Section B: Chapter 13
Yadkin-Pee Dee River Subbasin 03-07-13
Includes the Long and Big Bear Creek Watersheds

13.1 Water Quality Overview

Subbasin 03-07-13 at a Glance

Land and Water

Total area:	312 mi^2
Stream miles:	138.4

Population Statistics

1990 Est. Pop.:	37,644 people
Pop. Density:	121 persons / mi^2

Land Cover (%)

Forest / Wetland:	43.7
Surface Water:	0.3
Urban:	1.7
Cultivated Crop:	13.4
Pasture / Managed Herbaceous:	40.9

Long Creek flows generally south through Stanly County and into the lower section of the Rocky River. Tributaries include Big Bear and Little Long Creeks. The headwaters of the watershed begin at Gold Hill, and the majority of Albemarle and Oakboro are encompassed in the subbasin boundary. Water quality in this subbasin is generally good in larger streams, although many of the smaller streams have not been monitored recently.

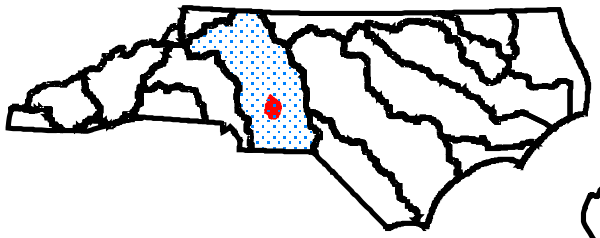
A map including the locations of NPDES discharges and water quality monitoring stations is presented in Figure B-14. Table B-26 contains a summary of monitoring data types, locations and results. Use support ratings for waters in this subbasin are summarized in Table B-27. Appendix I provides a key to discharge identification numbers. Refer to Appendix III for a complete listing of monitored waters and more information about use support ratings.

A large portion of this subbasin is in agricultural land uses. More than 40 percent of the land is described as pasture or managed herbaceous land and 13 percent is cultivated. Less than half of the area is forested (44 percent) and approximately 2 percent is developed.

Population is moderately dense, likely reflecting the Albemarle area and the US 52 Highway corridor. The population of Stanly County is expected to increase 21 percent between 2000 and 2020. Much of this growth is likely to occur to the east of this subbasin near Badin Lake (subbasin 03-07-08). There are eight NPDES permitted discharges and five registered animal operations in the subbasin. Facilities with compliance or toxicity problems are discussed in following sections.

The Reed Gold Mine State Historic Site is found within this subbasin. Reed Gold Mine is the site of the first documented gold find in the United States (1803). During its peak years, gold mining was second only to farming in the number of North Carolinians it employed. The estimated value of gold recovered reached over a million dollars a year. North Carolina led the nation in gold production until 1848, when it was eclipsed by the great rush to California (NCDCR brochure).

Figure B-14 Yadkin-Pee Dee River Subbasin 03-07-13



ROWAN
DAVIDSON
STANLY
CABARRUS
MONTGOMERY
Gold Hill
Richfield
New London
Albemarle
Oakboro
US-52
NC-73
NC-49
NC-740
NC-138
95
86
71
68
57
40
39
34
F-1
SSB-1
B-1
B-2
B-3
Q8720000
Big Bear Creek
Little Bear Creek (East)
Long Creek
Town Creek
Little Long Creek
Little Bear Creek
Stony Run Creek
Creek (West)

N
W
E
S

Legend

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- Fish Community Station
- Fish Tissue Station

NPDES Discharges

- Major
- Minor

Use Support Rating

- Supporting
- Impaired
- Not Rated
- No Data

- County Boundary
- Primary Roads
- Municipality

5 0 5 *Miles*

NCDENR

Planning Branch
Basinwide Planning Program Unit
March 21, 2003

Table B-26 DWQ Monitoring Locations, Bioclassifications and Notable Chemical Parameters (1998-2002) for Yadkin-Pee Dee River Subbasin 03-07-13

