

State of New Jersey
CHRISTINE TODD WHITMAN
GOVERNOR

AMBIENT BIOMONITORING NETWORK

**Arthur Kill, Passaic, Hackensack, and
Wallkill River Drainage Basins**

1993 Benthic Macroinvertebrate Data



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

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NJ Department of Environmental Protection
Division of Science and Research
CN 422, Trenton, NJ 08625-0409

WATER MONITORING MANAGEMENT
James Mumman, Administrator

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Water Monitoring Report Prepared By:

Paul Olsen
Barbara Kurtz
Jack Kurtz

Edited By:

Alfred L. Korndoerfer

Project Manager:

Paul Olsen

**Bureau of Water Monitoring
Biomonitoring Operations Section**



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Introduction

Historical Perspective

Since the early 1970's, the Bureau of Water Monitoring 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 USEPA (Region II and Headquarters) and 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, the bureau 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 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 (fiscal year 93), the bureau 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 (see Figure 1). 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 N.J.'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.

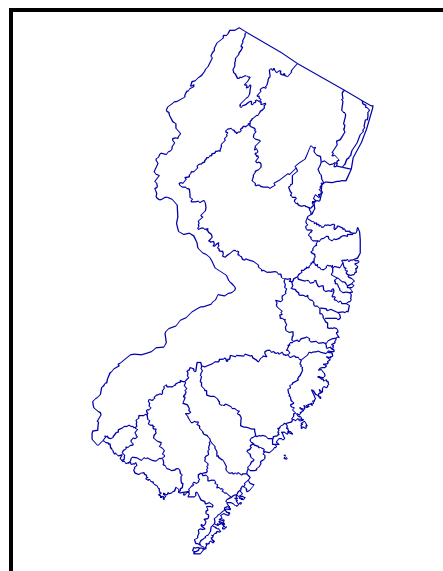


Figure 1 - Major Drainage Basins in N.J.

Based upon existing database deficiencies, the Arthur Kill (Rahway-Elizabeth rivers), Passaic, Hackensack, and Wallkill River Drainage Basins were selected to be monitored. The Rahway-Elizabeth Drainage Basin was sampled between Orange, Essex Co. and Rahway, Union Co. and between Irvington, Essex Co. and Union, Union Co. and Elizabeth, Union Co. The Passaic River Drainage Basin was sampled between Mendham Twp., Morris Co. and the mouth of Newark Bay, Newark, Essex Co. The Hackensack River Drainage Basin was sampled between Riverdale and South Hackensack, Bergen Co. The Wallkill Drainage Basin was sampled between Sparta and Wantage Twp., Sussex Co.

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 NJDEP ambient monitoring stations so that correlation of the data sets could be maximized; for example, a dataset for stations sampled for a 1992 evaluation of the Upper Passaic River has been incorporated into this report. 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, FG&W Management Areas, etc.) were also considered when selecting the sampling locations. **Monitoring station locations in the study area are indicated on the G.I.S. Maps # 1 through 9.** All stations were positioned via the Global Positioning System, 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. Semi-quantitative 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 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: **1.) Taxa Richness**, which reflects the health of a community through a measure of the total taxa; **2.) E+P+T**; the total number of the intolerant forms: *Ephemeroptera*, *Plecoptera*, and *Tricoptera*; **3.) %EPT** (including the hydropsychid family); **4.) %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 **5.) 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 #'s 1 through 9.** 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.

Overall, out of 113 monitoring stations sampled during this study period, 31.9% were rated as non-impaired, 54.9% were rated as moderately impaired, and 13.3% were rated as severely impaired (see Figure (2)).

When the Arthur Kill (Rahway-Elizabeth rivers), Passaic, Hackensack and Wallkill River Drainage Basins are examined by subbasin groupings, different patterns of biological impaired emerge. The Arthur Kill (Rahway-Elizabeth rivers) drainage is depicted in Figure 3.

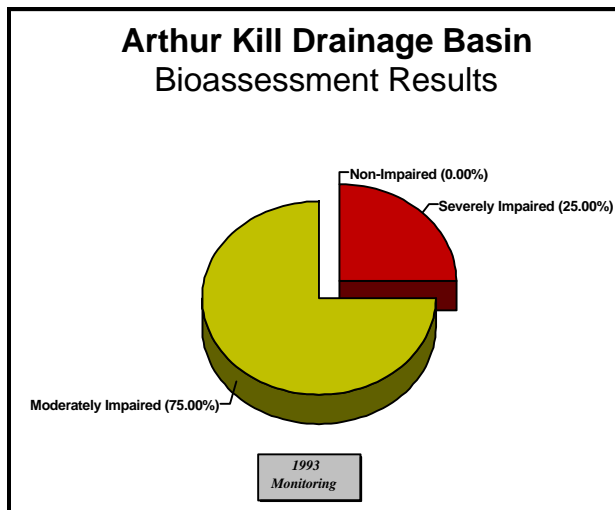


Figure 3

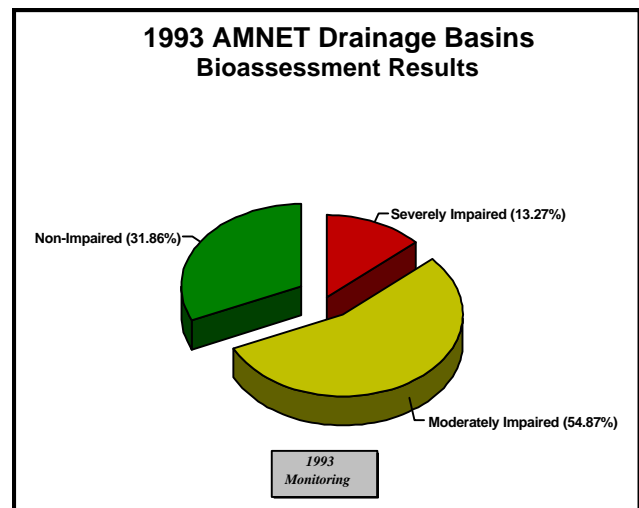


Figure 2

All sites exhibited impaired; 75% were categorized as moderately impaired. The remaining sites (25%) were rated severely impaired. The Passaic River drainage is depicted in Figure 4. No impairment was indicated at 32.1% of the sites. The majority of the sites (55.1%) exhibited moderate impairment; the remainder (12.8%) was severely impaired. The Hackensack River drainage is depicted in Figure 5. Non-impaired ratings were given to 11.1% of the sites. The majority of the sites (66.7%) exhibited a moderate degree of impairment. Severe impairment was indicated at the remaining (22.2%) sites. The Wallkill River

drainage is depicted in Figure 6. Most of the sites (71.4%) exhibited no impairment. The remaining sites (28.6%) were rated moderately impaired.

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

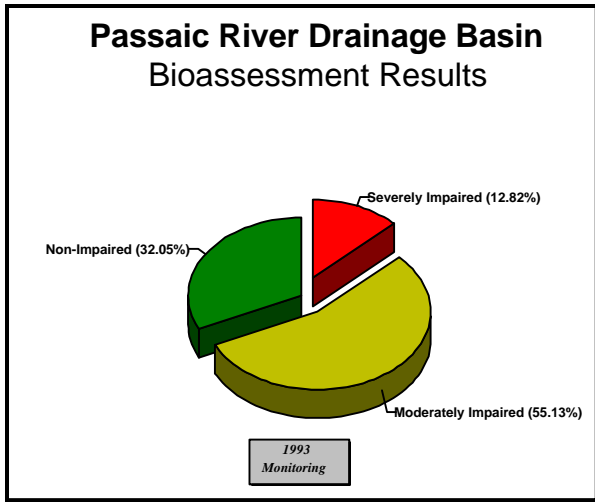


Figure 4

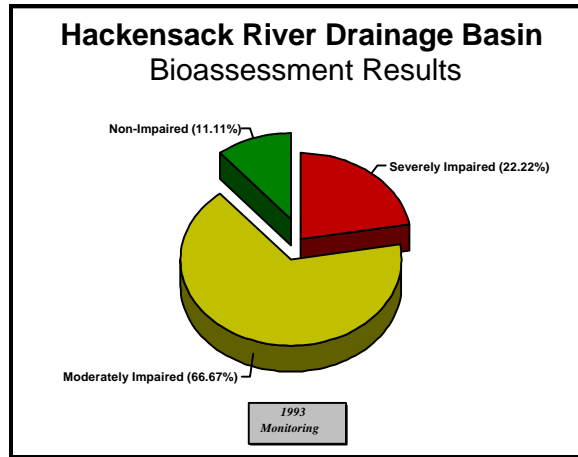


Figure 5

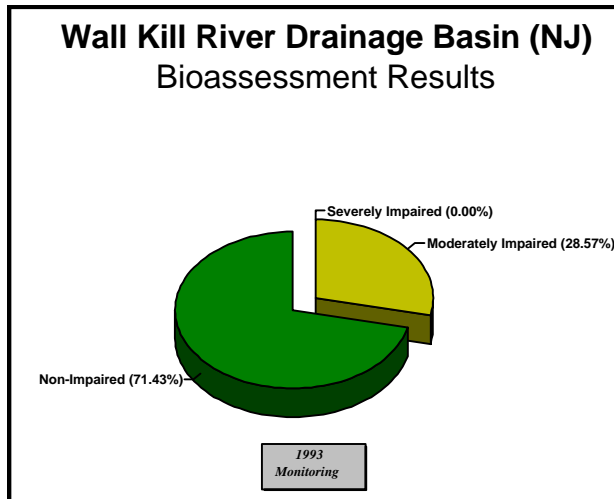


Figure 6

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 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
1. Taxa Richness (total Families)	>10	10-5	4-0
2. E+P+T Index (EPT)	>5	5-3	2-0
3. Percent Dominance (%CDF)	<40	40-60	>60
4. Percent EPT ² (%EPT)	>35	35-10	<10
5. 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.

¹Based on 100 organism subsamples

²Including the hydropsychid family

³Also known as the Hilsenhoff Biotic Index

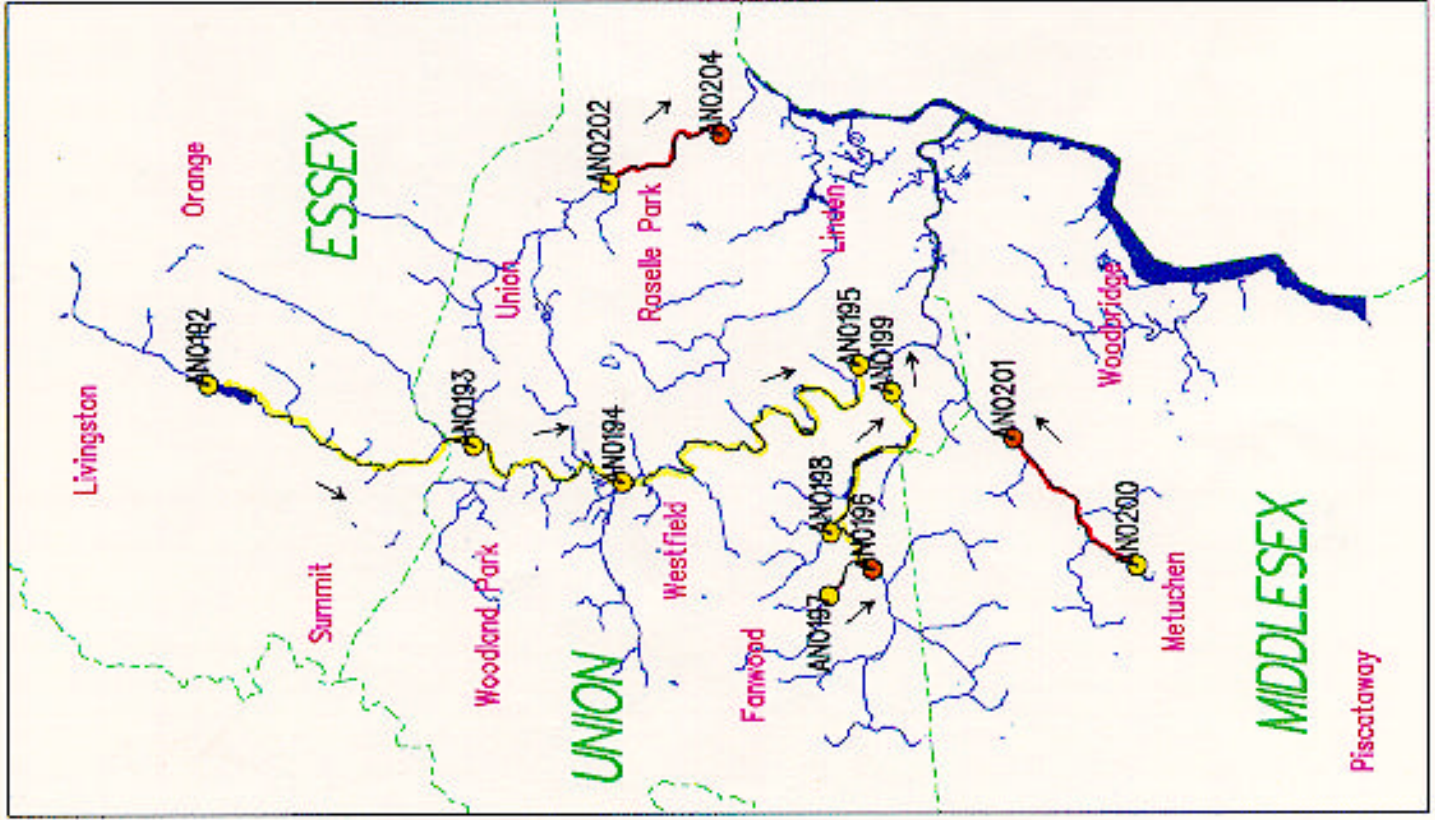
Map 1

Rahway – Elizabeth River Drainage



LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Stream
- Stream Flow
- County Boundary
- Municipalities

