STATE OF CONNECTICUT

Department of Envrionmental Protection

Bureau of Fisheries and Widllife

Division of Inland Fisheries

Federal Aid in Sport Fish Restoration F-66-R-3

Annual Performance Report

Project Title: **A Survey of Connecticut Streams and Rivers**

Job 2. Stream Survey

Job 3. Angler Survey

Period Covered: April 1, 1990 to March 31, 1991

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ABSTRACT

A comprehensive stream survey was conducted on the western and central coastal basins as part of a multiple year study of Connecticut streams and rivers. A total of 125 sites on 103 streams were sampled for invertebrate populations, fish populations, and habitat information. Eleven angler surveys were conducted on nine streams. Preliminary data analysis was done for most physical, chemical, and biological parameters measured based on the presence or absence of trout and trout reproduction, as well as by regional basin. Trout reproduction was found in 45% of the central coastal basin streams and 31% of the western coastal streams that were sampled. A length-weight relationship for brown trout was presented that was developed from Connecticut stream fish. Due to the one year lag in invertebrate sample processing, preliminary data analyses were conducted on 1989 invertebrate sample results. Streams containing trout reproduction all had at least 10 families of insects present.

A five strata creel design utilizing stocking periods for stratification was found to be better than the three strata design that had been used prior to 1990. Angler surveys indicated that heavy fishing pressure exits on the Mianus River TMA (4,852 hrs/km), the Saugatuck fly-fishing-only area (3,397 hrs/km), Chatfield Hollow Brook (4,371 hrs/km) and Mill River-Hamden (4,136 hrs/km), and moderate levels are found on the Mill River-Fairfield (366 hrs/km), Norwalk River (238 hrs/km), Pequonnock River (245 hrs/km), Saugatuck River (706 hrs/km), Farm River (532 hrs/km), and Hammonasset River(1,402 hrs/km).

An evaluation was made of the mechanisms and usefulness of the Habitat Quality Index (HQI), a model developed to predict trout standing crop in Wyoming streams.

1.0 Introduction:

A comprehensive survey of the streams and rivers of the State of Connecticut was begun by the Department of Environmental Protection (DEP) Inland Fisheries Division in 1988. The objectives of this study include: development of trout stocking models to optimize allocation of hatchery fish, compilation of a data base which would allow timely and accurate completion of environmental permitting and reviews, identification and quantification of the state's coldwater and warmwater resources, development of models to accurately predict species composition and biomass in Connecticut streams, and dissemination of this information to the general public in a useful and understandable form.

This report contains progress reports for Job 2 (Stream Survey) and Job 3 (Angler Survey), of Federal Aid in Sport Fish Restoration Project F-66-R, covering the third year of a multiple year stream sampling program. The complex of streams comprising the central coastal and west coastal basins were sampled during 1990 (Figure 1). Four rivers in the central coastal basin and three rivers in the west coastal basin were approximately 100 km^2 or more in area, ranging from 99.7 to 459.8 km^2 (Table 1). An additional 12 subregional basins, comprising 1,139 km^2, were also sampled. These regions have been undergoing the highest level of development in the state with approximately 8.29 construction permits per square mile issued per year during the mid-1980's (Chase Econometrics 1986). These regions contain many small streams that flow directly into Long Island Sound, many of which historically supported anadromous species.

Table 1.-Drainage area of central and west coastal basins.

Regional Basins	Major and Regional Basin Codes	Area (km^2)
Hammonasset River	51	137.8
Mill River (Hamden)	53	106.6
Quinnipiac River	52	459.8
West River(West Haven)	53	99.7
Saugatuck River	72	258.1
Norwalk River	73	177.8
Rippowam River	74	103.5
Additional subregional basins[1]	**Major Basin Codes**	**Area (km^2)**
Central coastal	5	531.7
Menunketesuck River		
East River		
West River(Guilford)		
Branford River		
Farm River		
Wepawaug River		
Western coastal	7	583.9
Pequonnock River		
Rooster River (Ash Creek)		
Mill River (Fairfield)		
Mianus River		
Byrum River		
Hudson River basin	8	23.8
Titicus River (Conn. reaches only)		

[1](subregional basins over 40 km^2 listed)

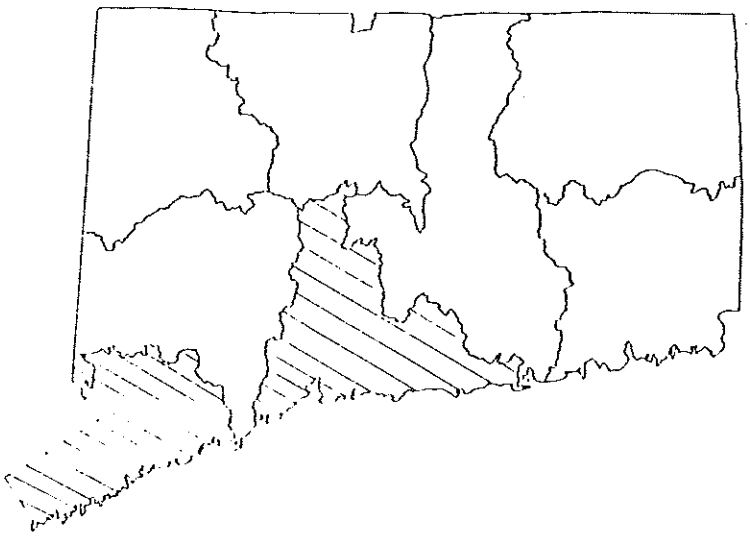

Figure 1. Drainage area sampled during 1990.

2.0 Methodology

Methods and materials used during this segment were the same as described in Hagstrom et al. (1989).

3.0 Stream Survey Results:

The drainages of the central coastal basin are dominated by granite in the east and west ends and have a mixed arkose-basalt rock type in the middle valleys (Quinnipiac and Farm River drainages). There are several water company reservoirs located in the upper half of the drainages with a series of inter-drainage diversions used to augment water supplies to these reservoirs. The hydrological responses of these drainages are varied from slow response in the meandering Quinnipiac River to a very quick response in the Neck River.

The western coastal basin is predominately granite substrate except for a small amount of limestone at the top of the Byram River system and in the Titicus River area (actually a Hudson River subdrainage). These drainages commonly have water diversion reserviors in the middle to upper half. The lower half of these drainages are areas of heavy residential and urban development.

Data were collected from, 125 sites on 103 streams (Figure 2; Appendix A). Salmonids were present at 65 sites on 52 streams. Evidence of brook trout *Salvelinus fontinalis* and/or brown trout *Salmo trutta* reproduction was found at 48 sites on 41 streams (Table 2).

Preliminary data analyses were carried out on all chemical, habitat, and population data. Standing crop and age class abundance were calculated where possible. Because of the length of time required to identify, enumerate, and weigh invertebrates, 1990 sample processing has not been completed. In this report data analysis was carried out on 1989 data. More detailed analyses will be conducted later once more complete data sets have been compiled.

