

Appendix II

Biological Water Quality Data Collected by DWQ

Benthic Macroinvertebrate Sampling Methods and Criteria

Freshwater Wadeable and Flowing Waters

Benthic macroinvertebrates can be collected from wadeable, freshwater, flowing waters using two sampling procedures. The Division of Water Quality's standard qualitative sampling procedure includes 10 composite samples: two kick-net samples, three bank sweeps, two rock or log washes, one sand sample, one leafpack sample, and visual collections from large rocks and logs (NCDEHNR, 1997). The purpose of these collections is to inventory the aquatic fauna and produce an indication of relative abundance for each taxon. Organisms are classified as Rare (1-2 specimens), Common (3-9 specimens), or Abundant (≥ 10 specimens).

Several data analysis summaries (metrics) can be produced to detect water quality problems. These metrics are based on the idea that unstressed streams and rivers have many invertebrate taxa and are dominated by intolerant species. Conversely, polluted streams have fewer numbers of invertebrate taxa and are dominated by tolerant species. The diversity of the invertebrate fauna is evaluated using taxa richness counts; the tolerance of the stream community is evaluated using a biotic index.

EPT taxa richness (EPT S) is used with DWQ criteria to assign water quality ratings (bioclassifications). "EPT" is an abbreviation for Ephemeroptera + Plecoptera + Trichoptera, insect groups that are generally intolerant of many kinds of pollution. Higher EPT taxa richness values usually indicate better water quality. Water quality ratings also are based on the relative tolerance of the macroinvertebrate community as summarized by the North Carolina Biotic Index (NCBI).

Both tolerance values for individual species and the final biotic index values have a range of 0-10, with higher numbers indicating more tolerant species or more polluted conditions. Water quality ratings assigned with the biotic index numbers are combined with EPT taxa richness ratings to produce a final bioclassification, using criteria for coastal plain streams. EPT abundance (EPT N) and total taxa richness calculations also are used to help examine between-site differences in water quality. If the EPT taxa richness rating and the biotic index differ by one bioclassification, the EPT abundance value is used to determine the final site rating.

Benthic macroinvertebrates can also be collected using an EPT sampling procedure. Four rather than 10 composite qualitative samples are taken at each site: 1 kick, 1 sweep, 1 leafpack and visual collections. Only EPT groups are collected and identified, and only EPT criteria are used to assign a bioclassification.

Both EPT taxa richness and biotic index values also can be affected by seasonal changes. DWQ criteria for assigning bioclassification are based on summer sampling: June - September. For samples collected outside summer, EPT taxa richness can be adjusted by subtracting out winter/spring Plecoptera or other adjustment based on resampling of summer site. The biotic index values also are seasonally adjusted for samples outside the summer season.

Criteria have been developed to assign bioclassifications ranging from Poor to Excellent to each benthic sample. These bioclassifications primarily reflect the influence of chemical pollutants. The major physical pollutant, sediment, is not assessed as well by a taxa richness analysis.

Boat Sampling and Coastal B Criteria

Coastal B rivers are defined as waters in the coastal plain that are deep (nonwadeable) with little or no visible current under normal or low flow conditions and that have freshwater. Other characteristics may include open canopy, low pH and low dissolved oxygen. These waters require a boat for sampling. These are usually large coastal plain rivers, including the lower sections of the Alligator, Chowan, Meherrin, Neuse, Pasquotank, Perquimans, Roanoke, Tar, South, Black, Waccamaw, Wiccacon, Northeast Cape Fear and Cape Fear Rivers. In such habitats, petite Ponar dredge sampling replaces kick-net samples, but all other standard qualitative collections techniques are still useable.

The standard boat method still aims at a total of 10 composite samples per site:

- Dredges - 3 composite samples using a petite Ponar.
- Sweeps - 3 samples collected from bank habitats, sampling as much of the edge habitat as possible, including aquatic macrophytes, roots and areas of debris.
- Leaf packs/Debris wash -1 composite sample of leaves and other large particulate organic matter are to be rinsed in a wash bucket.
- Epifaunal collections - 2 composite samples of macrophytes and well-colonized logs both in the current and along the shore.
- Visuals - should cover macrophytes, logs along the shore, and especially logs in the current.

The Biological Assessment Unit has limited data on Coastal B rivers and has had a difficult time gathering more data. Criteria have been developed based only on EPT taxa richness (Table A-II-1), although using biotic index values and total taxa richness values were also evaluated. The criteria that are presented here will continue to be evaluated, and any bioclassifications derived from them should be considered tentative and not used for use support decisions.

References

- Chutter, F. M. 1972. *An Empirical Biotic Index of the Quality of Water in South African Streams and Rivers*. Water Research. 6: 19-30.
- Hilsenhoff, W. L. 1977. *Use of Arthropods to Evaluate Water Quality in Streams*. Wisconsin Department of Natural Resources, Technical Bulletin No. 100.
- Lenat, D. L. 1993. *A Biotic Index for the Southeastern United States: Derivation and List of Tolerance Values, with Criteria for Assigning Water Quality Ratings*. J. North American Benthological Society. 12: 279-290.

Flow Measurement

Changes in the benthic macroinvertebrate community are often used to help assess between-year changes in water quality. Some between-year changes in the macroinvertebrates, however, may be due largely to changes in flow. High flow years magnify the potential effects of nonpoint source runoff, leading to scour, substrate instability and reduced periphyton. Low flow years may accentuate the effect of point source dischargers by providing less dilution of wastes. For these reasons, all between-year changes in the biological communities are considered in light of flow conditions (high, low or normal) for one month prior to the sampling date. Daily flow information is obtained from the closest available USGS monitoring site and compared to the long-term mean flows. High flow is defined as a mean flow >140 percent of the long-term mean for that time period, usually July or August. Low flow is defined as a mean flow <60 percent of the long-term mean, while normal flow is 60-140 percent of the mean. While broad scale regional patterns are often observed, there may be large geographical variation within the state, and large variation within a single summer period.

Habitat Evaluation

The Division has developed a habitat assessment form to better evaluate the physical habitat of a stream. The habitat score has a potential range of 1-100, based on evaluation of channel modification, amount of instream habitat, type of bottom substrate, pool variety, bank stability, light penetration and riparian zone width. Higher numbers suggest better habitat quality, but no criteria have been developed to assign impairment ratings.

Table A-II-1 Benthic Macroinvertebrate Data, Neuse River Basin, 1983 - 2000 (Basin sites are in **bold**.)

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|-------------------------------|--------|---------------|----------|-----|-----|------|-------------|-----------|
| 03-04-01 | | | | | | | | | |
| Sevenmile Cr | SR 1120 | Orange | 27-2-6-(0.5) | 8/7/00 | --- | 18 | --- | 5.00 | Good-Fair |
| | | | | 8/1/95 | --- | 21 | --- | 5.10 | Good |
| | | | | 7/8/91 | --- | 20 | --- | 5.28 | Good-Fair |
| Eno R | SR 1336 | Orange | 27-2-(1) | 8/7/00 | --- | 21 | --- | 4.95 | Good |
| | | | | 7/24/95 | --- | 20 | --- | 5.30 | Good-Fair |
| | | | | 7/8/91 | --- | 20 | --- | 4.45 | Good-Fair |
| Eno R | NC 70 Bypass | Orange | 27-2-(7) | 8/17/89 | 75 | 17 | 6.16 | 5.22 | Good-Fair |
| Eno R | NC 86, above WWTP | Orange | 27-2-(7) | 8/17/89 | 89 | 24 | 6.29 | 5.51 | Good-Fair |
| Eno R | Above Hillsborough WWTP | Orange | 27-2-(7) | 9/20/94 | 72 | 15 | 6.05 | 4.69 | Good-Fair |
| Eno R | Below Hillsborough WWTP | Orange | 27-2-(7) | 9/20/94 | 71 | 13 | 6.09 | 4.54 | Fair |
| Eno R | 2nd NC 70 Bypass | Orange | 27-2-(7) | 8/17/89 | 90 | 26 | 6.00 | 5.19 | Good |
| | | | | 6/21/88 | 73 | 20 | 6.06 | 4.83 | Good-Fair |
| Eno R | SR 1569, Cabes Ford | Orange | 27-2-(10) | 8/7/00 | 75 | 26 | 4.75 | 4.24 | Excellent |
| | | | | 10/14/96 | 88 | 28 | 5.38 | 4.52 | Good |
| | | | | 7/28/95 | 85 | 27 | 5.09 | 4.19 | Excellent |
| | | | | 7/9/91 | 97 | 33 | 4.89 | 4.21 | Excellent |
| | | | | 6/21/88 | 92 | 30 | 5.66 | 4.22 | Good |
| Eno R | US 15/501 | Durham | 27-2-(10) | 8/8/00 | 83 | 36 | 5.49 | 5.00 | Excellent |
| | | | | 7/28/95 | 70 | 23 | 5.47 | 4.63 | Good |
| | | | | 7/11/90 | 87 | 30 | 5.65 | 4.64 | Good |
| | | | | 7/14/88 | 90 | 27 | 6.14 | 5.18 | Good |
| | | | | 7/7/86 | 82 | 28 | 5.58 | 4.46 | Good |
| Eno R | SR 1004 | Durham | 27-2-(19.5) | 8/6/84 | 87 | 31 | 5.43 | 4.69 | Good |
| | | | | 8/9/00 | 62 | 24 | 5.57 | 4.75 | Good |
| | | | | 7/28/95 | 71 | 27 | 5.52 | 4.94 | Good |
| | | | | 7/9/91 | 88 | 31 | 5.35 | 4.51 | Good |
| | | | | 6/10/85 | 91 | 32 | 5.85 | 4.45 | Good |
| Little R | SR 1461 | Durham | 27-2-21-(3.5) | 8/8/00 | 88 | 34 | 5.27 | 4.39 | Excellent |
| | | | | 7/28/95 | 81 | 28 | 5.72 | 4.67 | Good |
| | | | | 7/8/91 | 82 | 31 | 4.89 | 3.98 | Excellent |
| | | | | 10/22/90 | 79 | 25 | 5.76 | 4.18 | Good |
| | | | | 9/11/90 | 100 | 36 | 5.16 | 3.92 | Excellent |
| | | | | 4/5/90 | 96 | 37 | 4.84 | 3.88 | Excellent |
| | | | | 1/11/90 | 86 | 31 | 5.10 | 4.17 | Excellent |
| | | | | 10/12/89 | 93 | 34 | 4.99 | 3.61 | Excellent |
| | | | | 7/27/89 | 82 | 30 | 5.38 | 4.79 | Good |
| | | | | 4/20/89 | 78 | 30 | 4.58 | 3.84 | Excellent |
| | | | | 2/15/89 | 102 | 33 | 5.79 | 3.93 | Excellent |
| Little R | US 501 | Durham | 27-2-21-(3.5) | 7/6/87 | 113 | 38 | 5.57 | 4.46 | Excellent |
| | | | | 7/29/85 | 90 | 31 | 5.19 | 3.90 | Good |
| Little R | SR 1004 | Durham | 27-2-21-(6) | 6/12/85 | 76 | 25 | 5.89 | 4.70 | Good-Fair |
| S Fk Little R | SR 1538 | Orange | 27-2-21-2 | 8/4/00 | 23 | 23 | 4.50 | 4.50 | Good |
| | | | | 8/1/95 | --- | 19 | --- | 4.45 | Fair |
| N Fk Little R | SR 1519 | Orange | 27-2-21-3 | 8/04/00 | --- | 17 | --- | 5.09 | Good-Fair |
| | | | | 7/24/95 | --- | 11 | --- | 6.16 | Fair |
| N Fk Little R | SR 1538 | Orange | 27-2-21-3 | 8/8/00 | --- | 20 | --- | 4.34 | Good-Fair |
| | | | | 7/24/95 | 99 | 29 | 5.70 | 4.63 | Good |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|------------------------|-----------|---------------|----------|-----|-----|------|-------------|-----------|
| N Fk Little R | SR 1461 | Durham | 27-2-21-3 | 7/8/91 | 103 | 33 | 5.58 | 4.44 | Good |
| Mountain Cr | Above SR 1464 | Durham | 27-2-21-4-(1) | 3/15/94 | 44 | 15 | 5.86 | 3.75 | Good-Fair |
| Mountain Cr | Below SR 1464 | Durham | 27-2-21-4-(1) | 3/15/94 | 50 | 16 | 5.68 | 4.29 | Good-Fair |
| Mountain Cr | SR 1466 | Durham | 27-2-21-4-(1) | 3/15/94 | 45 | 17 | 5.05 | 3.52 | Good-Fair |
| Flat R | SR 1737 | Person | 27-3-(1) | 6/9/93 | 81 | 27 | 5.37 | 4.71 | Good |
| | | | | 5/8/90 | 29 | 29 | 4.12 | 4.12 | Good |
| Flat R | SR 1614 | Durham | 27-3-(1) | 8/3/00 | 90 | 30 | 5.46 | 4.84 | Good |
| | | | | 10/14/96 | 75 | 28 | 5.67 | 4.66 | Good |
| | | | | 3/13/95 | 102 | 42 | 5.00 | 4.00 | Excellent |
| | | | | 7/24/95 | 86 | 27 | 5.80 | 4.97 | Good |
| | | | | 7/8/93 | 98 | 32 | 5.22 | 4.12 | Excellent |
| | | | | 2/8/93 | 92 | 33 | 5.11 | 3.72 | Excellent |
| | | | | 7/8/91 | 98 | 36 | 5.24 | 4.47 | Excellent |
| | | | | 7/11/90 | 107 | 37 | 5.82 | 4.73 | Good |
| | | | | 7/14/88 | 91 | 26 | 5.53 | 4.43 | Good |
| | | | | 7/7/86 | 92 | 28 | 5.55 | 4.76 | Good |
| | | | | 8/9/84 | 82 | 25 | 5.02 | 4.46 | Good |
| | | | | 8/6/84 | 68 | 23 | 5.35 | 4.43 | Good |
| Flat R | SR 1004 | Durham | 27-3-(9) | 8/9/00 | 48 | 13 | 6.85 | 5.95 | Fair |
| | | | | 8/1/95 | 62 | 12 | 7.06 | 5.35 | Fair |
| | | | | 6/12/85 | 61 | 10 | 7.03 | 6.56 | Fair |
| N Flat R | SR 1144 | Person | 27-3-2 | 6/9/93 | 65 | 12 | 5.93 | 5.54 | Good-Fair |
| N Flat R | SR 1715 | Person | 27-3-2 | 7/8/93 | 77 | 24 | 5.00 | 4.22 | Good |
| | | | | 2/9/93 | 80 | 29 | 4.83 | 3.60 | Excellent |
| | | | | 7/8/91 | --- | 21 | --- | 4.66 | Good |
| S Flat R | SR 1009 | Person | 27-3-3 | 5/8/90 | --- | 11 | --- | 5.56 | Fair |
| S Flat R | NC 157 | Person | 27-3-3 | 6/9/93 | 90 | 24 | 5.86 | 4.99 | Good-Fair |
| | | | | 5/8/90 | 29 | 29 | 4.73 | 4.69 | Good |
| S Flat R | SR 1125 | Person | 27-3-3 | 7/8/93 | 75 | 23 | 5.25 | 4.04 | Good |
| | | | | 2/9/93 | 76 | 28 | 4.55 | 3.42 | Good |
| Brushy Fk | SR 1108 | Person | 27-3-3-1 | 5/8/90 | --- | 23 | --- | 4.17 | Good |
| Deep Cr | SR 1717 | Person | 27-3-4 | 2/9/93 | 67 | 20 | 6.02 | 4.42 | Good |
| Deep Cr | SR 1715 | Person | 27-3-4 | 8/4/00 | --- | 21 | --- | 4.70 | Good |
| | | | | 7/24/95 | --- | 23 | --- | 4.88 | Good |
| | | | | 3/13/95 | 113 | 41 | 5.08 | 4.30 | Excellent |
| | | | | 2/8/93 | 80 | 31 | 5.25 | 4.07 | Good |
| | | | | 5/8/90 | --- | 32 | --- | 3.85 | Excellent |
| Deep Cr | SR 1734 | Person | 27-3-4 | 11/6/84 | 78 | 24 | 5.50 | 3.52 | Good |
| Knap of Reeds Cr | SR 1104 | Granville | 27-4-(6) | 6/12/85 | 65 | 15 | 6.72 | 6.31 | Fair |
| Knap of Reeds Cr | Above WWTP | Granville | 27-4-(6) | 9/19/94 | 78 | 12 | 6.84 | 5.79 | Fair |
| | | | | 8/7/91 | 58 | 12 | 6.64 | 5.97 | Fair |
| | | | | 2/5/87 | 62 | 14 | 6.92 | 5.00 | Fair |
| | | | | 6/12/85 | 70 | 10 | 7.08 | 6.42 | Fair |
| | | | | 5/26/82 | 61 | 11 | 7.09 | 6.45 | Fair |
| Knap of Reeds Cr | Below WWTP | Granville | 27-4-(6) | 8/9/00 | 51 | 8 | 7.10 | 6.55 | Fair |
| | | | | 9/19/94 | 66 | 7 | 7.39 | 5.88 | Fair |
| | | | | 8/7/91 | 46 | 8 | 7.08 | 5.88 | Fair |
| | | | | 2/5/87 | 32 | 3 | 8.12 | 6.23 | Poor |
| | | | | 6/12/85 | 19 | 0 | 7.92 | 0.00 | Poor |
| | | | | 5/26/82 | 30 | 4 | 8.05 | 6.55 | Poor |
| Knap of Reeds Cr | above 1st tributary | Granville | 27-4-(6) | 2/5/87 | 39 | 3 | 8.32 | 6.66 | Poor |
| | | | | 6/13/85 | 40 | 2 | 7.92 | 7.30 | Poor |
| Ellerbe Cr | SR 1709 | Durham | 27-5-(0.7) | 3/13/95 | 32 | 4 | 7.88 | 5.97 | Poor |
| | | | | 8/7/91 | 41 | 0 | 8.42 | 0.00 | Poor |
| Ellerbe Cr | SR 1636 | Durham | 27-5-(2) | 8/23/00 | 41 | 6 | 7.28 | 6.72 | Fair |
| | | | | 3/29/95 | 38 | 3 | 7.74 | 6.11 | Poor |
| | | | | 8/7/91 | 36 | 3 | 7.84 | 7.42 | Poor |

