

**State of New Jersey
CHRISTINE TODD WHITMAN
GOVERNOR**

**AMBIENT BIOMONITORING NETWORK
Lower Delaware River Drainage Basin**

1995 - 96 Benthic Macroinvertebrate Data



**New Jersey Department of Environmental Protection
ROBERT C. SHINN, JR.
COMMISSIONER**

July 1996



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Biomonitoring Operations Section

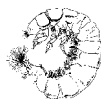
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Ambient Biomonitoring Network

Lower Delaware River Drainage Basin

1995 - 96 Benthic Macroinvertebrate Study

Introduction

Historical Perspective

Since the early 1970's, the Bureau of Water Monitoring (BWM) has been conducting biomonitoring studies on the state's water-bodies. Biomonitoring conducted by the bureau has included both long-term ambient monitoring and intensive surveys.

Between 1977 and 1988, the **Ambient Station Biomonitoring Network** was sampled in cooperation with United States Environmental Protection Agency (USEPA) Region II and Headquarters and the United States Geological Survey (USGS). The resulting biological data was utilized by the 305(b) Program in its evaluations of waterbody impairment. After 1988, funding for ambient biomonitoring was severely curtailed, resulting in the abandonment of routine ambient biomonitoring in the State.

In 1991, BWM received numerous requests from the Office of Regulatory Policy to reactivate the Ambient Biomonitoring Network. The network stations have not been sampled since 1988, and a revisiting of the entire network was overdue. Long-term monitoring data from this network will be most beneficial to the generation of the 305(b) Biennial Report, to the updating of the 303(d) list, to providing the Department with the baseline data necessary to make sound environmental policy decisions in watershed management, and to direct permit activities.

Data Quality Objectives

Accordingly, in 1992 (NJ Fiscal Year 1993), BWM designed and initiated the **Ambient Biomonitoring Network (AMNET)**. The goal of the program is to establish a network of lotic (running water) stations in each major watershed drainage basin. Each watershed drainage basin will be biomonitoring for benthic macroinvertebrate populations on a five to six year rotation. The frequency of sampling is reflective of a realistic temporal lag between the cessation of a perturbation and a biological community's recovery from said perturbation. Experience in the 305(b) Program, which reexamines the responses of New Jersey's biological communities to changes in water quality on a two year cycle, has indicated that five years is the optimum frequency for long-term biomonitoring.

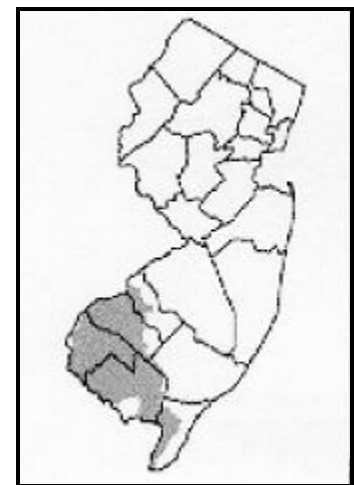


Figure 1 - Study Area

Based upon existing database deficiencies, the area of the Lower Delaware River Drainage Basin shaded in Figure 1 was selected to be monitored during NJ Fiscal Year 1996 (calendar year 1995-1996). The area was sampled from the sources of its many tributaries down to the Head-of-Tide.

Site Selection

At least one monitoring station has been located on every second-order stream and all first-order streams at least three miles in length. Stream order is defined as a measure of the position of a stream in the hierarchy of tributaries. First-order streams are those with no tributaries, while second-order streams are those that have as tributaries only first-order streams.

To the greatest extent possible, the network incorporated existing USGS and New Jersey Department of Environmental Protection (NJDEP) ambient monitoring stations so that correlation of the data sets could be maximized. Furthermore, the network was designed with mainstem (second- or third-order) stations located before the confluence of major tributaries and with stations located so as to assess the impacts of larger lakes. Known sources of contamination and significant natural features (i.e., freshwater wetlands, preserves, Fish, Game and Wildlife Management Areas, etc.) were also considered when selecting the sampling locations. **Monitoring station locations in the study area are indicated on the Geographical Information System (G.I.S.) Maps # 1 through 8.** All stations were positioned via the Global Positioning System (GPS), using Trimble Pathfinder Basic Plus global positioning units. Position data was corrected via the NJDEP and University of Rhode Island base station data sets. ***Appendix A contains a compilation of all station locations as generated by the GPS.***

Since the objectives of this monitoring network are to provide long-term, basin-wide, biological impact data, the geographical dispersion of the stations was deemed adequate. However, it is likely that the monitoring resolution will not be sufficient to adequately assess the impact of any one point source of pollution. The development of site-specific biological impact data is best handled by conducting an intensive biomonitoring survey.

While biological monitoring using benthic macroinvertebrate community structure is an excellent water quality monitoring tool, it is only one branch of water quality monitoring. Additional tools include water column chemistry, sediment chemistry, toxicity testing, fish tissue analysis, and fish community analysis. The most comprehensive evaluation would incorporate all of these elements. However, financial constraints make such monitoring difficult to perform. The frugality of benthic macroinvertebrate analysis provides the water pollution control professional with a holistic assessment of water quality at a reasonable cost.

Methods

Benthic Macroinvertebrate Sampling

The benthic macroinvertebrate sampling was performed in accordance with the procedures delineated in Chapter 7, section K. of the Department's "Field Procedures Manual, NJDEP, May 1992" and, with the following modifications for application to New Jersey's waters, the USEPA's Rapid Bioassessment Protocol II as given in "U.S. Environmental Protection Agency (EPA), 1989, Rapid Bioassessment Protocols For Use In Streams and Rivers, EPA/4444/4-89-001, Assessment and Watershed Protection Division, Washington D.C." The rapid bioassessment was based upon an evaluation of relatively few samples collected at each station. AMNET's goal is to perform an evaluation of overall biological integrity by capitalizing upon the ability of benthic communities to holistically reflect environmental

perturbations. It was imperative, therefore, that sampling be conducted when most of the benthic macroinvertebrates had both attained a size range likely to be retained during standard sieving and sorting, and when in a life stage most conducive to accurate identification. Since most emergence and reproduction occur in the spring and fall, a time when about 80 percent of the macroinvertebrates would be too small to be captured by conventional methods, the period between early June and early September was selected as the optimal collection period. In cases where fall emergence and reproduction were not an issue, sampling could continue into late fall/early winter.

Protocol II of the Rapid Bioassessment (RBPII) employs a systematic field collection of benthic macroinvertebrates and the subsequent analysis of the samples for major taxa. Semiquantitative samples of benthic macroinvertebrates were collected from three different locations at each sampling station. Both riffle/run area samples and Coarse Particulate Organic Matter (CPOM) samples were included in a composite sample for a given station. Using composite samples ameliorates the effects of habitat inconsistency between stations. Samples were collected either with a Surber Sampler, Kick Net, Petite Ponar, or by hand picking. During the field investigation, qualitative observations of habitat, surrounding land use, obvious sources of pollution, and observations of other aquatic biota were made and recorded.

The entire sample collected was sieved through a #30 mesh sieve, put into an appropriate container, preserved with between 5% - 10% formalin (up to 20% formalin was used in cases of excessive organic loading), and transported to the bureau's biomonitoring laboratory for sorting and identification.

Sample Sorting and Identification

The samples were placed on a grid in a small pan with a light colored bottom for the sorting and enumeration of a 100-organism subsample, as per the protocol. The subsampling procedure consisted of evenly distributing the composite sample into the pan. Grids were randomly selected and all organisms within those grids were removed until 100 had been counted. All organisms in the subsample were identified to at least family, though in most cases the identifications were taken to the species level.

Data Analysis

Benthic community biological impairment may be manifested by the absence of pollution sensitive macroinvertebrate taxa (such as Ephemeroptera [mayfly], Plecoptera [stonefly], and Trichoptera [caddisfly]); by excessive dominance by certain taxon (especially pollution tolerant groups such as some Chironomidae [midge] and Oligochaeta [aquatic worm]); by low overall taxa richness; or by perceptible shifts in community structure relative to a reference condition. All of these indicators were utilized in evaluating the RBPII sampling data generated during this study.

The RBPII data analysis protocol is a standardized bioassessment protocol developed by the USEPA in response to a need for a cost effective biomonitoring tool. The RBPII data analysis protocol integrates several community, population, and functional parameters into one easily comprehended evaluation of biological integrity. This integrated approach to data analysis recognizes that each parameter, or biometric, has different ranges of sensitivity to pollution stresses. An integrated assessment provides increased assurance of validity due to the variety of biometrics evaluated. A deficiency in any one metric

for a particular environmental situation is, therefore, less likely to invalidate the study conclusions. The integrated assessment results in each station being given a biological condition category rating, providing the analyst with an easily communicated assessment of relative impairment; this assessment is referred to in this report as the **Bioassessment Rating**.

The USEPA RBPII data analysis protocol, with some revision, was utilized to evaluate the 1993-94 sample data. Sample station data was evaluated by comparison to a historical database, consisting of 200 benthic macroinvertebrate samples collected in the state, using the impairment criteria developed by Mr. J. Kurtenbach, USEPA - Region II (A Method for Rapid Bioassessment of Streams in New Jersey Using Benthic Macroinvertebrates, Annual Meeting of the North American Benthological Society, Santa Fe, NM, 1991). The bioassessment scores resulting from said analyses are referred to as **NJ Impairment Scores (NJIS)**.

The biometrics used in the assessments are based on family level taxonomy. The NJIS was developed, using the aforementioned database, for evaluating New Jersey biomonitoring stations. Community metric criteria were established for three categories of water quality bioassessment; **nonimpaired**, **moderately impaired**, and **severely impaired** (Table 1), using the following metrics: **Taxa Richness**, which reflects the health of a community through a measure of the total taxa; **E+P+T**, the total number of the intolerant forms: *Ephemeroptera*, *Plecoptera*, and *Tricoptera*; **%EPT** (including the hydropsychid family); **%Contribution of the Dominant Family (%CDF)**, a measure of community balance based upon the abundance of the numerically dominant taxon relative to the entire population; and **Modified Family Biotic Index (FBI)**, which summarizes FTV (Family Tolerance Values) into a single score reflective of organic pollution.

In addition to the metrics listed above, any abnormalities observed in chironomid detritivores, herbivores, and periphyton feeders, demonstrated by number of abnormalities per number of chironomids analyzed for abnormalities, were also used, qualitatively, when developing the final evaluation of biological impairment.

Results and Discussion

The bioassessment ratings developed for each of the monitoring stations were used as the basis for evaluating the degree of biological impairment in the stream segments. In each subbasin, starting from the most downstream station, estimated stream segment bioassessment ratings were assigned by interpolating from the downstream station to the next contiguous upstream station. **The estimated stream segment bioassessment ratings are presented as color coded highlighted segments on each of the G.I.S. Maps # 1 through 8.** These ratings are best estimates of the instream biological impairment based upon the available data. For any given segment, the actual instream conditions may be different due to unknown sources of degradation.

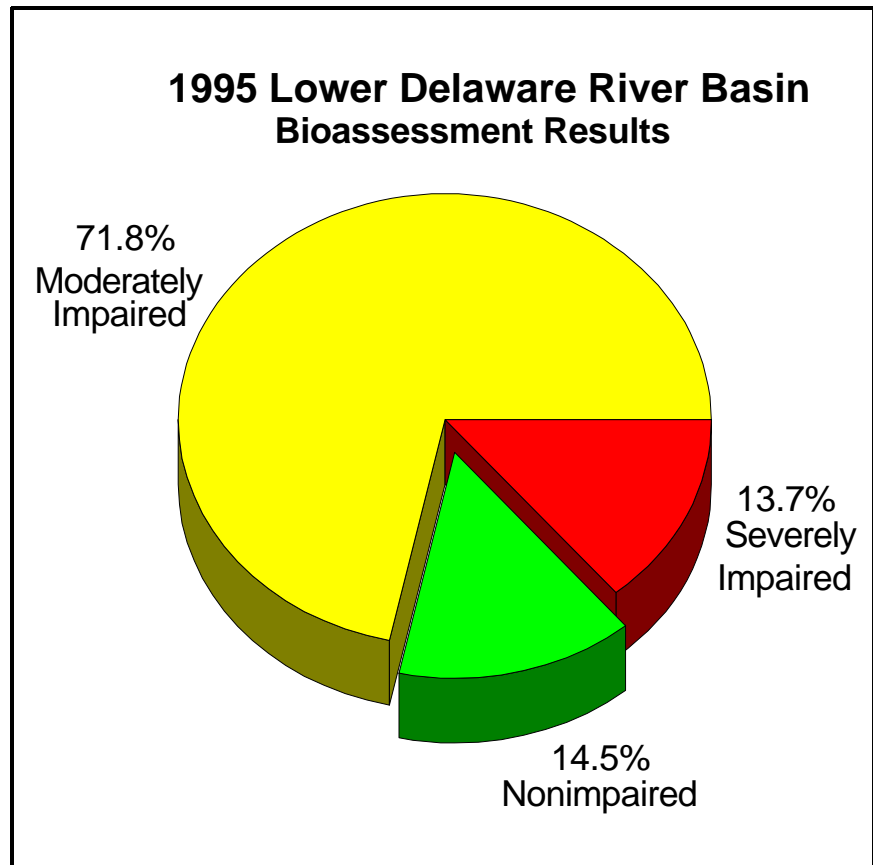


Figure 2

Overall, out of 116 monitoring stations sampled during this study period, **14.5%** were rated as **NONIMPAIRED**, **71.8%** were rated as **MODERATELY IMPAIRED**, and **13.7%** were rated as **SEVERELY IMPAIRED** (Figure 2).

When the Lower Delaware River Drainage Basin is examined by subbasin, different patterns of biological impairment emerge.

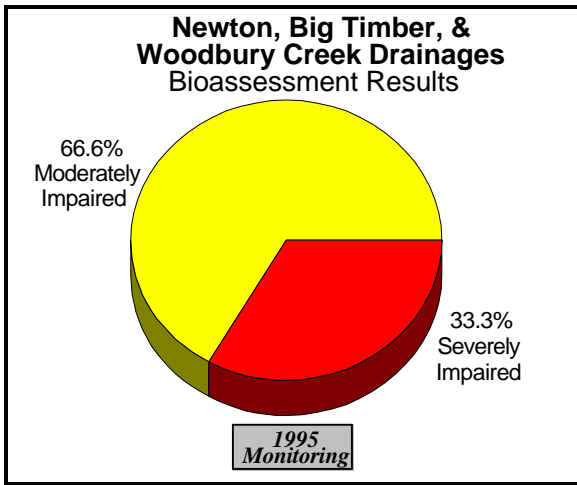


Figure 3

The Newton, Big Timber, & Woodbury Creek drainages are depicted in Figure 3 (see also map 1). The majority of the 15 sites sampled (66.6%) were rated as moderately impaired, while the remaining sites (33.3%) were rated as severely impaired.

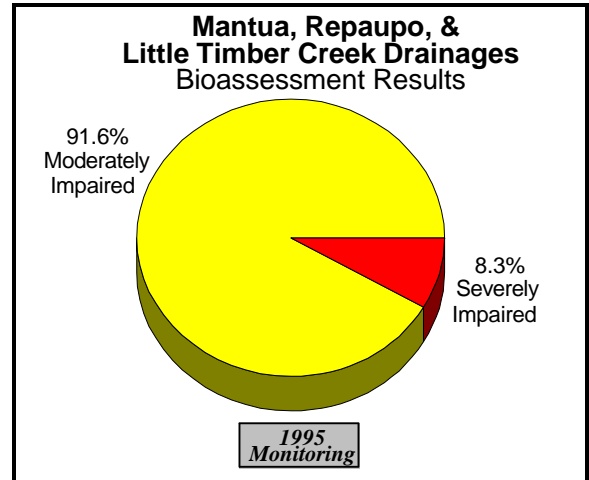


Figure 4

The Mantua, Repaupo, & Little Timber Creek drainages are depicted in Figure 4 (see also map 2). Of the 11 sites sampled, moderate impairment was found at 91.6% of the sites, while 8.3% of the sites were found to be severely impaired.

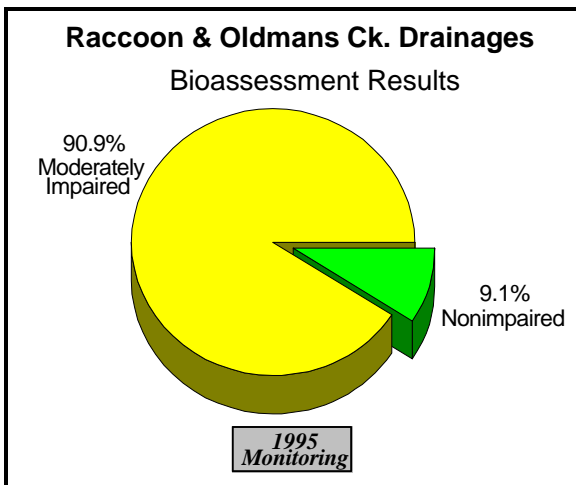


Figure 5

The Raccoon and Oldmans Creek drainages are depicted in Figure 5 (see also map 3). Of the 11 sites sampled, nonimpaired ratings were given to 9.1% of the sites, while moderate impairment was determined at 90.9% of the sites.

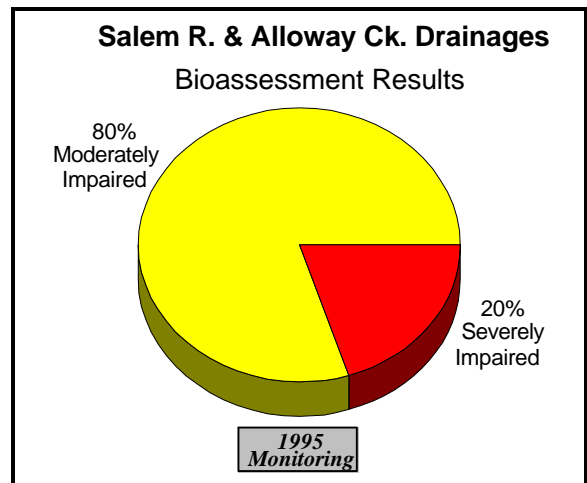


Figure 6

The Salem River and Alloway Creek drainages are depicted in Figure 6 (see also map 4). The majority of the 15 sites sampled (80%) were rated as moderately impaired, while severe impairment was determined at 20% of the sites.

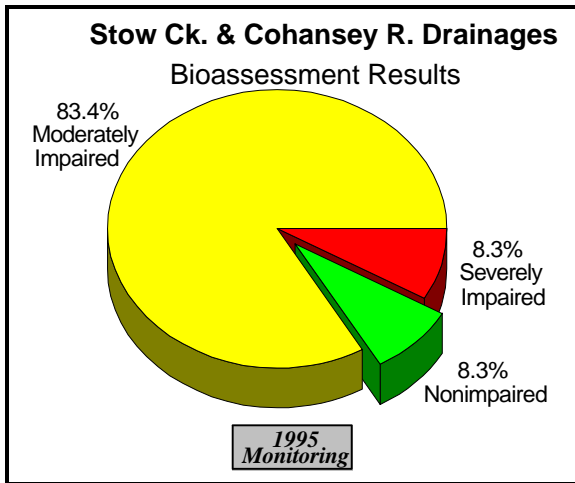


Figure 7

The Stow Creek and Cohansey River drainages, with their associated smaller tributaries, are depicted in Figure 7 (see also map 5). The results of the 12 sites sampled reveal that 8.3% of the sites were nonimpaired, while moderate impairment was found at 83.4% and severe impairment was determined at 8.3% of the sites.

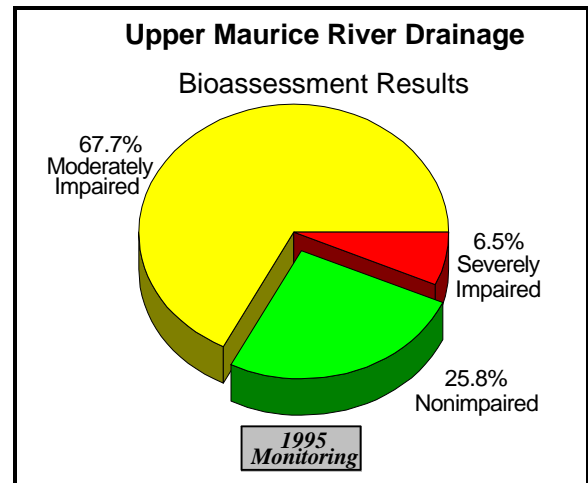


Figure 8

The Upper Maurice River drainage is depicted in Figure 8 (see also map 6). Of the 31 sites sampled, no impairment was indicated at 25.8% of the sites. The majority of the sites (67.7%) were rated as moderately impaired, while 6.5% were rated as severely impaired.

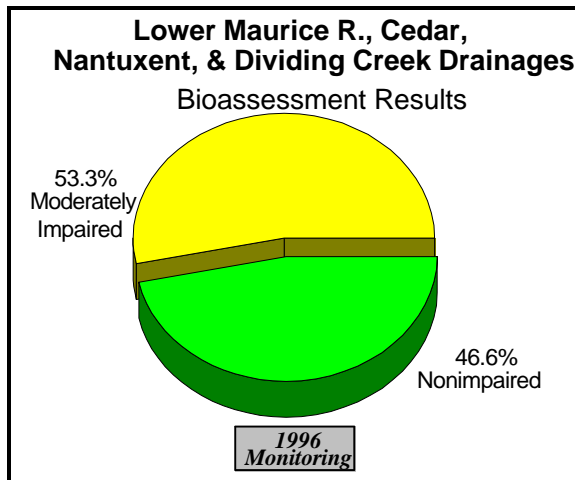


Figure 9

The Lower Maurice River, Cedar Creek, Nantuxent Creek, and Dividing Creek drainages are depicted in Figure 9 (see also map 7). The majority of the 15 sites sampled (53.3%) were rated as moderately impaired, while the remaining 46.6% of the sites were rated as nonimpaired.

