

**State of New Jersey
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**AMBIENT BIOMONITORING NETWORK
Atlantic Coastal Drainage Basin**

1994 - 95 Benthic Macroinvertebrate Data



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

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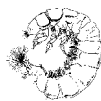
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Introduction

Historical Perspective

Since the early 1970's, the Bureau of Water Monitoring (BWM) has been conducting biomonitoring studies on the state's waterbodies. 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 93), 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.

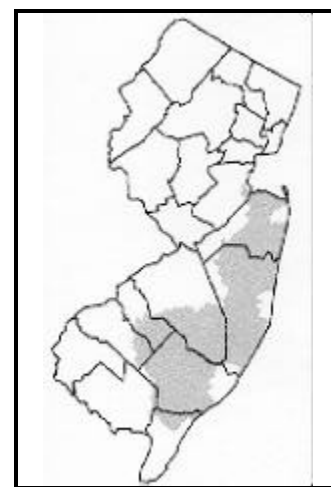


Figure 1 - Study Area

Based upon existing database deficiencies, the area of the Atlantic Coastal Drainage Basin shaded in Figure 1 was selected to be monitored during NJ fiscal year 1995 (calendar year 1994-1995). 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 12.** 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/444/4-89-001, 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, 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; **non-impaired**, **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 12.** 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.

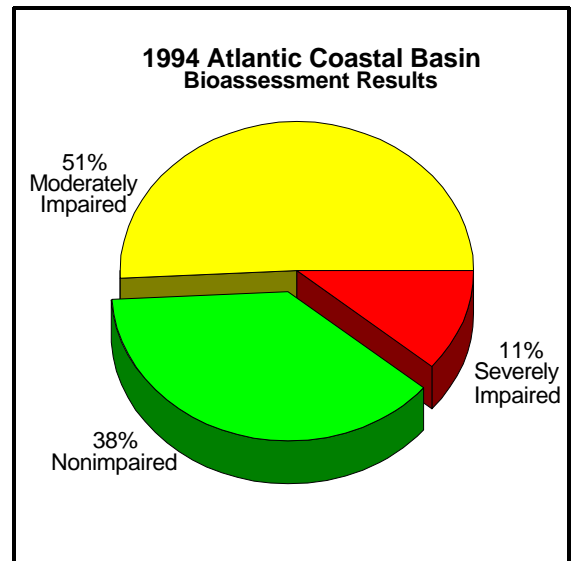


Figure 2

Overall, out of 197 monitoring stations sampled during this study period, **38%** were rated as **NONIMPAIRED**, **51%** were rated as **MODERATELY IMPAIRED**, and **11%** were rated as **SEVERELY IMPAIRED** (Figure 2).

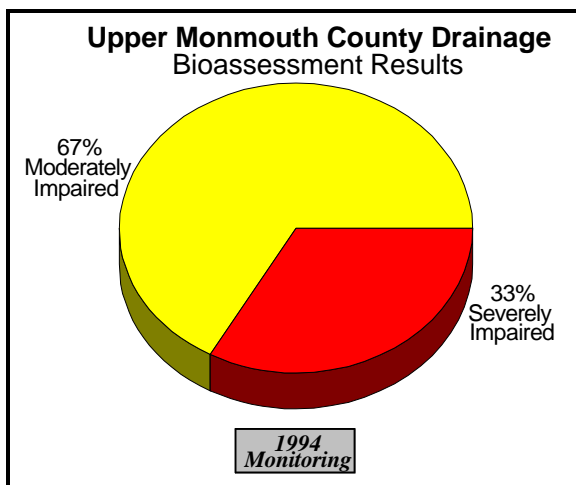


Figure 3

When the Atlantic Coastal Drainage Basin is examined by subbasin, different patterns of biological impairment emerge. The Upper Monmouth County drainage is depicted in Figure 3 (see also map 1). The majority of sites (67%) were rated as moderately impaired. The remaining sites (33%) were rated as severely impaired.

The Lower Monmouth County drainage is depicted in Figure 4 (see also map 2). No impairment was found at 18% of the sites. Moderate impairment was found at 73% of the sites while 9% of the sites were found to be severely impaired.

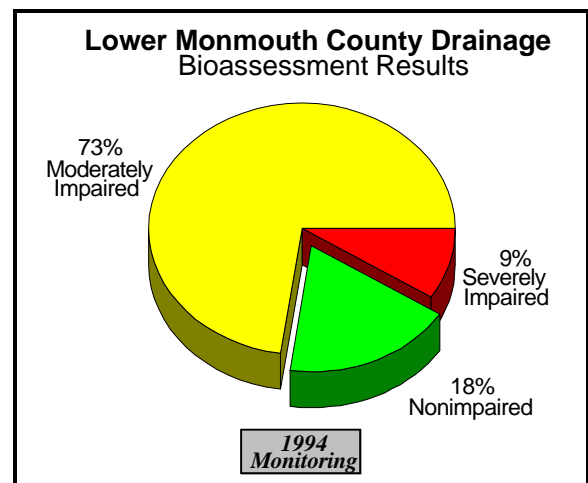


Figure 4

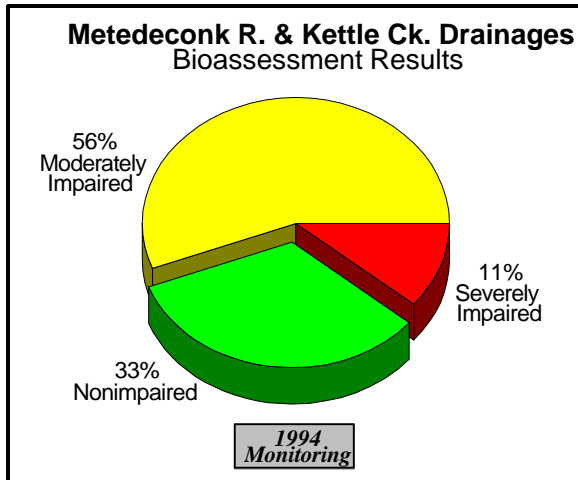


Figure 5

The Metedeconk River and Kettle Creek drainages are depicted in Figure 5 (see also map 3). Nonimpaired ratings were given to 33% of the sites. Moderate impairment was determined at 56% of the sites while 11% of the sites were rated as severely impaired.

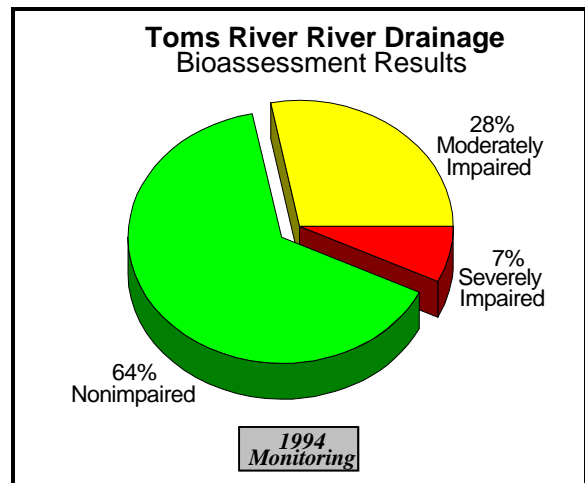


Figure 6

The Toms River drainage is depicted in Figure 6 (see also map 4). The majority of the sites (64%) were rated as nonimpaired. Moderate impairment was found at 28% of the sites while severe impairment was determined at 7% of the sites.

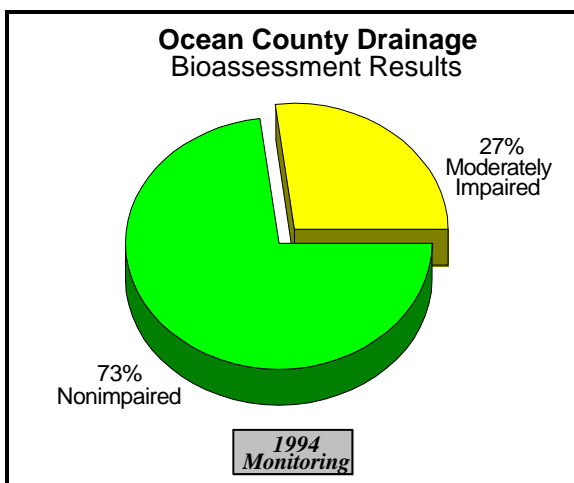


Figure 7

The Ocean County drainage with its associated smaller tributaries is depicted in Figure 7 (see also map 5). The results revealed that 73% of the sites were nonimpaired while moderate impairment was found at 27% of the sites.

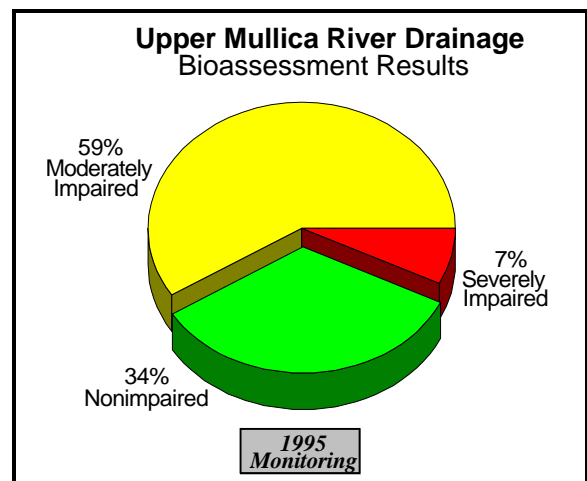


Figure 8

The Upper Mullica River drainage is depicted in Figure 8 (see also map 6). No impairment was indicated at 34% of the sites. The majority of the sites (59%) were rated as moderately impaired while 7% were rated as severely impaired.

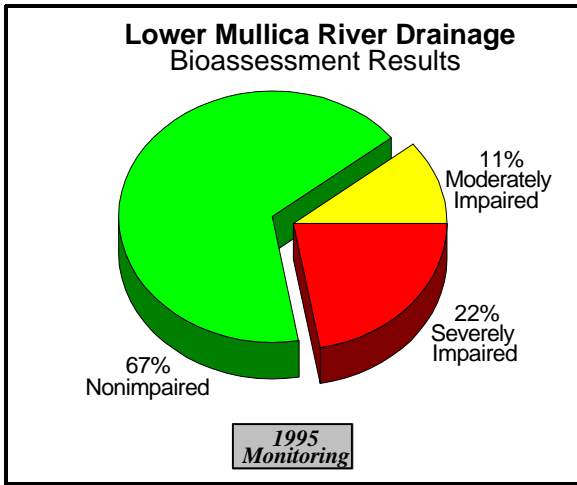


Figure 9

The Lower Mullica River drainage is depicted in Figure 9 (see also map 7). The majority of the sites (67%) were rated as nonimpaired. Moderate impairment was found at 11% of the sites while the remaining 22% of the sites were rated as severely impaired.

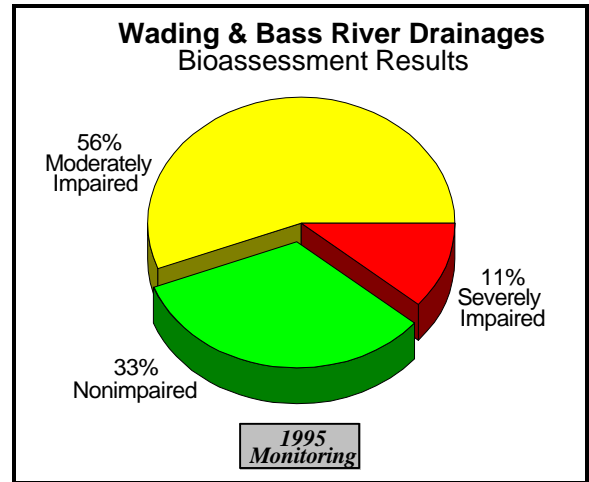


Figure 10

The Wading River and Bass River drainages are depicted in Figure 10 (see also map 8). No impairment was indicated at 33% of the sites. Moderate impairment was found at 56% of the sites while severe impairment was determined at 11% of the sites.

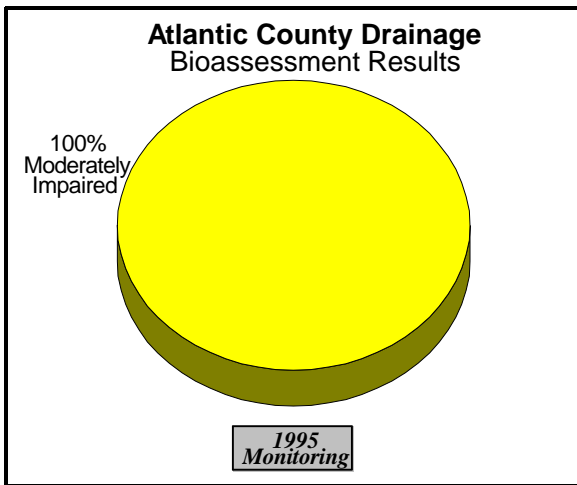


Figure 11

The Atlantic County drainage with its associated smaller tributaries is depicted in Figure 11 (see also map 9). All sites (100%) were rated as moderately impaired.

The Upper Egg Harbor River drainage is depicted in Figure 12 (see also map 10). No impairment was determined at 39% of the sites. The majority of the sites (55%) were rated as moderately impaired while the remaining 6% of the sites were rated as severely impaired.

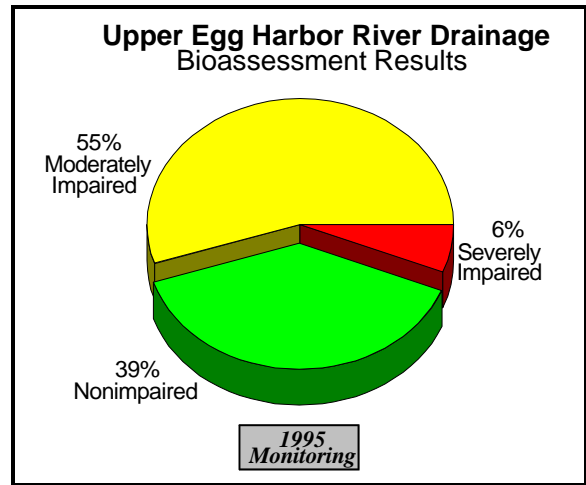


Figure 12

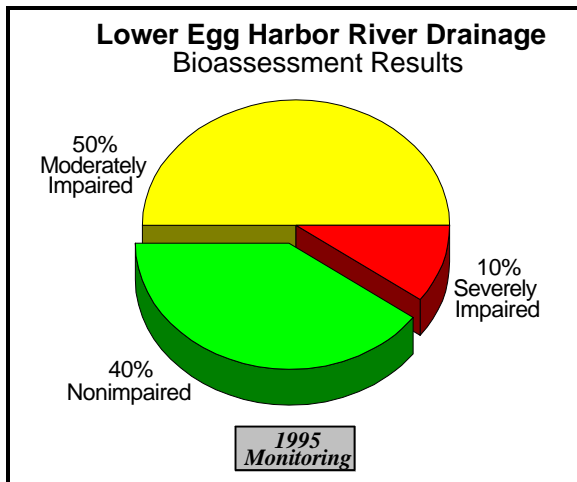


Figure 13

The Lower Egg Harbor river drainage is depicted in Figure 13 (see also map 11). No impairment was indicated at 40% of the sites. Moderate impairment was found at 50% of the sites while severe impairment was determined at 10% of the sites.

The Tuckahoe River drainage is depicted in Figure 14 (see also map 12). No impairment was detected at 60% of the sites while moderate impairment was found at the remaining (40%) sites.

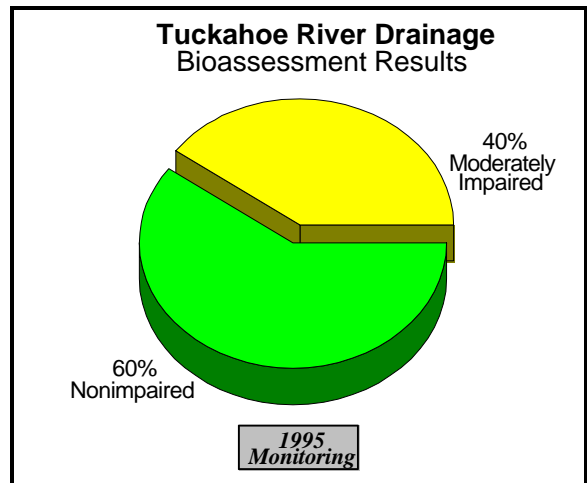


Figure 14

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 |
|------------------------------|--------------------|
| Non-impaired | 24-30 |
| Moderately Impaired | 9-21 |
| Severely Impaired | 0-6 |

Attributes

Non-impaired: 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

Appendix A Atlantic Coastal Basin GPS Data

| Station | Waterbody | Latitude/ Longitude |
|---------|----------------|----------------------------------|
| AN0456 | Matawan Ck | 40 24'12.735"N 74 15'42.577"W |
| AN0457 | Gravelly Bk | 40 24'28.377"N 74 13'42.797"W |
| AN0458 | Wilkson Ck | 40 24'24.215"N 74 13'16.701"W |
| AN0459 | Flat Ck | 40 25'37.403"N 74 10'29.561"W |
| AN0460 | Mahoras Bk | 40 24'41.014"N 74 08'20.746"W |
| AN0461 | Town Bk | 40 23'20.121"N 74 06'17.813"W |
| AN0462 | McClees Ck | 40 23'06.687"N 74 03'58.023"W |
| AN0463 | Poricy Bk | 40 21'25.358"N 74 05'09.491"W |
| AN0464 | Nut Swamp Bk | 40 20'48.837"N 74 06'41.162"W |
| AN0465 | Hop Bk | 40 22'12.645"N 74 10'32.421"W |
| AN0466 | Hop Bk | 40 19'48.015"N 74 10'19.853"W |
| AN0467 | Willow Bk | 40 21'37.789"N 74 12'14.399"W |
| AN0468 | Willow Bk | 40 19'47.304"N 74 10'24.318"W |
| AN0469 | Big Bk | 40 19'26.412"N 74 14'39.876"W |
| AN0470 | Big Bk | 40 19'24.881"N 74 10'25.215"W |
| AN0471 | Yellow Bk | 40 16'33.719"N 74 13'07.024"W |
| AN0472 | Yellow Bk | 40 17'49.057"N 74 10'14.063"W |
| AN0473 | Mine Bk | 40 17'30.242"N 74 10'09.093"W |
| AN0474 | Swimming River | 40 19'12.279"N 74 06'46.344"W |
| AN0475 | Hockhockson Bk | 40 17'24.123"N 74 07'17.497"W |
| AN0476 | Pine Bk | 40 18'15.425"N 74 06'02.660"W |
| AN0477 | Whale Pond Bk | 40 16'31.284"N 74 00'35.573"W |
| AN0478 | Poplar Bk | 40 15'23.978"N 73 59'48.693"W |
| AN0479 | Jumping Bk | 40 14'10.903"N 74 04'56.910"W |
| AN0480 | Jumping Bk | 40 12'11.845"N 74 03'51.907"W |
| AN0481 | Shark River | 40 13'42.032"N 74 07'28.261"W |
| AN0482 | Shark River | 40 11'55.088"N 74 04'11.362"W |

| Station | Waterbody | Latitude/ Longitude |
|---------|---------------------------------|----------------------------------|
| AN0483 | Wreck Pond Bk | 40 08'38.240"N 74 03'11.170"W |
| AN0484 | Hannabrand Bk | 40 08'36.888"N 74 03'11.801"W |
| AN0485 | Manasquan River | 40 12'02.761"N 74 20'28.054"W |
| AN0486 | Debois Ck | 40 14'58.026"N 74 15'26.422"W |
| AN0487 | Debois Ck | 40 12'32.333"N 74 16'07.114"W |
| AN0488 | Unnamed Trib to Manasquan River | 40 12'32.120"N 74 15'48.845"W |
| AN0489 | Manasquan River | 40 12'15.745"N 74 15'22.766"W |
| AN0490 | Manasquan River | 40 11'33.921"N 74 11'42.422"W |
| AN0491 | Marsh Bog Bk | 40 12'52.149"N 74 10'52.465"W |
| AN0492 | Marsh Bog Bk | 40 10'01.260"N 74 09'32.215"W |
| AN0493 | Manasquan River | 40 09'42.051"N 74 09'16.348"W |
| AN0494 | Mingamahone Bk | 40 12'45.620"N 74 10'04.877"W |
| AN0495 | Mingamahone Bk | 40 09'57.503"N 74 08'59.733"W |
| AN0496 | Stan Bk | 40 08'39.281"N 74 09'48.259"W |
| AN0497 | Squankum Bk | 40 09'03.496"N 74 09'12.710"W |
| AN0498 | Manasquan River | 40 08'35.408"N 74 07'01.761"W |
| AN0499 | N Br Metedeconk River | 40 11'39.202"N 74 20'49.876"W |
| AN0500 | N Br Metedeconk River | 40 10'52.799"N 74 17'15.151"W |
| AN0501 | N Br Metedeconk River | 40 08'51.913"N 74 15'13.826"W |
| AN0502 | N Br Metedeconk River | 40 06'36.253"N 74 13'08.040"W |
| AN0503 | Haystack Bk | 40 08'46.678"N 74 11'57.276"W |
| AN0504 | Haystack Bk | 40 07'26.667"N 74 11'17.514"W |
| AN0505 | Muddy Ford Bk | 40 06'34.545"N 74 09'41.915"W |
| AN0506 | N Br Metedeconk River | 40 04'53.908"N 74 09'06.501"W |
| AN0507 | Cabinfield Br | 40 04'58.896"N 74 09'27.740"W |
| AN0508 | S Br Metedeconk River | 40 09'42.417"N 74 21'41.889"W |
| AN0509 | S Br Metedeconk River | 40 08'51.224"N 74 19'30.814"W |

Appendix A Atlantic Coastal Basin GPS Data

| Station | Waterbody | Latitude/ Longitude |
|---------|----------------------------|----------------------------------|
| AN0510 | S Br Metedeconk River | 40 07'36.448"N 74 16'40.381"W |
| AN0511 | S Br Metedeconk River | 40 05'12.980"N 74 12'43.838"W |
| AN0512 | S Br Metedeconk River | 40 04'43.762"N 74 09'23.207"W |
| AN0513 | Beaverdam Ck | 40 04'24.382"N 74 06'53.325"W |
| AN0514 | Cedar Bridge Br | 40 03'19.213"N 74 08'18.571"W |
| AN0515 | Kettle Ck | 40 03'17.311"N 74 11'45.941"W |
| AN0516 | Kettle Ck | 40 02'30.867"N 74 08'33.926"W |
| AN0517 | Toms River | 40 11'06.329"N 74 24'32.297"W |
| AN0518 | Toms River | 40 09'58.700"N 74 25'05.315"W |
| AN0519 | Toms River | 40 06'35.239"N 74 22'25.318"W |
| AN0520 | Unnamed Trib to Toms River | 40 06'43.052"N 74 20'38.031"W |
| AN0521 | Maple Root Br | 40 04'52.484"N 74 19'37.719"W |
| AN0522 | Dove Mill Br | 40 04'08.821"N 74 17'28.182"W |
| AN0523 | Toms River | 40 03'42.060"N 74 16'28.461"W |
| AN0524 | Toms River | 40 00'05.063"N 74 13'53.627"W |
| AN0525 | Bordens Mill Br | 40 03'04.136"N 74 26'18.297"W |
| AN0526 | Shannae Bk | 40 03'31.479"N 74 23'29.576"W |
| AN0527 | Ridgeway Br | 40 02'50.290"N 74 20'04.829"W |
| AN0528 | Ridgeway Br | 40 01'16.602"N 74 16'25.455"W |
| AN0529 | Blacks Br | 40 00'46.737"N 74 22'47.782"W |
| AN0530 | Blacks Br | 40 00'30.662"N 74 19'47.856"W |
| AN0531 | Old Hurricane Br | 39 59'28.903"N 74 22'44.706"W |
| AN0532 | Manapaqua Br | 40 00'44.351"N 74 18'08.892"W |
| AN0533 | Union Br | 40 00'29.381"N 74 17'37.405"W |
| AN0534 | Union Br | 40 00'22.763"N 74 14'48.685"W |
| AN0535 | Toms River | 39 59'11.738"N 74 13'25.468"W |
| AN0536 | Wrangel Bk | 39 58'22.141"N 74 19'26.457"W |

| Station | Waterbody | Latitude/ Longitude |
|---------|------------------------------|----------------------------------|
| AN0537 | Wrangel Bk | 39 57'53.690"N 74 14'36.988"W |
| AN0538 | Sunken Br | 39 58'02.914"N 74 14'31.134"W |
| AN0539 | Wrangel Bk | 39 57'39.477"N 74 13'41.257"W |
| AN0540 | Davenport Br | 39 55'35.966"N 74 20'17.971"W |
| AN0541 | Davenport Br | 39 57'37.775"N 74 14'40.168"W |
| AN0542 | Jakes Br | 39 54'55.658"N 74 16'24.661"W |
| AN0543 | Jakes Br | 39 56'07.451"N 74 12'41.579"W |
| AN0544 | Unnamed Trib to Toms River | 39 57'19.937"N 74 09'57.889"W |
| AN0545 | Webbs Mill Br | 39 53'16.503"N 74 22'46.543"W |
| AN0546 | Cedar Ck | 39 53'50.254"N 74 18'58.633"W |
| AN0547 | Factory Br | 39 52'52.182"N 74 16'30.652"W |
| AN0548 | Cedar Ck | 39 53'38.637"N 74 13'30.747"W |
| AN0549 | Cedar Ck | 39 52'03.701"N 74 10'08.079"W |
| AN0550 | Long Br of N Br Forked River | 39 49'02.140"N 74 17'34.177"W |
| AN0551 | N Br Forked River | 39 51'31.375"N 74 13'29.853"W |
| AN0552 | Oyster Ck | 39 47'53.907"N 74 15'00.327"W |
| AN0553 | Waretown Ck | 39 47'34.873"N 74 11'45.572"W |
| AN0554 | Four Mile Br | 39 42'26.783"N 74 16'00.961"W |
| AN0555 | Mill Ck | 39 41'33.720"N 74 15'31.934"W |
| AN0556 | Cedar Run | 39 40'48.951"N 74 16'15.046"W |
| AN0557 | Westecunk Ck | 39 39'59.592"N 74 19'12.923"W |
| AN0558 | Westecunk Ck | 39 38'24.939"N 74 18'28.067"W |
| AN0559 | Mill Br of Tuckerton Ck | 39 36'37.501"N 74 20'59.833"W |
| AN0560 | Mullica River | 39 47'09.311"N 74 51'36.670"W |
| AN0561 | Mullica River | 39 46'34.587"N 74 47'55.514"W |
| AN0562 | Mullica River | 39 44'35.026"N 74 45'25.637"W |
| AN0563 | Wesickaman Ck | 39 44'27.878"N 74 43'24.077"W |

Appendix A Atlantic Coastal Basin GPS Data

| Station | Waterbody | Latitude/ Longitude |
|---------|-----------------|----------------------------------|
| AN0564 | Mullica River | 39 39'33.315"N 74 39'30.917"W |
| AN0565 | Hays Mill Ck | 39 45'02.448"N 74 50'27.301"W |
| AN0566 | Sleeper Br | 39 43'21.979"N 74 45'23.637"W |
| AN0567 | Clarks Br | 39 42'48.684"N 74 46'40.249"W |
| AN0568 | Prices Br | 39 43'19.550"N 74 47'47.944"W |
| AN0569 | Pump Br | 39 41'58.655"N 74 50'39.208"W |
| AN0570 | Blue Anchor Bk | 39 41'17.490"N 74 50'04.093"W |
| AN0571 | Albertson Bk | 39 41'35.070"N 74 48'22.624"W |
| AN0572 | Albertson Bk | 39 41'40.910"N 74 44'38.276"W |
| AN0573 | Great Swamp Bk | 39 40'18.019"N 74 49'30.981"W |
| AN0574 | Great Swamp Bk | 39 41'03.368"N 74 45'47.927"W |
| AN0575 | Cedar Bk | 39 39'52.436"N 74 45'56.055"W |
| AN0576 | Nesco Hague Ck | 39 38'28.782"N 74 39'40.933"W |
| AN0577 | Hammonton Ck | 39 37'57.912"N 74 45'37.641"W |
| AN0578 | Hammonton Ck | 39 37'40.762"N 74 41'36.744"W |
| AN0579 | Batsto River | 39 48'02.393"N 74 40'20.754"W |
| AN0580 | Roberts Br | 39 47'16.213"N 74 39'33.924"W |
| AN0581 | Skit Br | 39 47'08.597"N 74 39'29.778"W |
| AN0582 | Indian Mills Bk | 39 47'35.360"N 74 44'47.794"W |
| AN0583 | Muskingum Bk | 39 47'41.517"N 74 44'29.657"W |
| AN0584 | Springers Bk | 39 46'45.701"N 74 44'18.819"W |
| AN0585 | Springers Bk | 39 45'19.474"N 74 41'46.395"W |
| AN0586 | Batsto River | 39 42'34.668"N 74 39'58.838"W |
| AN0587 | Pen Swamp Br | 39 41'02.959"N 74 39'01.352"W |
| AN0588 | Batsto River | 39 38'31.254"N 74 38'59.579"W |
| AN0589 | Lucas Br | 39 37'03.357"N 74 37'48.428"W |
| AN0590 | Landing Ck | 39 32'08.751"N 74 39'26.918"W |

| Station | Waterbody | Latitude/ Longitude |
|---------|----------------------------------|----------------------------------|
| AN0591 | Elliots Ck | 39 32'41.029"N 74 36'22.910"W |
| AN0592 | Landing Ck | 39 33'24.529"N 74 36'10.286"W |
| AN0593 | Indian Cabin Ck | 39 34'15.793"N 74 39'50.060"W |
| AN0594 | Indian Cabin Ck | 39 33'31.228"N 74 36'17.837"W |
| AN0595 | West Br Wading River | 39 48'52.036"N 74 32'49.311"W |
| AN0596 | West Br Wading River | 39 47'23.466"N 74 32'08.800"W |
| AN0597 | Shoal Br | 39 46'35.273"N 74 30'30.785"W |
| AN0598 | Mile Run | 39 45'14.431"N 74 33'15.274"W |
| AN0599 | Tulpehocken Ck | 39 46'17.049"N 74 36'52.225"W |
| AN0600 | Tulpehocken Ck | 39 42'51.783"N 74 33'57.169"W |
| AN0601 | Little Hauken Run | 39 42'57.765"N 74 32'05.993"W |
| AN0602 | Wading River | 39 40'26.247"N 74 32'13.815"W |
| AN0603 | Oswego River | 39 46'32.771"N 74 22'04.117"W |
| AN0604 | Plains Br | 39 45'51.390"N 74 24'28.223"W |
| AN0605 | Papoose Br | 39 44'32.151"N 74 27'09.681"W |
| AN0606 | Oswego River | 39 43'53.532"N 74 29'19.798"W |
| AN0607 | Oswego River (E Br Wading River) | 39 39'48.457"N 74 31'24.552"W |
| AN0608 | Arnold Br | 39 38'46.247"N 74 30'12.048"W |
| AN0609 | Tub Mill Br | 39 38'40.920"N 74 30'02.755"W |
| AN0610 | West Br Bass River | 39 37'27.357"N 74 26'45.044"W |
| AN0611 | Dans Bridge Br | 39 38'12.016"N 74 25'34.679"W |
| AN0612 | East Br Bass River | 39 37'24.146"N 74 26'28.020"W |
| AN0613 | Clarks Mill Stream | 39 30'57.885"N 74 30'28.201"W |
| AN0614 | Morses Mill Stream | 39 30'39.081"N 74 30'11.840"W |
| AN0615 | Mattix Run | 39 29'39.424"N 74 28'45.286"W |
| AN0616 | N Br Absecon Ck | 39 26'42.079"N 74 32'20.056"W |
| AN0617 | S Br Absecon Ck | 39 26'23.385"N 74 33'58.793"W |