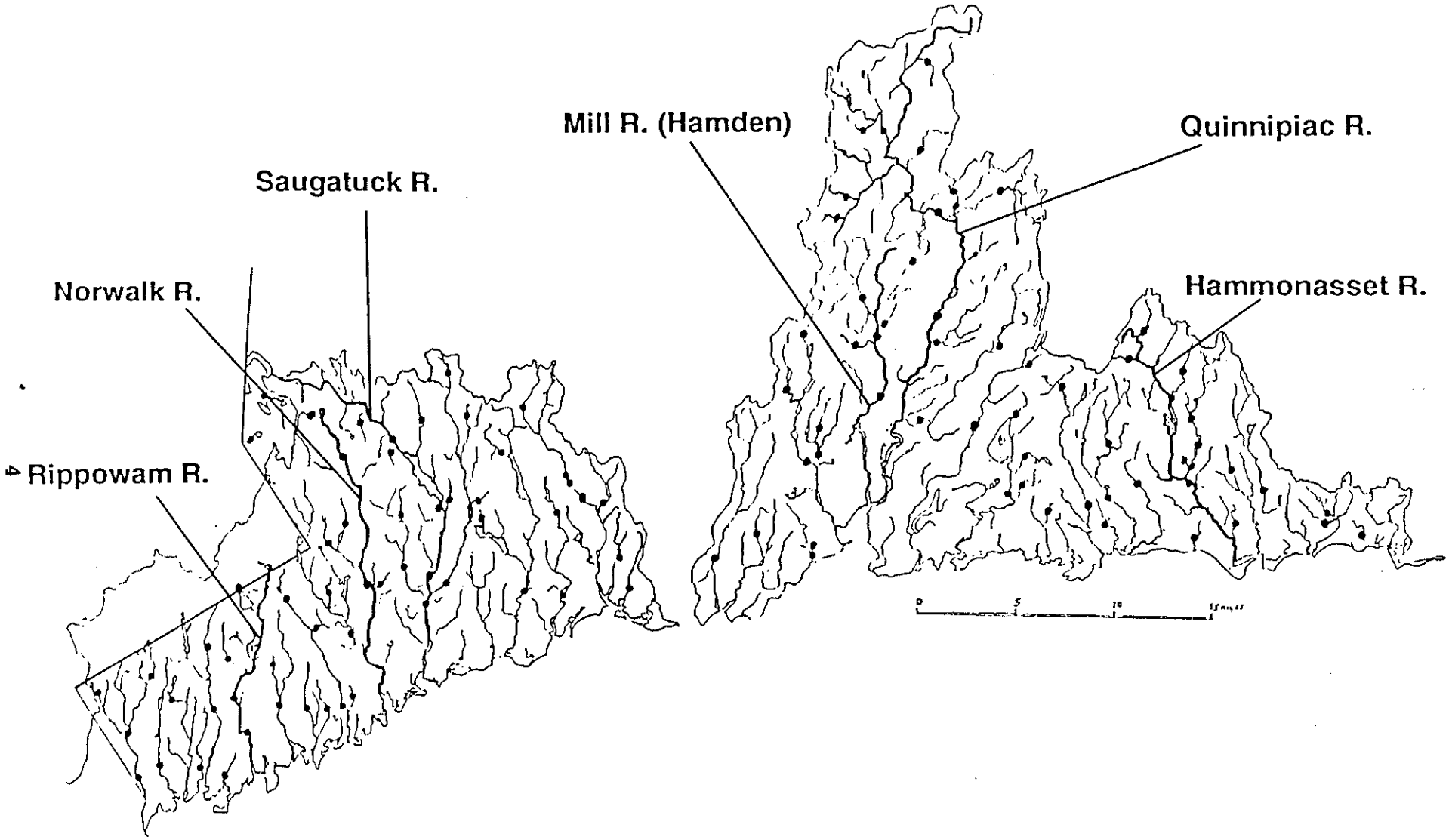

Figure 2. The 125 sites sampled during 1990 season.

Table 2.-Percentage of streams with trout reproduction by species and drainage for two Connecticut coastal basins, 1990.

Drainage Name and Code	Number of Streams	Percentage of Streams with Trout Reproduction		
		Brown Tr.	Brook Tr.	Total
Central coastal				
50	5	0.0	0.0	0.0
Hammonasset River				
51	23	17.4	34.8	47.8
Quinnipiac River				
52	14	21.4	50.0	57.1
Mill River (Hamden)				
53	11	27.3	36.4	45.5
subtotal				
All central coastal	53	18.9	35.8	45.2
Western coastal				
70	2	0.0	0.0	0.0
Pequonnock River				
71	12	25.0	16.7	41.7
Saugatuck River				
72	9	33.3	55.5	66.7
Norwalk River				
73	7	42.9	14.3	42.9
Mianus River				
74	18	5.5	0.0	4.5
subtotal				
All western coastal	48	20.8	16.7	31.3
Titicus River				
81	2	0.0	100	100
Totals 1990	103	19.4	28.2	39.8

3.1 Chemical:

Means, standard deviations, and ranges of values were calculated for dissolved oxygen, pH, conductivity, and alkalinity (Table 3). Statistics were also calculated for streams grouped by presence of trout and streams with trout reproduction. Mean values of chemical parameters for trout streams with and without reproduction were not significantly different from means of all streams. However, as in previous years, the ranges were not as extreme for streams with trout.

Dissolved Oxygen (D.O.) concentrations were not significantly different from previous years. One unnamed site with trout (site 2104) was found to have a D.O. concentration of below 6.0 ppm which is the lower limit of the range expected by Raleigh (1982). This site had increasing D.O. values proceeding downstream along the length of the site. Water entered the top of the site from a pond that was fairly low in oxygen (D.O. 4.2

Table 3.-Mean, ± standard deviation and range ( ) of chemical parameters listed by trout presence, and occurrence of trout reproduction.

Parameter	All Streams 1990	Streams With Trout Present	Streams With Trout Reproduction
Dissolved Oxygen(mg/l)	8.67±1.39 (3.5-12.4)	9.20±1.14 (4.6-12.1)	9.22±1.12 (4.6-12.1)
pH	6.96±0.56 (5.4-8.7)	7.18±0.51 (5.4-8.5)	7.21±0.51 (5.4-8.5)
Conductivity [1]	216±286 (25-2788)	142±86 (25-578)	141±78 (25-397)
Alkalinity [2]	44.6±31.6 (2.2-174.8)	36.3±29.9 (2.2-174.8)	37.4±29.1 (2.2-156.8)

1 umhos/cm. 2 mg/l $CaCO_3$ eq.

ppm) and rapidly gained oxygen as it was aerated going through the site. D.O. at the downstream end of the site was 5.5 ppm. This was probably the result of a short-term oxygen deficiency in the pond.

Trout were not found in any streams with conductivity levels near the high end of the range of values measured. Alkalinity and conductivity had higher mean values than in previous years, but were not significantly different. No sites with extremely low alkalinity values (less than 2.0 mg/l) were found in these drainages indicating that these areas have little or no problems with acidification.

3.2 Physical:

Means, standard deviations, and ranges were calculated for several physical parameters (Table 4). Mean water velocity was similar to previous years (Hagstrom et al. 1989, 1990). Mean discharge was slightly higher than in previous years (0.28 m^3/s, 1990 versus 0.20 m^3/s, 1989) for streams with trout reproduction. Mean overhead canopy values were approximately the same as in previous years. Embeddedness of type 3 and type 4 substrate was slightly lower and higher respectively than in prior years, but were not significantly different. Elevation was evaluated for possible effects on trout populations. Burton and Wesche (1974), Wesche et al. (1977), Lanka (1985), and Scarnecchia (1983) have looked at elevation as a predictor in a variety of models. Some of these models have used elevation as an untransformed variable. Others have used elevation to classify streams into general geological or basin components. Streams with trout present and streams with trout reproduction showed higher mean elevation than all streams combined. This was caused by the lack of trout reproduction in the lower elevations of the coastal streams. It appears, based on gross observation of trout population locations, that elevation will be most useful if it is examined relative to a mean basin elevation. This will allow headwater and lowland areas to be differentiated even if basins occur at different mean elevations.

Table 4.-Mean, ± standard deviation and range ( ) of selected physical parameters listed by trout presence, and occurrence of trout reproduction.

Parameter	All Streams 1990	Streams With Trout Present	Streams With Trout Reproduction
Mean Water Velocity m/s	0.16±0.11 (0.02-0.61)	0.17±0.11 (0.03-0.61)	0.17±0.12 (0.03-0.61)
Discharge Volume M^3/s	0.22±0.37 (0.003-2.6)	0.29±0.44 (0.003-2.6)	0.28±0.47 (0.003-2.6)
Overhead Canopy (%)	82.9±16.2 (5-100)	84.0±20.0 (5-100)	84.9±13.9 (55-100)
Pool/Riffle Ratio	177.2±8.4 (0-2000)	65.7±342 (0.2-2000)	6.7±18.8 (0.2-2000)
Site elevation (feet above sea level)	175±156 (0-900)	206±172 (20-900)	226±176 (25-900)
Substrate* Percent Embeddedness			
Type 3	40.1±2.0 (0-90)	38.1±22.5 (0-90)	38.4±23.2 (0-90)
Type 4	32.5±19.0 (0-97.5)	33.1±187 (3.3-97.5)	36.2±20.1 (3.3-86)

* Type 3 substrate is 4-75 mm in diameter, Type 4 substrate is 76-305 mm in diameter.

Overall there were only slight differences in the mean values of physical factors from previous years because of the wide variety and number of sites sampled each year. Physical variables tended to cover a similar range of values, being slightly affected by small differences in water chemistry and variability in annual flow regimes.

3.3 Biological:

3.3.1 Invertebrates:

During May and June 1990, 638 invertebrate samples were collected at low flow sample sites. Invertebrate samples collected during 1989 were sorted and identified to family (Appendix B) by June 1990. The mean number of families per site was calculated for sites without trout, sites with trout present, and sites with evidence of trout reproduction (Table 5). Mean-number-of-individuals, and mean-grams-of-invertebrates-per-square-meter were also calculated for the three types of streams. Bowlby and Roff (1986) indicated that invertebrates weighing less than 0.1 mg dry weight (approximately 1.0 mg wet weight) are not used for food by trout. To accommodate this observation, calculations were repeated on a subset of families where the average weight of the individuals was greater than or equal to 1.0 mg wet weight (Table 5).