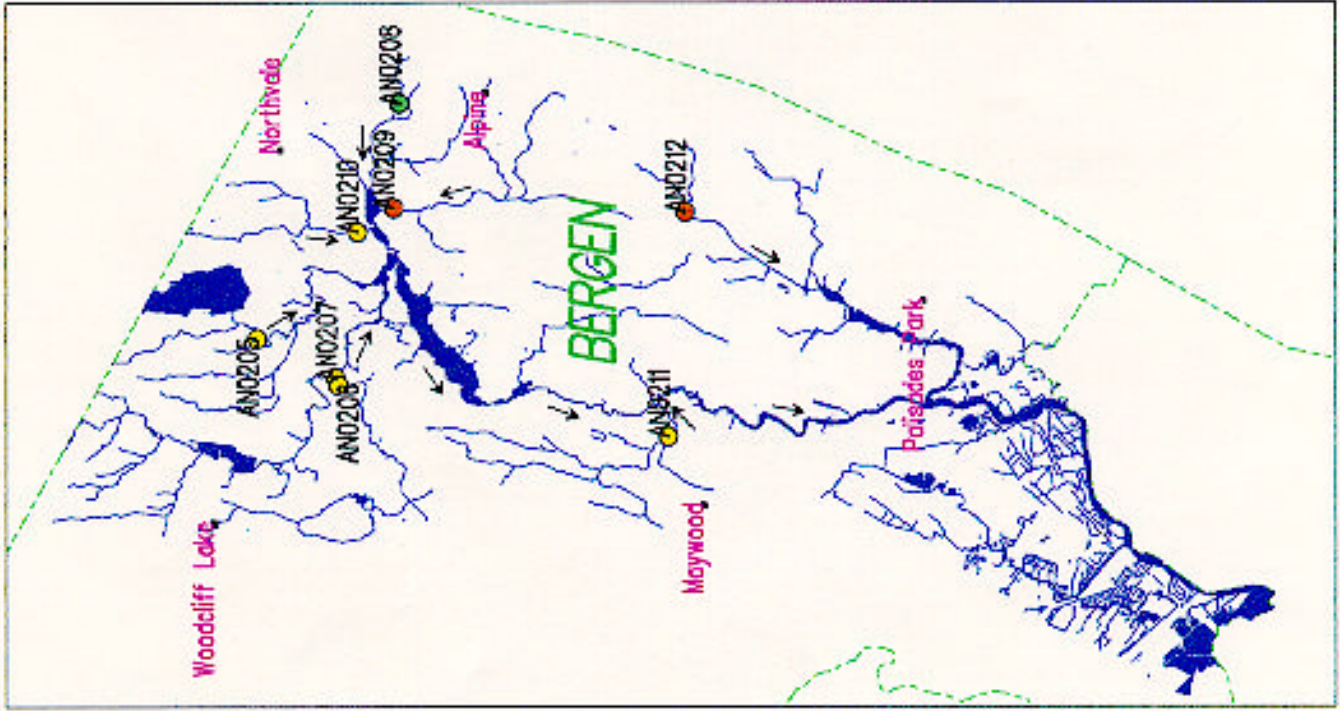


Map 2 Hackensack River Drainage



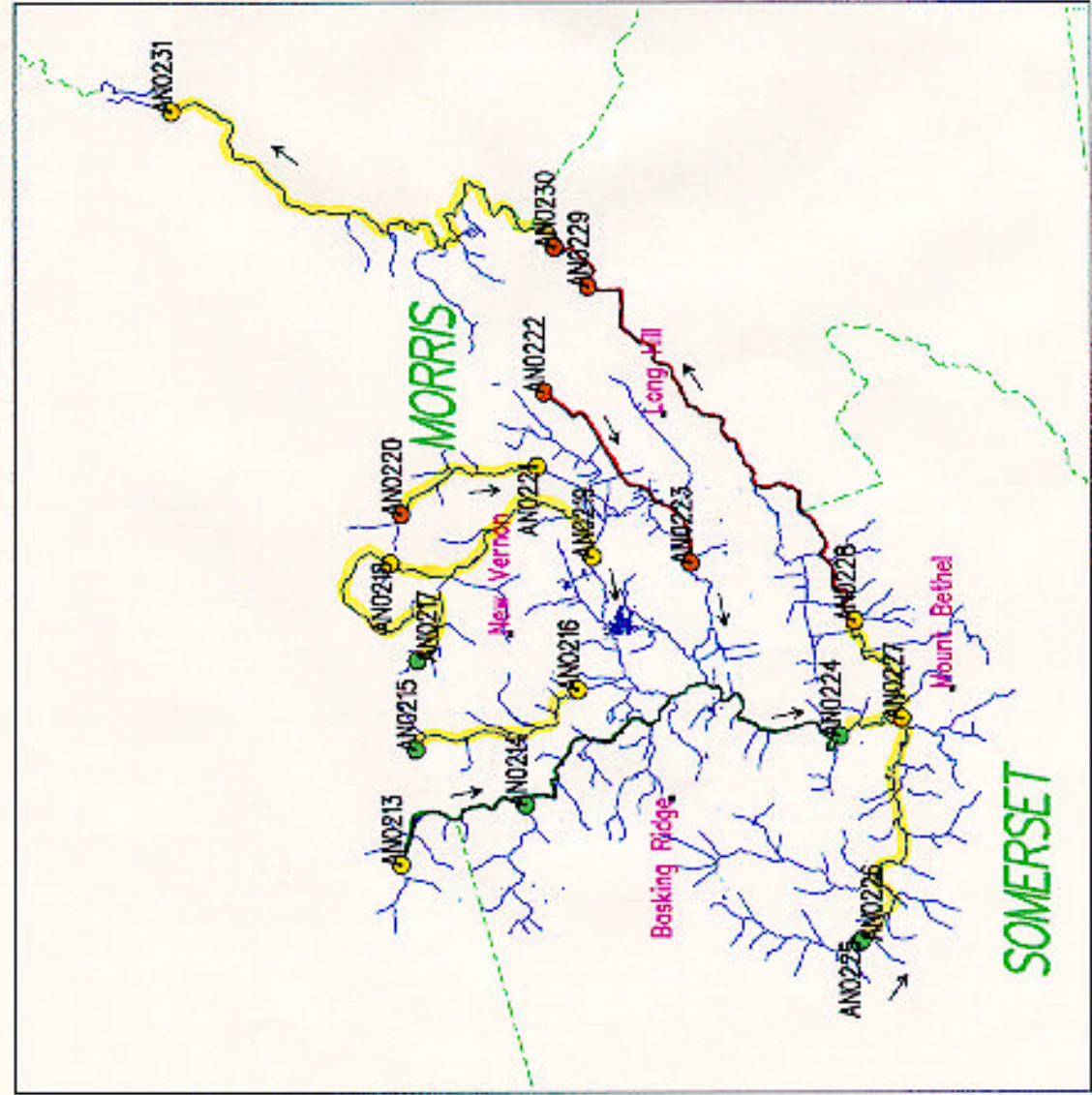
LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Stream
- Stream Flow
- - - County Boundary
- Municipality



Map 3

Passaic River Upper and Middle Drainage



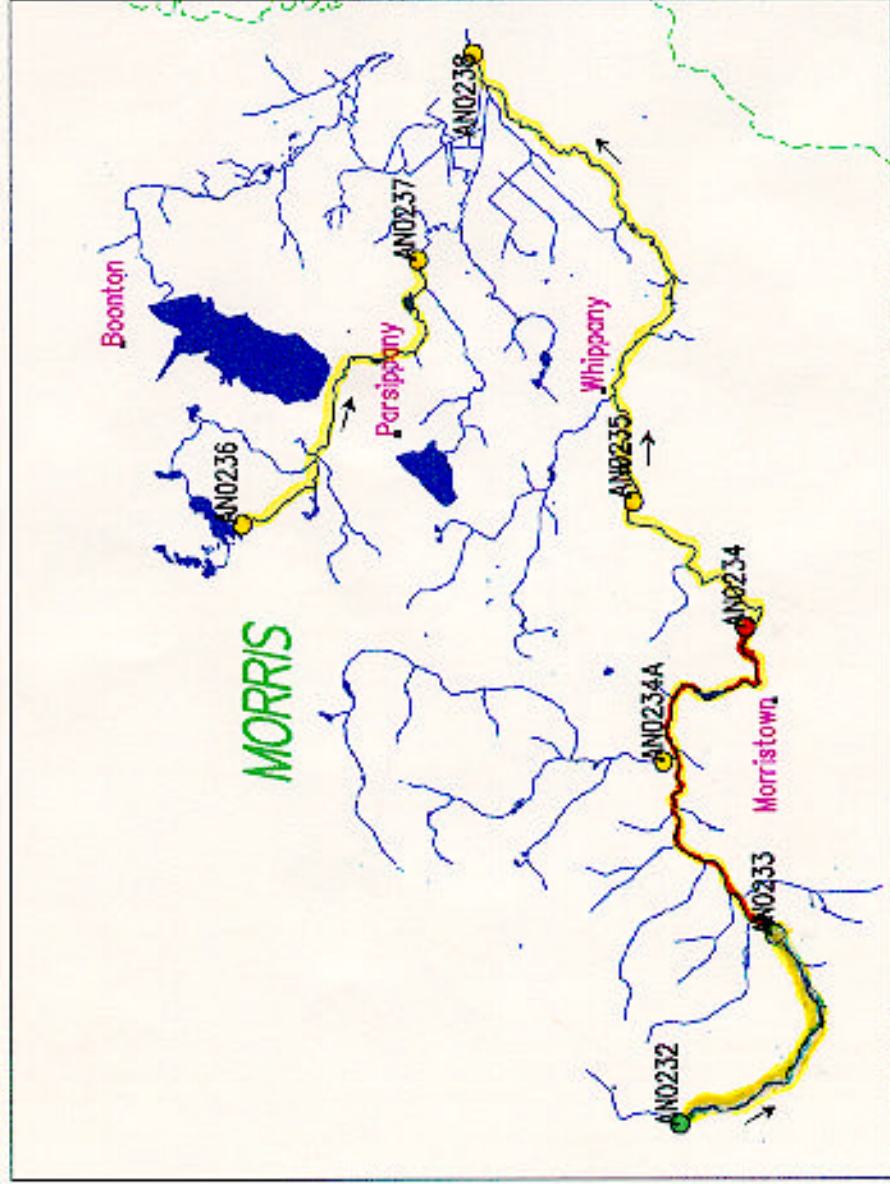
LEGEND

- Non-impaird
- Moderately Impaired
- Severely Impaired
- ~ Stream
- Stream Flow
- - - County Boundary
- Municipality

Bureau of Water Monitoring

Map 4

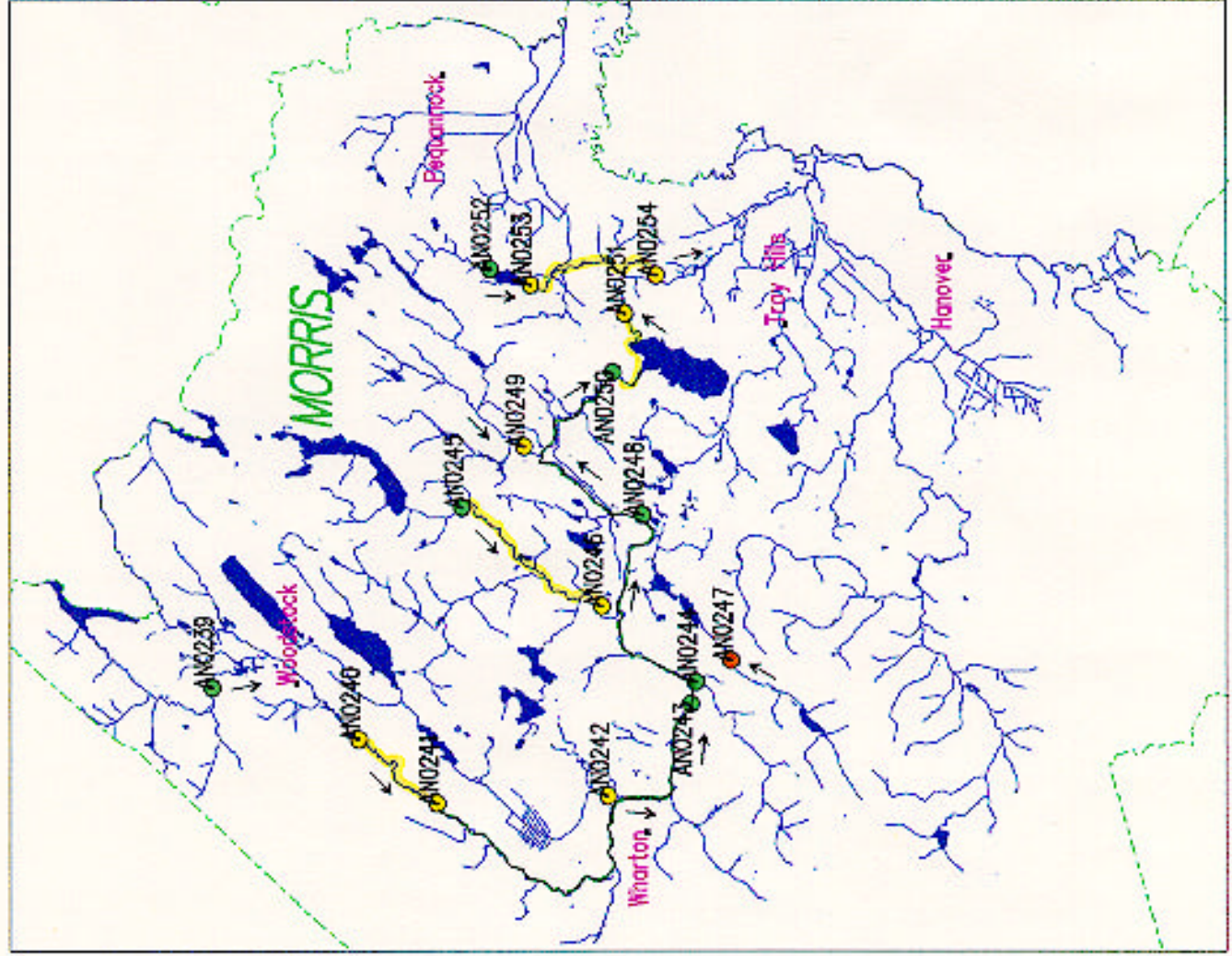
Whippany River Drainage



LEGEND

- Non-Impaired (Green circle)
- Moderately Impaired (Yellow circle)
- Severely Impaired (Red circle)
- Stream (Blue line)
- Stream Flow (Arrow on blue line)
- County Boundary (Dashed green line)
- Municipalities (Pink line)

Map 5 Rockaway River Drainage



LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Stream Flow
- Stream
- - - County Boundary
- Municipalities

Map 6

Wanaque-Pequannock Ramapo-Pompton Drainage



LEGEND

- Not-Impaired
- Moderately Impaired
- Severely Impaired
- Stream
- Stream Flow
- County Boundary
- Municipality



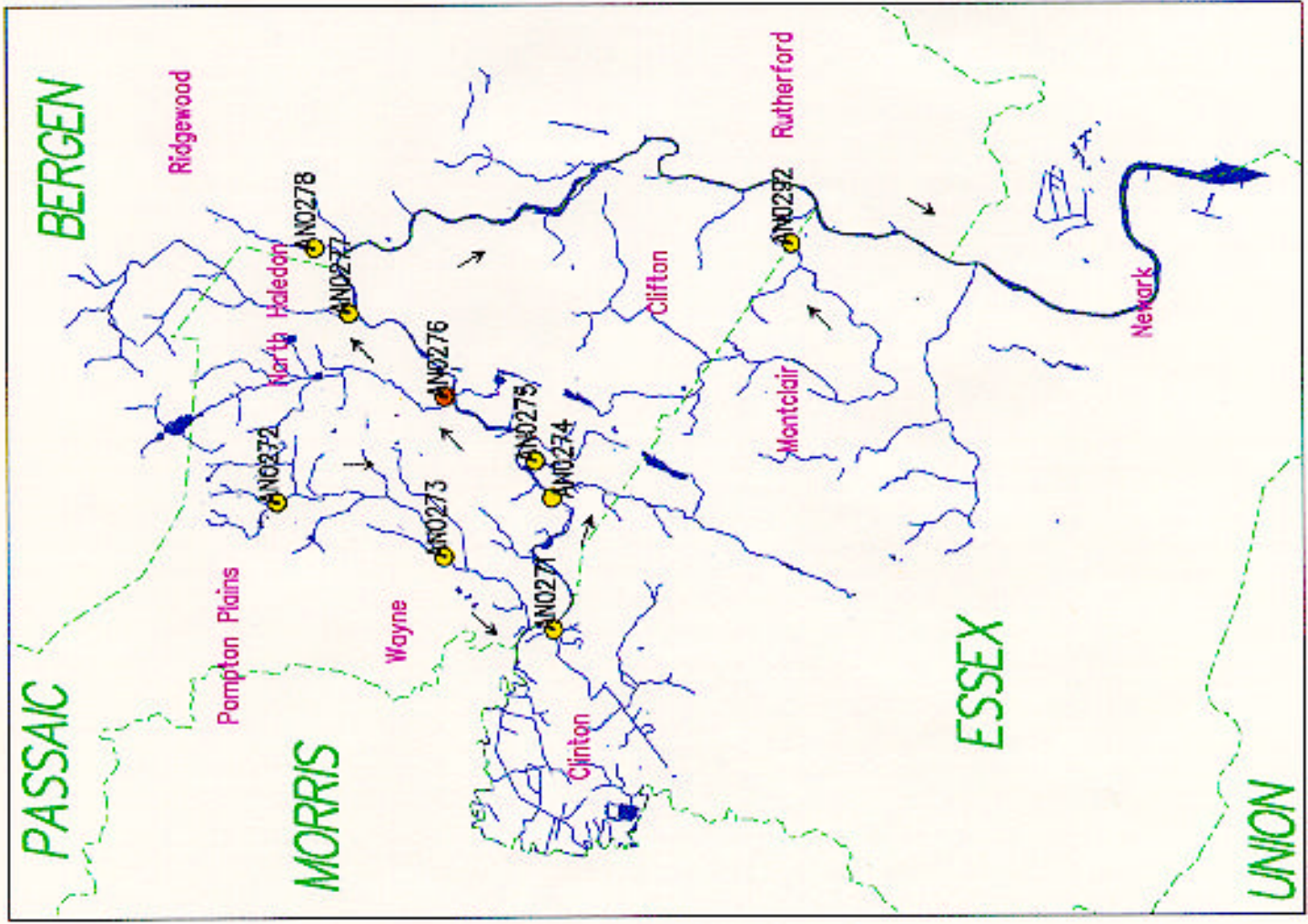
Map 7

Lower Passaic Drainage



LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- ~ Stream
- Stream Flow
- - - County Boundary
- Municipality

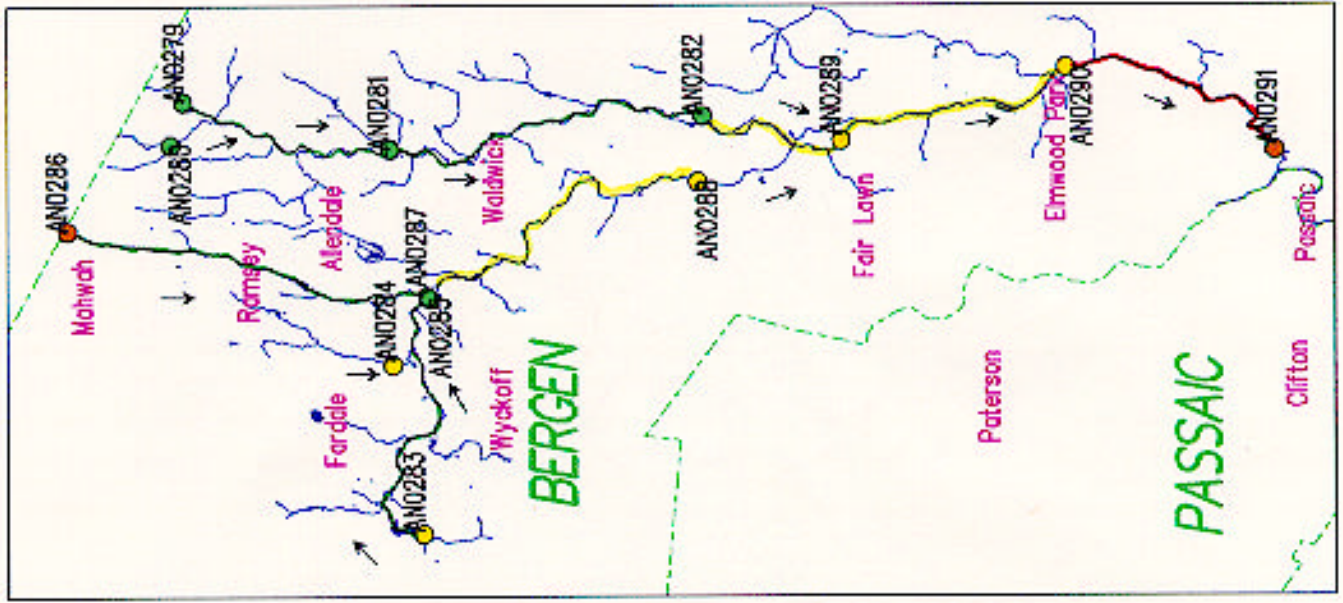


Map 8 Saddle River Basin



LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Stream
- Stream Flow
- County Boundary
- Municipalities