Appendix A Atlantic Coastal Basin GPS Data

| Station | Waterbody | Latitude/ Longitude |
|---------|------------------------|----------------------------------|
| AN0618 | Mill Br | 39 23'44.571"N 74 35'35.497"W |
| AN0619 | Maple Run | 39 22'32.351"N 74 34'18.285"W |
| AN0620 | Great Egg Harbor River | 39 46'52.071"N 74 56'35.204"W |
| AN0621 | Great Egg Harbor River | 39 44'01.753"N 74 57'05.024"W |
| AN0622 | Four Mile Br | 39 41'47.628"N 74 56'23.787"W |
| AN0623 | Great Egg Harbor River | 39 40'10.371"N 74 54'48.289"W |
| AN0624 | Squankum Br | 39 40'04.359"N 74 57'38.194"W |
| AN0625 | Great Egg Harbor River | 39 35'39.832"N 74 51'04.227"W |
| AN0626 | Penny Pot Stream | 39 34'48.229"N 74 49'02.597"W |
| AN0627 | Hospitality Br | 39 38'40.179"N 74 59'08.709"W |
| AN0628 | Hospitality Br | 39 37'14.233"N 74 55'37.429"W |
| AN0629 | Faraway Br | 39 36'58.367"N 74 56'09.741"W |
| AN0630 | White Oak Br | 39 35'47.012"N 74 55'05.246"W |
| AN0631 | Collings Br | 39 33'57.943"N 74 55'33.719"W |
| AN0632 | Collings Br | 39 35'23.355"N 74 52'53.270"W |
| AN0633 | Hospitality Br | 39 35'18.515"N 74 51'31.545"W |
| AN0634 | Three Pond Bk | 39 34'51.890"N 74 52'02.117"W |
| AN0635 | Great Egg Harbor River | 39 31'05.251"N 74 46'43.162"W |
| AN0636 | Deep Run | 39 31'20.641"N 74 55'11.740"W |
| AN0637 | Deep Run | 39 30'26.186"N 74 46'54.885"W |
| AN0638 | Mare Run | 39 28'43.593"N 74 45'26.992"W |
| AN0639 | Watering Race | 39 28'21.891"N 74 42'54.977"W |
| AN0640 | Babcock Ck | 39 28'08.225"N 74 41'33.057"W |
| AN0641 | Gravelly Run | 39 25'38.137"N 74 42'06.261"W |
| AN0642 | Miry Run | 39 24'20.259"N 74 41'29.242"W |
| AN0643 | South River | 39 28'16.176"N 74 50'35.343"W |
| AN0644 | South River | 39 26'25.336"N 74 45'20.120"W |

| Station | Waterbody | Latitude/ Longitude |
|---------|----------------|----------------------------------|
| AN0645 | Stephens Ck | 39 24'56.173"N 74 47'41.893"W |
| AN0646 | Stephens Ck | 39 23'37.822"N 74 44'53.539"W |
| AN0647 | Gibson Ck | 39 21'11.307"N 74 45'22.319"W |
| AN0648 | Tuckahoe River | 39 22'20.030"N 74 51'12.404"W |
| AN0649 | Tuckahoe River | 39 19'26.042"N 74 51'40.518"W |
| AN0650 | Tuckahoe River | 39 18'25.426"N 74 49'13.234"W |
| AN0651 | McNeals Br | 39 18'57.708"N 74 49'27.551"W |
| AN0652 | Mill Ck | 39 17'03.613"N 74 47'31.199"W |

Map 1

UPPER MONMOUTH COUNTY DRAINAGE

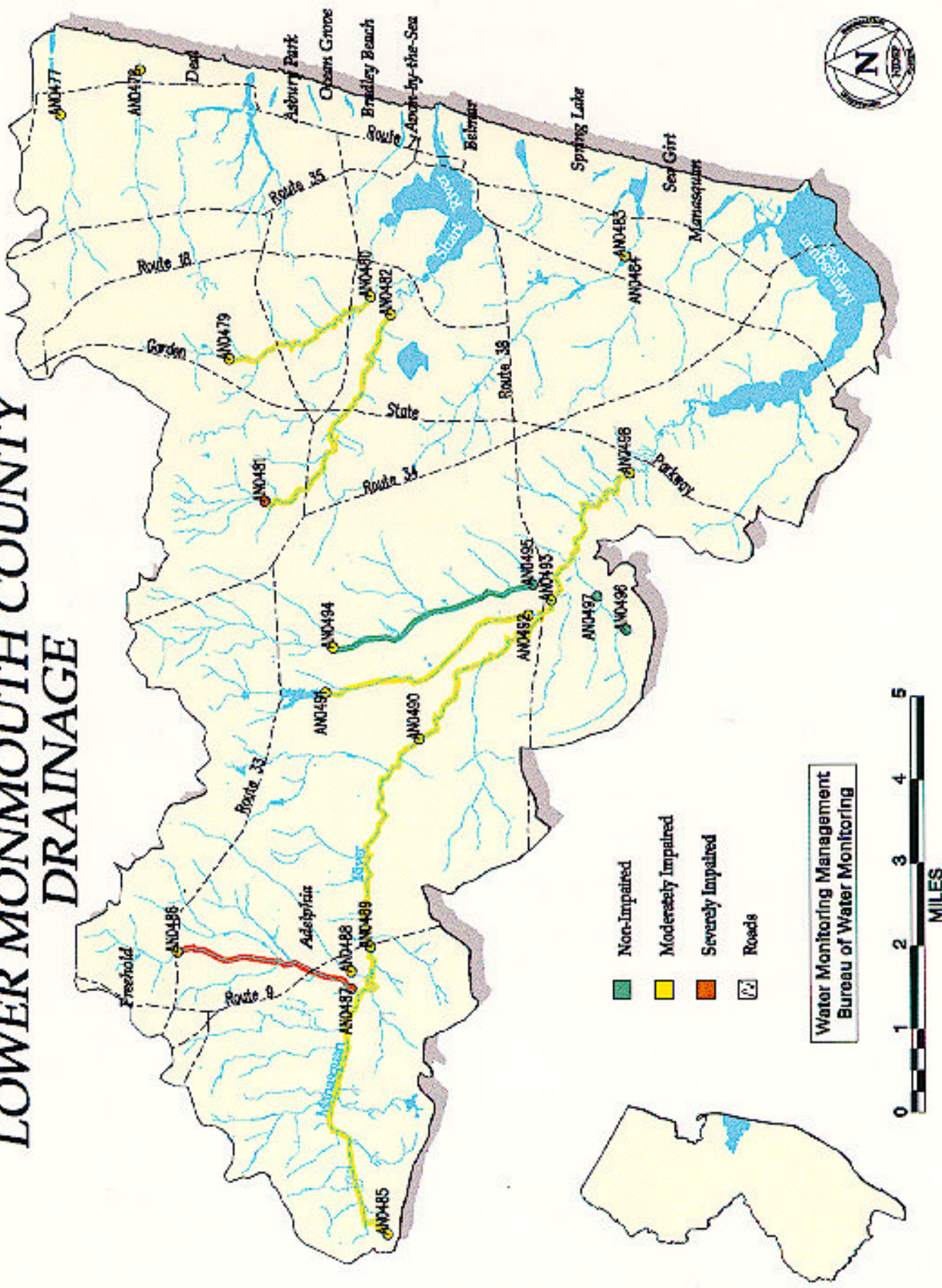


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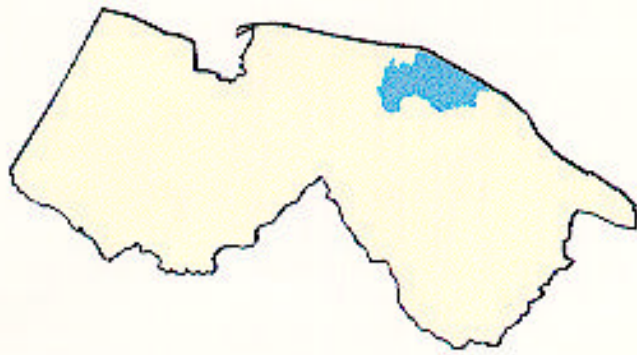
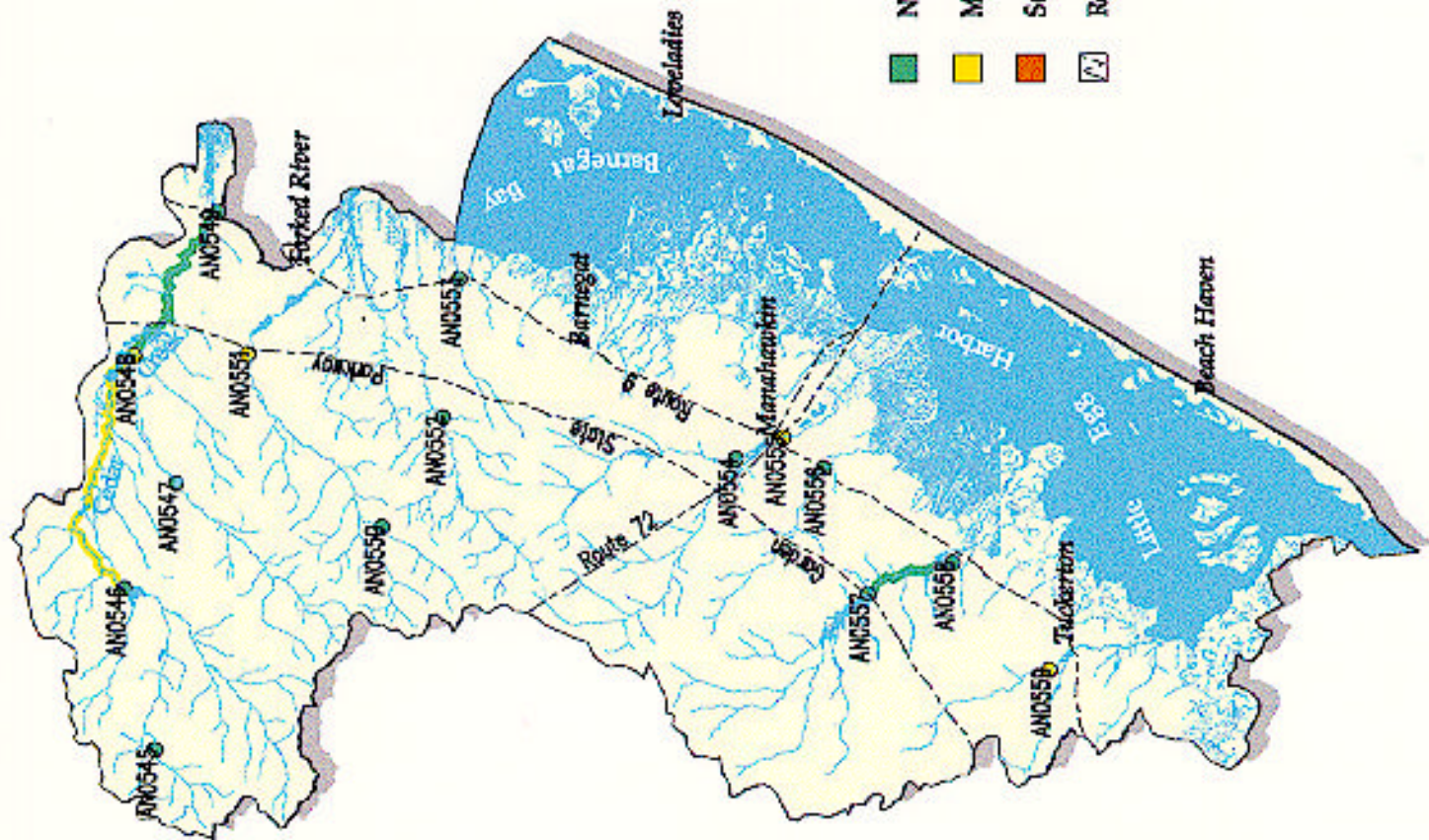


Map 2

LOWER MONMOUTH COUNTY DRAINAGE



Map 5 OCEAN COUNTY DRAINAGE

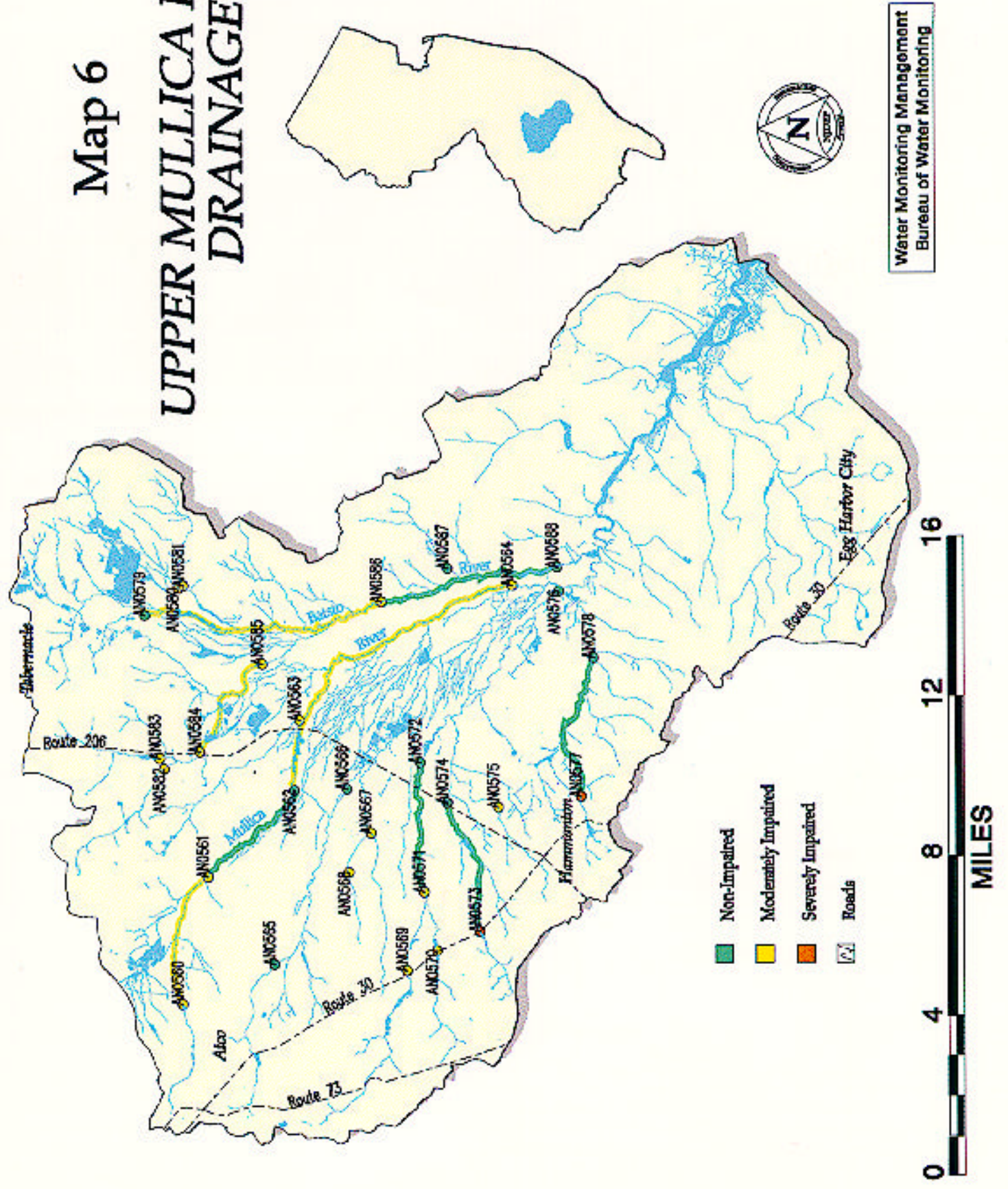


- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

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Bureau of Water Monitoring

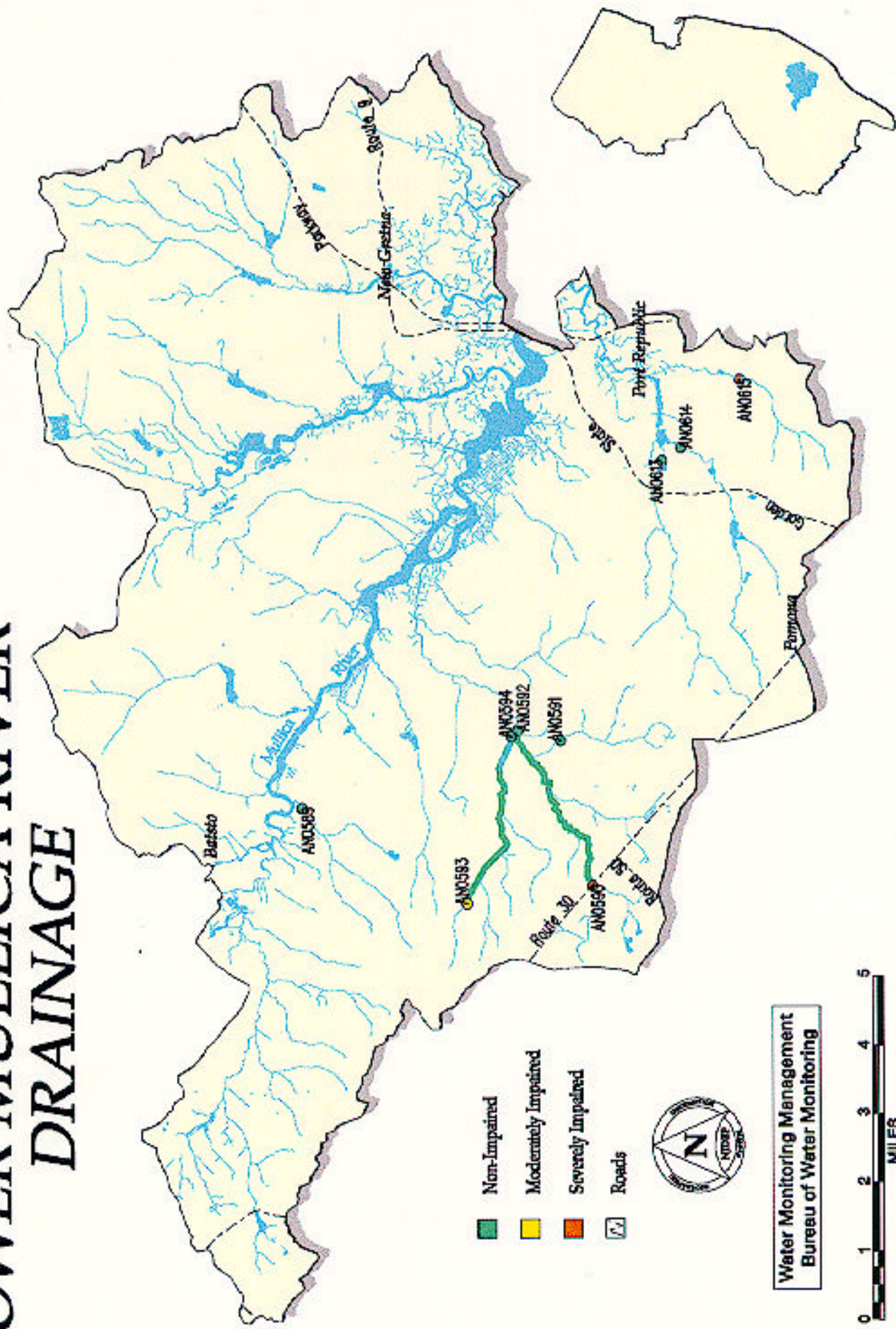


Map 6 UPPER MULLICA RIVER DRAINAGE

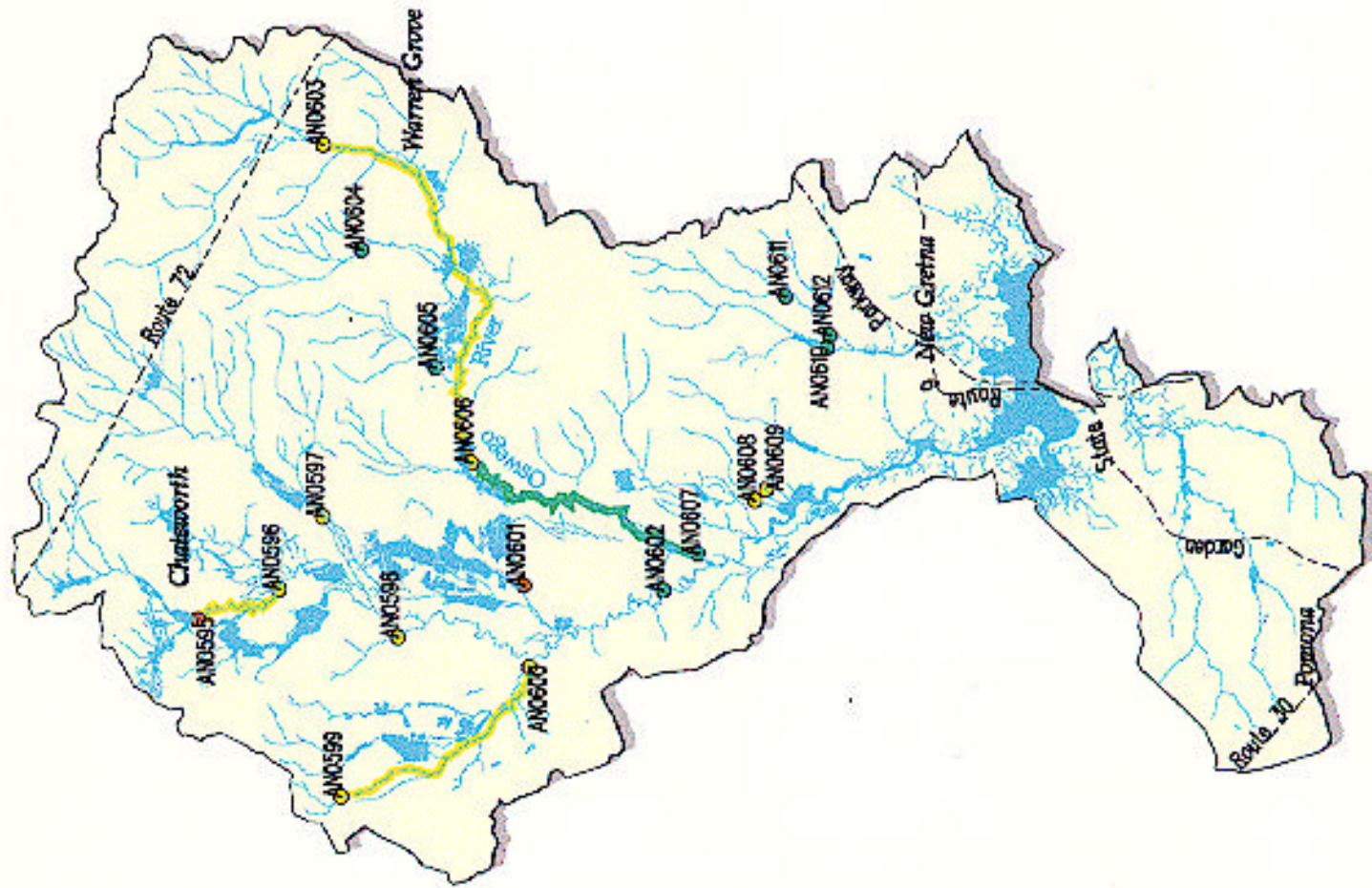


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Map 7 LOWER MULLICA RIVER DRAINAGE



Map 8 WADING AND BASS RIVER DRAINAGES



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



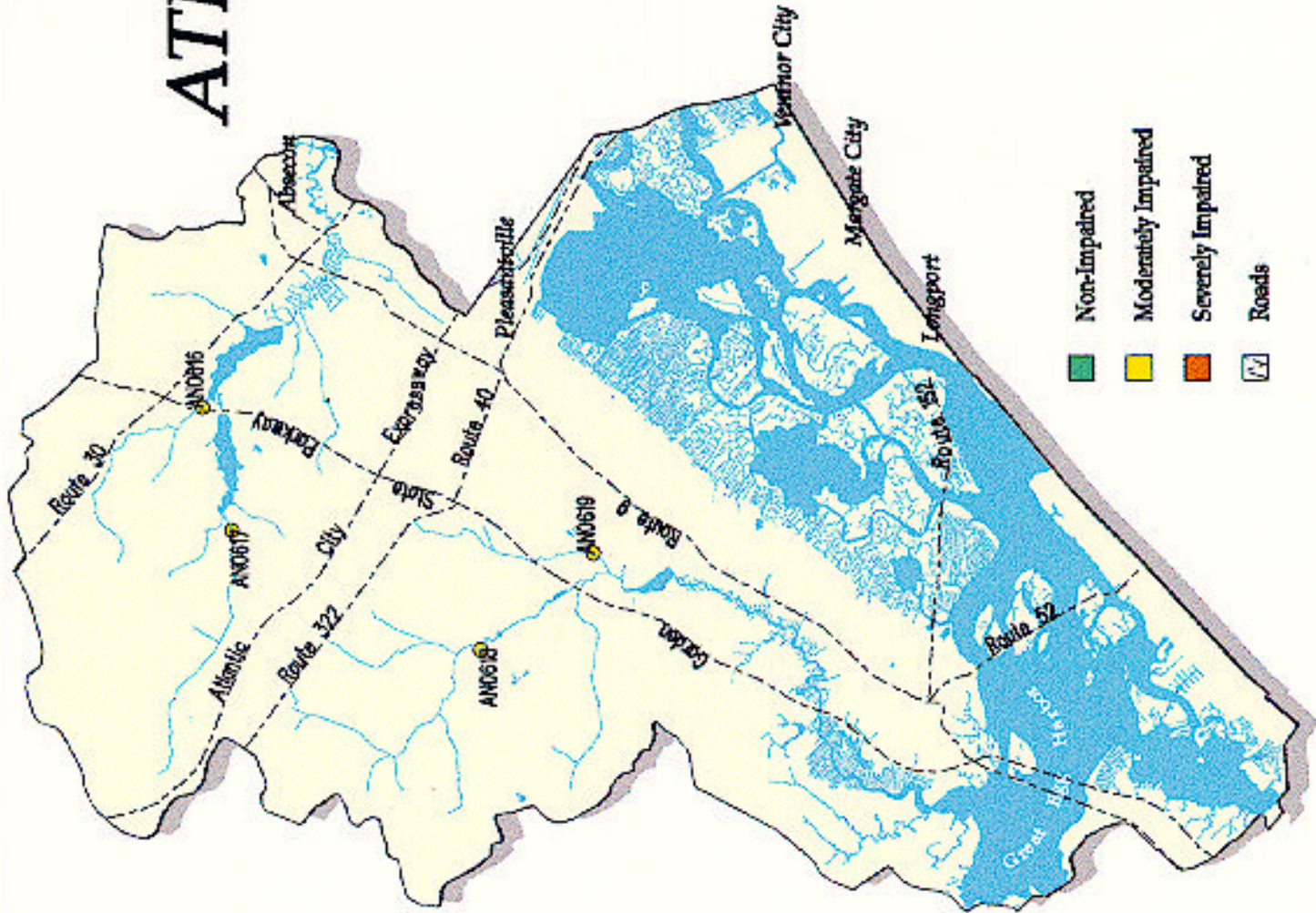
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Bureau of Water Monitoring



Map 9 ATLANTIC COUNTY DRAINAGE



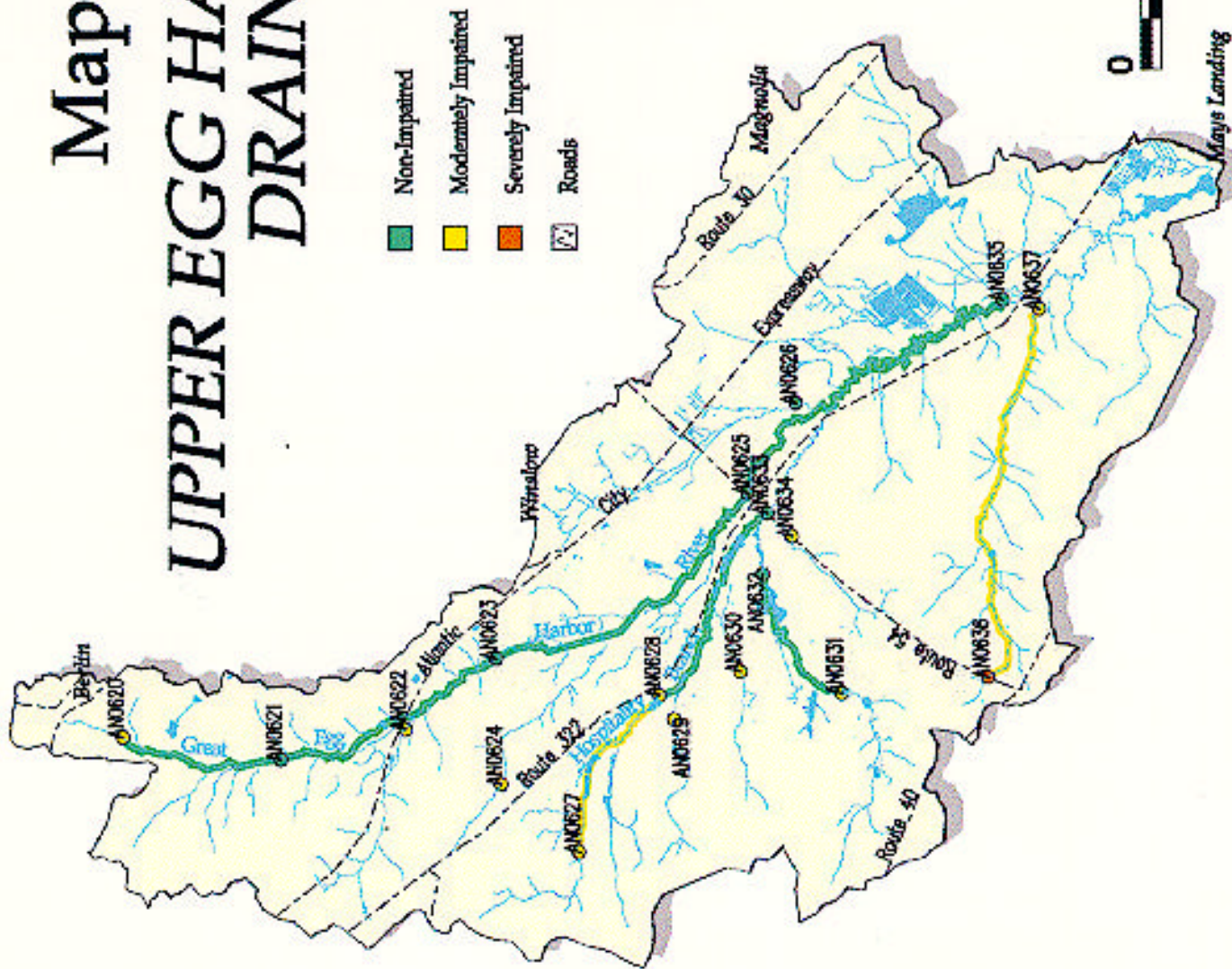
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- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