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|------------------------|----------------|-----------|-------------|----------|-----|-----|------|-------------|-----------|
| L Lick Cr | SR 1815 | Durham | 27-9-(0.5) | 6/10/85 | 35 | 2 | 8.74 | 7.51 | Poor |
| | | | | 2/14/95 | 27 | 1 | 7.95 | 5.81 | Poor |
| | | | | 8/7/91 | 56 | 7 | 7.79 | 6.25 | Poor |
| | | | | 2/15/88 | --- | 5 | --- | 5.80 | Poor |
| L Lick Cr | SR 1814 | Durham | 27-9-(0.5) | 3/6/00 | 26 | 2 | 7.07 | 7.22 | Poor |
| | | | | 2/14/95 | 34 | 6 | 7.89 | 6.22 | Poor |
| | | | | 8/7/91 | 59 | 7 | 7.21 | 6.34 | Fair |
| | | | | 2/15/88 | --- | 4 | --- | 5.99 | Poor |
| | | | | 6/13/85 | 77 | 11 | 7.09 | 5.87 | Fair |
| Lick Cr | SR 1905 | Durham | 27-11-(0.5) | 3/6/00 | 26 | 12 | 6.69 | 5.69 | Fair |
| | | | | 2/14/95 | --- | --- | --- | 5.77 | Fair |
| | | | | 2/15/88 | --- | 5 | --- | 4.31 | Fair |
| Smith Cr | SR 1710 | Granville | 27-12-2-(1) | 8/10/00 | --- | 21 | --- | 5.18 | Good |
| | | | | 7/25/95 | 85 | 24 | 5.92 | 5.37 | Good-Fair |
| | | | | 3/2/95 | 90 | 31 | 5.13 | 4.26 | Good |
| | | | | 4/24/92 | 84 | 30 | 5.14 | 4.44 | Good |
| | | | | 8/6/91 | --- | 17 | --- | 4.73 | Good-Fair |
| | | | | 11/16/84 | 84 | 29 | 5.41 | 4.62 | Good |
| | | | | 6/20/84 | 87 | 23 | 5.38 | 4.97 | Good |
| | | | | 4/2/84 | 100 | 32 | 5.45 | 4.44 | Good |
| | | | | 1/25/84 | 79 | 29 | 5.01 | 4.14 | Good |
| | | | | 8/10/00 | --- | 23 | --- | 5.20 | Good |
| New Light Cr | SR 1912 | Wake | 27-13-(0.1) | 3/2/95 | --- | 24 | --- | 4.24 | Good-Fair |
| | | | | 8/10/00 | --- | 14 | --- | 5.44 | Good-Fair |
| Upper Barton Cr | NC 50 | Wake | 27-15-(1) | 12/9/96 | --- | 13 | --- | 4.58 | Fair |
| | | | | 7/25/95 | --- | 16 | --- | 4.49 | Good-Fair |
| | | | | 2/23/95 | --- | 32 | --- | 3.93 | Good |
| | | | | 2/14/95 | --- | 29 | --- | 3.71 | Good |
| | | | | 7/9/91 | --- | 21 | --- | 4.34 | Good |
| Lower Barton Cr | SR 1844 | Wake | 27-16-(1) | 2/14/95 | --- | 31 | --- | 3.82 | Good-Fair |
| | | | | 6/13/85 | 83 | 19 | 6.12 | 5.34 | Good-Fair |
| Horse Cr | SR 1923 | Wake | 27-17-(0.7) | 9/12/96 | --- | 12 | --- | 4.48 | Fair |
| 03-04-02 | | | | | | | | | |
| Neuse R | US 401 | Wake | 27-(20.7) | 7/6/00 | 63 | 21 | 5.76 | 4.99 | Good-Fair |
| | | | | 7/25/95 | 56 | 22 | 5.89 | 5.01 | Good-Fair |
| | | | | 7/9/91 | 70 | 20 | 5.91 | 5.18 | Good-Fair |
| | | | | 8/18/89 | 53 | 15 | 6.27 | 5.55 | Good-Fair |
| | | | | 7/10/87 | --- | 19 | --- | 5.01 | Good-Fair |
| | | | | 6/30/87 | 74 | 21 | 6.15 | 4.83 | Good-Fair |
| | | | | 12/4/86 | --- | 12 | --- | 4.97 | Fair |
| | | | | 7/26/85 | 71 | 20 | 6.66 | 5.60 | Good-Fair |
| | | | | 11/22/83 | 58 | 12 | 6.33 | 5.25 | Fair |
| | | | | 10/14/83 | 70 | 19 | 6.53 | 5.56 | Good-Fair |
| Neuse R | US 1 | Wake | 27-(20.7) | 9/16/83 | 68 | 13 | 6.64 | 5.64 | Fair |
| | | | | 7/13/83 | 58 | 17 | 6.14 | 5.38 | Good-Fair |
| | | | | 12/4/86 | --- | 12 | --- | 5.36 | Fair |
| Neuse R | US 64 | Wake | 27-(20.7) | 11/6/85 | 48 | 10 | 7.25 | 5.56 | Fair |
| | | | | 9/11/00 | 45 | 16 | 5.86 | 5.17 | Good-Fair |
| | | | | 10/24/96 | 48 | 17 | 5.61 | 4.64 | Good-Fair |
| | | | | 7/26/95 | 62 | 22 | 5.59 | 4.79 | Good |
| | | | | 7/10/91 | 69 | 22 | 6.00 | 4.81 | Good-Fair |
| Neuse R | SR 2555 | Wake | 27-(20.7) | 12/4/86 | --- | 13 | --- | 5.23 | Fair |
| | | | | 6/30/87 | 74 | 22 | 6.17 | 5.14 | Good-Fair |
| Neuse R | SR 2509 | Wake | 27-(20.7) | 6/30/87 | 71 | 22 | 6.01 | 4.98 | Good-Fair |
| UT Neuse R | ab N Wake fill | Wake | 27-(20.7) | 5/18/92 | 73 | 24 | 5.40 | 4.01 | Good |
| UT Neuse R | be N Wake fill | Wake | 27-(20.7) | 5/19/92 | 50 | 17 | 4.77 | 3.77 | Good |
| UT Neuse R | Mallinkrodt M1 | Wake | 27-(20.7) | 5/18/92 | 54 | 5 | 6.96 | 4.48 | Fair |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|----------------|--------|-------------|----------|-----|-----|------|-------------|-----------|
| UT Neuse R | Mallinkrodt M3 | Wake | 27-(20.7) | 5/18/92 | 49 | 2 | 7.61 | 6.05 | Poor |
| Richland Cr | SR 1931 | Wake | 27-21 | 5/20/97 | --- | 17 | --- | 4.08 | Good-Fair |
| Richland Cr | US 1 | Wake | 27-21 | 3/17/00 | --- | 18 | --- | 4.90 | Good-Fair |
| | | | | 12/10/96 | --- | 13 | --- | 5.08 | Fair |
| | | | | 3/10/95 | --- | 20 | --- | 4.41 | Good-Fair |
| | | | | 3/24/94 | 60 | 22 | 5.09 | 4.30 | Good-Fair |
| | | | | 8/20/91 | --- | 17 | --- | 4.58 | Good-Fair |
| Smith Cr | be WF Res. | Wake | 27-23-(2) | 3/25/87 | --- | 2 | --- | 4.95 | Poor |
| Smith Cr | SR 2049 | Wake | 27-23-(2) | 12/2/86 | --- | 12 | --- | 5.45 | Fair |
| Smith Cr | SR 2044 | Wake | 27-23-(2) | 12/2/86 | --- | 2 | --- | 6.58 | Poor |
| Smith Cr | SR 2045 | Wake | 27-23-(2) | 7/6/00 | --- | 12 | --- | 5.10 | Fair |
| | | | | 7/25/95 | --- | 15 | --- | 5.38 | Good-Fair |
| | | | | 12/2/86 | --- | 4 | --- | 6.07 | Poor |
| Austin Cr | SR 2053 | Wake | 27-23-3 | 3/25/87 | --- | 12 | --- | 3.41 | Fair |
| Sanford Br | SR 2049 | Wake | 27-23-5 | 12/2/86 | --- | 9 | --- | 5.99 | Fair |
| UT Toms Cr | SR 2044 | Wake | 27-24 | 5/12/00 | 59 | 20 | 5.49 | 4.30 | NR |
| Toms Cr | off powerline | Wake | 27-24 | 5/11/00 | 45 | 14 | 4.98 | 3.54 | NR |
| Toms Cr | Ab Deerchase | Wake | 27-24 | 8/21/00 | 36 | 6 | 6.79 | 6.27 | NR |
| Toms Cr | SR 2044 | Wake | 27-24 | 7/6/00 | --- | 11 | --- | 5.40 | Fair |
| | | | | 5/11/00 | 45 | 8 | 6.21 | 5.58 | NR |
| | | | | 7/25/95 | --- | 10 | --- | 5.35 | Fair |
| | | | | 8/21/91 | 61 | 17 | 5.70 | 4.23 | Good |
| Perry Cr | SR 2006 | Wake | 27-25-(2) | 7/6/00 | --- | 8 | --- | 5.23 | Fair |
| | | | | 12/9/96 | --- | 11 | --- | 5.56 | Fair |
| | | | | 7/25/95 | --- | 8 | --- | 5.87 | Fair |
| Mango Cr | ab WWTP | Wake | 27-32 | 3/24/87 | --- | 6 | --- | 4.57 | Poor |
| Mango Cr | be WWTP | Wake | 27-32 | 3/24/87 | --- | 3 | --- | 5.97 | Poor |
| Crabtree Cr | NC 54 | Wake | 27-33-(1) | 7/5/00 | 70 | 8 | 7.55 | 7.07 | Poor |
| | | | | 7/24/95 | --- | 6 | --- | 6.68 | Poor |
| | | | | 7/9/91 | --- | 8 | --- | 6.61 | Fair |
| | | | | 8/3/88 | --- | 5 | --- | 6.38 | Poor |
| | | | | 3/22/88 | 65 | 15 | 7.25 | 6.24 | Fair |
| Crabtree Cr | SR 1002 | Wake | 27-33-(1) | 8/3/88 | --- | 9 | --- | 6.36 | Fair |
| | | | | 3/22/88 | 66 | 12 | 7.25 | 6.18 | Fair |
| Crabtree Cr | SR 1795 | Wake | 27-33-(1) | 4/19/94 | 51 | 6 | 7.69 | 7.17 | Poor |
| | | | | 6/23/87 | --- | 6 | --- | 6.65 | Poor |
| | | | | 10/26/84 | 73 | 11 | 6.59 | 5.91 | Fair |
| | | | | 4/19/84 | 61 | 14 | 6.03 | 5.16 | Good-Fair |
| Crabtree Cr | I-40 | Wake | 27-33-(3.5) | 4/19/94 | 55 | 11 | 7.18 | 5.56 | Fair |
| | | | | 6/23/87 | --- | 7 | --- | 6.27 | Fair |
| | | | | 10/26/84 | 56 | 8 | 7.20 | 6.60 | Fair |
| | | | | 4/12/84 | 68 | 16 | 5.32 | 4.59 | Fair |
| Crabtree Cr | Umstead Pk | Wake | 27-33-(3.5) | 7/5/00 | 55 | 13 | 6.19 | 5.99 | Good-Fair |
| | | | | 7/24/95 | 54 | 13 | 6.37 | 5.98 | Good-Fair |
| | | | | 4/19/94 | 54 | 10 | 6.56 | 6.40 | Fair |
| | | | | 7/2/87 | 55 | 9 | 6.54 | 6.69 | Fair |
| | | | | 6/23/87 | --- | 9 | --- | 6.09 | Fair |
| | | | | 4/15/86 | 80 | 20 | 6.31 | 5.30 | Good-Fair |
| | | | | 10/26/84 | 65 | 14 | 6.18 | 5.67 | Good-Fair |
| Black Cr | Weston Pkwy | Wake | 27-33-5 | 7/27/00 | --- | 8 | --- | 6.33 | Fair |
| | | | | 5/17/94 | --- | 11 | --- | 5.56 | Fair |
| Reedy Cr | Umstead Park | Wake | 27-33-8 | 5/19/00 | 31 | 7 | 6.76 | 6.16 | NR |
| Sycamore Cr | SR 1649 | Wake | 27-33-9 | 8/20/91 | --- | 15 | --- | 5.79 | Good-fair |
| UT Turkey Cr | ab Delta Rdg | Wake | 27-33-9-2 | 7/26/00 | 26 | 6 | 5.25 | 5.14 | NR |
| UT Turkey Cr | be Delta Rdg | Wake | 27-33-9-2 | 7/26/00 | 15 | 3 | 6.21 | 3.69 | NR |
| Crabtree Cr | SR 1649 | Wake | 27-33-(10) | 4/19/94 | --- | 9 | --- | 5.62 | Fair |
| | | | | 7/9/91 | --- | 9 | --- | 6.30 | Fair |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|-------------|----------|--------------|----------|-----|-----|------|-------------|-----------|
| Crabtree Cr | US 1 | Wake | 27-33-(10) | 6/22/87 | --- | 15 | --- | 5.63 | Good-Fair |
| | | | | 8/30/00 | 54 | 13 | 6.55 | 5.89 | Fair |
| | | | | 10/15/96 | 41 | 11 | 6.64 | 6.14 | Fair |
| | | | | 7/24/95 | 54 | 16 | 6.55 | 6.09 | Fair |
| | | | | 10/12/89 | 45 | 12 | 6.70 | 6.14 | Fair |
| | | | | 7/27/89 | 54 | 12 | 6.62 | 6.16 | Fair |
| | | | | 4/21/89 | 63 | 14 | 6.47 | 5.31 | Fiar |
| | | | | 2/15/89 | 46 | 9 | 7.14 | 6.29 | Fair |
| | | | | 9/6/84 | 56 | 10 | 6.85 | 5.97 | Fair |
| | | | | 8/15/96 | --- | 7 | --- | 7.04 | Fair |
| Richlands Cr | SR 1775 | Wake | 27-33-11 | 8/15/96 | --- | 7 | --- | 7.04 | Fair |
| Richlands Cr | SR 1649 | Wake | 27-33-11 | 8/15/96 | --- | 12 | --- | 6.21 | Fair |
| | | | | 7/9/91 | --- | 10 | --- | 6.27 | Fair |
| Hare Snipe Cr | US 70 | Wake | 27-33-12-(2) | 3/17/00 | --- | 5 | --- | 5.53 | Poor |
| | | | | 2/23/95 | --- | 10 | --- | 5.17 | Fair |
| Mine Cr | above lake | Wake | 27-33-14 | 9/26/95 | --- | 7 | --- | 5.71 | Fair |
| Mine Cr | below lake | Wake | 27-33-14 | 3/17/00 | --- | 3 | --- | 6.93 | Poor |
| | | | | 2/23/95 | --- | 4 | --- | 6.05 | Poor |
| Pigeon House Cr | Dortch St | Wake | 27-33-18 | 7/25/95 | 31 | 1 | 8.85 | 7.00 | Poor |
| Pigeon House Cr | Fenton St | Wake | 27-33-18 | 2/27/00 | 33 | 2 | 8.13 | 7.60 | Poor |
| Marsh Cr | near US 1 | Wake | 27-33-20 | 7/27/00 | 40 | 3 | 7.43 | 6.61 | Poor |
| | | | | 7/26/95 | 44 | 6 | 6.85 | 6.47 | Fair |
| | | | | 11/16/84 | 39 | 4 | 7.59 | 6.83 | Poor |
| | | | | 4/2/84 | 39 | 3 | 7.88 | 5.82 | Poor |
| | | | | 1/25/84 | 20 | 4 | 7.59 | 5.57 | Poor |
| | | | | 6/4/83 | 48 | 6 | 7.55 | 6.62 | Poor |
| Walnut Cr | SR 1700 | Wake | 27-34-(4) | 11/6/85 | 49 | 3 | 7.61 | 6.84 | Poor |
| Walnut Cr | Hammond Rd | Wake | 27-34-(4) | 11/6/85 | 36 | 5 | 8.27 | 7.01 | Poor |
| Walnut Cr | SR 1004 | Wake | 27-34-(4) | 3/24/94 | 47 | 7 | 7.68 | 5.22 | Poor |
| | | | | 11/6/85 | 36 | 2 | 8.26 | 7.69 | Poor |
| Walnut Cr | State St | Wake | 27-34-(4) | 3/24/94 | 45 | 4 | 7.28 | 6.01 | Poor |
| Walnut Cr | SR 2554 | Wake | 27-34-(4) | 3/24/94 | 44 | 5 | 7.33 | 6.11 | Poor |
| Walnut Cr | SR 1730 | Wake | 27-34-(4) | 7/16/91 | --- | 9 | --- | 6.04 | Fair |
| Walnut Cr | SR 2551 | Wake | 27-34-(4) | 7/27/00 | 61 | 15 | 6.37 | 5.57 | Good-Fair |
| | | | | 7/26/95 | 51 | 10 | 7.03 | 5.59 | Fair |
| | | | | 3/24/94 | 49 | 12 | 6.10 | 4.60 | Fair |
| | | | | 11/8/85 | 42 | 13 | 6.45 | 5.93 | Fair |
| UT Big Br | ab Goodmark | Wake | 27-34-11 | 4/20/89 | 47 | 6 | 7.03 | 4.91 | NR |
| UT Big Br | be Goodmark | Wake | 27-34-11 | 4/20/89 | 31 | 1 | 8.11 | 5.50 | NR |
| UT Poplar Cr | ab WWTP | Wake | 27-35 | 11/10/98 | 24 | 5 | 5.70 | 3.89 | NR |
| UT Poplar Cr | ab SR 2509 | Wake | 27-35 | 11/10/98 | 17 | 1 | 7.80 | 2.21 | NR |
| Neuse R | NC 42 | Johnston | 27-(36) | 10/12/00 | 63 | 25 | 5.45 | 4.63 | Good |
| | | | | 9/11/00 | 60 | 24 | 5.59 | 4.73 | Good |
| | | | | 10/25/96 | 49 | 20 | 5.32 | 4.53 | Good |
| | | | | 7/27/95 | 67 | 21 | 5.78 | 4.90 | Good-Fair |
| | | | | 7/10/91 | 70 | 25 | 5.82 | 4.81 | Good |
| | | | | 8/6/90 | 72 | 23 | 5.94 | 4.73 | Good-Fair |
| | | | | 7/13/88 | 79 | 21 | 6.08 | 5.19 | Good-Fair |
| | | | | 7/11/88 | --- | 14 | --- | 5.39 | Good-Fair |
| | | | | 7/11/86 | 81 | 20 | 6.39 | 5.09 | Good-Fair |
| | | | | 7/11/86 | 65 | 18 | 6.40 | 5.19 | Good-Fair |
| | | | | 7/22/85 | 63 | 18 | 6.26 | 5.24 | Good-Fair |
| | | | | 9/19/84 | 60 | 21 | 5.90 | 5.08 | Good-Fair |
| | | | | 7/14/83 | 58 | 13 | 6.24 | 5.02 | Good-Fair |
| Neuse R | SR 1201 | Johnston | 27-(36) | 10/13/00 | 61 | 23 | 5.56 | 4.25 | Good |
| | | | | 8/3/95 | 60 | 25 | 4.99 | 4.00 | Good |
| | | | | 7/10/91 | 64 | 24 | 5.61 | 4.53 | Good |
| UT Neuse R | SR 1903 | Johnston | 27-(36) | 9/15/92 | 65 | 18 | 5.23 | 4.73 | Good |
| Marks Cr | SR 1714 | Johnston | 27-38 | 9/8/00 | --- | 19 | --- | 5.12 | Good-Fair |