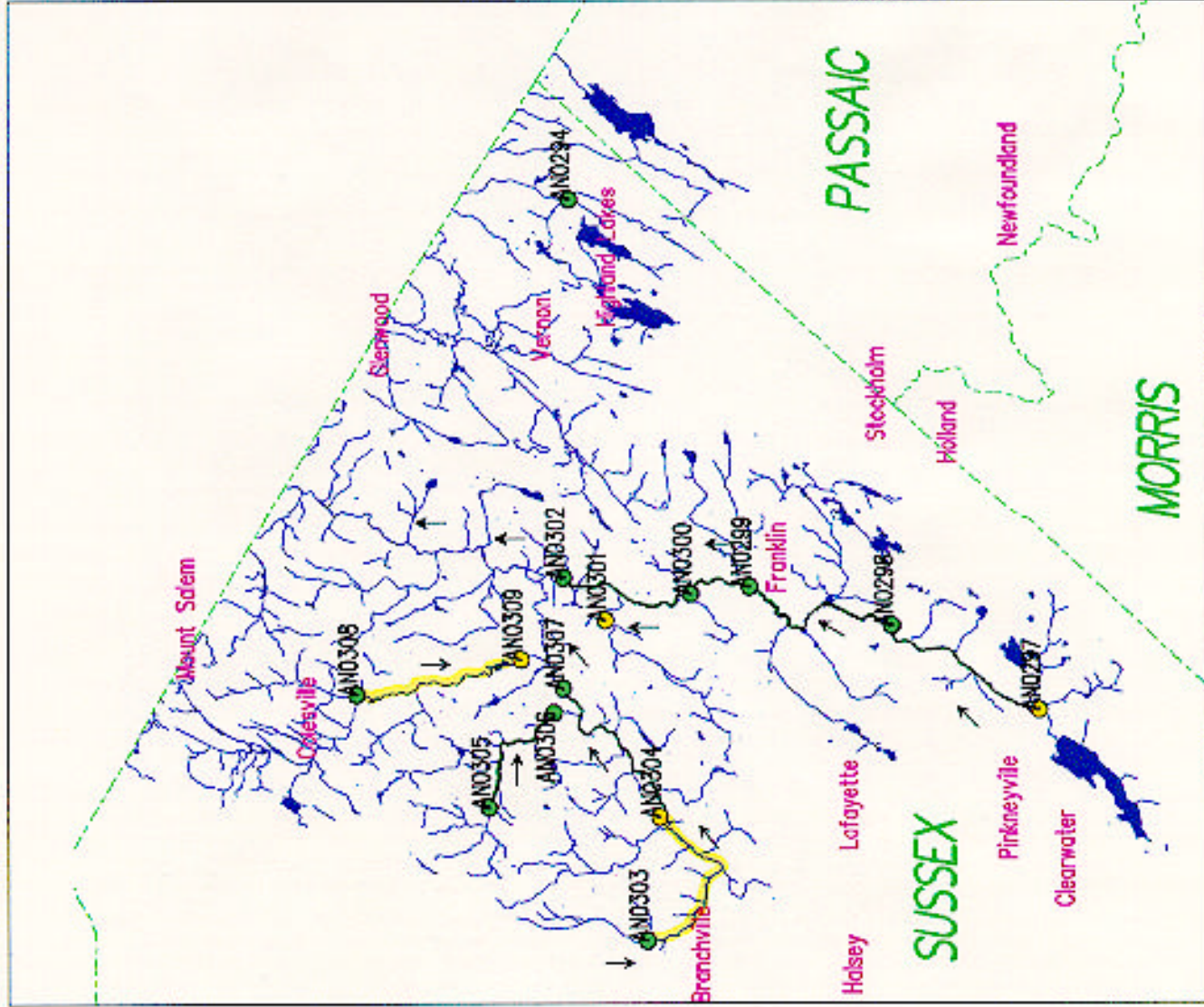


Map 9 Walkill River Basin



LEGEND

- Non-Impaired
- Moderately Impaired
- Severely Impaired
- Stream
- Stream Flow
- - - County Boundary
- Municipality



APPENDIX B

Passaic Basin - Caldwell USGS Quadrangle
Station AN0192
Rahway River, Northfield Ave (above Orange Reservoir), West Orange
February 20, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	2	7
Gastropoda	5	7
Chironomidae	5	6
Lumbricidae	1	10
Simuliidae	1	6

Statistical Analysis

Number of Taxa = 5
Total Number of Individuals = 14
% Contribution of Dominant Family = 35.71
Family Biotic Index = 6.79
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 5-10/<1...
Substrate: cobbles...Streambank Vegetation/Stability: poor/poor...
Canopy: open...Other: sparsely tree-lined; commercial

Passaic Basin - Roselle USGS Quadrangle
 Station AN0193
 Rahway River, Washington Ave (Rt 82), Springfield
 February 20, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Asellidae	27	8
Naididae	6	7
Tubificidae	29	10
Chironomidae	7	6
Gastropoda	1	7
Hirudinea	2	10
BloodRedChironomidae	1	8
Lumbricidae	1	10
Simuliidae	1	6
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 10
 Total Number of Individuals = 76
 % Contribution of Dominant Family = 38.16
 Family Biotic Index = 8.54
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.01
 E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 0.00
 EPT/C* = 0.00 *(Chironomidae)
 NJIS Rating = 9
 Biological Condition = moderately impaired
 Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 30/1...
 Substrate: cobbles...Streambank Vegetation/Stability: poor/poor...
 Canopy: open...Other: sparsely tree-lined; commercial/residential;
 siltation; oil in the stream

Passaic Basin - Roselle USGS Quadrangle
Station AN0194
Rahway River, Kenilworth Boulevard, Springfield Township
February 20, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	1	7
Chironomidae	21	6
Tubificidae	10	10
Hydropsychidae	13	4
Asellidae	1	8
Gammaridae	4	4
Simuliidae	3	6
Hirudinea	1	10
Sphaeriidae	1	8
Nematoda	1	6

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 56
% Contribution of Dominant Family = 37.50
Family Biotic Index = 6.27
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 23.21
EPT/C* = 0.62 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 20/<1...
Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: park surrounds

Passaic Basin - Perth Amboy USGS Quadrangle
Station AN0195
Rahway River, River Road, just upstream of Church Street, Rahway
February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	26	4
Tubificidae	33	10
Turbellaria	11	4
Sphaeriidae	8	8
Haplotaxidae	1	8
Hydropsychidae	10	4
Gastropoda	4	7
Chironomidae	7	6

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 56
% Contribution of Dominant Family = 33.00
Family Biotic Index = 6.60
Scraper/Filterer Collector Ratio = 0.11
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 10.00
EPT/C* = 1.43 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 45/<1
...Substrate: sand/cobble...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: sparsely tree-lined; residential

Passaic Basin - Perth Amboy USGS Quadrangle
 Station AN0196
 Robinsons Brook, Goodmans Crossing, Scotch Plains
 February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Sphaeriidae	46	8
Tubificidae	34	10
Tipulidae	1	3
Turbellaria	4	4
Gastropoda	5	7
Hydropsychidae	1	4
Chironomidae	7	6
Hirudinea	1	10
Lumbriculidae	1	8

Statistical Analysis

Number of Taxa = 9
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 46.00
 Family Biotic Index = 8.26
 Scraper/Filterer Collector Ratio = 0.08
 Shredder/Total Ratio = 0.04
 E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 1.00
 EPT/C* = 0.14 *(Chironomidae)
 NJIS Rating = 6
 Biological Condition = severely impaired
 Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 30/1.
 ..Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
 poor...Canopy: open...Other: sparsely tree-lined; apartments

Passaic Basin - Roselle USGS Quadrangle
 Station AN0197
 Robinsons Brook, Raritan Road AKA Terrell Road, Scotch Plains
 February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	59	4
BloodRedChironomidae	9	8
Simuliidae	19	6
Tubificidae	2	10
Chironomidae	7	6
Tipulidae	1	3
Turbellaria	1	4
Ceratopogonidae	1	6
Nematoda	1	6

Statistical Analysis

Number of Taxa = 9
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 59.00
 Family Biotic Index = 5.03
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.01
 E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 59.00
 EPT/C* = 3.69 *(Chironomidae)
 NJIS Rating = 15
 Biological Condition = moderately impaired
 Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 12/<1...
 Substrate: gravel...Streambank Vegetation/Stability: poor/poor...
 Canopy: open...Other: residential

Passaic Basin - Perth Amboy USGS Quadrangle
 Station AN0198
 Robinsons Brook, Lamberts Mill Road, Westfield Township
 February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	59	10
Hirudinea	2	10
Gammaridae	1	4
BloodRedChironomidae	2	8
Hydropsychidae	10	4
Asellidae	10	8
Chironomidae	7	6
Turbellaria	3	4
Lumbriculidae	1	8
Coenagrionidae	1	9
Naididae	1	7
Gastropoda	3	7

Statistical Analysis

Number of Taxa = 12
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 59.00
 Family Biotic Index = 8.49
 Scraper/Filterer Collector Ratio = 0.09
 Shredder/Total Ratio = 0.01
 $E+P+T^* = 1 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
 $\%EPT = 10.00$
 $EPT/C^* = 1.11 * (\text{Chironomidae})$
 NJIS Rating = 12
 Biological Condition = moderately impaired
 Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 6/<1...
 Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
 poor...Canopy: open...Other: commercial

Passaic Basin - Perth Amboy USGS Quadrangle
Station AN0199
Robinsons Brook, Route 27, Rahway
February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	13	4
Hydropsychidae	25	4
Gammaridae	12	4
Gastropoda	11	7
Asellidae	3	8
Tubificidae	4	10
Simuliidae	3	6
Elmidae	4	4
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 76
% Contribution of Dominant Family = 32.89
Family Biotic Index = 5.04
Scraper/Filterer Collector Ratio = 0.03
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 32.89
EPT/C* = 25.00 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 30-40/<1...
Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: tree-lined

Passaic Basin - Perth Amboy USGS Quadrangle
 Station AN0200
 South Branch Rahway River, Parsonnage Road, Menlo Park
 February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	28	8
Turbellaria	12	4
Sphaeriidae	18	8
Tubificidae	36	10
Bryozoa	4	7
Simuliidae	1	6
Chironomidae	1	6

Statistical Analysis

Number of Taxa = 7
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 36.00
 Family Biotic Index = 8.16
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.00
 E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 0.00
 EPT/C* = 0.00 *(Chironomidae)
 NJIS Rating = 9
 Biological Condition = moderately impaired
 Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 5/<1...
 Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
 poor...Canopy: open...Other: tree-lined; channelized; pond
 upstream with lots of goose shit around it

Passaic Basin - Perth Amboy USGS Quadrangle
Station AN0201
South Branch Rahway River, Maplewood Ave (in Merrill Pk), Colonia
February 19, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	2	8
Gammaridae	2	4
Tubificidae	42	10
Cambarinae	1	6
Turbellaria	2	4
Chironomidae	3	6

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 52
% Contribution of Dominant Family = 80.77
Family Biotic Index = 9.15
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution
 Tubificidae overwhelmingly dominant

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 50/1.
..Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: channelized in places; siltation;
residential

Elizabeth Basin - Roselle/Elizabeth USGS Quadrangle
Station AN0202
Elizabeth River, Lakeview Road and Maple Terrace, Union
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Simuliidae	27	6
Baetidae	6	4
Chironomidae	22	6
Tubificidae	11	10
BloodRedChironomidae	24	8
Turbellaria	9	4
Gastropoda	1	7

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 100
% Contribution of Dominant Family = 27.00
Family Biotic Index = 6.63
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.14
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 6.00
EPT/C* = 0.13 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): -/-...
Substrate: gravel/sand/clay...Streambank Vegetation/Stability:
poor/poor...Canopy: open...Other: none

Elizabeth Basin - Elizabeth USGS Quadrangle
Station AN0203
Elizabeth River, Springfield Avenue (Route 24), Irvington
July 6, 1993

Family Number Family
 of Tolerance
 Individuals Value (FTV)

*** NO SAMPLE TAKEN ***

Statistical Analysis

Observations

The Elizabeth River is channelized throughout the Irvington area;
it's being utilized as an open sewer.

Elizabeth Basin - Elizabeth USGS Quadrangle
Station AN0204
Elizabeth River, Summer Street, Elizabeth
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	21	10

Statistical Analysis

Number of Taxa = 1
Total Number of Individuals = 21
% Contribution of Dominant Family = 100.00
Family Biotic Index = 10.00
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 0
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
 low diversity
 Tubificidae overwhelmingly dominant
 significant organic pollution

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 50/10...
Substrate: rock/sand...Streambank Vegetation/Stability: poor/poor.
..Canopy: open...Other: fish

Station AN0205
Hackensack River, Old Tappan Road, Old Tappan
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	46	4
Bryozoa	31	7
BloodRedChironomidae	4	8
Chironomidae	13	6
Hydrozoa	1	7
Gammaridae	5	4

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 100
% Contribution of Dominant Family = 46.00
Family Biotic Index = 5.38
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.04
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 46.00
EPT/C* = 2.71 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 40/1+...
Substrate: rock/cobble/sand/gravel...Streambank Vegetation/
stability: fair/fair...Canopy: half open...Other: tree-lined

Hackensack Basin - Hackensack USGS Quadrangle
Station AN0206
Musquapsink Brook, Harrington Avenue, Westwood
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	65	4
Hydropsychidae	8	4
Gastropoda	5	7
Asellidae	11	8
Simuliidae	1	6
BloodRedChironomidae	7	8
Elmidae	2	4
Cambarinae	1	6

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 100
% Contribution of Dominant Family = 65.00
Family Biotic Index = 4.91
Scraper/Filterer Collector Ratio = 0.33
Shredder/Total Ratio = 0.07
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 8.00
EPT/C* = 1.14 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms
Gammaridae overwhelmingly dominant

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 40/<1...
Substrate: sand/cobble...Streambank Vegetation/Stability: fair/
/fair...Canopy: open...Other: tree-lined; ducks; geese; snapping
turtles

Hackensack Basin - Hackensack USGS Quadrangle
Station AN0207
Pascack Brook, Westwood Avenue (nr USGS gage), Westwood/Rivervale
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	41	4
Asellidae	7	8
Gammaridae	5	4
Chironomidae	28	6
Turbellaria	12	4
Tipulidae	2	3
Elmidae	3	4
Bryozoa	2	7

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 100
% Contribution of Dominant Family = 41.00
Family Biotic Index = 4.88
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.03
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 41.00
EPT/C* = 1.46 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: moderate...Width/Depth(ft):
40/<1...Substrate: rock/cobble/sand...Streambank Vegetation/
stability: fair/fair (upstream)...Canopy: open...Other: tree-lined
upstream; channelized by bridge; sampled below spillway; crayfish;
geese

Hackensack Basin - Yonkers USGS Quadrangle
Station AN0208
Dwars Kill, Ruckman Road, Closter
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	49	6
Ephemerellidae	3	1
Tipulidae	3	3
Baetidae	4	4
Empididae	3	6
Hydropsychidae	6	4
Elmidae	4	4
Leptophlebiidae	2	2
Ceratopogonidae	2	6
Glossosomatidae	1	0
Naididae	4	7
Lepidostomatidae	4	1
Philopotamidae	3	3
Nemertea	1	5
BloodRedChironomidae	2	8
Hemiptera	1	8
Rhyacophilidae	2	0
Choroperlidae	2	1
Dytiscidae	2	4
Peltoperlidae	1	1
Psephenidae	1	4

Statistical Analysis

Number of Taxa = 21
Total Number of Individuals = 100
% Contribution of Dominant Family = 49.00
Family Biotic Index = 4.81
Scraper/Filterer Collector Ratio = 0.78
Shredder/Total Ratio = 0.10
E+P+T* = 9 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 27.00
EPT/C* = 0.53 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 5/<1...
Substrate: rock/cobble/rubble/gravel/sand...Streambank Vegetation/
Stability: poor/poor...Canopy: mostly closed...Other: tree-lined

Hackensack Basin - Yonkers USGS Quadrangle
Station AN0209
Tenakill, Cedar Lane, Closter
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	58	8
Tubificidae	3	10
Chironomidae	29	6
Asellidae	6	8
Gammaridae	1	4
Turbellaria	2	4
Hemiptera	1	8

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 100
% Contribution of Dominant Family = 58.00
Family Biotic Index = 7.36
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.44
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 6
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 40/1+...
Substrate: sand/cobble...Streambank Vegetation/Stability: poor/
/poor...Canopy: open...Other: tree-lined; siltation; fish; geese

Hackensack Basin - Yonkers USGS Quadrangle
 Station AN0210
 Dorotockeys Run, Tappan Road (Harrington Park), North Harrington
 July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Elmidae	6	4
Turbellaria	13	4
Hydropsychidae	1	4
Gammaridae	30	4
BloodRedChironomidae	37	8
Sphaeriidae	2	8
Chironomidae	8	6
Asellidae	2	8
Tubificidae	1	10

Statistical Analysis

Number of Taxa = 9
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 37.00
 Family Biotic Index = 5.86
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.37
 E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 1.00
 EPT/C* = 0.02 *(Chironomidae)
 NJIS Rating = 12
 Biological Condition = moderately impaired
 Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 20/<1...
 Substrate: gravel/sand/rocks...Streambank Vegetation/Stability:
 fair/good...Canopy: open...Other: tree-lined