Sites sampled in 1989 averaged 18.8 ($\pm$ 5.5) families when trout were present and 17.1 ($\pm$ 5.7) families when trout were absent. The mean number of families with trout present was similiar to the 1988 mean, but the number of families with no trout present was considerably higher than in 1988. This is probably the result of sampling during a relatively short time period in the spring in 1989, and sampling over the entire summer in 1988. Streams with trout reproduction in 1989 still where found to have at least 11 families present as in 1988, while several streams with trout present in 1989 had fewer families than the streams with trout present the previous year (a minimum of ten families in 1988 versus three families in 1989). These factors will be examined later for species specific differences at sites with reproducing trout populations.

Table 5.-Summary of invertebrate data from 1989 samples. Mean, ± standard deviation and range ( ) were calculated for number of invertebrate families, average weight and average number of individuals per sq meter for streams with no trout, trout present, and trout reproducing. The same calculations were performed on a subset of invertebrates with mean individual weights greater than 1.0 mg.

Variable	No Trout	Trout Present	Trout Reproducing
All invertebrates			
Sample Size (N)	35	60	59
Number of Families	17.1 ± 5.7 (5-26)	18.8 ± 5.5 (3-33)	19.15 ± 5.3 (11-33)
Individuals/m^2	1425 ± 983	1435 ± 2208	1530 ± 2231
Weight g/m^2	12.1 ± 15.5	16.6 ± 33.1	16.93 ± 33.8
Ind. Wt >1.0 mg			
Number of Families	7.0 ± 3.1 (2-13)	14.4 ± 6.5 (2-26)	13.1 ± 6.0 (2-26)
Individuals/m^2	935 ± 1841	1014 ± 1188	1346 ± 2247
Weight g/m^2	12.0 ± 15.4	12.5 ± 30.5	16.9 ± 33.8

3.3.2 Fish Populations:

In 1990 seven fish species not previously encountered during the stream survey where collected: green sunfish *Lepomis cyanellus*, hogchocker *Trinectes maculatus*, sheepshead minnow *Cyprinodon variegatus*, striped bass *Morone saxatilis*, white perch *Morone americana*, threespine stickleback *Gasterosteus aculeatus* and ninespine stickleback *Pungitius pungitius*. Most of these species were collected in samples taken at the edge of the salt

wedge in the coastal streams. The green sunfish were more widely distributed in this area than expected based on Whitworth (1968), and appear to have expanded their range through an area of the western coastal basin (Figure 3).

The capture efficiency (p) of all species combined was over 30% for most sites sampled. The capture efficiencies for individual species were generally above 30% (Table 6). The negatively buoyant species, longnose dace *Rhinichthys cataractae* and tesselated darter *Ethostoma olmstedi*, had the lowest mean capture efficiencies. Capture efficiencies were high enough to prevent any significant bias in the population estimates for the dominant species at each site. Capture efficiencies for individual species were nearly identical, or slightly higher than, those determined in 1988 and 1989 (Hagstrom et al. 1989, 1990).

The reproductive success of trout varied greatly between drainages. Streams were considered to have trout reproduction if there were any juvenile trout present and there were no known fingerling stockings in the system. Approximately 40% of the streams examined during 1990 had some amount of trout reproduction (Table 2). There was more brown trout reproduction than brook trout reproduction in the west coastal basin. The coastal streams coded 5000 and 7000 (small drainage areas directly off of Long Island Sound) supported no trout reproduction. The low levels of reproduction in some of the western coastal drainages can probably be attributed to high levels of development and a lack of water-company or closed-access stream areas.

Length-weight relationships, for expanding length frequency data into standing crop estimates, were developed for brook trout and brown trout from local stream data. The equation for brook trout did not differ significantly from the equation in Carlander (1969), therefore we will continue to use the same equation as before. The equation we developed for brown trout was substantially different from Carlander's (1969) equation for New York State that we had used earlier. Our new equation (Table 7) does match values from several other areas . We used the new

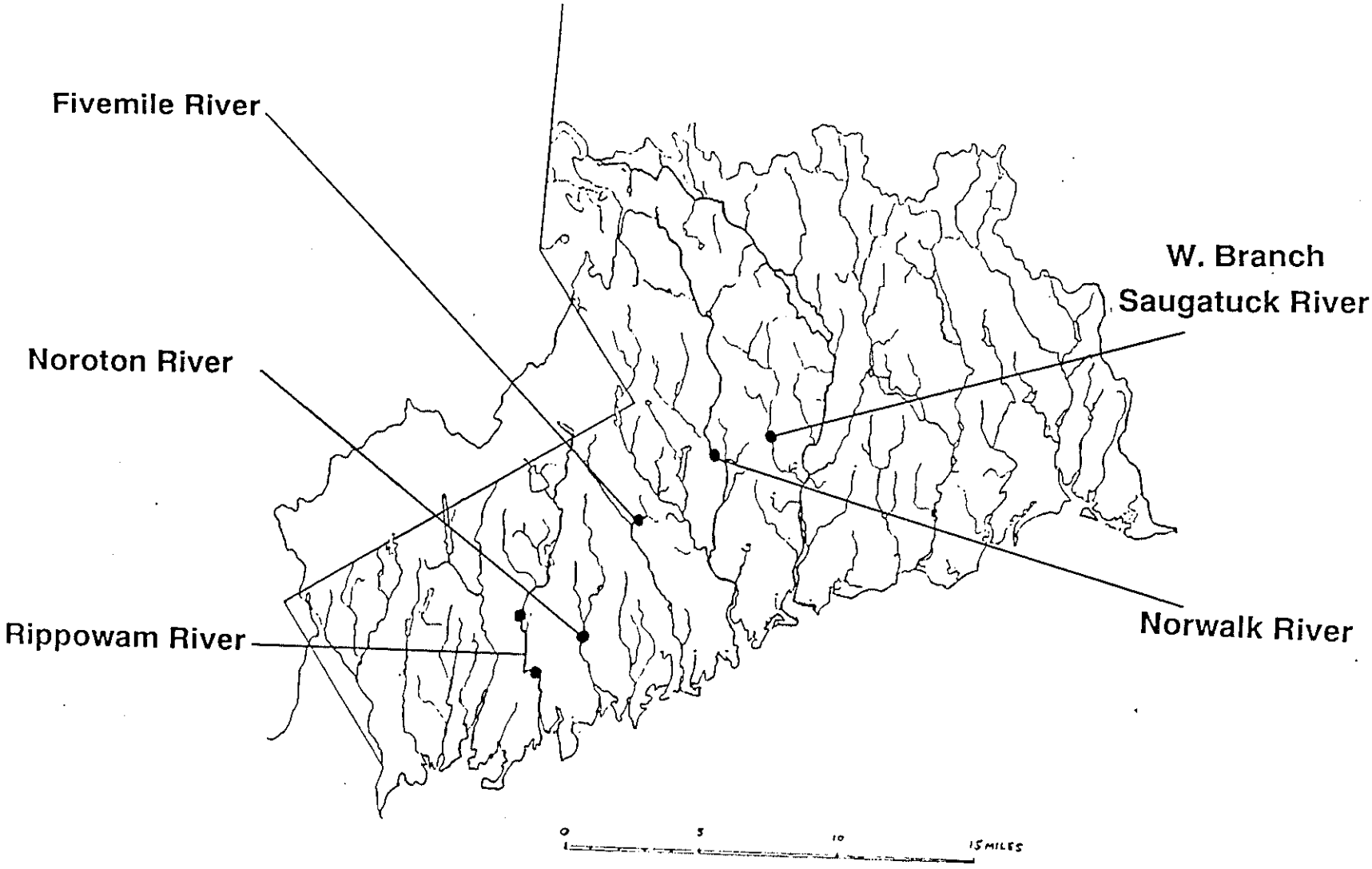

Figure 3. The Distribution of green sunfish *Lepomis Cyanellus* in the western coastal drainage area.

Table 6.-Efficiency of capture (p) during the 1990 sample season for selected species.

Species	Number of Sites	Number > 30%(p)	Mean (p)	Maximum (p)	Minimum (p)
American eel *Anguilla rostrata*	96	90	61.6	100	9.8
Brown trout *Salmo trutta*	44	44	75.6	100	33.0
Brook trout *Salvelinus fontinallis*	39	39	70.6	100	42.9
Fallfish *Semotilus corporalis*	26	24	59.2	100	7.3
White sucker *Catastomus commersoni*	86	82	60.1	100	4.5
Blacknose dace *Rhinichthys atratulus*	89	82	58.4	100	8.3
Common shiner *Notropis cornutus*	26	23	55.0	100	5.9
Longnose dace *Rhinichthys cataractae*	29	24	45.0	100	15.8
Tesselated darter *Etheostoma olmstedi*	50	32	44.7	100	10.1
Total sites	123	102	51.0		

Table 7.-Equations used to generate biomass estimates from length frequency data. Total lengths (TL) are in millimeters and weights (W) are in grams.