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|------------------------|----------------|----------|--------------|---------|-----|-----|------|-------------|-----------|
| | | | | 7/27/95 | --- | 18 | --- | 5.01 | Good-Fair |
| | | | | 7/15/91 | --- | 17 | --- | 4.47 | Good-Fair |
| Mill Cr | NC 70A | Johnston | 27-40 | 9/15/92 | 46 | 7 | 7.31 | 6.58 | NR |
| Swift Cr | Old Raleigh Rd | Wake | 27-43-(1) | 3/16/89 | --- | 1 | --- | 7.78 | NR |
| Swift Cr | ab Williams Cr | Wake | 27-43-(1) | 5/19/00 | 43 | 7 | 6.61 | 6.59 | NR |
| Swift Cr | ab US 1 | Wake | 27-43-(1) | 7/5/00 | --- | 5 | --- | 6.72 | Poor |
| | | | | 5/10/00 | 32 | 8 | 6.99 | 6.78 | NR |
| | | | | 7/24/95 | --- | 4 | --- | 7.41 | Poor |
| | | | | 7/9/91 | --- | 10 | --- | 6.27 | Fair |
| | | | | 3/2/89 | --- | 9 | --- | 6.34 | Fair |
| Swift Cr | SR 1300 | Wake | 27-43-(1) | 5/3/00 | 63 | 9 | 7.36 | 6.33 | Poor |
| | | | | 3/2/89 | --- | 14 | --- | 6.18 | Fair |
| Swift Cr | SR 1152 | Wake | 27-43-(1) | 7/5/00 | --- | 9 | --- | 6.80 | Fair |
| | | | | 4/24/00 | 56 | 12 | 6.84 | 6.41 | Fair |
| | | | | 7/24/95 | --- | 7 | --- | 6.34 | Fair |
| | | | | 3/6/89 | --- | 9 | --- | 6.17 | Fair |
| UT Swift Cr B | Radio Tower | Wake | 27-43-(1) | 3/6/89 | --- | 13 | --- | 2.77 | NR |
| UT Swift Cr | nr Swift Cr | Wake | 27-43-(1) | 3/6/89 | --- | 5 | --- | 4.67 | NR |
| UT Swift Cr A | T4 | Wake | 27-43-(1) | 3/2/89 | --- | 13 | --- | 3.07 | NR |
| UT Swift Cr | Hemlock Bluff | Wake | 27-43-(1) | 3/2/89 | --- | 23 | --- | 2.91 | NR |
| UT Swift Cr | Old Stage cont | Wake | 27-43-(1) | 6/13/97 | --- | 16 | --- | 4.12 | NR |
| UT Swift Cr | Old Stage Dev | Wake | 27-43-(1) | 6/13/97 | --- | 6 | --- | 5.94 | NR |
| Williams Cr | ab US 64 | Wake | 27-43-2 | 5/19/00 | 39 | 6 | 7.29 | 6.69 | NR |
| Williams Cr | Old Raleigh | Wake | 27-43-2 | 3/6/89 | --- | 4 | --- | 6.75 | NR |
| Speight Cr | SR 1345 | Wake | 27-43-3.5 | 5/2/00 | 55 | 6 | 6.75 | 5.51 | NR |
| Swift Cr | NC 42 | Johnston | 27-43-(8) | 7/12/91 | --- | 8 | --- | 5.61 | Fair |
| | | | | 7/11/86 | 53 | 8 | 6.75 | 5.36 | Fair |
| Swift Cr | SR 1525 | Johnston | 27-43-(8) | 7/27/95 | --- | 14 | --- | 5.55 | Good-Fair |
| Swift Cr | SR 1555 | Johnston | 27-43-(8) | 10/2/00 | --- | 16 | --- | 5.76 | Good-Fair |
| Swift Cr | SR 1501 | Johnston | 27-43-(8) | 10/2/00 | 67 | 21 | 5.52 | 4.83 | Good |
| | | | | 7/27/95 | 58 | 18 | 5.60 | 5.08 | Good |
| | | | | 8/19/91 | 76 | 19 | 5.74 | 5.00 | Good-Fair |
| UT Swift Cr | ab MHP | Johnston | 27-43-(8) | 3/24/87 | --- | 15 | --- | 4.09 | Good-Fair |
| UT Swift Cr | be MHP | Johnston | 27-43-(8) | 3/24/87 | --- | 16 | --- | 4.06 | Good-Fair |
| Little Cr | SR 1562 | Johnston | 27-43-12 | 9/8/00 | --- | 11 | --- | 6.20 | Fair |
| | | | | 7/27/95 | --- | 10 | --- | 5.59 | Fair |
| | | | | 8/19/91 | --- | 13 | --- | 5.48 | Fair |
| Moccasin/Raccoon Swp | SR 1007 | Johnston | 27-51 | 7/11/91 | --- | 7 | --- | 5.96 | Fair |
| 03-04-03 | | | | | | | | | |
| UT Middle Cr | Lufkin Rd. | Wake | 27-43-15-(1) | 2/6/87 | 29 | 2 | 8.09 | 2.66 | Poor |
| | | | | 2/6/87 | 27 | 1 | 8.90 | 7.78 | Poor |
| Middle Cr | SR 2739 | Wake | 27-43-15-(1) | 6/2/86 | 82 | 12 | 6.51 | 5.05 | Fair |
| | Tallicud Rd | Wake | 27-43-15-(1) | 5/30/86 | 72 | 10 | 6.93 | 5.89 | Fair |
| Middle Cr | SR 1301 | Wake | 27-43-15-(1) | 9/5/90 | 81 | 16 | 6.26 | 4.46 | Good-Fair |
| | | | | 5/29/86 | 65 | 9 | 7.07 | 5.70 | Fair |
| Basal Cr | NC 55 | Wake | 27-43-15-3 | 5/29/86 | 95 | 16 | 6.08 | 4.65 | Good-Fair |
| Middle Cr | SR 1375 | Wake | 27-43-15-(4) | 8/21/00 | 42 | 13 | 6.01 | 5.78 | Good-Fair |
| | | | | 8/11/95 | 39 | 10 | 6.01 | 5.94 | Fair |
| | | | | 7/25/91 | 55 | 11 | 6.25 | 5.77 | Good-Fair |
| | | | | 5/30/86 | 67 | 14 | 6.82 | 4.95 | Fair |
| Middle Cr | US 401 | Wake | 27-43-15-(4) | 6/2/86 | 96 | 26 | 6.22 | 4.91 | Good |
| Middle Cr | NC 50 | Johnston | 27-43-15-(4) | 8/21/00 | 49 | 18 | 5.49 | 4.88 | Good-Fair |
| | | | | 8/9/95 | 46 | 14 | 5.78 | 4.68 | Good-Fair |
| | | | | 7/24/91 | 82 | 17 | 5.99 | 4.95 | Good-Fair |
| | | | | 7/13/90 | 84 | 18 | 6.16 | 4.72 | Good-Fair |
| | | | | 7/10/87 | --- | 14 | --- | 5.06 | Good-Fair |
| | | | | 7/7/87 | 80 | 17 | 6.61 | 4.83 | Fair |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|--------------|----------|----------------|----------|-----|-----|------|-------------|-----------|
| Terrible Cr | SR 1507 | Johnston | 27-43-15-8-(2) | 6/3/86 | 73 | 13 | 6.58 | 5.26 | Fair |
| 03-04-04 | | | | | | | | | |
| Black Cr | SR 1330 | Johnston | 27-45-(2) | 8/9/95 | 47 | 7 | 6.56 | 5.47 | Fair |
| | | | | 7/24/91 | 62 | 10 | 7.11 | 5.86 | Fair |
| Mill Cr | SR 1662 | Johnston | 27-52 | 7/11/83 | 50 | 19 | 6.30 | 4.93 | Good-Fair |
| Mill Cr | SR 1009 | Johnston | 27-52 | 8/24/00 | --- | 12 | --- | 5.29 | Good-Fair |
| | | | | 8/8/95 | --- | 12 | --- | 4.82 | Good-Fair |
| | | | | 8/19/91 | --- | 13 | --- | 5.07 | Good-Fair |
| Hannah Cr | SR 1200 | Johnston | 27-52-6 | 7/11/83 | 58 | 11 | 7.55 | 5.72 | Fair |
| Hannah Cr | SR 1009 | Johnston | 27-52-6 | 8/15/00 | --- | 11 | --- | 5.68 | Fair |
| | | | | 8/8/95 | --- | 13 | --- | 5.33 | Good-Fair |
| | | | | 8/19/91 | --- | 8 | --- | 5.27 | Fair |
| Stone Cr | SR 1138 | Johnston | 27-52-5 | 8/9/95 | --- | 8 | --- | 5.46 | Good-Fair |
| 03-04-05 | | | | | | | | | |
| Neuse R | NC 58 | Lenoir | 27-(56) | 10/17/00 | 62 | 22 | 5.42 | 4.17 | Good |
| | | | | 8/7/95 | 58 | 20 | 5.08 | 4.18 | Good |
| | | | | 7/19/91 | 60 | 21 | 5.21 | 4.75 | Good |
| | | | | 7/10/90 | 70 | 24 | 5.38 | 4.51 | Good |
| | | | | 7/11/88 | 71 | 24 | 5.66 | 4.97 | Good |
| | | | | 7/7/87 | 76 | 23 | 5.85 | 4.84 | Good-Fair |
| | | | | 6/26/86 | 74 | 23 | 6.28 | 5.17 | Good-Fair |
| | | | | 9/3/85 | 74 | 22 | 5.83 | 4.73 | Good-Fair |
| | | | | 9/4/84 | 63 | 20 | 5.57 | 4.46 | Good |
| | | | | 7/25/83 | 60 | 18 | 5.65 | 4.90 | Good |
| | | | | 6/15/00 | 52 | 5 | 7.19 | 6 | Fair |
| Stoney Cr | Ashe St park | Wayne | 27-62 | 6/15/00 | 52 | 5 | 7.19 | 6 | Fair |
| | SR 1920 | Wayne | 27-62 | 8/22/00 | --- | 8 | --- | 5.60 | Fair |
| Stoney Cr | SR 1920 | Wayne | 27-62 | 6/15/00 | 50 | 5 | 6.98 | 5.73 | Fair |
| | | | | 8/8/95 | --- | 4 | --- | 5.96 | Poor |
| | | | | 8/8/95 | --- | 4 | --- | 5.96 | Poor |
| Bear Cr | SR 1731 | Wayne | 27-572 | 10/13/00 | 63 | 21 | 5.25 | 4.24 | Good |
| Bear Cr | SR 1311 | Lenoir | 27-72 | 8/22/00 | --- | 13 | --- | 5.24 | Good-Fair |
| | | | | 8/7/95 | --- | 7 | --- | 5.40 | Fair |
| | | | | 7/10/91 | --- | 14 | --- | 4.92 | Good-Fair |
| Falling Cr | SR 1546 | Lenoir | 27-77 | 1/7/97 | --- | 8 | --- | 5.31 | Poor |
| Falling Cr | SR 1519 | Lenoir | 27-77 | 10/5/00 | --- | 11 | --- | 5.44 | Fair |
| Falling Cr | SR 1001 | Lenoir | 27-77 | 11/18/99 | --- | 13 | --- | 5.61 | Good-Fair |
| Falling Cr | SR 1340 | Lenoir | 27-77 | 7/10/91 | --- | 14 | --- | 4.55 | Good-Fair |
| | | | | 8/7/95 | --- | 12 | --- | 5.45 | Good-Fair |
| Southwest Cr | SR 1804 | Lenoir | 27-80 | 8/7/95 | --- | 6 | --- | 6.03 | Not Rated |
| Briery Run | SR 1732 | Lenoir | 27-81-8 | 7/10/91 | --- | 6 | --- | 6.03 | Not Rated |
| | | | | 11/2/93 | 23 | 1 | 8.82 | 6.37 | Not Rated |
| Stonyton Cr | SR 1742 | Lenoir | 27-81-8 | 11/2/93 | 25 | 1 | 7.52 | 5.50 | Not Rated |
| 03-04-06 | | | | | | | | | |
| Little R | NC 96 | Wake | 27-57-(1) | 08/15/00 | --- | 20 | --- | 5.09 | Good-Fair |
| | | | | 08/24/95 | 94 | 21 | 6.48 | 4.94 | Good-Fair |
| | | | | 01/27/95 | 70 | 20 | 6.45 | 4.84 | Good-Fair |
| | | | | 08/14/91 | 81 | 21 | 6.35 | 5.13 | Good-Fair |
| | | | | 11/06/84 | 98 | 25 | 6.12 | 4.64 | Good-Fair |
| | | | | 09/21/84 | 92 | 21 | 5.98 | 4.94 | Good-Fair |
| | | | | 08/02/84 | 96 | 18 | 5.87 | 4.62 | Good-Fair |
| | | | | 06/22/84 | 101 | 23 | 6.00 | 4.77 | Good-Fair |
| | | | | 05/15/84 | 107 | 26 | 5.91 | 4.49 | Good |
| | | | | 04/13/84 | 104 | 32 | 5.62 | 4.31 | Good |
| | | | | 03/14/84 | 102 | 30 | 5.74 | 4.42 | Good |
| | | | | 02/10/84 | 89 | 24 | 5.65 | 4.67 | Good |
| | | | | 01/23/84 | 80 | 28 | 5.74 | 5.03 | Good |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|---------------------|----------|--------------|----------|-----|-----|------|-------------|-----------|
| | | | | 12/16/83 | 107 | 28 | 6.19 | 5.40 | Good-Fair |
| | | | | 11/22/83 | 100 | 25 | 6.33 | 5.15 | Good-Fair |
| | | | | 10/14/83 | 96 | 21 | 6.10 | 4.89 | Good-Fair |
| | | | | 09/07/83 | 89 | 19 | 6.43 | 4.94 | Good-Fair |
| Little R | SR 2224 | Wake | 27-57-(1) | 01/27/95 | 75 | 15 | 6.19 | 5.01 | Good-Fair |
| Little R | SR 1722 | Johnston | 27-57-(8.5) | 07/23/91 | 77 | 19 | 6.14 | 4.72 | Good-Fair |
| Little R | SR 2130 | Johnston | 27-57-(8.5) | 08/15/00 | 66 | 19 | 5.51 | 4.68 | Good |
| | | | | 08/24/95 | 75 | 16 | 5.98 | 4.85 | Good-Fair |
| | | | | 07/23/91 | 75 | 24 | 5.39 | 4.73 | Good |
| | | | | 03/24/88 | --- | 37 | --- | 3.55 | Excellent |
| Little R | SR 2335 | Johnston | 27-57-(8.5) | 03/23/88 | --- | 16 | --- | 5.17 | Good-Fair |
| Little R | SR 2320 | Johnston | 27-57-(8.5) | 07/11/89 | 64 | 17 | 5.73 | 5.13 | Good-Fair |
| | | | | 07/08/87 | 83 | 23 | 5.77 | 5.01 | Good-Fair |
| | | | | 09/03/85 | 78 | 13 | 6.51 | 5.35 | Fair |
| | | | | 07/11/83 | 63 | 22 | 5.31 | 4.09 | Good |
| Buffalo Cr | SR 1007 | Wake | 27-57-16-(2) | 08/06/91 | --- | 2 | --- | 7.63 | Poor |
| Buffalo Cr | SR 1941 | Johnston | 27-57-16-(3) | 08/15/00 | 73 | 15 | 6.27 | 5.47 | Good-Fair |
| | | | | 07/25/91 | --- | 9 | --- | 4.62 | Fair |
| Mill Cr | above Kenly WWTP | Johnston | 27-57-18 | 03/23/88 | 41 | 8 | 6.89 | 4.67 | Not Rated |
| Mill Cr | below Kenly WWTP | Johnston | 27-57-18 | 03/23/88 | 23 | 1 | 8.60 | 5.81 | Not Rated |
| | | | | 07/23/91 | 56 | 5 | 7.30 | 6.90 | Not Rated |
| Little R | NC 581 | Wayne | 27-57-(20.2) | 08/24/00 | 60 | 17 | 5.56 | 4.48 | Good-Fair |
| | | | | 08/24/95 | 69 | 17 | 6.11 | 4.33 | Good-Fair |
| | | | | 07/24/91 | 78 | 25 | 5.51 | 4.58 | Good |
| Little R | off SR 1326 | Wayne | 27-57-(21.1) | 07/06/94 | 84 | 20 | 6.49 | 4.93 | Good-Fair |
| Little R | above US 70 | Wayne | 27-57-(21.2) | 07/xx/94 | 69 | 21 | --- | --- | Good |
| Little R | US 70 | Wayne | 27-57-(21.2) | 07/06/94 | --- | 14 | --- | 4.81 | Good-Fair |
| 03-04-07 | | | | | | | | | |
| Moccasin Cr | NC 231 | Nash | 27-86-2 | 09/22/00 | --- | 17 | --- | 5.37 | Good-Fair |
| | | | | 08/15/00 | --- | 14 | --- | 6.04 | Good-Fair |