Hackensack Basin - Hackensack USGS Quadrangle
Station AN0211
Van Saun Brook, Main Street and Route 4, North Hackensack
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Simuliidae	18	6
Asellidae	24	8
Turbellaria	4	4
BloodRedChironomidae	7	8
Hydropsychidae	6	4
Empididae	2	6
Chironomidae	22	6
Sphaeriidae	14	8
Gastropoda	1	7
Naididae	2	7

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 24.00
Family Biotic Index = 6.73
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.06
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 6.00
EPT/C* = 0.21 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: near clear...Flow: slow...Width/Depth(ft): 20/<1...
Substrate: cobble/rubble/sand...Streambank Vegetation/Stability:
poor/poor...Canopy: mostly covered...Other: below the Coles Brook
confluence

Hackensack Basin - Yonkers USGS Quadrangle
 Station AN0212
 Overpeck Creek, Dean Drive (near Brookside Cemetery), Englewood
 July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	70	6
Gastropoda	2	7
BloodRedChironomidae	8	8
Turbellaria	9	4
Baetidae	3	4
Hydrophilidae	1	5
Aeshnidae	1	3
Tipulidae	1	3
Lumbricidae	3	10
Hydropsychidae	2	4

Statistical Analysis

Number of Taxa = 10
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 70.00
 Family Biotic Index = 5.95
 Scraper/Filterer Collector Ratio = 0.50
 Shredder/Total Ratio = 0.19
 E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 5.00
 EPT/C* = 0.06 *(Chironomidae)
 NJIS Rating = 6
 Biological Condition = severely impaired
 Deficiency(s) noted: paucity of clean water organisms
 Chironomidae overwhelmingly dominant

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 20/<1...
 Substrate: rubble/cobble/sand/gravel...Streambank Vegetation/
 Stability: poor/fair...Canopy: mostly open...Other: tree-lined;
 right streambank is channelized; periphyton; several fish; from
 Palisades Drive, south, the creek is dead, black, and channelized

Passaic Basin - Mendham USGS Quadrangle
Station AN0213
Passaic River, Tempewick Road, Mendham Township
February 5, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Simuliidae	43	6
Chironomidae	21	6
Bryozoa	6	7
Nemouridae	5	2
Sphaeriidae	2	8
Turbellaria	2	4
Ephemerellidae	2	1
Hydropsychidae	12	4
Tipulidae	4	3
Limnephilidae	1	4
Naididae	2	7

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 43.00
Family Biotic Index = 5.40
Scraper/Filterer Collector Ratio = 0.02
Shredder/Total Ratio = 0.14
E+P+T* = 4 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 20.00
EPT/C* = 0.95 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 8/<1...
Substrate: rocks...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: wooded

Passaic Basin - Bernardsville USGS Quadrangle
 Station AN0214
 Indian Grave Brook, Hardscrabble Road, near Bernardsville
 February 5, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Ephemereleididae	23	1
Heptageniidae	1	4
Hydropsychidae	11	4
Simuliidae	35	6
Chironomidae	8	6
Nemouridae	6	2
Elmidae	3	4
Ceratopogonidae	1	6
Perlidae	2	1
Taeniopterygidae	2	2
Psephenidae	1	4
Limnephilidae	1	4
Glossosomatidae	1	0
Psychomyiidae	1	2
Leptophlebiidae	1	2
Empididae	1	6
Naididae	1	7
Baetidae	1	4

Statistical Analysis

Number of Taxa = 18
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 35.00
 Family Biotic Index = 3.94
 Scraper/Filterer Collector Ratio = 0.13
 Shredder/Total Ratio = 0.30
 E+P+T* = 11 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 50.00
 EPT/C* = 6.25 *(Chironomidae)
 NJIS Rating = 30
 Biological Condition = non-impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 15/<1...
 Substrate: rocks...Streambank Vegetation/Stability: good/good...
 Canopy: half open...Other: wooded; residences; native brook trout

Passaic Basin - Mendham USGS Quadrangle
 Station AN0215
 Primrose Brook, Jockey Hollow National Park, Jockey Hollow
 February 4, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Capniidae	4	1
Limnephilidae	7	4
Chironomidae	31	6
Ephemereididae	25	1
Hydropsychidae	2	4
Naididae	1	7
Molannidae	1	6
Lepidostomatidae	4	1
Simuliidae	7	6
Tubificidae	1	10
Gomphidae	1	1
Tipulidae	6	3
Siphonuridae	1	7
Nematoda	1	6
Perlidae	1	1
Pteronarcyidae	1	0
Rhyacophilidae	1	0
Dixidae	1	3
Gastropoda	1	7
Peltoperlidae	2	1
Leptophlebiae	1	2

Statistical Analysis

Number of Taxa = 21
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 31.00
 Family Biotic Index = 3.67
 Scraper/Filterer Collector Ratio = 1.73
 Shredder/Total Ratio = 0.40
 E+P+T* = 11 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 48.00
 EPT/C* = 1.55 *(Chironomidae)
 NJIS Rating = 30
 Biological Condition = non-impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 50/1...
 Substrate: rocks...Streambank Vegetation/Stability: good/good...
 Canopy: open...Other: wooded; darter...Readings (05/19/92): Water
 Temp (oC): 14.5...Conductivity (æmhos): 91...pH (s.u.): 7.6...
 Dissolved Oxygen (ppm): 10.5

Passaic Basin - Mendham USGS Quadrangle
Station AN0216
Primrose Brook, Lees Mill Road, Harding Township
February 6, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Simuliidae	34	6
Nemouridae	22	2
Taeniopterygidae	3	2
Chironomidae	35	6
Gammaridae	3	4
Glossosomatidae	1	0
Hydropsychidae	1	4
Ceratopogonidae	1	6

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 100
% Contribution of Dominant Family = 35.00
Family Biotic Index = 4.86
Scraper/Filterer Collector Ratio = 0.09
Shredder/Total Ratio = 0.25
E+P+T* = 4 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 27.00
EPT/C* = 0.77 *(Chironomidae)
NJIS Rating = 21
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 12/<1...
Substrate: rocks...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: some trees; residences

Passaic Basin - Morristown USGS Quadrangle
Station AN0217
Great Brook, Blackwells Place, Harding Township
February 6, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	36	6
Baetidae	6	4
Ephemerellidae	19	1
Siphonuridae	23	7
Psychomyiidae	1	2
Naididae	6	7
Capniidae	3	1
Lumbriculidae	1	8
Nemouridae	1	2
Hydropsychidae	1	4
Heptageniidae	1	4
Glossosomatidae	1	0
Limnephilidae	1	4

Statistical Analysis

Number of Taxa = 13
Total Number of Individuals = 100
% Contribution of Dominant Family = 36.00
Family Biotic Index = 4.89
Scraper/Filterer Collector Ratio = 3.00
Shredder/Total Ratio = 0.29
E+P+T* = 10 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 57.00
EPT/C* = 1.58 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: crystal clear...Flow: moderate...Width/Depth(ft): -/
<1...Substrate: rocks/stones/gravel...Streambank Vegetation/
Stability: fair/fair...Canopy: open...Other: residential; fish

Passaic Basin - Morristown USGS Quadrangle
Station AN0218
Great Brook, Blackberry Lane, Harding Township
February 6, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	15	4
Simuliidae	19	6
Tubificidae	18	10
Naididae	3	7
Hydropsychidae	7	4
Limnephilidae	1	4
Gastropoda	4	7
Elmidae	6	4
Chironomidae	4	6
BloodRedChironomidae	1	8
Sphaeriidae	13	8
Asellidae	5	8
Turbellaria	1	4
Heptageniidae	2	4
Empididae	1	6

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 100
% Contribution of Dominant Family = 19.00
Family Biotic Index = 6.53
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 10.00
EPT/C* = 2.00 *(Chironomidae)
NJIS Rating = 21
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 8/<1...
Substrate: silt/CPOM...Streambank Vegetation/Stability: fair...
Canopy: open...Other: wood-lined; a dead bass

Passaic Basin - Chatham USGS Quadrangle
Station AN0219
Great Brook, Blue Trail (end of Woodland Road), Great Swamp WMA
February 6, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	28	6
Sphaeriidae	14	8
Gammaridae	21	4
Naididae	24	7
Hirudinea	2	10
BloodRedChironomidae	1	8
Tubificidae	6	10
Gastropoda	2	7
Lumbricidae	1	8
Hemiptera	1	8

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 28.00
Family Biotic Index = 6.50
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.01
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 4/<1...
Substrate: gravel...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: wooded; macrophytes

Passaic Basin - Morristown USGS Quadrangle
Station AN0220
Loantaka Brook, Bluestone Terrace, Morristown Township
February 7, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	85	8
Tubificidae	13	10
Naididae	1	7
Chironomidae	1	6

Statistical Analysis

Number of Taxa = 4

Total Number of Individuals = 100

% Contribution of Dominant Family = 85.00

Family Biotic Index = 6.23

Scraper/Filterer Collector Ratio = 0.00

Shredder/Total Ratio = 0.01

E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)

%EPT = 0.00

EPT/C* = 0.00 *(Chironomidae)

NJIS Rating = 0

Biological Condition = severely impaired

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

Observations

Streamwater: turbid, grey...Flow: slow...Width/Depth(ft): 8/1...
Substrate: sand/cobbles...Streambank Vegetation/Stability: fair/
fair...Canopy: open...Other: wood-lined; residential; sewage odor

Passaic Basin - Chatham USGS Quadrangle
Station AN0221
Loantaka Brook, Green Village Road, Green Village
February 7, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	45	6
Turbellaria	5	4
BloodRedChironomidae	3	8
Naididae	1	7
Tubificidae	3	10
Sphaeriidae	8	8
Simuliidae	17	6
Hydropsychidae	15	4
Gammaridae	1	4
Asellidae	1	8
Elmidae	1	4

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 45.00
Family Biotic Index = 5.93
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.04
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 15.00
EPT/C* = 0.31 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: grey...Flow: moderate...Width/Depth(ft): 20/<1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
fair/fair...Canopy: open...Other: tree-lined; sewage odor

Passaic Basin - Chatham USGS Quadrangle
Station AN0222
Black Brook, Southern Boulevard, Harding Township
February 7, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	80	10
Simuliidae	1	6
Lumbriculidae	8	8
Nematoda	2	6
BloodRedChironomidae	2	8
Turbellaria	2	4
Psychodidae	3	10
Chironomidae	2	6

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 100
% Contribution of Dominant Family = 80.00
Family Biotic Index = 9.48
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 00.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
Tubificidae overwhelmingly dominant
significant organic pollution

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 5/<1...
Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
good...Canopy: open...Other: riprap on banks; golf course upstream

Passaic Basin - Chatham USGS Quadrangle
Station AN0223
Black Brook, New Vernon Road, Meyersville
February 7, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Sphaeriidae	13	8
Chironomidae	62	6
Tubificidae	13	10
Bryozoa	1	7
Gammaridae	4	4
BloodRedChironomidae	3	8
Ceratopogonidae	1	6
Nematoda	1	6
Naididae	1	7
Asellidae	1	8

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 62.00
Family Biotic Index = 6.80
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.24
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 6
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
Chironomidae overwhelmingly dominant

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 15/<1...
Substrate: sand/gravel/cobbles...Streambank Vegetation/Stability:
good/good...Canopy: open...Other: wooded; residential

Passaic Basin - Bernardsville USGS Quadrangle
Station AN0224
Passaic River, Valley Road (Route 512), near Millington
February 5, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	21	6
Simuliidae	10	6
Gammaridae	15	4
Coenagrionidae	2	9
Elmidae	13	4
Lepidostomatidae	5	1
Hydropsychidae	11	4
Taeniopterygidae	6	2
Psephenidae	4	4
Gastropoda	2	7
Turbellaria	2	4
Perlidae	1	1
Sialidae	1	4
Leptoceridae	2	4
Asellidae	1	8
Tipulidae	1	3
Hydroptilidae	1	4
Sphaeriidae	1	8
Empididae	1	6

Statistical Analysis

Number of Taxa = 19
Total Number of Individuals = 100
% Contribution of Dominant Family = 21.00
Family Biotic Index = 4.57
Scraper/Filterer Collector Ratio = 0.29
Shredder/Total Ratio = 0.07
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 26.00
EPT/C* = 1.24 *(Chironomidae)
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 50/1...
Substrate: rocks...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: wooded

Passaic Basin - Bernardsville USGS Quadrangle

Station AN0225

Dead River tributary, Somerville Rd, Liberty Corner, Bernards Twp

February 4, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Sphaeriidae	3	8
Odontoceridae	10	0
Tubificidae	17	10
Elmidae	4	4
Chironomidae	24	6
Helicopsychidae	1	3
Psephenidae	2	4
Limnephilidae	5	4
Simuliidae	19	6
Ephemerellidae	2	1
Heptageniidae	1	4
Capniidae	8	1
Sialidae	1	4
Nemouridae	2	2
Leptophlebiidae	1	2

Statistical Analysis

Number of Taxa = 15

Total Number of Individuals = 100

% Contribution of Dominant Family = 24.00

Family Biotic Index = 5.23

Scraper/Filterer Collector Ratio = 0.59

Shredder/Total Ratio = 0.18

E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)

%EPT = 30.00

EPT/C* = 1.25 *(Chironomidae)

NJIS Rating = 24

Biological Condition = non-impaired

Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 5/<1...

Substrate: gravel/cobbles...Streambank Vegetation/Stability: good/
good...Canopy: mostly open...Other: wooded; macrophytes; crayfish;
small fish

Passaic Basin - Bernardsville USGS Quadrangle
Station AN0226
Dead River, Somerville Road, Liberty Corner, Bernards Township
February 4, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Ephemereleididae	14	1
Simuliidae	46	6
Odontoceridae	1	0
Elmidae	3	4
Chironomidae	21	6
Nemouridae	1	2
Hydroptilidae	1	4
Gastropoda	1	7
Limnephilidae	1	4
Turbellaria	2	4
Capniidae	5	1
Gomphidae	1	1
Hydropsychidae	1	4
Taeniopterygidae	1	2
Porifera	1	7

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 100
% Contribution of Dominant Family = 46.00
Family Biotic Index = 4.72
Scraper/Filterer Collector Ratio = 0.06
Shredder/Total Ratio = 0.23
E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 25.00
EPT/C* = 1.19 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: turbid, green...Flow: slow...Width/Depth(ft): 20/1...
Substrate: rock...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: wood-lined; fish

Passaic Basin - Bernardsville USGS Quadrangle
Station AN0227
Dead River, King George Road, near Mount Bethel
February 5, 1992

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	75	6
Elmidae	4	4
Gammaridae	5	4
Simuliidae	2	6
Siphonuridae	2	7
Hemiptera	5	8
Hydropsychidae	3	4
Tubificidae	2	10
Caenidae	1	7
Hydroptilidae	1	4

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 75.00
Family Biotic Index = 5.95
Scraper/Filterer Collector Ratio = 0.20
Shredder/Total Ratio = 0.25
 $E+P+T^* = 4 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 7.00
 $EPT/C^* = 0.09 * (\text{Chironomidae})$
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: Chironomidae overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: turbid, green...Flow: slow...Width/Depth(ft): 20/1...
Substrate: rock...Streambank Vegetation/Stability: good/good...
Canopy: open...Other: wood-lined; fish

Passaic Basin - Chatham USGS Quadrangle
Station AN0228
Passaic River, South Main Avenue, Stirling
November 20, 1989

Family	Number of Individuals	Family Tolerance Value (FTV)
Chironomidae	66	6
Hydropsychidae	14	4
Naididae	5	7
Empididae	3	6
Ephemerellidae	2	1
Gastropoda	2	7
Simuliidae	5	6
Acariformes	1	4
Taeniopterygidae	2	2

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 66.00
Family Biotic Index = 5.59
Scraper/Filterer Collector Ratio = 0.03
Shredder/Total Ratio = 0.06
 $E+P+T^* = 3 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 18.00
 $EPT/C^* = 0.27 * (\text{Chironomidae})$
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: Chironomidae overwhelmingly dominant

Observations

Streamwater: ...Flow: slow...Width/Depth(ft): 30/3.5...Substrate:
sand/clay/rocks...Streambank Vegetation/Stability: ...Canopy: ...
Other: snags

Passaic Basin - Chatham USGS Quadrangle
Station AN0229
Passaic River, Stanley Avenue, Chatham
June 11, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	80	7
Hydropsychidae	4	4
Chironomidae	15	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 4

Total Number of Individuals = 100

% Contribution of Dominant Family = 80.00

Family Biotic Index = 6.74

Scraper/Filterer Collector Ratio = 0.00

Shredder/Total Ratio = 0.00

E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)

%EPT = 4.00

EPT/C* = 0.25 *(Chironomidae)

NJIS Rating = 6

Biological Condition = severely impaired

Deficiency(s) noted: Naididae overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: ...Flow: moderate...Width/Depth(ft): 50/1.5...

Substrate: sand/gravel/rocks...Streambank Vegetation/Stability: ..