Species	Equation	Source and State of Origin
Previously Used		
Brown trout	Log(W)=-5.422 + 3.189 Log(TL)	NY Carlander(1969)
Brook trout	Log(W)=-5.095 + 3.04 Log(TL)	PA Carlander(1969)
Developed From Connecticut Streams		
Brown trout	Log(W)=-4.862 + 2.943 Log(TL)	
American eel	Log(W)=-6.225 + 3.167 Log(TL)	Nova Scotia Jessop (1987)
Misc Sp.	Log(W)=-5.00 + 3.0 Log(TL)	General Relationship

brown trout formula to generate biomass estimates. For most species a generalized length-weight formula was still appropriate. For American eels we used the same equation as before, which was developed from stream specimens.

The biomasses of all fish species were generated by the same method as described in Hagstrom et al. (1990). Mean trout biomass (kg/ha) and number per hectare are listed by drainage in Table 8. Trout biomass ranged from 0.07 to 132.6 kg/ha for brook trout and 0.65 to 58.4 kg/ha for brown trout. For the number/ha and standing crop of trout by drainage it is important to remember that the coastal drainages consist of several parallel streams that are not connected, but are lumped together by the existing state basin coding system. This may cause some misinterpretation of Table 8 results. The Hammonasset River shows a considerable number of brown trout per hectare (287 fish/ha) but this is the result of including the Farm River (a parallel drainage) which has a large brown trout population. The actual mean number per hectare for streams directly connected to the Hammonasset River is only 77.5 brown trout/hectare. There are similar problems with interpreting some of the numbers for the western coastal basins.

There was a general trend toward reproducing trout populations being limited to closed-access areas. The large trout populations found in some of these sites dominate the number-of-trout-per-hectare calculations used to generate Table 8. There was, however, evidence of reproduction of brown trout in several main stem rivers in the western coastal drainages. Both the Pequonnock River and the Norwalk River had young-of-the-year and age-1 brown trout present in the lower reaches. Brook trout reproduction was generally limited to smaller streams and headwater areas. Brook trout numbers and reproduction were limited in both the Norwalk River and Mianus River drainage complexes. The Saugatuck River had brook trout numbers that were similar in range to the Farmington River drainage. All other

Table 8.-Mean ± standard deviation of standing crop (kg/ha) and number per hectare of trout by drainage in the Connecticut coastal drainage basins sampled in 1990.

Species/ Drainage[1]	Standing Crop: Streams with Trout	Standing Crop: Streams with Reproduction	Number per Hectare: Streams with Trout	Number per Hectare: Streams with Reproduction
Brown trout				
Central coastal	---± ---	---± ---	---± ---	---± ---
Hammonasset R.	16.5±16.5	24.6±18.1	287± 509	545± 626
Quinnipiac R.	8.6± 5.1	9.7± 1.9	35± 21	54± 11
Mill R.(Hamden)	10.9±10.5	10.2±11.0	470± 860	562± 915
All 5000 drnges	12.4±12.7	14.5±14.1	270± 595	429± 726
Western coastal	---± ---	---± ---	---± ---	---± ---
Pequonnock R.	3.3± 1.5	3.8± 1.4	29± 11	33± 9
Saugatuck R.	12.5±18.0	19.0±23.4	72± 64	88± 75
Norwalk R.	5.8± 5.0	7.0± 6.1	159± 275	251± 324
Mianus R.	13.7±15.4	38.9± ---	74± 83	208± ---
All 7000 drnges	9.4±13.9	13.4±17.8	85± 151	128± 196
Titicus	---± ---	---± ---	---± ---	---± ---
Total 1990	10.9±13.4	14.1±15.9	175± 440	285± 562
Brook trout				
Central coastal	---± ---	---± ---	---± ---	--- ---
Hammonasset	13.7±12.4	15.2±14.0	850± 1382	1346± 1570
Quinnipiac	30.7±38.2	30.3±38.2	1552± 3170	1552± 3270
Mill(Hamden)	30.1±19.7	24.1±17.7	1340± 879	952± 733
All 5000 drnges	21.9±25.0	22.3±26.6	1152± 1984	1339± 2217
Western coastal	---± ---	---± ---	---± ---	---± ---
Pequonnock	34.5±45.7	50.3±48.9	1609± 2186	2405± 2295
Saugatuck	24.1±42.2	31.6±46.4	3827± 8908	5098± 9968
Norwalk	27.7± ---	27.7± ---	586± ---	586± ---
Mianus	1.9± ---	---± ---	11.0± ---	---± ---
All 7000 drnges	23.6±38.1	31.4±41.6	2617± 6743	3563± 7658
Titicus	13.6±10.6	13.6±10.6	1606± 1588	1606± 1588
Total 1990	22.5±30.5	25.5±33.1	1688± 4430	2154± 5075
All drainages (1988-1990)			2151± 4733	2424± 5009

1. Mill R. Hamden, Hammonasset R., Pequonnock R., and Mianus R. drainages are actually complexes of streams in the same area.

drainages had standing crops and numbers/hectare comparable to what was seen in tributaries of the Connecticut River basin.

The biomass of other fish species varied considerably between drainages and stream sites (Table 9). The maximum biomasses of white sucker (795 kg/ha) and American eel (205 kg/ha) were not as high as maximum values seen in the Connecticut River basin streams (1,171 and 1,997 kg/ha). Average American eel biomasses were lower in all drainages sampled in 1990. Smallmouth bass were notably limited in biomass and distribution in the coastal streams and cutlips minnow made a significant contribution to the biomass of some western coastal streams. For most of the other species checked (common shiners, fallfish, and longnose dace) there was similar variability of biomass values between drainages but, generally there was a reduced frequency of occurrence compared to the Connecticut River basin.

The ranges of densities of age-0 brook trout and brown trout sampled during 1989 and 1990 are listed in Table 10. The highest density was recorded from a small headwater stream (26,792 brook trout/ha). The number of age-0 and age-1 fish is highly variable across years and drainages. The density of age-1 brown trout, an index used by Engstrom-Heg (1986) to estimate future fishing success, indicated that at least some Connecticut streams could support a limited amount of fishing pressure on wild trout.

Scale samples were collected from representative groups of trout at Burlington Hatchery prior to the 1990 trout stocking (February 1990). The samples included different strain and age groups of brook trout and brown trout reared at both Quinebaug Hatchery and Burlington Hatchery. Very consistent patterns of growth could be found on scales from most fish. These scales were used as references, along with field notes, when trying to determine whether trout were of wild or hatchery origin.

The mean length at age calculations for the Connecticut River basin (excluding the Farmington River) indicated that growth of brown trout was considerably better than in the Farmington River drainage (Table 11). Connecticut-River-basin growth was comparable to the moderate growth streams described by

Table 9.-Mean ± standard deviation and range of standing crop (kg/ha) of fish species by drainage in the Connecticut coastal drainage basins.

Species/ Drainage 1	Number of Sites	Mean ±	sd	Max	Min
White sucker, *Catostomus commersoni*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	14	22.0 ±	49.3	196.7	0.19
Quinnipiac R.	13	128.3 ±	222.8	795.1	0.02
Mill R.(Hamden)	13	18.3 ±	24.2	89.3	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	10	26.6 ±	47.7	167.1	1.15
Saugatuck R.	10	19.5 ±	37.4	129.8	0.56
Norwalk R.	6	42.5 ±	53.3	159.7	3.17
Mianus R.	17	16.0 ±	27.4	103.3	0.01
American eel, *Anguilla rostrata*					
Central coastal	4	21.6 ±	22.0	51.7	0.01
Hammonasset R.	23	47.7 ±	38.9	165.1	1.24
Quinnipiac R.	8	31.9 ±	40.0	108.1	2.76
Mill R.(Hamden)	10	29.8 ±	22.8	79.9	0.01
Western coastal	2	20.5 ±	16.4	36.9	4.19
Pequonnock R.	12	54.3 ±	52.3	202.1	8.26
Saugatuck R.	11	44.9 ±	52.6	192.2	0.11
Norwalk R.	7	60.7 ±	64.3	205.5	7.65
Mianus R	19	51.2 ±	38.0	145.7	10.40
Blacknose dace, *Rhinichthys atratulus*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	12	5.9 ±	7.7	29.0	0.01
Quinnipiac R.	11	8.7 ±	9.5	32.0	0.27
Mill R.(Hamden)	14	7.0 ±	8.6	33.3	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	11	5.9 ±	4.7	18.4	0.01
Saugatuck R.	12	3.7 ±	5.6	21.4	0.01
Norwalk R.	6	5.4 ±	7.4	21.4	0.05
Mianus R.	21	10.0 ±	11.0	36.5	0.29
Longnose dace, *Rhinichthys cataractae*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	6	1.4 ±	0.7	2.4	0.21
Quinnipiac R.	8	8.4 ±	6.9	17.1	0.03
Mill R.(Hamden)	5	4.0 ±	4.5	12.6	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	1	3.3 ±	---	---	---
Saugatuck R.	5	2.1 ±	1.4	4.8	0.89
Norwalk R.	0	--- ±	---	---	---
Mianus R.	3	3.0 ±	1.0	4.0	1.63

1. Mill R. Hamden, Hammonasset R., Pequonnock R., and Mianus R. drainages are actually complexes of streams in the same area.