Map 10

UPPER EGG HARBOR RIVER DRAINAGE



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Map 11 LOWER EGG HARBOR RIVER DRAINAGE

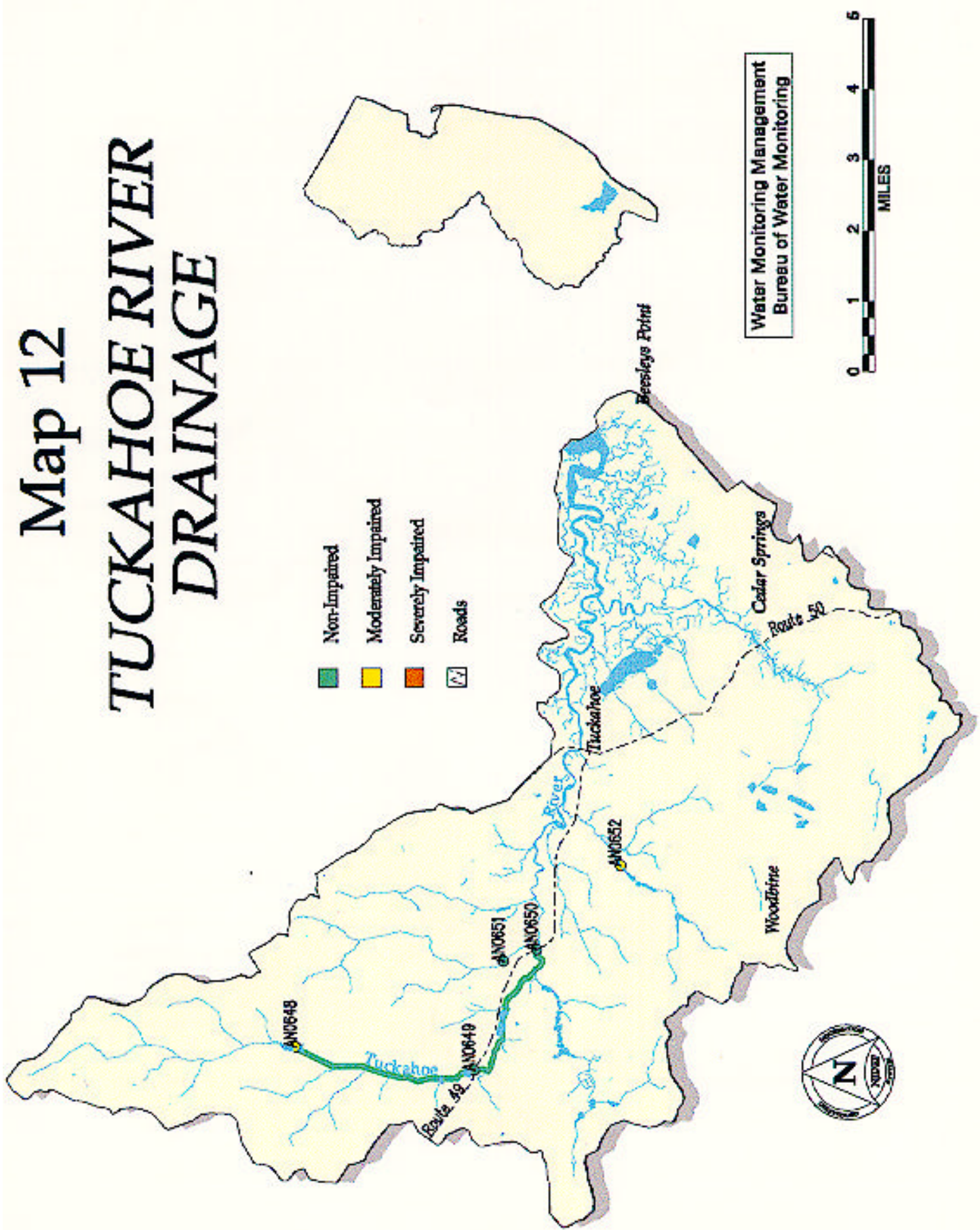


- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Roads

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Map 12 TUCKAHOE RIVER DRAINAGE



APPENDIX B

AN0456 # Matawan Ck, Morganville Rd, Marlboro Twp
USGS Quad + South Amboy

August 2, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 19 |
| PHYSIDAE | 7 | 6 |
| SPHAERIIDAE | 8 | 8 |
| ASELLIDAE | 8 | 2 |
| CAENIDAE | 7 | 1 |
| CORDULEGASTRIDAE | 3 | 1 |
| CORIXIDAE | 7 | 2 |
| SIALIDAE | 4 | 10 |
| CORYDALIDAE | 0 | 1 |
| PHRYGANEIDAE | 4 | 1 |
| TIPULIDAE | 3 | 2 |
| CHIRONOMIDAE | 6 | 33 |
| BLOODREDCHIRONOMIDAE | 8 | 13 |
| ANTHOMYIIDAE | 6 | 1 |

Number of Taxa + 14 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 33.00%
Family Biotic Index + 6.94
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.27
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.04

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + near clear
Flow + slow
Width/Depth(ft) + 8-10/<0.5
Substrate + mud/stones
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + woods/rural; stagnant odor; sunfish; frog; snake; impairment source(s) unknown

AN0457 # Gravelly Bk, Church St, Aberdeen Twp
USGS Quad + Keyport

August 1, 1994

| Taxon (Family Level) | FTV | NOI |
|--------------------------------------|-----|-----|
| DIPLOPODA | 5 | 1 |
| SIALIDAE | 4 | 9 |
| CHIRONOMIDAE | 6 | 29 |
| BLOODREDCHIRONOMIDAE | 8 | 3 |
| Number of Taxa + 4 # Population + 42 | | |

Dominant Family(s) + CHIRONOMIDAE 69.05%
Family Biotic Index + 5.69
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.71
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 3/severely impaired

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

)))))))))))))
OBSERVATIONS

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

Clarity + brown
Flow + slow
Width/Depth(ft) + 10/<1
Substrate + mud/sand
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree & shrub-lined/suburban; Rt 34 commercial area upstr;
metallic floc; shopping carts

AN0458 # Wilkson Ck, Church St, Aberdeen Twp
USGS Quad + Keyport

August 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 2 |

Number of Taxa + 3 # Population + 4

Dominant Family(s) + CHIRONOMIDAE 50.00%
Family Biotic Index + 5.75
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.25
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

Deficiency(s) noted + low diversity
paucity of clean water organisms

OBSERVATIONS

Clarity + reddish brown
Flow + fast
Width/Depth(ft) + 16/<1
Substrate + cobble/stone
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree & shrub-lined/suburban; Rt 34 commercial area upstr; iron
floc; concrete debris

AN0459 # Flat Ck, Middle Rd, Raritan Twp
USGS Quad + Keyport

August 1, 1994

|))))))))) | | |
|----------------------|-----|-----|
| Taxon (Family Level) | FTV | NOI |
|))))))))) | | |
| NEMATODA | 6 | 1 |
| TUBIFICIDAE | 10 | 65 |
| SIALIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 9 |
| BLOODREDCHIRONOMIDAE | 8 | 24 |

)))))))))
Number of Taxa + 5 # Population + 100
)))))))))

Dominant Family(s) + TUBIFICIDAE 65.00%
Family Biotic Index + 9.06
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.05
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 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 + orange brown
Flow + slow
Width/Depth(ft) + 6-8/<1
Substrate + rock/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + shrub & weed-lined/suburban; Rt 35 commercial area upstr;
metallic floc; trash (bottles/cans/wood)

AN0460 # Mahoras Bk, Rt 35, Middletown Twp
USGS Quad + Keyport

August 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 15 |
| SPHAERIIDAE | 8 | 10 |
| GAMMARIDAE | 4 | 66 |
| SIALIDAE | 4 | 1 |
| HYDROPSYCHIDAE | 4 | 2 |
| PHRYGANEIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 5 |

Number of Taxa + 7 # Population + 100

Dominant Family(s) + GAMMARIDAE 66.00%
Family Biotic Index + 5.40
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 3.00
EPT/Chironomids + 0.60

NJIS/Rating + 6/severely impaired

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

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 22/~1
Substrate + rock/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + weed-lined/urban; Rt 35 commercial corridor upstr; macrophytes;
minnows

AN0461 # Town Bk, Spruce Rd, Middletown Twp
USGS Quad + Sandy Hook

August 2, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 54 |
| PLANORBIDAE | 6 | 2 |
| PHYSIDAE | 7 | 3 |
| SPHAERIIDAE | 8 | 17 |
| GAMMARIDAE | 4 | 14 |
| DYTISCIDAE | 5 | 1 |
| CHIRONOMIDAE | 6 | 3 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| PLUMATELLIDAE | 7 | 2 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + NAIDIDAE 54.00%
 Family Biotic Index + 6.76
 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 + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

)))))))))
 OBSERVATIONS
)))))))

Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 4/<0.5
 Substrate + muck/rock
 Streambank Vegetation/Stability + -
 Canopy + half open
 Other + suburban/woods/marsh; Rt 35 commercial corridor upstr; minnows

AN0462 # McClees Ck, Whippoorwill Rd, Middletown Twp
USGS Quad + Sandy Hook

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 4 |
| TUBIFICIDAE | 10 | 7 |
| NAIDIDAE | 7 | 3 |
| PLANORBIDAE | 6 | 4 |
| PHYSIDAE | 7 | 4 |
| ONISCIDAE | 7 | 1 |
| GAMMARIDAE | 4 | 10 |
| CORDULIIDAE | 5 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 4 |
| HYDROPSYCHIDAE | 4 | 47 |
| LEPTOCERIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 12 |

Number of Taxa + 14 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 47.00%
Family Biotic Index + 5.33
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 48.00
EPT/Chironomids + 4.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 6/1.5
Substrate + sand/cobble
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/suburban; Rt 35 commercial corridor upstr; eels; minnows

AN0463 # Poricy Bk, Navesink R Rd, Middletown Twp
USGS Quad + Long Branch

August 3, 1994

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)))))))))
Taxon (Family Level)          FTV    NOI
)))))))))
DUGESIIDAE                     9      32
TUBIFICIDAE                    10     3
SPHAERIIDAE                    8      1
ASELLIDAE                      8      1
GAMMARIDAE                     4     21
TALITRIDAE                     8      8
CAENIDAE                       7      1
LIBELLULIDAE                   9      1
HYDROPSYCHIDAE                4      8
CHIRONOMIDAE                   6      6
BLOODREDCHIRONOMIDAE          8      1
PLUMATELLIDAE                 7     17
)))))))))

```

Number of Taxa + 12 # Population + 100
)))))))))

Dominant Family(s) + DUGESIIDAE 32.00%
Family Biotic Index + 6.93
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(rihoptera) + 2
%EPT + 9.00
EPT/Chironomids + 1.29

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