| | | | | 09/20/96 | --- | 13 | --- | 5.21 | Fair |
| | | | | 08/23/95 | --- | 16 | --- | 5.38 | Good-Fair |
| | | | | 07/25/91 | --- | 17 | --- | 4.97 | Good-Fair |
| Moccasin Cr | SR 1131 | Nash | 27-86-2 | 05/29/91 | 64 | 16 | 6.01 | 5.32 | Good-Fair |
| | | | | 05/10/88 | 79 | 25 | 5.81 | 5.15 | Good |
| Little Cr | NC 39 | Wake | 27-86-2-4 | 07/23/91 | 46 | 2 | 7.92 | 7.64 | Poor |
| Bull Br | above SR 2110 | Johnston | 27-86-2-6.5 | 10/03/00 | 43 | 17 | 4.96 | 4.21 | Not Rated |
| Turkey Cr | SR 1109 | Nash | 27-86-3-(1) | 08/15/00 | --- | 11 | --- | 6.26 | Fair |
| Turkey Cr | SR 1101 | Nash | 27-86-3-(1) | 05/29/91 | 74 | 14 | 6.67 | 6.10 | Fair |
| | | | | 05/10/88 | 81 | 15 | 6.38 | 5.65 | Good-Fair |
| Turkey Cr | SR 1128 | Wilson | 27-86-3-(1) | 08/23/95 | --- | 18 | --- | 4.84 | Good-Fair |
| | | | | 07/25/91 | 13 | 13 | 5.13 | 5.13 | Good-Fair |
| Beaverdam Cr | SR 1111 | Nash | 27-86-3-8 | 10/03/00 | 56 | 8 | 6.52 | 6.60 | Fair |
| | | | | 07/22/91 | 84 | 18 | 6.00 | 5.00 | Good-Fair |
| Beaverdam Cr | SR 1112 | Nash | 27-86-3-8 | 05/29/91 | 75 | 11 | 6.54 | 5.66 | Fair |
| | | | | 05/10/88 | 76 | 17 | 6.27 | 5.14 | Good-Fair |
| Bloomery Swp | NC 42 | Wilson | 27-86-6-(3) | 09/20/96 | --- | 4 | --- | 5.95 | Poor |
| | | Wilson | | 08/28/96 | 60 | 8 | 6.40 | 5.87 | Good-Fair |
| Contentnea Cr | NC 42 | Wilson | 27-86-(1) | 08/29/96 | 67 | 15 | 6 | 5.65 | Good-Fair |
| Contentnea Cr | SR 1606 | Wilson | 27-86-(7) | 08/28/96 | 62 | 9 | 6.96 | 6.07 | Fair |
| Contentnea Cr | NC 222 | Wilson | 27-86-(7) | 08/29/00 | 78 | 20 | 6.39 | 5.65 | Good-Fair |
| Contentnea Cr | NC 58 | Wilson | 27-86-(7) | 08/23/95 | 64 | 11 | 7.07 | 6.36 | Fair |
| | | | | 07/22/91 | 78 | 19 | 6.28 | 5.38 | Good-Fair |
| | | | | 07/09/90 | 54 | 13 | 6.95 | 5.43 | Fair |
| | | | | 07/11/88 | 60 | 7 | 7.09 | 6.14 | Fair |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|-------------|--------|--------------|----------|-----|-----|------|-------------|-----------|
| Contentnea Cr | SR 1800 | Pitt | 27-86-(7) | 07/10/86 | 79 | 15 | 6.56 | 5.27 | Good-Fair |
| | | | | 10/17/00 | 75 | 19 | 6.35 | 5.19 | Good-Fair |
| | | | | 08/22/95 | 69 | 16 | 6.51 | 5.06 | Good-Fair |
| | | | | 07/22/91 | 77 | 25 | 5.69 | 4.75 | Good |
| | | | | 07/07/87 | 89 | 24 | 6.37 | 5.11 | Good |
| | | | | 07/22/85 | 86 | 20 | 6.54 | 5.14 | Good-Fair |
| | | | | 07/26/83 | 70 | 20 | 6.13 | 5.02 | Good-Fair |
| Great Swp | SR 1634 | Wilson | 27-86-9-3 | 08/28/96 | 60 | 4 | 7.23 | 6.01 | Poor |
| Toisnot Swp | US 264 | Wilson | 27-86-11-(5) | 10/05/00 | --- | 9 | --- | 5.80 | Fair |
| Toisnot Swp | NC 222 | Wilson | 27-86-11-(5) | 08/29/96 | 68 | 5 | 6.71 | 6.77 | Fair |
| Nanhunta Swp | SR 1058 | Greene | 27-86-14 | 07/24/91 | --- | 11 | --- | 5.82 | Fair |
| | | | | 08/16/00 | 72 | 9 | 6.54 | 5.43 | Fair |
| | | | | 11/18/99 | --- | 6 | --- | 5.83 | Fair |
| | | | | 08/22/95 | 57 | 6 | 6.40 | 5.76 | Fair |
| | | | | 07/09/90 | 68 | 16 | 6.54 | 5.24 | Good-Fair |
| | | | | 05/02/90 | 66 | 13 | 6.34 | 5.13 | Good-Fair |
| | | | | 07/11/88 | 65 | 10 | 6.70 | 4.99 | Fair |
| Wheat Swp Cr | NC 58 | Lenoir | 27-86-24 | 02/22/00 | 48 | 6 | 7.54 | 6.03 | Not Rated |
| | SR 1091 | Greene | 27-86-24 | 02/25/92 | 82 | 7 | 7.35 | 6.58 | Not Rated |
| | | | | 07/24/91 | --- | 2 | --- | 6.28 | Not Rated |
| L Contentnea Cr | NC 264A | Pitt | 27-86-26 | 10/05/00 | --- | 6 | --- | 6.08 | Fair |
| 03-04-08 | | | | | | | | | |
| Neuse R | SR 1423 | Craven | 27-(85) | 07/21/95 | 68 | 10 | 6.98 | 5.86 | Good-Fair |
| | | | | 07/14/89 | 73 | 18 | 6.64 | 5.51 | Good-Fair |
| | | | | 07/07/87 | 66 | 15 | 7.16 | 5.81 | Good-Fair |
| | | | | 07/23/85 | 64 | 12 | 7.50 | 6.73 | Fair |
| | | | | 07/12/83 | 52 | 9 | 7.19 | 5.48 | Good-Fair |
| Core Cr | NC 55 | Craven | 27-90 | 08/16/00 | 61 | 10 | 6.92 | 6.47 | Fair |
| | | | | 08/21/95 | 44 | 3 | 7.52 | 7.53 | Poor |
| | | | | 07/23/91 | --- | 8 | --- | 6.26 | Fair |
| Flat Swp | NC 55 | Craven | 27-90-3 | 02/23/00 | 55 | 8 | 7.85 | 6.91 | Not Rated |
| Rollover Cr | SR 1224 | Craven | 27-98-2 | 05/25/89 | 49 | 5 | 6.94 | 5.48 | Not Rated |
| | | | | 05/03/88 | 29 | 9 | 6.40 | 5.36 | Not Rated |
| Beaverdam Br | SR 1244 | Craven | 27-98-2.2 | 05/25/89 | 59 | 4 | 7.22 | 5.18 | Not Rated |
| | | | | 05/03/88 | 36 | 6 | 7.09 | 6.06 | Not Rated |
| Caswell Br | off SR 1243 | Craven | 27-98-2.6 | 05/25/89 | 52 | 10 | 6.32 | 4.58 | Not Rated |
| | | | | 05/03/88 | 35 | 11 | 6.34 | 5.35 | Not Rated |
| 03-04-09 | | | | | | | | | |
| Swift Cr | NC 102 | Pitt | 27-97-(0.5) | 08/22/95 | --- | 5 | --- | 5.88 | Poor |
| | | | | 07/24/91 | --- | 8 | --- | 6.04 | Fair |
| Swift Cr | NC 118 | Craven | 27-97-(0.5) | 10/12/00 | 78 | 13 | 6.82 | 6.19 | Fair |
| | | | | 08/21/95 | 59 | 6 | 7.04 | 6.01 | Fair |
| | | | | 07/23/91 | --- | 12 | --- | 5.95 | Good-Fair |
| Swift Cr | SR 1478 | Craven | 27-97-(0.5) | 07/07/87 | 65 | 11 | 7.29 | 5.78 | Not Rated |
| | | | | 07/22/85 | 55 | 2 | 7.88 | 6.18 | Not Rated |
| | | | | 07/12/83 | 45 | 2 | 7.99 | 6.03 | Not Rated |
| Fork Swp | SR 1711 | Pitt | 27-97-4 | 08/14/95 | 46 | 2 | 7.39 | 5.99 | Not Rated |
| | | | | 03/14/95 | 42 | 2 | 7.53 | 7 | Not Rated |
| Clayroot Swp | SR 1941 | Pitt | 27-97-5 | 08/16/00 | --- | 3 | --- | 5.89 | Poor |
| | | | | 02/24/00 | 56 | 8 | 7.03 | 5.45 | Fair |
| | | | | 08/21/95 | --- | 3 | --- | 5.88 | Poor |
| | | | | 07/23/91 | --- | 9 | --- | 5.57 | Fair |
| Creeping Swp | NC 102 | Pitt | 27-97-5-3 | 02/24/00 | 30 | 2 | 6.87 | 7.39 | Not Rated |
| Palmetto Swp | NC 43 | Craven | 27-97-5.3 | 02/24/00 | 60 | 8 | 7.09 | 6.44 | Not Rated |
| L Swift Cr | SR 1623 | Craven | 27-97-8 | 03/14/95 | 25 | 2 | 7.66 | 7.07 | Not Rated |
| Fisher Swp | SR 1621 | Craven | 27-97-8-3 | 02/25/97 | 44 | 4 | 7.14 | 7.27 | Not Rated |
| | | | | 03/14/95 | 48 | 4 | 6.97 | 6.24 | Not Rated |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|----------------------------|----------------|----------|---------------|----------|-----|-----|------|-------------|-----------|
| | | | | 08/14/95 | 35 | 2 | 7.25 | 6.82 | Not Rated |
| 03-04-10 | | | | | | | | | |
| Freshwater | | | | | | | | | |
| Mill Br | nr Mouth | Craven | 27-99.5 | 08/22/95 | 35 | 5 | 8.30 | --- | Not Rated |
| W Pr Brices Cr | SR 1101 | Craven | 27-101-40-(1) | 04/22/86 | 53 | 13 | 6.12 | 4.47 | Not Rated |
| Upper Broad Cr | SR 1612 | Craven | 27-106-(1) | 03/15/95 | 34 | 3 | 6.89 | 6.72 | Not Rated |
| Upper Broad Cr | NC 55 | Craven | 27-106-(1) | 02/25/00 | 35 | 4 | 7.19 | 7.33 | Not Rated |
| Deep Run | NC 55 | Pamlico | 27-106-6 | 04/28/95 | 29 | 5 | 7.06 | 6.54 | Not Rated |
| | | | | 03/14/95 | 24 | 5 | 6.14 | 5.78 | Not Rated |
| Goose Cr (Black Cr) | SR 1100 | Pamlico | 27-107-(1) | 02/23/99 | 30 | 3 | 6.75 | 6.57 | Not Rated |
| | | Pamlico | | 03/06/98 | 21 | 2 | 5.98 | 4.95 | Not Rated |
| | | Pamlico | | 02/25/97 | 27 | 0 | 7.26 | --- | Not Rated |
| | | Pamlico | | 03/21/95 | 27 | 4 | 6.41 | 5.89 | Not Rated |
| SW Pr Slocum Cr | SR 1746 | Craven | 27-112-1 | 02/25/00 | 48 | 13 | 6.50 | 4.95 | Not Rated |
| Fork Run | SR 1005 | Pamlico | 27-125-2 | 03/21/95 | 26 | 1 | 8.06 | --- | Not Rated |
| Estuarine | | | | | | | | | |
| Neuse R | New Bern | Craven | 27-96 | 08/22/95 | 25 | 1 | 2.2 | --- | Not Rated |
| Lawson Cr | at Mouth | Craven | 27-101-42 | 08/22/95 | 10* | --- | 1.4 | --- | Not Rated |
| Upper Slocum Cr | at Turkey Gut | Craven | 27-112 | 02/09/92 | 10* | --- | 1.2* | --- | Not Rated |
| Slocum Cr | at Mouth | Craven | 27-112 | 08/23/95 | 14 | --- | 2.4 | --- | Not Rated |
| E Pr Slocum Cr | below | Craven | 27-112-2 | 02/09/92 | 3* | --- | 1.3* | --- | Not Rated |
| | Havelock | | | | | | | | |
| | WWTP | | | | | | | | |
| Neuse R | at Hancock Cr | Craven | 27-(115) | 08/23/95 | 19 | --- | 2.3 | --- | Not Rated |
| Hancock Cr | E of Cherry Pt | Craven | 27-115 | 02/09/92 | 12* | --- | 1.5* | --- | Not Rated |
| Clubfoot Cr | nr Mouth | Craven | 27-123 | 08/23/95 | 18 | --- | 2.1 | --- | Not Rated |
| Neuse R | Pierson Pt | Pamlico | 27-(129) | 06/03/98 | 31 | --- | 2.4 | --- | Not Rated |
| Neuse R | NC 55 Bridge | Pamlico | 27-(129) | 07/12/84 | 29 | --- | 1.8 | --- | Not Rated |
| Neuse R | Windmill Pt | Pamlico | 27-(129) | 06/03/98 | 27 | --- | 2.4 | --- | Not Rated |
| Greens Cr | above | Pamlico | 27-129-(1) | 02/09/92 | 16* | --- | 1.3* | --- | Not Rated |
| | Kershaw Cr | | | | | | | | |
| Greens Cr | at Kershaw Cr | Pamlico | 27-129-(2) | 06/03/98 | 42 | --- | 2.0 | --- | Not Rated |
| | | | 27-129-(2) | 08/22/95 | 10* | --- | 1.9* | --- | Not Rated |
| Greens Cr | NC 55 | Pamlico | 27-129-(2) | 06/03/98 | 37 | --- | 2.0 | --- | Not Rated |
| Greens Cr | nr Yacht Club | Pamlico | 27-129-(2) | 02/09/92 | 10* | --- | 1.3* | --- | Not Rated |
| | | | | 06/03/98 | 32 | --- | 1.9 | --- | Not Rated |
| Oriental Harbor | at Docks | Pamlico | 27-129-8 | 02/09/92 | 7 | --- | 1.2 | --- | Not Rated |
| Oriental Harbor | at Fulcher's | Pamlico | 27-129-8 | 08/22/95 | 9 | --- | 1.3 | --- | Not Rated |
| | Seafood | | | | | | | | |
| Oriental Harbor | Boathouse | Pamlico | 27-129-8 | 06/03/98 | 25 | --- | 1.4 | --- | Not Rated |
| South R | at mouth | Carteret | 27-135 | 06/02/94 | 31 | --- | 2.0 | --- | Not Rated |
| W Fk South R | Open Ground | Carteret | 27-135-1 | 06/02/94 | 33 | --- | 2.0 | --- | Not Rated |
| | Farms | | | | | | | | |
| Southwest Cr | Open Ground | Carteret | 27-135-9 | 06/02/94 | 34 | --- | 2.0 | --- | Not Rated |
| | Farms | | | | | | | | |
| Eastman Cr | at WIRO site | Carteret | 27-135-10 | 06/02/94 | 19 | --- | 1.5 | --- | Not Rated |
| | 15 | | | | | | | | |
| Eastman Cr | nr headwaters | Carteret | 27-135-10 | 06/02/94 | 31 | --- | 1.9 | --- | Not Rated |
| Mulberry Cr | at Island | Carteret | 27-135-16 | 06/02/94 | 31 | --- | 2.0 | --- | Not Rated |
| Hardy Cr | Upstream | Carteret | 27-135-18 | 06/02/94 | 31 | --- | 1.6 | --- | Not Rated |
| Hardy Cr | at Mouth | Carteret | 27-135-18 | 06/02/94 | 31 | --- | 2.3 | --- | Not Rated |
| 03-04-11 | | | | | | | | | |
| Trent R | SR 1153 | Jones | 27-101-(1) | 02/25/00 | 57 | 7 | 7.36 | 5.89 | Not Rated |
| Trent R | near Comfort | Jones | 27-101-(1) | 05/09/00 | 50 | 7 | 6.82 | 5.97 | Fair |
| Trent R | NC 58 | Jones | 27-101-(1) | 08/21/95 | 71 | 12 | 6.38 | 5.15 | Good-Fair |
| | | | | 11/01/90 | 61 | 13 | 6.29 | 3.50 | Good-Fair |
| | | | | 06/27/90 | 69 | 12 | 6.80 | 5.28 | Fair |