Table 9.-Continued.

Species/ Drainage	Number of Sites	Mean ±	sd	Max	Min
Fallfish, *Semotilus corporalis*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	5	6.9 ±	5.9	15.3	1.39
Quinnipiac R.	5	16.9 ±	24.8	66.1	1.10
Mill R.(Hamden)	6	47.3 ±	102.5	276.6	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	0	--- ±	---	---	---
Saugatuck R.	2	4.6 ±	4.6	9.2	0.05
Norwalk R.	1	26.4 ±	---	---	---
Mianus R.	6	7.9 ±	10.4	29.9	0.09
Common shiner, *Notropis cornutus*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	2	4.7 ±	4.5	9.3	0.20
Quinnipiac R.	5	7.8 ±	10.3	27.6	0.13
Mill R.(Hamden)	3	0.2 ±	0.2	0.4	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	0	--- ±	---	---	---
Saugatuck R.	6	5.0 ±	6.1	17.8	0.06
Norwalk R.	4	1.0 ±	0.6	2.0	0.61
Mianus R.	6	7.6 ±	10.1	29.4	0.56
Redbreast sunfish, *Lepomis auritus*					
Central coastal	1	0.1 ±	---	---	---
Hammonasset R.	3	4.7 ±	2.2	7.5	2.24
Quinnipiac R.	3	2.2 ±	2.0	4.9	0.20
Mill R.(Hamden)	8	3.4 ±	3.3	10.6	0.01
Western coastal	0	--- ±	---	---	---
Pequonnock R.	5	4.6 ±	4.7	13.3	0.66
Saugatuck R.	8	2.4 ±	1.8	5.3	0.07
Norwalk R.	4	1.6 ±	1.5	3.9	0.98
Mianus R.	11	2.1 ±	2.2	7.4	0.22
Pumpkinseed sunfish, *Lepomis gibbosus*					
Central coastal	1	20.2 ±	---	---	---
Hammonasset R.	13	3.6 ±	6.7	22.5	0.01
Quinnipiac R.	9	0.5 ±	0.6	2.0	0.07
Mill R.(Hamden)	5	1.4 ±	1.8	4.8	0.12
Western coastal	0	--- ±	---	---	---
Pequonnock R.	12	4.8 ±	11.4	42.6	0.01
Saugatuck R.	6	0.9 ±	1.6	4.4	0.02
Norwalk R.	4	1.4 ±	1.6	4.2	0.08
Mianus R.	13	0.8 ±	1.0	3.4	0.03

Table 9.-Continued.

Species/ Drainage	Number of Sites	Mean ±	sd	Max	Min
Largemouth bass, *Micropterus salmoides*					
Central coastal	0	--- ±	---	---	---
Hammonasset R.	10	0.9 ±	1.3	4.2	0.49
Quinnipiac R.	9	1.3 ±	1.3	3.8	0.01
Mill R.(Hamden)	7	0.5 ±	0.4	1.3	0.01
Western coastal	1	3.5 ±	---	---	---
Pequonnock R.	9	0.5 ±	0.5	1.5	0.01
Saugatuck R.	9	0.9 ±	1.6	5.2	0.01
Norwalk R.	4	0.4 ±	0.2	0.7	0.05
Mianus R.	16	0.5 ±	0.5	1.7	0.01
Smallmouth bass, *Micropterus dolomieui*					
Western coastal	0	--- ±	---	---	---
Pequonnock R.	0	--- ±	---	---	---
Saugatuck R.	1	0.2 ±	---	---	---
Norwalk R.	1	5.3 ±	---	---	---
Mianus R.	1	6.5 ±	---	---	---
Species of limited state distribution					
Cutlips minnow, *Exoglossum maxillingua*					
Western coastal	0	--- ±	---	---	---
Pequonnock R.	2	3.9 ±	1.8	5.7	2.05
Saugatuck R.	7	3.2 ±	2.8	8.2	0.17
Norwalk R.	3	11.7 ±	12.3	29.0	1.40
Mianus R.	2	4.5 ±	0.6	4.5	4.40
Green sunfish, *Lepomis cyanellus*					
Western coastal	0	--- ±	---	---	---
Pequonnock R.	0	--- ±	---	---	---
Saugatuck R.	1	0.1 ±	---	---	---
Norwalk R.	1	0.1 ±	---	---	---
Mianus R.	3	0.4 ±	0.2	0.5	0.16

Table 10.-Range of number of age-0 and age-1 brook trout and brown trout per hectare sampled in 1989 and 1990.

Year	Age 0	Age 1
Brook trout		
1989	12 - 6,114	4 - 2,111
1990	9 - 26,792	2 - 1,263
Brown trout		
1989	1 - 680	2 - 1,125
1990	3 - 2,020	2 - 558

Table 11.-Mean brown trout length and range at age for tributary streams of the Connecticut River and selected comparison values.

Source	Age 1 (mm)	Age 2 (mm)	Age 3 (mm)
Connecticut River Drainages, Conn.	97.6 (73-131)	176.9 (146-207)	246 (197-280)
Farmington River.	86 (74-92)	153 (133-181)	222.5 (210-235)
NY, PA, NH[1] 21 Streams	173 (97-241)	229 (245-345)	287 (236-566)
"Slow Growth"[2]	73 (60-81)	126 (120-138)	172 (161-194)
"Moderate Growth"[2]	99 (76-165)	191 (149-272)	249 (206-295)
"Fast Growth"[2]	110 (94-122)	231 (224-240)	335 (325-345)

[1] From Carlander (1969)

[2] Mean data from streams characterized as having "slow" (N=5), "moderate" (N=11), and "fast" (N=3) growth rates by Newman (1985).

Newman (1985). Brook trout growth in the Connecticut River basin was also considerably faster than growth in the Farmington River drainage (Table 12). The reasons for these differences are probably flow, temperature, and density related and will be examined in more detail at a later date.

Table 12.-Mean brook trout length and range at age for tributary streams of the Connecticut River and selected comparison values from Carlander (1969).

Source	Age 1 (mm)	Age 2 (mm)	Age 3 (mm)
Connecticut River Drainages, Conn. (15 streams)	103.6 (68-141)	181.6 (116-255)	248 (223-299)
Farmington River	89.2 (71-104)	135.9 (115-161)	191 (183-199)
NY Streams	109 (74-287)	152 (66-287)	175 (102-381)
PA Streams (12 streams)	102 (81-119)	135 (119-142)	163 (150-211)
NH Streams (11 streams)	107-130 (76-188)	152-196 (127-272)	198-246 (165-335)

4.0 Angler Survey Results:

4.1 Angler Survey Site Descriptions:

A total of ten streams were surveyed during 1990 (Figures 4 and Figures 5). Table 13 lists the stocking pattern and length of each area. The streams were surveyed in groups of three or four at a time to conserve sampling effort. All streams sampled were major trout streams. All sites were on larger streams (4 m to 28 m wide). The most heavily stocked stream section was the Mianus River Trout Management Area (TMA) which received one preseason stocking, two inseason stockings and a fall stocking of fingerling brown trout (1,000 fingerlings). The Mianus TMA has a single-hook-artificial only period (March 1 to opening day, April 21, 1990) that was creeled as a separate time period. This area is in a town park with no development on the west bank and several large homes on the east bank. The stream is wooded with abundant access by foot paths.

A section of the Saugatuck River that is designated as a fly-fishing-only area was treated as a separate creel from the rest of the lower Saugatuck River. The portion of the Saugatuck River above Saugatuck Reservoir was not creeled due to time limitations. Both sections of the Saugatuck River that were creeled have easy road access. The fly-fishing-only area is a continuous 0.9 km section with heavy development on the west bank. The open Saugatuck River area has intermittent access from the road and has considerable development on both banks. Both areas are characterized by long shallow pools separated by short riffles. The open area also contains a bedrock-plunge-pool section immediately below Saugatuck Reservior. At one time the Saugatuck River reportedly supported a sea-run population of brown trout.