The Cape May County drainages are depicted in Figure 10 (see also map 8). Of the 6 sites sampled, moderate impairment was indicated at 33.3% of the sites, while severe impairment was determined at 66.6% of the sites.

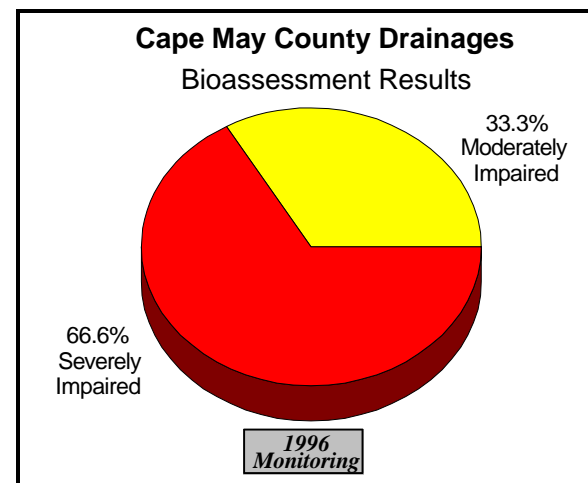


Figure 10

The raw taxonomic data, statistical analyses, and biological assessment ratings for each station are located in **Appendix B**.

References

Kurtenbach, J., *A Method for Rapid Bioassessment of Streams in New Jersey Using Benthic Macroinvertebrates*, Bulletin of the North American Benthological Society, 8(1):129., 1990.

New Jersey Department of Environmental Protection, Bureau of Water Monitoring, *Standard Operating Procedures Manual for Biomonitoring Laboratory*, 1990.

New Jersey Department of Environmental Protection and Energy, *Field Sampling Procedures Manual* NJDEPE, 1992.

U.S. Environmental Protection Agency, *Rapid Bioassessment Protocols For The Use In Streams And Rivers*, USEPA, 1989.

TABLE 1

CRITERIA FOR SCREENING WATER QUALITY IN NEW JERSEY STREAMS

Scoring Criteria For Rapid Bioassessments¹

Biometrics	6	3	0
Taxa Richness (total Families)	> 10	10-5	4-0
E+ P+ T Index (EPT)	> 5	5-3	2-0
Percent Dominance (%CDF)	< 40	40-60	> 60
Percent EPT ² (%EPT)	> 35	35-10	< 10
Modified Family Biotic Index ³ (FBI)	0-4	4-6	6-10

Biological Assessment	Total Score
Nonimpaired	24-30
Moderately Impaired	9-21
Severely Impaired	0-6

Attributes

Nonimpaired: Benthic community comparable to other undisturbed streams within the region. A community characterized by a maximum taxa richness, balanced taxa groups, and good representation of intolerant individuals.

Moderately Impaired: Macroinvertebrate richness is reduced, in particular EPT taxa. Taxa composition changes result in reduced community balance and intolerant taxa become absent.

Severely Impaired: A dramatic change in the benthic community has occurred. Macroinvertebrates are dominated by a few taxa, which are very abundant. Tolerant taxa are the only individuals present.

¹ Based on 100 organism subsamples

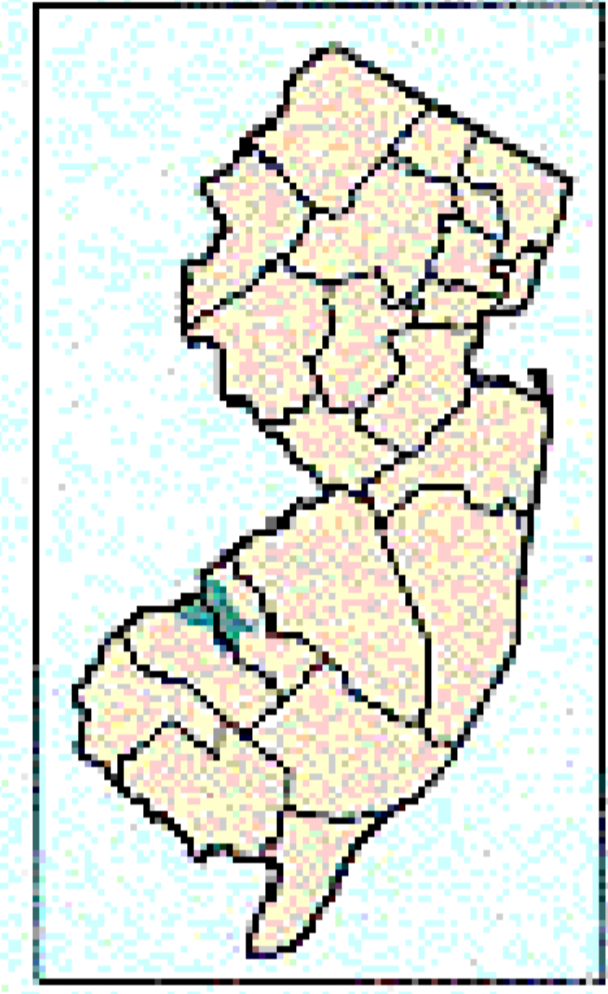
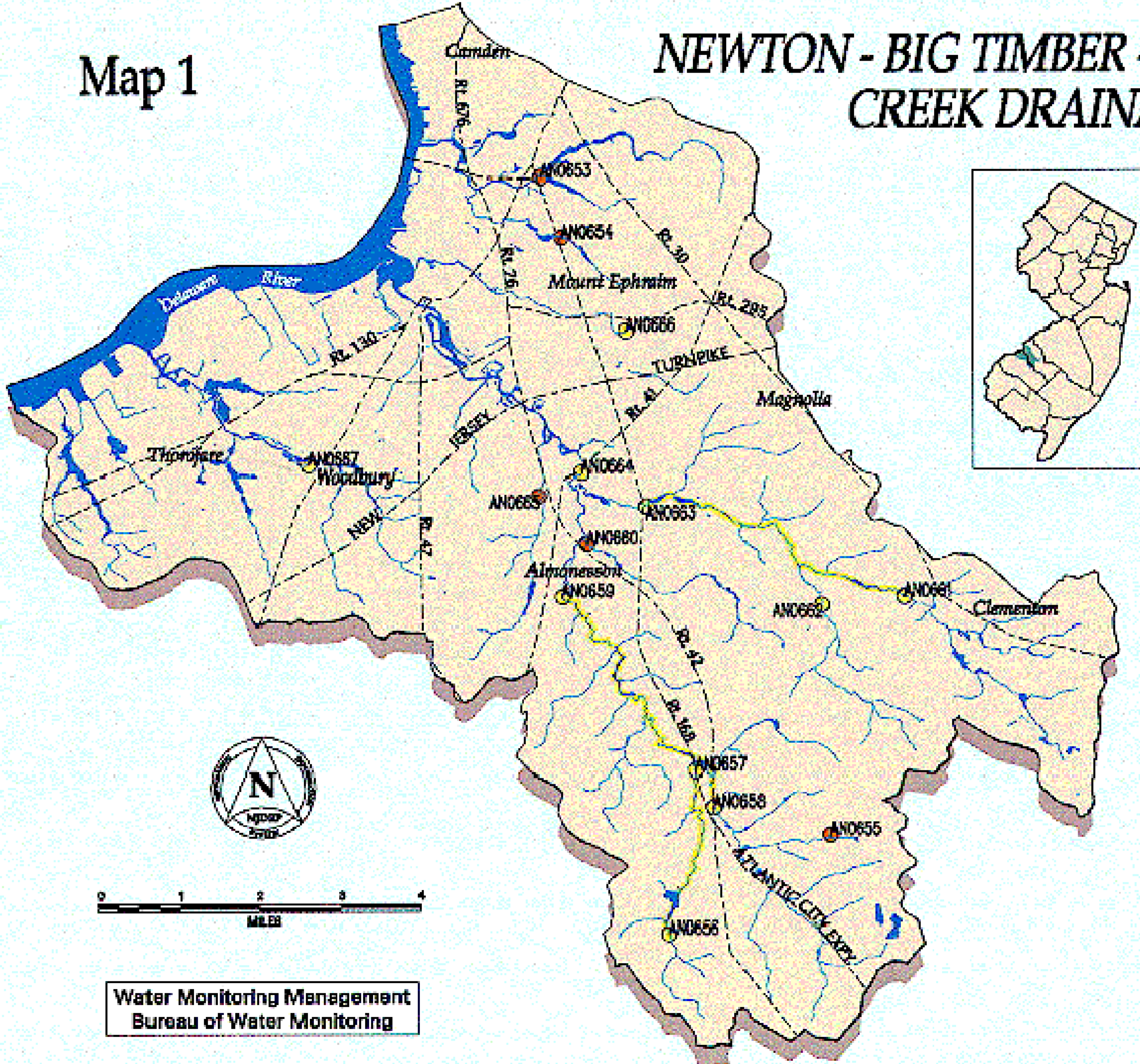
² Including the hydropsychid family

³ Also known as the Hilsenhoff Biotic Index

MAPS

Map 1

NEWTON - BIG TIMBER - WOODBURY CREEK DRAINAGES

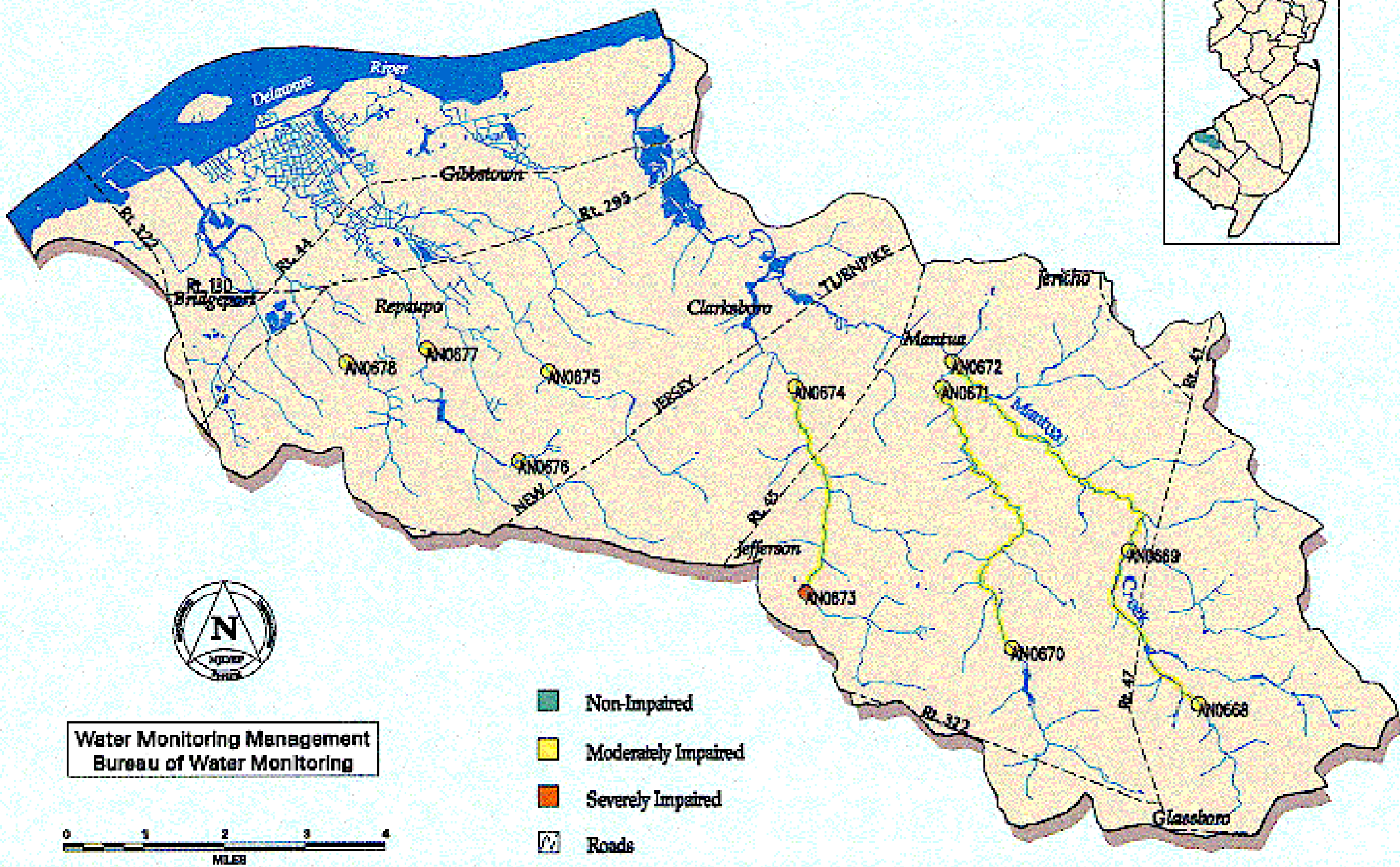


- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

Water Monitoring Management
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Map 2

MANTUA - REPAUPO - LITTLE TIMBER CREEK DRAINAGES



Water Monitoring Management
Bureau of Water Monitoring

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

0 1 2 3 4
MILES

RACCOON-OLDMANS CREEK DRAINAGES



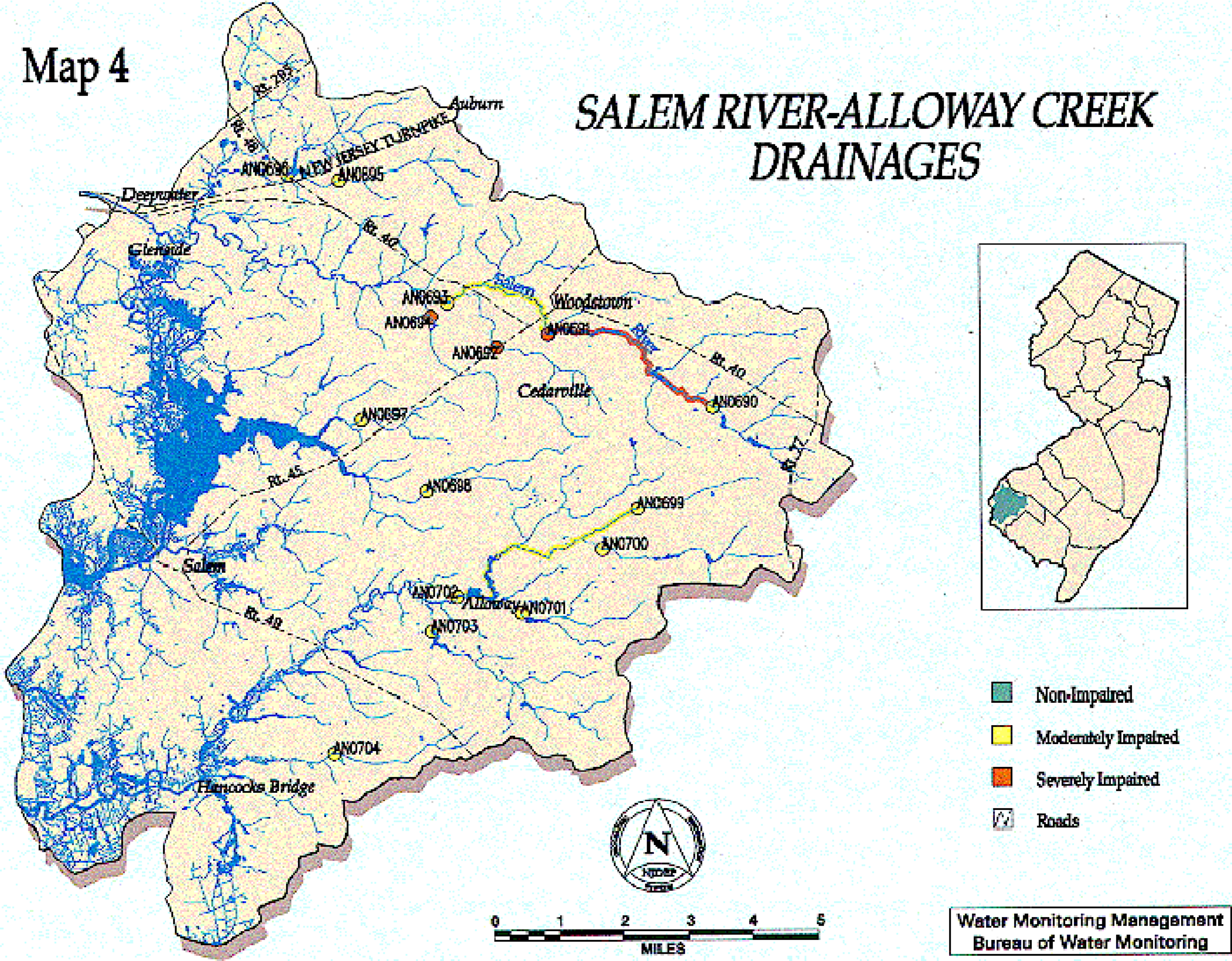
Water Monitoring Management
Bureau of Water Monitoring

0 1 2 3 4
MILES



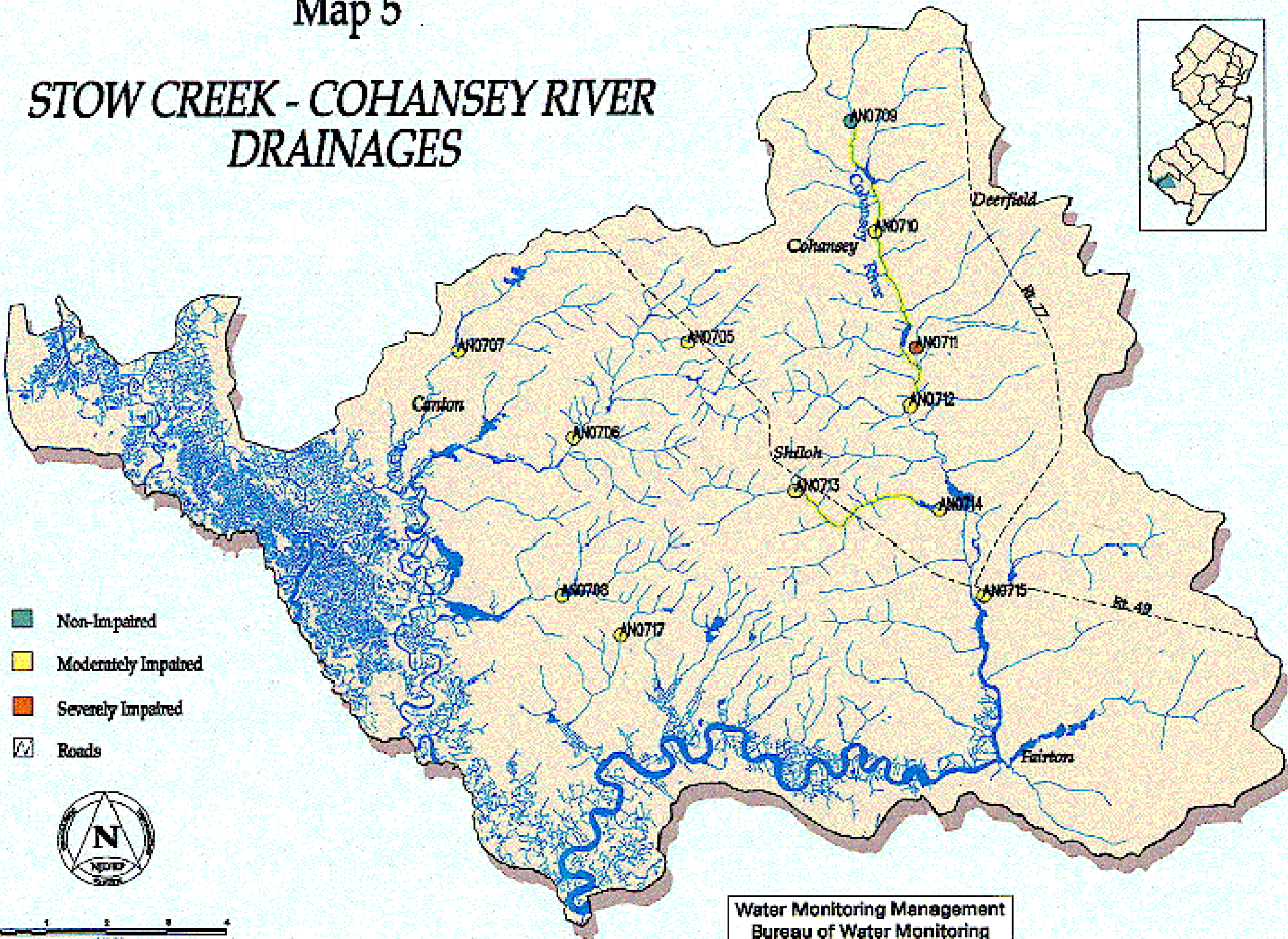
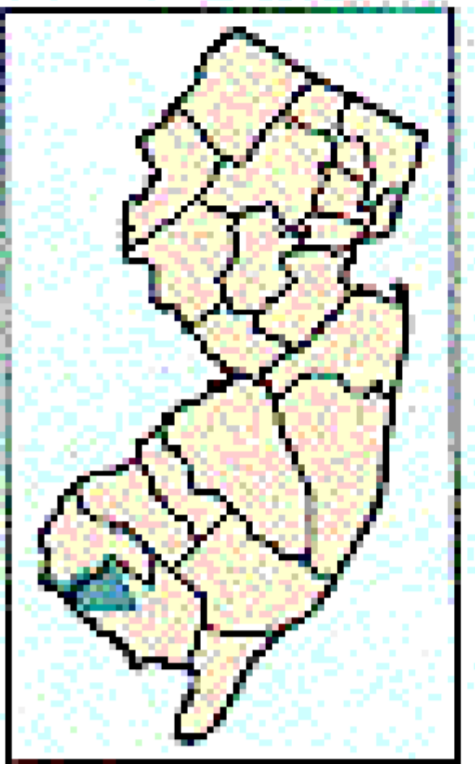
Map 4