```

)))))))))
OBSERVATIONS
)))))))))
Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 6/1
Substrate + mud/sand/muck
Streambank Vegetation/Stability + good/good
Canopy + partly open
Other + woods/suburban; some trash; eels

```

AN0464 # Nut Swamp Bk, Normandy Rd, Middletown Twp
USGS Quad + Long Branch

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 23 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 2 |
| SIALIDAE | 4 | 1 |
| HYDROPSYCHIDAE | 4 | 3 |
| CHIRONOMIDAE | 6 | 56 |
| BLOODREDCHIRONOMIDAE | 8 | 11 |
| STRATIOMYIDAE | 10 | 1 |

Number of Taxa + 10 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 56.00%
Family Biotic Index + 7.14
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 3.00
EPT/Chironomids + 0.04

NJIS/Rating + 6/severely impaired

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

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 6/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/suburban; Garden St Pkwy upstr; siltation

AN0465 # Hop Bk, Roberts Rd, Holmdel Twp
USGS Quad + Marlboro

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| NEMATODA | 6 | 1 |
| TUBIFICIDAE | 10 | 4 |
| LUMBRICIDAE | 10 | 2 |
| VELIIDAE | 9 | 2 |
| SIALIDAE | 4 | 1 |
| HYDROPSYCHIDAE | 4 | 11 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 12 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 10 # Population + 36

Dominant Family(s) + CHIRONOMIDAE 33.33%
Family Biotic Index + 6.17
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.17
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 30.56
EPT/Chironomids + 0.85

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 20/<1
Substrate + gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; ongoing housing construction upstr; fish

AN0466 # Hop Bk, Willow Bk Rd, Holmdel Twp
USGS Quad + Marlboro

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 1 |
| LUMBRICIDAE | 10 | 1 |
| ASELLIDAE | 8 | 2 |
| GAMMARIDAE | 4 | 3 |
| AESHNIDAE | 3 | 3 |
| ELMIDAE | 5 | 2 |
| HYDROPSYCHIDAE | 4 | 6 |
| PHRYGANEIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 48 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| STRATIOMYIDAE | 10 | 1 |
| EMPIDIDAE | 6 | 2 |

Number of Taxa + 14 # Population + 77

Dominant Family(s) + CHIRONOMIDAE 62.34%
Family Biotic Index + 6.08
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.52
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 9.09
EPT/Chironomids + 0.14

NJIS/Rating + 9/moderately impaired

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

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OBSERVATIONS

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Clarity + clear

Flow + -

Width/Depth(ft) + 10/<1

Substrate + sand/gravel

Streambank Vegetation/Stability + good/good

Canopy + mostly closed

Other + woods/agricultural; ongoing housing construction upstr;
siltation; crayfish; fish

AN0467 # Willow Bk, Schank Rd, Holmdel Twp
USGS Quad + Marlboro

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 2 |
| TUBIFICIDAE | 10 | 3 |
| NAIDIDAE | 7 | 6 |
| GAMMARIDAE | 4 | 8 |
| ENTOMOBRYIDAE | 10 | 1 |
| VELIIDAE | 9 | 5 |
| STAPHYLINIDAE | 4 | 1 |
| PTYCHOPTERIDAE | 8 | 1 |
| CHIRONOMIDAE | 6 | 3 |

Number of Taxa + 9 # Population + 30

Dominant Family(s) + GAMMARIDAE 26.67%
Family Biotic Index + 6.77
Scraper/Filterer Collector Ratio + 0.00
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 + clear
Flow + moderate
Width/Depth(ft) + 6/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods/agricultural; ongoing housing construction upstr

AN0468 # Willow Bk, Willow Bk Rd, Colts Neck Twp
USGS Quad + Marlboro

August 3, 1994

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Taxon (Family Level)                                FTV      NOI
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TUBIFICIDAE                                        10       5
HEPTAGENIIDAE                                    4       1
HYDROPSYCHIDAE                                   4       10
CHIRONOMIDAE                                       6       84
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Number of Taxa + 4 # Population + 100
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Dominant Family(s) + CHIRONOMIDAE 84.00%
Family Biotic Index + 5.98
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.66
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 2
%EPT + 11.00
EPT/Chironomids + 0.13

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NJIS/Rating + 6/severely impaired

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

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OBSERVATIONS
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Clarity + clear
Flow + slow
Width/Depth(ft) + 20/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/agricultural; ongoing housing construction upstr

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AN0470 # Big Bk, Cross Rd, Colts Neck Twp
USGS Quad + Marlboro

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 1 |
| PLANORBIDAE | 6 | 1 |
| ASELLIDAE | 8 | 1 |
| GAMMARIDAE | 4 | 3 |
| HEPTAGENIIDAE | 4 | 3 |
| COENAGRIONIDAE | 9 | 3 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 1 |
| HYDROPSYCHIDAE | 4 | 27 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 52 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 14 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 52.00%
Family Biotic Index + 5.60
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 2
%EPT + 30.00
EPT/Chironomids + 0.56

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 30/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods/agricultural; housing construction upstr

AN0473 # Mine Bk, Creamery Rd, Colts Neck Twp
USGS Quad + Marlboro

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 5 |
| LUMBRICULIDAE | 8 | 6 |
| TUBIFICIDAE | 10 | 6 |
| NAIDIDAE | 7 | 2 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 1 |
| ASELLIDAE | 8 | 1 |
| VELIIDAE | 9 | 7 |
| CORYDALIDAE | 0 | 1 |
| PSYCHOMYIIDAE | 2 | 1 |
| HYDROPSYCHIDAE | 4 | 2 |
| TIPULIDAE | 3 | 3 |
| SIMULIIDAE | 6 | 8 |
| CHIRONOMIDAE | 6 | 36 |
| BLOODREDCHIRONOMIDAE | 8 | 20 |
| EMPIDIDAE | 6 | 4 |
| EPHYDRIDAE | 6 | 1 |

Number of Taxa + 17 # Population + 105

Dominant Family(s) + CHIRONOMIDAE 34.29%
Family Biotic Index + 6.82
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.40
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.86
EPT/Chironomids + 0.05

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 10/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/rural; agricultural upstr; fish

AN0475 # Hockhockson Bk, Hockhockson Rd, Colts Neck Twp
USGS Quad + Long Branch

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| LUMBRICULIDAE | 8 | 16 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 11 |
| SPHAERIIDAE | 8 | 3 |
| ASELLIDAE | 8 | 11 |
| ONISCIDAE | 7 | 2 |
| GAMMARIDAE | 4 | 3 |
| BAETIDAE | 4 | 1 |
| GERRIDAE | 8 | 1 |
| GYRINIDAE | 3 | 1 |
| SIALIDAE | 4 | 2 |
| HYDROPSYCHIDAE | 4 | 7 |
| PHRYGANEIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 3 |
| TIPULIDAE | 3 | 4 |
| CHIRONOMIDAE | 6 | 29 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 29.00%
Family Biotic Index + 6.33
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 13.00
EPT/Chironomids + 0.42

NJIS/Rating + 21/moderately impaired

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OBSERVATIONS

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Clarity + turbid

Flow + slow-moderate

Width/Depth(ft) + 8/2

Substrate + sand

Streambank Vegetation/Stability + good/good

Canopy + mostly closed

Other + woods/agricultural; partially channelized; trout stocked waters

AN0476 # Pine Bk, Tinton Ave (Rt 537), Tinton Falls
USGS Quad + Long Branch

August 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 2 |
| LUMBRICULIDAE | 8 | 16 |
| TUBIFICIDAE | 10 | 13 |
| LUMBRICIDAE | 10 | 2 |
| PLANORBIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 4 |
| GAMMARIDAE | 4 | 5 |
| CORIXIDAE | 7 | 1 |
| HYDROPSYCHIDAE | 4 | 45 |
| BRACHYCENTRIDAE | 1 | 8 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 1 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 45.00%
Family Biotic Index + 5.63
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 2
%EPT + 53.00
EPT/Chironomids + 53.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 20-25/1-2
Substrate + sand/cobble
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + suburban; commercial area upstr; eels; minnows

AN0477 # Whale Pd Bk, Larchwood Ave, Oakhurst
USGS Quad + Long Branch

August 4, 1994

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Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLANARIIDAE                   3      3
LUMBRICULIDAE                 8      15
TUBIFICIDAE                   10     19
PLANORBIDAE                   6      1
ASELLIDAE                     8      2
GAMMARIDAE                    4      55
TIPULIDAE                     3      1
CHIRONOMIDAE                  6      2
BLOODREDCHIRONOMIDAE        8      2
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Number of Taxa + 9 # Population + 100
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Dominant Family(s) + GAMMARIDAE 55.00%
Family Biotic Index + 5.92
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

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OBSERVATIONS
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Clarity + slightly turbid
Flow + slow
Width/Depth(ft) + 15/1-2
Substrate + stone/sand/silt
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods/urban; commercial area upstr; stormwater pipes

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AN0478 # Poplar Bk, Almyr Ave, Deal
USGS Quad + Long Branch

August 4, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| TUBIFICIDAE | 10 | 23 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 3 |
| ASELLIDAE | 8 | 26 |
| GAMMARIDAE | 4 | 44 |
| HYDROPSYCHIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 1 |

Number of Taxa + 8 # Population + 101

Dominant Family(s) + GAMMARIDAE 43.56%
Family Biotic Index + 6.66
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 0.99
EPT/Chironomids + 1.00

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 10-12/1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/urban; commercial area upstr; eels

AN0479 # Jumping Bk, Essex Rd, New Shrewsbury Twp
USGS Quad + Asbury Pk

August 4, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| LUMBRICULIDAE | 8 | 4 |
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 2 |
| PLANORBIDAE | 6 | 1 |
| PHYSIDAE | 7 | 2 |
| ASELLIDAE | 8 | 2 |
| CAENIDAE | 7 | 1 |
| CORDULIIDAE | 5 | 2 |
| COENAGRIONIDAE | 9 | 8 |
| ELMIDAE | 5 | 9 |
| SIALIDAE | 4 | 4 |
| LEPTOCERIDAE | 4 | 7 |
| POLYCENTROPODIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 49 |
| TABANIDAE | 6 | 1 |

Number of Taxa + 16 # Population + 99

Dominant Family(s) + CHIRONOMIDAE 49.49%
Family Biotic Index + 6.31
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.39
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 9.09
EPT/Chironomids + 0.18

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + turbid
Flow + slow
Width/Depth(ft) + 8-10/>1
Substrate + sand/silt/gravel
Streambank Vegetation/Stability + good/good
Canopy + closed
Other + woods/suburban; commercial area upstr

AN0480 # Jumping Bk, Corlies Ave, Neptune Twp
USGS Quad + Asbury Pk

September 20, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| VELIIDAE | 9 | 3 |
| ELMIDAE | 5 | 1 |
| HYDROPSYCHIDAE | 4 | 74 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 9 |
| BLOODREDCHIRONOMIDAE | 8 | 4 |
| EMPIDIDAE | 6 | 2 |
| EPHYDRIDAE | 6 | 1 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 74.00%
Family Biotic Index + 4.74
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 74.00
EPT/Chironomids + 5.69

NJIS/Rating + 18/moderately impaired

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

OBSERVATIONS

Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 8-10/1-2
Substrate + cobble/sand/gravel
Streambank Vegetation/Stability + poor/good
Canopy + mostly closed
Other + woods/suburban; commercial area upstr; macrophytes; eels

AN0481 # Shark R, Shark R Rd, Wall Twp
USGS Quad + Asbury Pk

August 4, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-------------------|
| LUMBRICULIDAE | 8 | 3 |
| TUBIFICIDAE | 10 | 2 |
| ASELLIDAE | 8 | 1 |
| DYTISCIDAE | 5 | 5 |
| SIALIDAE | 4 | 2 |
| TIPULIDAE | 3 | 8 |
| PTYCHOPTERIDAE | 8 | 2 |
| CHIRONOMIDAE | 6 | 63 |
| BLOODREDCHIRONOMIDAE | 8 | 5 |
| Number of Taxa + | 9 | # Population + 91 |

Dominant Family(s) + CHIRONOMIDAE 69.23%
Family Biotic Index + 5.97
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.08
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 + slightly turbid
Flow + slow-moderate
Width/Depth(ft) + 8-10/1
Substrate + silt/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/agricultural; Earle Depot upstr; orange (iron) siltation

AN0483 # Wreck Pd, Old Mill Rd, Wall Twp
USGS Quad + Asbury Pk

August 10, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SPONGILLIDAE | 5 | 13 |
| NAIDIDAE | 7 | 1 |
| HYDROBIIDAE | 8 | 2 |
| SPHAERIIDAE | 8 | 1 |
| HYDROPSYCHIDAE | 4 | 4 |
| HYDROPTILIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 2 |
| PALUDICELLIDAE | 7 | 27 |
| FREDERICELLIDAE | 2 | 49 |

Number of Taxa + 9 # Population + 100

Dominant Family(s) + FREDERICELLIDAE 49.00%
Family Biotic Index + 4.15
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 2
%EPT + 5.00
EPT/Chironomids + 2.50

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + clear
Flow + moderate
Width/Depth(ft) + 30/0.5-1.5
Substrate + cobble/rock/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + urban; commercial area upstr; oily sheen on water surface;
trash; macrophytes; eel; crab

AN0484 # Hannabrand Bk, Old Mill Rd, Wall Twp
USGS Quad + Asbury Pk

August 10, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 3 |
| NEMATODA | 6 | 1 |
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 4 |
| PHYSIDAE | 7 | 1 |
| ONISCIDAE | 7 | 1 |
| GAMMARIDAE | 4 | 11 |
| HEPTAGENIIDAE | 4 | 9 |
| BAETIDAE | 4 | 2 |
| ELMIDAE | 5 | 3 |
| CORYDALIDAE | 0 | 2 |
| HYDROPSYCHIDAE | 4 | 20 |
| LEPTOCERIDAE | 4 | 1 |
| BRACHYCENTRIDAE | 1 | 3 |
| POLYCENTROPODIDAE | 6 | 1 |
| TIPULIDAE | 3 | 2 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 19 |
| BLOODREDCHIRONOMIDAE | 8 | 9 |
| EMPIDIDAE | 6 | 1 |
| FREDERICELLIDAE | 2 | 1 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 20.00%
Family Biotic Index + 5.21
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.28
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 36.00
EPT/Chironomids + 1.29

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 20/<1
Substrate + cobble/sand/stone
Streambank Vegetation/Stability + good/good
Canopy + open
Other + residential; catfish; minnows

AN0485 # Manasquan R, off Turkey Swamp Rd, Freehold Twp
USGS Quad + Adelphia

October 7, 1992

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| LUMBRICULIDAE | 8 | 6 |
| SPHAERIIDAE | 8 | 28 |
| ASELLIDAE | 8 | 37 |
| GAMMARIDAE | 4 | 1 |
| ISOTOMIDAE | 10 | 1 |
| CORYDALIDAE | 0 | 1 |
| PHRYGANEIDAE | 4 | 4 |
| TIPULIDAE | 3 | 4 |
| PTYCHOPTERIDAE | 8 | 7 |
| CHIRONOMIDAE | 6 | 10 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + ASELLIDAE 37.00%
Family Biotic Index + 7.35
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.17
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 4.00
EPT/Chironomids + 0.40

NJIS/Rating + 12/moderately impaired

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

OBSERVATIONS

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 3/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/swamp; sometimes impounded upstr

AN0486 # Debois Ck, Rt 33, Freehold Twp
USGS Quad + Adelphia

September 14, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 7 |
| GLOSSIPHONIIDAE | 8 | 1 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 1 |
| ONISCIDAE | 7 | 1 |
| DIPLOPODA | 5 | 1 |
| PSEPHENIDAE | 4 | 2 |
| ELMIDAE | 5 | 2 |
| SIALIDAE | 4 | 2 |
| HYDROPSYCHIDAE | 4 | 3 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 34 |
| BLOODREDCHIRONOMIDAE | 8 | 5 |

Number of Taxa + 13 # Population + 61

Dominant Family(s) + CHIRONOMIDAE 55.74%
Family Biotic Index + 6.44
Scraper/Filterer Collector Ratio + 0.20
Shredder/Total Ratio + 0.16
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 4.92
EPT/Chironomids + 0.08

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 10/<1
Substrate + sand/gravel/ironstone/concrete
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree-lined/suburban; STP/commercial area upstr; iron precipitate; trash (plastics)

AN0487 # Debois Ck, Strickland Rd, Howell Twp
USGS Quad + Adelphia

September 14, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| TUBIFICIDAE | 10 | 7 |
| NAIDIDAE | 7 | 2 |
| CAMBARIDAE | 5 | 1 |
| HYDROPSYCHIDAE | 4 | 7 |
| PHRYGANEIDAE | 4 | 1 |
| TIPULIDAE | 3 | 2 |
| SIMULIIDAE | 6 | 4 |
| CHIRONOMIDAE | 6 | 75 |

Number of Taxa + 9 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 75.00%
Family Biotic Index + 6.08
Scraper/Filterer Collector Ratio + 0.07
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 2
%EPT + 8.00
EPT/Chironomids + 0.11

NJIS/Rating + 6/severely impaired

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

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OBSERVATIONS

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Clarity + clear w grey-green tint
Flow + moderate
Width/Depth(ft) + 15/<1
Substrate + sand/some gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + brush-lined/suburban; commercial area upstr; undersides of
stones black; oil rising from substrate; trash

AN0488 # Manasquan R un trb, Strickland Rd, Howell Twp
USGS Quad + Adelphia

September 14, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 18 |
| NEMATODA | 6 | 1 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 14 |
| NAIDIDAE | 7 | 3 |
| ONISCIDAE | 7 | 1 |
| HALIPLIDAE | 5 | 1 |
| ELMIDAE | 5 | 3 |
| HYDROPSYCHIDAE | 4 | 8 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 45 |
| ANTHOMYIIDAE | 6 | 1 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 45.00%
Family Biotic Index + 6.63
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 8.00
EPT/Chironomids + 0.18

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + clear

Flow + moderate

Width/Depth(ft) + 6/<1

Substrate + sand/gravel

Streambank Vegetation/Stability + fair/fair

Canopy + half open

Other + tree & brush-lined/suburban; commercial area upstr; macrophytes

AN0489 # Manasquan R, Rt 9, Wyckoff Mills
USGS Quad + Adelphia

September 14, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 4 |
| COENAGRIONIDAE | 9 | 1 |
| CORIXIDAE | 7 | 1 |
| SIALIDAE | 4 | 1 |
| HYDROPSYCHIDAE | 4 | 16 |
| CHIRONOMIDAE | 6 | 42 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 8 # Population + 71

Dominant Family(s) + CHIRONOMIDAE 59.15%
Family Biotic Index + 5.94
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 1
%EPT + 22.54
EPT/Chironomids + 0.37

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 20/<1
Substrate + sand
Streambank Vegetation/Stability + poor/poor
Canopy + half open
Other + tree-lined/commercial

AN0490 # Manasquan R, W Farms Rd, Howell Twp
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| GAMMARIDAE | 4 | 2 |
| AESHNIDAE | 3 | 1 |
| CORYDALIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 85 |
| BRACHYCENTRIDAE | 1 | 1 |
| PYRALIDAE | 5 | 1 |
| TIPULIDAE | 3 | 4 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 2 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 85.00%
Family Biotic Index + 4.01
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 2
%EPT + 86.00
EPT/Chironomids + 43.00

NJIS/Rating + 18/moderately impaired

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

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 30/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + half open
Other + agricultural; siltation; macrophytes

AN0491 # Marsh Bog Bk, Cranberry Bog Rd, Howell Twp
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 20 |
| ASELLIDAE | 8 | 2 |
| CORDULEGASTRIDAE | 3 | 1 |
| LEUCTRIDAE | 0 | 1 |
| VELIIDAE | 9 | 2 |
| DYTISCIDAE | 5 | 1 |
| GYRINIDAE | 3 | 2 |
| ELMIDAE | 5 | 1 |
| CHRYSOMELIDAE | 5 | 1 |
| SIALIDAE | 4 | 2 |
| CORYDALIDAE | 0 | 1 |
| TIPULIDAE | 3 | 7 |
| CHIRONOMIDAE | 6 | 44 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |
| TABANIDAE | 6 | 1 |

Number of Taxa + 15 # Population + 88

Dominant Family(s) + CHIRONOMIDAE 50.00%
Family Biotic Index + 6.06
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.19
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.14
EPT/Chironomids + 0.02

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + clear cedar

Flow + fast

Width/Depth(ft) + 4-6/~1

Substrate + gravel/mud

Streambank Vegetation/Stability + fair/fair

Canopy + half open

Other + woods; Rt 33 commercial corridor upstr; siltation; macrophytes;
minnows

AN0492 # Marsh Bog Bk, Yellow Bk Rd, Squankum
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 3 |
| NAIDIDAE | 7 | 2 |
| SPHAERIIDAE | 8 | 2 |
| ONISCIDAE | 7 | 1 |
| HEPTAGENIIDAE | 4 | 14 |
| AESHNIDAE | 3 | 3 |
| COENAGRIONIDAE | 9 | 3 |
| ELMIDAE | 5 | 2 |
| CORYDALIDAE | 0 | 2 |
| HYDROPSYCHIDAE | 4 | 23 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 37 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |
| EMPIDIDAE | 6 | 2 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 37.00%
Family Biotic Index + 5.26
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.26
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 37.00
EPT/Chironomids + 0.95

NJIS/Rating + 21/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + clear
Flow + fast
Width/Depth(ft) + 15/~1
Substrate + gravel/stone
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + woods/commercial/agricultural

AN0493 # Manasquan R, Rt 547, Squankum
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----------------|
| TUBIFICIDAE | 10 | 3 |
| GAMMARIDAE | 4 | 5 |
| HYDROPSYCHIDAE | 4 | 37 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 19 |
| Number of Taxa + 5 | # | Population + 65 |

Dominant Family(s) + HYDROPSYCHIDAE 56.92%
Family Biotic Index + 4.85
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 1
%EPT + 56.92
EPT/Chironomids + 1.95

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + clear
Flow + fast
Width/Depth(ft) + 50/<1
Substrate + rock/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + tree-lined/agricultural; periphyton; macrophytes; minnows;
tadpoles

AN0494 # Mingamahone Bk, Cranberry Bog Rd, Howell Twp
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| LUMBRICULIDAE | 8 | 3 |
| NAIDIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 2 |
| ASELLIDAE | 8 | 1 |
| GAMMARIDAE | 4 | 8 |
| VELIIDAE | 9 | 1 |
| DYTISCIDAE | 5 | 2 |
| SIALIDAE | 4 | 6 |
| TIPULIDAE | 3 | 2 |
| PTYCHOPTERIDAE | 8 | 7 |
| CHIRONOMIDAE | 6 | 2 |

Number of Taxa + 12 # Population + 36

Dominant Family(s) + GAMMARIDAE 22.22%
Family Biotic Index + 5.92
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.25
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + clear dark

Flow + slow

Width/Depth(ft) + 15/1.5

Substrate + mud/muck

Streambank Vegetation/Stability + fair/fair

Canopy + mostly open

Other + woods/suburban; Earle Depot/commercial area upstr; oily sheen
on water surface

AN0495 # Mingamahone Bk, Rt 524, Squankum
USGS Quad + Farmingdale

August 9, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 7 |
| TUBIFICIDAE | 10 | 12 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 2 |
| GAMMARIDAE | 4 | 14 |
| HEPTAGENIIDAE | 4 | 29 |
| GYRINIDAE | 3 | 1 |
| SIALIDAE | 4 | 2 |
| CORYDALIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 11 |
| BRACHYCENTRIDAE | 1 | 2 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 5 |
| CHIRONOMIDAE | 6 | 10 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 16 # Population + 100

Dominant Family(s) + HEPTAGENIIDAE 29.00%
Family Biotic Index + 5.28
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.36
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 3
%EPT + 42.00
EPT/Chironomids + 3.82

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + clear dark
Flow + fast
Width/Depth(ft) + 30/2
Substrate + gravel/stone
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods; Allaire St Pk; macrophytes

AN0496 # Stan Bk, Easy St, Howell Twp
USGS Quad + Farmingdale

October 30, 1990

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Taxon (Family Level) FTV NOI
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LUMBRICULIDAE 8 12
SPHAERIIDAE 8 4
ASELLIDAE 8 13
ENTOMOBRYIDAE 10 1
LEPTOPHLEBIIDAE 2 3
SIALIDAE 4 1
CORYDALIDAE 0 1
PSYCHOMYIIDAE 2 1
HYDROPSYCHIDAE 4 20
LIMNAPHILIDAE 4 8
MOLANNIDAE 6 2
CALAMOCERATIDAE 0 2
POLYCENTROPODIDAE 6 1
TIPULIDAE 3 3
SIMULIIDAE 6 1
CHIRONOMIDAE 6 18
TABANIDAE 6 2
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Number of Taxa + 17 # Population + 93
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Dominant Family(s) + HYDROPSYCHIDAE 21.51%
Family Biotic Index + 5.58
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 7
%EPT + 39.78
EPT/Chironomids + 2.06

NJIS/Rating + 27/non-impaired

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OBSERVATIONS
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Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 2/<1
Substrate + gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + partly open
Other + woods/marsh/agricultural

AN0497 # Squankum Bk, Spur 549, Howell Twp
USGS Quad + Farmingdale

August 10, 1994

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| PROSTOMATIDAE | 7 | 6 |
| LUMBRICULIDAE | 8 | 2 |
| GLOSSIPHONIIDAE | 8 | 2 |
| PLANORBIDAE | 6 | 4 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 9 |
| ONISCIDAE | 7 | 1 |
| HEPTAGENIIDAE | 4 | 6 |
| BAETIDAE | 4 | 2 |
| AESHNIDAE | 3 | 1 |
| VELIIDAE | 9 | 1 |
| LAMPYRIDAE | 6 | 1 |
| ELMIDAE | 5 | 16 |
| CORYDALIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 3 |
| PHRYGANEIDAE | 4 | 4 |
| LEPTOCERIDAE | 4 | 1 |
| BRACHYCENTRIDAE | 1 | 9 |
| TIPULIDAE | 3 | 4 |
| PSYCHODIDAE | 10 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 20 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |

Number of Taxa + 23 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 20.00%
 Family Biotic Index + 5.31
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.25
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
 %EPT + 25.00
 EPT/Chironomids + 1.14

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear
 Flow + slow-moderate
 Width/Depth(ft) + 8/<1
 Substrate + sand/mud/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods/agriculture; oil sheen on water surface

AN0498 # Manasquan R, Hospital Rd, Wall Twp
USGS Quad + Asbury Pk

August 10, 1994

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| PROSTOMATIDAE | 7 | 7 |
| LUMBRICULIDAE | 8 | 4 |
| NAIDIDAE | 7 | 1 |
| ANCYLIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 1 |
| GAMMARIDAE | 4 | 15 |
| CAENIDAE | 7 | 1 |
| GOMPHIDAE | 1 | 1 |
| LEUCTRIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 20 |
| HYDROPTILIDAE | 4 | 2 |
| BRACHYCENTRIDAE | 1 | 3 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 33 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| EMPIDIDAE | 6 | 5 |
| ANTHOMYIIDAE | 6 | 1 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 33.00%
Family Biotic Index + 5.22
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 27.00
EPT/Chironomids + 0.79

NJIS/Rating + 21/moderately impaired

OBSERVATIONS
Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 50/2
Substrate + sand/mud/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + Garden St Pkwy/hospital upstr

AN0499 # N Br Metedeconk R, Rt 527, Freehold Twp
USGS Quad + Adelphia

September 28, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DENDROCOELIDAE | 5 | 1 |
| LUMBRICULIDAE | 8 | 4 |
| TUBIFICIDAE | 10 | 7 |
| NAIDIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 28 |
| ASELLIDAE | 8 | 16 |
| GAMMARIDAE | 4 | 1 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| CAPNIIDAE | 1 | 1 |
| VELIIDAE | 9 | 2 |
| SIALIDAE | 4 | 2 |
| PHRYGANEIDAE | 4 | 2 |
| LIMNEPHILIDAE | 4 | 4 |
| CALAMOCERATIDAE | 0 | 1 |
| POLYCENTROPODIDAE | 6 | 2 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 25 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + SPHAERIIDAE 28.00%
Family Biotic Index + 6.90
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.32
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 12.00
EPT/Chironomids + 0.48

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + turbid
Flow + slow
Width/Depth(ft) + 6-8/1-2
Substrate + muck
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; junkyard upstr; detritus; macrophytes

AN0500 # N Br Metedeconk R, Jackson Mills Rd, Freehold Twp
USGS Quad + Adelphia

September 28, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 12 |
| SPHAERIIDAE | 8 | 37 |
| HEPTAGENIIDAE | 4 | 1 |
| LEPTOPHLEBIIDAE | 2 | 5 |
| COENAGRIONIDAE | 9 | 3 |
| CAPNIIDAE | 1 | 1 |
| VELIIDAE | 9 | 1 |
| SIALIDAE | 4 | 3 |
| CORYDALIDAE | 0 | 1 |
| PSYCHOMYIIDAE | 2 | 5 |
| MOLANNIDAE | 6 | 1 |
| CALAMOCERATIDAE | 0 | 4 |
| TIPULIDAE | 3 | 3 |
| SIMULIIDAE | 6 | 14 |
| CHIRONOMIDAE | 6 | 9 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + SPHAERIIDAE 37.00%
Family Biotic Index + 6.42
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 6
%EPT + 17.00
EPT/Chironomids + 1.89

NJIS/Rating + 24/non-impaired

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

AN0502 # N Br Metedeconk R, Rt 9, Lakewood
USGS Quad + Lakewood

September 28, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PLAGIOSTOMIDAE | 9 | 1 |
| DUGESIIDAE | 9 | 1 |
| TUBIFICIDAE | 10 | 11 |
| HYDROBIIDAE | 8 | 10 |
| SPHAERIIDAE | 8 | 19 |
| ONISCIDAE | 7 | 1 |
| GAMMARIDAE | 4 | 2 |
| CAMBARIDAE | 5 | 1 |
| CHILOPODA | 6 | 1 |
| BAETIDAE | 4 | 12 |
| COENAGRIONIDAE | 9 | 2 |
| CORIXIDAE | 7 | 27 |
| HALIPLIDAE | 5 | 2 |
| DYTISCIDAE | 5 | 1 |
| ELMIDAE | 5 | 4 |
| SIALIDAE | 4 | 1 |
| PHRYGANEIDAE | 4 | 1 |
| TIPULIDAE | 3 | 2 |
| CHIRONOMIDAE | 6 | 1 |

Number of Taxa + 19 # Population + 100

Dominant Family(s) + CORIXIDAE 27.00%
Family Biotic Index + 6.96
Scraper/Filterer Collector Ratio + 0.42
Shredder/Total Ratio + 0.15
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 13.00
EPT/Chironomids + 13.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + slightly turbid
Flow + slow
Width/Depth(ft) + 40-50/>2
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + open
Other + suburban; Rt 9 commercial corridor upstr; channelized; shopping carts; macrophytes; crayfish

AN0503 # Haystack Bk, Southard Rd, Howell Twp
USGS Quad + Farmingdale

August 10, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| PROSTOMATIDAE | 7 | 3 |
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 8 |
| NAIDIDAE | 7 | 3 |
| LYMNAEIDAE | 6 | 5 |
| ANCYLIDAE | 7 | 1 |
| PLANORBIDAE | 6 | 4 |
| PHYSIDAE | 7 | 44 |
| SPHAERIIDAE | 8 | 19 |
| COENAGRIONIDAE | 9 | 2 |
| CORIXIDAE | 7 | 2 |
| VELIIDAE | 9 | 1 |
| HYDROPSYCHIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 3 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + PHYSIDAE 44.00%
Family Biotic Index + 7.40
Scraper/Filterer Collector Ratio + 0.05
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.33

NJIS/Rating + 9/moderately impaired

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

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OBSERVATIONS

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Clarity + turbid
Flow + slow
Width/Depth(ft) + 15/1
Substrate + mud
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + suburban; rotten egg odor; oily sheen on water surface;
macrophytes; frogs

AN0504 # Haystack Bk, Rt 547, Howell Twp
USGS Quad + Lakewood

August 10, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PLANARIIDAE | 3 | 1 |
| DUGESIIDAE | 9 | 7 |
| PROSTOMATIDAE | 7 | 5 |
| NAIDIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 15 |
| BAETIDAE | 4 | 1 |
| AESHNIDAE | 3 | 4 |
| MACROMIIDAE | 3 | 1 |
| COENAGRIONIDAE | 9 | 4 |
| ELMIDAE | 5 | 11 |
| SIALIDAE | 4 | 3 |
| CORYDALIDAE | 0 | 1 |
| PHILOPOTAMIDAE | 3 | 8 |
| HYDROPSYCHIDAE | 4 | 25 |
| BRACHYCENTRIDAE | 1 | 4 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 7 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 25.00%
Family Biotic Index + 4.74
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.17
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 5
%EPT + 53.00
EPT/Chironomids + 7.57

NJIS/Rating + 27/non-impaired

OBSERVATIONS

Clarity + turbid
Flow + slow
Width/Depth(ft) + 20/2-2.5
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + residential; trailer park; oily odor

AN0505 # Muddy Ford, Greenville Rd, Howell Twp
USGS Quad + Lakewood

September 20, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 7 |
| GAMMARIDAE | 4 | 2 |
| HEPTAGENIIDAE | 4 | 9 |
| BAETIDAE | 4 | 12 |
| VELIIDAE | 9 | 2 |
| HYDROPHILIIDAE | 5 | 1 |
| ELMIDAE | 5 | 5 |
| HYDROPSYCHIDAE | 4 | 5 |
| PHRYGANEIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| BRACHYCENTRIDAE | 1 | 9 |
| SIMULIIDAE | 6 | 6 |
| CHIRONOMIDAE | 6 | 40 |
| BLOODREDCHIRONOMIDAE | 8 | 3 |
| TABANIDAE | 6 | 1 |
| RHAGIONIDAE | 2 | 2 |

Number of Taxa + 16 # Population + 106

Dominant Family(s) + CHIRONOMIDAE 37.74%
Family Biotic Index + 5.23
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.23
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 6
%EPT + 34.91
EPT/Chironomids + 0.86

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear
Flow + moderate
Width/Depth(ft) + 8-10/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods; oily residue on bank nr stormwater pipe; macrophytes

AN0506 # N Br Metedeconk R, Rt 88, Lakewood Twp
USGS Quad + Lakewood

September 20, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 2 |
| TUBIFICIDAE | 10 | 8 |
| GLOSSIPHONIIDAE | 8 | 1 |
| HYDROBIIDAE | 8 | 11 |
| PLANORBIDAE | 6 | 1 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 9 |
| GAMMARIDAE | 4 | 14 |
| HEPTAGENIIDAE | 4 | 5 |
| BAETIDAE | 4 | 6 |
| COENAGRIONIDAE | 9 | 6 |
| CORIXIDAE | 7 | 4 |
| HALIPLIDAE | 5 | 3 |
| ELMIDAE | 5 | 8 |
| HYDROPSYCHIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| PYRALIDAE | 5 | 4 |
| CHIRONOMIDAE | 6 | 12 |

Number of Taxa + 20 # Population + 100

Dominant Family(s) + GAMMARIDAE 14.00%
Family Biotic Index + 6.26
Scraper/Filterer Collector Ratio + 0.85
Shredder/Total Ratio + 0.19
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 15.00
EPT/Chironomids + 1.25

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear
Flow + moderate
Width/Depth(ft) + 30/2
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods/commercial; stormwater pipes; macrophytes; fish; turtle

AN0507 # Cabinfield Br, Lanes Mill Rd, Lakewood Twp
 USGS Quad + Lakewood

September 20, 1994

| Taxon (Family Level) | FTV | NOI |
|-----------------------|------------------|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 1 |
| PLANORBIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 67 |
| HEPTAGENIIDAE | 4 | 3 |
| HALIPLIDAE | 5 | 1 |
| ELMIDAE | 5 | 3 |
| HYDROPSYCHIDAE | 4 | 7 |
| POLYCENTROPODIDAE | 6 | 1 |
| PYRALIDAE | 5 | 1 |
| CHIRONOMIDAE | 6 | 8 |
| FREDERICELLIDAE | 2 | 5 |
| Number of Taxa + 13 # | Population + 100 | |

Dominant Family(s) + SPHAERIIDAE 67.00%
 Family Biotic Index + 6.96
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.04
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
 %EPT + 11.00
 EPT/Chironomids + 1.38

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + SPHAERIIDAE overwhelmingly dominant

OBSERVATIONS

Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 4/1
 Substrate + sand/gravel/cobble
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + tree & shrub-lined/commercial/urban; dwnstr flow partially
 blocked by old fence clogged w debris

AN0508 # S Br Metedeconk R, Leesville-Siloam Rd, Jackson Twp
USGS Quad + Adelphia

October 29, 1990

| Taxon (Family Level) | FTV | NOI |
|--|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| PLANORBIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 10 |
| LEPTOPHLEBIIDAE | 2 | 3 |
| LEUCTRIDAE | 0 | 45 |
| CAPNIIDAE | 1 | 25 |
| PSYCHOMYIIDAE | 2 | 1 |
| LIMNephilidae | 4 | 4 |
| ODONTOCERIDAE | 0 | 4 |
| TIPULIDAE | 3 | 2 |
| CHIRONOMIDAE | 6 | 2 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| ANTHOMYIIDAE | 6 | 1 |
| Number of Taxa + 13 # Population + 100 | | |

Dominant Family(s) + LEUCTRIDAE 45.00%
 Family Biotic Index + 1.75
 Scraper/Filterer Collector Ratio + 0.36
 Shredder/Total Ratio + 0.79
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
 %EPT + 82.00
 EPT/Chironomids + 27.33

NJIS/Rating + 27/non-impaired

OBSERVATIONS
 Clarity + clear cedar
 Flow + moderate
 Width/Depth(ft) + 5/<1
 Substrate + sand
 Streambank Vegetation/Stability + good/good
 Canopy + partly open
 Other + woods

AN0509 # S Br Metedeconk R, Jackson Mills Rd, Jackson Mills
USGS Quad + Adelphia

September 28, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| HYDRIDAE | 4 | 1 |
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 7 |
| PLANORBIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 3 |
| ASELLIDAE | 8 | 6 |
| TALITRIDAE | 8 | 7 |
| BAETIDAE | 4 | 13 |
| COENAGRIONIDAE | 9 | 2 |
| CORIXIDAE | 7 | 20 |
| NOTONECTIDAE | 9 | 1 |
| HALIPLIDAE | 5 | 1 |
| GYRINIDAE | 3 | 1 |
| ELMIDAE | 5 | 4 |
| PHRYGANEIDAE | 4 | 2 |
| POLYCENTROPODIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 17 |
| BLOODREDCHIRONOMIDAE | 8 | 8 |
| FREDERICELLIDAE | 2 | 3 |

Number of Taxa + 19 # Population + 100

Dominant Family(s) + CORIXIDAE 20.00%
Family Biotic Index + 6.40
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 16.00
EPT/Chironomids + 0.64

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + turbid
Flow + moderate
Width/Depth(ft) + 20-25/>2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/rural; eutrophic lk upstr; fish

AN0510 # S Br Metedeconk R, Bennetts Mill Rd, Bennetts Mill
USGS Quad + Adelphia

September 28, 1994

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| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| VIVIPARIDAE | 6 | 2 |
| PHYSIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 15 |
| GYRINIDAE | 3 | 1 |
| HYDROPSYCHIDAE | 4 | 4 |
| TIPULIDAE | 3 | 2 |
| PALUDICELLIDAE | 7 | 67 |
| PLUMATELLIDAE | 7 | 8 |

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|------------------|---|---|--------------|-----|
| Number of Taxa + | 8 | # | Population + | 100 |
|------------------|---|---|--------------|-----|

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Dominant Family(s) + PALUDICELLIDAE 67.00%
Family Biotic Index + 6.89
Scraper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 4.00
EPT/Chironomids + 0.00

NJIS/Rating + 6/severely impaired

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

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OBSERVATIONS

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Clarity + turbid
Flow + moderate
Width/Depth(ft) + 30-40/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/residential; eutrophic lk upstr; eels; trout stocked waters

AN0511 # S Br Metedeconk R, Cedar Bridge Rd, Lakewood
USGS Quad + Lakewood

October 18, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|------------------|-----|
| LUMBRICULIDAE | 8 | 22 |
| TUBIFICIDAE | 10 | 2 |
| VIVIPARIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 56 |
| GAMMARIDAE | 4 | 2 |
| HEPTAGENIIDAE | 4 | 4 |
| HYDROPSYCHIDAE | 4 | 10 |
| BRACHYCENTRIDAE | 1 | 4 |
| POLYCENTROPODIDAE | 6 | 1 |
| Number of Taxa + 9 # | Population + 102 | |

Dominant Family(s) + SPHAERIIDAE 54.90%
Family Biotic Index + 7.10
Scraper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 4
%EPT + 18.63
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + significant organic pollution

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OBSERVATIONS
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Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 25/1+
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/urban; Rt 9 commercial area upstr; macrophytes

AN0512 # S Br Metedeconk R, Chambers Bridge Rd, Brick Twp
USGS Quad + Lakewood

October 18, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 2 |
| HYDROBIIDAE | 8 | 5 |
| SPHAERIIDAE | 8 | 27 |
| GAMMARIDAE | 4 | 28 |
| HEPTAGENIIDAE | 4 | 11 |
| BAETIDAE | 4 | 8 |
| MACROMIIDAE | 3 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| TAENIOPTERYGIDAE | 2 | 1 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 4 |
| HYDROPSYCHIDAE | 4 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 6 |

Number of Taxa + 16 # Population + 101

Dominant Family(s) + GAMMARIDAE 27.72%
Family Biotic Index + 5.73
Scraper/Filterer Collector Ratio + 0.14
Shredder/Total Ratio + 0.19
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 5
%EPT + 21.78
EPT/Chironomids + 3.67

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 25/1
Substrate + sand/some gravel & concrete chunks
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + tree-lined/suburban; commercial area upstr; channelized; Blue Gills

AN0513 # Beaver Dam Ck, Rt 88, Brick Twp
USGS Quad + Pt Pleasant

September 20, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 3 |
| NEMATODA | 6 | 2 |
| TUBIFICIDAE | 10 | 13 |
| NAIDIDAE | 7 | 14 |
| ASELLIDAE | 8 | 15 |
| GAMMARIDAE | 4 | 1 |
| CAENIDAE | 7 | 2 |
| COENAGRIONIDAE | 9 | 3 |
| VELIIDAE | 9 | 1 |
| HALIPLIDAE | 5 | 1 |
| HYDROPHILIDAE | 5 | 11 |
| HYDROPSYCHIDAE | 4 | 6 |
| LEPTOCERIDAE | 4 | 5 |
| PYRALIDAE | 5 | 4 |
| CHIRONOMIDAE | 6 | 17 |
| DOLICHOPODIDAE | 4 | 1 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 17.00%
Family Biotic Index + 6.74
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 3
%EPT + 13.00
EPT/Chironomids + 0.76

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 8-10/2
Substrate + sand/muck/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + woods/suburban; commercial area upstr; channelized; debris;
minnows

AN0515 # Kettle Ck, New Hampshire Ave, Lakewood Twp
USGS Quad + Lakewood

October 18, 1994

| Taxon (Family Level) | FTV | NOI |
|--|-----|-----|
| DUGESIIDAE | 9 | 2 |
| TUBIFICIDAE | 10 | 9 |
| NAIDIDAE | 7 | 2 |
| SPHAERIIDAE | 8 | 11 |
| ASELLIDAE | 8 | 8 |
| HEPTAGENIIDAE | 4 | 13 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| EPHEMERELLIDAE | 1 | 4 |
| LEUCTRIDAE | 0 | 6 |
| SIALIDAE | 4 | 1 |
| CORYDALIDAE | 0 | 3 |
| HYDROPSYCHIDAE | 4 | 21 |
| MOLANNIDAE | 6 | 2 |
| ODONTOCERIDAE | 0 | 1 |
| CALAMOCERATIDAE | 0 | 2 |
| POLYCENTROPODIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 10 |
| Number of Taxa + 17 # Population + 100 | | |

Dominant Family(s) + HYDROPSYCHIDAE 21.00%
Family Biotic Index + 5.12
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.31
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 54.00
EPT/Chironomids + 5.40

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 3/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; fish

AN0516 # Kettle Ck, Moore Rd, Brick Twp
USGS Quad + Lakewood

October 18, 1994

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Taxon (Family Level)           FTV    NOI
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HYDRIDAE                       4      10
DUGESIIDAE                     9      31
PROSTOMATIDAE                 7      1
LUMBRICULIDAE                 8      1
NAIDIDAE                      7      33
LUMBRICIDAE                   10     1
HYDROBIIDAE                   8      3
PHYSIDAE                      7      1
SPHAERIIDAE                   8      3
COENAGRIONIDAE                9      1
HYDROPSYCHIDAE                4      2
SIMULIIDAE                    6      8
PLUMATELLIDAE                 7      5

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Number of Taxa + 13 # Population + 100

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Dominant Family(s) + NAIDIDAE    33.00%
Family Biotic Index +   7.30
Scraper/Filterer Collector Ratio + 0.17
Shredder/Total Ratio +   0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 2.00
EPT/Chironomids + 0.00

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NJIS/Rating + 12/moderately impaired

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

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OBSERVATIONS
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Clarity + clear
Flow + slow
Width/Depth(ft) + 30/1
Substrate + sand
Streambank Vegetation/Stability + poor/good
Canopy + open
Other + brush-lined/suburban; eutrophic lk upstr; channelized; banks
       stabilized w creosote planks; macrophytes

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AN0517 # Toms R, Paint Island Rd, Millstone Twp
USGS Quad + Roosevelt

October 29, 1990

| Taxon (Family Level) | FTV | NOI |
|--|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 1 |
| LUMBRICIDAE | 10 | 1 |
| SPHAERIIDAE | 8 | 2 |
| ENTOMOBRYIDAE | 10 | 1 |
| LEPTOPHLEBIIDAE | 2 | 1 |
| EPHEMERELLIDAE | 1 | 3 |
| LEUCTRIDAE | 0 | 42 |
| PTILODACTYLIDAE | 1 | 7 |
| CORYDALIDAE | 0 | 1 |
| PSYCHOMYIIDAE | 2 | 1 |
| HYDROPSYCHIDAE | 4 | 12 |
| LIMNAPHILIDAE | 4 | 1 |
| POLYCENTROPODIDAE | 6 | 4 |
| TIPULIDAE | 3 | 2 |
| CERATOPOGONIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 17 |
| Number of Taxa + 17 # Population + 100 | | |

Dominant Family(s) + LEUCTRIDAE 42.00%
Family Biotic Index + 2.73
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.69
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 64.00
EPT/Chironomids + 3.76

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 2/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + partly open
Other + tree-lined/agricultural

AN0518 # Toms R, Rt 571, Holmson
USGS Quad + Roosevelt

October 12, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 1 |
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 13 |
| PLANORBIDAE | 6 | 6 |
| SPHAERIIDAE | 8 | 44 |
| GOMPHIDAE | 1 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| ELMIDAE | 5 | 2 |
| SIALIDAE | 4 | 2 |
| HYDROPSYCHIDAE | 4 | 13 |
| PHRYGANEIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 2 |
| BRACHYCENTRIDAE | 1 | 7 |
| POLYCENTROPODIDAE | 6 | 1 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 1 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + SPHAERIIDAE 44.00%
Family Biotic Index + 6.65
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 5
%EPT + 25.00
EPT/Chironomids + 25.00

NJIS/Rating + 18/moderately impaired

OBSERVATIONS
Clarity + clear black
Flow + slow
Width/Depth(ft) + 15/<1-4
Substrate + sand/silt
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + tree-lined; several fish

AN0519 # Toms R, Rt 528, Cassville
USGS Quad + Lakehurst

October 12, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICIDAE | 10 | 1 |
| HEPTAGENIIDAE | 4 | 15 |
| COENAGRIONIDAE | 9 | 1 |
| TAENIOPTERYGIDAE | 2 | 2 |
| PERLIDAE | 1 | 3 |
| PTILODACTYLIDAE | 1 | 6 |
| SIALIDAE | 4 | 2 |
| CORYDALIDAE | 0 | 5 |
| PHILOPOTAMIDAE | 3 | 8 |
| HYDROPSYCHIDAE | 4 | 4 |
| LIMNAPHILIDAE | 4 | 2 |
| BRACHYCENTRIDAE | 1 | 15 |
| SERICOSTOMATIDAE | 3 | 2 |
| HELICOPSYCHIDAE | 3 | 1 |
| TIPULIDAE | 3 | 2 |
| SIMULIIDAE | 6 | 13 |
| RHAGIONIDAE | 2 | 18 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + RHAGIONIDAE 18.00%
Family Biotic Index + 2.92
Scraper/Filterer Collector Ratio + 0.12
Shredder/Total Ratio + 0.23
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 9
%EPT + 52.00
EPT/Chironomids + 0.00

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 25/<1
Substrate + gravel/sand/clay/rock/road tar
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; macrophytes

USGS Quad + Lakehurst

October 12, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 2 |
| TUBIFICIDAE | 10 | 6 |
| SPHAERIIDAE | 8 | 7 |
| GAMMARIDAE | 4 | 26 |
| DIPLOPODA | 5 | 1 |
| BAETIDAE | 4 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 1 |
| HYDROPSYCHIDAE | 4 | 8 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 4 |
| BRACHYCENTRIDAE | 1 | 26 |
| SIMULIIDAE | 6 | 5 |
| CHIRONOMIDAE | 6 | 7 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + GAMMARIDAE & BRACHYCENTRIDAE 26.00%
Family Biotic Index + 4.38
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 40.00
EPT/Chironomids + 4.44

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 10/<1
Substrate + gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree-lined/rural; macrophytes

AN0521 # Maple Root Br, Bowman Rd, Jackson Twp
USGS Quad + Lakehurst

October 12, 1994

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| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 1 |
| ASELLIDAE | 8 | 19 |
| LEPTOPHLEBIIDAE | 2 | 5 |
| SIALIDAE | 4 | 6 |
| CORYDALIDAE | 0 | 1 |
| PHILOPOTAMIDAE | 3 | 1 |
| PHRYGANEIDAE | 4 | 2 |
| LIMNEPHILIDAE | 4 | 3 |
| MOLANNIDAE | 6 | 10 |
| LEPTOCERIDAE | 4 | 1 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 48 |

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 Number of Taxa + 13 # Population + 100
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Dominant Family(s) + CHIRONOMIDAE 48.00%
 Family Biotic Index + 5.90
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.10
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
 %EPT + 22.00
 EPT/Chironomids + 0.46

NJIS/Rating + 21/moderately impaired

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 OBSERVATIONS
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 Clarity + clear
 Flow + negligible
 Width/Depth(ft) + 25/1
 Substrate + silt
 Streambank Vegetation/Stability + good/good
 Canopy + half closed
 Other + woods; macrophytes (water lilies); impairment source(s) unknown

AN0522 # Dove Mill Br, Grawtown Rd, Jackson Twp
 USGS Quad + Lakehurst

October 13, 1994

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  Taxon (Family Level)           FTV      NOI
  ))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
  PLANARIIDAE                    3        1
  SPHAERIIDAE                    8        3
  ASELLIDAE                      8        2
  HEPTAGENIIDAE                 4        4
  LEPTOPHLEBIIDAE              2       36
  CHLOROPERLIDAE                1        1
  GYRINIDAE                     3        1
  ELMIDAE                       5        6
  SIALIDAE                      4        1
  CORYDALIDAE                   0        1
  PHILOPOTAMIDAE               3        2
  HYDROPSYCHIDAE               4        7
  LIMNephilidae                 4        5
  ODONTOCERIDAE                 0        2
  CALAMOCERATIDAE              0        1
  LEPTOCERIDAE                  4        1
  SERICOSTOMATIDAE             3       12
  TIPULIDAE                     3        7
  SIMULIIDAE                    6        1
  CHIRONOMIDAE                  6        6
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Number of Taxa + 20 # Population + 100

Dominant Family(s) + LEPTOPHLEBIIDAE 36.00%
 Family Biotic Index + 3.26
 Scraper/Filterer Collector Ratio + 0.15
 Shredder/Total Ratio + 0.28
 E(phemeroptera)+P(lecoptera)+T(riphoptera) + 10
 %EPT + 71.00
 EPT/Chironomids + 11.83

NJIS/Rating + 30/non-impaired

))

OBSERVATIONS

))

Clarity + clear
 Flow + slow
 Width/Depth(ft) + 25/1
 Substrate + sand
 Streambank Vegetation/Stability + fair/fair
 Canopy + half closed
 Other + woods; fish

USGS Quad + Lakehurst

October 13, 1994

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10     4
ASELLIDAE                     8     1
HEPTAGENIIDAE                 4     3
METRETOPODIDAE               2     1
BAETISCIDAE                   3     1
PERLIDAE                      1     3
DYTISCIDAE                    5     1
ELMIDAE                       5     4
CORYDALIDAE                   0     1
PHILOPOTAMIDAE               3     4
LIMNEPHILIDAE                 4    17
MOLANNIDAE                    6     1
LEPTOCERIDAE                  4     1
BRACHYCENTRIDAE               1    25
TIPULIDAE                     3     9
CHIRONOMIDAE                   6    18
BLOODREDCHIRONOMIDAE         8     1
RHAGIONIDAE                    2     5
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 18    #    Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + BRACHYCENTRIDAE 25.00%

Family Biotic Index + 3.61

Scraper/Filterer Collector Ratio + 4.00

Shredder/Total Ratio + 0.21

E(phemeroptera)+P(lecoptera)+T(richoptera) + 9

%EPT + 56.00

EPT/Chironomids + 2.95

NJIS/Rating + 30/non-impaired

