Newsletter of the Troublesome Creek & Little Troublesome Creek Watershed Planning Team

Troublesome Creeks News

On the Border of Guilford and Rockingham Counties

Special points of interest:

- Biological Monitoring Data
- Land Use in the Watershed

Issue 5
July 2002

Greetings,

At our last meeting we learned about the preliminary findings within Troublesome Creek and Little Troublesome Creek watersheds. In addition, the stakeholders identified areas of concern that may have degraded waterbodies. These areas will be field checked to determine the problems and hopefully incorporate them into solutions.

Our next meeting will involve future planning for the watershed. Tetra Tech, Inc is going to be generating computer models to determine future land use and development in the watersheds. We are looking for the input of stakeholders to determine how and where development should or is likely to occur.

As always, please let us know if you have any questions. Thanks.

Regards,
Patrick Beggs – Watershed Education for Communites and Local Officials – WECO

June 25, 2002 meeting roster

Primary Team Members Present:
Gerald Featherstone, Haw River Assembly
Dick Frohock, landowner
Wally Horton, Rockingham Co. Planning Dept.
Jeff Johnston, Dan River Basin Association
Carolyn Joyner, Town of Stokesdale
Carol Patrick, Piedmont Triad COG
Donna Zinkan, Landowner

Technical Staff and Guests Present:
Deborah Amaral, guest
Shari Bryant, NCWRC
Hal Bryson, WRP
Jason Doll, Tetra Tech
Johnsie Hayes, SWCD, Rockingham Co
John Thomas, USACE
John Timmons, NRCS, Rockingham Co
David Wanucha, NCDWQ
Tom Yokum, NCDWQ-WARP

Our Next Meeting:

Tuesday, August 27 - 2-4 pm
Rockingham County Agricultural Center
(4th Tuesday of the month)
The agenda includes presentations about the current zoning and planning outlook in the watershed. We will begin to map out how you want your watershed to look in the future.

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Preliminary Findings of Troublesome Creek

Jason Doll of Tetra Tech, Inc. presented the preliminary findings of our two watersheds. As Jason explained, the characteristics of Troublesome Creek Watershed and Little Troublesome Creek Watershed, although located right next to one another, should be considered "a tale of two watersheds" since they are very different from one another. Troublesome Creek Watershed is less developed and contains more agriculture than Little Troublesome Creek Watershed, which contains the Town of Reidsville. The data on the following pages is from Jason's presentation and the entire presentation can be found on the WECO website. There are many great maps in the presentation to help understand the findings. These are all contained in the online version of the presentation. Please let us know if you need help obtaining it.

A Tale of Two Watersheds

Troublesome Creek	……..watershed……..	Little Troublesome Creek
56	**area (sq. mi.)**	**12.7**
4.5 sq. mi.	**area within municipal limits**	**6 sq. mi.**
(35 mi of perennial streams) **123**	**stream miles**	**28** (17 mi of perennial streams)
57%	**Forest Land**	**49%**
(74% row crops/24% pasture) **35%**	**Agriculture Land**	**21%** *(69% row crops/31% pasture)*
5 %	**Developed Land**	**30 %**

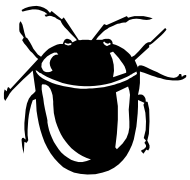
Biological Monitoring Data

Streams can be rated: Excellent, Good, Good-Fair, Fair, Poor.
Ratings are based on species type, number, diversity, and health to name a few factors.

in Troublesome Creek

Benthic Macroinvertebrates

Sampled in '93 and '98 at the same location. Both times they were rated "Good-Fair". Sampling showed a low diversity of species but also the presence of intolerant species.



Intolerant species are those that are **unable to survive** well in the presence of pollutants, they are intolerant of pollutants. Their presence indicates water that probably does **NOT** contain high levels of pollutants.

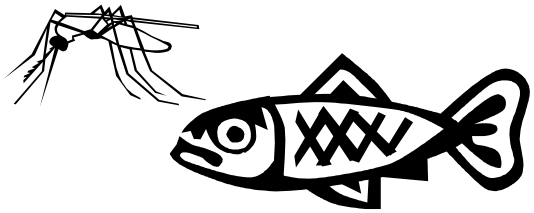
Fish Commmunity
Sampled in '93 & '98 at the same location. Both times it was rated "Poor". Notes from this prior sampling indicate a degraded habitat.

in Little Troublesome Creek

Benthic Macroinvertebrates

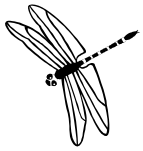
Numerous sites have been sampled since 1987. Consistently rated "Fair" upstream and "Poor" downstream. Downstream improved to "Fair" after a wastewater plant discharge was relocated.

Fish Commmunity
Sampled twice. Rated "Poor" both times.



Benthic Macroinvertebrates are the insects and other small insect-like animals associated with streams.