.Canopy: ...Other: macrophytes

Passaic Basin - Chathan USGS Quadrangle
Station AN0230
Passaic Rivier, Summit Avenue, Chatham
June 12, 1990

Family	Number of Individuals	Family Toleran Value (FTV)
Naididae	89	7
Chironomidae	6	6
Hydropsychidae	2	4
Simuliidae	2	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 5
Total Number of Individuals = 100
% Contribution of Dominant Family = 89.00
Family Biotic Index = 6.87
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.01
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.00
EPT/C* = 0.29 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: Naididae overwhelmingly dominant
paucity of clean water organisms
low diversity

Observations

Streamwater: ...Flow: moderate...Width/Depth(ft): 30/2...
Substrate: sand/gravel/rocks...Streambank Vegetation/Stability: ..
.Canopy: ...Other: macrophytes

Passaic Basin - Caldwell USGS Quadrangle
Station AN0231
Passaic River, Eagle Rock Avenue, East Hanover Township
November 17, 1989

Family	Number of Individual	Family Tolerance Value (FTV)
Chironomidae	47	6
Naididae	44	7
Simuliidae	3	6
Hydrozoa	2	7
BloodRedChironomidae	3	8
Nematoda	1	6

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 100
% Contribution of Dominant Family = 47.00
Family Biotic Index = 6.52
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.06
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: ...Flow: slow...Width/Depth(ft): 300/10...Substrate:
mud...Streambank Vegetation/Stability: Canopy: ...Other: snags

Passaic Basic -Mendham USGS Quadrangle
 Station AN0232
 Whippany River, Mount Pleasant Road, Mendham Township
 July 7, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Hydropsychiae	26	4
Philopotamidae	23	3
Simuliidae	10	6
Leuctridae	4	0
Nemouridae	2	2
Empididae	1	6
Chironomidae	8	6
Corydalidae	4	0
Psychomyiidae	1	2
Lumbriculidae	3	8
Rhyacophilidae	6	0
Perlidae	1	1
Baetidae	2	4
Tipulidae	3	3
Glossosomatidae	2	0
Limnephilidae	1	4
Leptophlebiidae	1	2
Heptageniidae	1	4
Psephenidae	1	4

Statistical Analysis

Number of Taxa = 19
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 26.00
 Family Biotic Index = 3.49
 Scraper/Filterer Collector Ratio = 0.05
 Shredder/Total Ratio = 0.10
 E+P+T* = 12 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 70.00
 EPT/C* = 8.75 *(Chironomidae)
 NJIS Rating = 30
 Biological Condition = non-impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 6/<1...
 Substrate: sand/cobble...Streambank Vegetation/Stability: fair/
 fair...Canopy: mostly closed...Other: tree-lined

Passaic Basin - Mendham USGS Quadrangle
Station AN0233
Whippany River, Whithead Road, Morris Township
May 22, 1990

Family	Number of Individual	Family Tolerance Value (FTV)
Naididae	32	7
Ephemereididae	11	1
Hydropsychidae	11	4
Leuctridae	1	0
Asellidae	1	8
Elmidae	4	4
Gastropoda	2	7
Tipulidae	9	3
Chironomidae	15	6
Limnephilidae	2	4
Lumbriculidae	2	8
Empididae	1	6
Gammaridae	2	4
Baetidae	4	4
Acariformes	1	4
Simuliidae	1	6
Tubificidae	1	10

Statistical Analysis

Number of Taxa = 17
Total Number of Individuals = 100
% Contribution of Dominant Family = 32.00
Family Biotic Index = 5.08
Scraper/Filterer Collector Ratio = 0.29
Shredder/Total Ratio = 0.28
E+P+T* = 5 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 29.00
EPT/C* = 1.93 *(Chironomidae)
NJIS Rating = 21
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 15/1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
good/good...Canopy: open...Other: field; siltation; filamentous
algae; periphyton; trout

Passaic Basin - Morristown USGS Quadrangle
Station AN0234
Whippany River, Ridgedale Avenue, Morristown
May 22, 1990

Family	Number of Individual	Family Tolerance Value (FTV)
Hydropsychidae	5	4
Naididae	87	7
Gammaridae	6	4
Chironomidae	6	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 5
Total Number of Individuals = 105
% Contribution of Dominant Family = 82.86
Family Biotic Index = 6.64
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.01
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 4.76
EPT/C* = 0.71 *(Chironomidae)
NJIS Rating = 6
Biological Condition = severely impaired
Deficiency(s) noted: Naididae overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: moderate...Width/Depth(ft):
30/1...Substrate: boulders/cobbles/gravel...Streambank Vegetation/
Stability: good/good...Canopy: open...Other: commercial/
industrial; periphyton; macrophytes

Passaic Basin - Morristown USGS Quadrangle
Station AN0235
Whippany River, Jefferson Road, Hanover Township
May 22, 1990

Family	Number of Individual	Family Tolerance Value (FTV)
Hydropsychiae	12	4
Turbellaria	1	4
Naididae	48	7
Chironomidae	38	6
BloodRedChironomidae	2	8
Ceratopogonidae	1	6
Gammaridae	1	4
Gastropoda	1	7

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 104
% Contribution of Dominant Family = 46.15
Family Biotic Index = 6.24
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 11.54
EPT/C* = 0.30 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: moderate...Width/Depth(ft):
50/1.5...Substrate: gravel/sand/cobbles...Streambank Vegetation/
Stability: good/good...Canopy: partly open...Other: forest/
residential/industrial; some siltation

Passaic Basin -Boonton USGS Quadrangle
Station AN0236
Troy Brook, Lake Road (below lake outlet), Mountain Lakes
July 13, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	73	4
Turbellaria	3	4
Talitridae	18	8
Hydropsychidae	1	4
Hirudinea	3	10
Sphaeriidae	2	8

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 100
% Contribution of Dominant Family = 73.00
Family Biotic Index = 4.98
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 1.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: Gammaridae overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: -...Flow: slow...Width/Depth(ft): 3/2-3...Substrate:
boulders/rocks/sand...Streambank Vegetation/Stability: good/good..
.Canopy: mostly closed...Other: trees, residential; leaf litter on
substrate; sign reads "Pesticide treated waters to control aquatic
vegetation--treated 6/8/93 by Allied Biological, Hackettstown, NJ"

Passaic Basin - Morristown USGS Quadrangle
Station AN0237
Troy Brook, Beaverwyck Road, Troy Hills
July 13, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Hydropsychidae	37	4
Baetidae	8	4
Elmidae	8	4
Psephenidae	8	4
Gammaridae	7	4
Gastropoda	1	7
Tipulidae	2	3
Lumbricidae	1	10
Chironomidae	2	6

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 74
% Contribution of Dominant Family = 50.00
Family Biotic Index = 4.15
Scraper/Filterer Collector Ratio = 0.21
Shredder/Total Ratio = 0.14
 $E+P+T^* = 2 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 60.81
 $EPT/C^* = 22.50 * (\text{Chironomidae})$
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 12/1...
Substrate: boulders/cobbles...Streambank Vegetation/Stability:
good/good...Canopy: mostly open...Other: residential; algae;
minnows

Wallkill Basin - Caldwell USGS Quadrangle
Station AN0238
Whippany River, Edwards Road, East Hanover Township
July 7, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Simuliidae	15	6
Hydropsychidae	56	4
Asellidae	4	8
Gammaridae	20	4
Chironomidae	6	6
Baetidae	1	4

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 102
% Contribution of Dominant Family = 54.90
Family Biotic Index = 4.57
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 55.88
EPT/C* = 9.50 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 30/1...
Substrate: sand/cobbles...Streambank Vegetation/Stability: poor/
poor...Canopy: half open...Other: tree lined

Passaic Basin - Dover USGS Quadrangle
 Station AN0239
 Russia Brook at Milton-Dover Road, Jefferson Township
 July 22, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Hydropsychidae	68	4
BloodRedChironomidae	6	8
Elmidae	2	4
Tipulidae	3	3
Chironomidae	8	6
Baetidae	3	4
Hemiptera	1	8
Siphonuridae	1	7
Simuliidae	1	6
Glossosomatidae	2	0
Philopotamidae	2	3
Heptageniidae	1	4
Ephemerellidae	1	1
Empididae	1	6

Statistical Analysis

Number of Taxa = 14
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 68.00
 Family Biotic Index = 4.35
 Scraper/Filterer Collector Ratio = 0.03
 Shredder/Total Ratio = 0.14
 E+P+T* = 7 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 78.00
 EPT/C* = 5.57 *(Chironomidae)
 NJIS Rating = 24
 Biological Condition = non-impaired
 Deficiency(s) noted: Hydropsychidae overwhelmingly dominant

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10-15/1...
 Substrate: boulders/sand...Streambank Vegetation/Stability: good/
 good...Canopy: mostly closed...Other: wooded, residential nearby;
 filamentous algae; macrophytes; darters

Passaic Basin - Dover USGS Quadrangle
Station AN0240
Rockaway River, below Longwood Lake, Jefferson Township
July 22, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Chironomidae	72	6
Hydropsychidae	16	4
Heptageniidae	4	4
Turbellaria	3	4
Gammaridae	2	4
Elmidae	2	4
Philopotamidae	1	3

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 100
% Contribution of Dominant Family = 72.00
Family Biotic Index = 5.43
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.05
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 21.00
EPT/C* = 0.29 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: Chironomidae overwhelmingly dominant

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 30/1.
..Substrate: boulder/sand/gravel...Streambank Vegetation/
Stability: good/good...Canopy: partly open...Other: wooded;
mussels; crayfish; fish

Passaic Basin - Dover USGS Quadrangle
Station AN0241
Rockaway River, Berkshire Valley Road, Jefferson Township
July 20, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	70	4
Hemiptera	4	8
Asellidae	5	8
Tubificidae	2	10
Cambarinae	1	6
Hydropsychidae	7	4
Sphaeriidae	4	8
Gyrinidae	1	3
Lumbriculidae	3	8
Heptageniidae	1	4
Ephemeraeidae	1	4
Sialidae	1	4

Statistical Analysis

Number of Taxa = 12
Total Number of Individuals = 100
% Contribution of Dominant Family = 70.00
Family Biotic Index = 4.77
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 9.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: Gammaridae overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: -...Flow: fast...Width/Depth(ft): 20/1-3...Substrate:
boulders/rock/gravel...Streambank Vegetation/Stability: fair/fair.
..Canopy: half open...Other: algae; crayfish; trout stocked;
minnows, darters

Rockaway Basin - Dover USGS Quadrangle
Station AN0242
Green Pond Brook, Mount Pleasant Turnpike, Wharton
July 20, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	54	4
Gomphidae	1	1
Chironomidae	15	6
Leptoceridae	9	4
BloodRedChironomidae	15	8
Sphaeriidae	1	8
Elmidae	1	4
Tubificidae	1	10
Lumbriculidae	2	8
Turbellaria	1	4

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 54.00
Family Biotic Index = 5.05
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.15
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 9.00
EPT/C* = 0.30 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: -...Flow: fast...Width/Depth(ft): 12/<1...Substrate:
sand/gravel...Streambank Vegetation/Stability: good/good...Canopy:
open...Other: commercial; marsh; few trees; trash in stream; some
macrophytes and algae

Passaic Basin - Dover USGS Quadrangle
Station AN0243
Rockaway Rivewr, Blackwell Road (Rt. 13), Randolph Township
July 20, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Perlidae	3	1
BloodRedChironomidae	8	8
Gastropoda	5	7
Chironomidae	4	6
Baetidae	5	4
Tipulidae	1	3
Hydropsychidae	39	4
Tubificidae	5	10
Gammaridae	14	4
Glossosomatidae	4	0
Simuliidae	2	6
Cambarinae	1	6
Elmidae	2	4
Hydroptilidae	1	4
Asellidae	2	8
Lumbriculidae	1	8
Lepidostomatidae	1	1
Heptageniidae	1	4
Hydrophilidae	1	5

Statistical Analysis

Number of Taxa = 19
Total Number of Individuals = 100
% Contribution of Dominant Family = 39.00
Family Biotic Index = 4.75
Scraper/Filterer Collector Ratio = 0.16
Shredder/Total Ratio = 0.08
E+P+T* = 7 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 54.00
EPT/C* = 4.50 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate-fast...Width/Depth(ft): 30/1..
.Substrate: rocks/sand...Streambank Vegetation/Stability: good/
good...Canopy: open...Other: commercial; oil sheen on surface;
algae; fish

Rockaway Basin -Dover USGS Quadrangle
Station AN0244
Mill Brook, Palmer Road, Randolph Township
July 20, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	37	4
Hydropsychidae	25	4
Gastropoda	1	7
Hemiptera	1	8
Glossosomatidae	6	0
Chironomidae	6	6
Cambarinae	1	6
BloodRedChironomidae	3	8
Tubificidae	5	10
Gomphidae	2	1
Sphaeriidae	1	8
Baetidae	3	4
Aeshnidae	2	3
Corydalidae	2	0
Asellidae	2	8
Tipulidae	1	3
Lumbriculidae	1	8
Leuctridae	1	0

Statistical Analysis

Number of Taxa = 18
Total Number of Individuals = 100
% Contribution of Dominant Family = 37.00
Family Biotic Index = 4.34
Scraper/Filterer Collector Ratio = 0.20
Shredder/Total Ratio = 0.05
E+P+T* = 4 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 35.00
EPT/C* = 3.89 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: -...Flow: slow...Width/Depth(ft): -/-...Substrate:
rocks/mud/sand...Streambank Vegetation/Stability: fair/fair...
Canopy: half open...Other: residential, commercial; sparse algae
and macrophytes; minnows

Passaic Basin - Boonton USGS Quadrangle
Station AN0245
Beaver Brook, Lyonville Road, Meriden
July 15, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Heptageniidae	2	4
Tubificidae	3	10
Hydropsychidae	18	4
Glossosomatidae	1	0
Chironomidae	5	6
Aeshnidae	1	3
Baetidae	1	4
Cambarinae	1	6
Pteronarcyidae	1	0
Lumbriculidae	4	8
Limnephilidae	3	4
Philopotamidae	1	3
Leptophlebiidae	1	2
Elmidae	2	4
Rhyacophilidae	1	0
BloodRedChironomidae	1	8
Gomphidae	1	1

Statistical Analysis

Number of Taxa = 17
Total Number of Individuals = 47
% Contribution of Dominant Family = 38.30
Family Biotic Index = 4.66
Scraper/Filterer Collector Ratio = 0.09
Shredder/Total Ratio = 0.11
E+P+T* = 9 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 61.70
EPT/C* = 4.83 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10-15/1-2..
.Substrate: boulder/sand/gravel...Streambank Vegetation/Stability:
fair/fair...Canopy: mostly closed...Other: tree-lined; fish; frogs

Passaic Basin - Boonton USGS Quadrangle
Station AN0246
Beaver Brook, Morris Avenue, Denville
July 15, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	88	4
Hirudinea	6	10
Gastropoda	1	7
Sphaeriidae	1	8
Hemiptera	2	8
Haliplidae	1	5
Cambarinae	1	6

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 100
% Contribution of Dominant Family = 88.00
Family Biotic Index = 4.54
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms
Gammaridae overwhelmingly dominant

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 30-40/2-4...
Substrate: sand/muck...Streambank Vegetation/Stability: good/good.
..Canopy: mostly open...Other: forest, nearby residential; algae;
macrophytes; fish; turtles

Passaic Basin - Mendham USGS Quadrangle
Station AN0247
Den Brook, Mount Pleasant Turnpike, Denville
July 20, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
BloodRedChironomidae	66	8
Tubificidae	14	10
Chironomidae	7	6
Gammaridae	6	4
Hydropsychidae	1	4
Gastropoda	1	7
Tipulidae	1	3
Lumbriculidae	3	8
Lumbricidae	1	10

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 66.00
Family Biotic Index = 7.83
Scraper/Filterer Collector Ratio = 0.08
Shredder/Total Ratio = 0.57
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 1.00
EPT/C* = 0.01 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
BloodRedChironomidae overwhelmingly dominant
significant organic pollution

Observations

Streamwater: -...Flow: fast...Width/Depth(ft): 10/<1...Substrate:
boulders/cobble...Streambank Vegetation/Stability: good/good...
Canopy: mostly closed...Other: wooded; residential; siltation;
darter

Passaic Basin - Boonton USGS Quadrangle
Station AN0248
Rockaway River, Pocono Road, Denville
July 15, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Elmidae	5	4
Turbellaria	20	4
Gastropoda	15	7
Tricorythidae	1	4
Chironomidae	12	6
Heptageniidae	5	4
Hydropsychidae	25	4
Gammaridae	4	4
Lepidostomatidae	1	1
Lumbriculidae	1	8
Simuliidae	2	6
Ephemerellidae	1	1
Baetidae	5	4
Psephenidae	2	4
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 100
% Contribution of Dominant Family = 25.00
Family Biotic Index = 4.75
Scraper/Filterer Collector Ratio = 0.10
Shredder/Total Ratio = 0.08
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 38.00
EPT/C* = 3.17 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate-fast...Width/Depth(ft): 50/1-2
...Substrate: cobble/gravel...Streambank Vegetation/Stability:
good/good...Canopy: mostly open...Other: tree-lined; hospital and
residential nearby; algae; macrophytes; minnows

Passaic Basin - Boonton USGS Quadrangle
Station AN0249
Stony Brook, Valley Road, Boonton Township
July 15, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	88	4
Elmidae	2	4
Hemiptera	2	8
Cambarinae	2	6
Chironomidae	4	6
Limnephilidae	1	4
Leptoceridae	1	4

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 100
% Contribution of Dominant Family = 88.00
Family Biotic Index = 4.20
Scraper/Filterer Collector Ratio = 0.33
Shredder/Total Ratio = 0.00
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.00
EPT/C* = 0.50 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: Gammaridae overwhelmingly dominant
 paucity of clean water organisms

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 8-10/>1...
Substrate: sand/muck...Streambank Vegetation/Stability: good/good.
..Canopy: open...Other: forest; residences; oil sheen in spots