```

))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 40/1-3
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods

```

AN0524 # Toms R, Rt 571, Dover Twp
USGS Quad + Lakewood

October 13, 1994

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)      FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                10       17
LEUCTRIDAE                 0        1
CAPNIIDAE                  1        2
TAENIOPTERYGIDAE          2        1
ELMIDAE                    5       35
PTILODACTYLIDAE           1        2
HYDROPSYCHIDAE            4        4
LEPIDOSTOMATIDAE          1        9
BRACHYCENTRIDAE           1        5
SERICOSTOMATIDAE          3       10
HELICOPSYCHIDAE           3        6
TIPULIDAE                  3        2
SIMULIIDAE                 6        1
CHIRONOMIDAE               6        4
EMPIDIDAE                  6        1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 15 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

```

Dominant Family(s) + ELMIDAE 35.00%
Family Biotic Index + 4.71
Scraper/Filterer Collector Ratio + 0.86
Shredder/Total Ratio + 0.26
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 38.00
EPT/Chironomids + 9.50

```

NJIS/Rating + 30/non-impaired

```

))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 40/<1
Substrate + gravel/sand/cobble
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods; macrophytes

```

AN0525 # Bordens Mill Br, Colliers Mills WMA, Jackson Twp
USGS Quad + Cassville

October 18, 1994

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)                FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                          10      7
CHIRONOMIDAE                          6      2
BLOODREDCHIRONOMIDAE                 8      1
CHAOBORIDAE                           8      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 4  #  Population + 11
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

```

Dominant Family(s) + TUBIFICIDAE    63.64%
Family Biotic Index + 8.91
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

```

NJIS/Rating + 0/severely impaired

```

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

```

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

OBSERVATIONS

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

```

Clarity + turbid black
Flow + negligible
Width/Depth(ft) + 4-5/1
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; Colliers Mills WMA; eutrophic lks upstr; old cranberry
      bog spillway nearly blocked by debris; odor of decaying
      vegetation

```

AN0526 # Shannae Br, Colliers Mills WMA, Jackson Twp
USGS Quad + Cassville

October 18, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 13 |
| TUBIFICIDAE | 10 | 4 |
| SPHAERIIDAE | 8 | 1 |
| LEPTOPHLEBIIDAE | 2 | 17 |
| GOMPHIDAE | 1 | 3 |
| COENAGRIONIDAE | 9 | 1 |
| CORIXIDAE | 7 | 1 |
| MOLANNIDAE | 6 | 11 |
| LEPTOCERIDAE | 4 | 16 |
| POLYCENTROPODIDAE | 6 | 12 |
| PTYCHOPTERIDAE | 8 | 2 |
| CHIRONOMIDAE | 6 | 19 |

Number of Taxa + 12 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 19.00%
Family Biotic Index + 5.37
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 4
%EPT + 56.00
EPT/Chironomids + 2.95

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + clear brown
Flow + slow
Width/Depth(ft) + 20-25/>2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; Colliers Mills WMA; Lk Success upstr

AN0527 # Ridgeway Br, Rt 571, Legler
USGS Quad + Lakehurst

October 19, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| ASELLIDAE | 8 | 1 |
| METRETOPODIDAE | 2 | 2 |
| LEPTOPHLEBIIDAE | 2 | 39 |
| COENAGRIONIDAE | 9 | 2 |
| PERLIDAE | 1 | 1 |
| CORIXIDAE | 7 | 1 |
| DYTISCIDAE | 5 | 2 |
| SIALIDAE | 4 | 4 |
| PHILOPOTAMIDAE | 3 | 1 |
| LIMNEPHILIDAE | 4 | 2 |
| MOLANNIDAE | 6 | 2 |
| POLYCENTROPODIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 39 |

Number of Taxa + 14 # Population + 100

Dominant Family(s) + LEPTOPHLEBIIDAE & CHIRONOMIDAE 39.00%
Family Biotic Index + 4.31
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 7
%EPT + 49.00
EPT/Chironomids + 1.26

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 15-20/1-2
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods

AN0528 # Ridgeway Br, Rt 70, Manchester Twp
USGS Quad + Lakehurst

October 19, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 3 |
| SPHAERIIDAE | 8 | 1 |
| ASELLIDAE | 8 | 14 |
| METRETOPODIDAE | 2 | 4 |
| LEPTOPHLEBIIDAE | 2 | 12 |
| COENAGRIONIDAE | 9 | 1 |
| PERLIDAE | 1 | 1 |
| CORIXIDAE | 7 | 1 |
| VELIIDAE | 9 | 1 |
| ELMIDAE | 5 | 4 |
| CORYDALIDAE | 0 | 4 |
| PHILOPOTAMIDAE | 3 | 18 |
| HYDROPSYCHIDAE | 4 | 8 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 1 |
| ODONTOCERIDAE | 0 | 3 |
| BRACHYCENTRIDAE | 1 | 6 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 4 |
| BLOODREDCHIRONOMIDAE | 8 | 11 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + PHILOPOTAMIDAE 18.00%
Family Biotic Index + 4.43
Scraper/Filterer Collector Ratio + 0.10
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 54.00
EPT/Chironomids + 3.60

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 15-20/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods/commercial

AN0531 # Old Hurricane Br, Beckerville Rd, Manchester Twp
USGS Quad + Whiting

November 14, 1990

)))))))))))))
Taxon (Family Level) FTV NOI
)))))))))))))
TUBIFICIDAE 10 2
NAIDIDAE 7 16
ASELLIDAE 8 1
LEPTOPHLEBIIDAE 2 1
LEUCTRIDAE 0 5
TAENIOPTERYGIDAE 2 17
ELMIDAE 5 2
PHILOPOTAMIDAE 3 2
HYDROPSYCHIDAE 4 41
LIMNIPHILIDAE 4 2
SIMULIIDAE 6 7
CHIRONOMIDAE 6 4
)))))))))))))
Number of Taxa + 12 # Population + 100
)))))))))))))

Dominant Family(s) + HYDROPSYCHIDAE 41.00%
Family Biotic Index + 4.30
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.08
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 68.00
EPT/Chironomids + 17.00

NJIS/Rating + 27/non-impaired

)))))))))))))
OBSERVATIONS
)))))))))))))
Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 7/1+
Substrate + gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; Manchester WMA; leaf litter; filamentous algae

AN0532 # Manapagua Bk, Rt 70, Lakehurst
USGS Quad + Lakehurst

October 19, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| ASELLIDAE | 8 | 97 |
| ELMIDAE | 5 | 1 |
| PYRALIDAE | 5 | 1 |
| SIMULIIDAE | 6 | 1 |

Number of Taxa + 4 # Population + 100

Dominant Family(s) + ASELLIDAE 97.00%
Family Biotic Index + 7.92
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 + 0/severely impaired

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

))))))

OBSERVATIONS

))))))

Clarity + slightly turbid lgt brown
Flow + slow-moderate
Width/Depth(ft) + 10-12/~1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/commercial; urban/Lakehurst Naval Air Sta upstr; flow
partially blocked by debris dwnstr of bridge

AN0533 # Union Br, Colonial Dr, Manchester Twp
USGS Quad + Lakehurst

October 19, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| ASELLIDAE | 8 | 1 |
| AESHNIDAE | 3 | 2 |
| CORDULIIDAE | 5 | 2 |
| COENAGRIONIDAE | 9 | 3 |
| PERLIDAE | 1 | 1 |
| ELMIDAE | 5 | 19 |
| SIALIDAE | 4 | 2 |
| PHILOPOTAMIDAE | 3 | 2 |
| HYDROPSYCHIDAE | 4 | 10 |
| LIMNEPHILIDAE | 4 | 3 |
| LEPTOCERIDAE | 4 | 3 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 4 |
| CHIRONOMIDAE | 6 | 37 |
| BLOODREDCHIRONOMIDAE | 8 | 11 |
| EMPIDIDAE | 6 | 2 |

Number of Taxa + 17 # Population + 105

Dominant Family(s) + CHIRONOMIDAE 35.24%
Family Biotic Index + 5.66
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 18.10
EPT/Chironomids + 0.40

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear
Flow + moderate
Width/Depth(ft) + 25-30/1-2
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods/suburban; firehouse/municipal complex nearby; oily residue on rt bank; macrophytes

AN0534 # Union Br, Beacon Ave, Pine Lk Pk-Manchester Twp
USGS Quad + Lakewood

November 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 5 |
| ASELLIDAE | 8 | 9 |
| HEPTAGENIIDAE | 4 | 4 |
| LEPTOPHLEBIIDAE | 2 | 3 |
| COENAGRIONIDAE | 9 | 7 |
| PERLODIDAE | 2 | 1 |
| CORIXIDAE | 7 | 1 |
| ELMIDAE | 5 | 3 |
| HYDROPSYCHIDAE | 4 | 35 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNephilidae | 4 | 7 |
| PYRALIDAE | 5 | 2 |
| CHIRONOMIDAE | 6 | 17 |
| BLOODREDCHIRONOMIDAE | 8 | 4 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 35.00%
Family Biotic Index + 5.42
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.31
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 51.00
EPT/Chironomids + 2.43

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 50/2-3
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + open
Other + residential; storm sewer pipes; macrophytes

AN0535 # Toms R, Oakridge Pkwy, Dover Twp
USGS Quad + Toms R

October 13, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| HEPTAGENIIDAE | 4 | 1 |
| PERLIDAE | 1 | 3 |
| HYDROMETRIDAE | 9 | 1 |
| ELMIDAE | 5 | 33 |
| PHILOPOTAMIDAE | 3 | 3 |
| HYDROPSYCHIDAE | 4 | 5 |
| LIMNAPHILIDAE | 4 | 2 |
| MOLANNIDAE | 6 | 1 |
| BRACHYCENTRIDAE | 1 | 15 |
| SERICOSTOMATIDAE | 3 | 17 |
| HELICOPSYCHIDAE | 3 | 16 |
| TIPULIDAE | 3 | 2 |
| RHAGIONIDAE | 2 | 1 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + ELMIDAE 33.00%
Family Biotic Index + 3.46
Scraper/Filterer Collector Ratio + 2.00
Shredder/Total Ratio + 0.20
E(phemeroptera)+P(lecoptera)+T(trichoptera) + 9
%EPT + 63.00
EPT/Chironomids + 0.00

NJIS/Rating + 30/non-impaired

))))))

OBSERVATIONS

))))))

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 75/>1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; industrial upstr; macrophytes; fish

AN0537 # Wrangel Bk, Mule Rd, Berkeley Twp
 USGS Quad + Toms R

November 1, 1994

```

  )))))))
  Taxon (Family Level)      FTV      NOI
  )))))))
  LUMBRICULIDAE             8        5
  TUBIFICIDAE               10       12
  NAIDIDAE                   7        3
  ASELLIDAE                  8        17
  HEPTAGENIIDAE              4        14
  EPHEMERELLIDAE             1        5
  COENAGRIONIDAE             9        1
  TAENIOPTERYGIDAE           2       16
  DYTISCIDAE                  5        2
  ELMIDAE                     5        4
  CORYDALIDAE                 0        1
  HYDROPTILIDAE              4        2
  LIMNEPHILIDAE              4        4
  PSYCHODIDAE                 10       2
  CHIRONOMIDAE                6       13
  BLOODREDCHIRONOMIDAE       8        5
  )))))))

```

Number of Taxa + 16 # Population + 106

Dominant Family(s) + ASELLIDAE 16.04%
 Family Biotic Index + 5.76
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.33
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
 %EPT + 38.68
 EPT/Chironomids + 2.28

NJIS/Rating + 24/non-impaired