SALEM RIVER-ALLOWAY CREEK DRAINAGES



Map 5

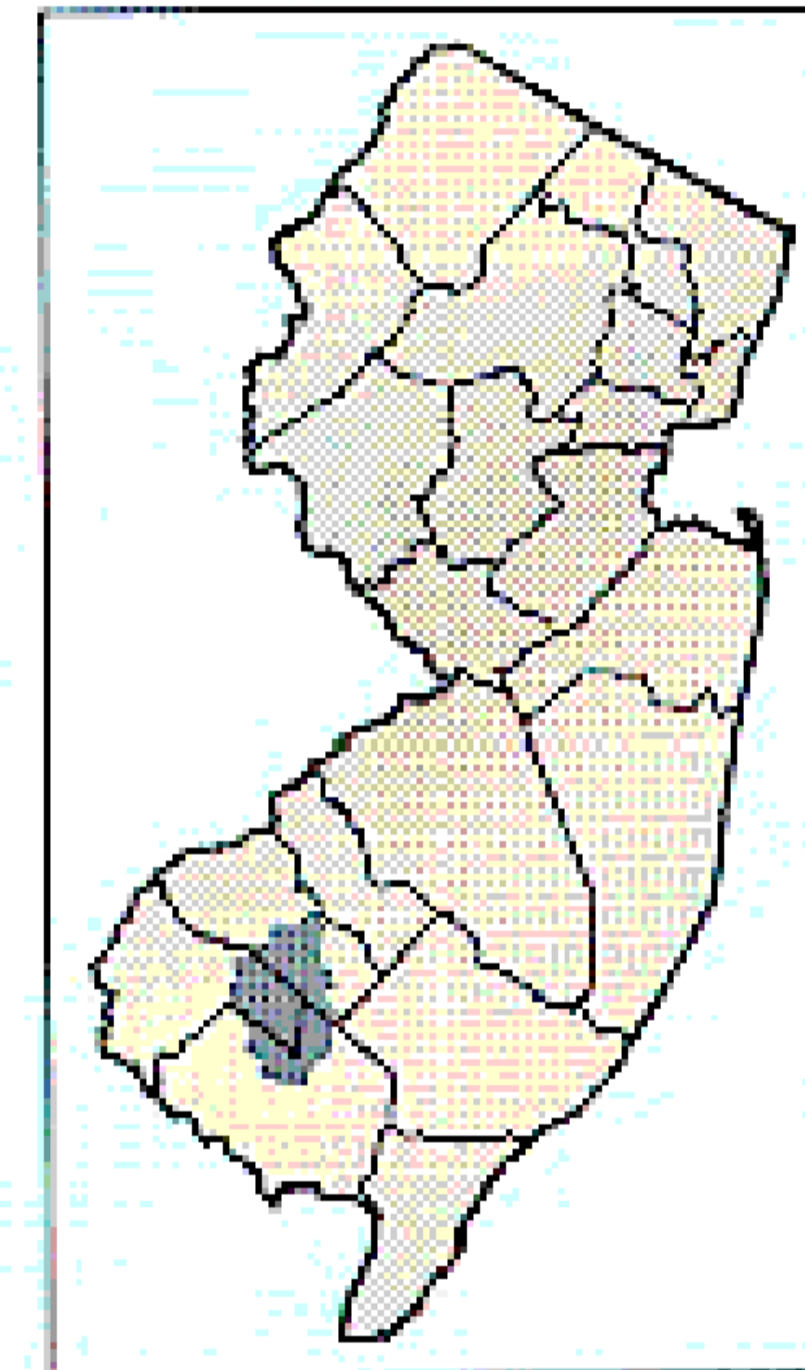
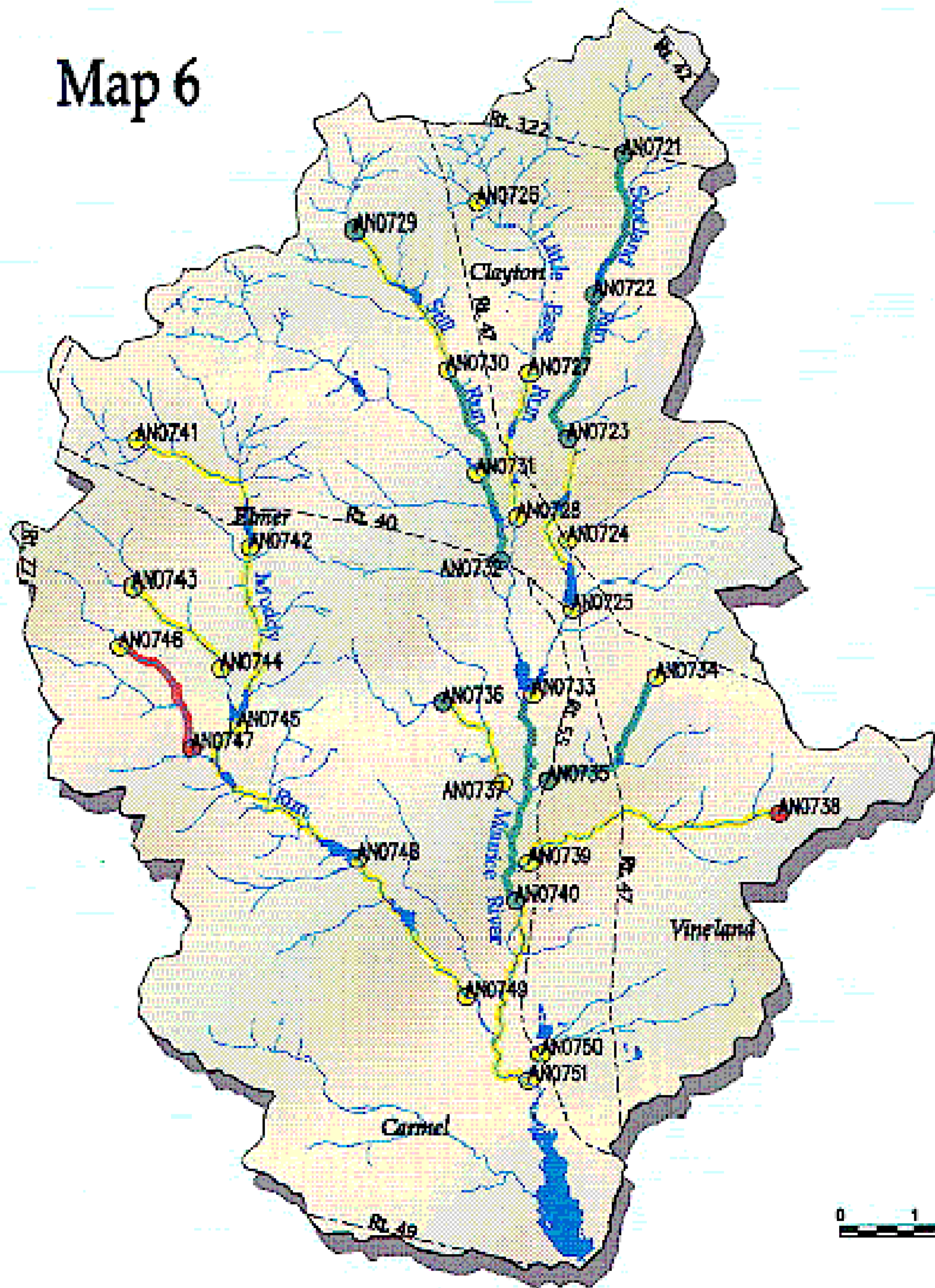
STOW CREEK - COHANSEY RIVER DRAINAGES



Water Monitoring Management
Bureau of Water Monitoring

Map 6

UPPER MAURICE RIVER DRAINAGE

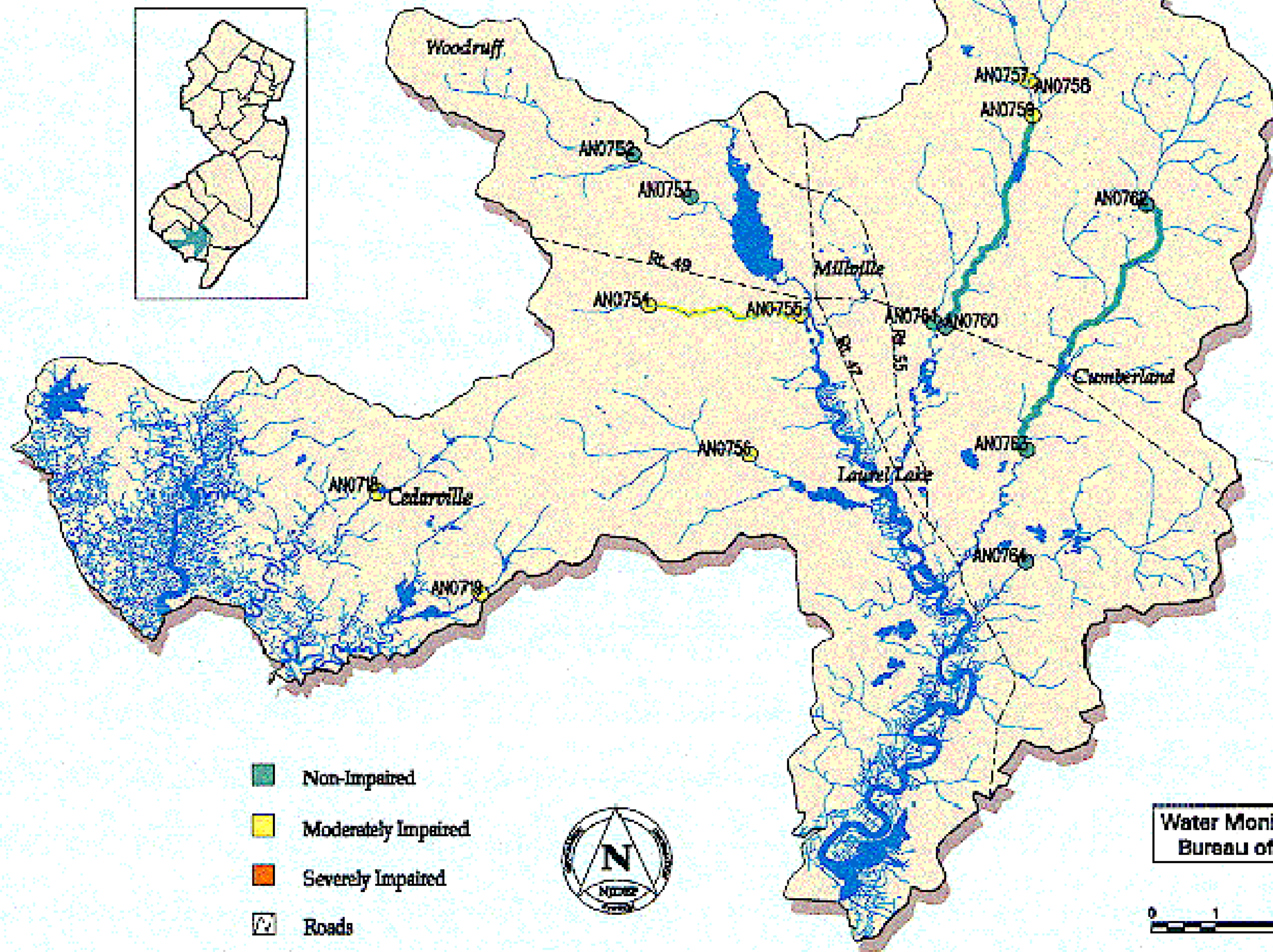
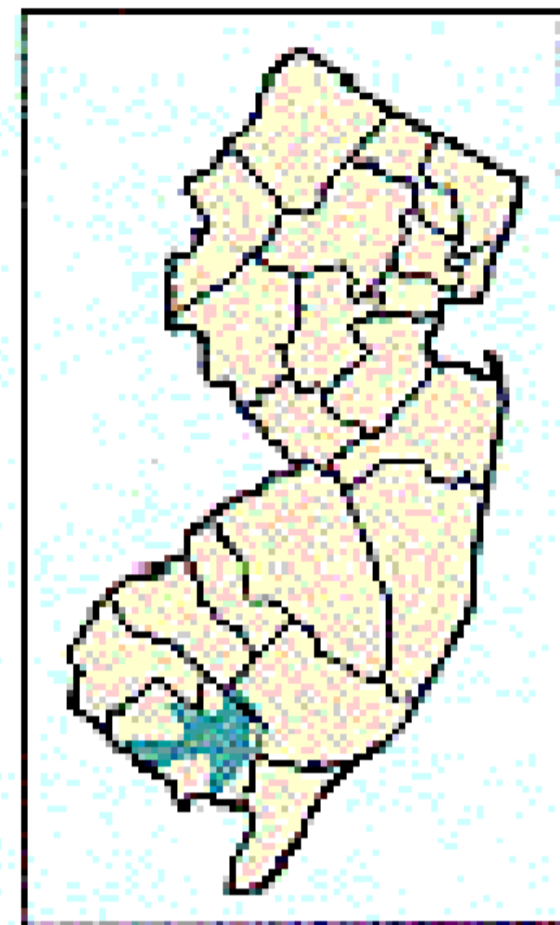


- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

Water Monitoring Management
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Map 7

LOWER MAURICE RIVER DRAINAGE

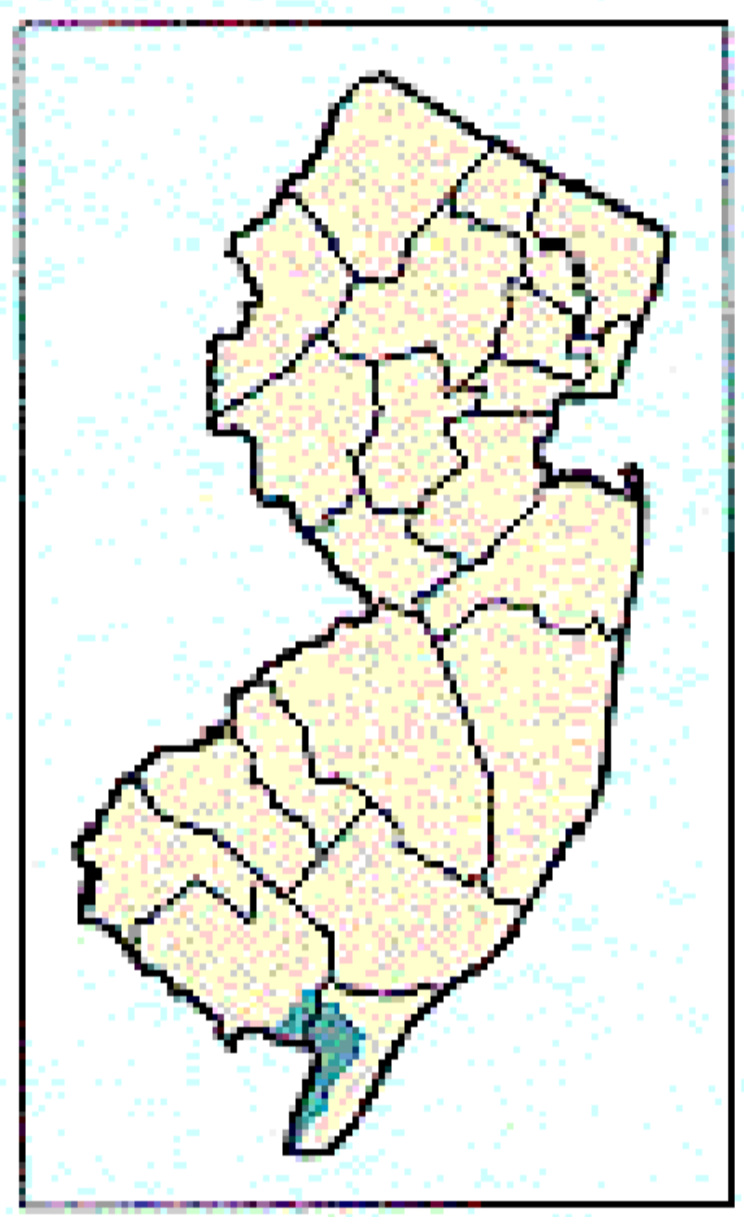


Water Monitoring Management
Bureau of Water Monitoring

0 1 2 3 4 5
MILES

Map 8

CAPE MAY COUNTY DRAINAGES



- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads



Water Monitoring Management
Bureau of Water Monitoring

APPENDIX B

AN0653 # Newton Ck, Rt 168, W Collingswood, Camden Co, Camden Quad

July 11, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4      2
ENCHYTRAEIDAE                 10     1
TUBIFICIDAE                   10     1
NAIDIDAE                       7     15
GLOSSIPHONIIDAE               8      3
ERPOBDELLIDAE                 8      1
DYTISCIDAE                     5      1
CHIRONOMIDAE                   6      2
BLOODREDCHIRONOMIDAE          8     71
PALUDICELLIDAE                7      3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 10 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + BLOODREDCHIRONOMIDAE 71.00%
Family Biotic Index + 7.71
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + BLOODREDCHIRONOMIDAE overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

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))))))))))
OBSERVATIONS
))))))))))
Clarity + green
Flow + fast
Width/Depth(ft) + 30/1
Substrate + rock/mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree-lined/urban; Newton Lk upstr; some macrophytes; sick
red-eared slider turtle

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AN0654 # Newton Ck S Br, Rt 168, Mt Ephraim, Camden Co, Camden Quad

July 11, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      7
TUBIFICIDAE                   10     15
NAIDIDAE                      7     68
GLOSSIPHONIIDAE              8      1
COENAGRIONIDAE               9      1
CHIRONOMIDAE                  6      4
BLOODREDCHIRONOMIDAE         8      4
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 7 # Population +      100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + NAIDIDAE 68.00%
 Family Biotic Index + 7.62
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.01
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + NAIDIDAE overwhelmingly dominant
 paucity of clean water organisms
 significant organic pollution

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 30-40/1
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/commercial; macrophytes (spadderdock/reeds/grasses);
       fish (carp/catfish/minnows)

```

AN0655 # Stone Bridge Br trib, Waddell Farm, Erial, Camden Co, Runnemedede Quad

July 9, 1991

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      1
SPHAERIIDAE                   8      4
LEUCTRIDAE                     0      4
CORYDALIDAE                   0      1
LEPIDOSTOMATIDAE             1      1
CHIRONOMIDAE                   6     89
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 6 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 89.00%
 Family Biotic Index + 5.75
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.72
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 5.00
 EPT/Chironomids + 0.06

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + CHIRONOMIDAE overwhelmingly dominant
paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 4/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/field/farm; upstr of confl w Stone Bridge Br;
      macrophytes; Water Temp 17.5EC; Cond 65 µhmos; pH 4.6 su; DO
      6.2 ppm

```


AN0656 # UNT to S Branch Big Timber Ck, Ganttown Rd, Washington Twp,
Gloucester Co, Pitman E Quad

July 18, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      2
TUBIFICIDAE                   10     8
NAIDIDAE                      7      1
VIVIPARIDAE                   6      2
HYDROBIIDAE                   8      7
PLANORBIDAE                   6      1
PHYSIDAE                      7      7
SPHAERIIDAE                   8     34
GAMMARIDAE                    4     23
SIALIDAE                      4      7
SIMULIIDAE                    6      1
CHIRONOMIDAE                  6      7
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 12 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 34.00%
Family Biotic Index + 6.68
Scraper/Filterer Collector Ratio + 0.26
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 8-10/1-2
Substrate + sand/gravel/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods

```

AN0657 # UNT to S Branch Big Timber Ck, Grenloch Terrace (last bridge),
Washington Twp, Camden Co, Runnemedede Quad

July 18, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      3
TUBIFICIDAE                   10     5
NAIDIDAE                       7      4
HYDROBIIDAE                   8      1
PLANORBIDAE                   6      2
PHYSIDAE                      7      1
SPHAERIIDAE                   8      3
ASELLIDAE                     8      3
GAMMARIDAE                    4     63
PALAEMONIDAE                  6      1
BAETIDAE                      4      1
CAENIDAE                      7      5
COENAGRIONIDAE               9      2
PLEIDAE                       9      2
HALIPLIDAE                    5      1
SIALIDAE                      4      2
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6     10
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 110
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 57.27%
Family Biotic Index + 5.38
Scraper/Filterer Collector Ratio + 0.20
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 5.45
EPT/Chironomids + 0.60

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10/1-2
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; fish; turtle

```

AN0658 # S Branch Big Timber Ck, Turnersville-Sicklerville Rd, Washington
Twp, Gloucester Co, Runnemedede Quad

July 18, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      3
TUBIFICIDAE                   10     9
PHYSIDAE                      7      6
SPHAERIIDAE                   8      3
GAMMARIDAE                    4     22
PALAEMONIDAE                  6      1
HEPTAGENIIDAE                 4      3
BAETIDAE                      4      5
AESHNIDAE                     3      1
COENAGRIONIDAE               9     10
CORIXIDAE                     7     22
NOTONECTIDAE                 9      2
PLEIDAE                       9      1
HALIPLIDAE                    5      1
ELMIDAE                       5      1
CHIRONOMIDAE                  6      1
BLOODREDCHIRONOMIDAE         8      5
PLUMATELLIDAE                7      4
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE & CORIXIDAE 22.00%
Family Biotic Index + 6.64
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 8.00
EPT/Chironomids + 1.33

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + moderate
Width/Depth(ft) + 12-15/2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/commercial; trout stocked waters

```

AN0659 # S Branch Big Timber Ck, Almonesson Rd, Gloucester Twp, Camden Co,
Runnemedede Quad

July 13, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      1
TUBIFICIDAE                   10     10
NAIDIDAE                       7     16
GLOSSIPHONIIDAE               8      1
ANCYLIDAE                      7      2
SPHAERIIDAE                   8      5
AXONOPSIDAE                   5      3
GAMMARIDAE                     4     30
ELMIDAE                       5      1
LEPTOCERIDAE                  4      1
CERATOPOGONIDAE               6      1
CHIRONOMIDAE                   6     26
BLOODREDCHIRONOMIDAE          8      7
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13 # Population + 104
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 28.85%
Family Biotic Index + 6.20
Scraper/Filterer Collector Ratio + 0.18
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 0.96
EPT/Chironomids + 0.03

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 20-25/1-2
Substrate + sand/rock
Streambank Vegetation/Stability + good/good
Canopy + open
Other + wetland meadow/homes nearby; tidal; black-bottomed rocks;
      macrophytes; crayfish; fish (minnows/other); trash