Water companies control a considerable portion of the upper Farm River and much of its drainage area is undeveloped or still in agricultural use. The stream has a cobble substrate that gradually changes to sand in the southern half. Wild brown trout

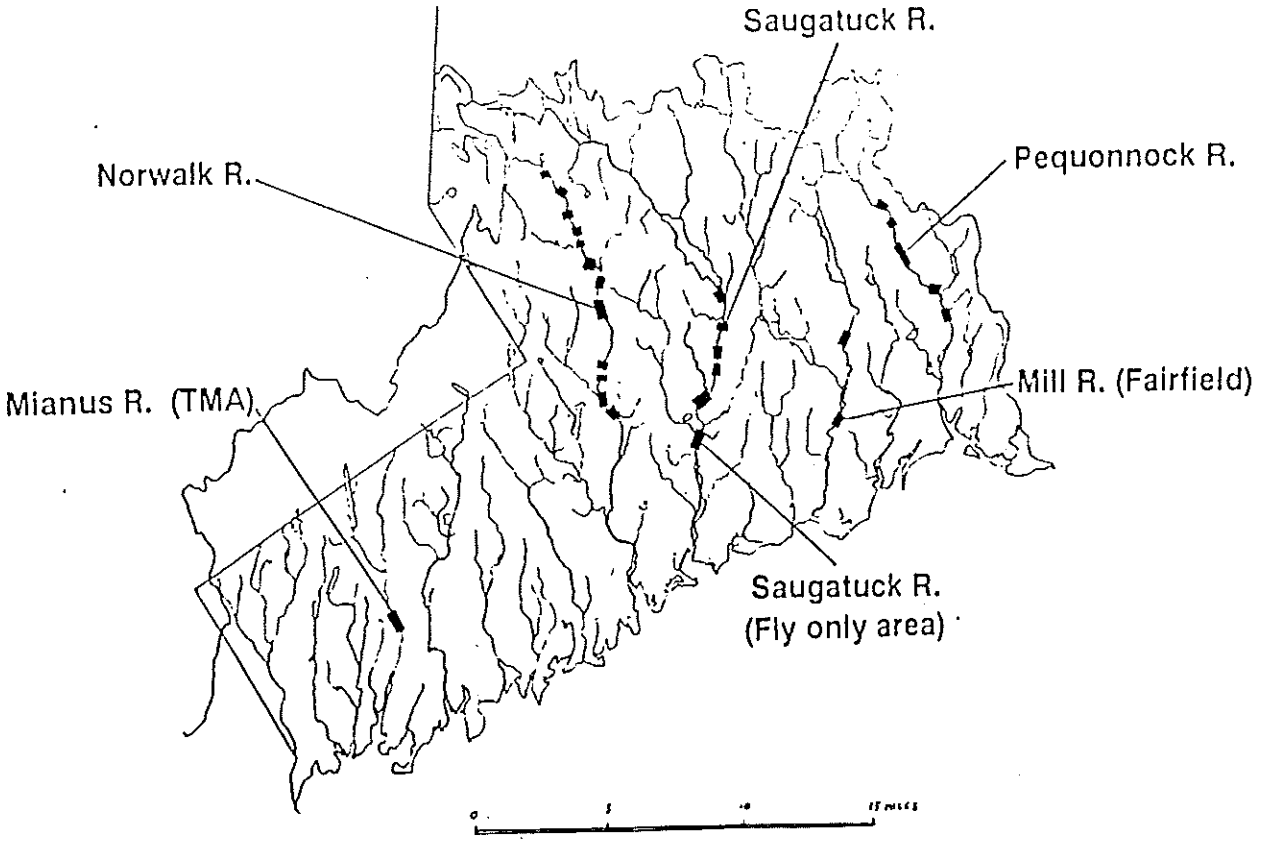

Figure 4.-Location of angler surveys in western coastal drainages conducted during 1990.

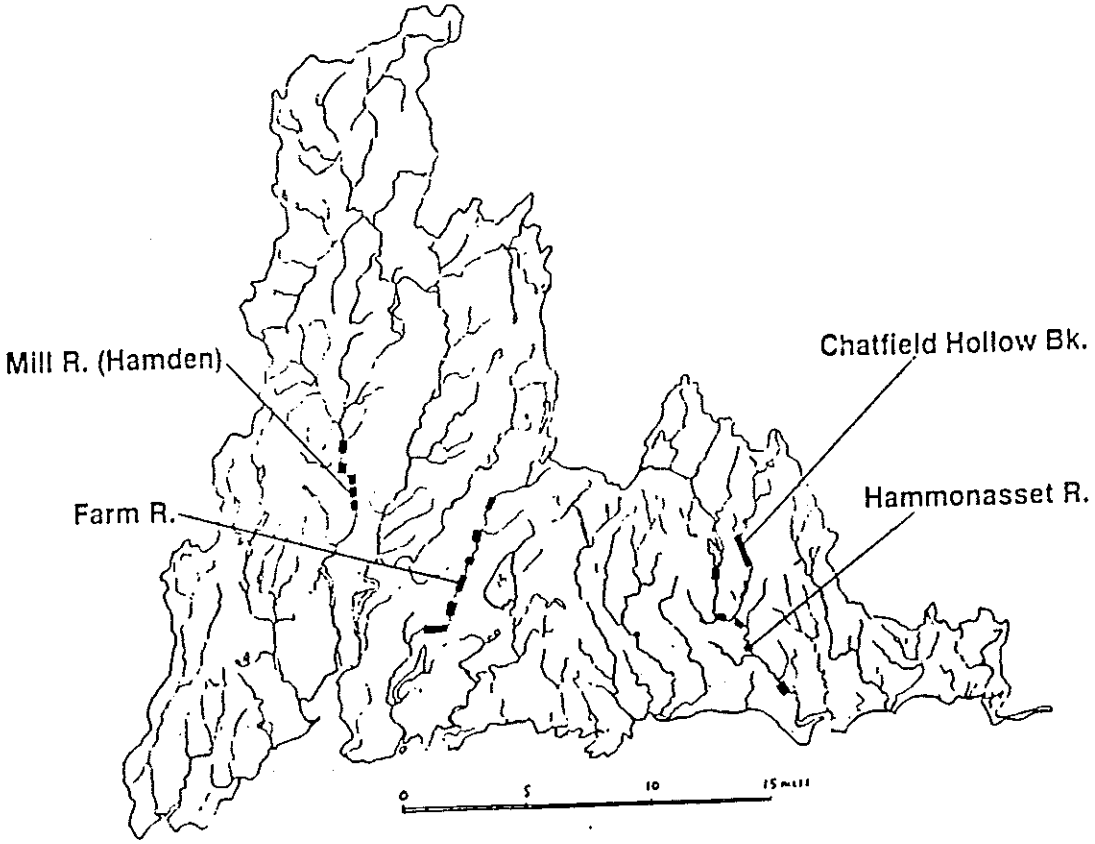

Figure 5.-Location of angler surveys in the central coastal drainages conducted during 1990.

Table 13.-Stocking information for streams on which angler surveys were done in 1990.

Stream	Species* Stocked	Total Number of Trout Stocked	Number Stocked per km	Number of Inseason Stockings
Mianus R. TMA	BK, BN, RW	3,391	1,995	2
Mill R. Fairfield	BK, BN, RW	1,410	227	1
Norwalk R.	BK, BN, RW	9,690	344	2
Pequonnock R.	BK, BN, RW	5,600	471	2
Saugatuck R. Fly-Only Area	BK, BN, RW	1,370	1,522	1
Saugatuck R. Lower Open	BK, BN, RW	9,440	963	2
Farm R.	BK, BN, RW	5,070	433	2
Mill R. Hamden	BK, BN, RW	8,380	1,374	2
Hammonasset R.	BK, BN, RW	8,070	799	2
Chatfield Hollow Br.	BK, BN, RW	1,480	1,345	1

* BK=Brook trout *Salvelinus fontinalis* adults, BN= Brown trout *Salmo trutta* adults, RW= Rainbow trout *Oncorhynchus mykiss* adults. (20-30 cm) .

are present throughout the entire stream length. Access to the stream is intermittent and is generally 25-50 m off the road.

The Hammonasset River has intermittent access, with one section controlled by a fishing club. The upper third of the area creeled has a substrate consisting of small boulders and cobble, whereas the lower two thirds has a sand substrate. The southern most section meanders through a lowland/marsh area. The Hammonasset is reported to support some sea-run brown trout. Low flows during the summer, due to water diversions, may limit the capacity of this river to hold trout through the summer directly downstream of the Hammonasset Reservoir.

Chatfield Hollow Brook was the smallest stream creeled (4-5 m wide). The creel area was located in Chatfield Hollow State Park and had excellent roadside access throughout. The creel section was bounded by a pond at both the upper and lower ends. The park was a very popular recreational area throughout the spring and summer.