```

  )))))))
  OBSERVATIONS
  )))))))
  Clarity + clear
  Flow + moderate
  Width/Depth(ft) + 25/2
  Substrate + rock/sand
  Streambank Vegetation/Stability + good/good
  Canopy + mostly open
  Other + residential; macrophytes

```

AN0538 # Sunken Br, Mule Rd, Berkeley Twp
USGS Quad + Toms R

November 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SPONGILLIDAE | 5 | 25 |
| HYDRIDAE | 4 | 3 |
| DUGESIIDAE | 9 | 5 |
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 45 |
| ASELLIDAE | 8 | 2 |
| BAETIDAE | 4 | 1 |
| CAENIDAE | 7 | 1 |
| COENAGRIONIDAE | 9 | 3 |
| HYDROPHILIDAE | 5 | 1 |
| HYDROPTILIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 5 |
| EMPIDIDAE | 6 | 2 |
| FREDERICELLIDAE | 2 | 4 |

Number of Taxa + 14 # Population + 100

Dominant Family(s) + NAIDIDAE 45.00%
Family Biotic Index + 6.30
Scraper/Filterer Collector Ratio + 0.03
Shredder/Total Ratio + 0.01
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 3.00
EPT/Chironomids + 0.60

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 80/1-1.5
Substrate + sand/some lg rocks
Streambank Vegetation/Stability + fair/fair
Canopy + open
Other + shrub & grass-lined/suburban; mining operation upstr;
periphyton; macrophytes; ducks

November 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 4 |
| NAIDIDAE | 7 | 5 |
| GLOSSIPHONIIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 4 |
| ASELLIDAE | 8 | 21 |
| HEPTAGENIIDAE | 4 | 6 |
| BAETIDAE | 4 | 1 |
| LEPTOPHLEBIIDAE | 2 | 4 |
| EPHEMERELLIDAE | 1 | 1 |
| BAETISCIDAE | 3 | 1 |
| TAENIOPTERYGIDAE | 2 | 5 |
| ELMIDAE | 5 | 2 |
| HYDROPSYCHIDAE | 4 | 1 |
| LIMNAPHILIDAE | 4 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| SERICOSTOMATIDAE | 3 | 1 |
| TIPULIDAE | 3 | 1 |
| PSYCHODIDAE | 10 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 14 |
| BLOODREDCHIRONOMIDAE | 8 | 7 |
| EMPIDIDAE | 6 | 1 |
| ANTHOMYIIDAE | 6 | 1 |

Number of Taxa + 26 # Population + 90

Dominant Family(s) + ASELLIDAE 23.33%
Family Biotic Index + 6.27
Scraper/Filterer Collector Ratio + 0.13
Shredder/Total Ratio + 0.23
E(phemeroptera)+P(lecoptera)+T(richoptera) + 10
%EPT + 24.44
EPT/Chironomids + 1.05

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + red tint clear
Flow + fast
Width/Depth(ft) + 30/1.5-2
Substrate + sand/rock
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + tree, shrub & weed-lined/residential; macrophytes; ducks

AN0540 # Davenport Br, Lacey Rd, Berkeley Twp
USGS Quad + Keswick Grove

November 29, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 9 |
| NAIDIDAE | 7 | 2 |
| VALVATIDAE | 4 | 1 |
| SPHAERIIDAE | 8 | 1 |
| ASELLIDAE | 8 | 3 |
| TALITRIDAE | 8 | 3 |
| EPHEMERELLIDAE | 1 | 5 |
| COENAGRIONIDAE | 9 | 1 |
| ELMIDAE | 5 | 2 |
| PHILOPOTAMIDAE | 3 | 36 |
| HYDROPSYCHIDAE | 4 | 40 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 2 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 14 # Population + 107

Dominant Family(s) + HYDROPSYCHIDAE 37.38%
Family Biotic Index + 4.29
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 75.70
EPT/Chironomids + 40.50

NJIS/Rating + 27/non-impaired

)))))))))))))
OBSERVATIONS
)))))))))))))
Clarity + clear
Flow + fast
Width/Depth(ft) + 10/1-2
Substrate + gravel/stones
Streambank Vegetation/Stability + fair/fair
Canopy + partly closed
Other + woods/bog; cranberry bog upstr; macrophytes

AN0541 # Davenport Br, Mule Rd, Berkeley Twp
USGS Quad + Keswick Grove

November 3, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NAIDIDAE | 7 | 3 |
| PLANORBIDAE | 6 | 1 |
| BAETIDAE | 4 | 1 |
| EPHEMERELLIDAE | 1 | 5 |
| BAETISCIDAE | 3 | 2 |
| LEUCTRIDAE | 0 | 1 |
| TAENIOPTERYGIDAE | 2 | 14 |
| ELMIDAE | 5 | 7 |
| RHYACOPHILIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 22 |
| HYDROPTILIDAE | 4 | 9 |
| LIMNephilidae | 4 | 1 |
| MOLANNIDAE | 6 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| TIPULIDAE | 3 | 1 |
| CERATOPOGONIDAE | 6 | 3 |
| SIMULIIDAE | 6 | 9 |
| CHIRONOMIDAE | 6 | 18 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 22.00%
Family Biotic Index + 4.26
Scraper/Filterer Collector Ratio + 0.39
Shredder/Total Ratio + 0.18
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 11
%EPT + 58.00
EPT/Chironomids + 3.22

NJIS/Rating + 30/non-impaired

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 40/0.75-1
Substrate + sand/rock
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree & grass-lined/suburban; periphyton; macrophytes

AN0542 # Jakes Br, Dover Rd, Berkeley Twp
USGS Quad + Keswick Grove

November 29, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 13 |
| TUBIFICIDAE | 10 | 30 |
| ASELLIDAE | 8 | 3 |
| LEPTOPHLEBIIDAE | 2 | 10 |
| LEUCTRIDAE | 0 | 3 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNAPHILIDAE | 4 | 1 |
| TIPULIDAE | 3 | 4 |
| CERATOPOGONIDAE | 6 | 2 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 35 |

Number of Taxa + 11 # Population + 103

Dominant Family(s) + CHIRONOMIDAE 33.98%
Family Biotic Index + 6.76
Scraper/Filterer Collector Ratio + 24.00
Shredder/Total Ratio + 0.05
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 14.56
EPT/Chironomids + 0.43

NJIS/Rating + 21/moderately impaired

OBSERVATIONS
Clarity + clear
Flow + fast
Width/Depth(ft) + 3/0.5-1
Substrate + gravel/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; leaf litter; mosses; macrophytes; impairment source(s)
unknown

AN0543 # Jakes Br, Double Trouble Rd, S Toms R
USGS Quad + Toms R

November 29, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DENDROCOELIDAE | 5 | 1 |
| TUBIFICIDAE | 10 | 1 |
| ASELLIDAE | 8 | 64 |
| EPHEMERELLIDAE | 1 | 1 |
| TAENIOPTERYGIDAE | 2 | 8 |
| ELMIDAE | 5 | 8 |
| HYDROPSYCHIDAE | 4 | 11 |
| PHRYGANEIDAE | 4 | 4 |
| LIMNAPHILIDAE | 4 | 9 |
| SIMULIIDAE | 6 | 1 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 11 # Population + 109

Dominant Family(s) + ASELLIDAE 58.72%
Family Biotic Index + 6.37
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 30.28
EPT/Chironomids + 33.00

NJIS/Rating + 18/moderately impaired

OBSERVATIONS
Clarity + clear
Flow + fast
Width/Depth(ft) + 30/1.5-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods/suburban; cranberry bogs upstr; man-made rock banks;
siltation; mosses; macrophytes

AN0544 # Toms R un trb, Rt 37, Dover Twp
USGS Quad + Toms R

October 19, 1994

| Taxon (Family Level) | FTV | NOI |
|--|-----|-----|
| LUMBRICULIDAE | 8 | 43 |
| TUBIFICIDAE | 10 | 3 |
| NAIDIDAE | 7 | 6 |
| ERPOBDELLIDAE | 8 | 2 |
| PLANORBIDAE | 6 | 5 |
| SPHAERIIDAE | 8 | 1 |
| CAENIDAE | 7 | 1 |
| LIBELLULIDAE | 9 | 1 |
| COENAGRIONIDAE | 9 | 16 |
| DYTISCIDAE | 5 | 1 |
| PYRALIDAE | 5 | 2 |
| CHIRONOMIDAE | 6 | 9 |
| BLOODREDCHIRONOMIDAE | 8 | 10 |
| Number of Taxa + 13 # Population + 100 | | |

Dominant Family(s) + LUMBRICULIDAE 43.00%
 Family Biotic Index + 7.79
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.01
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
 %EPT + 1.00
 EPT/Chironomids + 0.05

NJIS/Rating + 9/moderately impaired

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

OBSERVATIONS
 Clarity + clear
 Flow + slow
 Width/Depth(ft) + 20/<1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + open
 Other + tree & brush-lined/suburban; Rt 37 commercial area upstr

AN0545 # Webbs Mill Br, Rt 539, Lacey Twp
USGS Quad + Whiting

December 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 2 |
| ASELLIDAE | 8 | 2 |
| TALITRIDAE | 8 | 39 |
| METRETOPODIDAE | 2 | 1 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| COENAGRIONIDAE | 9 | 5 |
| CORIXIDAE | 7 | 2 |
| DYTISCIDAE | 5 | 1 |
| HYDROPTILIDAE | 4 | 12 |
| PHRYGANEIDAE | 4 | 2 |
| LIMNEPHILIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 2 |
| CHIRONOMIDAE | 6 | 26 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + TALITRIDAE 39.00%
Family Biotic Index + 6.58
Scraper/Filterer Collector Ratio + 12.00
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 21.00
EPT/Chironomids + 0.81

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + -
Canopy + mostly closed
Other + woods; NJDEP & Ocean Co groundwater contamination project
upstr; siltation; filamentous algae; macrophytes

AN0546 # Cedar Ck, Whiting Lacey Rd, Bamber Lk-Lacey Twp
USGS Quad + Keswick Grove

December 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| NAIDIDAE | 7 | 7 |
| TALITRIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 4 |
| LEPTOPHLEBIIDAE | 2 | 6 |
| EPHEMERELLIDAE | 1 | 13 |
| GOMPHIDAE | 1 | 1 |
| MACROMIIDAE | 3 | 3 |
| COENAGRIONIDAE | 9 | 10 |
| HYDROPHILIDAE | 5 | 1 |
| ELMIDAE | 5 | 9 |
| CORYDALIDAE | 0 | 1 |
| HYDROPSYCHIDAE | 4 | 1 |
| HYDROPTILIDAE | 4 | 5 |
| LIMNAPHILIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 2 |
| CHIRONOMIDAE | 6 | 32 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 32.00%
Family Biotic Index + 4.97
Scraper/Filterer Collector Ratio + 6.00
Shredder/Total Ratio + 0.40
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 33.00
EPT/Chironomids + 1.00

NJIS/Rating + 27/non-impaired

OBSERVATIONS

Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 20/2
Substrate + sand/gravel/stone
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods; Bamber Lk upstr; macrophytes; fish; very deep in ctr of stream

AN0547 # Factory Br, Whiting Lacey Rd, Lacey Twp
USGS Quad + Keswick Grove

December 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 6 |
| HEPTAGENIIDAE | 4 | 23 |
| LEPTOPHLEBIIDAE | 2 | 4 |
| EPHEMERELLIDAE | 1 | 5 |
| COENAGRIONIDAE | 9 | 1 |
| TAENIOPTERYGIDAE | 2 | 25 |
| PERLIDAE | 1 | 2 |
| CORYDALIDAE | 0 | 1 |
| PHILOPOTAMIDAE | 3 | 1 |
| HYDROPSYCHIDAE | 4 | 24 |
| MOLANNIDAE | 6 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 4 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + TAENIOPTERYGIDAE 25.00%
Family Biotic Index + 3.68
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.30
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 86.00
EPT/Chironomids + 21.50

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + crystal clear
Flow + fast
Width/Depth(ft) + 25/<1-1.5
Substrate + sand/gravel/stone
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; mosses; macrophytes

AN0548 # Cedar Ck, Double Trouble St Pk, Lacey Twp
USGS Quad + Toms R

December 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| TAENIOPTERYGIDAE | 2 | 3 |
| PERLODIDAE | 2 | 1 |
| ELMIDAE | 5 | 2 |
| HYDROPSYCHIDAE | 4 | 17 |
| BRACHYCENTRIDAE | 1 | 71 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 1 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 10 # Population + 101

Dominant Family(s) + BRACHYCENTRIDAE 70.30%
Family Biotic Index + 2.02
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 91.09
EPT/Chironomids + 92.00

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + BRACHYCENTRIDAE overwhelmingly dominant

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OBSERVATIONS

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Clarity + clear cedar
Flow + fast
Width/Depth(ft) + 30/0.5-1.5
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; Double Trouble St Pk; eutrophic lk upstr

AN0549 # Cedar Ck, Rt 9, Lanoka Harbor
USGS Quad + Forked R

December 1, 1994

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NAIDIDAE | 7 | 36 |
| ASELLIDAE | 8 | 11 |
| METRETOPODIDAE | 2 | 2 |
| LEPTOPHLEBIIDAE | 2 | 3 |
| EPHEMERELLIDAE | 1 | 4 |
| CAENIDAE | 7 | 2 |
| BAETISCIDAE | 3 | 2 |
| TAENIOPTERYGIDAE | 2 | 1 |
| PERLIDAE | 1 | 3 |
| DYTISCIDAE | 5 | 1 |
| ELMIDAE | 5 | 1 |
| HYDROPTILIDAE | 4 | 1 |
| LIMNephilidae | 4 | 3 |
| LEPTOCERIDAE | 4 | 4 |
| BRACHYCENTRIDAE | 1 | 1 |
| POLYCENTROPODIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 24 |

Number of Taxa + 17 # Population + 100

Dominant Family(s) + NAIDIDAE 36.00%
Family Biotic Index + 5.72
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.15
E(phemeroptera)+P(lecoptera)+T(richoptera) + 12
%EPT + 27.00
EPT/Chironomids + 1.13

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + clear
Flow + fast
Width/Depth(ft) + 60/1.5
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + tree & shrub-lined/suburban

AN0550 # Long Br, , Lacey-Ocean Twp boundary
USGS Quad + Brookville

December 13, 1994

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| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| LUMBRICULIDAE | 8 | 1 |
| NAIDIDAE | 7 | 1 |
| ASELLIDAE | 8 | 6 |
| METRETOPODIDAE | 2 | 1 |
| LEPTOPHLEBIIDAE | 2 | 19 |
| EPHEMERELLIDAE | 1 | 4 |
| ELMIDAE | 5 | 1 |
| CORYDALIDAE | 0 | 1 |
| PHILOPOTAMIDAE | 3 | 6 |
| HYDROPSYCHIDAE | 4 | 6 |
| HYDROPTILIDAE | 4 | 1 |
| SIMULIIDAE | 6 | 13 |
| CHIRONOMIDAE | 6 | 38 |
| TABANIDAE | 6 | 1 |
| EMPIDIDAE | 6 | 1 |

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Number of Taxa + 15 # Population + 100
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Dominant Family(s) + CHIRONOMIDAE 38.00%
Family Biotic Index + 4.76
Scraper/Filterer Collector Ratio + 0.04
Shredder/Total Ratio + 0.48
E(phemeroptera)+P(lecoptera)+T(rihoptera) + 6
%EPT + 37.00
EPT/Chironomids + 0.97

NJIS/Rating + 30/non-impaired

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OBSERVATIONS

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Clarity + clear brown
Flow + slow-moderate
Width/Depth(ft) + 20/1.5
Substrate + gravel
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (few cedars); leaf litter; many islands instream; trb to
N Br Forked R

AN0551 # N Br Forked R, @ powerlines, Lacey Twp
USGS Quad + Forked R

November 29, 1994

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| PROSTOMATIDAE | 7 | 1 |
| NEMATODA | 6 | 1 |
| LUMBRICULIDAE | 8 | 6 |
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 3 |
| ARRENURIDAE | 5 | 1 |
| TALITRIDAE | 8 | 2 |
| HEPTAGENIIDAE | 4 | 1 |
| METRETOPODIDAE | 2 | 5 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| COENAGRIONIDAE | 9 | 1 |
| TAENIOPTERYGIDAE | 2 | 7 |
| PERLODIDAE | 2 | 4 |
| CORYDALIDAE | 0 | 5 |
| PHILOPOTAMIDAE | 3 | 1 |
| HYDROPSYCHIDAE | 4 | 5 |
| HYDROPTILIDAE | 4 | 3 |
| POLYCENTROPODIDAE | 6 | 1 |
| TIPULIDAE | 3 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 52 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 23 # Population + 108

Dominant Family(s) + CHIRONOMIDAE 48.15%
Family Biotic Index + 5.11
Scraper/Filterer Collector Ratio + 1.63
Shredder/Total Ratio + 0.12
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 26.85
EPT/Chironomids + 0.56

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 20/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + meadow/woods; trash; filamentous algae; minnows

AN0552 # Oyster Ck, Rt 532, Ocean Twp
USGS Quad + Brookville

December 13, 1994

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| NAIDIDAE | 7 | 1 |
| LUMBRICIDAE | 10 | 1 |
| HEPTAGENIIDAE | 4 | 3 |
| EPHEMERELLIDAE | 1 | 3 |
| TAENIOPTERYGIDAE | 2 | 10 |
| PERLODIDAE | 2 | 2 |
| ELMIDAE | 5 | 1 |
| CORYDALIDAE | 0 | 2 |
| PHILOPOTAMIDAE | 3 | 1 |
| HYDROPSYCHIDAE | 4 | 2 |
| HYDROPTILIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 3 |
| BRACHYCENTRIDAE | 1 | 30 |
| TIPULIDAE | 3 | 2 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 33 |

Number of Taxa + 19 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 33.00%
Family Biotic Index + 3.39
Scraper/Filterer Collector Ratio + 0.25
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(richoptera) + 12
%EPT + 59.00
EPT/Chironomids + 1.79

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear brown
Flow + moderate
Width/Depth(ft) + 10-12/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods (cedars); some foam along bank; macrophytes

AN0553 # Waretown Ck, Rt 9, Waretown
USGS Quad + Forked R

December 13, 1994

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| LUMBRICULIDAE | 8 | 2 |
| SPHAERIIDAE | 8 | 3 |
| HEPTAGENIIDAE | 4 | 7 |
| EPHEMERELLIDAE | 1 | 2 |
| LEUCTRIDAE | 0 | 30 |
| TAENIOPTERYGIDAE | 2 | 1 |
| CORYDALIDAE | 0 | 2 |
| PHILOPOTAMIDAE | 3 | 12 |
| HYDROPSYCHIDAE | 4 | 6 |
| LEPTOCERIDAE | 4 | 1 |
| POLYCENTROPODIDAE | 6 | 2 |
| TIPULIDAE | 3 | 2 |
| SIMULIIDAE | 6 | 23 |
| CHIRONOMIDAE | 6 | 6 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + LEUCTRIDAE 30.00%
Family Biotic Index + 3.36
Scraper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.40
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 61.00
EPT/Chironomids + 8.71

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear brown
Flow + moderate
Width/Depth(ft) + 10-12/<1
Substrate + gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (cedars/pines/deciduous)/residential/commercial;
macrophytes

AN0555 # Mill Ck, Rt 72, Manahawkin
USGS Quad + West Creek

December 13, 1994

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Taxon (Family Level)           FTV    NOI
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DUGESIIDAE                      9      6
PROSTOMATIDAE                   7      7
TUBIFICIDAE                     10     2
NAIDIDAE                         7      1
HYDROBIIDAE                     8      5
PLANORBIDAE                     6      2
SPHAERIIDAE                     8     55
COENAGRIONIDAE                 9      1
TAENIOPTERYGIDAE              2      2
HYDROPTILIDAE                  4      5
POLYCENTROPODIDAE             6      1
PYRALIDAE                      5      1
SIMULIIDAE                      6      2
CHIRONOMIDAE                   6     10
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Number of Taxa + 14   #   Population + 100
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Dominant Family(s) + SPHAERIIDAE 55.00%
Family Biotic Index + 7.38
Scraper/Filterer Collector Ratio + 0.18
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 8.00
EPT/Chironomids + 0.80

NJIS/Rating + 12/moderately impaired

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

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OBSERVATIONS
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Clarity + clear brown
Flow + slow
Width/Depth(ft) + 15-20/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (a few cedars); suburban/commercial upstr; lk upstr;
        beavers have cut trees & begun building a dam

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AN0558 # Westecunk Ck, Rail Road Ave, West Creek
USGS Quad + West Creek

December 20, 1994

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Taxon (Family Level)           FTV   NOI
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LUMBRICULIDAE                   8     4
TUBIFICIDAE                     10    3
NAIDIDAE                         7     4
SPHAERIIDAE                     8     1
HEPTAGENIIDAE                   4     2
BAETIDAE                        4     2
LEPTOPHLEBIIDAE                2     5
EPHEMERELLIDAE                  1     8
COENAGRIONIDAE                  9     1
TAENIOPTERYGIDAE                2    10
PERLODIDAE                      2     2
DYTISCIDAE                       5     1
ELMIDAE                          5    12
PHILOPOTAMIDAE                  3     2
HYDROPSYCHIDAE                  4     2
LIMNEPHILIDAE                   4    10
TIPULIDAE                       3     1
SIMULIIDAE                       6     1
CHIRONOMIDAE                     6    31
TABANIDAE                        6     1

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Number of Taxa + 20 # Population + 103
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Dominant Family(s) + CHIRONOMIDAE 30.10%
Family Biotic Index + 4.71
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.36
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 41.75
EPT/Chironomids + 1.39

NJIS/Rating + 30/non-impaired

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OBSERVATIONS

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Clarity + clear
Flow + moderate
Width/Depth(ft) + 25-30/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (~50% cedars)/residential; pumping sta adj to stream;
        filamentous algae; sunfish

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AN0560 # Mullica R, Jackson-Medford Rd, Waterford Twp
USGS Quad + Medford Lks

March 9, 1995

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Taxon (Family Level)          FTV   NOI
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PROSTOMATIDAE                 7     10
LUMBRICULIDAE                 8     5
TUBIFICIDAE                   10    7
NAIDIDAE                       7     7
GLOSSIPHONIIDAE               8     1
HYDROBIIDAE                   8     2
LYMNAEIDAE                     6     2
SPHAERIIDAE                   8    22
CHYDORIDAE                    4     2
PALAEMONIDAE                  6     5
LEPTOPHLEBIIDAE              2     1
CORDULIIDAE                   5     1
COENAGRIONIDAE                9     4
HALIPLIDAE                    5     3
HYDROPSYCHIDAE               4     4
HYDROPTILIDAE                4     1
PHRYGANEIDAE                  4     1
LEPIDOSTOMATIDAE             1     2
CHIRONOMIDAE                  6    15
BLOODREDCHIRONOMIDAE         8     1

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Number of Taxa + 20 # Population + 96
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Dominant Family(s) + SPHAERIIDAE 22.92%
Family Biotic Index + 6.89
Scraper/Filterer Collector Ratio + 0.10
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 9.38
EPT/Chironomids + 0.56

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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Clarity + slight turbid cedar
Flow + moderate
Width/Depth(ft) + 12-15/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (no cedars)/suburban; eutrophic lk upstr; fish; grass
shrimp

AN0561 # Mullica R, Jackson Rd, Waterford Twp
USGS Quad + Medford Lks

March 9, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 13 |
| NAIDIDAE | 7 | 2 |
| ASELLIDAE | 8 | 7 |
| GAMMARIDAE | 4 | 14 |
| DYTISCIDAE | 5 | 1 |
| HELODIDAE | 7 | 5 |
| SIALIDAE | 4 | 2 |
| CORYDALIDAE | 0 | 2 |
| TIPULIDAE | 3 | 2 |
| CHIRONOMIDAE | 6 | 42 |

Number of Taxa + 11 # Population + 91

Dominant Family(s) + CHIRONOMIDAE 46.15%
Family Biotic Index + 6.26
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.20
E(phemeroptera)+P(lecoptera)+T(riohptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear dark
Flow + fast
Width/Depth(ft) + 15-20/>2
Substrate + sand
Streambank Vegetation/Stability + -
Canopy + partly closed
Other + woods (<50% cedars); streambank veg/stab could not be determined because the stream had overflowed the banks; heavy rain previous day; impairment source(s) unknown

AN0563 # Wesickamon Ck, Atsion-Quakerbridge Rd, Atsion
USGS Quad + Atsion

February 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| ASELLIDAE | 8 | 1 |
| LEPTOPHLEBIIDAE | 2 | 15 |
| NEMOURIDAE | 2 | 13 |
| LEUCTRIDAE | 0 | 2 |
| SIMULIIDAE | 6 | 54 |
| CHIRONOMIDAE | 6 | 20 |

Number of Taxa + 6 # Population + 105

Dominant Family(s) + SIMULIIDAE 51.43%
Family Biotic Index + 4.84
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.45
E(phemeroptera)+P(lecoptera)+T(rihoptera) + 3
%EPT + 28.57
EPT/Chironomids + 1.50

NJIS/Rating + 18/moderately impaired

OBSERVATIONS
Clarity + cedar
Flow + fast
Width/Depth(ft) + 10/1
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + tree & shrub-lined/park; impairment source(s) unknown

AN0565 # Hays Mill Ck, Tremont Ave, Waterford Twp
USGS Quad + Medford Lks

March 16, 1995

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| DUGESIIDAE | 9 | 4 |
| PROSTOMATIDAE | 7 | 2 |
| LUMBRICULIDAE | 8 | 3 |
| TUBIFICIDAE | 10 | 8 |
| VIVIPARIDAE | 6 | 1 |
| SPHAERIIDAE | 8 | 5 |
| HEPTAGENIIDAE | 4 | 8 |
| BAETIDAE | 4 | 6 |
| LEPTOPHLEBIIDAE | 2 | 4 |
| EPHEMERELLIDAE | 1 | 9 |
| PERLODIDAE | 2 | 4 |
| ELMIDAE | 5 | 1 |
| PSYCHOMYIIDAE | 2 | 1 |
| HYDROPSYCHIDAE | 4 | 9 |
| LIMNEPHILIDAE | 4 | 6 |
| MOLANNIDAE | 6 | 1 |
| LEPTOCERIDAE | 4 | 2 |
| LEPIDOSTOMATIDAE | 1 | 11 |
| BRACHYCENTRIDAE | 1 | 2 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 12 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 12.00%
Family Biotic Index + 4.53
Scraper/Filterer Collector Ratio + 0.13
Shredder/Total Ratio + 0.44
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 12
%EPT + 63.00
EPT/Chironomids + 5.25

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 30/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (~5% cedars); oily sheen on water surface; macrophytes

AN0567 # Clarks Br, Burnt Mill Rd, Waterford Twp
USGS Quad + Hammonton

March 16, 1995

))
Taxon (Family Level) FTV NOI
))
NEMATODA 6 1
LUMBRICULIDAE 8 3
NEMOURIDAE 2 52
LEUCTRIDAE 0 1
LIMNEPHILIDAE 4 1
CERATOPOGONIDAE 6 5
SIMULIIDAE 6 15
CHIRONOMIDAE 6 21
TABANIDAE 6 1
))
Number of Taxa + 9 # Population + 100
))

Dominant Family(s) + NEMOURIDAE 52.00%
Family Biotic Index + 3.90
Scraper/Filterer Collector Ratio + 0.07
Shredder/Total Ratio + 0.69
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 54.00
EPT/Chironomids + 2.57

NJIS/Rating + 21/moderately impaired

))))))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 30/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (~90 % cedars)/swamp; snags; leaf litter; fish;
impairment source(s) unknown

AN0568 # Prices Br, Burnt Mill Rd, Waterford Twp
USGS Quad + Hammonton

March 16, 1995

))))))))))

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| DENDROCOELIDAE | 5 | 1 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 7 |
| ASELLIDAE | 8 | 9 |
| NEMOURIDAE | 2 | 22 |
| CORYDALIDAE | 0 | 1 |
| SIMULIIDAE | 6 | 7 |
| CHIRONOMIDAE | 6 | 50 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

))))))))))
Number of Taxa + 10 # Population + 100
))))))))))

Dominant Family(s) + CHIRONOMIDAE 50.00%
Family Biotic Index + 5.38
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.62
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 1
%EPT + 22.00
EPT/Chironomids + 0.43

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))))))
OBSERVATIONS

))))))))))
Clarity + clear cedar
Flow + slow-moderate
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (~2% cedars); leaf litter; lots of wood chips in sample;
impairment source(s) unknown

AN0570 # Blue Anchor Bk, Rt 30, Winslow Twp
USGS Quad + Hammonton

March 28, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SPONGILLIDAE | 5 | 28 |
| DUGESIIDAE | 9 | 2 |
| LUMBRICULIDAE | 8 | 5 |
| NAIDIDAE | 7 | 33 |
| HYDROBIIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 8 |
| COENAGRIONIDAE | 9 | 2 |
| HYDROPSYCHIDAE | 4 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 5 |
| BLOODREDCHIRONOMIDAE | 8 | 4 |
| EMPIDIDAE | 6 | 2 |
| PLUMATELLIDAE | 7 | 6 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + NAIDIDAE 33.00%
Family Biotic Index + 6.57
Scraper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.11

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 8-10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + partly closed
Other + tree-lined/rural; STP/Rt 30/eutrophic lks upstr; stormwater pipe; litter; macrophytes

AN0571 # Albertson Bk, Wharton Ave, Waterford Twp
USGS Quad + Hammonton

March 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PROSTOMATIDAE | 7 | 6 |
| LUMBRICULIDAE | 8 | 10 |
| TUBIFICIDAE | 10 | 17 |
| NAIDIDAE | 7 | 5 |
| ANCYLIDAE | 7 | 1 |
| PLANORBIDAE | 6 | 3 |
| SPHAERIIDAE | 8 | 17 |
| EPHEMERELLIDAE | 1 | 2 |
| COENAGRIONIDAE | 9 | 1 |
| PERLODIDAE | 2 | 2 |
| HYDROPSYCHIDAE | 4 | 3 |
| BRACHYCENTRIDAE | 1 | 1 |
| POLYCENTROPODIDAE | 6 | 2 |
| PSYCHODIDAE | 10 | 1 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 30 |
| DOLICHOPODIDAE | 4 | 1 |

Number of Taxa + 17 # Population + 103

Dominant Family(s) + CHIRONOMIDAE 29.13%
Family Biotic Index + 7.07
Scraper/Filterer Collector Ratio + 0.04
Shredder/Total Ratio + 0.13
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 5
%EPT + 9.71
EPT/Chironomids + 0.33

NJIS/Rating + 15/moderately impaired

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

OBSERVATIONS

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 20/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (~30% cedars)/agricultural; eutrophic lks upstr;
macrophytes

AN0572 # Albertson Bk, Old Bridge Crossing, Hammonton
USGS Quad + Atsion

March 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| LUMBRICULIDAE | 8 | 4 |
| TUBIFICIDAE | 10 | 7 |
| NAIDIDAE | 7 | 1 |
| SPHAERIIDAE | 8 | 9 |
| PALAEEMONIDAE | 6 | 1 |
| LEPTOPHLEBIIDAE | 2 | 4 |
| CORDULEGASTRIDAE | 3 | 1 |
| ELMIDAE | 5 | 10 |
| SIALIDAE | 4 | 2 |
| HYDROPSYCHIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 4 |
| LEPTOCERIDAE | 4 | 2 |
| LEPIDOSTOMATIDAE | 1 | 11 |
| BRACHYCENTRIDAE | 1 | 11 |
| POLYCENTROPODIDAE | 6 | 3 |
| TIPULIDAE | 3 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 19 |

Number of Taxa + 19 # Population + 94

Dominant Family(s) + CHIRONOMIDAE 20.21%
Family Biotic Index + 5.03
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.21
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 38.30
EPT/Chironomids + 1.89

NJIS/Rating + 27/non-impaired

OBSERVATIONS

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 30/2-3
Substrate + gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (~10 cedars); leaf litter; macrophytes

AN0573 # Great Swamp Br, Rt 30, Winslow Twp
 USGS Quad + Hammonton

March 23, 1995

))))))))))

| Taxon (Family Level) | FTV | NOI |
|---------------------------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 2 |
| SPHAERIIDAE | 8 | 4 |
| CAENIDAE | 7 | 3 |
| CHIRONOMIDAE | 6 | 3 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| PLUMATELLIDAE | 7 | 86 |
| Number of Taxa + 7 # Population + 100 | | |

))))))))))

Dominant Family(s) + PLUMATELLIDAE 86.00%
 Family Biotic Index + 7.09
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.06
 E(phemeroptera)+P(lecoptera)+T(ricoptera) + 1
 %EPT + 3.00
 EPT/Chironomids + 0.75

NJIS/Rating + 3/severely impaired

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

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear cedar
 Flow + moderate
 Width/Depth(ft) + 10/0.5
 Substrate + gravel/sand
 Streambank Vegetation/Stability + poor/poor
 Canopy + mostly open
 Other + woods/suburban; Rt 30 commercial corridor/eutrophic lk upstr;
 oily residue on banks; snags; fish; frogs

AN0574 # Great Swamp Br, Rt 206, Hammonton
USGS Quad + Hammonton

March 16, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV     NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
HYDRIDAE                       4       1
DUGESIIDAE                      9       1
PROSTOMATIDAE                   7       1
NEMATODA                        6       9
LUMBRICULIDAE                   8       2
TUBIFICIDAE                     10      26
NAIDIDAE                         7       1
SPHAERIIDAE                     8       1
METRETOPODIDAE                  2       1
EPHEMERELLIDAE                  1       6
GOMPHIDAE                       1       1
CORDULIIDAE                     5       1
LEUCTRIDAE                      0       1
DYTISCIDAE                      5       3
GYRINIDAE                       3       1
ELMIDAE                         5       1
SIALIDAE                        4       2
LEPTOCERIDAE                   4       3
SERICOSTOMATIDAE                3       1
POLYCENTROPODIDAE              6       3
SIMULIIDAE                      6       1
CHIRONOMIDAE                    6      40
BLOODREDCHIRONOMIDAE           8       2
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 23 # Population + 109
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
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Dominant Family(s) + CHIRONOMIDAE 36.70%
Family Biotic Index + 6.47
Scraper/Filterer Collector Ratio + 2.50
Shredder/Total Ratio + 0.17
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 6
%EPT + 13.76
EPT/Chironomids + 0.36

NJIS/Rating + 24/non-impaired

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))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 25/3
Substrate + muck
Streambank Vegetation/Stability + good/good
Canopy + -
Other + woods (~30% cedars); macrophytes; fish
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March 28, 1995

))))))))))

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| NAIDIDAE | 7 | 1 |
| HEPTAGENIIDAE | 4 | 1 |
| EPHEMERELLIDAE | 1 | 1 |
| PERLIDAE | 1 | 2 |
| ELMIDAE | 5 | 16 |
| CORYDALIDAE | 0 | 2 |
| HYDROPSYCHIDAE | 4 | 20 |
| LEPTOCERIDAE | 4 | 2 |
| LEPIDOSTOMATIDAE | 1 | 14 |
| BRACHYCENTRIDAE | 1 | 2 |
| SERICOSTOMATIDAE | 3 | 2 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 27 |
| RHAGIONIDAE | 2 | 2 |
| EMPIDIDAE | 6 | 3 |

))))))))))

Number of Taxa + 17 # Population + 100

))))))))))

Dominant Family(s) + CHIRONOMIDAE 27.00%
Family Biotic Index + 4.17
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.20
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 44.00
EPT/Chironomids + 1.63

NJIS/Rating + 30/non-impaired

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear
Flow + moderate
Width/Depth(ft) + 12-15/2-3
Substrate + sand/gravel
Streambank Vegetation/Stability + poor/poor
Canopy + partly closed
Other + woods (~50% cedars)

AN0577 # Hammonton Ck, Boyer Rd (blw STP), Hammonton
USGS Quad + Hammonton

January 29, 1992

| Taxon (Family Level) | FTV | NOI |
|---------------------------------------|-----|-----|
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 90 |
| ERPOBDELLIDAE | 8 | 1 |
| PLANORBIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 2 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| Number of Taxa + 6 # Population + 100 | | |

Dominant Family(s) + NAIDIDAE 90.00%
Family Biotic Index + 7.14
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 + 3/severely impaired

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

OBSERVATIONS

Clarity + turbid grey
Flow + slow
Width/Depth(ft) + 10/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods/suburban; STP/Rt 30 commercial corridor/eutrophic lk
upstr; periphyton; macrophytes

AN0578 # Hammonton Ck, Columbia Rd, Mullica Twp
USGS Quad + Atsion

January 29, 1992

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)))))))))
Taxon (Family Level)           FTV   NOI
)))))))))
TUBIFICIDAE                    10    7
NAIDIDAE                       7    15
LUMBRICIDAE                    10    1
ASELLIDAE                      8    1
GAMMARIDAE                     4    1
HEPTAGENIIDAE                 4    1
LEPTOPHLEBIIDAE              2    40
COENAGRIONIDAE                9    1
ELMIDAE                        5    2
SIALIDAE                      4    1
HYDROPSYCHIDAE               4    3
LEPTOCERIDAE                  4    1
SERICOSTOMATIDAE             3    1
SIMULIIDAE                    6    1
CHIRONOMIDAE                   6    21
PLUMATELLIDAE                 7    3
)))))))))
Number of Taxa + 16  #  Population + 100
)))))))))

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Dominant Family(s) + LEPTOPHLEBIIDAE  40.00%
Family Biotic Index + 4.76
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.48
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 5
%EPT + 46.00
EPT/Chironomids + 2.19

```

NJIS/Rating + 24/non-impaired

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)))))))))
OBSERVATIONS
)))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 20/1-3
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; macrophytes

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AN0580 # Roberts Br, Carranza Rd, Shamong Twp
USGS Quad + Indian Mills

February 16, 1995

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Taxon (Family Level)                      FTV   NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                               10    1
NAIDIDAE                                  7     2
ASELLIDAE                                 8     1
LEPTOPHLEBIIDAE                          2     1
COENAGRIONIDAE                           9     3
TAENIOPTERYGIDAE                         2     1
SIALIDAE                                  4     1
PHRYGANEIDAE                              4     1
LIMNAPHILIDAE                             4     5
SIMULIIDAE                                6    70
CHIRONOMIDAE                              6    22
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 11 # Population + 108
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + SIMULIIDAE 64.81%
Family Biotic Index + 5.95
Scrapper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 7.41
EPT/Chironomids + 0.36

NJIS/Rating + 12/moderately impaired

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

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

OBSERVATIONS
))))))))))))))))))))))))))
Clarity + clear dark
Flow + slow
Width/Depth(ft) + 6-8/>2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (75% cedars); creosoted wood on bridge; oily sheen on
water surface; impairment source(s) unknown

AN0581 # Skit Br, Carranza Rd, Shamong Twp
 USGS Quad + Indian Mills

February 16, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 17 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 2 |
| ASELLIDAE | 8 | 16 |
| GAMMARIDAE | 4 | 4 |
| SIALIDAE | 4 | 4 |
| HYDROPSYCHIDAE | 4 | 8 |
| LIMNEPHILIDAE | 4 | 3 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 37 |

Number of Taxa + 11 # Population + 94

Dominant Family(s) + CHIRONOMIDAE 39.36%
 Family Biotic Index + 6.36
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.02
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 11.70
 EPT/Chironomids + 0.30

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + clear dark
 Flow + slow
 Width/Depth(ft) + 10-12/>2
 Substrate + sand
 Streambank Vegetation/Stability + good/good
 Canopy + partly closed
 Other + woods (75% cedars); creosoted wood on bridge; oily sheen on
 water surface; impairment source(s) unknown

AN0582 # Indian Mills Bk, Willow Grove Rd, Indian Mills
 USGS Quad + Indian Mills

February 16, 1995

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| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 3 |
| TUBIFICIDAE | 10 | 19 |
| NAIDIDAE | 7 | 3 |
| CAENIDAE | 7 | 8 |
| COENAGRIONIDAE | 9 | 1 |
| LIMNEPHILIDAE | 4 | 2 |
| SIMULIIDAE | 6 | 4 |
| CHIRONOMIDAE | 6 | 60 |

))

Number of Taxa + 8 # Population + 100

))

Dominant Family(s) + CHIRONOMIDAE 60.00%
 Family Biotic Index + 6.92
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.21
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 10.00
 EPT/Chironomids + 0.17

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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OBSERVATIONS

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

Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 6-8/1-2
 Substrate + sand/muck
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods/rural; lk/dam construction upstr; tires

AN0583 # Muskingum Bk, Tabernacle Rd, Indian Mills
USGS Quad + Indian Mills

February 22, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| LUMBRICULIDAE | 8 | 4 |
| TUBIFICIDAE | 10 | 3 |
| NAIDIDAE | 7 | 6 |
| GLOSSIPHONIIDAE | 8 | 1 |
| PLANORBIDAE | 6 | 1 |
| ASELLIDAE | 8 | 1 |
| TALITRIDAE | 8 | 40 |
| CAENIDAE | 7 | 1 |
| COENAGRIONIDAE | 9 | 1 |
| HYDROPTILIDAE | 4 | 2 |
| CHIRONOMIDAE | 6 | 38 |

Number of Taxa + 12 # Population + 100

Dominant Family(s) + TALITRIDAE 40.00%
Family Biotic Index + 7.16
Scraper/Filterer Collector Ratio + 2.00
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 3.00
EPT/Chironomids + 0.08

NJIS/Rating + 9/moderately impaired

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

OBSERVATIONS
Clarity + turbid
Flow + slow
Width/Depth(ft) + 12-15/1-2
Substrate + muck
Streambank Vegetation/Stability + good/good
Canopy + open
Other + agricultural; lk/dam construction upstr; floating masses of algae

AN0584 # Springers Bk, Rt 206, Shamong Twp
USGS Quad + Indian Mills

February 16, 1995

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Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
DUGESIIDAE                    9        1
PROSTOMATIDAE                 7        1
NEMATODA                       6        2
TUBIFICIDAE                   10       3
LUMBRICIDAE                   10       1
PLANORBIDAE                    6        1
SPHAERIIDAE                    8        1
HYGROBATIDAE                   2        1
PALAEMONIDAE                   6        1
TAENIOPTERYGIDAE              2        4
HYDROPSYCHIDAE                4        1
PYRALIDAE                      5        1
SIMULIIDAE                     6        1
CHIRONOMIDAE                   6       81
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Number of Taxa + 14  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + CHIRONOMIDAE 81.00%
Family Biotic Index + 5.99
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.06
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 5.00
EPT/Chironomids + 0.06

NJIS/Rating + 9/moderately impaired

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

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))))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 10-15/2
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/agricultural/suburban; store adj to stream; farm &
        trailer pk nearby; tires; macrophytes

```


AN0586 # Batsto R, Quaker Bridge, Washington Twp
USGS Quad + Atsion

February 22, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 7 |
| ARRENURIDAE | 5 | 1 |
| ASELLIDAE | 8 | 2 |
| TALITRIDAE | 8 | 13 |
| METRETOPODIDAE | 2 | 3 |
| LEPTOPHLEBIIDAE | 2 | 64 |
| CORIXIDAE | 7 | 3 |
| SIALIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 2 |
| BRACHYCENTRIDAE | 1 | 1 |
| CHIRONOMIDAE | 6 | 4 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 13 # Population + 103

Dominant Family(s) + LEPTOPHLEBIIDAE 62.14%
Family Biotic Index + 3.78
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.61
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 67.96
EPT/Chironomids + 14.00

NJIS/Rating + 21/moderately impaired

Deficiency(s) noted + LEPTOPHLEBIIDAE overwhelmingly dominant

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 40-50/>2
Substrate + sand
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods (~50% cedars); impairment source(s) unknown

AN0587 # Pen Swamp Br, Quaker Bridge-Batsto Rd, Washington Twp
USGS Quad + Atsion

February 22, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| ASELLIDAE | 8 | 8 |
| GAMMARIDAE | 4 | 8 |
| LEPTOPHLEBIIDAE | 2 | 3 |
| AESHNIDAE | 3 | 1 |
| LEUCTRIDAE | 0 | 2 |
| TAENIOPTERYGIDAE | 2 | 1 |
| CORIXIDAE | 7 | 3 |
| SIALIDAE | 4 | 1 |
| PHILOPOTAMIDAE | 3 | 6 |
| HYDROPSYCHIDAE | 4 | 13 |
| HYDROPTILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| POLYCENTROPODIDAE | 6 | 7 |
| TIPULIDAE | 3 | 1 |
| CERATOPOGONIDAE | 6 | 2 |
| SIMULIIDAE | 6 | 13 |
| CHIRONOMIDAE | 6 | 27 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 27.00%
Family Biotic Index + 5.19
Scraper/Filterer Collector Ratio + 0.09
Shredder/Total Ratio + 0.15
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 36.00
EPT/Chironomids + 1.33

NJIS/Rating + 27/non-impaired

OBSERVATIONS

Clarity + clear
Flow + slow-moderate
Width/Depth(ft) + 6-8/1-2
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (~75% cedars); filamentous algae; macrophytes

AN0588 # Batsto R, Rt 542, Batsto
USGS Quad + Atsion

February 22, 1995

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Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                   8      1
HEPTAGENIIDAE                   4      9
EPHEMERELLIDAE                  1      2
ELMIDAE                          5     10
HYDROPSYCHIDAE                  4      8
HYDROPTILIDAE                   4      2
LEPTOCERIDAE                    4      6
BRACHYCENTRIDAE                 1      6
SERICOSTOMATIDAE                3      1
TIPULIDAE                        3      2
CHIRONOMIDAE                    6     49
BLOODREDCHIRONOMIDAE            8      1
EMPIDIDAE                        6      3
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 13 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

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Dominant Family(s) + CHIRONOMIDAE 49.00%
Family Biotic Index + 4.95
Scraper/Filterer Collector Ratio + 0.25
Shredder/Total Ratio + 0.16
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 34.00
EPT/Chironomids + 0.68

```

NJIS/Rating + 24/non-impaired

```

))))))))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))))))))
Clarity + clear
Flow + moderate
Width/Depth(ft) + 30-40/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly open
Other + woods (~50% cedars); USGS gage

```

AN0589 # Lucas Br, Pleasant Mills-Weekstown Rd, Mullica Twp
USGS Quad + Egg Harbor City