```

AN0660 # Pines Run, L Landing Rd, Hilltop, Camden Co, Runnemedede Quad

July 13, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      3
TUBIFICIDAE                   10     26
NAIDIDAE                      7      6
HYDROBIIDAE                   8      1
SPHAERIIDAE                   8      6
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6     44
BLOODREDCHIRONOMIDAE         8     12
DOLICHOPODIDAE               4      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 44.00%
Family Biotic Index + 7.52
Scraper/Filterer Collector Ratio + 0.07
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 15-18/1-2
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods/meadow; probably tidal; oily patches on water; stormwater
      pipe

```

AN0661 # N Branch Big Timber Ck, West Park Ave, Lindenwold Boro, Camden Co,
Runnemede Quad

July 13, 1995

))

Taxon (Family Level)	FTV	NOI
PLAGIOSTOMIDAE	9	1
DUGESIIDAE	9	4
PROSTOMATIDAE	7	2
TUBIFICIDAE	10	1
NAIDIDAE	7	7
HYDROBIIDAE	8	2
PLANORBIDAE	6	13
PHYSIDAE	7	5
SPHAERIIDAE	8	6
COENAGRIONIDAE	9	2
ELMIDAE	5	1
HYDROPSYCHIDAE	4	7
LEPTOCERIDAE	4	4
SIMULIIDAE	6	6
CHIRONOMIDAE	6	29
BLOODREDCHIRONOMIDAE	8	4
PALUDICELLIDAE	7	8

))

Number of Taxa + 17 # Population + 102

))

Dominant Family(s) + CHIRONOMIDAE 28.43%
 Family Biotic Index + 6.47
 Scraper/Filterer Collector Ratio + 0.09
 Shredder/Total Ratio + 0.05
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 10.78
 EPT/Chironomids + 0.33

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 10-12/1-2
 Substrate + sand/cobble
 Streambank Vegetation/Stability + fair/fair
 Canopy + mostly closed
 Other + tree-lined/residential; wall on right bank; stormwater pipe;
 water fowl

AN0662 # Mason Run, Chews Landing Rd, Lindenwold, Camden Co, Runnemedede Quad

July 13, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     3
NAIDIDAE                      7     13
PLANORBIDAE                   6      3
PHYSIDAE                      7      3
SPHAERIIDAE                   8      1
DAPHNIDAE                     4      2
GAMMARIDAE                    4      8
COENAGRIONIDAE               9     10
CORIXIDAE                     7      3
HALIPLIDAE                    5      1
HYDROPSYCHIDAE               4      1
CHIRONOMIDAE                  6     29
BLOODREDCHIRONOMIDAE        8     20
EMPIDIDAE                     6      2
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 29.00%
Family Biotic Index + 6.82
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.02

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 15-20/1-2
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/few homes; macrophytes; fish (minnows/other)

```

AN0663 # N Branch Big Timber Ck, Rt# 168, Gloucester Twp, Camden Co,
Runnemedede Quad

July 13, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7      1
SERPULIDAE                    4      1
ENCHYTRAEIDAE                 10     1
TUBIFICIDAE                   10     26
NAIDIDAE                      7      4
GLOSSIPHONIIDAE              8      1
HYDROBIIDAE                   8      1
SPHAERIIDAE                   8     25
GAMMARIDAE                    4     11
HYDROPTILIDAE                4      2
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6     10
BLOODREDCHIRONOMIDAE         8     11
PLUMATELLIDAE                7      5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 26.00%
Family Biotic Index + 7.66
Scraper/Filterer Collector Ratio + 0.08
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.00
EPT/Chironomids + 0.10

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 50/1-2
Substrate + sand/mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree-lined/commercial; stormwater pipes; some macrophytes;
      crayfish; fish (minnows)

```


AN0664 # Bg Timber Ck, Clements Bridge Rd, Glendora, Camden Co,
Runnemedede Quad

July 11, 1995

))
Taxon (Family Level) FTV NOI
))
CLAVIDAE 7 3
PLAGIOSTOMIDAE 9 1
TUBIFICIDAE 10 4
ANCYLIDAE 7 1
GAMMARIDAE 4 20
HEPTAGENIIDAE 4 1
CHIRONOMIDAE 6 30
BLOODREDCHIRONOMIDAE 8 48
))
Number of Taxa + 8 # Population + 108
))

Dominant Family(s) + BLOODREDCHIRONOMIDAE 44.44%
Family Biotic Index + 6.71
Scraper/Filterer Collector Ratio + 0.50
Shredder/Total Ratio + 0.46
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 0.93
EPT/Chironomids + 0.01

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + fast
Width/Depth(ft) + 60/10
Substrate + sand/rock
Streambank Vegetation/Stability + poor/poor
Canopy + mostly open
Other + woods/residential/commercial; landfill upstr; wetlands dwnstr;
siltation; macrophytes (spadderdock)

AN0665 # Almonesson Ck, Clements Bridge Rd, Deptford Twp, Gloucester Co,
Runnemedede Quad

July 18, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     8
SPHAERIIDAE                   8      1
GAMMARIDAE                    4      1
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6     37
BLOODREDCHIRONOMIDAE         8     52
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 6 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + BLOODREDCHIRONOMIDAE 52.00%
Family Biotic Index + 7.36
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.80
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + moderate
Width/Depth(ft) + 25-30/>2
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + some trees/commercial

```

AN0666 # Ltl Timber Ck, Devon Rd, Bellmawr, Camden Co, Runnemedede Quad

July 11, 1995

))))))))))

Taxon (Family Level)	FTV	NOI
TUBIFICIDAE	10	8
LUMBRICIDAE	10	1
GLOSSIPHONIIDAE	8	1
TIPULIDAE	3	2
CHIRONOMIDAE	6	8
BLOODREDCHIRONOMIDAE	8	2

))))))))))

Number of Taxa + 6 # Population + 22

))))))))))

Dominant Family(s) + TUBIFICIDAE & CHIRONOMIDAE 36.36%

Family Biotic Index + 7.64

Scraper/Filterer Collector Ratio + 0.00

Shredder/Total Ratio + 0.14

E(phemeroptera)+P(lecoptera)+T(richoptera) + 0

%EPT + 0.00

EPT/Chironomids + 0.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
 significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear

Flow + slow

Width/Depth(ft) + 10/<1

Substrate + sand/cobble/gravel

Streambank Vegetation/Stability + poor/fair

Canopy + mostly closed

Other + tree-lined/residential/park; concrete wall on left bank; snags;
 frog

AN0667 # Woodbury Ck, Rt 45, Woodbury, Gloucester Co, Woodbury Quad

July 18, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                      6      1
TUBIFICIDAE                   10     28
NAIDIDAE                       7     10
GLOSSIPHONIIDAE               8      1
ANCYLIDAE                      7      1
DIAPTOMIDAE                   4      1
GAMMARIDAE                    4     35
CHIRONOMIDAE                  6     10
BLOODREDCHIRONOMIDAE         8     13
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 35.00%
Family Biotic Index + 6.79
Scraper/Filterer Collector Ratio + 1.00
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 20-30/1-2
Substrate + mud
Streambank Vegetation/Stability + -
Canopy + mostly open
Other + some trees/park/HS ballfields; urban upstr; tidal; extensive
      mud flats

```

AN0668 # Mantua Ck, Greentree Rd, Washington Twp, Gloucester Co, Pitman
E Quad

July 25, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7      1
LUMBRICULIDAE                 8      2
PHYSIDAE                      7      2
SPHAERIIDAE                   8      2
GAMMARIDAE                    4     49
MACROMIIDAE                   3      1
COENAGRIONIDAE                9      1
VELIIDAE                      9      1
SIALIDAE                     4      1
HYDROPSYCHIDAE               4     15
PYRALIDAE                    5      1
SIMULIIDAE                    6     13
CHIRONOMIDAE                  6      5
EMPIDIDAE                     6      1
PALUDICELLIDAE               7      5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 49.00%
Family Biotic Index + 4.88
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 15.00
EPT/Chironomids + 3.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 15/0.5
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/residential; macrophytes

```

AN0669 # Mantua Ck, Lambs Rd, Mantua Twp, Gloucester Co, Runnemedede Quad

July 25, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4        1
PLAGIOSTOMIDAE                9        1
DUGESIIDAE                    9        1
PROSTOMATIDAE                7        3
NAIDIDAE                      7        1
PLANORBIDAE                   6        1
SPHAERIIDAE                   8        1
GAMMARIDAE                    4        2
COENAGRIONIDAE               9        1
ELMIDAE                       5        1
LEPTOCERIDAE                 4        1
CHIRONOMIDAE                  6        7
PALUDICELLIDAE                7       74
PLUMATELLIDAE                 7        5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + PALUDICELLIDAE 74.00%
 Family Biotic Index + 6.85
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.00
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 1.00
 EPT/Chironomids + 0.14

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + PALUDICELLIDAE overwhelmingly dominant
 paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 30/1.5
Substrate + cobble/sand
Streambank Vegetation/Stability + good/good
Canopy + closed
Other + tree-lined/rural/residential; Bethel Lk upstr

```

AN0670 # Chestnut Br, Lambs Rd, Pitman, Gloucester Co, Pitman W Quad

July 20, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      3
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     16
BAETIDAE                      4      14
ELMIDAE                       5      22
HYDROPSYCHIDAE               4      37
TIPULIDAE                     3      1
CHIRONOMIDAE                  6      3
BLOODREDCHIRONOMIDAE         8      3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + HYDROPSYCHIDAE 37.00%
Family Biotic Index + 5.54
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.18
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 51.00
EPT/Chironomids + 8.50

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 12/<1
Substrate + gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/bamboo/residential; Alcyon Lk/Comet Tool Co upstr;
      box turtle

```

AN0671 # Chestnut Br, Mantua Blvd, Mantua, Gloucester Co, Woodbury Quad

July 20, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)           FTV     NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                     10      36
SPHAERIIDAE                     8       12
GAMMARIDAE                       4       8
BAETIDAE                         4       6
ELMIDAE                          5       3
CORYDALIDAE                     0       1
HYDROPSYCHIDAE                 4       1
SIMULIIDAE                      6       2
CHIRONOMIDAE                   6       9
BLOODREDCHIRONOMIDAE          8      21
EMPIDIDAE                       6       1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 11 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

```

Dominant Family(s) + TUBIFICIDAE    36.00%
Family Biotic Index + 7.71
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.32
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 7.00
EPT/Chironomids + 0.23

```

NJIS/Rating + 12/moderately impaired

```

Deficiency(s) noted + paucity of clean water organisms
                    significant organic pollution

```

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 20/0.5-1.5
Substrate + gravel/sand
Streambank Vegetation/Stability + poor/good
Canopy + mostly closed
Other + tree-lined/low residential; walls rocked; few macrophytes; fish
      (king fisher/eel)

```


AN0672 # Mantua Ck, Mantua Ave, Mantua, Gloucester Co, Woodbury Quad

July 20, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4      1
DUGESIIDAE                    9      1
TUBIFICIDAE                   10     9
NAIDIDAE                      7     22
SPHAERIIDAE                   8     14
GAMMARIDAE                    4      8
ELMIDAE                      5      1
HYDROPTILIDAE                4      3
CHIRONOMIDAE                  6     34
BLOODREDCHIRONOMIDAE         8      9
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 10 # Population + 102
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 33.33%
Family Biotic Index + 6.80
Scraper/Filterer Collector Ratio + 0.12
Shredder/Total Ratio + 0.16
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.94
EPT/Chironomids + 0.07

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 30/2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/residential; patchy oil sheen on water; macrophytes
      (spadderdock); Painter turtle

```

AN0673 # Edwards Run, Pitman - Jefferson Rd, Harrison Twp, Gloucester
Co, Pitman W Quad

July 20, 1995

))))))))))
Taxon (Family Level) FTV NOI
))))))))))
NEMATODA 6 1
TUBIFICIDAE 10 92
ELMIDAE 5 2
CHIRONOMIDAE 6 4
BLOODREDCHIRONOMIDAE 8 1
))))))))))
Number of Taxa + 5 # Population + 100
))))))))))

Dominant Family(s) + TUBIFICIDAE 92.00%
Family Biotic Index + 9.68
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + TUBIFICIDAE overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 3/0.5
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + closed
Other + woods; agricultural upstr

AN0674 # Edwards Run, Jessups Mill Rd, Mantua Twp, Gloucester Co,
Woodbury Quad

July 20, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7      1
ENCHYTRAEIDAE                 10     3
TUBIFICIDAE                   10    18
NAIDIDAE                      7      8
LUMBRICIDAE                   10     1
SPHAERIIDAE                   8      2
GAMMARIDAE                    4      5
CORIXIDAE                     7      4
ELMIDAE                       5      2
SIALIDAE                      4      2
CORYDALIDAE                   0      2
TIPULIDAE                     3      3
SIMULIIDAE                    6      2
CHIRONOMIDAE                  6     37
BLOODREDCHIRONOMIDAE         8      4
EMPIDIDAE                     6      4
PLUMATELLIDAE                7      2
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 37.00%
Family Biotic Index + 6.78
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.16
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10/<1
Substrate + sand
Streambank Vegetation/Stability + -
Canopy + mostly closed
Other + tree-lined/residential; landfill upstr; iron precipitate;
      metallic sheen on water; frogs; fish (minnows); trash
      (shopping cart/hub cap); SIGN + DANGER - This Water Unfit for
      Human... Gloucester Co Health Dept - 853-3405

```

AN0675 # Still Run, Quaker Rd, E Greenwich Twp, Gloucester Co,
Bridgeport Quad

July 25, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      2
PROSTOMATIDAE                 7      2
NEMATODA                       6      1
LUMBRICULIDAE                 8      9
TUBIFICIDAE                   10     1
VIVIPARIDAE                   6      1
PLANORBIDAE                   6      6
SPHAERIIDAE                   8     25
GAMMARIDAE                     4     39
HYDROPHILIDAE                 5      1
ELMIDAE                       5      1
SIALIDAE                       4      2
HYDROPSYCHIDAE               4      1
POLYCENTROPODIDAE            6      1
CHIRONOMIDAE                   6      7
BLOODREDCHIRONOMIDAE         8      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 39.00%
Family Biotic Index + 5.96
Scraper/Filterer Collector Ratio + 0.04
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.25

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 20/3-4
Substrate + mud/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/rural/agricultural; fish

```

AN0676 # Rattling Run, Tomlin Rd, E Greenwich Twp, Gloucester Co,
Bridgeport Quad

July 25, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      2
PROSTOMATIDAE                7      4
TUBIFICIDAE                   10     42
NAIDIDAE                      7      2
LYMNAEIDAE                    6      1
PLANORBIDAE                   6      2
PHYSIDAE                      7      4
SPHAERIIDAE                   8     14
SIALIDAE                      4      2
CHIRONOMIDAE                  6      3
BLOODREDCHIRONOMIDAE         8     24
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 11 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 42.00%
Family Biotic Index + 8.56
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.22
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + moderate
Width/Depth(ft) + 15/1-2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/agricultural; channelized; swampy odor

```

AN0677 # Pargy Ck, Swedesboro Ave, E Greenwich Twp, Gloucester Co,
Bridgeport Quad

August 8, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      10
DUGESIIDAE                    9      16
LUMBRICULIDAE                 8      2
TUBIFICIDAE                   10     16
NAIDIDAE                      7      1
LUMBRICIDAE                   10     2
GLOSSIPHONIIDAE              8      1
PHYSIDAE                      7      5
SPHAERIIDAE                   8      9
GAMMARIDAE                    4      2
CORDULIIDAE                   5      4
COENAGRIONIDAE               9      1
ELMIDAE                       5      2
SIALIDAE                      4      1
HYDROPSYCHIDAE               4      1
PSYCHODIDAE                   10     1
CHIRONOMIDAE                  6      17
BLOODREDCHIRONOMIDAE         8      13
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 104
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 16.35%
Family Biotic Index + 7.91
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 0.96
EPT/Chironomids + 0.03

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 30/0.75-1
Substrate + soft mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + woods/agricultural; snags; many macrophytes; trash
      (muffler/tail pipe/other)

```

AN0678 # Ltl Timber Ck, Paulsboro Rd, Logan Twp, Gloucester Co,
Bridgeport Quad

August 8, 1995

))
Taxon (Family Level) FTV NOI
))
PLAGIOSTOMIDAE 9 2
DUGESIIDAE 9 2
TUBIFICIDAE 10 9
NAIDIDAE 7 3
HYDROBIIDAE 8 8
LYMNAEIDAE 6 2
PLANORBIDAE 6 3
PHYSIDAE 7 2
DAPHNIDAE 4 1
TALITRIDAE 8 2
PALAEMONIDAE 6 2
METRETOPODIDAE 2 1
CAENIDAE 7 1
GOMPHIDAE 1 3
COENAGRIONIDAE 9 12
CORIXIDAE 7 1
MESOVELIIDAE 9 2
ELMIDAE 5 12
SIALIDAE 4 1
CULICIDAE 8 1
CERATOPOGONIDAE 6 1
CHIRONOMIDAE 6 25
BLOODREDCHIRONOMIDAE 8 4
))
Number of Taxa + 23 # Population + 100
))

Dominant Family(s) + CHIRONOMIDAE 25.00%
Family Biotic Index + 6.92
Scraper/Filterer Collector Ratio + 1.00
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.07

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 15/1-2
Substrate + mud/rock
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/agricultural; macrophytes (spadderdock); fish
(sunfish); trash (rusty fence/boards)

AN0679 # Raccoon Ck, Ellis Mill Rd, Elk Twp, Gloucester Co, Pitman W Quad

August 17, 1995

))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	10
TUBIFICIDAE	10	1
HYDROBIIDAE	8	10
PHYSIDAE	7	3
SPHAERIIDAE	8	60
DIPLOPODA	5	1
MACROMIIDAE	3	1
COENAGRIONIDAE	9	3
GERRIDAE	8	1
HYDROPSYCHIDAE	4	4
LEPTOCERIDAE	4	1
NEPTICULIDAE	5	4
CHIRONOMIDAE	6	1

))

Number of Taxa + 13 # Population + 100

))

Dominant Family(s) + SPHAERIIDAE 60.00%
 Family Biotic Index + 7.70
 Scraper/Filterer Collector Ratio + 0.16
 Shredder/Total Ratio + 0.01
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 5.00
 EPT/Chironomids + 5.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))))

OBSERVATIONS

))))))))))))

Clarity + clear
 Flow + fast
 Width/Depth(ft) + 20/1-2
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + tree-lined/residential; Gilman Lk upstr; siltation; periphyton;
 fish (sunfish/minnows); Painter turtle; trash (muffler/cinder
 blocks/concrete/lumber/other construction debris)

AN0680 # Raccoon Ck, N Main St, Mullica Hill, Gloucester Co, Pitman W Quad

August 8, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                   7      2
LUMBRICULIDAE                   8      1
TUBIFICIDAE                     10     4
SPHAERIIDAE                     8     16
GAMMARIDAE                      4      1
HEPTAGENIIDAE                   4      1
BAETIDAE                       4     12
ELMIDAE                         5      2
SIALIDAE                       4      1
HYDROPSYCHIDAE                 4     47
LEPTOCERIDAE                   4      2
TIPULIDAE                      3      1
CHIRONOMIDAE                    6     11
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13 # Population + 101
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + HYDROPSYCHIDAE 46.53%
 Family Biotic Index + 5.20
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.14
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
 %EPT + 61.39
 EPT/Chironomids + 5.64