Passaic Basin - Boonton USGS Quadrangle
Station AN0250
Rockaway River, Morris Avenue (near USGS gage), Boonton
July 16, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	43	4
Baetidae	20	4
Perlidae	7	1
Elmidae	7	4
Simuliidae	5	6
Philopotamidae	1	3
Chironomidae	4	6
Brachycentridae	10	1
Heptageniidae	2	4
Gammaridae	1	4

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 43.00
Family Biotic Index = 3.66
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.21
 $E+P+T^* = 6 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 83.00
 $EPT/C^* = 20.75 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 30/1-2...
Substrate: boulders...Streambank Vegetation/Stability: fair/fair..
.Canopy: partly covered...Other: woods, highway, RR bridge nearby

Passaic Basin - Boonton USGS Quadrangle
Station AN0251
Rockaway River, River Road(below RVSA), Boonton
July 16, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Chironomidae	31	6
Hydropsychidae	52	4
Baetidae	4	4
Simuliidae	11	6
Empididae	1	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 6
Total Number of Individuals = 100
% Contribution of Dominant Family = 52.00
Family Biotic Index = 4.90
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.06
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 56.00
EPT/C* = 1.75 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 75/1...
Substrate: cobble/boulder/sand...Streambank Vegetation/Stability:
good/good...Canopy: mostly open...Other: wooded; siltation;
filamentous algae; periphyton; fish

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0252
Crooked Brook, Hemlock Road (above Lake Valhalla), Montville Twp.
August 3, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gomphidae	9	1
Psephenidae	28	4
Chironomidae	3	6
Limnephilidae	19	4
Glossosomatidae	3	0
Heptageniidae	1	4
Corydalidae	1	0
Perlidae	3	1
Lumbriculidae	1	8
Leuctridae	1	0
Ephemerellidae	2	1
Hydropsychidae	2	4
Hemiptera	1	8
Pteronarcyidae	1	0
Rhyacophilidae	1	0

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 76
% Contribution of Dominant Family = 36.84
Family Biotic Index = 3.26
Scraper/Filterer Collector Ratio = 11.75
Shredder/Total Ratio = 0.11
E+P+T* = 9 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 43.42
EPT/C* = 11.00 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: -...Flow: slow...Width/Depth(ft): 4/1...Substrate:
boulders/cobbles/gravel...Streambank Vegetation/Stability: fair/
fair...Canopy: mostly closed...Other: moss; fish

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0253
Crooked Brook, Vista Road (below Lake Valhalla), Montville Twp.
July 13, 1993

Family	Number of Individual	Family Tolerance Value (FTV)
Gammaridae	6	4
Naididae	2	7
Gomphidae	1	1
Turbellaria	2	4
Chironomidae	2	6
Hydropsychidae	3	4
Asellidae	3	8
Lumbriculidae	2	8

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 21
% Contribution of Dominant Family = 28.57
Family Biotic Index = 5.29
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 14.29
EPT/C* = 1.50 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 5/<1...
Substrate: boulders/rocks/sand...Streambank Vegetation/Stability:
fair/fair...Canopy: closed...Other: trees; residential

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0254
Crooked Brook, River Road, Montville Township
July 13, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	19	4
BloodRedChironomidae	3	8
Chironomidae	6	6
Elmidae	1	4
Asellidae	2	8
Cambarinae	1	6
Hydropsychidae	1	4

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 33
% Contribution of Dominant Family = 57.58
Family Biotic Index = 5.03
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.09
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 3.03
EPT/C* = 0.11 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 5/1-2...
Substrate: gravel/sand/rocks...Streambank Vegetation/Stability:
poor/poor...Canopy: half open...Other: few trees; marsh;
commercial; crayfish; minnows

Passaic Basin - Greenwood Lake USGS Quadrangle
Station AN0255
Wanaque River, East Shore Drive (below Greenwood Lake), Awosting
July 10, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Tipulidae	3	3
Polychaeta	6	5
Brachycentridae	1	1
Limnephilidae	1	4
Bryozoa	10	7
Sphaeriidae	3	8
Lumbricidae	1	10
Hydropsychidae	18	4
Baetidae	9	4
Heptageniidae	9	4
Chironomidae	20	6
Gammaridae	11	4
Tricorythidae	3	4
Elmidae	1	4
Ephemerellidae	1	1
Hemiptera	1	8
Acariformes	1	4
Simuliidae	1	6

Statistical Analysis

Number of Taxa = 18
Total Number of Individuals = 100
% Contribution of Dominant Family = 20.00
Family Biotic Index = 4.91
Scraper/Filterer Collector Ratio = 0.18
Shredder/Total Ratio = 0.26
E+P+T* = 7 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 42.00
EPT/C* = 2.10 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 40/1...
Substrate: cobbles/rocks...Streambank Vegetation/Stability: good/
good...Canopy: mostly closed...Other: periphyton; macrophytes

Passaic Basin - Wanaque USGS Quadrangle
Station AN0256
Wanaque River, Highland Avenue (below STP), Wanaque
July 10, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	3	7
Asellidae	1	8
Cambarinae	2	6
Hydropsychidae	2	4
Simuliidae	1	6
Chironomidae	33	6
BloodRedChironomidae	12	8
Gastropoda	43	7
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 98
% Contribution of Dominant Family = 43.88
Family Biotic Index = 6.71
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.12
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.04
EPT/C* = 0.04 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): --...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: --/--
...Canopy: --...Other: periphyton near outfall

Passaic Basin - Wanaque USGS Quadrangle
Station AN0257
Wanaque River, Wanaque Avenue (below Lake Inez), Pompton Lakes
July 9, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Nematoda	1	6
Gammaridae	16	4
Hydropsychidae	45	4
Empididae	2	6
Simuliidae	23	6
Tipulidae	2	3
Chironomidae	33	6
BloodRedChironomidae	3	8
Unionidae	1	8

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 126
% Contribution of Dominant Family = 35.71
Family Biotic Index = 5.05
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 35.71
EPT/C* = 1.25 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: --...Flow: --...Width/Depth(ft): 100/--...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: --/--
...Canopy: --...Other: --

Passaic Basin - Franklin USGS Quadrangle
Station AN258
Pequannock River, Route 515, Hardyston Township
August 3, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Sphaeriidae	47	8
Gastropoda	27	7
Chironomidae	5	6
Aelosomatidae	4	8
Hirudinea	1	10
Gomphidae	4	1
Hemiptera	7	8
Coenigionidae	1	9
Stratiomyidae	2	10
Cambarinae	2	6
Hydrophilidae	3	5
Baetidae	1	4
Hydropsychidae	1	4
Haliplidae	2	5
Limnephilidae	1	4

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 108
% Contribution of Dominant Family = 43.52
Family Biotic Index = 7.18
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.78
EPT/C* = 0.60 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms
significant organic pollution

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 4/1-2
...Substrate: mud/rock...Streambank Vegetation/Stability:
moderate/moderate...Canopy: half-open...Other: woods and marsh;
macrophytes sparse; darters

Passaic Basin - Newfoundland USGS Quadrangle
 Station AN0259
 Pequannock River, Route 23, Stockholm
 July 22, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	26	8
Chironomidae	39	6
Elmidae	5	4
Siphonuridae	5	7
Gastropoda	3	7
Gomphidae	3	1
Hydropsychidae	7	4
Peltoperlidae	1	1
Hydroptilidae	1	4
Tipulidae	2	3
Cambarinae	1	6
Baetidae	2	4
Leptoceridae	1	4
Caenidae	1	7
Perlidae	1	1
Nematoda	1	6
Tubificidae	1	10

Statistical Analysis

Number of Taxa = 17
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 39.00
 Family Biotic Index = 6.02
 Scraper/Filterer Collector Ratio = 0.03
 Shredder/Total Ratio = 0.32
 E+P+T* = 7 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 18.00
 EPT/C* = 0.28 *(Chironomidae)
 NJIS Rating = 24
 Biological Condition = non-impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 6/<1...
 Substrate: boulders/bedrock/gravel...Streambank Vegetation/
 Stability: good/good...Canopy: mostly open...Other: periphyton;
 minnows; crayfish; some concrete bank stabilization

Passaic Basin - Newfoundland USGS Quadrangle
 Station AN0260
 Mossmans Brook, north of Clinton Reservoir, West Milford Township
 August 5, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Baetidae	1	4
Limnephilidae	6	4
Chironomidae	44	6
Psephenidae	7	4
Coenagrionidae	2	9
Corydalidae	3	0
Asellidae	4	8
Hydropsychidae	4	4
Tipulidae	4	3
BloodRedChironomidae	12	8
Perlidae	3	1
Pteronarcyidae	6	0
Gastropoda	1	7
Libellulidae	2	9
Ephemerellidae	2	1
Heptageniidae	3	4
Caenidae	1	7

Statistical Analysis

Number of Taxa = 17
 Total Number of Individuals = 105
 % Contribution of Dominant Family = 41.90
 Family Biotic Index = 5.17
 Scraper/Filterer Collector Ratio = 0.50
 Shredder/Total Ratio = 0.28
 E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 24.76
 EPT/C* = 0.46 *(Chironomidae)
 NJIS Rating = 21
 Biological Condition = moderately impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 10/<1...
 Substrate: cobble...Streambank Vegetation/Stability: good/good...
 Canopy: mostly closed...Other: forest; algae; fish; frogs

Passaic Basin - Newfoundland USGS Quadrangle
Station AN0261
Clinton Brook, La Rue Road, West Milford Township
July 27, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	92	7
Hemiptera	2	8
Halplidae	2	5
Tubificidae	4	10
Stratiomyidae	2	10
Chironomidae	9	6
Coenagrionidae	1	9
Phryganeidae	1	4
Aeshnidae	1	3
Asellidae	1	8
Talitridae	2	8

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 117
% Contribution of Dominant Family = 78.63
Family Biotic Index = 7.04
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.85
EPT/C* = 0.11 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
Naididae overwhelmingly dominant
significant organic pollution

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 30/1-2...
Substrate: sand...Streambank Vegetation/Stability: good/good...
Canopy: mostly open...Other: wooded; filamentous algae;
macrophytes; fish

Passaic Basin - Newfoundland USGS Quadrangle
Station AN0262
Kanouse Brook, Kanouse Road, West Milford
July 27, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Talitridae	49	8
Chironomidae	25	6
Sailidae	2	4
BloodRedChironomidae	3	8
Gastropoda	6	7
Baetidae	7	4
Hydrophilidae	2	5
Elmidae	2	4
Culicidae	2	8
Hirudinea	1	10
Limnephilidae	6	4
Aeshnidae	2	3
Calopterygidae	1	5
Phryganeidae	1	4
Tubificidae	1	10
Lumbriculidae	1	8
Coenagrionidae	2	9
Haliplidae	1	5

Statistical Analysis

Number of Taxa = 18
Total Number of Individuals = 114
% Contribution of Dominant Family = 42.98
Family Biotic Index = 6.74
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.11
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 12.28
EPT/C* = 0.50 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 15/
1-2...Substrate: cobbles/sand/gravel...Streambank Vegetation/
Stability: good/good...Canopy: mostly open...Other: forest;
macrophytes; fish

Passaic Basin - Newfoundland USGS Quadrangle
Station AN0263
Macopin River, Echo Lake outlet, West Milford Township
July 27, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	24	4
Heptageniidae	8	4
Hemiptera	2	8
Chironomidae	27	6
Gastropoda	7	7
Turbellaria	4	4
Lumbriculidae	4	8
Tipulidae	7	3
Gammaridae	3	4
Ceratopogonidae	1	6
Gomphidae	1	1
Anthomyiidae	1	6
Baetidae	1	4
Empididae	1	6

Statistical Analysis

Number of Taxa = 14
Total Number of Individuals = 91
% Contribution of Dominant Family = 29.67
Family Biotic Index = 5.04
Scraper/Filterer Collector Ratio = 0.03
Shredder/Total Ratio = 0.18
 $E+P+T^* = 3 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 36.26
 $EPT/C^* = 1.22 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: slow...Width/Depth(ft): 4/<1...
Substrate: gravel/sand...Streambank Vegetation/Stability: good/
good...Canopy: mostly open...Other: wooded; oil on water;
filamentous algae

Passaic Basin - Newfoundland USGS Quadrangle
Station AN0264
Pequannock River, USGS gage, Route 23, Macopin Intake
July 27, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	16	4
Hydropsychidae	57	4
Heptageniidae	2	4
Baetidae	11	4
Chironomidae	6	6
BloodRedChironomidae	1	8
Asellidae	1	8
Simuliidae	1	6
Perlidae	1	1
Gastropoda	3	7
Tubificidae	1	10

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 57.00
Family Biotic Index = 4.34
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.13
E+P+T* = 4 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 71.08
EPT/C* = 10.14 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 40/3.
..Substrate: boulders/sand/gravel...Streambank Vegetation/
Stability: poor/poor...Canopy: partly closed...Other: wooded;
periphyton; minnows

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0265
Pequannock River, Route 511, Butler
July 22, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	37	4
Philopotamidae	5	3
Baetidae	13	4
Siphonuridae	1	7
Gammaridae	14	4
Naididae	2	7
Nemertea	3	5
Gastropoda	2	7
Tubificidae	1	10
Chironomidae	7	6
BloodRedChironomidae	7	8
Rhyacophilidae	1	0
Hemiptera	2	8
Perlidae	1	1

Statistical Analysis

Number of Taxa = 14
Total Number of Individuals = 96
% Contribution of Dominant Family = 38.54
Family Biotic Index = 4.65
Scraper/Filterer Collector Ratio = 0.22
Shredder/Total Ratio = 0.21
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 60.42
EPT/C* = 4.14 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 30/2...
Substrate: boulders/sand/gravel...Streambank Vegetation/
Stability: poor/poor...Canopy: partly closed...Other: tree lined;
left bank channelized with retaining wall; urban area; crayfish;
minnows

Passaic Basin - Ramsey USGS Quadrangle
 Station AN0266
 Ramapo River, West Ramapo Avenue, Ramsey Township
 July 10, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	1	4
Nemertea	1	5
Nematoda	1	6
Lumbriculidae	2	8
Siphonuridae	1	7
Heptageniidae	1	4
Baetidae	1	4
Sialidae	1	4
Hydropsychidae	16	4
Tipulidae	6	3
Simuliidae	1	6
Chironomidae	53	6
BloodRedChironomidae	1	8
Gastropoda	12	7

Statistical Analysis

Number of Taxa = 14
 Total Number of Individuals = 98
 % Contribution of Dominant Family = 54.08
 Family Biotic Index = 5.59
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.15
 $E+P+T^* = 4 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
 $\%EPT = 19.39$
 $EPT/C^* = 0.35 * (\text{Chironomidae})$
 NJIS Rating = 18
 Biological Condition = moderately impaired
 Deficiency(s) noted: none

Observations

Streamwater: --...Flow: --...Width/Depth(ft): --/--...Substrate:
 --...Streambank Vegetation/Stability: --/--...Canopy: --...Other:
 --

Passaic Basin - Ramsey USGS Quadrangle
Station AN0267
Ramapo River, Lenape Lane, Oakland
July 10, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	1	4
Nemertea	1	5
Lumbriculidae	3	8
Naididae	1	7
Hirudinea	2	10
Siphonuridae	1	7
Caenidae	2	7
Heptageniidae	9	4
Hydropsychidae	4	4
Elmidae	3	4
Simuliidae	11	6
Chironomidae	52	6
Gastropoda	9	7

Statistical Analysis

Number of Taxa = 13
Total Number of Individuals = 99
% Contribution of Dominant Family = 52.53
Family Biotic Index = 5.92
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.07
 $E+P+T^* = 4 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 16.16
 $EPT/C^* = 0.31 * (\text{Chironomidae})$
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 100/1...
Substrate: cobbles...Streambank Vegetation/Stability: good/good...
Canopy: --...Other: siltation; periphyton; orconetes

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0268
Pompton River, Newark Pompton Turnpike
July 9, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Nematoda	1	6
Gammaridae	3	4
Heptageniidae	1	4
Hydropsychidae	32	4
Pyralidae	1	5
Simuliidae	42	6
Chironomidae	29	6

Statistical Analysis

Number of Taxa = 7
Total Number of Individuals = 109
% Contribution of Dominant Family = 38.53
Family Biotic Index = 5.33
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.01
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 30.28
EPT/C* = 1.14 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: --...Flow: --...Width/Depth(ft): --/--...
Substrate: --...Streambank Vegetation/Stability: --/--...
Canopy: --...Other: --

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0269
Pompton River tributary, Ryerson Road, Lincoln Park
July 20, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	40	4
Gammaridae	22	4
Sphaeriidae	16	8
Simuliidae	2	6
Chironomidae	15	6
BloodRedChironomidae	1	8
Elmidae	2	4
Cambarinae	1	6
Lumbricidae	1	10

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 40.00
Family Biotic Index = 5.10
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 40.00
EPT/C* = 2.50 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 25/8...
Substrate: stone...Streambank Vegetation/Stability: fair/fair...
Canopy: mostly covered...Other: trees; macrophytes; fish

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0270
Packanack Brook, Osbourne Road, Mountain View
July 12, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	12	4
Gammaridae	52	4
Empididae	3	6
BloodRedChironomidae	16	8
Chironomidae	7	6
Elmidae	2	4
Simuliidae	1	6
Gastropoda	5	7
Asellidae	1	8
Turbellaria	1	4

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 52.00
Family Biotic Index = 5.05
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
 $E+P+T^* = 1 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 12.00
 $EPT/C^* = 0.52 * (\text{Chironomidae})$
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: turbid, green...Flow: moderate ...Width/Depth(ft):
10/8...Substrate: rocks/stones/sand...Streambank Vegetation/
Stability: good/good...Canopy: mostly open...Other: algae; fish;
ducks