& Little Troublesome Creek Watersheds



Classification, Use Support Ratings and the 303(d) List

Surface waters are classified according to their best intended uses. The minimum stream classification (C) requires a stream to support aquatic life and secondary recreation (I.e.-fishing, boating).

Determining how well a waterbody supports its uses (*use support* status) is an important method of interpreting and assessing water quality. Surface waters can be rated *fully supporting* (FS), *partially supporting* (PS) or *not supporting* (NS). A rating refers to whether the classified uses of the water (i.e., aquatic life protection, primary recreation, water supply) are being met.

Troublesome Creek

classified **WS-III NSW** (level **3 W**ater **S**upply with **N**utrient **S**ensitive **W**aters) It is protected as a water supply in a low to moderately developed watershed and requires limitations on nutrient inputs. Its intended uses include water supply and fish consumption (as compared to just fishing).

From its source to State Road 2423, Troublesome Creek is rated PS – partially supporting. It is on the 303(d) list due to biological impairment. Historically, sediment was blamed as the cause. Potential sources of sediment include agriculture.

Little Troublesome Creek

classified **C-NSW** (class **C** with **N**utrient **S**ensitive **W**aters) It is protected for its intended uses which include aquatic life propogation and survival, fishing, wildlife and secondary recreation, and requires limitations on nutrient inputs. **From its source to the Haw River, Little Troublesome Creek is rated PS and NS – partially supporting and nonsupporting. It is on the 303(d) list due to fecal coliform and biological impairment.** Potential sources of fecal coliform are urban runoff and storm sewers.

A Historical Look at the Landscape of the Piedmont and Conservation

- the 19th century saw widespread clearing of forests followed by intensive agriculture
- by the early 20th century, this forest clearing had peaked
- prior to 1930's, there were no official conservation practices, allowing for great amounts of soil erosion
- sediment filled streams, causing large increases in elevations of small streams
- starting in the 1920s & 1930s, cultivated land began to decline and continues to do so
- what was not developed or kept in agriculture has returned to forest land
- in 1979 the Soil Conservation Service (SCS) estimated soil loss at 12 ton/acre/year – a goal was set to reduce that number to 5 ton/acre/year on 75 % of the land.
- a more recent sediment survey by the Conservation District shows over 80% of district lands now covered by conservation plans for erosion control.
- over 80% of that has applied erosion control practices in place.
- these erosion Best Management Practices will require maintenance, which will require funding.

Local Conservation agencies include:

- NRCS – Natural Resource Conservation Service (formerly SCS)
- Soil and Water Conservation District
- Cooperative Extension Service

Preliminary Findings of Troublesome Creek and Little Troublesome Creek Watersheds

Conclusions from Characterization

Troublesome Creek

Future development without appropriate planning and management measures poses the greatest threat to water quality & aquatic habitat, mainly due to the development pressure of the growing Triad, &
the erodability of soils (especially in the stream channels.)

The current watershed condition is good. It's status on the state 303(d) "impaired " list may be inappropriate

More extensive biological monitoring is needed.

The watershed is likely to yield more opportunities for preservation of land than for restoration of streams and wetlands.

Little Troublesome Creek

Stream channel modifications and increased imperviousness have resulted in degraded water quality and degraded habitat along the majority of the creek.

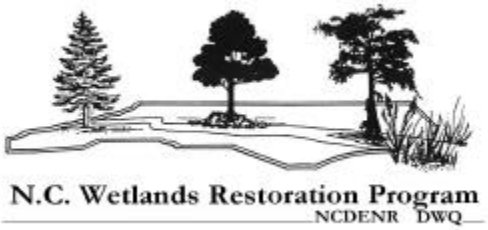
Stream restoration will require an integrated strategy to establish new stream dimensions & patterns and manage stormwater flows. Both are required to allow for the changes to streamflow and differing sediment loads.

Data Gathering & Important Sources

- **GIS Data**
  USGS, USEPA, NC CGIA, Rockingham County, Guilford County, Piedmont-Triad COG, US Fish & Wildlife Service, City of Reidsville, NC Wildlife Resource Commission
- **Water Quality Data**
  NCDWQ, USEPA, USDA-NRCS, NCDWQ-WARP, NCSU Stream Restoration Institute, SWCD-Rockingham Co., Upper Cape Fear River Program

⇒ Numerous Studies and Significant Data are available for Little Troublesome Creek, e.g.:
- NCDWQ-WARP
- NCSU Stream Restoration Institute
- NCDWQ Coliform Modeling Efforts

⇒ Limited Data/Information is available to Assess Status of Troublesome Creek
- NCDWQ Limited Lakes Program Data
- Agricultural Sediment Initiative - NCDSWC



Next Steps for Tetra Tech, Inc.

Finalize objectives for Detailed Assessment phase of Local Watershed Plan

Determine appropriate and realistic scenarios for future landuse conditions

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