NJIS/Rating + 21/moderately impaired

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + -
Flow + -
Width/Depth(ft) + 20/1
Substrate + sand/gravel/cobble
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + tree-lined/suburban; some macrophytes; fish (sunfish); sewage
      odor from stormpipe; trash (construction debris)

```

AN0681 # Raccoon Ck S Br, Swedesboro Rd, S Harrison Twp, Gloucester Co,
Pitman W Quad

August 12, 1995

))

Taxon (Family Level)	FTV	NOI
PLAGIOSTOMIDAE	9	1
PROSTOMATIDAE	7	1
TUBIFICIDAE	10	2
GLOSSIPHONIIDAE	8	1
ANCYLIDAE	7	1
PLANORBIDAE	6	4
SPHAERIIDAE	8	3
ASELLIDAE	8	1
GAMMARIDAE	4	7
DIPLOPODA	5	3
HEPTAGENIIDAE	4	8
SIPHONURIDAE	7	1
EPHEMERELLIDAE	1	7
AESHNIDAE	3	1
GOMPHIDAE	1	1
COENAGRIONIDAE	9	1
GERRIDAE	8	1
VELIIDAE	9	2
GYRINIDAE	3	1
DRYOPIDAE	5	1
ELMIDAE	5	11
CORYDALIDAE	0	1
HYDROPSYCHIDAE	4	8
POLYCENTROPODIDAE	6	1
CHIRONOMIDAE	6	22
BLOODREDCHIRONOMIDAE	8	10
EMPIDIDAE	6	1

))

Number of Taxa + 27 # Population + 102

))

Dominant Family(s) + CHIRONOMIDAE 21.57%

Family Biotic Index + 5.43

Scraper/Filterer Collector Ratio + 0.13

Shredder/Total Ratio + 0.35

E(phemeroptera)+P(lecoptera)+T(richoptera) + 5

%EPT + 24.51

EPT/Chironomids + 0.78

NJIS/Rating + 21/moderately impaired

))))))))))))

OBSERVATIONS

))))))))))))

Clarity + clear

Flow + slow

Width/Depth(ft) + 12/1

Substrate + sand/gravel

Streambank Vegetation/Stability + fair/fair

Canopy + closed

Other + woods/residential; new development started; siltation; fish

(sunfish)

AN0682 # Raccoon Ck S Br, High St, Harrison Twp, Gloucester Co,
Woodstown Quad

August 8, 1995

))
Taxon (Family Level) FTV NOI
))
PROSTOMATIDAE 7 1
TUBIFICIDAE 10 13
SPHAERIIDAE 8 5
GAMMARIDAE 4 7
HEPTAGENIIDAE 4 12
BAETIDAE 4 3
SIPHONURIDAE 7 2
EPHEMERELLIDAE 1 1
CAENIDAE 7 1
AESHNIDAE 3 1
ELMIDAE 5 6
HYDROPSYCHIDAE 4 29
TIPULIDAE 3 5
SIMULIIDAE 6 4
CHIRONOMIDAE 6 7
EMPIDIDAE 6 3
))
Number of Taxa + 16 # Population + 100
))

Dominant Family(s) + HYDROPSYCHIDAE 29.00%
Family Biotic Index + 5.35
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.22
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 48.00
EPT/Chironomids + 6.86

NJIS/Rating + 27/non-impaired

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 10/0.5
Substrate + sand/gravel/some cobble
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + tree-lined/rural/agricultural; snags; some macrophytes; goats
nr ck

AN0683 # Raccoon Ck, Tomlin Sta Rd, Harrison Twp, Gloucester Co,
Woodstown Quad

August 8, 1995

))))))))))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	1
TUBIFICIDAE	10	31
PHYSIDAE	7	2
SPHAERIIDAE	8	13
GAMMARIDAE	4	17
HEPTAGENIIDAE	4	2
BAETIDAE	4	1
GOMPHIDAE	1	2
COENAGRIONIDAE	9	1
CORIXIDAE	7	7
ELMIDAE	5	1
HYDROPSYCHIDAE	4	1
SIMULIIDAE	6	1
CHIRONOMIDAE	6	14
BLOODREDCHIRONOMIDAE	8	4
TABANIDAE	6	1
EMPIDIDAE	6	1

))))))))))

Number of Taxa + 17 # Population + 100

))))))))))

Dominant Family(s) + TUBIFICIDAE 31.00%
Family Biotic Index + 7.20
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 4.00
EPT/Chironomids + 0.22

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear
Flow + fast
Width/Depth(ft) + 15/1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + woods/low residential; macrophytes; trash (rusty metal/tires)

AN0684 # Raccoon Ck trib, Russell Mill Rd, Woolwich Twp, Gloucester Co,
Woodstown Quad

August 8, 1995

))
Taxon (Family Level) FTV NOI
))
TUBIFICIDAE 10 1
NAIDIDAE 7 1
SPHAERIIDAE 8 15
GAMMARIDAE 4 30
BAETIDAE 4 2
ELMIDAE 5 1
HYDROPSYCHIDAE 4 42
LEPTOCERIDAE 4 1
CHIRONOMIDAE 6 7
))
Number of Taxa + 9 # Population + 100
))

Dominant Family(s) + HYDROPSYCHIDAE 42.00%
Family Biotic Index + 4.84
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 45.00
EPT/Chironomids + 6.43

NJIS/Rating + 21/moderately impaired

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 5/<1
Substrate + gravel/cobble
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods/low residential; strong creosote odor from new bridge;
many macrophytes; fish (sunfish/minnows)

AN0686 # Oldmans Ck, Swedesboro-Monroeville Rd, Jessups Mill, Gloucester
Co & Salem Co, Pitman W Quad

August 17, 1995

))))))))))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	2
TUBIFICIDAE	10	18
PHYSIDAE	7	2
SPHAERIIDAE	8	28
CAMBARIDAE	5	4
HEPTAGENIIDAE	4	1
AESHNIDAE	3	2
COENAGRIONIDAE	9	8
CORIXIDAE	7	2
NOTONECTIDAE	9	1
VELIIDAE	9	1
HALIPLIDAE	5	2
GYRINIDAE	3	1
ELMIDAE	5	2
SIALIDAE	4	5
CORYDALIDAE	0	6
HYDROPSYCHIDAE	4	1
PHRYGANEIDAE	4	1
POLYCENTROPIDAE	6	1
CHIRONOMIDAE	6	11
BLOODREDCHIRONOMIDAE	8	1

))))))))))

Number of Taxa + 21 # Population + 100

))))))))))

Dominant Family(s) + SPHAERIIDAE 28.00%
Family Biotic Index + 6.97
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 4.00
EPT/Chironomids + 0.33

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10/1-2
Substrate + mud
Streambank Vegetation/Stability + -
Canopy + mostly closed
Other + woods/residential; many frogs; painter turtle

AN0687 # Oldmans Ck, Lk Rd, Harrisonville, Gloucester Co & Salem Co,
 Woodstown Quad

August 17, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
SPONGILLIDAE                  5      4
PLAGIOSTOMIDAE                9      2
DUGESIIDAE                    9      15
PROSTOMATIDAE                7      1
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     4
NAIDIDAE                      7     13
HYDROBIIDAE                   8      4
SPHAERIIDAE                   8      3
DAPHNIDAE                     4      1
CYPRIDAE                      6      4
ASELLIDAE                     8      8
TALITRIDAE                    8      8
PALAEMONIDAE                  6      1
CAENIDAE                      7      6
COENAGRIONIDAE                9      2
ELMIDAE                       5      1
PHILOPOTAMIDAE                3      1
HYDROPSYCHIDAE                4     12
HYDROPTILIDAE                 4      3
CHIRONOMIDAE                   6      6
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 21    # Population +      100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + DUGESIIDAE 15.00%
 Family Biotic Index + 7.01
 Scraper/Filterer Collector Ratio + 0.29
 Shredder/Total Ratio + 0.06
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
 %EPT + 22.00
 EPT/Chironomids + 3.67

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + slow-moderate
Width/Depth(ft) + 12/1.5
Substrate + sand/gravel
Streambank Vegetation/Stability + -
Canopy + mostly closed
Other + woods/agricultural/low residential/WMA; eutrophic Harrisonville
      Lk upstr; filamentous algae; periphyton; crayfish; fish (sunfish)

```


AN0688 # Oldmans Ck, Kings Hwy, Porches Mill, Gloucester Co & Salem Co,
Woodstown Quad

August 24, 1995

))

Taxon (Family Level)	FTV	NOI
PLAGIOSTOMIDAE	9	2
DUGESIIDAE	9	2
PROSTOMATIDAE	7	2
TUBIFICIDAE	10	3
NAIDIDAE	7	11
ERPOBDELLIDAE	8	1
HYDROBIIDAE	8	1
LYMNAEIDAE	6	1
PHYSIDAE	7	2
SPHAERIIDAE	8	2
UNIONICOLIDAE	3	1
DAPHNIDAE	4	2
MACROTHRICIDAE	4	4
CYCLOPIDAE	4	1
GAMMARIDAE	4	4
TALITRIDAE	8	2
PALAEEMONIDAE	6	2
CAENIDAE	7	1
COENAGRIONIDAE	9	1
ELMIDAE	5	7
HYDROPSYCHIDAE	4	1
LEPTOCERIDAE	4	2
CERATOPOGONIDAE	6	2
CHIRONOMIDAE	6	16
BLOODREDCHIRONOMIDAE	8	8
PLUMATELLIDAE	7	12
FREDERICELLIDAE	2	7

))

Number of Taxa + 27 # Population + 100

))

Dominant Family(s) + CHIRONOMIDAE 16.00%

Family Biotic Index + 6.17

Scraper/Filterer Collector Ratio + 0.03

Shredder/Total Ratio + 0.08

E(phemeroptera)+P(lecoptera)+T(richoptera) + 3

%EPT + 4.00

EPT/Chironomids + 0.17

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))

OBSERVATIONS

))))))))))

Clarity + turbid

Flow + slow

Width/Depth(ft) + 15-20/2-3

Substrate + mud

Streambank Vegetation/Stability + good/good

Canopy + open

Other + woods; creosoted bridge; some oil on surface; fish

(minnows/other); turtles

AN0689 # Oldmans Ck, Pointers - Auburn Rd (Rt 551), Auburn, Gloucester
 Co & Salem Co, Woodstown Quad

August 22, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))
SERPULIDAE                    4      2
TUBIFICIDAE                   10     32
NAIDIDAE                      7      2
GLOSSIPHONIIDAE              8      1
HYDROBIIDAE                  8      1
UNIONIDAE                    8      1
SPHAERIIDAE                  8      1
HYGROBATIDAE                 2      1
GAMMARIDAE                   4     19
PALAEMONIDAE                 6      4
CORIXIDAE                    7      1
ELMIDAE                      5      1
CHIRONOMIDAE                 6     21
BLOODREDCHIRONOMIDAE        8     13
))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))
  
```

Dominant Family(s) + TUBIFICIDAE 32.00%
 Family Biotic Index + 7.18
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.04
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
 significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 50-60/>3
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; old inactive farm nearby
  
```

AN0690 # Salem R, Commissioners Rd (Rt 581), U Pittsgrove Twp, Salem Co,
Alloway Quad

August 24, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      2
TUBIFICIDAE                   10     3
GLOSSIPHONIIDAE               8      1
HYDROBIIDAE                   8      1
PHYSIDAE                      7      2
CAENIDAE                      7      2
COENAGRIONIDAE               9      3
GERRIDAE                      8      1
GYRINIDAE                    3      1
HYDROPHILIDAE                5      1
ELMIDAE                      5      3
SIALIDAE                     4      4
CORYDALIDAE                   0      1
TIPULIDAE                    3      2
CULICIDAE                    8      1
CHIRONOMIDAE                  6     21
BLOODREDCHIRONOMIDAE         8     51
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + BLOODREDCHIRONOMIDAE 51.00%
Family Biotic Index + 7.12
Scraper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.12
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.00
EPT/Chironomids + 0.03

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 10-15/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; frog; trash (bicycles)

```

AN0691 # Salem R, Mill St, Woodstown, Salem Co, Woodstown Quad

August 22, 1995

))
Taxon (Family Level) FTV NOI
))
DUGESIIDAE 9 6
TUBIFICIDAE 10 2
NAIDIDAE 7 5
PHYSIDAE 7 1
CYPRIDAE 6 1
HYDROPSYCHIDAE 4 1
CHIRONOMIDAE 6 11
BLOODREDCHIRONOMIDAE 8 44
PLUMATELLIDAE 7 29
))
Number of Taxa + 9 # Population + 100
))

Dominant Family(s) + BLOODREDCHIRONOMIDAE 44.00%
Family Biotic Index + 7.47
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.02

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + moderate
Width/Depth(ft) + 8-10/1-2
Substrate + gravel/cobble
Streambank Vegetation/Stability + fair/fair
Canopy + closed
Other + woods/residential; Memorial Lk upstr; siltation; fish; turtles;
USGS gage

August 22, 1995

))
Taxon (Family Level) FTV NOI
))
DUGESIIDAE 9 1
TUBIFICIDAE 10 13
NAIDIDAE 7 55
ELMIDAE 5 1
CHIRONOMIDAE 6 2
BLOODREDCHIRONOMIDAE 8 28
))
Number of Taxa + 6 # Population + 100
))

Dominant Family(s) + NAIDIDAE 55.00%
Family Biotic Index + 7.65
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 5-6/1-2
Substrate + mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree-lined/residential/agricultural (dairy farm); foul odor
from sediment; neighbor said...dairy farm has discharged sour
milk into stream

AN0693 # Salem R, Kings Hwy, Sharptown, Salem Co, Woodstown Quad

August 22, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4      1
TUBIFICIDAE                   10     1
NAIDIDAE                      7      2
HYDROBIIDAE                   8      2
ANCYLIDAE                     7      2
PLANORBIDAE                   6      8
GAMMARIDAE                    4      3
CAMBARIDAE                    5      1
PALAEMONIDAE                  6      1
CORDULIIDAE                   5      1
CORIXIDAE                     7      3
PLEIDAE                       9      1
GERRIDAE                      8      1
ELMIDAE                       5      9
CHIRONOMIDAE                  6      48
BLOODREDCHIRONOMIDAE         8      16
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 48.00%
Family Biotic Index + 6.33
Scraper/Filterer Collector Ratio + 0.24
Shredder/Total Ratio + 0.42
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 25-30/>2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; stormwater pipe; turtles

```

AN0694 # Major Run, Pointers - Sharptown Rd, Mannington Twp, Salem Co,
Woodstown Quad

August 22, 1995

))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	11
TUBIFICIDAE	10	52
SPHAERIIDAE	8	1
TIPULIDAE	3	1
CHIRONOMIDAE	6	5
BLOODREDCHIRONOMIDAE	8	7
PLUMATELLIDAE	7	23

))

Number of Taxa + 7 # Population + 100

))

Dominant Family(s) + TUBIFICIDAE 52.00%
Family Biotic Index + 8.77
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 4-5/<1
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + closed
Other + woods/agricultural; many ditches (with water) entering stream

AN0695 # Two Penny Run, E Quillytown Rd, U Penns Neck Twp, Salem Co,
Penns Grove Quad

August 22, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      15
TUBIFICIDAE                   10     9
VIVIPARIDAE                   6      1
HYDROBIIDAE                   8      1
UNIONIDAE                     8      1
SPHAERIIDAE                   8      6
GOMPHIDAE                     1      1
CORIXIDAE                     7      1
ELMIDAE                       5      28
LEPTOCERIDAE                 4      1
CHIRONOMIDAE                  6      31
BLOODREDCHIRONOMIDAE        8      5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 12 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 31.00%
Family Biotic Index + 6.73
Scraper/Filterer Collector Ratio + 0.29
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.03

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 5-6/1-2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/agricultural

```


AN0696 # Game Ck, Rt 48, U Penns Neck Twp, Salem Co, Penns Grove Quad

August 22, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9        2
TUBIFICIDAE                   10       5
NAIDIDAE                      7        24
PLANORBIDAE                   6        1
PHYSIDAE                      7        1
SIDIDAE                       3        1
MACROTHRICIDAE               4        15
CAENIDAE                      7        6
CORDULIIDAE                   5        2
CERATOPOGONIDAE              6        1
CHIRONOMIDAE                  6        33
BLOODREDCHIRONOMIDAE         8        9
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 12 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 33.00%
 Family Biotic Index + 6.40
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.09
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 6.00
 EPT/Chironomids + 0.14

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 15-20/<1
Substrate + gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/residential/agricultural; Layton Lk upstr;
      siltation; Epistylis; green/bluegreen filamentous algae; fish;
      water snake; turtles

```


AN0698 # Swedes Run, Swedes Bridge Rd, Mannington Twp, Salem Co, Salem
Quad

September 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     3
PHYSIDAE                       7     1
SPHAERIIDAE                   8     1
ASELLIDAE                     8     3
GAMMARIDAE                     4    23
CALOPTERYGIDAE                5     1
COENAGRIONIDAE                9     2
CORIXIDAE                     7    35
GERRIDAE                      8     1
ELMIDAE                       5    18
SIALIDAE                      4     1
CULICIDAE                     8     2
CHIRONOMIDAE                  6     9
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CORIXIDAE 35.00%
 Family Biotic Index + 6.01
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.00
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 15/1
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/agricultural; macrophytes; fish (minnows)

```

AN0699 # Alloway Ck, Yorktown - Friesburg Rd, Alloway Twp, Salem Co,
Alloway Quad

August 24, 1995

))
Taxon (Family Level) FTV NOI
))
TUBIFICIDAE 10 10
NAIDIDAE 7 2
LYMNAEIDAE 6 5
SPHAERIIDAE 8 2
DIPLOPODA 5 2
HEPTAGENIIDAE 4 1
BAETIDAE 4 7
EPHEMERELLIDAE 1 1
GOMPHIDAE 1 2
CORIXIDAE 7 1
VELIIDAE 9 1
ELMIDAE 5 1
CORYDALIDAE 0 1
TIPULIDAE 3 1
CHIRONOMIDAE 6 57
BLOODREDCHIRONOMIDAE 8 6
))
Number of Taxa + 16 # Population + 100
))

Dominant Family(s) + CHIRONOMIDAE 57.00%
Family Biotic Index + 6.19
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.57
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 9.00
EPT/Chironomids + 0.14

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 3-4/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/agricultural (dairy/corn farm); siltation;
green/bluegreen filamentous algae; fish (minnows); tadpoles

AN0700 # Cool Run, Stockington - Pleasant Hill Rd, Alloway Twp, Salem
Co, Alloway Quad

August 24, 1995

))))))))))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	1
PROSTOMATIDAE	7	10
TUBIFICIDAE	10	3
SPHAERIIDAE	8	7
HEPTAGENIIDAE	4	2
AESHNIDAE	3	1
MACROMIIDAE	3	1
ELMIDAE	5	4
SIALIDAE	4	1
HYDROPSYCHIDAE	4	65
LEPTOCERIDAE	4	2
CHIRONOMIDAE	6	3

))))))))))

Number of Taxa + 12 # Population + 100

))))))))))

Dominant Family(s) + HYDROPSYCHIDAE 65.00%
Family Biotic Index + 4.89
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 69.00
EPT/Chironomids + 23.00

NJIS/Rating + 21/moderately impaired

Deficiency(s) noted + HYDROPSYCHIDAE overwhelmingly dominant

))))))))))

OBSERVATIONS

))))))))))

Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 8-10/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; siltation; leaf litter; frogs; trash
(cinder blocks/concrete)

AN0701 # UNT to Alloway Ck, Alloway-Aldine Rd, Alloway Twp, Salem Co, Alloway Quad

September 21, 1995

))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	1
TUBIFICIDAE	10	2
PLANORBIDAE	6	1
SPHAERIIDAE	8	7
GAMMARIDAE	4	1
HEPTAGENIIDAE	4	5
GOMPHIDAE	1	1
LIBELLULIDAE	9	1
CORDULIIDAE	5	1
ELMIDAE	5	31
CORYDALIDAE	0	1
HYDROPSYCHIDAE	4	17
CERATOPOGONIDAE	6	1
CHIRONOMIDAE	6	25
BLOODREDCHIRONOMIDAE	8	4
EMPIDIDAE	6	1

))

Number of Taxa + 16 # Population + 100

))

Dominant Family(s) + ELMIDAE 31.00%
 Family Biotic Index + 5.47
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.11
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 22.00
 EPT/Chironomids + 0.76

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))))
 OBSERVATIONS
))))))))))
 Clarity + clear
 Flow + slow
 Width/Depth(ft) + 12-15/1-2
 Substrate + sand/some gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods; frogs

AN0702 # Alloway Ck, Welchville - Alloway Rd, Alloway, Salem Co, Alloway
Quad

September 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                      6      1
ENCHYTRAEIDAE                 10     6
TUBIFICIDAE                   10    26
PISCICOLIDAE                  7      1
GLOSSIPHONIIDAE               8      2
SPHAERIIDAE                   8      1
GAMMARIDAE                    4      1
LIBELLULIDAE                  9      1
CORIXIDAE                     7      9
HYDROPHILIDAE                 5      1
ELMIDAE                       5      4
CHIRONOMIDAE                  6      8
BLOODREDCHIRONOMIDAE         8     24
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13  # Population +      85
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 30.59%
Family Biotic Index + 8.21
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 50/2
Substrate + mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + some trees/rural; oil sheen on water; brackish
macroinvertebrates + ISOPODA - Cassidisca lunifrons (1),
AMPHIPODA - Leptocheirus (1), DECAPODA - Rhithropanopeus
harrisii (2), Palaemonetes pugio (32); turtles

```

AN0703 # Deep Run, Waterworks Rd, Alloway, Salem Co, Alloway Quad

September 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     8
NAIDIDAE                       7    36
GLOSSIPHONIIDAE               8     2
ANCYLIDAE                      7     1
TALITRIDAE                     8     1
LIBELLULIDAE                   9     8
CORDULIIDAE                    5     1
CORIXIDAE                      7     1
GERRIDAE                       8     1
ELMIDAE                        5    10
LEPTOCERIDAE                  4     1
CERATOPOGONIDAE               6     2
CHIRONOMIDAE                   6    15
BLOODREDCHIRONOMIDAE          8    13
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + NAIDIDAE 36.00%
 Family Biotic Index + 7.15
 Scraper/Filterer Collector Ratio + 0.08
 Shredder/Total Ratio + 0.13
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 1.00
 EPT/Chironomids + 0.04

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
 significant organic pollution

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 18/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + half open
Other + tree-lined/rural; brackish macroinvertebrate + DECAPODA -
    Palaemonetes pugio (27); turtles

```


AN0704 # Lower Alloway Ck, Perry Rd, Lower Alloways Ck Twp, Salem Co, Salem Quad

September 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
CLAVIDAE                      7      49
PLAGIOSTOMIDAE                9      3
ASELLIDAE                     8      1
GAMMARIDAE                    4      6
LIBELLULIDAE                  9      2
COENAGRIONIDAE                9      2
CORIXIDAE                     7     14
ELMIDAE                       5      5
SIALIDAE                     4      2
LEPTOCERIDAE                  4      2
CHIRONOMIDAE                   6     10
BLOODREDCHIRONOMIDAE         8      4
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 12 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CLAVIDAE 49.00%
 Family Biotic Index + 6.69
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.04
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 2.00
 EPT/Chironomids + 0.14

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 15/1
Substrate + mud/sand
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree-lined/agricultural; brackish macroinvertebrates + ISOPODA
      - Cassidisca lunifrons (1), DECAPODA - Palaemonetes pugio
        (39), Rhithropanopeus harrisii (1); frogs

```

AN0705 # Sarah Run, Telegraph Rd, Quinton Twp, Salem Co & Cumberland Co,
Shiloh Quad