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0271
Deepavaal Brook, Little Falls Road, Caldwell Township
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hemiptera	20	8
Chironomidae	41	6
Gammaridae	13	4
BloodRedChironomidae	13	8
Tubificidae	8	10
Asellidae	1	8
Hydropsychidae	2	4
Gastropoda	2	7

Statistical Analysis

Number of Taxa = 8
Total Number of Individuals = 100
% Contribution of Dominant Family = 41.00
Family Biotic Index = 6.72
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.04
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.00
EPT/C* = 0.04 *(Chironomidae)
NJIS Rating = 9
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 20/
1-2...Substrate: boulders/mud...Streambank Vegetation/Stability:
fair/fair...Canopy: partly open...Other: residential; crayfish;
darter

Passaic Basin - Paterson USGS Quadrangle
Station AN0272
Preakness Brook, Paterson-Hamburg Tnpk., Wayne
July 12, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	36	4
Simuliidae	24	6
Hydropsychidae	15	4
Baetidae	5	4
Cambarinae	1	6
Chironomidae	8	6
Lumbriculidae	5	8
Tubificidae	2	10
Tipulidae	1	3
Asellidae	1	8
Turbellaria	2	4

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 36.00
Family Biotic Index = 5.01
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.06
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 20.00
EPT/C* = 2.50 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate-fast...Width/Depth(ft): 15/1.5
...Substrate: rocks/sand...Streambank Vegetation/Stability: good/
good...Canopy: open...Other: commercial; algae; fish

Passaic Basin - Pompton Plains USGS Quadrangle
Station AN0273
Preakness Brook, golf course on French Hill Road, Wayne
July 12, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Lumbriculidae	14	8
Chironomidae	31	6
Gammaridae	13	4
Hydropsychidae	22	4
Elmidae	7	4
BloodRedChironomidae	1	8
Baetidae	2	4
Tipulidae	4	3
Naididae	2	7
Cambarinae	1	6
Simuliidae	3	6

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 31.00
Family Biotic Index = 5.32
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.09
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 24.00
EPT/C* = 0.75 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 25/1-3...
Substrate: gravel/sand...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: surrounding golf course; algae; fish

Passaic Basin - Paterson USGS Quadrangle
Station AN0274
Passaic River, Riverview Road, Little Falls
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	8	4
Hydropsychidae	80	4
Simuliidae	1	6
Chironomidae	4	6
Bryozoa	5	7
Naididae	1	7
Elmidae	1	4

Statistical Analysis

Number of Taxa = 7

Total Number of Individuals = 100

% Contribution of Dominant Family = 80.00

Family Biotic Index = 4.28

Scraper/Filterer Collector Ratio = 0.00

Shredder/Total Ratio = 0.00

E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)

%EPT = 80.00

EPT/C* = 20.00 *(Chironomidae)

NJIS Rating = 15

Biological Condition = moderately impaired

Deficiency(s) noted: paucity of clean water organisms
Hydropsychidae overwhelmingly dominant

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 300/1...

Substrate: cobble...Streambank Vegetation/Stability: fair/fair...

Canopy: open...Other: tree-lined; substrate covered w/periphyton

Passaic Basin - Paterson USGS Quadrangle
Station AN0275
Peckman River, near McBride Avenue, West Paterson
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	49	4
BloodRedChironomidae	19	8
Chironomidae	12	6
Asellidae	8	8
Naididae	1	7
Hydroptilidae	3	4
Turbellaria	1	4
Tipulidae	1	3
Baetidae	4	4
Simuliidae	1	6
Hirudinea	1	10

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 100
% Contribution of Dominant Family = 49.00
Family Biotic Index = 5.42
Scraper/Filterer Collector Ratio = 0.06
Shredder/Total Ratio = 0.23
E+P+T* = 3 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 56.00
EPT/C* = 1.81 *(Chironomidae)
NJIS Rating = 21
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 30/<1...
Substrate: sand/cobble...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: tree-lined

Passaic Basin - Paterson USGS Quadrangle
Station AN0276
Molly Ann Brook, West Side Park, Prospect Park
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	62	10
Gammaridae	27	4
Gastropoda	4	7
Asellidae	1	8
Turbellaria	1	4
Sphaeriidae	1	8
BloodRedChironomidae	2	8
Cambarinae	1	6
Hemiptera	1	8

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 62.00
Family Biotic Index = 8.06
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 0.00
EPT/C* = 0.00 *(Chironomidae)
NJIS Rating = 3
Biological Condition = severely impaired
Deficiency(s) noted: paucity of clean water organisms
Tubificidae overwhelmingly dominant
significant organic pollution

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 20/1...
Substrate: mud/gravel...Streambank Vegetation/Stability: fair/fair
...Canopy: mostly open...Other: some trees; surface oils; water
had swampy, foul odor

Passaic Basin - Paterson USGS Quadrangle
Station AN0277
Goffle Brook, Wargarow Road, Prospect Park
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Simuliidae	19	6
Elmidae	8	4
Hydropsychidae	17	4
BloodRedChironomidae	17	8
Gammaridae	15	4
Asellidae	8	8
Chironomidae	11	6
Lumbriculidae	2	8
Tipulidae	2	3
Turbellaria	1	4

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 100
% Contribution of Dominant Family = 19.00
Family Biotic Index = 5.66
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.19
 $E+P+T^* = 1 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 17.00
 $EPT/C^* = 0.61 * (\text{Chironomidae})$
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10-15/1...
Substrate: boulders/sand...Streambank Vegetation/Stability: fair/
fair...Canopy: mostly closed...Other: tree-lined; commercial and
industrial area; concrete and block gives stability to bank;
filamentous algae; fish

Passaic Basin - Paterson USGS Quadrangle
Station AN0278
Diamond Brook, Hemlock Street off Maple Avenue, Fairlawn
July 7, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
BloodRedChironomidae	21	8
Chironomidae	36	6
Lumbricidae	9	10
Tubificidae	17	10
Lumbriculidae	8	8
Turbellaria	10	4
Baetidae	4	4
Asellidae	6	8
Hydropsychidae	2	4
Simuliidae	1	6
Cambarinae	1	6
Hirudinea	1	10
Gammaridae	1	4
Empididae	1	6

Statistical Analysis

Number of Taxa = 14
Total Number of Individuals = 118
% Contribution of Dominant Family = 30.51
Family Biotic Index = 7.22
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.24
 $E+P+T^* = 2 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 5.08
 $EPT/C^* = 0.11 * (\text{Chironomidae})$
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10-15/<1...
Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
poor...Canopy: mostly open...Other: forest, recreational park,
commercial and residential; filamentous algae; minnows

Passaic Basin - Park Ridge USGS Quadrangle
Station AN0279
Saddle River, Old Stone Church Road,, Upper Saddle River
July 17, 1990

Family	Number of Individual	Family Tolerance Value (FTV)
Turbellaria	10	4
Lumbriculidae	3	8
Asellidae	1	8
Heptageniidae	1	4
Baetidae	9	4
Corydalidae	1	0
Hydropsychidae	42	4
Glossosomatidae	2	0
Philopotamidae	6	3
Hydroptilidae	2	4
Psephenidae	16	4
Elmidae	5	4
Tipulidae	10	3
Simuliidae	2	6
Chironomidae	2	6

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 112
% Contribution of Dominant Family = 37.50
Family Biotic Index = 3.96
Scraper/Filterer Collector Ratio = 0.40
Shredder/Total Ratio = 0.18
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 55.36
EPT/C* = 31.00 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 12/<1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
good/good...Canopy: mostly open...Other: periphyton

Passaic Basin - Park Ridge USGS Quadrangle
Station AN0280
West Branch Saddle R., Old Stone Church Road, Upper Saddle River
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Bryozoa	1	7
Lumbriculidae	2	8
Asellidae	1	8
Heptageniidae	2	4
Baetidae	1	4
Tricorythidae	1	4
Corydalidae	1	0
Hydropsychidae	24	4
Glossosomatidae	4	0
Limnephilidae	1	4
Hydroptilidae	1	4
Psephenidae	4	4
Elmidae	8	4
Tipulidae	39	3
Empididae	1	6
Chironomidae	17	6

Statistical Analysis

Number of Taxa = 16
Total Number of Individuals = 108
% Contribution of Dominant Family = 36.11
Family Biotic Index = 3.93
Scraper/Filterer Collector Ratio = 0.40
Shredder/Total Ratio = 0.44
E+P+T* = 7 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 31.48
EPT/C* = 2.00 *(Chironomidae)
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 12/2.5...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: good/
good...Canopy: partly open...Other: periphyton

Passaic Basin - Park Ridge USGS Quadrangle
Station AN0281
Saddle River, East Allendale Avenue, Saddle River
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	20	4
Nematoda	2	6
Bryozoa	2	7
Lumbriculidae	1	8
Hirudinea	1	10
Asellidae	26	8
Gammaridae	1	4
Tricorythidae	1	4
Baetidae	3	4
Hydropsychidae	35	4
Philopotamidae	2	3
Hydroptilidae	1	4
Leptoceridae	1	4
Psephenidae	5	4
Elmidae	12	4
Simuliidae	1	6
Empididae	1	6
Chironomidae	17	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 19
Total Number of Individuals = 133
% Contribution of Dominant Family = 26.32
Family Biotic Index = 5.23
Scraper/Filterer Collector Ratio = 0.15
Shredder/Total Ratio = 0.04
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 32.33
EPT/C* = 2.39 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 60/<1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
fair/poor...Canopy: open...Other: none

Passaic Basin - Ridgewood USGS Quadrangle
Station AN0282
Saddle River, East Ridgewood Avenue, Ridgewood
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	1	4
Lumbriculidae	1	8
Naididae	1	7
Baetidae	4	4
Heptageniidae	1	4
Hydropsychidae	58	4
Psephenidae	1	4
Elmidae	13	4
Simuliidae	3	6
Empididae	3	6
Chironomidae	24	6
Gastropoda	1	7

Statistical Analysis

Number of Taxa = 12
Total Number of Individuals = 111
% Contribution of Dominant Family = 52.25
Family Biotic Index = 4.63
Scraper/Filterer Collector Ratio = 0.03
Shredder/Total Ratio = 0.05
 $E+P+T^* = 3 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 56.76
 $EPT/C^* = 2.63 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: --...Flow: fast...Width/Depth(ft): 20/<1...Substrate:
cobbles/gravel/sand...Streambank Vegetation/Stability: good/good..
.Canopy: open...Other: periphyton

Passaic Basin - Ramsey USGS Quadrangle
Station AN0283
Hohokus Brook, Old Mill Road, Fardale
July 16, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	64	4
Nematoda	1	6
Bryozoa	4	7
Naididae	3	7
Asellidae	1	8
Gammaridae	3	4
Acariformes	1	4
Hydropsychidae	3	4
Elmidae	8	4
Simuliidae	5	6
BloodRedChironomidae	3	8
Chironomidae	5	6
Gastropoda	2	7
Sphaeriidae	2	8

Statistical Analysis

Number of Taxa = 14
Total Number of Individuals = 105
% Contribution of Dominant Family = 60.95
Family Biotic Index = 4.70
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.03
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 2.86
EPT/C* = 0.38 *(Chironomidae)
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: Turbellaria overwhelmingly dominant
paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 5/<1...
Substrate: cobbles...Streambank Vegetation/Stability: good/good...
Canopy: partly shaded...Other: periphyton

Passaic Basin - Ramsey USGS Quadrangle
Station AN0284
Valentine Brook, Forest Avenue, Allendale
July 16, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	8	4
Lumbricidae	6	10
Tubificidae	1	10
Asellidae	3	8
Gammaridae	2	4
Hydropsychidae	26	4
Elmidae	1	4
Tipulidae	3	3
Simuliidae	10	6
Empididae	1	6
Chironomidae	51	6
BloodRedChironomidae	1	8
Gastropoda	2	7

Statistical Analysis

Number of Taxa = 13
Total Number of Individuals = 115
% Contribution of Dominant Family = 44.35
Family Biotic Index = 5.61
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.17
 $E+P+T^* = 1 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 22.61
 $EPT/C^* = 0.50 * (\text{Chironomidae})$
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 15/<1...
Substrate: cobbles/asphalt/sand...Streambank Vegetation/Stability:
good/good...Canopy: partly open...Other: periphyton

Passaic Basin - Ramsey USGS Quadrangle
Station AN0285
Hohokus Brook, Park Avenue, Allendale
July 16, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	4	4
Bryozoa	1	7
Naididae	4	7
Lumbricidae	1	10
Gammaridae	3	4
Heptageniidae	6	4
Coenagrionidae	1	9
Hydropsychidae	39	4
Elmidae	23	4
Tipulidae	1	3
Empididae	1	6
Chironomidae	32	6

Statistical Analysis

Number of Taxa = 12
Total Number of Individuals = 116
% Contribution of Dominant Family = 33.62
Family Biotic Index = 4.78
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.07
 $E+P+T^* = 2 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 38.79
 $EPT/C^* = 1.41 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: turbid...Flow: fast...Width/Depth(ft): 30/<1...
Substrate: cobbles/boulders...Streambank Vegetation/Stability:
good/good...Canopy: partly open...Other: periphyton

Passaic Basin - Ramsey USGS Quadrangle
 Station AN0286
 Ramsey Brook, Grenadier Avenue, Mahwah
 July 16, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	3	4
Lumbricidae	4	10
Tubificidae	25	10
Asellidae	1	8
Cambarinae	4	6
Empididae	2	6
BloodRedChironomidae	1	8
Chironomidae	5	6
Gastropoda	1	7
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 10
 Total Number of Individuals = 47
 % Contribution of Dominant Family = 53.19
 Family Biotic Index = 8.49
 Scraper/Filterer Collector Ratio = 0.00
 Shredder/Total Ratio = 0.02
 E+P+T* = 0 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 0.00
 EPT/C* = 0.00 *(Chironomidae)
 NJIS Rating = 6
 Biological Condition = severely impaired
 Deficiency(s) noted: paucity of clean water organisms
 significant organic pollution

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 4/<1...
 Substrate: cobbles/sand...Streambank Vegetation/Stability: good/
 good...Canopy: partly open...Other: black rock bottoms

Passaic Basin - Ramsey USGS Quadrangle
Station AN0287
Ramsey Brook, Park Avenue, Allendale
July 16, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	5	4
Lumbricidae	1	10
Asellidae	1	8
Gammaridae	1	4
Heptageniidae	2	4
Hydropsychidae	41	4
Elmidae	37	4
Simuliidae	2	6
Tipulidae	3	3
Chironomidae	17	6
Gastropoda	1	7

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 111
% Contribution of Dominant Family = 36.94
Family Biotic Index = 4.43
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.07
 $E+P+T^* = 2 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 38.74
 $EPT/C^* = 2.53 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 20/<1...
Substrate: cobbles/sand...Streambank Vegetation/Stability: good/
good...Canopy: partly shaded...Other: periphyton

Passaic Basin - Ridgewood USGS Quadrangle
Station AN0288
Hohokus Brook, Spring Street, Ridgewood
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Lumbricidae	2	10
Tubificidae	3	10
Naididae	1	7
Asellidae	1	8
Hydropsychidae	45	4
Elmidae	1	4
Simuliidae	4	6
Tipulidae	1	3
Chironomidae	43	6
BloodRedChironomidae	2	8

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 103
% Contribution of Dominant Family = 43.69
Family Biotic Index = 5.34
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.02
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 43.69
EPT/C* = 1.00 *(Chironomidae)
NJIS Rating = 15
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 75/<1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
good/good...Canopy: partly open...Other: periphyton

Passaic Basin - Hackensack USGS Quadrangle
Station AN0289
Saddle River, Dunkerhook Road, Fairlawn
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Bryozoa	1	7
Naididae	4	7
Hirudinea	2	10
Asellidae	9	8
Gammaridae	1	4
Hydropsychidae	69	4
Elmidae	1	4
Simuliidae	3	6
Empididae	1	6
Chironomidae	24	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 116
% Contribution of Dominant Family = 59.48
Family Biotic Index = 5.06
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 59.48
EPT/C* = 2.76 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 75/<1...
Substrate: cobbles/rubble/sand...Streambank Vegetation/Stability:
good/good...Canopy: open...Other: periphyton; mosses; macrophytes

Passaic Basin - Hackensack USGS Quadrangle
Station AN0290
Saddle River, Railroad Avenue, Rochelle
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	5	4
Bryozoa	3	7
Hirudinea	1	10
Asellidae	68	8
Gammaridae	2	4
Sisyridae	1	3
Hydropsychidae	28	4
Simuliidae	1	6
Chironomidae	8	6
BloodRedChironomidae	1	8

Statistical Analysis

Number of Taxa = 10
Total Number of Individuals = 118
% Contribution of Dominant Family = 57.63
Family Biotic Index = 6.61
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.00
 $E+P+T^* = 1 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 23.73
 $EPT/C^* = 3.11 * (\text{Chironomidae})$
NJIS Rating = 12
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: slightly turbid...Flow: moderate...Width/Depth(ft):
75/1...Substrate: cobbles/sand...Streambank Vegetation/Stability:
good/good...Canopy: open...Other: silt; periphyton

Passaic Basin - Hackensack USGS Quadrangle
Station AN0291
Saddle River, Marcellus Place, Garfield
July 17, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	4	4
Bryozoa	7	7
Naididae	1	7
Hirudinea	1	10
Asellidae	79	8
Gammaridae	1	4
Neanurinae	1	10
Hydropsychidae	4	4
Tipulidae	1	3
BloodRedChironomidae	3	8
Chironomidae	13	6