The Norwalk River is a fairly wide (5-15 m) river that has a long narrow drainage basin. The upper third of the river has many marshy areas which may become stagnant during the summer. The lower portions, from Wilton downstream, have high quality water input from tributaries which improve the river water quality. The river is generally low to moderate gradient with sand, gravel, and small boulder substrates dominating in different sections.

The Mill River in Hamden has been effected by the activities of the South Central Regional Water Authority (SCRWA). Its' headwaters are located on water company land and are thus somewhat protected from the impacts of development. Some of the river's flow volume however, is diverted. The areas of the river which were creeled were approximately 10-15 m wide. Access was good at the upper end of the creel area which was in Sleeping Giant State Park. Further downstream, access was more intermittent. The lower part of the watershed is heavily developed as it goes through Hamden. The stream received considerable fishing pressure due, at least in part, to its proximity to a large population center (New Haven).

The Mill River in Fairfield is a moderate sized stream (7-10 m wide) with good access. The sections creeled were located near Rte 15, and in a City of Fairfield park, downstream of Samp Mortar Reservoir. Because the Reservoir is a top draw off, the lower creel section warmed up considerably during the summer.

The Pequonnock River is 8-15 m wide and has long shallow pools and shallow riffles in some areas and boulders, bedrock, and deeper pools in other areas. In the slower sections there is considerable silt build up and embedding of the cobble substrate. There was good access at state and town properties along the creel route.

4.2 Angler Survey Summaries:

During 1989 we began using a bridge-pool creel design, which skipped over the time consuming low effort sections of stream between bridge pools. This resulted in greater numbers of angler interviews per hour of creeling. During 1990 we continued to use the bridge-pool design. In addition we evaluated the effect of stratification by stocked versus nonstocked time periods.

4.2.1 The Three vs Five Strata Design:

To maximize the efficency and minimize the variance of a creel survey it is necessary to stratify the effort into periods within which daily effort levels are similiar. In Hagstrom et al. (1990) we discussed the variance in effort associated with the time since a stream was stocked. During 1990 we tested the three strata design that we had used previously (1. opening day, 2. weekdays, and 3. weekend/holidays) against a new five strata design (1. opening day, 2. weekdays-stocked, 3. weekdays-nonstocked, 4. weekend/holidays-stocked, and 5. weekend/holidays-nonstocked) that accounted for the number and timing of inseason stocking dates. We believed that the five-strata design might decrease the variance of our effort estimates and allow us to obtain more precise total catch and effort estimates with fewer samples. All samples within 2 weeks of opening day or within 4 days after an inseason stockings where considered as part of "stocked" strata (either weekdays-stocked, or weekend/holidays-stocked). Relative standard error (RSE), used as an indicator of precision, averaged 25.1% for effort estimates using the three strata design on the eleven streams sampled. Effort estimates generated using the five strata design on the same set of data resulted in an average RSE of 21.7%. This is an improvement in precision of 13.5% for effort estimates. For total catch the results were less dramatic; the RSE for total catch only improved in precision by 3.3%.

The five strata design also resulted in a decrease in the estimate of mean effort by 0.5 fisherman per hour and a decrease in the mean catch per unit of effort (CPUE) by 0.29 fish per

hour. The reduction in catch rates was the result of isolating the higher CPUE periods that occurred immediately after inseason stockings. This most likely resulted in improved accuracy of the catch estimates. The improvement in precision, however, was not large indicating that variability within stocked periods and within nonstocked periods was high.

All values reported in this report are based on the five strata design, except for the preseason portion of the Mianus River creel which only had a two strata (weekend, weekday) design.

4.2.2 Effort:

Table 13 contains effort estimates for the surveyed streams. RSE's for effort data collected in 1990 ranged from 13.7% to 41.4%, and averaged 21.71% (Table 14). In streams where it was possible, canoe surveys were conducted simultaneously with bridge-pool creels to obtain reasonable expansion values for effort on entire stream sections. The Mianus River was broken up into two time periods (pre-opening day, and post-opening day) and the Saugatuck River creel survey had two separate sections (the fly-fishing-only area, and an upstream open fishing area below Saugatuck Reservoir). The stream with the highest level of effort over its entire length was the Mill River, with and expanded effort estimate of 25,228 angler hours. On an effort per stream length basis the highest fishing pressure in 1990 was 4,371 angler hours per km on the section of Chatfield Hollow Brook within Chatfield Hollow State Park. The lowest level of effort per km was on the Norwalk River which had 238 angler hours per km.

Observations after June 15 turned up effort at the Mianus River, Hammonasset River, Mill River (Hamden) and Saugatuck River fly-fishing-only area. This late season effort is not accounted for in our data.

Using a linear regression model of total number of trout stocked per kilometer of stream versus hours of effort per

Table 14.-Effort in angler-hours and catch per unit of effort (CPUE) in fish per hour for streams surveyed in 1990.

Stream	Angler Effort			Catch Per Unit of Effort			
	Total Hrs	Hrs Per KM	±RSE	Brown Trout	Brook Trout	Rainbow Trout	All[1] Fish
Mianus R. TMA							
3/1-4/20[2]	4,927	2,898	±18.9%	0.902	0.008	0.252	1.193
4/21-6/15	3,321	1,954	±18.6%	1.016	0.007	0.137	1.324
total	8,248	4,852	--	0.948	0.008	0.206	1.246
Mill R. Fairfield	2,268	366	±26.0%	0.632	0.202	0.570	1.432
Norwalk R.	6,711	238	±21.4%	0.405	0.146	0.055	0.648
Pequonnock R.	2,910	245	±16.8%	0.839	0.218	0.194	1.230
Saugatuck R. Fly-Only Area	3,057	3,397	±15.6%	0.253	0.049	0.127	0.402
Saugatuck R. Lower Open	6,922	706	±13.7%	0.253	0.166	0.187	0.593
Farm R.	6,224	532	±21.7%	0.273	0.101	0.110	0.522
Mill R. Hamden	25,228	4,136	±20.6%	0.256	0.094	0.079	0.443
Hammonasset R.	14,152	1,402	±24.8%	0.175	0.044	0.050	0.285
Chatfield Hollow Bk.	4,808	4,371	±41.4%	0.210	0.066	0.129	0.418

1 Additional species include largemouth bass, chain pickerel *Esox niger*, and sunfish *Lepomis spp.*

2 Catch and release (single-hook-artificials only) period. All non-TMA areas closed to fishing during this period. All other creels cover the period 4/21-6/15, 1990.

kilometer, developed last year (eq 3, Hagstrom et al. 1990), predicted and measured effort values were compared for all areas except areas with special restrictive regulations.

$$\text{Hours of Fishing/km} = 1.469(\text{Fish Stocked/km}) + 345 \qquad (3)$$

The correlation between predicted and measured effort values had an r-square of 90.7% and was significant at $p<0.001$ with 8 d.f. The plot of measured versus predicted values (Figure. 6) indicated a consistent bias. Values below 1000 hours of effort/km were generally overestimated by the equation and values over 1000 hours of effort/km were underestimated. The two restrictive areas, the Mianus TMA (both inseason and preseason periods) and Saugatuck fly-fishing-only area were underestimated. A new regression equation developed from 1988 through 1990 data resulted in an adjusted R-square value 85.1% with 15 d.f. and an F value of 86.7 (Figure 7, Eq 4).

$$\text{Hours of Fishing/km} = 1.553(\text{Fish Stocked/km}) + 249 \qquad (4)$$

Daily variations in effort were closely related to time of stocking as described by Thorpe et al. (1944) and Butler and Borgenson (1965). Attempts were made to recalculate creel results with alternative stratifications, such as stratifying by weekly intervals. None of the alternatives increased precision. The primary influences that we have identified that affect levels of effort are, in approximate order of importance: number of days after opening day, dates of inseason stocking, weekend or weekday, time of day, and weather effects. One promising possible way to reduce variability may be to include the entire weekend after opening day as a single stratum instead of opening day by itself.