October 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      3
PLANARIIDAE                   3      2
DUGESIIDAE                    9      1
TUBIFICIDAE                   10     1
NAIDIDAE                      7      1
PLANORBIDAE                   6      1
PHYSIDAE                      7      7
SPHAERIIDAE                   8     68
GAMMARIDAE                    4      1
COENAGRIONIDAE               9      1
SIALIDAE                      4      2
HYDROPSYCHIDAE               4      8
PHRYGANEIDAE                  4      1
LIMNEPHILIDAE                4      1
SIMULIIDAE                    6      1
CHIRONOMIDAE                  6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 68.00%
Family Biotic Index + 7.31
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 10.00
EPT/Chironomids + 10.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + SPHAERIIDAE overwhelmingly dominant
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 3/<1
Substrate + mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + tree-lined/residential; agricultural upstr; macrophytes
      (duckweed/other); frogs

```

AN0706 # Stow Ck, Buckhorn Rd, L Alloways Ck Twp, Salem Co, & Cumberland Co
Shiloh Quad

September 21, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      1
DUGESIIDAE                    9      2
LUMBRICULIDAE                 8      11
TUBIFICIDAE                   10     12
HYDROBIIDAE                   8      6
SPHAERIIDAE                   8      1
GAMMARIDAE                    4      30
HEPTAGENIIDAE                 4      1
BAETIDAE                      4      8
AESHNIDAE                     3      1
CORDULIIDAE                   5      1
COENAGRIONIDAE                9      2
ELMIDAE                       5      3
SIALIDAE                      4      1
LEPTOCERIDAE                  4      2
PYRALIDAE                     5      1
CERATOPOGONIDAE               6      2
CHIRONOMIDAE                   6      15
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 30.00%
Family Biotic Index + 6.07
Scraper/Filterer Collector Ratio + 2.00
Shredder/Total Ratio + 0.18
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 11.00
EPT/Chironomids + 0.73

NJIS/Rating + 21/moderately impaired

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 12-15/2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; macrophytes

```

AN0707 # Canton Drain, Maskell Mill Rd, L Alloways Ck Twp, Salem Co,
Canton Quad

September 21, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      2
TUBIFICIDAE                   10     3
NAIDIDAE                       7      6
GLOSSIPHONIIDAE              8      2
PLANORBIDAE                   6      1
SIDIDAE                       3      2
DAPHNIDAE                     4      1
CHYDORIDAE                    4      1
GAMMARIDAE                    4      2
PALAEMONIDAE                 6      1
BAETIDAE                      4      3
CAENIDAE                      7      1
CORDULIIDAE                   5      3
COENAGRIONIDAE               9     16
ELMIDAE                       5      9
CHIRONOMIDAE                  6     26
BLOODREDCHIRONOMIDAE         8     21
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 26.00%
Family Biotic Index + 6.87
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 4.00
EPT/Chironomids + 0.09

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 15-20/1-2
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods/WMA; Maskell Mill Pond upstr; some macrophytes

```

AN0708 # Raccoon Ditch, Davis Mill Rd, Stow Ck Twp, Cumberland Co,
Shiloh Quad

September 21, 1995

))
Taxon (Family Level) FTV NOI
))
CLAVIDAE 7 10
HYDRIDAE 4 3
PROSTOMATIDAE 7 1
TUBIFICIDAE 10 37
ARRENURIDAE 5 1
DAPHNIDAE 4 1
CAENIDAE 7 1
LIBELLULIDAE 9 1
ELMIDAE 5 3
SIALIDAE 4 1
LEPTOCERIDAE 4 1
CHIRONOMIDAE 6 8
BLOODREDCHIRONOMIDAE 8 33
))
Number of Taxa + 13 # Population + 101
))

Dominant Family(s) + TUBIFICIDAE 36.63%
Family Biotic Index + 8.11
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 1.98
EPT/Chironomids + 0.05

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 50/1-2
Substrate + cobble
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; pond upstr; bluegreen algae; dead snails; fish (minnows)

AN0709 # Cohansey R, Beal Rd, Alloway Twp, Salem Co, Alloway Quad

October 19, 1995

))

Taxon (Family Level)	FTV	NOI
ENCHYTRAEIDAE	10	1
TUBIFICIDAE	10	4
ANCYLIDAE	7	2
SPHAERIIDAE	8	2
HEPTAGENIIDAE	4	6
EPHEMERELLIDAE	1	4
CORDULEGASTRIDAE	3	2
COENAGRIONIDAE	9	1
TAENIOPTERYGIDAE	2	3
VELIIDAE	9	1
HALIPLIDAE	5	1
DYTISCIDAE	5	1
ELMIDAE	5	1
CORYDALIDAE	0	5
HYDROPSYCHIDAE	4	50
PHRYGANEIDAE	4	1
MOLANNIDAE	6	1
CHIRONOMIDAE	6	14

))

Number of Taxa + 18 # Population + 100

))

Dominant Family(s) + HYDROPSYCHIDAE 50.00%
 Family Biotic Index + 4.47
 Scraper/Filterer Collector Ratio + 0.04
 Shredder/Total Ratio + 0.23
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
 %EPT + 65.00
 EPT/Chironomids + 4.64

NJIS/Rating + 27/non-impaired

))))))))))
 OBSERVATIONS
))))))))
 Clarity + clear
 Flow + slow
 Width/Depth(ft) + 4-5/1-2
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods/rural; frog

AN0710 # Cohansey R, Rt 540, Hopewell Twp, Cumberland Co, Alloway Quad

October 19, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9        9
DUGESIIDAE                     9        2
PROSTOMATIDAE                 7        1
TUBIFICIDAE                   10       16
NAIDIDAE                       7        4
LYMNAEIDAE                    6        1
ANCYLIDAE                     7        1
SPHAERIIDAE                   8        6
DAPHNIDAE                     4        1
ASELLIDAE                     8        2
GAMMARIDAE                    4       13
ENTOMOBRYIDAE                 10       3
CORIXIDAE                     7        5
GERRIDAE                      8        1
HALIPLIDAE                    5        6
STAPHYLINIDAE                 4        1
ELMIDAE                       5        5
CULICIDAE                     8        1
CHIRONOMIDAE                   6       29
BLOODREDCHIRONOMIDAE         8        1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 20 # Population + 108
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 26.85%
 Family Biotic Index + 6.94
 Scraper/Filterer Collector Ratio + 0.11
 Shredder/Total Ratio + 0.17
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 30/>2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural

```

AN0711 # Parsonage Run, Finley Rd, U Deerfield Twp, Cumberland Co,
Shiloh Quad

October 19, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7      1
TUBIFICIDAE                   10     79
SPHAERIIDAE                   8      6
GAMMARIDAE                    4     11
COENAGRIONIDAE                9      1
ELMIDAE                       5      1
CHIRONOMIDAE                  6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 7 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 79.00%
Family Biotic Index + 9.09
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + TUBIFICIDAE overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 8-10/1-2
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/agricultural; macrophytes; fish (minnows)

```


AN0712 # Cohansey R, Silver Lk Rd, U Deerfield Twp, Cumberland Co,
Shiloh Quad

September 26, 1995

```

))))))))))
Taxon (Family Level)      FTV    NOI
))))))))))
TUBIFICIDAE              10     1
NAIDIDAE                  7     9
HYDROBIIDAE              8     1
SPHAERIIDAE              8     4
DAPHNIDAE                 4     5
GAMMARIDAE                4    48
BAETIDAE                  4     1
CORDULIIDAE              5     1
COENAGRIONIDAE           9     6
CORIXIDAE                 7     4
NEPIDAE                   8     1
HALIPLIDAE                5     1
POLYCENTROPODIDAE        6     1
PYRALIDAE                 5     1
CULICIDAE                 8     1
CERATOPOGONIDAE          6     1
SIMULIIDAE                6     1
CHIRONOMIDAE              6     9
BLOODREDCHIRONOMIDAE     8     4
))))))))))
Number of Taxa + 19    # Population + 100
))))))))))

```

Dominant Family(s) + GAMMARIDAE 48.00%
Family Biotic Index + 5.46
Scraper/Filterer Collector Ratio + 0.07
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.15

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))
OBSERVATIONS
))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 20/2
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; creosote odor from new bridge; macrophytes; fish (minnows)

```

AN0713 # Barrett Run, Maple Ave, Hopewell Twp, Cumberland Co, Shiloh Quad

October 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4      8
DUGESIIDAE                    9      1
NEMATODA                      6      2
TUBIFICIDAE                   10     38
NAIDIDAE                      7      1
GLOSSIPHONIIDAE              8      1
PHYSIDAE                      7      1
SPHAERIIDAE                  8      13
DAPHNIDAE                    4      7
LESTIDAE                     9      1
COENAGRIONIDAE               9      10
BELOSTOMATIDAE              9      1
MESOVELIIDAE                 9      1
HALIPLIDAE                   5      1
DYTISCIDAE                   5      4
CULICIDAE                    8      1
CHIRONOMIDAE                 6      8
BLOODREDCHIRONOMIDAE        8      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 38.00%
Family Biotic Index + 7.93
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + slow
Width/Depth(ft) + 8/1
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/agricultural/fruit tree orchards; bluegreen algae;
stalked protozoans (Systylis loffi & Epistylis); macrophytes
(cattails/duckweed); fish (minnows)

```

AN0714 # Barrett Run, W Ave, Bridgeton, Cumberland Co, Bridgeton Quad

September 26, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9      3
DUGESIIDAE                     9      1
PROSTOMATIDAE                 7      15
LUMBRICULIDAE                 8      1
ENCHYTRAEIDAE                 10     2
TUBIFICIDAE                   10     5
NAIDIDAE                      7      1
LUMBRICIDAE                   10     1
PLANORBIDAE                   6      3
PHYSIDAE                      7      2
SPHAERIIDAE                   8      9
CAENIDAE                      7      1
HYDROPSYCHIDAE               4      16
SIMULIIDAE                    6      7
CHIRONOMIDAE                  6      30
BLOODREDCHIRONOMIDAE         8      3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16    # Population +    100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 30.00%
Family Biotic Index + 6.57
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 17.00
EPT/Chironomids + 0.52

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 20/<1
Substrate + cobble/sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/urban park; Sunset Lk upstr; macrophytes

```

AN0715 # Indian Fields Br, Grove St, Bridgeton, Cumberland Co, Bridgeton
 Quad

September 26, 1995

))

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	3
PROSTOMATIDAE	7	12
LUMBRICULIDAE	8	4
TUBIFICIDAE	10	5
NAIDIDAE	7	1
LUMBRICIDAE	10	3
GLOSSIPHONIIDAE	8	1
HYDROBIIDAE	8	8
SPHAERIIDAE	8	7
GAMMARIDAE	4	21
CHIRONOMIDAE	6	2
PLUMATELLIDAE	7	24

))

Number of Taxa + 12 # Population + 91

))

Dominant Family(s) + PLUMATELLIDAE 26.37%
 Family Biotic Index + 6.84
 Scraper/Filterer Collector Ratio + 0.24
 Shredder/Total Ratio + 0.00
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))))

OBSERVATIONS

))))))))))))

Clarity + -
 Flow + fast
 Width/Depth(ft) + 15/1
 Substrate + sand/gravel/concrete cobble
 Streambank Vegetation/Stability + poor/fair
 Canopy + mostly closed
 Other + industrial/commerical; Hunt/Wesson foods plant; snags; some
 macrophytes; fish (minnows); trash (several shopping
 carts/other)

AN0716 # Island Br, Fayette St, Bridgeton, Cumberland Co, Bridgeton Quad

September 26, 1995

NOT SAMPLED

)))))))))

OBSERVATIONS

)))))))))

Clarity + -

Flow + -

Width/Depth(ft) + -/-

Substrate + -

Streambank Vegetation/Stability + -

Canopy + -

Other + dry for its entire length

AN0717 # Pine Mt Ck, Rt 623, Greenwich Twp, Cumberland Co, Shiloh Quad

October 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9        4
PROSTOMATIDAE                 7        4
LYMNAEIDAE                    6        6
PLANORBIDAE                   6        5
PHYSIDAE                      7        2
SPHAERIIDAE                   8        40
GAMMARIDAE                    4        33
CAMBARIDAE                    5        1
SIALIDAE                      4        3
PHRYGANEIDAE                  4        1
CHIRONOMIDAE                  6        1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 11 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 40.00%
Family Biotic Index + 6.23
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 1.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 2/1
Substrate + sand/mud
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree-lined/low residential; cranberry bog upstr; macrophytes;
      fish (minnows)

```

AN0718 # Cedar Ck, Main St, Cedarville, Cumberland Co, Cedarville Quad

October 19, 1995

))

Taxon (Family Level)	FTV	NOI
SPONGILLIDAE	5	40
CLAVIDAE	7	5
TUBIFICIDAE	10	1
NAIDIDAE	7	13
HYDROBIIDAE	8	2
PHYSIDAE	7	2
CYPRIDAE	6	2
GAMMARIDAE	4	7
LEPTOCERIDAE	4	1
CERATOPOGONIDAE	6	1
CHIRONOMIDAE	6	12
BLOODREDCHIRONOMIDAE	8	14

))

Number of Taxa + 12 # Population + 100

))

Dominant Family(s) + SPONGILLIDAE 40.00%
Family Biotic Index + 6.00
Scraper/Filterer Collector Ratio + 0.05
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(ricoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.04

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 20+/-
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + residential; Cedar Lk upstr; exposed tidal flats; slightly
brackish; filamentous algae; crabs; fish (minnows)

October 19, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      1
PROSTOMATIDAE                 7     13
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     1
NAIDIDAE                      7      3
ANCYLIDAE                     7      1
PLANORBIDAE                   6      1
SPHAERIIDAE                   8     47
GAMMARIDAE                    4      7
TALITRIDAE                    8      1
GOMPHIDAE                    1      1
COENAGRIONIDAE               9      6
ELMIDAE                      5      2
HYDROPTILIDAE                4      3
PHRYGANEIDAE                 4      1
POLYCENTROPODIDAE            6      1
PYRALIDAE                    5      1
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6      8
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 19 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 47.00%
Family Biotic Index + 7.10
Scraper/Filterer Collector Ratio + 0.15
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 5.00
EPT/Chironomids + 0.63

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 4-6/1
Substrate + sand/gravel/some mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/rural; mosses; macrophytes; fish (eel)

```


AN0720 # Dividing Ck, Haleyville Rd, Commercial Twp, Cumberland Co,
Dividing Ck Quad

October 19, 1995

NOT SAMPLED

)))))))))

OBSERVATIONS

)))))))))

Clarity + -

Flow + -

Width/Depth(ft) + -/-

Substrate + -

Streambank Vegetation/Stability + -

Canopy + -

Other + bridge out

November 1, 1995

))

Taxon (Family Level)	FTV	NOI
LUMBRICULIDAE	8	7
TUBIFICIDAE	10	21
SPHAERIIDAE	8	12
ASELLIDAE	8	25
AESHNIDAE	3	1
LEUCTRIDAE	0	1
ELMIDAE	5	1
SIALIDAE	4	4
CORYDALIDAE	0	1
PSYCHOMYIIDAE	2	2
PHRYGANEIDAE	4	3
LIMNEPHILIDAE	4	2
MOLANNIDAE	6	3
ODONTOCERIDAE	0	2
CALAMOCERATIDAE	0	4
SIMULIIDAE	6	2
CHIRONOMIDAE	6	5
TABANIDAE	6	4

))

Number of Taxa + 18 # Population + 100

))

Dominant Family(s) + ASELLIDAE 25.00%
 Family Biotic Index + 6.94
 Scraper/Filterer Collector Ratio + 0.12
 Shredder/Total Ratio + 0.09
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
 %EPT + 17.00
 EPT/Chironomids + 3.40

NJIS/Rating + 24/non-impaired

))))))))))
 OBSERVATIONS
))))))))
 Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 20/1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + fair/fair
 Canopy + half open
 Other + woods; detritus; leaf litter; macrophytes

AN0722 # Scotland Run, Clayton - Williamstown Rd (Rt 610), Clayton,
Gloucester Co, Pitman E Quad

February 22, 1996

))
Taxon (Family Level) FTV NOI
))
DUGESIIDAE 9 2
PROSTOMATIDAE 7 1
TUBIFICIDAE 10 1
NAIDIDAE 7 2
LUMBRICIDAE 10 2
HYDROBIIDAE 8 1
LYMNAEIDAE 6 2
PHYSIDAE 7 13
SPHAERIIDAE 8 24
HEPTAGENIIDAE 4 1
EPHEMERELLIDAE 1 1
HYDROPSYCHIDAE 4 7
PHRYGANEIDAE 4 1
LIMNEPHILIDAE 4 1
LEPTOCERIDAE 4 1
SIMULIIDAE 6 21
CHIRONOMIDAE 6 26
))
Number of Taxa + 17 # Population + 107
))

Dominant Family(s) + CHIRONOMIDAE 24.30%
Family Biotic Index + 6.53
Scraper/Filterer Collector Ratio + 0.04
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 11.21
EPT/Chironomids + 0.46

NJIS/Rating + 24/non-impaired

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 25-30/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; ranger sta; Wilson Lk upstr; snags; foam; filamentous
diatoms; macrophytes; fish (catfish); trash (bottles/other)

February 14, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
SPHAERIIDAE                   8      2
GAMMARIDAE                     4     17
HEPTAGENIIDAE                 4      4
EPHEMERELLIDAE               1      1
AESHNIDAE                     3      1
ELMIDAE                       5      9
HYDROPSYCHIDAE               4      8
LIMNEPHILIDAE                4      2
MOLANNIDAE                   6      1
CALAMOCERATIDAE              0      1
LEPIDOSTOMATIDAE             1      3
BRACHYCENTRIDAE              1      5
TIPULIDAE                     3     10
SIMULIIDAE                    6      4
CHIRONOMIDAE                  6     32
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 32.00%
Family Biotic Index + 4.49
Scraper/Filterer Collector Ratio + 0.13
Shredder/Total Ratio + 0.26
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 25.00
EPT/Chironomids + 0.78

NJIS/Rating + 27/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 30/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/industrial; submerged stormwater or outfall pipe; twp
      composting facility ~200 feet from stream

```

AN0724 # Indian Br, Rt 47, Franklin Twp, Gloucester Co, Newfield Quad

February 14, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                    10     12
SPHAERIIDAE                    8      2
GAMMARIDAE                      4     48
HYDROPSYCHIDAE                 4      4
LIMNEPHILIDAE                  4      1
CALAMOCERATIDAE                0      2
SIMULIIDAE                      6     13
CHIRONOMIDAE                    6     18
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 8 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 48.00%
Family Biotic Index + 5.34
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 7.00
EPT/Chironomids + 0.39

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 8-10/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + -
Canopy + mostly closed
Other + woods/agricultural; stormwater pipes; leaf litter
      (oak/maple/cedar); lots of trash

```

AN0725 # Scotland Run, Rt 40, Malaga, Gloucester Co, Newfield Quad

February 15, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICIDAE                   10     2
SPHAERIIDAE                   8      7
ASELLIDAE                     8     12
GAMMARIDAE                    4      1
HEPTAGENIIDAE                4      1
EPHEMERELLIDAE               1      5
ELMIDAE                      5      2
HYDROPSYCHIDAE               4     55
LIMNEPHILIDAE                4      1
CHIRONOMIDAE                  6     17
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 10 # Population + 103
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + HYDROPSYCHIDAE 53.40%
Family Biotic Index + 5.06
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 60.19
EPT/Chironomids + 3.65

NJIS/Rating + 18/moderately impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 30/1.5
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + open
Other + residential; Malaga Lk upstr; leaf litter (maple); macrophytes

```


AN0727 # Ltl Ease Run, Grant Ave, Franklin Twp, Gloucester Co, Pitman E
Quad

February 15, 1996

))))))))))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	1
TUBIFICIDAE	10	7
SPHAERIIDAE	8	2
ASELLIDAE	8	1
HEPTAGENIIDAE	4	2
METRETOPODIDAE	2	1
LEPTOPHLEBIIDAE	2	5
CAPNIIDAE	1	1
HYDROPHILIDAE	5	1
SIALIDAE	4	3
CORYDALIDAE	0	4
PSYCHOMYIIDAE	2	2
ODONTOCERIDAE	0	1
LEPTOCERIDAE	4	1
LEPIDOSTOMATIDAE	1	2
POLYCENTROPODIDAE	6	2
SIMULIIDAE	6	8
CHIRONOMIDAE	6	54
BLOODREDCHIRONOMIDAE	8	2

))))))))))

Number of Taxa + 19	# Population +	100
---------------------	----------------	-----

))))))))))

Dominant Family(s) + CHIRONOMIDAE 54.00%
Family Biotic Index + 5.49
Scraper/Filterer Collector Ratio + 0.05
Shredder/Total Ratio + 0.21
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 17.00
EPT/Chironomids + 0.30
NJIS/Rating + 21/moderately impaired

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 20/1.5
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + -
Other + wood/low residential; leaf litter (maple); macrophytes; trash
(bottles/cans)

AN0728 # Ltl Ease Run, Leonard Cake Rd, Franklin Twp, Gloucester Co,
Newfield Quad

February 15, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      14
ANCYLIDAE                     7      1
SPHAERIIDAE                   8      3
GAMMARIDAE                    4      7
EPHEMERELLIDAE               1      6
NOTONECTIDAE                 9      1
HEBRIDAE                      9      1
GYRINIDAE                    3      1
ELMIDAE                      5      1
SIALIDAE                     4      1
CORYDALIDAE                  0      1
HYDROPSYCHIDAE              4      2
LIMNEPHILIDAE               4      1
TIPULIDAE                    3      1
SIMULIIDAE                   6      1
CHIRONOMIDAE                 6      21
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16  # Population + 63
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 33.33%
Family Biotic Index + 5.62
Scraper/Filterer Collector Ratio + 0.17
Shredder/Total Ratio + 0.29
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 14.29
EPT/Chironomids + 0.43

NJIS/Rating + 21/moderately impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 12/2
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + -
Other + woods/low residential; leaf litter (maple); trash (tires/lumber)

```

AN0729 # Still Run, Aura Rd, Aura (Elk Twp), Gloucester Co, Pitman W Quad

November 1, 1995

))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	11
NEMATODA	6	1
TUBIFICIDAE	10	9
NAIDIDAE	7	2
ANCYLIDAE	7	1
PLANORBIDAE	6	6
PHYSIDAE	7	1
SPHAERIIDAE	8	9
BAETIDAE	4	1
EPHEMERELLIDAE	1	4
COENAGRIONIDAE	9	5
TAENIOPTERYGIDAE	2	2
SIALIDAE	4	4
HYDROPSYCHIDAE	4	3
HYDROPTILIDAE	4	2
POLYCENTROPODIDAE	6	5
PYRALIDAE	5	1
CHIRONOMIDAE	6	4