March 28, 1995

```
)))))))))
Taxon (Family Level)           FTV    NOI
)))))))))
EPHEMERELLIDAE                1      1
AESHNIDAE                     3      4
LEUCTRIDAE                    0      1
PERLODIDAE                    2      4
CORYDALIDAE                   0      2
PHILOPOTAMIDAE               3      4
HYDROPSYCHIDAE               4      5
PHRYGANEIDAE                 4      1
LIMNEPHILIDAE                4      5
LEPTOCERIDAE                 4      1
LEPIDOSTOMATIDAE            1      2
BRACHYCENTRIDAE              1      1
POLYCENTROPODIDAE           6      1
CERATOPOGONIDAE             6      1
SIMULIIDAE                   6     60
CHIRONOMIDAE                 6      7
)))))))))
Number of Taxa + 16   #   Population + 100
)))))))))
```

Dominant Family(s) + SIMULIIDAE 60.00%
Family Biotic Index + 4.98
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.05
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 11
%EPT + 26.00
EPT/Chironomids + 3.71

NJIS/Rating + 24/non-impaired

)))))))))
OBSERVATIONS
)))))))))

Clarity + clear
Flow + moderate
Width/Depth(ft) + 6/-
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + partly closed
Other + woods (~90% cedars)/rural

AN0591 # Elliots Ck, Bremen Ave, Egg Harbor City
USGS Quad + Green Bank

March 28, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))  
Taxon (Family Level) FTV NOI  
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))  
LUMBRICULIDAE 8 2  
TUBIFICIDAE 10 4  
NAIDIDAE 7 4  
ASELLIDAE 8 1  
GAMMARIDAE 4 2  
LEPTOPHLEBIIDAE 2 20  
EPHEMERELLIDAE 1 1  
COENAGRIONIDAE 9 2  
LEUCTRIDAE 0 10  
PERLODIDAE 2 2  
ELMIDAE 5 1  
SIALIDAE 4 3  
CORYDALIDAE 0 2  
PHILOPOTAMIDAE 3 2  
HYDROPSYCHIDAE 4 7  
LIMNEPHILIDAE 4 4  
LEPIDOSTOMATIDAE 1 6  
POLYCENTROPODIDAE 6 1  
SIMULIIDAE 6 11  
CHIRONOMIDAE 6 15
```

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))  
Number of Taxa + 20 # Population + 100  
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
```

Dominant Family(s) + LEPTOPHLEBIIDAE 20.00%
Family Biotic Index + 3.98
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.42
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 53.00
EPT/Chironomids + 3.53

NJIS/Rating + 30/non-impaired

```
))))))))))))))))))))))  
OBSERVATIONS  
))))))))))))))))))))))  
Clarity + clear  
Flow + slow  
Width/Depth(ft) + 6-8/1-2  
Substrate + sand  
Streambank Vegetation/Stability + poor/poor  
Canopy + partly closed  
Other + woods (~75% cedars); vineyard nearby; macrophytes; fish
```

AN0592 # Landing Ck, Indian Cabin Rd, Mullica Twp
USGS Quad + Green Bank

March 28, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 6 |
| NAIDIDAE | 7 | 6 |
| SPHAERIIDAE | 8 | 3 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| LEUCTRIDAE | 0 | 1 |
| CORIXIDAE | 7 | 1 |
| SIALIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 6 |
| LEPTOCERIDAE | 4 | 6 |
| LEPIDOSTOMATIDAE | 1 | 28 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 33 |
| TABANIDAE | 6 | 2 |

Number of Taxa + 15 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 33.00%
Family Biotic Index + 4.61
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.45
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 43.00
EPT/Chironomids + 1.30

NJIS/Rating + 27/non-impaired

OBSERVATIONS
Clarity + slightly turbid
Flow + slow
Width/Depth(ft) + 12-15/1-2
Substrate + sand/gravel/muck
Streambank Vegetation/Stability + poor/poor
Canopy + partly closed
Other + woods (<50% cedars)

AN0593 # Indian Cabin Ck, Fifth Ave, Mullica Twp
USGS Quad + Egg Harbor City

April 6, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 4 |
| NAIDIDAE | 7 | 10 |
| GAMMARIDAE | 4 | 1 |
| LEPTOPHLEBIIDAE | 2 | 8 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 74 |

Number of Taxa + 8 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 74.00%
Family Biotic Index + 5.80
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.14
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 11.00
EPT/Chironomids + 0.15

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + CHIRONOMIDAE overwhelmingly dominant

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 5/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; mosses; filamentous algae; impairment source(s) unknown

AN0594 # Indian Cabin Ck, EHC Lk outlet, Egg Harbor City
USGS Quad + Green Bank

March 28, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NEMATODA | 6 | 2 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 36 |
| CAENIDAE | 7 | 1 |
| GOMPHIDAE | 1 | 2 |
| ELMIDAE | 5 | 11 |
| PHILOPOTAMIDAE | 3 | 4 |
| HYDROPSYCHIDAE | 4 | 4 |
| HYDROPTILIDAE | 4 | 5 |
| LIMNEPHILIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 4 |
| SIMULIIDAE | 6 | 8 |
| CHIRONOMIDAE | 6 | 17 |
| EMPIDIDAE | 6 | 3 |

Number of Taxa + 15 # Population + 101

Dominant Family(s) + NAIDIDAE 35.64%
Family Biotic Index + 5.80
Scraper/Filterer Collector Ratio + 0.26
Shredder/Total Ratio + 0.03
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 19.80
EPT/Chironomids + 1.18

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + clear
Flow + moderate
Width/Depth(ft) + 6/1-2
Substrate + sand/silt/gravel
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + woods (~75% cedars)/park; ongoing construction in area; minnows

AN0595 # W Br Wading R, Rt 532, Woodland Twp
USGS Quad + Chatsworth

January 24, 1995

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Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
NEMATODA                       6      1
TUBIFICIDAE                    10     63
ASELLIDAE                      8      8
LEPTOPHLEBIIDAE              2      1
DYTISCIDAE                    5      1
SIALIDAE                      4      1
CHIRONOMIDAE                   6      8
BLOODREDCHIRONOMIDAE          8     17
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 8 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + TUBIFICIDAE 63.00%
Family Biotic Index + 8.95
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.07
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 1
%EPT + 1.00
EPT/Chironomids + 0.04

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) + 10/1
Substrate + rock/gravel/silt
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (pines/~10% cedars); lk/cranberry bogs upstr;
channelized; oily sheen on water surface; macrophytes

```

AN0596 # W Br Wading R, Rt 563, Washington Twp
 USGS Quad + Chatsworth

January 24, 1995

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)          FTV      NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
TUBIFICIDAE                   10       1
NAIDIDAE                       7       14
ASELLIDAE                      8       8
ELMIDAE                        5       2
HYDROPSYCHIDAE                4       14
PHRYGANEIDAE                   4       2
SIMULIIDAE                     6      50
CHIRONOMIDAE                   6       8
BLOODREDCHIRONOMIDAE          8       1
  
```

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 9 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

Dominant Family(s) + SIMULIIDAE 50.00%
 Family Biotic Index + 6.02
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.02
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
 %EPT + 16.00
 EPT/Chironomids + 1.78

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

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))))))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))))))

```

Clarity + dark cedar
 Flow + fast
 Width/Depth(ft) + 25/>2
 Substrate + sand
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods; cranberry bogs upstr; channelized; siltation; oily sheen
 on water

AN0598 # Mile Run, Hawkins-Speedwell Rd, Washington Twp
USGS Quad + Chatsworth

January 26, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 23 |
| HALIPLIDAE | 5 | 1 |
| PHRYGANEIDAE | 4 | 3 |
| LIMNEPHILIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 74 |

Number of Taxa + 7 # Population + 104

Dominant Family(s) + CHIRONOMIDAE 71.15%
Family Biotic Index + 6.28
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.74
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 3
%EPT + 4.81
EPT/Chironomids + 0.07

NJIS/Rating + 9/moderately impaired

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

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 4/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods; frequently used area for 4-wheel drive vehicles;
detritus; mosses

AN0599 # Tulpehocken Ck, Carranza Rd, Tabernacle Twp
USGS Quad + Chatsworth

January 23, 1992

))))))))))

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NAIDIDAE | 7 | 5 |
| ASELLIDAE | 8 | 4 |
| EPHEMERELLIDAE | 1 | 1 |
| CORIXIDAE | 7 | 1 |
| HELODIDAE | 7 | 5 |
| SIALIDAE | 4 | 8 |
| CORYDALIDAE | 0 | 1 |
| PHRYGANEIDAE | 4 | 1 |
| LIMNEPHILIDAE | 4 | 2 |
| CHIRONOMIDAE | 6 | 71 |
| EMPIDIDAE | 6 | 1 |

))))))))))

Number of Taxa + 11 # Population + 100

))))))))))

Dominant Family(s) + CHIRONOMIDAE 71.00%
Family Biotic Index + 5.86
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.14
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 4.00
EPT/Chironomids + 0.06

NJIS/Rating + 9/moderately impaired

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

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 2-3/<1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + closed
Other + woods (cedars/pines); impairment source(s) unknown

AN0601 # Ltl Hauken Run, Rt 563, Washington Twp
 USGS Quad + Jenkins

January 24, 1995

```

))))))))))
Taxon (Family Level)      FTV      NOI
))))))))))
LUMBRICULIDAE             8         2
TUBIFICIDAE               10        4
ASELLIDAE                 8         8
DYTISCIDAE                5         1
HELODIDAE                 7         5
CERATOPOGONIDAE          6         1
SIMULIIDAE                6         13
CHIRONOMIDAE              6         52
))))))))))
Number of Taxa + 8 # Population + 86
))))))))))
  
```

Dominant Family(s) + CHIRONOMIDAE 60.47%
 Family Biotic Index + 6.47
 Scraper/Filterer Collector Ratio + 0.46
 Shredder/Total Ratio + 0.56
 E(phemeroptera)+P(lecoptera)+T(riehoptera) + 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 + cedar
Flow + slow
Width/Depth(ft) + 30/3
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods; cranberry bog upstream; channelized; siltation;
      macrophytes
  
```

AN0602 # W. Br. Wading R, Rt 563, Washington Twp
USGS Quad + Jenkins

January 24, 1995

```

))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                  8      13
NAIDIDAE                       7      8
ASELLIDAE                      8      8
GAMMARIDAE                     4      2
METRETOPODIDAE                2      1
BAETISCIDAE                   3      1
COENAGRIONIDAE                9      4
CAPNIIDAE                     1      1
PERLODIDAE                    2      5
HYDROPHILIDAE                 5      1
ELMIDAE                       5     11
HYDROPSYCHIDAE               4      1
HYDROPTILIDAE                 4      1
LIMNEPHILIDAE                 4      2
CERATOPOGONIDAE              6      1
CHIRONOMIDAE                  6     16
TABANIDAE                     6      1
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 17  # Population + 77
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

```

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Dominant Family(s) + CHIRONOMIDAE 20.78%
Family Biotic Index + 6.08
Scraper/Filterer Collector Ratio + 2.00
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 15.58
EPT/Chironomids + 0.75

```

NJIS/Rating + 24/non-impaired

```

))))))))))))))))))))))))))
OBSERVATIONS
))))))))))))))))))))))))))

```

```

Clarity + cedar
Flow + fast
Width/Depth(ft) + 30/>3
Substrate + sand/gravel
Streambank Vegetation/Stability + poor/poor
Canopy + mostly open
Other + woods; filamentous algae

```

AN0603 # Oswego R, Rt 539, Barnegat Twp
USGS Quad + Brookville

January 18, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| ASELLIDAE | 8 | 8 |
| CORIXIDAE | 7 | 1 |
| SIALIDAE | 4 | 1 |
| PHRYGANEIDAE | 4 | 2 |
| LIMNephilidae | 4 | 8 |
| POLYCENTROPODIDAE | 6 | 5 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 73 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |

Number of Taxa + 10 # Population + 104

Dominant Family(s) + CHIRONOMIDAE 70.19%
 Family Biotic Index + 6.07
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.50
 E(phemeroptera)+P(lecoptera)+T(rihoptera) + 3
 %EPT + 14.42
 EPT/Chironomids + 0.20

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + CHIRONOMIDAE overwhelmingly dominant

OBSERVATIONS
 Clarity + clear cedar
 Flow + slow
 Width/Depth(ft) + 10/2-3
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + partly closed
 Other + woods (~30 cedars); cranberry bogs upstr; channelized;
 macrophytes; minnows

AN0605 # Papoose Br, Jenkins Rd, Washington Twp
 USGS Quad + Oswego Lk

January 18, 1995

))

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 4 |
| TUBIFICIDAE | 10 | 5 |
| NAIDIDAE | 7 | 2 |
| HEPTAGENIIDAE | 4 | 16 |
| LEPTOPHLEBIIDAE | 2 | 3 |
| EPHEMERELLIDAE | 1 | 4 |
| AESHNIDAE | 3 | 1 |
| LEUCTRIDAE | 0 | 3 |
| TAENIOPTERYGIDAE | 2 | 4 |
| PERLIDAE | 1 | 5 |
| HYDROPSYCHIDAE | 4 | 17 |
| HYDROPTILIDAE | 4 | 1 |
| BRACHYCENTRIDAE | 1 | 1 |
| SIMULIIDAE | 6 | 21 |
| CHIRONOMIDAE | 6 | 13 |

))

Number of Taxa + 15 # Population + 100

))

Dominant Family(s) + SIMULIIDAE 21.00%
 Family Biotic Index + 4.63
 Scraper/Filterer Collector Ratio + 0.03
 Shredder/Total Ratio + 0.27
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
 %EPT + 54.00
 EPT/Chironomids + 4.15

NJIS/Rating + 30/non-impaired

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

OBSERVATIONS

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

Clarity + clear cedar
 Flow + moderate
 Width/Depth(ft) + 25/1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods (~95% cedars); macrophytes

AN0606 # Oswego R, Andrews Rd, Oswego Lk
USGS Quad + Oswego Lk

January 18, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| NAIDIDAE | 7 | 1 |
| CAENIDAE | 7 | 1 |
| TAENIOPTERYGIDAE | 2 | 2 |
| HYDROPSYCHIDAE | 4 | 12 |
| HYDROPTILIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 19 |
| EMPIDIDAE | 6 | 2 |
| PLUMATELLIDAE | 7 | 61 |

Number of Taxa + 9 # Population + 100

Dominant Family(s) + PLUMATELLIDAE 61.00%
Family Biotic Index + 6.31
Scraper/Filterer Collector Ratio + 0.04
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 4
%EPT + 16.00
EPT/Chironomids + 0.84

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + PLUMATELLIDAE overwhelmingly dominant

))

OBSERVATIONS

))

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 25/1.5
Substrate + sand
Streambank Vegetation/Stability + gravel
Canopy + open
Other + woods (~90% cedars); eutrophic lk upstr; macrophytes

AN0607 # Oswego R, Chatsworth Rd. (679), Harrisville
USGS Quad + Jenkins

December 9, 1991

)))))))))
Taxon (Family Level) FTV NOI
)))))))))
LUMBRICULIDAE 8 1
TUBIFICIDAE 10 8
NAIDIDAE 7 1
SPHAERIIDAE 8 1
BAETISCIDAE 3 12
ELMIDAE 5 2
PHILOPOTAMIDAE 3 1
HYDROPSYCHIDAE 4 28
LIMNEPHILIDAE 4 1
LEPTOCERIDAE 4 1
CERATOPOGONIDAE 6 4
CHIRONOMIDAE 6 38
EMPIDIDAE 6 2
)))))))))
Number of Taxa + 13 # Population + 100
)))))))))

Dominant Family(s) + CHIRONOMIDAE 38.00%
Family Biotic Index + 5.36
Scrapper/Filterer Collector Ratio + 0.02
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 43.00
EPT/Chironomids + 1.13

NJIS/Rating + 24/non-impaired

)))))))))
OBSERVATIONS
)))))))))
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 75/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; lk upstr; channelized; Water Temp 9.0EC; Cond 33 μmos;
pH 4.6 su; DO 12.9 ppm

AN0608 # Arnolds Br, Chatsworth Rd. (679), Bass R Twp
USGS Quad + Jenkins

January 12, 1995

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Taxon (Family Level)          FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
LUMBRICULIDAE                 8      4
NAIDIDAE                       7      1
ASELLIDAE                     8      5
GAMMARIDAE                    4     30
LEPTOPHLEBIIDAE              2      3
AESHNIDAE                     3      1
COENAGRIONIDAE               9      1
LEUCTRIDAE                    0      2
CORIXIDAE                     7      1
SIALIDAE                      4      2
HYDROPTILIDAE                4      1
LIMNEPHILIDAE                4      1
POLYCENTROPODIDAE           6      1
TIPULIDAE                    3      1
CERATOPOGONIDAE              6      3
SIMULIIDAE                   6     19
CHIRONOMIDAE                  6     24
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Number of Taxa + 17  # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + GAMMARIDAE 30.00%
 Family Biotic Index + 5.25
 Scraper/Filterer Collector Ratio + 0.05
 Shredder/Total Ratio + 0.14
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
 %EPT + 8.00
 EPT/Chironomids + 0.33

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))

OBSERVATIONS

))

Clarity + clear cedar
 Flow + moderate
 Width/Depth(ft) + 3/1
 Substrate + sand/gravel
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + woods (~75% cedars); macrophytes; natural condition (no actual
 impairment)

AN0609 # Tub Mill Br, Chatsworth Rd. (679), Bass R Twp
USGS Quad + Oswego Lk

January 12, 1995

)))))))))

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 4 |
| NAIDIDAE | 7 | 2 |
| PHRYGANEIDAE | 4 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 12 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 6 # Population + 21
)))))))))

Dominant Family(s) + CHIRONOMIDAE 57.14%
Family Biotic Index + 6.48
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.38
E(phemeroptera)+P(lecoptera)+T(rihoptera) + 1
%EPT + 4.76
EPT/Chironomids + 0.08

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

)))))))))
OBSERVATIONS

)))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 3/1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (~10% cedars); drainage ditch entering stream; mosses;
natural condition (no actual impairment)

AN0610 # W Br Bass R, Stage Rd, Bass R Twp
USGS Quad + New Gretna

January 12, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 5 |
| LEPTOPHLEBIIDAE | 2 | 8 |
| EPHEMERELLIDAE | 1 | 1 |
| CAENIDAE | 7 | 1 |
| AESHNIDAE | 3 | 1 |
| GOMPHIDAE | 1 | 1 |
| CORDULIIDAE | 5 | 1 |
| STAPHYLINIDAE | 4 | 1 |
| ELMIDAE | 5 | 2 |
| SIALIDAE | 4 | 1 |
| HYDROPTILIDAE | 4 | 1 |
| PHRYGANEIDAE | 4 | 2 |
| LIMNÉPHILIDAE | 4 | 11 |
| MOLANNIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 8 |
| CHIRONOMIDAE | 6 | 22 |
| BLOODREDCHIRONOMIDAE | 8 | 41 |

Number of Taxa + 19 # Population + 110
 (Total counts from table: 8+10+7+2+1+7+3+1+5+4+5+4+4+4+6+6+6+8=86 taxa; 1+1+5+8+1+1+1+1+1+2+1+1+2+11+1+8+22+41=110 population)

Dominant Family(s) + BLOODREDCHIRONOMIDAE 37.27%
 Family Biotic Index + 6.13
 Scraper/Filterer Collector Ratio + 0.13
 Shredder/Total Ratio + 0.17
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
 %EPT + 22.73
 EPT/Chironomids + 0.40

NJIS/Rating + 24/non-impaired

OBSERVATIONS
 Clarity + clear cedar
 Flow + slow
 Width/Depth(ft) + 15/2
 Substrate + gravel/sand/muck
 Streambank Vegetation/Stability + good/good
 Canopy + mostly open
 Other + woods (75% cedars)/rural; leaf litter

AN0612 # E Br Bass R, Stage Rd, Bass R Twp
USGS Quad + New Gretna

January 12, 1995

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)))))))))
Taxon (Family Level)          FTV      NOI
)))))))))
LUMBRICULIDAE                8         6
TUBIFICIDAE                  10        5
NAIDIDAE                       7        17
GAMMARIDAE                     4         1
METRETOPODIDAE                2         3
LEPTOPHLEBIIDAE              2        21
TAENIOPTERYGIDAE             2         4
PERLODIDAE                     2         1
HYDROPTILIDAE                 4         9
LIMNEPHILIDAE                 4         2
MOLANNIDAE                     6         1
BRACHYCENTRIDAE               1         1
POLYCENTROPODIDAE            6         3
TIPULIDAE                      3         1
CERATOPOGONIDAE              6         1
CHIRONOMIDAE                   6        33
)))))))))

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Number of Taxa + 16 # Population + 109
)))))))))

Dominant Family(s) + CHIRONOMIDAE 30.28%
Family Biotic Index + 5.09
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.20
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 41.28
EPT/Chironomids + 1.36

NJIS/Rating + 27/non-impaired

)))))))))
OBSERVATIONS
)))))))))

Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 20/1-2
Substrate + sand/gravel/muck
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (~95% cedars)/rural; macrophytes; minnows

AN0613 # Clarks Mill Stream, Rt 575, Port Republic
USGS Quad + Green Bank

April 6, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SERPULIDAE | 4 | 1 |
| TUBIFICIDAE | 10 | 4 |
| ERPOBDELLIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 2 |
| ASELLIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 3 |
| LEPTOPHLEBIIDAE | 2 | 1 |
| ELMIDAE | 5 | 1 |
| SIALIDAE | 4 | 2 |
| HYDROPSYCHIDAE | 4 | 5 |
| LIMNEPHILIDAE | 4 | 3 |
| MOLANNIDAE | 6 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| TIPULIDAE | 3 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 30 |
| BLOODREDCHIRONOMIDAE | 8 | 36 |
| EMPIDIDAE | 6 | 3 |

Number of Taxa + 19 # Population + 100

Dominant Family(s) + BLOODREDCHIRONOMIDAE 36.00%
Family Biotic Index + 6.58
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.12
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 14.00
EPT/Chironomids + 0.21

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 25/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/low residential; filamentous algae; macrophytes

AN0614 # Morses Mill Stream, Riverside Dr, Port Republic
USGS Quad + Green Bank

April 6, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SERPULIDAE | 4 | 1 |
| NAIDIDAE | 7 | 3 |
| LEUCTRIDAE | 0 | 13 |
| ELMIDAE | 5 | 4 |
| PHILOPOTAMIDAE | 3 | 42 |
| HYDROPSYCHIDAE | 4 | 1 |
| TIPULIDAE | 3 | 3 |
| CERATOPOGONIDAE | 6 | 2 |
| SIMULIIDAE | 6 | 23 |
| CHIRONOMIDAE | 6 | 7 |
| EMPIDIDAE | 6 | 1 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + PHILOPOTAMIDAE 42.00%
Family Biotic Index + 3.82
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.15
E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
%EPT + 56.00
EPT/Chironomids + 8.00

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear
Flow + fast
Width/Depth(ft) + 30/1
Substrate + sand/gravel/muck
Streambank Vegetation/Stability + fair/fair
Canopy + half open
Other + woods; litter strewn in & around stream; macrophytes

AN0616 # N Br Absecon Ck, Garden St Pkwy, Egg Harbor Twp
USGS Quad + Pleasantville

April 11, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 2 |
| NAIDIDAE | 7 | 3 |
| ERPOBDELLIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 6 |
| ASELLIDAE | 8 | 9 |
| GAMMARIDAE | 4 | 10 |
| TALITRIDAE | 8 | 8 |
| CORIXIDAE | 7 | 13 |
| ELMIDAE | 5 | 1 |
| LIMNEPHILIDAE | 4 | 1 |
| CALAMOCERATIDAE | 0 | 1 |
| CHIRONOMIDAE | 6 | 44 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 44.00%
Family Biotic Index + 6.45
Scraper/Filterer Collector Ratio + 0.32
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 2.00
EPT/Chironomids + 0.04

NJIS/Rating + 12/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 20/2-3
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods (~75% cedars); Atlantic City Airport/Rt 30 commercial
corridor/Garden St Pkwy upstr; fish

AN0617 # S Br Absecon Ck, FAA Facility, Egg Harbor Twp
USGS Quad + Pleasantville

June 21, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 3 |
| TUBIFICIDAE | 10 | 10 |
| SPHAERIIDAE | 8 | 4 |
| ASELLIDAE | 8 | 28 |
| GAMMARIDAE | 4 | 9 |
| COENAGRIONIDAE | 9 | 1 |
| LEUCTRIDAE | 0 | 11 |
| GYRINIDAE | 3 | 1 |
| ELMIDAE | 5 | 1 |
| SIALIDAE | 4 | 2 |
| CORYDALIDAE | 0 | 1 |
| LEPIDOSTOMATIDAE | 1 | 4 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 32 |
| DOLICHOPODIDAE | 4 | 1 |

Number of Taxa + 15 # Population + 109

Dominant Family(s) + CHIRONOMIDAE 29.36%
Family Biotic Index + 5.94
Scraper/Filterer Collector Ratio + 0.14
Shredder/Total Ratio + 0.17
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 13.76
EPT/Chironomids + 0.47

NJIS/Rating + 18/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; Atlantic City Airport/hazardous waste site upstr; leaf
litter; periphyton; macrophytes

AN0618 # Mill Br, Spruce Ave, Egg Harbor Twp
USGS Quad + Pleasantville

April 11, 1995

))))))))))

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| TUBIFICIDAE | 10 | 7 |
| ERPOBDELLIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 2 |
| ASELLIDAE | 8 | 16 |
| TALITRIDAE | 8 | 38 |
| CAMBARIDAE | 5 | 2 |
| COENAGRIONIDAE | 9 | 1 |
| PERLODIDAE | 2 | 1 |
| ELMIDAE | 5 | 1 |
| PHILOPOTAMIDAE | 3 | 1 |
| LIMNEPHILIDAE | 4 | 4 |
| CALAMOCERATIDAE | 0 | 1 |
| POLYCENTROPODIDAE | 6 | 3 |
| CERATOPOGONIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 18 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |
| TABANIDAE | 6 | 1 |

))))))))))

Number of Taxa + 18 # Population + 100

))))))))))

Dominant Family(s) + TALITRIDAE 38.00%
Family Biotic Index + 7.26
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 10.00
EPT/Chironomids + 0.53

NJIS/Rating + 21/moderately impaired

Deficiency(s) noted + significant organic pollution

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear
Flow + slow
Width/Depth(ft) + 15-20/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods (<50% cedars)/suburban; housing construction upstr; storm
sewers; macrophytes

AN0619 # Maple Run, Mill Rd, Northfield
USGS Quad + Pleasantville

April 11, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| HYDRIDAE | 4 | 3 |
| NEMATODA | 6 | 1 |
| TUBIFICIDAE | 10 | 10 |
| NAIDIDAE | 7 | 34 |
| DAPHNIDAE | 4 | 1 |
| CHYDORIDAE | 4 | 7 |
| ASELLIDAE | 8 | 10 |
| DYTISCIDAE | 5 | 2 |
| CERATOPOGONIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 20 |
| BLOODREDCHIRONOMIDAE | 8 | 11 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + NAIDIDAE 34.00%
Family Biotic Index + 6.92
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 + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

))))))

OBSERVATIONS

))))))

Clarity + slightly turbid
Flow + slow
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + poor/poor
Canopy + mostly closed
Other + tree-lined/suburban/agricultural; Garden St Pkwy upstr; oily
residue/litter in stream

AN0620 # Gr Egg Harbor R, Watsontown-New Freedom Rd, Berlin
 USGS Quad + Clementon

May 31, 1995

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)))))
Taxon (Family Level)          FTV   NOI
)))))
PLAGIOSTOMIDAE                9     1
LUMBRICULIDAE                 8     1
TUBIFICIDAE                   10    30
NAIDIDAE                       7     7
GLOSSIPHONIIDAE               8     4
HYDROBIIDAE                   8    12
LYMNAEIDAE                     6     3
PLANORBIDAE                    6     5
PHYSIDAE                       7    11
DAPHNIDAE                      4     6
CHYDORIDAE                     4     1
LIBELLULIDAE                   9     1
COENAGRIONIDAE                 9     5
CORIXIDAE                      7     1
HALIPLIDAE                     5     1
DYTISCIDAE                     5     1
CHIRONOMIDAE                   6     8
BLOODREDCHIRONOMIDAE          8     2
)))))
Number of Taxa + 18 # Population + 100
)))))

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Dominant Family(s) + TUBIFICIDAE 30.00%
 Family Biotic Index + 7.82
 Scraper/Filterer Collector Ratio + 1.71
 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

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)))))
OBSERVATIONS
)))))
Clarity + clear
Flow + slow
Width/Depth(ft) + 30/1-1.5
Substrate + mud/silt/rocks
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods/urban; agricultural/Rt 30 commercial corridor upstr;
      channelized; stagnant odor; oil emerging from disturbed
      substrate; macrophytes; fish; snake

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AN0621 # Gr Egg Harbor R, Williamstown-New Freedom Rd, Winslow Twp
USGS Quad + Williamstown

June 3, 1993

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Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
PLANARIIDAE                     3      1
DUGESIIDAE                      9      2
TUBIFICIDAE                    10     2
ASELLIDAE                       8      1
GAMMARIDAE                      4      1
HEPTAGENIIDAE                  4      6
BAETIDAE                       4      6
EPHEMERELLIDAE                 1      3
AESHNIDAE                      3      1
COENAGRIONIDAE                 9      3
ELMIDAE                        5      6
SIALIDAE                       4      1
CORYDALIDAE                    0      2
HYDROPSYCHIDAE                4      7
LIMNAPHILIDAE                 4     10
ODONTOCERIDAE                 0     11
CALAMOCERATIDAE               0      4
LEPTOCERIDAE                  4      2
LEPIDOSTOMATIDAE              1      1
SERICOSTOMATIDAE              3      3
SIMULIIDAE                     6      1
CHIRONOMIDAE                   6     25
BLOODREDCHIRONOMIDAE          8      1

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Number of Taxa + 23 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + CHIRONOMIDAE 25.00%
Family Biotic Index + 4.18
Scraper/Filterer Collector Ratio + 1.38
Shredder/Total Ratio + 0.43
E(phemeroptera)+P(lecoptera)+T(riohoptera) + 10
%EPT + 53.00
EPT/Chironomids + 2.04

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NJIS/Rating + 30/non-impaired

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OBSERVATIONS
))))))))))))))))))))))))))
Clarity + clear cedar
Flow + slow
Width/Depth(ft) + 30/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/fair
Canopy + mostly open
Other + woods; macrophytes; USGS gage - 3.60

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AN0623 # Gr Egg Harbor R, Williamstown-Winslow Rd, Winslow Twp
USGS Quad + Williamstown

June 3, 1993

| Taxon (Family Level) | F*TV | NOI |
|----------------------|------|-----|
| PLANARIIDAE | 3 | 1 |
| TUBIFICIDAE | 10 | 5 |
| SPHAERIIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 14 |
| BAETIDAE | 4 | 18 |
| LEPTOPHLEBIIDAE | 2 | 2 |
| EPHEMERELLIDAE | 1 | 7 |
| LEUCTRIDAE | 0 | 1 |
| PERLIDAE | 1 | 4 |
| ELMIDAE | 5 | 5 |
| HYDROPSYCHIDAE | 4 | 1 |
| LIMNephilidae | 4 | 3 |
| MOLANNIDAE | 6 | 2 |
| LEPTOCERIDAE | 4 | 2 |
| SERICOSTOMATIDAE | 3 | 5 |
| SIMULIIDAE | 6 | 11 |
| CHIRONOMIDAE | 6 | 17 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 18 # Population + 100

Dominant Family(s) + BAETIDAE 18.00%
Family Biotic Index + 4.56
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.50
E(phemeroptera)+P(lecoptera)+T(richoptera) + 11
%EPT + 59.00
EPT/Chironomids + 3.28

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 35/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/fair
Canopy + mostly open
Other + woods; mosses; macrophytes; fish; USGS gage - 3.75

AN0625 # Gr Egg Harbor R, Rt 54, Folsom
USGS Quad + Newtonville

June 3, 1993

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| PERLIDAE | 1 | 5 |
| ELMIDAE | 5 | 15 |
| HYDROPSYCHIDAE | 4 | 24 |
| LIMNEPHILIDAE | 4 | 4 |
| ODONTOCERIDAE | 0 | 6 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| BRACHYCENTRIDAE | 1 | 17 |
| TIPULIDAE | 3 | 7 |
| SIMULIIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 19 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 11 # Population + 100

Dominant Family(s) + HYDROPSYCHIDAE 24.00%
Family Biotic Index + 3.59
Scraper/Filterer Collector Ratio + 0.36
Shredder/Total Ratio + 0.03
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 6
%EPT + 57.00
EPT/Chironomids + 2.85

NJIS/Rating + 30/non-impaired

))))))))))

OBSERVATIONS

))))))))))

Clarity + clear dark cedar
Flow + moderate
Width/Depth(ft) + 20/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods

AN0626 # Penny Pot Stream, Eighth St, Folsom Twp
USGS Quad + Newtonville

March 10, 1992

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Taxon (Family Level)             FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
SPHAERIIDAE                       8      1
HEPTAGENIIDAE                     4      2
LEUCTRIDAE                         0      1
PERLODIDAE                         2      2
SIALIDAE                           4      2
CORYDALIDAE                       0      1
PSYCHOMYIIDAE                     2      1
HYDROPSYCHIDAE                   4      4
LIMNEPHILIDAE                    4      28
ODONTOCERIDAE                    0      1
BRACHYCENTRIDAE                   1      1
SERICOSTOMATIDAE                  3      1
TIPULIDAE                         3      4
CHIRONOMIDAE                      6      1
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Number of Taxa + 14 # Population + 50

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Dominant Family(s) + LIMNEPHILIDAE    56.00%
Family Biotic Index + 3.60
Scraper/Filterer Collector Ratio + 0.17
Shredder/Total Ratio + 0.66
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 82.00
EPT/Chironomids + 41.00

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NJIS/Rating + 27/non-impaired

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OBSERVATIONS
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Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 10/1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + open
Other + woods

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AN0627 # Hospitality Br, Blue Bell Rd, Monroe Twp
USGS Quad + Williamstown

May 31, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| HYDRIDAE | 4 | 1 |
| PROSTOMATIDAE | 7 | 3 |
| TUBIFICIDAE | 10 | 3 |
| NAIDIDAE | 7 | 63 |
| PLANORBIDAE | 6 | 3 |
| CHYDORIDAE | 4 | 1 |
| BAETIDAE | 4 | 1 |
| AESHNIDAE | 3 | 1 |
| COENAGRIONIDAE | 9 | 6 |
| ELMIDAE | 5 | 1 |
| CHIRONOMIDAE | 6 | 16 |
| BLOODREDCHIRONOMIDAE | 8 | 5 |

Number of Taxa + 12 # Population + 104

Dominant Family(s) + NAIDIDAE 60.58%
Family Biotic Index + 6.92
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.09
E(phemeroptera)+P(lecoptera)+T(riphoptera) + 1
%EPT + 0.96
EPT/Chironomids + 0.05

NJIS/Rating + 9/moderately impaired

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

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 16/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/rural; macrophytes; minnows; impairment source(s) unknown

AN0629 # Faraway Br, Jackson Rd, Monroe Twp
USGS Quad + Buena

May 23, 1995

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| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SPONGILLIDAE | 5 | 2 |
| DUGESIIDAE | 9 | 3 |
| NEMATODA | 6 | 1 |
| TUBIFICIDAE | 10 | 6 |
| NAIDIDAE | 7 | 20 |
| ERPOBDELLIDAE | 8 | 1 |
| ANCYLIDAE | 7 | 1 |
| LIMNESIIDAE | 5 | 1 |
| ASELLIDAE | 8 | 45 |
| CAENIDAE | 7 | 1 |
| CORIXIDAE | 7 | 1 |
| HALIPLIDAE | 5 | 4 |
| ELMIDAE | 5 | 2 |
| LEPTOCERIDAE | 4 | 4 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| CHIRONOMIDAE | 6 | 6 |

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Number of Taxa + 17 # Population + 100

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Dominant Family(s) + ASELLIDAE 45.00%
 Family Biotic Index + 7.26
 Scraper/Filterer Collector Ratio + 0.33
 Shredder/Total Ratio + 0.02
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 3
 %EPT + 6.00
 EPT/Chironomids + 1.00

NJIS/Rating + 12/moderately impaired

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

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OBSERVATIONS

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Clarity + clear cedar
 Flow + slow
 Width/Depth(ft) + 20/2
 Substrate + sand/mud/muck
 Streambank Vegetation/Stability + good/good
 Canopy + mostly closed
 Other + rural; abandoned cranberry bogs upstr

AN0630 # White Oak Br, Jackson Rd, Monroe Twp
USGS Quad + Buena

May 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 3 |
| MACROTHRICIDAE | 4 | 2 |
| ASELLIDAE | 8 | 9 |
| COENAGRIONIDAE | 9 | 1 |
| DYTISCIDAE | 5 | 2 |
| LIMNEPHILIDAE | 4 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| SIMULIIDAE | 6 | 40 |
| CHIRONOMIDAE | 6 | 43 |

Number of Taxa + 9 # Population + 102

Dominant Family(s) + CHIRONOMIDAE 42.16%
Family Biotic Index + 6.23
Scraper/Filterer Collector Ratio + 0.17
Shredder/Total Ratio + 0.02
E(phemeroptera)+P(lecoptera)+T(richoptera) + 2
%EPT + 1.96
EPT/Chironomids + 0.05

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 20/1
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods (~10% cedars); trash; macrophytes

AN0631 # Collings Br, Unexpected Rd, Franklin Twp
USGS Quad + Buena

May 31, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 2 |
| TUBIFICIDAE | 10 | 6 |
| NAIDIDAE | 7 | 33 |
| GLOSSIPHONIIDAE | 8 | 1 |
| PLANORBIDAE | 6 | 6 |
| SPHAERIIDAE | 8 | 25 |
| ASELLIDAE | 8 | 11 |
| TALITRIDAE | 8 | 2 |
| SIMULIIDAE | 6 | 4 |
| CHIRONOMIDAE | 6 | 12 |
| BLOODREDCHIRONOMIDAE | 8 | 6 |

Number of Taxa + 11 # Population + 108

Dominant Family(s) + NAIDIDAE 30.56%
Family Biotic Index + 7.42
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 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 + clear dark cedar
Flow + slow
Width/Depth(ft) + 30/1.5-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (~5% white cedars)/bog; abandoned cranberry bogs upstr;
creosote odor; submerged tree branches; macrophytes

AN0632 # Collings Br, Blue Anchor Rd, Buena Vista Twp
USGS Quad + Buena

May 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 1 |
| TUBIFICIDAE | 10 | 14 |
| NAIDIDAE | 7 | 3 |
| GLOSSIPHONIIDAE | 8 | 2 |
| SPHAERIIDAE | 8 | 7 |
| ASELLIDAE | 8 | 3 |
| TALITRIDAE | 8 | 8 |
| HEPTAGENIIDAE | 4 | 1 |
| BAETIDAE | 4 | 4 |
| CAENIDAE | 7 | 2 |
| GYRINIDAE | 3 | 2 |
| ELMIDAE | 5 | 1 |
| CURCULIONIDAE | 7 | 2 |
| PHILOPOTAMIDAE | 3 | 1 |
| HYDROPSYCHIDAE | 4 | 9 |
| HYDROPTILIDAE | 4 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| POLYCENTROPODIDAE | 6 | 5 |
| SIMULIIDAE | 6 | 7 |
| CHIRONOMIDAE | 6 | 24 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 24.00%
Family Biotic Index + 6.63
Scraper/Filterer Collector Ratio + 0.06
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 25.00
EPT/Chironomids + 1.04

NJIS/Rating + 24/non-impaired

OBSERVATIONS
Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 20/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + residential; gravel pit upstr; macrophytes; fish

AN0633 # Hospitality Br, Rt 54, Folsom
USGS Quad + Newtonville

March 10, 1992

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| DUGESIIDAE | 9 | 1 |
| PROSTOMATIDAE | 7 | 7 |
| LUMBRICULIDAE | 8 | 6 |
| TUBIFICIDAE | 10 | 6 |
| SPHAERIIDAE | 8 | 22 |
| AESHNIDAE | 3 | 1 |
| GOMPHIDAE | 1 | 1 |
| ELMIDAE | 5 | 3 |
| SIALIDAE | 4 | 1 |
| PHILOPOTAMIDAE | 3 | 6 |
| HYDROPSYCHIDAE | 4 | 6 |
| LIMNEPHILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 2 |
| BRACHYCENTRIDAE | 1 | 9 |
| POLYCENTROPODIDAE | 6 | 1 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 3 |

Number of Taxa + 18 # Population + 79

Dominant Family(s) + SPHAERIIDAE 27.85%
Family Biotic Index + 5.96
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.03
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 6
%EPT + 31.65
EPT/Chironomids + 8.33

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 60/1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; some macrophytes

AN0634 # Three Pond Run, Rt 54, Folsom
USGS Quad + Newtonville

May 23, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 6 |
| TUBIFICIDAE | 10 | 1 |
| NAIDIDAE | 7 | 2 |
| SPHAERIIDAE | 8 | 3 |
| ASELLIDAE | 8 | 22 |
| GAMMARIDAE | 4 | 3 |
| GYRINIDAE | 3 | 1 |
| ELMIDAE | 5 | 3 |
| LEPTOCERIDAE | 4 | 3 |
| CHIRONOMIDAE | 6 | 56 |

Number of Taxa + 10 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 56.00%
Family Biotic Index + 6.50
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(richoptera) + 1
%EPT + 3.00
EPT/Chironomids + 0.05

NJIS/Rating + 9/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 12/1
Substrate + sand/mud
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/suburban; housing construction upstr; snags; macrophytes

AN0635 # Gr Egg Harbor R, Rt 559, Weymouth
USGS Quad + Newtonville

June 3, 1993

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 1 |
| LEUCTRIDAE | 0 | 2 |
| PERLIDAE | 1 | 3 |
| ELMIDAE | 5 | 22 |
| HYDROPSYCHIDAE | 4 | 2 |
| ODONTOCERIDAE | 0 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 3 |
| BRACHYCENTRIDAE | 1 | 57 |
| TIPULIDAE | 3 | 1 |
| CHIRONOMIDAE | 6 | 6 |

Number of Taxa + 12 # Population + 100

Dominant Family(s) + BRACHYCENTRIDAE 57.00%
Family Biotic Index + 2.36
Scraper/Filterer Collector Ratio + 0.50
Shredder/Total Ratio + 0.08
E(phemeroptera)+P(lecoptera)+T(richoptera) + 8
%EPT + 70.00
EPT/Chironomids + 11.67

NJIS/Rating + 27/non-impaired

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OBSERVATIONS

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Clarity + clear dark cedar
Flow + fast
Width/Depth(ft) + 75/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly open
Other + woods; macrophytes

AN0636 # Deep Run, Rt 54, Buena
USGS Quad + Buena

March 11, 1992

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Taxon (Family Level)          FTV     NOI
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TUBIFICIDAE                   10      30
BLOODREDCHIRONOMIDAE         8        70
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
Number of Taxa + 2 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
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Dominant Family(s) + BLOODREDCHIRONOMIDAE 70.00%
Family Biotic Index + 8.60
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.00
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 0
%EPT + 0.00
EPT/Chironomids + 0.00

NJIS/Rating + 0/severely impaired

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

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OBSERVATIONS

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Clarity + slightly turbid
Flow + moderate
Width/Depth(ft) + 3-6/<1
Substrate + sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + open
Other + suburban; STP upstr; sewage odor; periphyton

AN0637 # Deep Run, Rt 559, Hamilton Twp
USGS Quad + Newtonville

March 11, 1992

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 3 |
| TUBIFICIDAE | 10 | 38 |
| SPHAERIIDAE | 8 | 5 |
| ASELLIDAE | 8 | 3 |
| LEPTOPHLEBIIDAE | 2 | 1 |
| LEUCTRIDAE | 0 | 1 |
| ELMIDAE | 5 | 1 |
| SIALIDAE | 4 | 1 |
| CORYDALIDAE | 0 | 1 |
| LIMNEPHILIDAE | 4 | 8 |
| MOLANNIDAE | 6 | 2 |
| CALAMOCERATIDAE | 0 | 5 |
| SERICOSTOMATIDAE | 3 | 5 |
| TIPULIDAE | 3 | 7 |
| CHIRONOMIDAE | 6 | 14 |
| BLOODREDCHIRONOMIDAE | 8 | 5 |

Number of Taxa + 16 # Population + 100

Dominant Family(s) + TUBIFICIDAE 38.00%
Family Biotic Index + 6.83
Scraper/Filterer Collector Ratio + 0.20
Shredder/Total Ratio + 0.28
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 22.00
EPT/Chironomids + 1.16

NJIS/Rating + 21/moderately impaired

OBSERVATIONS

Clarity + clear cedar
Flow + moderate
Width/Depth(ft) + 30/1
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + open
Other + woods; detritus (maple leaves & twigs); impairment source(s)
unknown

AN0638 # Mare Run, Rt 559, Hamilton Twp
USGS Quad + Dorothy

May 16, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NEMATODA | 6 | 1 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 9 |
| SPHAERIIDAE | 8 | 1 |
| GAMMARIDAE | 4 | 2 |
| EPHEMERELLIDAE | 1 | 8 |
| COENAGRIONIDAE | 9 | 2 |
| SIALIDAE | 4 | 4 |
| HYDROPTILIDAE | 4 | 8 |
| MOLANNIDAE | 6 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| CHIRONOMIDAE | 6 | 52 |
| BLOODREDCHIRONOMIDAE | 8 | 9 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 52.00%
Family Biotic Index + 5.94
Scraper/Filterer Collector Ratio + 0.85
Shredder/Total Ratio + 0.23
E(phemeroptera)+P(lecoptera)+T(richoptera) + 4
%EPT + 19.00
EPT/Chironomids + 0.31

NJIS/Rating + 18/moderately impaired

OBSERVATIONS
Clarity + clear
Flow + fast
Width/Depth(ft) + 10/2-3
Substrate + mud/sand/gravel
Streambank Vegetation/Stability + fair/fair
Canopy + mostly closed
Other + woods (~5% white cedars); macrophytes; minnows

AN0639 # Watering Race, Rt 50, Hamilton Twp
USGS Quad + Mays Landing

April 11, 1995

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Taxon (Family Level)           FTV     NOI
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TUBIFICIDAE                    10      4
SPHAERIIDAE                    8       4
ASELLIDAE                      8     10
GAMMARIDAE                     4       8
TALITRIDAE                     8       1
LEPTOPHLEBIIDAE              2       2
SIALIDAE                      4       2
LEPTOCERIDAE                  4       1
POLYCENTROPODIDAE            6       1
CERATOPOGONIDAE              6       1
CHIRONOMIDAE                   6     66
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Number of Taxa + 11 # Population + 100
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Dominant Family(s) + CHIRONOMIDAE 66.00%
Family Biotic Index + 6.16
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.04
E(phemeroptera)+P(lecoptera)+T(riehoptera) + 3
%EPT + 4.00
EPT/Chironomids + 0.06

NJIS/Rating + 12/moderately impaired

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

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OBSERVATIONS
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Clarity + clear
Flow + slow
Width/Depth(ft) + 10-12/1
Substrate + sand/muck
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (<50% cedars)/suburban; rural/cranberry bogs upstr;
channelized; macrophytes; frog; beaver
```