| Subbasin/ Waterbody | Location | County | Index No. | Date | ST | EPT | NCBI | EPT NCBI | BioClass |
|------------------------|-------------------------|--------|---------------|----------|-----|-----|------|-------------|-----------|
| | | | | 06/26/89 | 72 | 19 | 6.48 | 4.58 | Good-Fair |
| | | | | 05/02/90 | 70 | 19 | 5.94 | 4.41 | Good-Fair |
| | | | | 06/23/87 | 86 | 22 | 6.48 | 4.50 | Good-Fair |
| | | | | 06/25/86 | 79 | 20 | 6.46 | 4.96 | Good-Fair |
| | | | | 09/03/85 | 76 | 13 | 6.07 | 4.66 | Good-Fair |
| | | | | 07/11/83 | 64 | 12 | 6.29 | 5.17 | Good-Fair |
| | | | | 08/11/82 | 77 | 19 | 5.37 | 3.95 | Good |
| Trent R | NC 17, Pollocksville | Jones | 27-101-(1) | 03/20/95 | 63 | 5 | 7.26 | 5.28 | Not Rated |
| Beaverdam Swp | NC 258 | Lenoir | 27-101-3 | 07/22/91 | --- | 6 | --- | 5.68 | Not Rated |
| Tuckahoe Swp | SR 1142 | Jones | 27-101-5-1 | 02/23/00 | 69 | 10 | 6.76 | 5.81 | Not Rated |
| Tuckahoe Swp | SR 1105 | Lenoir | 27-101-5-1 | 08/12/92 | 23 | 2 | 7.07 | 5.88 | Not Rated |
| | | | | 05/13/92 | 45 | 7 | 6.90 | 5.36 | Not Rated |
| | | | | 02/24/92 | 61 | 10 | 6.57 | 5.18 | Not Rated |
| Reedy Br | NC 41 | Jones | 27-101-7 | 07/22/91 | --- | 6 | --- | 5.02 | Good-Fair |
| Cypress Cr | SR 1134 | Jones | 27-101-8 | 08/11/92 | 29 | 0 | 8.49 | --- | Not Rated |
| | | | | 05/15/92 | 51 | 3 | 7.26 | 5.37 | Not Rated |
| | | | | 02/24/92 | 49 | 6 | 6.96 | 6.48 | Not Rated |
| L Chinquapin Cr | SR 1131 | Jones | 27-101-11 | 07/22/91 | --- | 7 | --- | 5.79 | Not Rated |
| Beaver Cr | SR 1315 or 1316 | Jones | 27-101-15 | 03/02/00 | 49 | 8 | 7.65 | 6.33 | Not Rated |
| | | | | 07/23/91 | --- | 9 | --- | 5.48 | Fair |
| Musselshell Cr | SR 1320 | Jones | 27-101-17 | 02/24/00 | 26 | 2 | 7.31 | 6.05 | Not Rated |
| | | | | 08/15/95 | 19 | 1 | 8.32 | 6.22 | Not Rated |
| | | | | 03/15/95 | 15 | 1 | 7.64 | 7.41 | Not Rated |
| Crooked Run | SR 1123 | Jones | 27-101-18 | 03/02/00 | 29 | 1 | 6.59 | 6.37 | Not Rated |
| Beaverdam Cr | SR 1002 | Jones | 27-101-21 | 02/24/00 | 52 | 8 | 6.77 | 5.38 | Not Rated |
| | | | | 02/25/97 | 43 | 7 | 6.39 | 5.49 | Not Rated |
| | | | | 03/20/95 | 44 | 11 | 6.02 | 4.50 | Not Rated |
| Mill Run | NC 58 | Jones | 27-101-23 | 07/22/91 | --- | 19 | --- | 4.12 | Good |
| UT Mill Run | SR 1119 | Jones | 27-101-23 | 07/22/91 | --- | 13 | --- | 4.60 | Good |
| Island Cr | SR 1004 | Jones | 27-101-33 | 11/17/99 | 20 | 20 | 4.92 | 4.92 | Not Rated |
| | | | | 02/22/99 | 67 | 20 | 5.76 | 4.41 | Not Rated |
| | | | | 08/15/95 | 63 | 22 | 6.04 | 4.46 | Not Rated |
| | | | | 03/15/95 | 60 | 18 | 6.47 | 5.70 | Not Rated |
| | | | | 07/22/91 | --- | 15 | --- | 4.15 | Good |
| | | | | 12/13/84 | 82 | 25 | 5.83 | 4.13 | Good |
| Wilson Cr | US 17 | Craven | 27-101-37 | 04/28/95 | 45 | 4 | 7.55 | 7.04 | Not Rated |
| 03-04-12 | | | | | | | | | |
| Thoroughfare Swp | SR 1120 | Wayne | 27-54-5-(1.5) | 2/25/92 | 72 | 9 | 7.60 | 7.07 | |
| | | | | 7/11/91 | 1 | 1 | 7.41 | 7.41 | Not Rated |
| Neuse R | SR 1915 | Wayne | 27-(56) | 7/9/90 | 71 | 22 | 5.48 | 4.54 | Good |
| | | | | 7/11/88 | 73 | 23 | 5.91 | 4.90 | Good-Fair |
| | | | | 7/10/86 | 81 | 26 | 6.03 | 4.79 | Good |
| | | | | 9/4/84 | 57 | 17 | 6.31 | 5.22 | Good-Fair |
| Neuse R | US 117 | Wayne | 27-(56) | 8/29/00 | 66 | 23 | 6.06 | 4.85 | Good-Fair |
| | | | | 8/8/95 | 53 | 16 | 5.47 | 4.64 | Good-Fair |
| | | | | 7/19/91 | 77 | 29 | 5.36 | 4.57 | Good |