))

Number of Taxa + 18 # Population + 71

))

Dominant Family(s) + PROSTOMATIDAE 15.49%
 Family Biotic Index + 6.49
 Scraper/Filterer Collector Ratio + 0.33
 Shredder/Total Ratio + 0.07
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
 %EPT + 23.94
 EPT/Chironomids + 4.25

NJIS/Rating + 24/non-impaired

))))))))))
 OBSERVATIONS
))))))))))
 Clarity + clear cedar
 Flow + moderate
 Width/Depth(ft) + 15/<1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + sparsely tree-lined/rural; snags; macrophytes

AN0730 # Still Run, Ltl Mill Rd, Franklin Twp, Gloucester Co, Pitman E
Quad

February 22, 1996

))))))))))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	4
ENCHYTRAEIDAE	10	2
TUBIFICIDAE	10	1
NAIDIDAE	7	2
HYDROBIIDAE	8	13
SPHAERIIDAE	8	6
PIONIDAE	4	2
CYPRIDAE	6	2
ASELLIDAE	8	1
TALITRIDAE	8	14
PALAEEMONIDAE	6	14
BAETIDAE	4	2
COENAGRIONIDAE	9	2
CORIXIDAE	7	4
NOTONECTIDAE	9	1
HALIPLIDAE	5	16
PHRYGANEIDAE	4	1
LIMNEPHILIDAE	4	1
POLYCENTROPODIDAE	6	3
CERATOPOGONIDAE	6	1
CHIRONOMIDAE	6	8

))))))))))

Number of Taxa + 21	# Population +	100
))))))))))))))))))))))))))))))

Dominant Family(s) + HALIPLIDAE 16.00%
 Family Biotic Index + 6.71
 Scraper/Filterer Collector Ratio + 1.30
 Shredder/Total Ratio + 0.03
 E(phemeroptera)+P(lecoptera)+T(riehoptera) + 4
 %EPT + 7.00
 EPT/Chironomids + 0.88

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
 OBSERVATIONS
))))))))))
 Clarity + clear
 Flow + slow
 Width/Depth(ft) + 10-15/>2
 Substrate + sand/mud
 Streambank Vegetation/Stability + -
 Canopy + mostly open
 Other + woods/wetlands; oil sheen; leaf litter (maple); macrophytes;
 trash

AN0731 # Reed Br, Royal Ave, Franklin Twp, Gloucester Co, Newfield Quad

February 15, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      1
PROSTOMATIDAE                 7      2
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     1
HYDROBIIDAE                   8      3
LYMNAEIDAE                    6      1
SPHAERIIDAE                   8     43
TAENIOPTERYGIDAE             2      1
ELMIDAE                        5      1
PHILOPOTAMIDAE               3      1
HYDROPSYCHIDAE               4      7
HYDROPTILIDAE                4      1
PYRALIDAE                     5      1
SIMULIIDAE                    6      1
CHIRONOMIDAE                  6     45
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 110
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 40.91%
Family Biotic Index + 6.71
Scraper/Filterer Collector Ratio + 0.08
Shredder/Total Ratio + 0.14
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 9.09
EPT/Chironomids + 0.22

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 20/1-1.5
Substrate + sand/gravel/rock
Streambank Vegetation/Stability + good/good
Canopy + -
Other + woods; Idle Acres Lk upstr; creosote odor; oil sheen; macrophytes

```

February 15, 1996

))))))))))

Taxon (Family Level)	FTV	NOI
LUMBRICULIDAE	8	1
TUBIFICIDAE	10	5
NAIDIDAE	7	1
PLANORBIDAE	6	1
SPHAERIIDAE	8	4
GAMMARIDAE	4	38
PALAEEMONIDAE	6	4
HEPTAGENIIDAE	4	3
EPHEMERELLIDAE	1	2
CAPNIIDAE	1	1
TAENIOPTERYGIDAE	2	3
HALIPLIDAE	5	1
GYRINIDAE	3	1
HYDROPTILIDAE	4	1
LIMNEPHILIDAE	4	1
LEPTOCERIDAE	4	1
POLYCENTROPODIDAE	6	1
TIPULIDAE	3	1
CHIRONOMIDAE	6	29
BLOODREDCHIRONOMIDAE	8	1

))))))))))

Number of Taxa + 20 # Population + 100

))))))))))

Dominant Family(s) + GAMMARIDAE 38.00%
Family Biotic Index + 5.11
Scraper/Filterer Collector Ratio + 2.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 13.00
EPT/Chironomids + 0.43

NJIS/Rating + 24/non-impaired

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 30/3
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + -
Other + woods; white geese upstr; leaf litter (oak/maple); macrophytes;
trash (tires)

AN0733 # Scotland Run, Willow Grove Rd Rt# 690, Pittsgrove Twp, Salem Co,
Newfield Quad

January 18, 1996

))
Taxon (Family Level) FTV NOI
))
SPONGILLIDAE 5 4
DUGESIIDAE 9 3
LUMBRICULIDAE 8 4
TUBIFICIDAE 10 1
NAIDIDAE 7 1
HYDROBIIDAE 8 2
PHYSIDAE 7 1
SPHAERIIDAE 8 3
GAMMARIDAE 4 5
PALAEMONIDAE 6 3
EPHEMERELLIDAE 1 2
COENAGRIONIDAE 9 2
TAENIOPTERYGIDAE 2 6
ELMIDAE 5 1
HYDROPSYCHIDAE 4 47
CHIRONOMIDAE 6 24
BLOODREDCHIRONOMIDAE 8 1
))
Number of Taxa + 17 # Population + 110
))

Dominant Family(s) + HYDROPSYCHIDAE 42.73%
Family Biotic Index + 5.07
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.18
E(phemeroptera)+P(lecoptera)+T(ricoptera) + 3
%EPT + 50.00
EPT/Chironomids + 2.20

NJIS/Rating + 21/moderately impaired

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 30-40/>2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/low residential; Willow Grove Lk upstr; sampled blw main
outlet; leaf litter (maple/oak); some foam; filamentous algae;
macrophytes; grass shrimp

February 14, 1996

))))))))))

Taxon (Family Level)	F*TV	NOI
NEMATODA	6	1
LUMBRICULIDAE	8	30
TUBIFICIDAE	10	20
HYDROBIIDAE	8	1
SPHAERIIDAE	8	4
ASELLIDAE	8	13
GAMMARIDAE	4	2
SIALIDAE	4	4
HYDROPSYCHIDAE	4	1
POLYCENTROPODIDAE	6	2
SIMULIIDAE	6	1
CHIRONOMIDAE	6	26

))))))))))

Number of Taxa + 12 # Population + 105

))))))))))

Dominant Family(s) + LUMBRICULIDAE 28.57%
 Family Biotic Index + 7.54
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.01
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 2.86
 EPT/Chironomids + 0.12

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear
 Flow + slow
 Width/Depth(ft) + 50-60/2
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods/powerlines/RR tracks; marshy & swampy upstr; oily
 residue; siltation; leaf litter (maple); detritus

AN0735 # Burnt Mill Br, Rt 55, Vineland, Cumberland Co, Newfield Quad

January 18, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                      6      1
LUMBRICULIDAE                 8      6
SPHAERIIDAE                   8      1
GAMMARIDAE                     4     16
EPHEMERELLIDAE                1      2
AESHNIDAE                     3      2
TAENIOPTERYGIDAE              2      7
ELMIDAE                       5      7
HYDROPSYCHIDAE                4      3
LIMNEPHILIDAE                 4     15
ODONTOCERIDAE                 0      4
LEPTOCERIDAE                  4      3
BRACHYCENTRIDAE               1      5
TIPULIDAE                     3      2
SIMULIIDAE                    6     18
CHIRONOMIDAE                  6      6
BLOODREDCHIRONOMIDAE          8      2
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SIMULIIDAE 18.00%
Family Biotic Index + 4.38
Scraper/Filterer Collector Ratio + 0.45
Shredder/Total Ratio + 0.16
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 39.00
EPT/Chironomids + 4.88

NJIS/Rating + 30/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 4-6/1-2
Substrate + sand/gravel/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (50% cedars); macrophytes

```


AN0736 # Green Br, Crow Pond Rd, Pittsgrove Twp, Salem Co, Newfield Quad

December 9, 1991

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     7
SPHAERIIDAE                   8      4
ASELLIDAE                     8     17
HEPTAGENIIDAE                 4      1
LEPTOPHLEBIIDAE              2      1
EPHEMERELLIDAE                1      2
COENAGRIONIDAE                9      1
ELMIDAE                        5      2
CORYDALIDAE                   0      1
HYDROPSYCHIDAE               4     17
LIMNNEPHILIDAE               4      1
ODONTOCERIDAE                 0      4
CALAMOCERATIDAE              0      1
LEPIDOSTOMATIDAE             1      1
SIMULIIDAE                    6      4
CHIRONOMIDAE                  6     31
TABANIDAE                     6      2
))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17 # Population + 97
))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 31.96%
 Family Biotic Index + 5.77
 Scraper/Filterer Collector Ratio + 0.19
 Shredder/Total Ratio + 0.31
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
 %EPT + 28.87
 EPT/Chironomids + 0.90

NJIS/Rating + 24/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 6/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; Water Temp 12.5EC; Cond 39 µmos; pH 5.5 su; DO 9.2 ppm

```

AN0737 # Green Br, Jesse Bridge Rd, Pittsgrove Twp, Salem Co, Newfield Quad

January 18, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                  8      1
TUBIFICIDAE                    10     2
NAIDIDAE                       7      3
SPHAERIIDAE                    8     13
HEPTAGENIIDAE                 4      5
LEPTOPHLEBIIDAE              2      1
EPHEMERELLIDAE               1      2
GOMPHIDAE                     1      1
ELMIDAE                       5      1
CORYDALIDAE                   0      4
HYDROPSYCHIDAE               4      6
LIMNEPHILIDAE                4      3
SIMULIIDAE                    6     12
CHIRONOMIDAE                  6     45
BLOODREDCHIRONOMIDAE         8      1
))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 45.00%
 Family Biotic Index + 5.69
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.37
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
 %EPT + 17.00
 EPT/Chironomids + 0.37

NJIS/Rating + 18/moderately impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 6-8/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/campground; leaf litter (maple); filamentous diatoms;
      trash (tires/bottles)

```

AN0738 # Blackwater Br, Main Rd, Franklin Twp, Gloucester Co, Buena Quad

February 14, 1996

)))))))))

Taxon (Family Level)	FTV	NOI
ENCHYTRAEIDAE	10	3
TUBIFICIDAE	10	4
SPHAERIIDAE	8	17
LIMNEPHILIDAE	4	2
TIPULIDAE	3	1
CHIRONOMIDAE	6	73

)))))))))
Number of Taxa + 6 # Population + 100
)))))))))

Dominant Family(s) + CHIRONOMIDAE 73.00%
Family Biotic Index + 6.55
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.68
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.00
EPT/Chironomids + 0.03

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + CHIRONOMIDAE overwhelmingly dominant
paucity of clean water organisms

)))))))))
OBSERVATIONS
)))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 8-10/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/commercial; auto repair shop within 100 ft; leaf litter
(maple); macrophytes; trash

AN0739 # Blackwater Br, Maurice R Pkwy, Vineland, Cumberland Co,
Newfield Quad

February 14, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4      1
TUBIFICIDAE                   10     6
NAIDIDAE                      7      1
SPHAERIIDAE                   8      4
GAMMARIDAE                    4     61
SIALIDAE                      4      1
PSYCHOMYIIDAE                2      2
HYDROPSYCHIDAE              4     12
HYDROPTILIDAE                4      2
LEPTOCERIDAE                 4      1
POLYCENTROPODIDAE           6      2
PSYCHODIDAE                  10     1
CHIRONOMIDAE                  6     12
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13  # Population + 106
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 57.55%
 Family Biotic Index + 4.80
 Scraper/Filterer Collector Ratio + 0.22
 Shredder/Total Ratio + 0.00
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
 %EPT + 17.92
 EPT/Chironomids + 1.58

NJIS/Rating + 21/moderately impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow-moderate
Width/Depth(ft) + 15-20/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/WMA; leaf litter (maple); filamentous green algae;
      macrophytes; fish; trash (cinder block debris); groundwater
      monitoring wells; USGS gage

```

AN0740 # Maurice R, Almond Ave, Vineland, Cumberland Co, Millville Quad

December 5, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7        2
NEMATODA                      6        1
TUBIFICIDAE                   10       11
LYMNAEIDAE                    6        1
PHYSIDAE                      7        2
SPHAERIIDAE                   8        4
GAMMARIDAE                    4       13
CORDULIIDAE                   5        1
COENAGRIONIDAE               9        1
TAENIOPTERYGIDAE             2       28
SIALIDAE                      4        1
HYDROPSYCHIDAE               4       31
HYDROPTILIDAE                4        1
CHIRONOMIDAE                  6        3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + HYDROPSYCHIDAE 31.00%
Family Biotic Index + 4.54
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 60.00
EPT/Chironomids + 20.00

NJIS/Rating + 27/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 50-60/1-3
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/park; leaf litter (maple); macrophytes; USGS gage

```

AN0741 # Muddy Run, Burlington Rd, U Pittsgrove Twp, Salem Co, Elmer Quad

January 17, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PROSTOMATIDAE                 7      1
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     6
NAIDIDAE                      7      1
LYMNAEIDAE                    6      2
PLANORBIDAE                   6      4
SPHAERIIDAE                   8      1
CHYDORIDAE                    4      3
BAETIDAE                      4      1
COENAGRIONIDAE                9      7
DYTISCIDAE                    5      2
ELMIDAE                       5     28
HYDROPTILIDAE                4      1
CHIRONOMIDAE                  6     31
BLOODREDCHIRONOMIDAE         8     11
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 31.00%
Family Biotic Index + 6.33
Scraper/Filterer Collector Ratio + 0.29
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.05

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 10-12/2
Substrate + mud
Streambank Vegetation/Stability + -
Canopy + open
Other + agricultural; channelized; stormwater pipes; macrophytes; fish

```

AN0742 # Muddy Run, Dutch Row Rd, Elmer, Salem Co, Elmer Quad

January 18, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      6
PROSTOMATIDAE                 7      2
TUBIFICIDAE                   10     13
HYDROBIIDAE                   8      3
PLANORBIDAE                   6      1
PHYSIDAE                      7      1
SPHAERIIDAE                   8      6
TALITRIDAE                    8      2
DYTISCIDAE                    5      1
CHIRONOMIDAE                  6      18
BLOODREDCHIRONOMIDAE         8      47
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 11 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + BLOODREDCHIRONOMIDAE 47.00%
Family Biotic Index + 7.88
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 6-8/>2
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree-lined/urban; Elmer Lk upstr; leaf litter (maple);
      macrophytes; shell abnormalities on 2 Physella integra integra

```

AN0743 # Palatine Br, Shirley Rd, U Pittsgrove Twp, Salem Co, Elmer Quad

January 17, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                    10     2
SPHAERIIDAE                    8     16
EPHEMERELLIDAE                 1     1
TAENIOPTERYGIDAE              2     1
ELMIDAE                        5     4
TIPULIDAE                      3     1
SIMULIIDAE                     6    42
CHIRONOMIDAE                   6    33
BLOODREDCHIRONOMIDAE          8     1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 101
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SIMULIIDAE 41.58%
Family Biotic Index + 6.26
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 1.98
EPT/Chironomids + 0.06

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 6-8/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + -
Canopy + mostly open
Other + tree-lined/agricultural; leaf litter (maple); macrophytes; fish

```


AN0745 # Muddy Run, blw Palatine Lk, Pittsgrove Twp, Salem Co, Elmer Quad

December 12, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLAGIOSTOMIDAE                9        1
DUGESIIDAE                    9        5
PROSTOMATIDAE                 7        1
SERPULIDAE                    4        1
LUMBRICULIDAE                 8        1
NAIDIDAE                      7        2
HYDROBIIDAE                   8        1
LYMNAEIDAE                    6        1
PLANORBIDAE                   6        3
PHYSIDAE                      7        1
SPHAERIIDAE                   8        9
COENAGRIONIDAE                9        1
HYDROPSYCHIDAE                4        7
SIMULIIDAE                    6        1
CHIRONOMIDAE                  6        15
BLOODREDCHIRONOMIDAE          8        1
PLUMATELLIDAE                 7        48
PECTINATELLIDAE               3        1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + PLUMATELLIDAE 48.00%
 Family Biotic Index + 6.78
 Scraper/Filterer Collector Ratio + 0.01
 Shredder/Total Ratio + 0.02
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 7.00
 EPT/Chironomids + 0.44

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 25/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; Palantine Lk upstr; foam; leaf litter
      (oak/maple/sweetgum); macrophytes; fish

```

AN0746 # Indian Run, Cedar Ln Rd, U Pittsgrove Twp, Salem Co, Elmer Quad

January 17, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     26
NAIDIDAE                       7      1
LUMBRICIDAE                   10     1
PLANORBIDAE                    6      1
PHYSIDAE                       7      1
SPHAERIIDAE                   8     31
ELMIDAE                       5      1
TIPULIDAE                      3      1
PSYCHODIDAE                   10     1
SIMULIIDAE                     6      2
CHIRONOMIDAE                   6     26
PLUMATELLIDAE                 7      8
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 12 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 31.00%
Family Biotic Index + 7.80
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.03
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + turbid
Flow + slow-moderate
Width/Depth(ft) + 4-6/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; grass in sample

```

AN0747 # Indian Run, Husted Sta Rd, Pittsgrove Twp, Salem Co, Elmer Quad

January 17, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                      6      1
PLANORBIDAE                   6      2
SPHAERIIDAE                   8      9
COENAGRIONIDAE                9      2
CHIRONOMIDAE                  6     83
PLUMATELLIDAE                 7      3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 6 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 83.00%
 Family Biotic Index + 6.27
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.04
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + CHIRONOMIDAE overwhelmingly dominant
paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10-15/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; leaf litter (maple); filamentous green
      algae; mosses

```

AN0748 # Muddy Run, Parvins Mill Rd, Pittsgrove Twp, Salem Co, Elmer Quad

January 17, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                      4        2
PLAGIOSTOMIDAE                9        3
DUGESIIDAE                     9        2
PROSTOMATIDAE                 7        1
LUMBRICULIDAE                 8        3
TUBIFICIDAE                   10       10
HYDROBIIDAE                   8        1
PHYSIDAE                      7        2
UNIONIDAE                     8        1
SPHAERIIDAE                   8        4
CAENIDAE                      7        1
COENAGRIONIDAE                9        1
CERATOPOGONIDAE               6        1
CHIRONOMIDAE                   6       49
BLOODREDCHIRONOMIDAE          8       10
EMPIDIDAE                     6        1
EPHYDRIDAE                    6        1
PLUMATELLIDAE                 7        7
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 49.00%
Family Biotic Index + 7.03
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.12
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.02

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 30-40/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/St Pk; Parvin Lk upstr

```

November 30, 1995

))

Taxon (Family Level)	FTV	NOI
PLAGIOSTOMIDAE	9	2
PROSTOMATIDAE	7	1
TUBIFICIDAE	10	4
HYDROBIIDAE	8	2
LYMNAEIDAE	6	1
ANCYLIDAE	7	1
PHYSIDAE	7	1
SPHAERIIDAE	8	5
GAMMARIDAE	4	22
PALAEEMONIDAE	6	2
CAENIDAE	7	2
GOMPHIDAE	1	3
CORDULIIDAE	5	1
COENAGRIONIDAE	9	9
TAENIOPTERYGIDAE	2	2
HALIPLIDAE	5	1
ELMIDAE	5	6
SIALIDAE	4	1
HYDROPSYCHIDAE	4	1
LEPTOCERIDAE	4	2
CHIRONOMIDAE	6	36
BLOODREDCHIRONOMIDAE	8	3

))

Number of Taxa + 22 # Population + 108

))

Dominant Family(s) + CHIRONOMIDAE 33.33%
 Family Biotic Index + 5.92
 Scraper/Filterer Collector Ratio + 0.33
 Shredder/Total Ratio + 0.19
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
 %EPT + 6.48
 EPT/Chironomids + 0.18

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))))
 OBSERVATIONS
))))))))))
 Clarity + turbid cedar
 Flow + fast
 Width/Depth(ft) + 30/3
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods; leaf litter (maple); macrophytes; fish (sunfish)

AN0750 # Parvin Br, Rt 55, Vineland, Cumberland Co, Millville Quad

December 12, 1995

))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	15
LUMBRICULIDAE	8	1
TUBIFICIDAE	10	3
LUMBRICIDAE	10	1
LYMNAEIDAE	6	4
ASELLIDAE	8	2
SIALIDAE	4	1
PTYCHOPTERIDAE	8	1
CHIRONOMIDAE	6	20

))

Number of Taxa + 9 # Population + 48

))

Dominant Family(s) + CHIRONOMIDAE 41.67%
 Family Biotic Index + 6.77
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.02
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
 %EPT + 0.00
 EPT/Chironomids + 0.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))))))
 OBSERVATIONS
))))))))))))))
 Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 25/1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods; iron precipitate; malodorous; leaf litter (maple);
 macrophytes

AN0751 # Maurice R, Sherman Ave, Vineland, Cumberland Co, Millville Quad

November 30, 1995

))

Taxon (Family Level)	FTV	NOI
PROSTOMATIDAE	7	7
TUBIFICIDAE	10	12
HYDROBIIDAE	8	2
PLANORBIDAE	6	1
PHYSIDAE	7	9
SPHAERIIDAE	8	7
CYCLOPIDAE	4	1
GAMMARIDAE	4	31
LIBELLULIDAE	9	1
COENAGRIONIDAE	9	8
TAENIOPTERYGIDAE	2	15
NEPIDAE	8	1
HALIPLIDAE	5	2
SIALIDAE	4	1
LIMNEPHILIDAE	4	3
PYRALIDAE	5	3
CHIRONOMIDAE	6	5
BLOODREDCHIRONOMIDAE	8	1

))

Number of Taxa + 18 # Population + 110

))

Dominant Family(s) + GAMMARIDAE 28.18%
 Family Biotic Index + 5.78
 Scraper/Filterer Collector Ratio + 0.25
 Shredder/Total Ratio + 0.04
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 16.36
 EPT/Chironomids + 3.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
 OBSERVATIONS
))))))))
 Clarity + cedar
 Flow + fast
 Width/Depth(ft) + 50/2
 Substrate + sand/gravel/cobble
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods/WMA; leaf litter (maple); some filamentous algae;
 macrophytes; much trash; USGS gaging sta

AN0752 # Lebanon Br, Sherman Ave, Deerfield Twp, Cumberland Co,
Millville Quad

November 30, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      7
NAIDIDAE                      7      1
ASELLIDAE                     8      5
GAMMARIDAE                    4      1
HEPTAGENIIDAE                4      3
LEPTOPHLEBIIDAE              2      1
EPHEMERELLIDAE               1      1
AESHNIDAE                    3      1
LEUCTRIDAE                    0     21
CAPNIIDAE                    1     12
ELMIDAE                      5      1
HYDROPSYCHIDAE               4     12
LIMNEPHILIDAE                4      7
CALAMOCERATIDAE              0      2
BRACHYCENTRIDAE              1      2
SIMULIIDAE                   6      2
CHIRONOMIDAE                  6     21
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + LEUCTRIDAE & CHIRONOMIDAE 21.00%
Family Biotic Index + 3.58
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.63
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 61.00
EPT/Chironomids + 2.90

NJIS/Rating + 30/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/low residential; some snags; macrophytes

