey's Creek Watershed Technical Advisory Committee

The Cathey's Creek Technical Advisory Committee was convened for the first time on September 29. The group learned about the local watershed planning process being sponsored by NC Ecosystem Enhancement Program (formerly the NC Wetlands Restoration Program), and reviewed a *Working Charter*, which outlined the goals of the process and the committee's roles.

The Committee heard from Andrea Leslie about a *biological assessment* that NC Division of Water Quality conducted in Cathey's Creek Watershed this year.

Ben Goetz, Earth Tech Inc., presented an overview of the watershed assessment that Earth Tech is conducting, and suggested a proposal for proceeding with the assess-

ment.

The group also provided a list of their expectations for participating in the watershed planning process.

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.



The Next Technical Committee Meeting will be held on Tuesday, Feb.3, 2003 2:00-4:00 p.m. at the Rutherford Co. Cooperative Ext. center in Spindale

- *Earth Tech will provide an update on the Technical Watershed Assessment*

Hopes and Expectations for the Planning Process

How will this watershed planning process help you?

Participants were asked to answer this question, so that everyone could understand each other's expectations. Answers follow.

- Saving Gilbert Town
- Preventing excess runoff
- Historical interest
- Keeping track of Extension activities
- Getting to know others in county
- Paddlers are interested in water quality
- Providing a model for obtaining grant \$
- Identifying projects to meet goals
- Protecting water quality for citizens
- Water and the process of involvement is critical
- Learning timbering impacts on water quality and restoring problems
- Town wants to help with projects
- Clean water key for habitat
- Better ideas for benefiting non-game wildlife species
- Protecting and restoring stream health
- See what impact development may have on water quality

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Expectations...continued

- Interested in how process unfolds
- Isothermal Planning & Devel. Comm.(IPDC) interested in any planning process and can provide technical assistance
- Alternative cost share programs to help landowners install best management practices (BMPs)
- Stream quality and erosion control
- Lack of public access
- Cultural resources as it involves stream channel changes

Note from WECO staff: Staff from NCEEP, WECO and Earth Tech, Inc. hoped to learn about the expectations of participants so they could let them know up-front if the planning process was not going to address any of those expectations. After hearing them, we feel that it is possible that many of those expectations could be addressed in some way by the planning process.

Purpose of Planning Process

Kristin Cozza, NC Ecosystem Enhancement Program (NCEEP), explained to the group NCEEP's purpose for sponsoring the watershed planning process, and what they were asking from the Advisory Committee.

NCEEP is trying to fund restoration projects that benefit the community and improves watershed functions. The watershed plan will outline problems and solutions, and the NCEEP will use the plan to guide where to implement projects. The plan is a non-regulatory tool, meaning that participation in the projects is entirely voluntary.

Benefits of the planning process:

- It will provide an opportunity to learn about Cathey's Creek
- It can serve as a model for other watersheds nearby
- Community can use the study as a leveraging tool for funds

The role of the committee will be to provide oversight of the watershed assessment, to inform the staff of important community issues, and to assist with implementing the plan.

Bugs in the Creek- what does it mean?

Andrea Leslie, a biologist with the NC Division of Water Quality (DWQ), provided a presentation on a 2003 Aquatic Community study that NCDWQ conducted.

This aquatic community study involved looking at aquatic macroinvertebrate and fish communities. Aquatic macroinvertebrates are organisms such as insects and clams that are also referred to as "benthos" meaning bottom dwelling.

Benthos and fish are sensitive to water quality and stream habitat, so they are a good measure of stream health. If you have a stream with good water quality and habitat quality, you would expect to see a certain number and diversity of macroinvertebrate species and fish.

Water quality factors that influence organism populations include:

- Oxygen, temperature, pH
- Pollutants (toxins, nutrients, suspended sediments)

Habitat quality factors that influence organism populations include:

- Morphology (or structure) of the stream channel- are there pools, riffles (areas of fast flow over rocks), bends?
- Bottom substrate- sand, gravel, rock
- Organic substrate- large wood, sticks, leaves

DWQ monitored macroinvertebrates at seven sites in the watershed in 2003. All sites sampled hosted impacted macroinvertebrate communities, and no excellent sites were found in

the watershed. The map on the opposing page marks these sites with symbols to illustrate how healthy the aquatic communities were at the sites.