Site	Stream	County	Road	Bioclassification or Noted Parameter
Benthic Macroinvertebrate Community Monitoring				
SSB-1	Long Creek[1]	Stanly	SR 1401	Good-Fair
B-1	Long Creek	Stanly	SR 1917	Good-Fair
B-2	Big Bear Creek	Stanly	SR 1225	Good
B-3	Stony Run Creek[1]	Stanly	SR 1970	Not Rated
Fish Community Monitoring				
F-1	Big Bear Creek	Stanly	NC 73	Good
Ambient Monitoring				
Q8720000	Long Creek	Stanly	SR 1954	None
Yadkin-Pee Dee River Basin Association Monitoring				
Q8715000	Long Creek	Stanly	SR 1968	None
Q8720000	Long Creek	Stanly	SR 1917	None

[1] Historical data of this type are available for this waterbody; refer to Appendix II. Sites may vary.

For more detailed information on sampling and assessment of streams in this subbasin, refer to the *Basinwide Assessment Report - Yadkin-Pee Dee River Basin* (NCDENR-DWQ, June 2002), available from DWQ Environmental Sciences Branch at http://www.esb.enr.state.nc.us/bar.html or by calling (919) 733-9960.

Table B-27 Use Support Ratings Summary (2002) for Monitored and Evaluated Freshwater Streams (miles) and Lakes (acres) in Yadkin-Pee Dee River Subbasin 03-07-13

Use Support Category	Units	Supporting	Impaired	Not Rated	No Data	Total[1]
Aquatic Life/Secondary Recreation	miles	76.0	0.0	11.9	50.5	138.4
	acres	0.0	0.0	0.0	0.0	0.0
Fish Consumption[2]	miles	0.0	**138.4**	0.0	0.0	138.4
	acres	0.0	**0.0**	0.0	0.0	0.0
Primary Recreation	miles	0.0	0.0	0.0	0.0	0.0
	acres	0.0	0.0	0.0	0.0	0.0
Water Supply	miles	0.0	0.0	0.0	0.0	0.0
	acres	0.0	0.0	0.0	0.0	0.0

[1] Total stream miles/acres assigned to each use support category in this subbasin. Column is not additive because some stream miles are assigned to more than one category.

[2] These waters are impaired based on fish consumption advice issued for three species of freshwater fish due to mercury contamination. Refer to page 104 of Section A for details.

13.2 Status and Recommendations for Previously Impaired Waters

This section reviews use support and recommendations detailed in the 1998 basinwide plan, reports status of progress, gives recommendations for the next five-year cycle, and outlines current projects aimed at improving water quality for each water. The 1998 Yadkin-Pee Dee River basin plan identified one Impaired water in this subbasin. Long Lake is discussed below.

13.2.1 **Long Lake** (74.0 acres)

1998 Recommendations
At the time of the 1998 basin plan, Long Lake (Albemarle City Pond) was drained and was not supporting designated uses. The City of Albemarle planned to restore the lake by dredging of sediment, development of an in-lake biofilter, and implementation of agricultural BMPs in the watershed. The city was actively searching for funding; approximately 45 percent had been secured.

Status of Progress
Dredging work was not complete at the time of the most recent lakes assessment work in the Yadkin-Pee Dee River basin. As of November 2002, the lake has been refilled but construction on an adjacent public park is not yet complete. The lake should be reopened to the public in the summer of 2003. DWQ plans to sample Long Lake again in 2005 or 2006.

13.3 Status and Recommendations for Newly Impaired Waters

No waters are Impaired based on recent DWQ monitoring (1998-2001); however, some impacts to water quality were observed. Refer to Part 13.5 below for further discussion of potential water quality problems.

13.4 Section 303(d) Listed Waters

Long Lake (discussed above) and Little Long Creek (discussed below) are currently listed on the state's draft 2002 303(d) list. Appendix IV contains more information on the 303(d) list and listing requirements.

13.5 Status and Recommendations for Waters with Notable Impacts

Based on DWQ's most recent use support assessment, the surface waters discussed below are not Impaired. However, notable water quality impacts were documented. While these waters are not considered Impaired, attention and resources should be focused on them over the next basinwide planning cycle to prevent additional degradation or facilitate water quality improvement. A discussion of how impairment is determined can be found in Appendix III.