* From dredge samples only, not directly comparable to sweeps used for later estuarine collections.

¹ For estuarine waters, the Estuarine Biotic Index (EBI) is applied.

Fish Community Sampling Methods and Criteria

Wadeable Stream Sampling Methods

At each sample site, a 600-foot section of stream was selected and measured. The fish in the delineated stretch of stream were then collected using two backpack electrofishing units and two persons netting the stunned fish. After collection, all readily identifiable fish were examined for sores, lesions, fin damage or skeletal anomalies, measured (total length to the nearest 1 mm), and then released. Those fish that were not readily identifiable were preserved and returned to the laboratory for identification, examination and total length measurement. Detailed descriptions of the sampling methods may be found in NCDENR (2001) or electronically at <http://www.esb.enr.state.nc.us/BAUwww/IBI%20Methods%202001.pdf>.

Nonwadeable Small Boat Sampling Methods

At each site, a 400 m section of stream is measured off into 100 m segments. There are four segments along each shoreline and two segments down the center of the stream, for a total of 10 segments. For each of the 100 m segments, fish are collected and processed the same as those collected using the wadeable stream method. The last collection technique used at each location is a timed catfish collection effort outside the measured stream reach. Data from each of the 100 meter segments and the catfish sampling are currently treated as a separate subsample.

NCIBI Analysis

The assessment of biological integrity using the North Carolina Index of Biotic Integrity (NCIBI) is provided by the cumulative assessment of 12 parameters or metrics. The values provided by the metrics are converted into scores on a 1, 3 or 5 scale. A score of 5 represents conditions which would be expected for undisturbed reference streams in the specific river basin or ecoregion, while a score of 1 indicates that the conditions deviate greatly from those expected in undisturbed streams of the region. Each metric is designed to contribute unique information to the overall assessment. The scores for all metrics are then summed to obtain the overall NCIBI score. Finally, the score (an even number between 12 and 60) is then used to determine the ecological integrity class, as proposed by Karr (1981), of the stream from which the sample was collected (Table A-II-2).

The NCIBI has recently been revised (NCDENR, 2001). Since the mid-to-late 1990s, the focus of using and applying the NCIBI has been restricted to wadeable streams that can be sampled by a crew of four persons. The bioclassifications and criteria have also be recalibrated against regional reference site data (Biological Assessment Unit Memorandum 20001017) (Tables A-II-3 and A-II-4).

Table A-II-2 Original Scores, Integrity Classes and Class Attributes for Evaluating Fish Communities using Karr's 1981 Index of Biotic Integrity

| NCIBI Scores | Integrity Classes | Class Attributes ¹ |
|--------------|-------------------|--|
| >58 | Excellent | Comparable to the best situations without human disturbance. All regionally expected species for the habitat and stream size, including the most intolerant forms are present, along with a full array of size classes and a balanced trophic structure. |
| 48-52 | Good | Species richness somewhat below expectation, especially due to the loss of the most intolerant species; some species are present with less than optimal abundances or size distributions; and the trophic structure shows some signs of stress. |
| 40-44 | Fair | Signs of additional deterioration include the loss of intolerant species, fewer species and a highly skewed trophic structure. |
| 28-34 | Poor | Dominated by omnivores, tolerant species and habitat generalists; few top carnivores; growth rates and condition factors commonly depressed; and diseased fish often present. |
| <22 | Very Poor | Few fish present, mostly introduced or tolerant species; and disease fin damage and other anomalies are regular. |
| ----- | No fish | Repeated sampling finds no fish. |

¹ Over-lapping classes share attributes with classes greater than and less than the respective IBI score.