AN0640 # Babcock Ck, Rt 322, Hamilton Twp
USGS Quad + Mays Landing

May 9, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| NEMATODA | 6 | 1 |
| LUMBRICULIDAE | 8 | 2 |
| TUBIFICIDAE | 10 | 4 |
| NAIDIDAE | 7 | 1 |
| ERPOBDELLIDAE | 8 | 1 |
| SPHAERIIDAE | 8 | 3 |
| CHYDORIDAE | 4 | 1 |
| ASELLIDAE | 8 | 47 |
| LEUCTRIDAE | 0 | 2 |
| CORIXIDAE | 7 | 2 |
| GYRINIDAE | 3 | 1 |
| SIALIDAE | 4 | 1 |
| SISYRIDAE | 1 | 1 |
| HYDROPSYCHIDAE | 4 | 1 |
| LIMNAPHILIDAE | 4 | 1 |
| ODONTOCERIDAE | 0 | 1 |
| LEPTOCERIDAE | 4 | 1 |
| TIPULIDAE | 3 | 2 |
| CHIRONOMIDAE | 6 | 33 |
| BLOODREDCHIRONOMIDAE | 8 | 1 |

Number of Taxa + 20 # Population + 107

Dominant Family(s) + ASELLIDAE 43.93%
Family Biotic Index + 6.79
Scraper/Filterer Collector Ratio + 0.17
Shredder/Total Ratio + 0.10
E(phemeroptera)+P(lecoptera)+T(richoptera) + 5
%EPT + 5.61
EPT/Chironomids + 0.18

NJIS/Rating + 15/moderately impaired

Deficiency(s) noted + paucity of clean water organisms

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 15-20/2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (deciduous/few cedars)/rural; Atlantic City Race Track
upstr; macrophytes

AN0643 # South R, Estelle Ave, Hamilton Twp
USGS Quad + Dorothy

May 16, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 22 |
| TUBIFICIDAE | 10 | 3 |
| HEPTAGENIIDAE | 4 | 1 |
| EPHEMERELLIDAE | 1 | 2 |
| LEUCTRIDAE | 0 | 14 |
| LIMNEPHILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 3 |
| LEPTOCERIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 13 |
| BRACHYCENTRIDAE | 1 | 1 |
| POLYCENTROPODIDAE | 6 | 2 |
| CERATOPOGONIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 35 |

Number of Taxa + 13 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 35.00%
Family Biotic Index + 4.86
Scraper/Filterer Collector Ratio + 0.00
Shredder/Total Ratio + 0.33
E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
%EPT + 38.00
EPT/Chironomids + 1.09

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear
Flow + slow
Width/Depth(ft) + 20/<2
Substrate + silt/sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods/rural; macrophytes; snake; lizard; skunk

AN0644 # South R, Forty Wire Rd, Weymouth Twp
USGS Quad + Dorothy

May 16, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| TUBIFICIDAE | 10 | 1 |
| SPHAERIIDAE | 8 | 1 |
| HEPTAGENIIDAE | 4 | 4 |
| BAETIDAE | 4 | 6 |
| EPHEMERELLIDAE | 1 | 1 |
| BAETISCIDAE | 3 | 1 |
| LEUCTRIDAE | 0 | 8 |
| PERLIDAE | 1 | 1 |
| PERLODIDAE | 2 | 1 |
| ELMIDAE | 5 | 4 |
| PTILODACTYLIDAE | 1 | 1 |
| CORYDALIDAE | 0 | 3 |
| HYDROPSYCHIDAE | 4 | 11 |
| ODONTOCERIDAE | 0 | 2 |
| LEPTOCERIDAE | 4 | 1 |
| LEPIDOSTOMATIDAE | 1 | 6 |
| BRACHYCENTRIDAE | 1 | 2 |
| HELICOPSYCHIDAE | 3 | 3 |
| POLYCENTROPODIDAE | 6 | 2 |
| SIMULIIDAE | 6 | 25 |
| CHIRONOMIDAE | 6 | 16 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + SIMULIIDAE 25.00%
Family Biotic Index + 4.09
Scraper/Filterer Collector Ratio + 0.13
Shredder/Total Ratio + 0.29
E(phemeroptera)+P(lecoptera)+T(richoptera) + 14
%EPT + 49.00
EPT/Chironomids + 3.06

NJIS/Rating + 30/non-impaired

OBSERVATIONS
Clarity + clear
Flow + fast
Width/Depth(ft) + 30/1-2
Substrate + rock/gravel/sand
Streambank Vegetation/Stability + good/good
Canopy + half open
Other + woods; macrophytes

AN0646 # Stephens Ck, Rt 50, Estellville
 USGS Quad + Mays Landing

May 9, 1995

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Taxon (Family Level)           FTV    NOI
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))
SPONGILLIDAE                    5      78
SERPULIDAE                      4      11
NAIDIDAE                        7       3
SPHAERIIDAE                     8       3
ELMIDAE                          5       1
HYDROPSYCHIDAE                 4       2
SIMULIIDAE                      6       1
CHIRONOMIDAE                    6       1
  
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Number of Taxa + 8 # Population + 100
))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

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Dominant Family(s) + SPONGILLIDAE 78.00%
 Family Biotic Index + 5.04
 Scraper/Filterer Collector Ratio + 0.00
 Shredder/Total Ratio + 0.00
 E(phemeroptera)+P(lecoptera)+T(riehoptera) + 1
 %EPT + 2.00
 EPT/Chironomids + 2.00

NJIS/Rating + 6/severely impaired

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

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OBSERVATIONS

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Clarity + clear
 Flow + slow
 Width/Depth(ft) + 10-12/1-2
 Substrate + sand/gravel
 Streambank Vegetation/Stability + fair/poor-fair
 Canopy + mostly closed
 Other + woods/rural; eutrophic lk upstr; abundant filamentous algae;
 macrophytes; fish; turtles

AN0647 # Gibson Ck, Rt 50, Estell Manor
USGS Quad + Tuckahoe

May 9, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 4 |
| HEPTAGENIIDAE | 4 | 9 |
| EPHEMERELLIDAE | 1 | 5 |
| AESHNIDAE | 3 | 1 |
| LEUCTRIDAE | 0 | 18 |
| PERLODIDAE | 2 | 2 |
| ELMIDAE | 5 | 9 |
| CORYDALIDAE | 0 | 2 |
| HYDROPSYCHIDAE | 4 | 2 |
| HYDROPTILIDAE | 4 | 4 |
| LIMNEPHILIDAE | 4 | 1 |
| MOLANNIDAE | 6 | 1 |
| ODONTOCERIDAE | 0 | 2 |
| TIPULIDAE | 3 | 1 |
| SIMULIIDAE | 6 | 10 |
| CHIRONOMIDAE | 6 | 29 |

Number of Taxa + 16 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 29.00%
Family Biotic Index + 3.96
Scraper/Filterer Collector Ratio + 0.38
Shredder/Total Ratio + 0.37
E(phemeroptera)+P(lecoptera)+T(rioptera) + 9
%EPT + 44.00
EPT/Chironomids + 1.52

NJIS/Rating + 30/non-impaired

OBSERVATIONS

Clarity + clear
Flow + moderate
Width/Depth(ft) + 6-8/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (~90% cedars); filamentous algae; macrophytes

AN0649 # Tuckahoe R, Rt 49, Hunters Mill (Estell Manor)
 USGS Quad + Tuckahoe

June 1, 1995

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Taxon (Family Level)             FTV      NOI
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NEMATODA                         6        2
LUMBRICULIDAE                    8        1
TUBIFICIDAE                      10       9
NAIDIDAE                          7        6
HYDRODROMIDAE                    5        1
ASELLIDAE                        8       18
GAMMARIDAE                       4        1
TALITRIDAE                       8        4
HEPTAGENIIDAE                   4        4
BAETIDAE                         4       20
EPHEMERELLIDAE                   1        3
LIBELLULIDAE                     9        1
HELODIDAE                        7        1
HYDROPSYCHIDAE                   4        1
HYDROPTILIDAE                   4        3
LEPTOCERIDAE                    4        4
LEPIDOSTOMATIDAE                 1        1
BRACHYCENTRIDAE                  1        6
SERICOSTOMATIDAE                 3        1
SIMULIIDAE                       6        3
CHIRONOMIDAE                     6       15
BLOODREDCHIRONOMIDAE             8        1
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Number of Taxa + 22 # Population + 106
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Dominant Family(s) + BAETIDAE 18.87%
 Family Biotic Index + 5.75
 Scraper/Filterer Collector Ratio + 0.50
 Shredder/Total Ratio + 0.29
 E(phemeroptera)+P(lecoptera)+T(richoptera) + 9
 %EPT + 40.57
 EPT/Chironomids + 2.69

NJIS/Rating + 27/non-impaired

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OBSERVATIONS

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Clarity + clear
 Flow + moderate
 Width/Depth(ft) + 8-10/1-2
 Substrate + sand/gravel/muck
 Streambank Vegetation/Stability + good/good
 Canopy + open
 Other + woods (old growth was cleared in recent years...new growth is
 grasses/shrubs/small deciduous trees)

AN0650 # Tuckahoe R, Rt 49, Head of River (Estell Manor)
USGS Quad + Tuckahoe

June 1, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| SPONGILLIDAE | 5 | 25 |
| LUMBRICULIDAE | 8 | 1 |
| TUBIFICIDAE | 10 | 7 |
| NAIDIDAE | 7 | 1 |
| ANCYLIDAE | 7 | 1 |
| HYDRODROMIDAE | 5 | 2 |
| ASELLIDAE | 8 | 4 |
| TALITRIDAE | 8 | 2 |
| EPHEMERELLIDAE | 1 | 3 |
| CAENIDAE | 7 | 1 |
| GOMPHIDAE | 1 | 1 |
| COENAGRIONIDAE | 9 | 2 |
| ELMIDAE | 5 | 2 |
| HYDROPSYCHIDAE | 4 | 2 |
| HYDROPTILIDAE | 4 | 6 |
| LEPTOCERIDAE | 4 | 2 |
| POLYCENTROPODIDAE | 6 | 1 |
| CERATOPOGONIDAE | 6 | 1 |
| SIMULIIDAE | 6 | 2 |
| CHIRONOMIDAE | 6 | 28 |
| BLOODREDCHIRONOMIDAE | 8 | 6 |

Number of Taxa + 21 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 28.00%
Family Biotic Index + 5.94
Scraper/Filterer Collector Ratio + 0.24
Shredder/Total Ratio + 0.11
E(phemeroptera)+P(lecoptera)+T(richoptera) + 6
%EPT + 15.00
EPT/Chironomids + 0.44

NJIS/Rating + 24/non-impaired

OBSERVATIONS

Clarity + clear
Flow + slow
Width/Depth(ft) + 15-20/2-3
Substrate + sand
Streambank Vegetation/Stability + good/good
Canopy + mostly closed
Other + woods (no cedars)/rural; cranberry bogs upstr; macrophytes;
minnows; frogs; USGS gage

June 1, 1995

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Taxon (Family Level)          FTV     NOI
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PLANARIIDAE                   3       1
TUBIFICIDAE                   10      4
ANCYLIDAE                     7       3
LIMNESIIDAE                   5       1
ASELLIDAE                     8       1
GAMMARIDAE                    4       1
EPHEMERELLIDAE               1       2
AESHNIDAE                    3       2
COENAGRIONIDAE              9       4
LEUCTRIDAE                   0       5
CORIXIDAE                    7       3
VELIIDAE                     9       2
DYTISCIDAE                   5       1
GYRINIDAE                    3       1
ELMIDAE                      5       2
SIALIDAE                    4       2
CORYDALIDAE                  0       1
HYDROPSYCHIDAE              4       1
HYDROPTILIDAE               4      17
CALAMOCERATIDAE            0       3
LEPTOCERIDAE                4       2
POLYCENTROPODIDAE          6       2
CERATOPOGONIDAE            6       1
SIMULIIDAE                   6       3
CHIRONOMIDAE                 6      35

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Number of Taxa + 25  # Population + 100
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Dominant Family(s) + CHIRONOMIDAE 35.00%
Family Biotic Index + 5.16
Scraper/Filterer Collector Ratio + 2.75
Shredder/Total Ratio + 0.14
E(phemeroptera)+P(lecoptera)+T(richoptera) + 7
%EPT + 32.00
EPT/Chironomids + 0.91

NJIS/Rating + 24/non-impaired

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OBSERVATIONS
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Clarity + clear
Flow + slow
Width/Depth(ft) + 6-8/1-2
Substrate + sand/gravel
Streambank Vegetation/Stability + good/good
Canopy + partly closed
Other + woods (<50% cedars); concrete chunks; macrophytes; minnows

AN0652 # Mill Ck, Rt 557, Upper Twp
USGS Quad + Tuckahoe

June 1, 1995

| Taxon (Family Level) | FTV | NOI |
|----------------------|-----|-----|
| LUMBRICULIDAE | 8 | 7 |
| TUBIFICIDAE | 10 | 9 |
| NAIDIDAE | 7 | 2 |
| PLANORBIDAE | 6 | 1 |
| AESHNIDAE | 3 | 1 |
| GOMPHIDAE | 1 | 2 |
| MACROMIIDAE | 3 | 2 |
| COENAGRIONIDAE | 9 | 4 |
| LEUCTRIDAE | 0 | 9 |
| ELMIDAE | 5 | 5 |
| CORYDALIDAE | 0 | 2 |
| HYDROPTILIDAE | 4 | 11 |
| LEPIDOSTOMATIDAE | 1 | 1 |
| POLYCENTROPODIDAE | 6 | 1 |
| TIPULIDAE | 3 | 1 |
| CULICIDAE | 8 | 1 |
| CERATOPOGONIDAE | 6 | 2 |
| SIMULIIDAE | 6 | 3 |
| CHIRONOMIDAE | 6 | 34 |
| BLOODREDCHIRONOMIDAE | 8 | 2 |

Number of Taxa + 20 # Population + 100

Dominant Family(s) + CHIRONOMIDAE 34.00%
Family Biotic Index + 5.50
Scraper/Filterer Collector Ratio + 2.20
Shredder/Total Ratio + 0.22
E(phemeroptera)+P(lectoptera)+T(richoptera) + 4
%EPT + 22.00
EPT/Chironomids + 0.61

NJIS/Rating + 21/moderately impaired

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OBSERVATIONS

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Clarity + clear

Flow + slow-moderate

Width/Depth(ft) + 4-6/1-2

Substrate + sand/gravel/muck

Streambank Vegetation/Stability + good/good

Canopy + mostly closed

Other + woods (few cedars)/rural; cranberry bogs upstr; some trash;
macrophytes