Although no action is required for these streams, voluntary implementation of BMPs is encouraged and continued monitoring is recommended. DWQ will notify local agencies and others of water quality concerns discussed below and work with them to conduct further

monitoring and to locate sources of water quality protection funding. Additionally, education on local water quality issues is always a useful tool to prevent water quality problems and to promote restoration efforts. Nonpoint source agency contacts are listed in Appendix VI.

13.5.1 Long Creek

In 1998, Long Creek was rated Support Threatened. The basin plan discusses problems with low dissolved oxygen above and below the Albemarle WWTP discharge. Recommendations were for the City of Albemarle to optimize its WWTP treatment processes in order to minimize impacts to Long Creek. The plan also recommends that DWQ consider reducing summer BOD limits from 10 mg/l to 5 mg/l during the next permit cycle.

Two water chemistry stations were sampled by the Yadkin-Pee Dee River Basin Association between 1998 and 2001. These limited data indicate few water quality problems. Dissolved oxygen concentrations were good. It is possible that the historical dissolved oxygen problems higher in the watershed were related to the draining and rehabilitation of Long Lake (refer to Part 13.2.1 above). In 2000, the primary discharge from the Oakboro WWTP (downstream of the Albemarle WWTP) was relocated from Long Creek into the Rocky River.

Benthic macroinvertebrates were sampled at two locations on Long Creek in 2001: above the City of Albemarle and Long Lake, and below the confluence of Big Bear Creek near the mouth. Instream and riparian habitat was in good condition at both sites; however, conductivity was elevated and both sites received only Good-Fair bioclassifications. An ambient monitoring station near the mouth of Long Creek revealed wide swings in conductivity, elevated pH and elevated concentrations of nutrients.

The Long Creek watershed is largely agricultural with the exception of Little Long Creek which drains the City of Albemarle. There are also three crushed stone mining operations in the headwaters of Long Creek. The Albemarle WWTP reported two violations of the BOD discharge limit, one violation of the fecal coliform limit, and two violations of the total suspended solids discharge limit between September 1999 and August 2001. These violations do not constitute significant noncompliance, and the facility is currently operating well below its permitted capacity. Data and information indicate that impacts to Long Creek are primarily due to nonpoint source pollution. DWQ will continue to monitor Long Creek over the next basinwide planning cycle. However, local actions are needed to reduce the effects of nonpoint source pollution in the watershed, particularly from mining operations, agricultural activities and runoff from developed areas.

The Long Creek watershed (03040105 060030) is one of 55 watersheds in the Yadkin-Pee Dee River basin that has been identified by the NC Wetlands Restoration Program (NCWRP) as an area with the greatest need and opportunity for stream and wetland restoration efforts. This watershed will be given higher priority than a nontargeted watershed for the implementation of NCWRP restoration projects. Refer to page 278 in Section C for details.

13.5.2 Little Long Creek

The Little Long Creek watershed, including Town Creek, drains the City of Albemarle in eastern Stanly County. Little Long Creek has never been sampled by DWQ; however, it was historically placed on the 303(d) list based on observations of problems related to urban runoff. As resources allow, DWQ will sample Little Long Creek over the next basinwide planning cycle. However, local actions are needed to reduce the effects of nonpoint source pollution, particularly from stormwater runoff, and to restore habitat in the lower portion of the watershed.

The Little Long Creek watershed (03040105 060040) is one of 55 watersheds in the Yadkin-Pee Dee River basin that has been identified by the NC Wetlands Restoration Program (NCWRP) as an area with the greatest need and opportunity for stream and wetland restoration efforts. This watershed will be given higher priority than a nontargeted watershed for the implementation of NCWRP restoration projects. Refer to page 278 in Section C for details.

The City of Albemarle will likely be required by DWQ to obtain a NPDES permit for municipal stormwater systems under the Phase II stormwater rules during the next basinwide planning cycle. Refer to page 37 of Section A, Chapter 2 for details.