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 115
% Contribution of Dominant Family = 68.70
Family Biotic Index = 7.38
Scraper/Filterer Collector Ratio = 0.00
Shredder/Total Ratio = 0.03
E+P+T* = 1 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 3.48
EPT/C* = 0.25 *(Chironomidae)
NJIS Rating = 6
Biological Condition = severely impaired
Deficiency(s) noted: Asellidae overwhelmingly dominant
paucity of clean water organisms
significant organic pollution

Observations

Streamwater: slightly turbid...Flow: fast...Width/Depth(ft): 75/1.
..Substrate: boulders/cobbles/sand...Streambank Vegetation/
Stability: good/good...Canopy: open...Other: silt; periphyton;
macrophytes

Passaic Basin - Orange USGS Quadrangle
Station AN0292
Third River, Yantacaw Park, Nutley
July 6, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	44	4
Chironomidae	12	6
Gammaridae	22	4
Bryozoa	3	7
Turbellaria	3	4
Baetidae	5	4
Asellidae	4	8
Gastropoda	6	7
Simuliidae	1	6

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 44.00
Family Biotic Index = 4.69
Scraper/Filterer Collector Ratio = 0.02
Shredder/Total Ratio = 0.05
E+P+T* = 2 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 49.00
EPT/C* = 4.08 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: ***...Flow: ***...Width/Depth(ft): ***/***...
Substrate: ***...Streambank Vegetation/Stability: ***/***...
Canopy: ***...Other: ***

Passaic Basin - Orange USGS Quadrangle
Station AN0293
Second River, McCarter Highway, Newark-Belleville

Family Number Family
 of Tolerance
 Individuals Value (FTV)

*** NO SAMPLE TAKEN ***

Statistical Analysis

Observations

Channelized

Wallkill Basin - Wawayanda USGS Quadrangle
Station AN0294
Cherry Ridge Brook, Wawayanda State Park, Vernon Twp
August 3, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Gammaridae	23	4
Brachycentridae	35	1
Hydropsychidae	19	4
Chironomidae	10	6
Elmidae	3	4
Pteronarcyidae	1	0
Baetidae	3	4
Rhyacophilidae	1	0
Perlidae	1	1
Sphaeriidae	1	8
Cambarinae	1	6
Gastropoda	1	7
Acariformes	1	4

Statistical Analysis

Number of Taxa = 13
Total Number of Individuals = 100
% Contribution of Dominant Family = 35.00
Family Biotic Index = 3.13
Scraper/Filterer Collector Ratio = 0.04
Shredder/Total Ratio = 0.09
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 60.00
EPT/C* = 6.00 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: -...Flow: fast...Width/Depth(ft): 8/<1...Substrate:
boulders/rock/gravel...Streambank Vegetation/Stability: poor/good.
..Canopy: mostly open...Other: algae; macrophytes; crayfish;
sunfish; salamander

Wallkill Basin - Wawayanda USGS Quadrangle
Station AN0295
Wawayanda Brook
Canal Road, Maple Grange

Family Number Family
 of Tolerance
 Individuals Value (FTV)

*** NO SAMPLE TAKEN ***

Statistical Analysis

Observations

Deep, No Flow

Wallkill Basin - Wawayanda USGS Quadrangle
Station AN0296
Black Creek
Marker Road, Maple Grange

Family Number Family
 of Tolerance
 Individuals Value (FTV)

*** NO SAMPLE TAKEN ***

Statistical Analysis

Observations

Deep, No Flow

Wallkill Basin - Newton East USGS Quadrangle
Station AN0297
Wallkill, Route 15 (behind municipal building), Sparta
June 25, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Porifera	40	7
Turbellaria	3	4
Asellidae	3	8
Baetidae	1	4
Hydropsychidae	37	4
Psychomyiidae	5	2
Elmidae	7	4
Tipulidae	2	3
Chironomidae	2	6

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 40.00
Family Biotic Index = 5.24
Scraper/Filterer Collector Ratio = 0.13
Shredder/Total Ratio = 0.03
 $E+P+T^* = 3 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 43.00
 $EPT/C^* = 21.50 * (\text{Chironomidae})$
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: turbid...Flow: moderate...Width/Depth(ft): 5/<1...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: good/
good...Canopy: closed...Other: none

Wallkill Basin - Franklin USGS Quadrangle
Station AN0298
Wallkill, Kennedy Avenue, Ogdensburg
June 25, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Nemertea	1	5
Gammaridae	24	4
Leuctridae	1	0
Ephemerellidae	1	1
Baetidae	2	4
Rhyacophilidae	2	0
Glossosomatidae	6	0
Hydropsychidae	19	4
Philopotamidae	1	3
Brachycentridae	2	1
Psephenidae	4	4
Elmidae	19	4
Tipulidae	4	3
Simuliidae	1	6
Chironomidae	27	6

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 114
% Contribution of Dominant Family = 23.68
Family Biotic Index = 4.06
Scraper/Filterer Collector Ratio = 0.38
Shredder/Total Ratio = 0.21
E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 29.82
EPT/C* = 1.26 *(Chironomidae)
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10/<1...
Substrate: cobbles/gravel/boulders...Streambank Vegetation/
Stability: good/good...Canopy: open...Other: Cambarus bartonii;
macrophytes

Wallkill Basin - Franklin USGS Quadrangle
Station AN0299
Wallkill, Scott Road, Franklin
June 25, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	1	4
Naididae	1	7
Gammaridae	10	4
Baetidae	6	4
Heptageniidae	3	4
Hydropsychidae	61	4
Brachycentridae	1	1
Philopotamidae	3	3
Psephenidae	4	4
Elmidae	4	4
Tipulidae	5	3
Chironomidae	12	6

Statistical Analysis

Number of Taxa = 12
Total Number of Individuals = 111
% Contribution of Dominant Family = 54.95
Family Biotic Index = 4.14
Scraper/Filterer Collector Ratio = 0.06
Shredder/Total Ratio = 0.13
E+P+T* = 5 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 66.67
EPT/C* = 6.17 *(Chironomidae)
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 25/1...
Substrate: cobbles/gravel/boulders...Streambank Vegetation/
Stability: good/good...Canopy: mostly open...Other: none

Wallkill Basin - Hamburg USGS Quadrangle
Station AN0300
Wallkill, Route 94, Hamburg
July 26, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Turbellaria	2	4
Naididae	4	7
Asellidae	1	8
Gammaridae	15	4
Caenidae	2	7
Leptophlebiidae	1	2
Ephemerellidae	1	1
Heptageniidae	1	4
Baetidae	4	4
Hemiptera	1	8
Corydalidae	1	0
Hydropsychidae	15	4
Glossosomatidae	1	0
Philopotamidae	2	3
Psephenidae	17	4
Elmidae	21	4
Simuliidae	1	6
Tipulidae	4	3
Chironomidae	13	6

Statistical Analysis

Number of Taxa = 19
Total Number of Individuals = 107
% Contribution of Dominant Family = 19.63
Family Biotic Index = 4.33
Scraper/Filterer Collector Ratio = 1.00
Shredder/Total Ratio = 0.12
E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 25.23
EPT/C* = 2.08 *(Chironomidae)
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 50/1...
Substrate: cobbles/gravel/sand...Streambank Vegetation/Stability:
good/good...Canopy: half open...Other: filamentous algae;
macrophytes

Wallkill Basin - Hamburg USGS Quadrangle
Station AN0301
Beaver Run, Cemetery Road, Wantage Township
July 15, 1993

Family	Number of Individuals	Family Tolerance Value (FTV)
Hydropsychidae	62	4
Chironomidae	6	6
Baetidae	6	4
Elmidae	15	4
Psephenidae	1	4
Simuliidae	6	6
Limnephilidae	1	4
Gastropoda	2	7
Psychomyiidae	1	2

Statistical Analysis

Number of Taxa = 9
Total Number of Individuals = 100
% Contribution of Dominant Family = 62.00
Family Biotic Index = 4.28
Scraper/Filterer Collector Ratio = 0.04
Shredder/Total Ratio = 0.07
 $E+P+T^* = 4 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 70.00
 $EPT/C^* = 11.67 * (\text{Chironomidae})$
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: Hydropsychidae overwhelmingly dominant

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 10/<1
...Substrate: rubble/sand...Streambank Vegetation/Stability: good/
good...Canopy: open...Other: a few trees and bushes on banks;
macrophytes

Wallkill Basin - Hamburg USGS Quadrangle
Station AN0302
Wallkill, Route 565, Sussex
June 26, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Asellidae	1	8
Gammaridae	25	4
Heptageniidae	11	4
Baetidae	1	4
Gomphidae	1	1
Limnephilidae	4	4
Hydropsychidae	6	4
Psephenidae	2	4
Elmidae	10	4
Tipulidae	2	3
Simuliidae	10	6
Chironomidae	10	6

Statistical Analysis

Number of Taxa = 12
Total Number of Individuals = 83
% Contribution of Dominant Family = 30.12
Family Biotic Index = 4.47
Scraper/Filterer Collector Ratio = 0.20
Shredder/Total Ratio = 0.19
 $E+P+T^* = 4 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 26.51
 $EPT/C^* = 2.20 * (\text{Chironomidae})$
NJIS Rating = 24
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 20/1...
Substrate: gravel/cobbles...Streambank Vegetation/Stability: fair/
fair...Canopy: open...Other: macrophytes; crayfish

Wallkill Basin - Branchville USGS Quadrangle
 Station AN0303
 Papakating Creek, Route 619 and Gunn Road, Frankford Township
 June 28, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Baetidae	6	4
Naididae	3	7
Heptageniidae	15	4
Limnephilidae	2	4
Psephenidae	8	4
Elmidae	8	4
Chironomidae	15	6
Leuctridae	10	0
Tipulidae	2	3
Tubificidae	1	10
Glossosomatidae	4	0
Ephemerellidae	1	1
Philopotamidae	2	3
Leptophlebiidae	3	2
Hydropsychidae	10	4
Perlidae	4	1
Athericidae	1	2
Siphonuridae	3	7
Sphaeriidae	1	8
Hydroptilidae	1	4

Statistical Analysis

Number of Taxa = 20
 Total Number of Individuals = 100
 % Contribution of Dominant Family = 15.00
 Family Biotic Index = 3.75
 Scraper/Filterer Collector Ratio = 1.06
 Shredder/Total Ratio = 0.25
 E+P+T* = 12 *(Ephemeroptera, Plecoptera and Trichoptera)
 %EPT = 61.00
 EPT/C* = 4.07 *(Chironomidae)
 NJIS Rating = 30
 Biological Condition = non-impaired
 Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: fast...Width/Depth(ft): 6/<1...
 Substrate: bedrock/boulders/cobbles/sand...Streambank Vegetation/
 Stability: good/good...Canopy: half-open...Other: none

Wallkill Basin - Branchville USGS Quadrangle
Station AN0304
Papakating Creek, Route 565, Pelletstown, Branchville
June 27, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Naididae	2	7
Tubificidae	6	10
Talitridae	39	8
Cambarinae	1	6
Baetidae	4	4
Leptophlebiidae	1	2
Heptageniidae	2	4
Hemiptera	10	8
Limnephilidae	7	4
Psychomyiidae	1	2
Elmidae	9	4
Psephenidae	5	4
Chironimidae	3	6
Gastropoda	23	7
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 114
% Contribution of Dominant Family = 34.21
Family Biotic Index = 6.76
Scraper/Filterer Collector Ratio = 5.67
Shredder/Total Ratio = 0.01
E+P+T* = 5 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 13.16
EPT/C* = 5.00 *(Chironomidae)
NJIS Rating = 21
Biological Condition = moderately impaired
Deficiency(s) noted: none

Observations

Streamwater: slightly turbid...Flow: slow...Width/Depth(ft): 50/<1
...Substrate: sand/cobbles...Streambank Vegetation/Stability:
poor/poor...Canopy: open...Other: crayfish

Wallkill Basin - Branchville USGS Quadrangle
Station AN0305
West Branch Papakating Creek, Route 519, Plumbsock
June 27, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	3	10
Asellidae	1	8
Perlidae	1	1
Heptageniidae	51	4
Siphonuridae	3	7
Baetidae	10	4
Ephemerellidae	1	1
Limnephilidae	4	4
Philopotamidae	3	3
Hydropsychidae	12	4
Psephenidae	3	4
Elmidae	4	4
Tipulidae	4	3
Chironomidae	12	6

Statistical Analysis

Number of Taxa = 14
Total Number of Individuals = 112
% Contribution of Dominant Family = 45.54
Family Biotic Index = 4.38
Scraper/Filterer Collector Ratio = 0.41
Shredder/Total Ratio = 0.14
 $E+P+T^* = 8 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 75.89
 $EPT/C^* = 7.08 * (\text{Chironomidae})$
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 5/<1...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: good/
good...Canopy: mostly closed...Other: none

Wallkill Basin - Branchville USGS Quadrangle
Station AN0306
West Branch Papakating Creek, Route 565, McCoy's Corner
June 27, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Lumbricidae	1	10
Naididae	6	7
Perlidae	3	1
Heptageniidae	2	4
Baetidae	7	4
Hydropsychidae	32	4
Glossosomatidae	1	0
Hydroptilidae	1	4
Limnephilidae	1	4
Philopotamidae	2	3
Psephenidae	3	4
Elmidae	11	4
Tipulidae	2	3
Simuliidae	1	6
Chironomidae	33	6

Statistical Analysis

Number of Taxa = 15
Total Number of Individuals = 106
% Contribution of Dominant Family = 31.13
Family Biotic Index = 4.74
Scraper/Filterer Collector Ratio = 0.17
Shredder/Total Ratio = 0.21
E+P+T* = 8 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 46.23
EPT/C* = 1.48 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 10/<1...
Substrate: sand/gravel...Streambank Vegetation/Stability: poor/
poor...Canopy: open...Other: none

Wallkill Basin - Branchville USGS Quadrangle
Station AN0307
Papakating Creek, Route 565, McCoy's Corner
June 27, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Tubificidae	6	10
Gammaridae	12	4
Cambarinae	1	6
Perlidae	1	1
Heptageniidae	24	4
Baetidae	14	4
Sialidae	1	4
Limnephilidae	4	4
Psychomyiidae	5	2
Hydropsychidae	3	4
Psephenidae	2	4
Elmidae	5	4
Chironomidae	23	6
BloodRedChironomidae	2	8
Gastropoda	1	7
Sphaeriidae	1	8

Statistical Analysis

Number of Taxa = 16
Total Number of Individuals = 105
% Contribution of Dominant Family = 22.86
Family Biotic Index = 4.82
Scraper/Filterer Collector Ratio = 0.46
Shredder/Total Ratio = 0.20
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 48.57
EPT/C* = 2.04 *(Chironomidae)
NJIS Rating = 30
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: turbid...Flow: slow...Width/Depth(ft): 35/1...
Substrate: sand/gravel...Streambank Vegetation/Stability: fair/
fair...Canopy: mostly open...Other: none

Wallkill Basin - Unionville USGS Quadrangle
Station AN0308
Clove River, Rose Marrow Avenue, Wantage Township
June 26, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Nematoda	1	6
Bryozoa	5	7
Asellidae	2	8
Perlidae	2	1
Heptageniidae	5	4
Baetidae	2	4
Limnephilidae	44	4
Hydropsychidae	5	4
Elmidae	21	4
Simuliidae	1	6
Chironomidae	26	6

Statistical Analysis

Number of Taxa = 11
Total Number of Individuals = 114
% Contribution of Dominant Family = 38.60
Family Biotic Index = 4.64
Scraper/Filterer Collector Ratio = 1.33
Shredder/Total Ratio = 0.04
 $E+P+T^* = 5 * (\text{Ephemeroptera, Plecoptera and Trichoptera})$
%EPT = 50.88
 $EPT/C^* = 2.23 * (\text{Chironomidae})$
NJIS Rating = 27
Biological Condition = non-impaired
Deficiency(s) noted: none

Observations

Streamwater: clear...Flow: moderate...Width/Depth(ft): 4/<1...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: good/
good...Canopy: mostly closed...Other: none

Wallkill Basin - Hamburg USGS Quadrangle
Station AN0309
Clove River, Loomis Avenue, Sussex
June 26, 1990

Family	Number of Individuals	Family Tolerance Value (FTV)
Porifera	15	7
Tubificidae	16	10
Naididae	1	7
Asellidae	9	8
Cambarinae	1	6
Caenidae	3	7
Heptageniidae	1	4
Leptophlebiidae	2	2
Baetidae	1	4
Sialidae	1	4
Hydropsychidae	2	4
Limnephilidae	1	4
Psephenidae	1	4
Elmidae	5	4
Tipulidae	2	3
Chironomidae	46	6
BloodRedChironomidae	2	8
Simuliidae	1	6
Gastropoda	1	7

Statistical Analysis

Number of Taxa = 19
Total Number of Individuals = 111
% Contribution of Dominant Family = 41.44
Family Biotic Index = 6.61
Scraper/Filterer Collector Ratio = 0.04
Shredder/Total Ratio = 0.06
E+P+T* = 6 *(Ephemeroptera, Plecoptera and Trichoptera)
%EPT = 9.01
EPT/C* = 0.21 *(Chironomidae)
NJIS Rating = 18
Biological Condition = moderately impaired
Deficiency(s) noted: paucity of clean water organisms

Observations

Streamwater: very turbid...Flow: slow...Width/Depth(ft): 20/1...
Substrate: cobbles/gravel...Streambank Vegetation/Stability: good/
good...Canopy: mostly closed...Other: none