Table A-II-3 Revised Scores and Classes for Evaluating the Fish Community of a Wadeable Stream Using the North Carolina Index of Biotic Integrity in the Piedmont Portion of the Cape Fear, Neuse, Roanoke and Tar River Basins

| NCIBI Scores | NCIBI Classes |
|--------------|---------------|
| >54 | Excellent |
| 46 -52 | Good |
| 40-44 | Good-Fair |
| 34-38 | Fair |
| ≤32 | Poor |

Criteria and ratings applicable only to wadeable streams in the piedmont region of the Neuse River basin are the same as those for the Cape Fear, Roanoke and Tar River basins. The definition of the piedmont for these four river basins is based map of North Carolina watersheds by Fels (1997). Specifically for the Neuse River basin, the piedmont encompasses the entire basin above Smithfield and Wilson, NC, except for the south and southwest portions of Johnston County and the eastern two-thirds of Wilson County.

Metrics and ratings should not be applied to nonwadeable streams and all streams in the coastal plain region of each of these basins. These streams are currently not rated.

References

Fels, J. 1997. *North Carolina Watersheds Map*. North Carolina State University Cooperative Extension Service. Raleigh, NC.

Karr, J. R. 1981. *Assessment of Biotic Integrity Using Fish Communities*. Fisheries. 6: 21-27.

NCDENR. 2001. *Stream Fish Community Assessment and Fish Tissue. Standard Operating Procedure Biological Monitoring*. Biological Assessment Unit. Environmental Sciences Branch. Water Quality Section. Division of Water Quality. North Carolina Department of Environment and Natural Resources. Raleigh, NC.

Table A-II-4 Scoring Criteria for the NCIBI for Wadeable Streams in the Outer Piedmont of the Cape Fear, Neuse, Roanoke and Tar River Basins Ranging Between 3.1 and 328 mi²

| No. | Metric | Score | |
|-----|---|-------------------------------|---|
| 1 | No. of species | | |
| | ≥ 16 species | 5 | |
| | 10-15 species | 3 | |
| | < 10 species | 1 | |
| 2 | No. of fish | | |
| | ≥ 225 fish | 5 | |
| | 150-224 fish | 3 | |
| | < 150 fish | 1 | |
| 3 | No. of species of darters | | |
| | <u>Cape Fear</u> | <u>Neuse, Roanoke and Tar</u> | |
| | ≥ 2 species | ≥ 3 species | 5 |
| | 1 species | 1 or 2 species | 3 |
| | 0 species | 0 species | 1 |
| 4 | No. of species of sunfish | | |
| | ≥ 4 species | 5 | |
| | 3 species | 3 | |
| | 0, 1, or 2 species | 1 | |
| 5 | No. of species of suckers | | |
| | <u>Cape Fear</u> | <u>Neuse, Roanoke and Tar</u> | |
| | ≥ 2 species | ≥ 3 species | 5 |
| | 1 species | 1 or 2 species | 3 |
| | 0 species | 0 species | 1 |
| 6 | No. of intolerant species | | |
| | <u>Cape Fear</u> | <u>Neuse, Roanoke and Tar</u> | |
| | ≥ 1 species | ≥ 3 species | 5 |
| | no middle score | 1 or 2 species | 3 |
| | 0 species | 0 species | 1 |
| 7 | Percentage of tolerant individuals | | |
| | ≤ 35% | 5 | |
| | 36-50% | 3 | |
| | > 50% | 1 | |
| 8 | Percentage of omnivorous and herbivorous individuals | | |
| | 10-35% | 5 | |
| | 36-50% | 3 | |
| | > 50% | 1 | |
| | < 10% | 1 | |
| 9 | Percentage of insectivorous individuals | | |
| | 65-90% | 5 | |
| | 45-64% | 3 | |
| | < 45% | 1 | |
| | > 90% | 1 | |
| 10 | Percentage of piscivorous individuals | | |
| | ≥ 1.4-15% | 5 | |
| | 0.4-1.3% | 3 | |
| | < 0.4% | 1 | |
| | > 15% | 1 | |
| 11 | Percentage of diseased fish (DELT = diseased, fin erosion, lesions and tumors) | | |
| | ≤ 1.75% | 5 | |
| | 1.76-2.75% | 3 | |
| | > 2.75% | 1 | |
| 12 | Percentage of species with multiple age groups | | |
| | ≥ 50% of all species have multiple age groups | 5 | |
| | 35-49% all species have multiple age groups | 3 | |
| | < 35% all species have multiple age groups | 1 | |

Table A-II-5 Fish Community Structure Data Collected in the Neuse River Basin, 1990 – 2000
(Current basinwide sites are **bolded**.)

| Subbasin/ Waterbody | Location | County | Index No. | Date | NCIBI Score | NCIBI Rating |
|------------------------|----------------|------------------|-------------|----------|----------------|-----------------|
| 03-04-01 | | | | | | |
| Eno R | SR 1336 | Orange | 27-2-1 | 04/04/00 | 54 | Excellent |
| Eno R | SR 1569 | Orange | 27-2-(10) | 08/03/98 | 60 | Excellent |
| Eno R | SR 1003 | Durham | 27-2-(10) | 08/03/98 | 60 | Excellent |
| S Fk Little R | SR 1461 | Durham | 27-2-21-2 | 04/07/00 | 60 | Excellent |
| N Fk Little R | SR 1461 | Durham | 27-2-21-3 | 04/07/00 | 48 | Good |
| N Flat R | SR 1715 | Person | 27-3-2 | 04/06/00 | 56 | Excellent |
| | | | | 06/10/99 | 50 | Good |
| S Flat R | NC 157 | Person | 27-3-3 | 04/06/00 | 48 | Good |
| Deep Cr | SR 1734 | Person | 27-3-4 | 04/06/00 | 56 | Excellent |
| | | | | 05/16/95 | 56 | Excellent |
| | | | | 07/19/90 | 60 | Excellent |
| Ellerbe Cr | SR 1709 | Durham | 27-5-(0.7) | 04/11/95 | 26 | Poor |
| Ellerbe Cr | SR 1636 | Durham | 27-5-(2) | 04/11/95 | 28 | Poor |
| Smith Cr | SR 1710 | Granville | 27-12-2-(2) | 04/04/00 | 44 | Good-Fair |
| | | | | 04/11/95 | 48 | Good |
| Newlight Cr | SR 1911 | Wake | 27-13-2 | 05/16/95 | 42 | Good-Fair |
| Upper Barton Cr | NC 50 | Wake | 27-15-(2) | 04/03/00 | 52 | Good |
| | | | | 05/18/95 | 48 | Good |
| 03-04-02 | | | | | | |
| Richland Cr | US 1 | Wake | 27-21 | 04/12/95 | 52 | Good |
| Smith Cr | SR 2045 | Wake | 27-23-(2) | 04/03/00 | 56 | Excellent |
| | | | | 05/18/95 | 42 | Good-Fair |
| Crabtree Cr | SR 1664 | Wake | 27-33-10 | 06/22/00 | 54 | Excellent |
| Crabtree Cr | US 1/401 | Wake | 27-33-10 | 04/12/95 | 50 | Good |
| Walnut Cr | SR 1348 | Wake | 27-34-(1.7) | 04/03/95 | 32 | Poor |
| | | | | 06/25/91 | 44 | Good-Fair |
| Walnut Cr | SR 1564 | Wake | 27-34-(4) | 06/25/91 | 48 | Good |
| Walnut Cr | SR 2542 | Wake | 27-34-(4) | 04/04/95 | 32 | Poor |
| Walnut Cr | SR 2544 | Wake | 27-34-(4) | 04/11/00 | 44 | Good-Fair |
| | | | | 04/04/95 | 34 | Fair |
| | | | | 06/25/91 | 48 | Good |
| Marks Cr | SR 1714 | Johnston | 27-38 | 04/05/00 | 54 | Excellent |
| | | | | 05/18/95 | 50 | Good |
| | | | | 09/23/91 | 46 | Good |
| Swift Cr | SR 1152 | Wake | 27-43-(1) | 04/24/00 | 34 | Fair |
| | | | | 04/24/00 | 40 | Good-Fair |
| | | | | 10/15/99 | 34 | Fair |
| | | | | 10/15/99 | 40 | Good-Fair |
| | | | | 08/20/99 | 38 | Fair |
| | | | | 08/20/99 | 38 | Fair |
| | | | | 06/25/99 | 38 | Fair |
| | | | | 06/25/99 | 40 | Good-Fair |
| | | | | 04/28/99 | 38 | Fair |
| | | | | 04/28/99 | 42 | Good-Fair |
| | | | | 04/27/95 | 28 | Poor |
| Swift Cr | SR 1525 | Johnston | 27-43-(8) | 04/27/95 | 34 | Fair |
| | | | | 10/02/91 | 50 | Good |

| Subbasin/ Waterbody | Location | County | Index No. | Date | NCIBI Score | NCIBI Rating |
|------------------------|----------------|-----------------|--------------|----------|----------------|-----------------|
| 03-04-03 | | | | | | |
| Middle Cr | SR 1404 | Wake | 27-43-15-(4) | 04/27/95 | 52 | Good |
| | | | | 06/04/91 | 48 | Good |
| Middle Cr | SR 1531 | Johnston | 27-43-15-(4) | 06/04/91 | 34 | Fair |
| Middle Cr | NC 50 | Johnston | 27-43-15-(4) | 06/01/95 | 52 | Good |
| Middle Cr | SR 1504 | Johnston | 27-43-15-(4) | 06/01/95 | 54 | Excellent |
| | | | | 06/04/91 | 48 | Good |
| 03-04-04 | | | | | | |
| Black Cr | SR 1330 | Johnston | 27-45-(2) | 05/25/95 | --- | Not rated |
| Stone Cr | SR 1138 | Johnston | 27-52-5 | 05/25/95 | --- | Not rated |
| | | | | 10/02/91 | --- | Not rated |
| Hannah Cr | SR 1162 | Johnston | 27-52-6 | 05/25/95 | --- | Not rated |
| | | | | 10/02/91 | --- | Not rated |
| 03-04-05 | | | | | | |
| Stoney Cr | SR 1920 | Wayne | 27-62 | 04/17/00 | --- | Not rated |
| | | | | 07/20/95 | --- | Not rated |
| Bear Cr | SR 1311 | Lenoir | 27-72 | 06/14/00 | --- | Not rated |
| | | | | 10/28/96 | --- | Not rated |
| | | | | 05/22/95 | --- | Not rated |
| Falling Cr | off SR 1546 | Lenoir | 27-77 | 10/28/96 | --- | Not rated |
| Falling Cr | SR 1340 | Lenoir | 27-77 | 06/14/00 | --- | Not rated |
| | | | | 05/22/95 | --- | Not rated |
| Moseley Cr | SR 1475 | Craven | 27-77-2 | 06/13/00 | --- | Not rated |
| | | | | 10/29/96 | --- | Not rated |
| | | | | 04/19/95 | --- | Not rated |
| | | | | 06/27/91 | --- | Not rated |
| Southwest Cr | SR 1804 | Lenoir | 27-80 | 05/22/95 | --- | Not rated |
| Briery Run | SR 1732 | Lenoir | 27-81-1 | 11/02/93 | --- | Not rated |
| Stonyton Cr | SR 1742 | Lenoir | 27-81 | 11/02/93 | --- | Not rated |
| 03-04-06 | | | | | | |
| Little R | NC 96 | Wake | 27-57-(1) | 04/04/00 | 40 | Good-Fair |
| | | | | 07/19/95 | 50 | Good |
| Little R | SR 2130 | Johnston | 27-57-(8.5) | 08/01/95 | 54 | Excellent |
| Buffalo Cr | SR 1941 | Johnston | 27-57-16-(3) | 04/05/00 | 44 | Good-Fair |
| | | | | 07/19/95 | 54 | Excellent |
| 03-04-07 | | | | | | |
| Moccasin Cr | SR 1001 | Wake | 27-86-2 | 06/06/91 | 42 | Good-Fair |
| Moccasin Cr | NC 231 | Johnston | 27-86-2 | 06/22/00 | 58 | Excellent |
| | | | | 10/31/96 | 54 | Excellent |
| | | | | 07/21/95 | 56 | Excellent |
| | | | | 06/06/91 | 54 | Excellent |
| Turkey Cr | SR 1131 | Nash | 27-86-3-(1) | 04/05/00 | --- | Not rated |
| Hominy Swp | SR 1606 | Wilson | 27-86-8 | 08/03/95 | --- | Not rated |
| Toisnot Swp | SR 1945 | Nash | 27-86-11-(1) | 06/05/91 | --- | Not rated |
| Toisnot Swp | NC 42 | Wilson | 27-86-11-(5) | 06/05/91 | --- | Not rated |
| Toisnot Swp | US 264 | Wilson | 27-86-11-(5) | 06/05/91 | --- | Not rated |
| Toisnot Swp | NC 222 | Wilson | 27-86-11-(5) | 05/25/00 | --- | Not rated |
| | | | | 08/01/95 | --- | Not rated |
| The Slough | SR 1535 | Wayne | 27-86-14-1 | 05/25/00 | --- | Not rated |
| | | | | 08/03/95 | --- | Not rated |
| Tyson Marsh | US 13/NC 58 | Greene | 27-86-17 | 05/23/95 | --- | Not rated |
| Little Contentnea Cr | SR 1228 | Pitt | 27-86-26 | 05/23/95 | --- | Not rated |