```

AN0753 # Mill Ck, off Spur 552 (Union Lk WMA), Millville, Cumberland Co,
Millville Quad

December 5, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      1
TUBIFICIDAE                   10     4
SPHAERIIDAE                   8      1
HEPTAGENIIDAE                 4      1
EPHEMERELLIDAE                1      4
LEUCTRIDAE                    0      8
CAPNIIDAE                     1     18
TAENIOPTERYGIDAE             2      4
DYTISCIDAE                    5      1
ELMIDAE                       5      8
CORYDALIDAE                   0      1
HYDROPSYCHIDAE               4      3
LIMNEPHILIDAE                4      4
ODONTOCERIDAE                0      2
BRACHYCENTRIDAE              1     20
POLYCENTROPODIDAE            6      1
TIPULIDAE                     3      6
SIMULIIDAE                    6      1
CHIRONOMIDAE                  6      9
BLOODREDCHIRONOMIDAE         8      1
TABANIDAE                     6      2
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 21  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + BRACHYCENTRIDAE 20.00%
 Family Biotic Index + 2.87
 Scraper/Filterer Collector Ratio + 0.57
 Shredder/Total Ratio + 0.37
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 10
 %EPT + 65.00
 EPT/Chironomids + 6.50

NJIS/Rating + 30/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 10-15/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + closed
Other + woods/WMA; leaf litter (maple/pine); macrophytes

```

AN0754 # White Marsh Run, Hogbin Rd, Millville, Cumberland Co, Millville
Quad

October 25, 1990

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      21
TUBIFICIDAE                   10     3
SPHAERIIDAE                   8      2
ASELLIDAE                     8      3
GAMMARIDAE                    4     48
ELMIDAE                       5      1
HYDROPSYCHIDAE               4      4
PHRYGANEIDAE                 4      1
LIMNephilidae                4      2
MOLANNIDAE                   6      2
CALAMOCERATIDAE              0      3
TIPULIDAE                     3      2
CHIRONOMIDAE                  6      7
TABANIDAE                     6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 14 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 48.00%
Family Biotic Index + 5.29
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 12.00
EPT/Chironomids + 1.71

NJIS/Rating + 18/moderately impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 6/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; macrophytes

```

AN0755 # White Marsh Run, Rt 555, Millville, Cumberland Co, Millville Quad

November 30, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8        1
TUBIFICIDAE                   10       28
HYDROBIIDAE                   8        3
SPHAERIIDAE                   8        1
CHYDORIDAE                    4        3
GAMMARIDAE                    4       50
CAENIDAE                      7        2
COENAGRIONIDAE               9        1
HALIPLIDAE                    5        1
NOTERIDAE                    4        1
PSYCHODIDAE                  10       1
CHIRONOMIDAE                  6        7
BLOODREDCHIRONOMIDAE         8        1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + GAMMARIDAE 50.00%
Family Biotic Index + 6.24
Scraper/Filterer Collector Ratio + 0.43
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.00
EPT/Chironomids + 0.25

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 10/<1
Substrate + sand/gravel/cobble
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree-lined/residential; leaf litter (maple/willow); some water
      milfoil macrophytes; minnow fish; antenna abnormality on 1
      Gammarus fasciatus; trash (car parts/bottles); plastic odor

```

October 31, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      1
CHYDORIDAE                    4     21
MACROTHRICIDAE               4      4
ASELLIDAE                    8     11
ISOTOMIDAE                   10     1
LEPTOPHLEBIIDAE             2      3
CORDULIIDAE                   5      1
COENAGRIONIDAE              9      2
CORIXIDAE                    7     14
DYTISCIDAE                   5      2
CURCULIONIDAE                7      1
PHRYGANEIDAE                 4      2
LIMNEPHILIDAE                4      1
TIPULIDAE                    3      3
CHIRONOMIDAE                  6     40
BLOODREDCHIRONOMIDAE        8      1
TABANIDAE                    6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17  # Population + 109
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 36.70%
Family Biotic Index + 5.73
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.33
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 5.50
EPT/Chironomids + 0.15

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 8-10/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (some cedars); detritus; filamentous green algae;
      macrophytes; fish; trash (tires/other)

```

AN0757 # Cedar Br, Italia Ave, Vineland, Cumberland Co, Five Pts Quad

December 5, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                      6        1
LUMBRICULIDAE                 8        2
TUBIFICIDAE                   10       2
LYMNAEIDAE                     6        2
PLANORBIDAE                    6        1
SPHAERIIDAE                    8       16
LIBERTIIDAE                    4        1
DAPHNIDAE                      4        2
GAMMARIDAE                     4       18
COENAGRIONIDAE                9        2
TAENIOPTERYGIDAE              2        3
SIALIDAE                       4        2
LEPTOCERIDAE                  4        1
CHIRONOMIDAE                   6       41
BLOODREDCHIRONOMIDAE          8        6
))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 41.00%
Family Biotic Index + 6.02
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.35
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 4.00
EPT/Chironomids + 0.09

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10-15/2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/rural; detritus; leaf litter (maple); macrophytes

```

AN0758 # Panther Br, Italia Ave, Vineland, Cumberland Co, Five Pts Quad

December 5, 1995

))

Taxon (Family Level)	FTV	NOI
TUBIFICIDAE	10	9
GLOSSIPHONIIDAE	8	1
PHYSIDAE	7	1
SPHAERIIDAE	8	7
GAMMARIDAE	4	21
EPHEMERELLIDAE	1	11
COENAGRIONIDAE	9	2
TAENIOPTERYGIDAE	2	2
ELMIDAE	5	2
SIALIDAE	4	4
LIMNEPHILIDAE	4	1
CHIRONOMIDAE	6	37
BLOODREDCHIRONOMIDAE	8	2

))

Number of Taxa + 13 # Population + 100

))

Dominant Family(s) + CHIRONOMIDAE 37.00%
 Family Biotic Index + 5.46
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.47
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
 %EPT + 14.00
 EPT/Chironomids + 0.36

NJIS/Rating + 21/moderately impaired

))))))))))
 OBSERVATIONS
))))))))
 Clarity + clear
 Flow + slow
 Width/Depth(ft) + 10-15/2-3
 Substrate + sand/mud
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods/residential; detritus; leaf litter (maple)

AN0759 # Manantico Ck, Hance Bridge Rd, Vineland, Cumberland Co, Five
Pts Quad

November 28, 1995

Taxon (Family Level)	FTV	NOI
DUGESIIDAE	9	1
PROSTOMATIDAE	7	16
NEMATODA	6	1
LUMBRICULIDAE	8	1
TUBIFICIDAE	10	3
ANCYLIDAE	7	1
PLANORBIDAE	6	10
PHYSIDAE	7	3
SPHAERIIDAE	8	19
CYCLOPIDAE	4	2
GAMMARIDAE	4	1
TAENIOPTERYGIDAE	2	11
GYRINIDAE	3	1
ELMIDAE	5	6
HYDROPSYCHIDAE	4	1
SIMULIIDAE	6	19
CHIRONOMIDAE	6	3
BLOODREDCHIRONOMIDAE	8	1
))))))))))		
Number of Taxa + 18	# Population +	100
))))))))))		

Dominant Family(s) + SPHAERIIDAE & SIMULIIDAE 19.00%
Family Biotic Index + 6.16
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 12.00
EPT/Chironomids + 3.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 15-18/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/residential; detritus; leaf litter (maple); macrophytes

AN0760 # Manantico Ck, Rt 49, Millville, Cumberland Co, Five Pts Quad

November 28, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                    10       6
SPHAERIIDAE                    8        5
ASELLIDAE                      8        3
GAMMARIDAE                     4       13
HEPTAGENIIDAE                 4        7
COENAGRIONIDAE                9        1
CAPNIIDAE                     1        3
TAENIOPTERYGIDAE              2       16
ELMIDAE                       5        4
CORYDALIDAE                   0        4
HYDROPSYCHIDAE                4        9
LIMNEPHILIDAE                 4        7
BRACHYCENTRIDAE               1        7
SERICOSTOMATIDAE              3        3
TIPULIDAE                     3        1
SIMULIIDAE                    6        1
CHIRONOMIDAE                   6       10
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TAENIOPTERYGIDAE 16.00%
Family Biotic Index + 4.17
Scraper/Filterer Collector Ratio + 0.13
Shredder/Total Ratio + 0.27
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 52.00
EPT/Chironomids + 5.20

NJIS/Rating + 30/non-impaired

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + turbid
Flow + slow
Width/Depth(ft) + 18-20/>2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/rural; leaf litter (maple/oak/willow/cherry/birch);
      macrophytes; fish

```

AN0761 # Berryman Br, Rt 49, Millville, Cumberland Co, Five Pts Quad

November 28, 1995

))

Taxon (Family Level) FTV NOI
))

LUMBRICULIDAE	8	1
TUBIFICIDAE	10	4
SPHAERIIDAE	8	3
ASELLIDAE	8	4
GAMMARIDAE	4	19
ONYCHIURIDAE	10	1
HEPTAGENIIDAE	4	1
LEPTOPHLEBIIDAE	2	7
EPHEMERELLIDAE	1	1
COENAGRIONIDAE	9	8
LEUCTRIDAE	0	2
CAPNIIDAE	1	6
CHLOROPERLIDAE	1	1
GYRINIDAE	3	1
ELMIDAE	5	3
SIALIDAE	4	4
CORYDALIDAE	0	2
PSYCHOMYIIDAE	2	1
LIMNEPHILIDAE	4	12
MOLANNIDAE	6	1
ODONTOCERIDAE	0	1
CALAMOCERATIDAE	0	5
TIPULIDAE	3	1
SIMULIIDAE	6	2
CHIRONOMIDAE	6	16
BLOODREDCHIRONOMIDAE	8	2
EMPIDIDAE	6	1

))

Number of Taxa + 27 # Population + 110

))

Dominant Family(s) + GAMMARIDAE 17.27%

Family Biotic Index + 4.65

Scraper/Filterer Collector Ratio + 1.17

Shredder/Total Ratio + 0.31

E(phemeroptera)+P(lecoptera)+T(richoptera) + 11

%EPT + 34.55

EPT/Chironomids + 2.11

NJIS/Rating + 27/non-impaired

))))))))))))

OBSERVATIONS

))))))))))))

Clarity + clear

Flow + slow-moderate

Width/Depth(ft) + 6-12/1-2

Substrate + sand/gravel

Streambank Vegetation/Stability + good/good

Canopy + mostly closed

Other + woods/rural; detritus; leaf litter (maple); some macrophytes;
abnormality on 1 Crangonyx serratus

AN0762 # Manumuskin R, Old Mays Landing Rd, Maurice R Twp, Cumberland Co, Five Pts Quad

November 28, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9      1
LUMBRICULIDAE                 8      2
NAIDIDAE                      7      1
SPHAERIIDAE                   8      3
ASELLIDAE                     8      9
LEPTOPHLEBIIDAE              2      7
CORDULEGASTRIDAE             3      1
CAPNIIDAE                     1      1
TAENIOPTERYGIDAE             2      9
CORYDALIDAE                   0      3
PHILOPOTAMIDAE               3      4
HYDROPSYCHIDAE               4      7
LIMNEPHILIDAE                 4     15
CERATOPOGONIDAE              6      1
SIMULIIDAE                    6      6
CHIRONOMIDAE                  6     30
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 30.00%
Family Biotic Index + 4.86
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.31
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 43.00
EPT/Chironomids + 1.43

NJIS/Rating + 30/non-impaired

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 8-10/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; impoundment upstr; leaf litter (maple); macrophytes;
      fish (minnows)

```

AN0763 # Manumuskin R, Fries Mill (off Cumberland - Port Elizabeth Rd),
 Maurice R Twp, Cumberland Co, Port Elizabeth Quad

November 28, 1995

))

Taxon (Family Level)	FTV	NOI
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))		
DUGESIIDAE	9	1
LUMBRICULIDAE	8	1
NAIDIDAE	7	2
MALACONOTHRIDAE	5	2
SIDIDAE	3	1
ASELLIDAE	8	5
TALITRIDAE	8	2
PODURIDAE	10	2
HEPTAGENIIDAE	4	5
METRETOPODIDAE	2	1
LEPTOPHLEBIIDAE	2	5
AESHNIDAE	3	1
LIBELLULIDAE	9	1
LEUCTRIDAE	0	1
CAPNIIDAE	1	2
TAENIOPTERYGIDAE	2	3
PERLIDAE	1	1
CORIXIDAE	7	3
DYTISCIDAE	5	2
CORYDALIDAE	0	3
HYDROPSYCHIDAE	4	14
HYDROPTILIDAE	4	2
LEPTOCERIDAE	4	1
BRACHYCENTRIDAE	1	6
POLYCENTROPODIDAE	6	1
CHIRONOMIDAE	6	30
BLOODREDCHIRONOMIDAE	8	1
TABANIDAE	6	1

))

Number of Taxa + 28 # Population + 100

))

Dominant Family(s) + CHIRONOMIDAE 30.00%

Family Biotic Index + 4.78

Scraper/Filterer Collector Ratio + 0.16

Shredder/Total Ratio + 0.21

E(phemeroptera)+P(lecoptera)+T(richoptera) + 12

%EPT + 42.00

EPT/Chironomids + 1.35

NJIS/Rating + 30/non-impaired

))))))))))))

OBSERVATIONS

))))))))))))

Clarity + clear cedar

Flow + slow

Width/Depth(ft) + 20-25/>2

Substrate + sand/gravel

Streambank Vegetation/Stability + good/good

Canopy + open

Other + woods (some cedars); leaf litter (maple); filamentous algae;
 macrophytes; fish (sunfish)

AN0764 # Muskee Ck, Rt 548, Maurice R Twp, Cumberland Co, Port Elizabeth Quad

October 31, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      9
ASELLIDAE                     8     12
LEPTOPHLEBIIDAE              2      3
CORIXIDAE                     7      6
GYRINIDAE                     3      1
ELMIDAE                       5      4
PHRYGANEIDAE                 4      1
LIMNEPHILIDAE                4      3
MOLANNIDAE                   6      3
ODONTOCERIDAE                0      1
CALAMOCERATIDAE              0     14
LEPTOCERIDAE                 4      4
POLYCENTROPODIDAE            6      7
CERATOPOGONIDAE              6      2
CHIRONOMIDAE                  6     28
BLOODREDCHIRONOMIDAE         8      1
TABANIDAE                     6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 28.00%
 Family Biotic Index + 5.25
 Scraper/Filterer Collector Ratio + 1.00
 Shredder/Total Ratio + 0.27
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
 %EPT + 36.00
 EPT/Chironomids + 1.24

NJIS/Rating + 27/non-impaired

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 15-18/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (some cedars); leaf litter (maple); macrophytes; fish
      (small)

```

February 22, 1996

))

Taxon (Family Level)	FTV	NOI
ENCHYTRAEIDAE	10	1
NAIDIDAE	7	2
ASELLIDAE	8	1
COENAGRIONIDAE	9	1
HYDROPHILIDAE	5	1
HYDROPTILIDAE	4	88
LIMNEPHILIDAE	4	2
MOLANNIDAE	6	1
CHIRONOMIDAE	6	10

))

Number of Taxa + 9 # Population + 107

))

Dominant Family(s) + HYDROPTILIDAE 82.24%
 Family Biotic Index + 4.41
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.03
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
 %EPT + 85.05
 EPT/Chironomids + 9.10

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + HYDROPTILIDAE overwhelmingly dominant

))))))))))))
 OBSERVATIONS
))))))))))
 Clarity + clear cedar
 Flow + slow
 Width/Depth(ft) + 10-12/2-3
 Substrate + sand
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods (some cedars); Hoffmans Mill Pond upstr; foam; snags;
 leaf litter (oak); filamentous green algae; macrophytes

AN0766 # Savages Run, Sunset Rd, Dennis Twp, Cape May Co, Heislerville Quad

February 22, 1996

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                    10     4
NAIDIDAE                       7     1
SPHAERIIDAE                    8    14
ONYCHIURIDAE                   10     2
LEPTOPHLEBIIDAE               2     4
COENAGRIONIDAE                 9     1
LEUCTRIDAE                     0     1
DYTISCIDAE                     5     1
SIALIDAE                       4     9
PHRYGANEIDAE                   4     2
LIMNEPHILIDAE                 4     6
CALAMOCERATIDAE               0     1
LEPTOCERIDAE                   4     1
POLYCENTROPODIDAE             6     2
SIMULIIDAE                     6     1
CHIRONOMIDAE                   6    50
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 16  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + CHIRONOMIDAE 50.00%
Family Biotic Index + 5.91
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 17.00
EPT/Chironomids + 0.34

NJIS/Rating + 21/moderately impaired

```

))))))))))))
OBSERVATIONS
))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 12-15/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; leaf litter (maple/pine/cedar); macrophytes; fish

```

AN0767 # Dennis Ck trib, Rt 47 (blw Dennisville Lk), Dennis Twp, Cape
May Co, Woodbine Quad

February 27, 1996

))
Taxon (Family Level) FTV NOI
))
TUBIFICIDAE 10 41
NAIDIDAE 7 30
PLANORBIDAE 6 2
GAMMARIDAE 4 3
LEPTOPHLEBIIDAE 2 1
CAENIDAE 7 1
CHIRONOMIDAE 6 16
BLOODREDCHIRONOMIDAE 8 6
))
Number of Taxa + 8 # Population + 100
))

Dominant Family(s) + TUBIFICIDAE 41.00%
Family Biotic Index + 7.97
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.09

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + paucity of clean water organisms
significant organic pollution

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + -
Width/Depth(ft) + 15/1
Substrate + sand/gravel/some boulders
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + residential; Johnson Pond aka Dennisville Lk upstr; filamentous
green algae/diatoms; fish (minnows/eels)

AN0768 # Dennis Ck trib, Rt 47 (blw Ludlams Pd), Dennis Twp, Cape May
Co, Woodbine Quad

February 29, 1996

NOT SAMPLED

)))))))))

OBSERVATIONS

)))))))))

Clarity + -

Flow + -

Width/Depth(ft) + -/-

Substrate + -

Streambank Vegetation/Stability + -

Canopy + -

Other + Ludlams Pond upstr; dam under repair...no sample taken

AN0769 # Old Robins Br, Beaver Causeway, Dennis Twp, Cape May Co,
Woodbine Quad

February 29, 1996

))))))))))

Taxon (Family Level)	FTV	NOI
LUMBRICULIDAE	8	2
ASELLIDAE	8	80
GAMMARIDAE	4	4
PHRYGANEIDAE	4	1
SIMULIIDAE	6	2
CHIRONOMIDAE	6	11

))))))))))

Number of Taxa + 6	# Population +	100
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))))))))))

Dominant Family(s) + ASELLIDAE 80.00%
Family Biotic Index + 7.54
Scraper/Filterer Collector Ratio + 0.50
Shredder/Total Ratio + 0.08
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.09

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + ASELLIDAE overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (90% cedar); blueberries

AN0770 # Green Ck, Rt 47, Middle Twp, Cape May Co, Rio Grande Quad

February 27, 1996

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                    10     20
NAIDIDAE                        7      1
GAMMARIDAE                      4      2
PHRYGANEIDAE                   4      1
TIPULIDAE                       3      1
CHIRONOMIDAE                   6      5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 6 # Population +      30
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 66.67%
 Family Biotic Index + 8.40
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.13
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 3.33
 EPT/Chironomids + 0.20

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + TUBIFICIDAE overwhelmingly dominant
 paucity of clean water organisms
 significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 20/1.5-2
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/low residential; leaf litter (maple); brackish
      macroinvertebrate + DECAPODA - Sesarma cinereum (3); fish
      (minnows)

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February 27, 1996

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      3
NAIDIDAE                      7      1
GLOSSIPHONIIDAE              8      1
HYDROBIIDAE                  8     26
PLANORBIDAE                   6      1
PHYSIDAE                      7      1
SPHAERIIDAE                   8     63
ASELLIDAE                     8      3
HALIPLIDAE                    5      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SPHAERIIDAE 63.00%
Family Biotic Index + 7.93
Scraper/Filterer Collector Ratio + 0.41
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

Deficiency(s) noted + SPHAERIIDAE overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

```

))))))))))
OBSERVATIONS
))))))))))
Clarity + -
Flow + fast
Width/Depth(ft) + 12/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/low residential; pumping pond upstr; channelized; leaf
      litter (maple); filamentous green algae; macrophytes

```