Habitat Issues in Cathey's Creek:

- Many streams are very sandy, limiting aquatic macroinvertebrate diversity
- Sandy substrates are susceptible to scour during storms
- Eroding banks are an issue

Anomalies found here:

- Found some good habitat but very impacted benthos at Mill Creek and Upper Hollands Creek:
 - May be an effect from a pond on Mill Creek?
 - Upper Holland's Creek: potential water quality issues?
- Case Creek had better benthos than expected since it is an urban stream

Looked at Spindale Wastewater Treatment Plant to see effects:

- Catheys Creek has decreases in community health downstream of plant outfall, but stormwater runoff from the urban Spindale area may be contributing to it. It's not possible to attribute the decrease in health to one or the other without further research.

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Bugs in the creek, continued from page 2

What is going on? Stream habitat here is pretty limited since many streams are very sandy. This is characteristic of streams in the lower broad. However, Cathey's Creek is doing more poorly than other creeks with similar characteristics.

Questions/Discussion with participants

Removing trees for navigation: Participants wondered if downed trees can be removed from streams for recreational access. It is best to remove only enough so that boats can pass through—these trees provide good habitat and can not be too numerous in that respect.

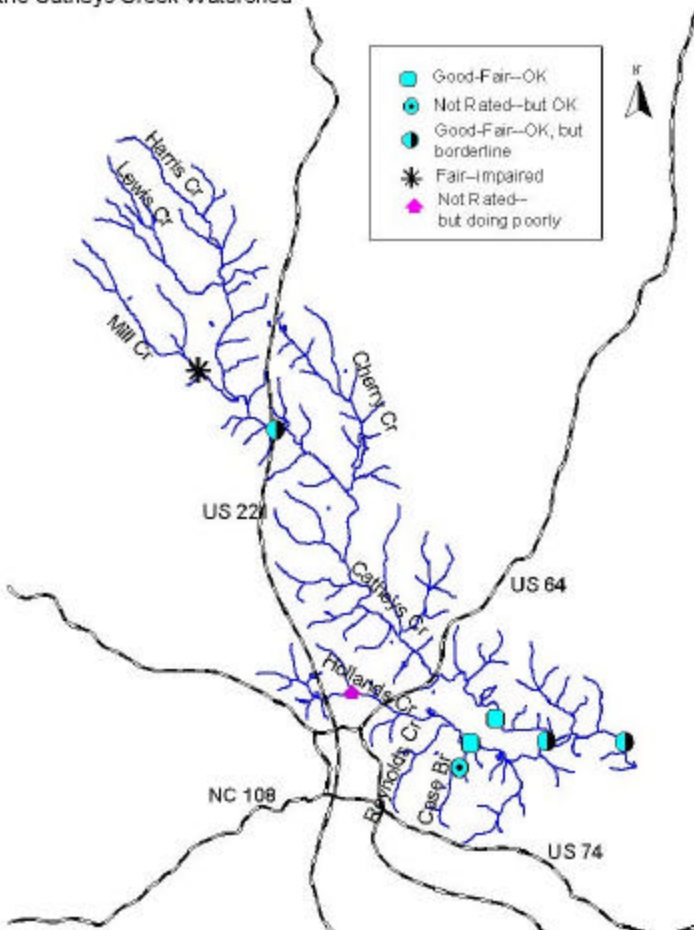
Fish sampling: Sampling was conducted in 1997 and 2002 at a lower reach of Cathey's Creek. A drop in fish community health was seen, possibly due to some event that may have wiped out the population. The group discussed whether this was due to the drought, or perhaps a toxic chemical spill that occurred 4 years ago. Most streams throughout the state didn't suffer such drops in fish populations during the drought as Cathey's Creek did, so Andrea thinks something else caused it.

They would like to re-sample the fish community in the fall.

Impacts of small ponds: In-stream ponds cut a stream off from the upstream and downstream portions, which changes the dynamics of the biological community. Fish cannot migrate. There is not currently a program to mitigate stream impacts from ponds.

Sand dredging impacts: This has an impact on a localized area as it kicks up fine sediments. It has been argued that dredging benefits the stream long-term since it is removing sediments, but on the whole it is detrimental.