| Subbasin/ Waterbody | Location | County | Index No. | Date | NCIBI Score | NCIBI Rating |
|--------------------------------|-----------------|---------------|------------------|-------------|------------------------|-------------------------|
| Sandy Run | US 258/13 | Greene | 27-86-26-5-1 | 05/23/95 | --- | Not rated |
| 03-04-08 | | | | | | |
| Core Cr | SR 1001 | Craven | 27-90 | 10/28/96 | --- | Not rated |
| | | | | 04/19/95 | --- | Not rated |
| 03-04-09 | | | | | | |
| Swift Cr | NC 102 | Pitt | 27-97-(0.5) | 05/22/95 | --- | Not rated |
| Fork Swp | SR 1711 | Pitt | 27-97-4 | 08/14/95 | --- | Not rated |
| | | | | 03/22/95 | --- | Not rated |
| Clayroot Swp | SR 1941 | Pitt | 27-97-5 | 06/13/00 | --- | Not rated |
| | | | | 05/22/95 | --- | Not rated |
| | | | | 06/26/91 | --- | Not rated |
| Creeping Swp | SR 1800 | Pitt | 27-97-5-3 | 08/30/91 | --- | Not rated |
| | NC 43 | Pitt | 27-97-5-3 | 08/30/91 | --- | Not rated |
| Little Swift Cr | SR 1623 | Craven | 27-97-8 | 03/22/95 | --- | Not rated |
| Fisher Swp | SR 1621 | Craven | 27-97-8-3 | 08/14/95 | --- | Not rated |
| | | | | 03/22/95 | --- | Not rated |
| 03-04-10 | | | | | | |
| Deep Run | NC 55 | Pamlico | 27-106-6 | 03/22/95 | --- | Not rated |
| 03-04-11 | | | | | | |
| Trent R | SR 1130 | Jones | 27-101-(1) | 11/05/91 | --- | Not rated |
| Tuckahoe Cr | SR 1142 | Jones | 27-101-5 | 06/12/00 | --- | Not rated |
| Little Chinquapin Br | SR 1131 | Jones | 27-101-11 | 07/16/91 | --- | Not rated |
| Musselshell Cr | SR 1320 | Jones | 27-101-17 | 08/15/95 | --- | Not rated |
| | | | | 03/23/95 | --- | Not rated |
| Mill Run | NC 58 | Jones | 27-101-23 | 06/12/00 | --- | Not rated |
| Island Cr | SR 1004 | Jones | 27-101-33 | 06/12/00 | --- | Not rated |
| | | | | 08/15/95 | --- | Not rated |
| | | | | 03/23/95 | --- | Not rated |
| 03-04-12 | | | | | | |
| Thoroughfare Swp | SR 1120 | Wayne | 27-101-5-(1.5) | 07/20/95 | --- | Not rated |

Table A-II-6 Fish Community Metric Values from Wadeable Streams During the 2000 Basinwide Monitoring (Ratable streams are only in the piedmont ecoregion.)

| Subbasin Waterbody | Location | County | Eco-Region | d. a. (mi ²) | Date | No. Species | No. Fish | No. Sp. Darters | No. Sp. Sunfish | No. Sp. Suckers | No. Intol. Sp. | % Tolerant | % Omni. + Herb. | % Insect. | % Pisc. | % DELT | % MA |
|--------------------|----------|-----------|------------|--------------------------|----------|-------------|----------|-----------------|-----------------|-----------------|----------------|------------|-----------------|-----------|---------|--------|------|
| 03-04-01 | | | | | | | | | | | | | | | | | |
| Deep Cr | SR 1734 | Person | P | 32.5 | 04/06/00 | 22 | 411 | 4 | 4 | 4 | 3 | 13 | 29 | 71 | 0.2 | 0.0 | 50 |
| Eno R | SR 1336 | Orange | P | 26.7 | 04/04/00 | 18 | 169 | 3 | 5 | 2 | 2 | 5 | 14 | 82 | 4.7 | 0.0 | 61 |
| N Fk Little R | SR 1461 | Durham | P | 29.7 | 04/07/00 | 14 | 418 | 2 | 4 | 1 | 3 | 12 | 51 | 46 | 2.9 | 0.0 | 57 |
| N Flat R | SR 1715 | Person | P | 33.0 | 04/06/00 | 21 | 581 | 4 | 5 | 4 | 3 | 8 | 27 | 73 | 0.2 | 0.0 | 62 |
| S Fk Little R | SR 1461 | Durham | P | 39.0 | 04/07/00 | 24 | 361 | 3 | 6 | 4 | 3 | 33 | 12 | 79 | 9.0 | 0.0 | 50 |
| S Flat R | NC 157 | Person | P | 17.3 | 04/06/00 | 17 | 451 | 2 | 4 | 2 | 2 | 13 | 42 | 58 | 0.4 | 0.0 | 65 |
| Smith Cr | SR 1710 | Granville | P | 6.2 | 04/04/00 | 15 | 366 | 2 | 5 | 0 | 0 | 17 | 33 | 67 | 0.0 | 0.0 | 53 |
| Upper Barton Cr | NC 50 | Wake | P | 5.8 | 04/03/00 | 21 | 795 | 2 | 4 | 3 | 0 | 10 | 28 | 71 | 0.4 | 0.0 | 52 |
| 03-04-02 | | | | | | | | | | | | | | | | | |
| Crabtree Cr | SR 1664 | Wake | P | 84.0 | 06/22/00 | 19 | 240 | 3 | 3 | 2 | 1 | 25 | 15 | 81 | 3.3 | 0.0 | 63 |
| Marks Cr | SR 1714 | Johnston | P | 25.2 | 04/05/00 | 18 | 366 | 3 | 3 | 2 | 2 | 23 | 11 | 80 | 8.0 | 0.0 | 56 |
| Smith Cr | SR 2045 | Wake | P | 22.6 | 04/03/00 | 17 | 494 | 3 | 5 | 1 | 1 | 25 | 15 | 79 | 6.0 | 0.0 | 53 |
| Swift Cr | SR 1152 | Wake | P | 21.0 | 04/24/00 | 18 | 389 | 1 | 6 | 2 | 0 | 19 | 7 | 92 | 0.8 | 0.8 | 39 |
| Swift Cr | SR 1152 | Wake | P | 21.0 | 04/24/00 | 13 | 369 | 1 | 6 | 1 | 0 | 24 | 0 | 99 | 0.5 | 3.0 | 46 |
| Walnut Cr | SR 2544 | Wake | P | 29.4 | 04/11/00 | 18 | 400 | 3 | 3 | 0 | 2 | 22 | 1 | 92 | 7.0 | 0.0 | 56 |
| 03-04-05 | | | | | | | | | | | | | | | | | |
| Bear Cr | SR 1311 | Lenoir | CA | 61.7 | 06/14/00 | 22 | 387 | 4 | 8 | 0 | 2 | 45 | 0 | 69 | 25.0 | 0.0 | 41 |
| Falling Cr | SR 1340 | Lenoir | CA | 46.9 | 06/14/00 | 25 | 661 | 3 | 8 | 1 | 1 | 30 | 3 | 59 | 38.0 | 0.0 | 68 |
| Moseley Cr | SR 1475 | Craven | CA | 45.7 | 06/13/00 | 25 | 436 | 2 | 7 | 1 | 1 | 42 | 3 | 73 | 10.0 | 0.0 | 56 |
| Stoney Cr | SR 1920 | Wayne | CA | 25.4 | 04/17/00 | 15 | 259 | 1 | 4 | 0 | 0 | 30 | 0 | 69 | 31.0 | 0.0 | 60 |
| 03-04-06 | | | | | | | | | | | | | | | | | |
| Buffalo Cr | SR 1941 | Johnston | P | 41.2 | 04/05/00 | 15 | 139 | 3 | 3 | 0 | 3 | 28 | 3 | 86 | 12.0 | 0.0 | 60 |
| Little R | NC 96 | Wake | P | 21.2 | 04/04/00 | 11 | 263 | 1 | 3 | 0 | 0 | 47 | 5 | 89 | 6.0 | 0.4 | 55 |
| 03-04-07 | | | | | | | | | | | | | | | | | |
| Moccasin Cr | NC 231 | Johnston | P | 59.0 | 06/22/00 | 26 | 524 | 4 | 7 | 1 | 3 | 7 | 10 | 86 | 3.6 | 0.0 | 50 |
| The Slough | SR 1535 | Wayne | CA | 15.9 | 05/25/00 | 26 | 321 | 3 | 6 | 1 | 2 | 25 | 2 | 87 | 11.0 | 0.0 | 35 |
| Toisnot Swp | NC 222 | Wilson | CA | 114.7 | 05/25/00 | 24 | 421 | 5 | 4 | 1 | 3 | 37 | 1 | 81 | 13.0 | 0.2 | 29 |
| Turkey Cr | SR 1131 | Nash | CA | 29.7 | 04/05/00 | 13 | 77 | 2 | 3 | 1 | 0 | 4 | 8 | 84 | 8.0 | 0.0 | 23 |
| 03-04-09 | | | | | | | | | | | | | | | | | |
| Clayroot Swp | SR 1941 | Pitt | CA | 12.0 | 06/13/00 | 23 | 815 | 2 | 5 | 1 | 1 | 22 | 1 | 52 | 40.0 | 0.0 | 61 |
| 03-04-11 | | | | | | | | | | | | | | | | | |
| Island Cr | SR 1004 | Jones | CA | 5.7 | 06/12/00 | 15 | 206 | 1 | 6 | 1 | 0 | 4 | 2 | 50 | 48.0 | 0.0 | 73 |
| Mill Run | NC 58 | Jones | CA | 21.0 | 06/12/00 | 19 | 345 | 2 | 6 | 1 | 1 | 24 | 3 | 62 | 35.0 | 0.0 | 58 |
| Tuckahoe Swp | SR 1142 | Jones | CA | 49.7 | 06/12/00 | 19 | 424 | 3 | 4 | 1 | 1 | 24 | 4 | 78 | 19.0 | 0.0 | 74 |

¹ Abbreviations are d.a. = drainage area; No. = number; Sp. = species; Intol. = intolerants; Omni.+Herb. = omnivores+herbivores; Insect. = insectivores; Pisc. = piscivores; DELT = disease, erosion, lesions and tumors; and MA = species with multiple age groups.

Fish Tissue Criteria

In evaluating fish tissue analysis results, several different types of criteria are used. Human health concerns related to fish consumption are screened by comparing results with Federal Food and Drug Administration (FDA) action levels (USFDA, 1980), Environmental Protection Agency (USEPA) recommended screening values, and criteria adopted by the North Carolina State Health Director (Table A-II-7). Individual parameter results which appear to be of potential human health concern are evaluated by the NC Division of Occupational and Environmental Epidemiology by request from DWQ.

The FDA levels were developed to protect humans from the chronic effects of toxic substances consumed in foodstuffs, and thus, employ a "safe level" approach to fish tissue consumption. Presently, the FDA has only developed metals criteria for mercury.

The USEPA has recommended screening values for target analytes which are formulated from a risk assessment procedure (USEPA, 1995). These are the concentrations of analytes in edible fish tissue that are of potential public health concern. The DWQ compares fish tissue results with USEPA screening values to evaluate the need for further intensive site specific monitoring.

The North Carolina State Health Director has adopted a selenium limit of 5 µg/g for issuing an advisory. Although the USEPA has suggested a screening value of 0.7 ppt (pg/g) for dioxins, the State of North Carolina currently uses a value of 3.0 ppt in issuing an advisory.

Table A-II-7 Fish Tissue Criteria (All wet weight concentrations are reported in parts per million (ppm, µg/g), except for dioxin which is in parts per trillion (ppt, pg/g)).

| Contaminant | FDA Action Levels | US EPA Screening Values | NC Health Director |
|------------------------|--------------------------|--------------------------------|---------------------------|
| Metals | | | |
| Cadmium | | 10.0 | |
| Mercury | 1.0 | 0.6 | 1.0 |
| Selenium | | 50.0 | 5.0 |
| Organics | | | |
| Aldrin | 0.3 | | |
| Chlorpyrifos | | 30 | |
| Total chlordane | | 0.08 | |
| Cis-chlordane | 0.3 | | |
| Trans-chlordane | 0.3 | | |
| Total DDT ¹ | | 0.3 | |
| o,p DDD | 5.0 | | |
| p, p DDD | 5.0 | | |
| o,p DDE | 5.0 | | |
| p,p DDE | 5.0 | | |
| o,p DDT | 5.0 | | |
| p,p DDT | 5.0 | | |
| Dieldrin | | 0.007 | |
| Dioxins (total) | | 0.7 | 3.0 |
| Endosulfan (I and II) | | 60.0 | |
| Endrin | 0.3 | 3.0 | |
| Heptachlorepoxide | | 0.01 | |
| Hexachlorobenzene | | 0.07 | |
| Lindane | | 0.08 | |
| Mirex | | 2.0 | |
| Total PCBs | | 0.01 | |
| PCB-1254 | 2.0 | | |
| Toxaphene | | 0.1 | |

¹ Total DDT includes the sum of all its isomers and metabolites (i.e., p,p DDT, o,p DDT, DDE and DDD).

² Total chlordane includes the sum of cis-and trans- isomers as well as nonachlor and oxychlordane.