2003 NC DWQ Benthic Macroinvertebrate Monitoring Sites in the Catheys Creek Watershed



Overview of Technical Watershed Assessment

Ben Goetz, Earth Tech, Inc., provided an overview of the watershed assessment.

The assessment process includes:

A *Characterization* that involved gathering mostly GIS based information.

A *Detailed Analysis* that involves fieldwork, water quality monitoring, and identifying areas to focus more investigation upon.

Identifying Specific Solutions to identified issues, which could include education, restoration projects, and ordinance recommendations.

Results of Characterization

History of land: mining, timbering, and farming are historical uses. Streams show adjustment from the impacts of these uses.

Land use/cover: highly vegetative (74%), with young forests, exotic invasive plants (like kudzu). Many overland and stream-bank BMP's have been implemented. Land use changes in recent history include nursery crops and development.

Subwatershed Conditions: **Water quality** problems include non-point sources (not from a pipe but from various and diffuse sources) and streambank erosion. **Hydrology** (the movement of water in a system) in the watershed exhibits realigned and incised channels, and in stream impoundment which may be negatively affecting water quality. **Habitat** in the watershed is characterized by cleared areas and managed land.

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Watershed Education for Communities and Local Officials

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



Participants at the September meeting included:

Boyce Abernathy
Pat Allen, Union Mills community
Tim Barth, Town of Spindale
Patrick Beggs, WECO
Walt Bumgarden, NC Cooperative Extension, Rutherford County
Kristin Cozza, NC Ecosystem Enhancement Program (NCEEP)
Roger Edwards, NC DWQ, Asheville Office
Lynne Faltraco, Concerned Citizens of Rutherford County
Nancy Ellen Ferguson, County historian
Ben Goetz, Earth Tech, Inc.
Andrea Leslie, NCDWQ
Jason Mayo, Rutherford County Planning Dept.
Albert Moore, USDA/NRCS
Lois Moove
Chuck Nance, Isothermal Planning and Devt. Commission (IPDC)
Hicks Owens Rutherford County Planning
Tom Padgett
Christy Perrin, WECO
Jerry Stensland, Rutherford Outdoor Coalition
Dennis Taylor, Daily Courier
Win Taylor, NC Wildlife Resources Comm.

Watershed Assessment continued...

The detailed analysis may include:

Water Quality Monitoring of oxygen, nitrogen, phosphorus, sediment, and temperature.

Macroinvertebrate Sampling will look at the variety of types and percentage of each type.

A *Stream Assessment* will look at the bed, bank, floodplain of streams, will quantify conditions, and note special impacts.

Sediment Sampling, and Fish Sampling.

Earth Tech will be investigating **Watershed Functions**, which are services provided by the watershed that we want to protect. The assessment proposes to look at three functions: 1) *Water quality*, which includes nutrients, sediment, and temperature for the study; 2) *Hydrology*, which includes flood frequency, stream network, and channel stability; and 3) *Habitat*, which includes land cover and plant types.

Earth Tech will examine *Indicators of watershed functions* that will be measured to determine the "health" of the watershed functions. For each function, these indicators may include:

Water Quality

- chemical content
- bug community
- fish community

Hydrology

- available floodplain
- channel shape, pattern, profile
- bed material

Habitat

- amount, type, variety
- geographical location

***I like to see a man
proud of the place
in which he lives.***

***I like to see a man
live so that his place
will be proud of him.***

Abraham Lincoln

Discussion about Watershed Functions– How else can we measure the "health" of the Cathey's Creek Watershed?

Q: *Will you establish a baseline chemical analysis?*

Yes, we will try to measure a "control".

Q: *Will you look at heavy metals– mercury and arsenic?*

Ben and Andrea will monitor. In relation to the gold mines if the data suggests it could be an impact and resources are available, we may consider checking sediment samples.

Q: *Do you have guidelines for developers?*

We will outline guidelines in the watershed plan.

Q: *Most homes have septic systems. Can we assess septic systems and straight piping?*

We will look for straight pipes while walking the streams

Comment: Let locals, the CCRC, contact people if they have straight pipes rather than approaching them yourselves– property rights is a sensitive issue.

Q: *Is there any data that CCRC may have regarding timbering impacts?*

Info available on logging roads, cutting that occurs adjacent to waterbodies. Sites are located on topographic maps that CCRC has.

Comment: The watershed plan could identify better places to timber.