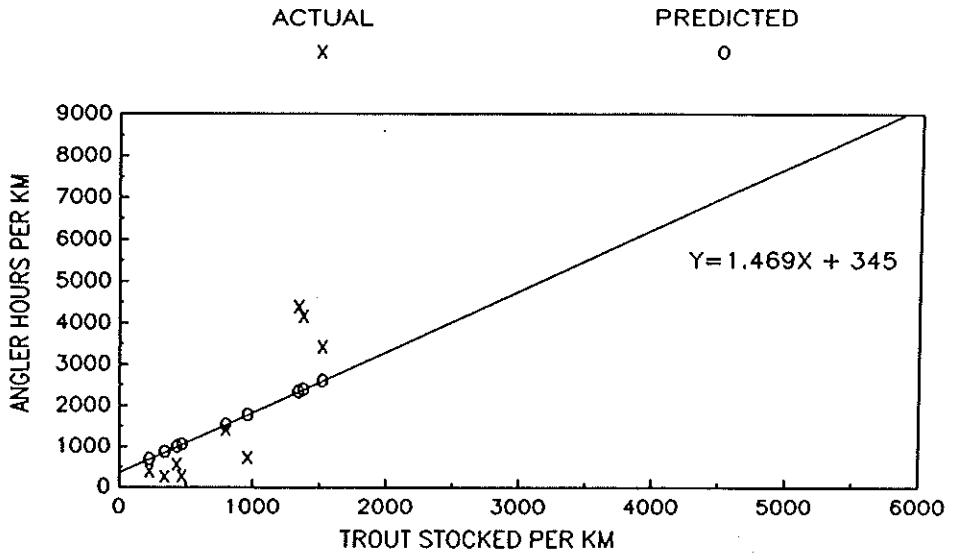

Figure 6.- Angler effort in hours per kilometer vs. number of trout stocked per kilometer for streams creeled in 1990. Predicted values are based on a regression developed from 1988-89 data.

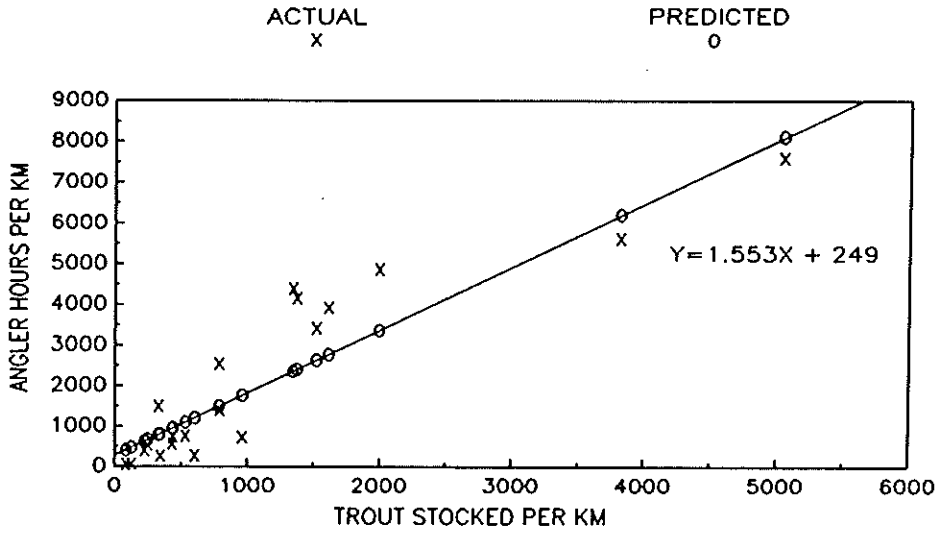

Figure 7.- Angler effort in hours per kilometer vs. number of trout stocked per kilometer for streams creeled 1988-90. Predicted values are based on 1988-90 data.

4.2.3 Catch per Unit of Effort (CPUE):

Catch Per Unit of Effort (CPUE) ranged from 0.285 to 1.32 total fish per angler hour (Table 14). The highest total CPUE values were from the Mianus River (inseason). Salmonids comprised nearly 100% of the catch in all areas except for an occasional sunfish, pickerel, or largemouth bass. Brown trout CPUE ranged from a low of 0.175 fish per hour on the Hammonasset River to a high of 1.016 fish per hour on the Mianus River. The brown trout CPUE values were similar inside and outside the fly-fishing-only area of the Saugatuck River. The CPUE for other trout species varied with their proportions in the stocking mix. The only notable exception was the Mill River (Fairfield) which had a catch of rainbow trout far in excess of the reported level of stocking. This may have been an artifact of expanding the opening day stratum, the result of fish from an undocumented source, or misidentification of fish by anglers.

4.2.4 Total Catch:

Estimated total catch by stream and species is listed in Table 15. Catch-and-release practices in the fly only area and the mandatory catch-and-release requirement on the preseason Mianus River help to elevate the total catch in these areas. Despite a higher catch-and-release rate, the lowest total catch was at the Saugatuck fly-fishing-only area, with 1,230 trout caught. This was probably due to the short length (0.9 km) of this creel area. The highest catch was in the Mill River (Hamden), with 11,183 fish caught. The RSE's for total catch were very consistent compared to prior years. This was a result of sampling only larger streams, and of using the new five-strata creel stratification.

Percent-return-to-the-creel was estimated by dividing the catch per kilometer (Table 15) by the total number of trout stocked per kilometer (Table 13). Return rates ranged from 43% to 303% of the number stocked (Table 16). High return rates were expected at the Mianus TMA because of the catch and release

Table 15.-Total catch and catch by species for streams surveyed in 1990.

Stream	Trout Catch Per KM	±RSE	Total Catch Brown Trout	Brook Trout	Rainbow Trout	All Fish
Mianus R. TMA	6,043	±31.4%	7,820	65	1,696	9,728
Mill R. Fairfield	523	±41.6%	1,433	458	1,293	3,248
Norwalk R.	151	±31.0%	2,718	979	363	4,246
Pequonnock R.	301	±47.7%	2,441	635	565	3,580
Saugatuck R. Fly-only Area	1,312	±23.5%	774	149	387	1,230
Saugatuck R. Lower Open	418	±33.3%	1,751	1,146	1,293	4,101
Farm R.	270	±26.4%	1,700	625	684	3,248
Mill R. Hamden	1,833	±39.0%	6,455	2,397	1,996	11,183
Hammonasset R.	399	±30.0%	2,474	628	702	4,032
Chatfield Hollow Bk.	1,829	±30.0%	1,010	315	620	2,012

Table 16.-Return to the creel for trout in stream sections surveyed in 1990. All trout species combined.

Stream	# Caught per Km	# Stocked per Km	Percent return
Mianus River TMA	6,043	1,995	303%
Mill River-Fairfield	613	227	270%
Norwalk River	151	344	44%
Pequonnock River	301	471	64%
Saugatuck River (Fly Only)	1,312	1,522	86%
Saugatuck River (Lower Open)	418	963	43%
Farm River	270	433	62%
Mill River-Hamden	1,833	1,374	133%
Hammonasset River	399	799	50%
Chatfield Hollow Brook	1,829	1,345	136%

regulation during the preseason, and the 9 inch size limit during the regular season. The Mill River (Fairfield) had a high return to the creel (270%) which we could not account for unless, as previously mentioned, there were some additional fish stocked. Release rates from this area were not high enough (16%) to account for the high return. It is assumed that differences among other areas can be accounted for by differing: release rates, catchability differences among species of trout, activity patterns of anglers, catchability differences between habitats, and variance within the catch estimates.

4.3 Recalculation of 1988 Angler Survey data:

Effort and catch estimates for 1988 were recalculated for five streams surveyed in 1988. In these recalculations we included opening day as a stratum instead of as a separate sampling unit (Tables 17 and 18). This made the 1988 data consistent with all subsequent years in terms of how it was calculated. Restratification of the data resulted in average decreases in the RSE values for effort of 10.6% (4.6-17.4%).

5.0 Model Development

Models which have been developed to predict trout standing crop are being evaluated before we attempt to develop our own models for Connecticut streams. This may help us to identify and avoid some of the pitfalls that have limited the utility of previous models. Last year a regionally developed model from New York State, the WNHF model, was evaluated. This year we evaluated the Habitat Quality Index (HQI) models developed in Wyoming by Binns and Eiserman (1979).

5.1 HQI:

There were two models developed for the HQI. These models utilize flow variability, food availability, water chemistry, and habitat data, to predict standing crop of trout. Model I (97% r-square) was developed from an initial 20 stream data set that was carefully selected. Binns and Eiserman tested Model I against a

Table 17.-Total catch and catch by species for streams surveyed in 1988, recalculated using opening day as a stratum instead of as a separate sample unit.

Stream	Trout Catch Per KM	±RSE	Total Catch Brown Trout	Brook Trout	Rainbow Trout	All Fish
E. Salmon Bk.	2,061	±21.0%	2,163	1,548	205	4,145
Sandy Bk.	566	±30.1%	373	81	395	777
Unionville Bk.	39	±86.0%	13	50	0	62
Nepaug R.	1,066	±41.5%	372	654	147	1,256
Stratton Bk.	38	±44.0%	22	43	0	64

Table 18.-Effort in angler-hours and Catch Per Unit of Effort (CPUE) in fish per hour for streams surveyed in 1988, recalculated using opening day as a stratum instead of as a separate sample unit.

Stream	Angler Effort Total Hrs	Hrs Per KM	±RSE	Catch Per Unit of Effort Brown Trout	Brook Trout	Rainbow Trout	All Fish
E. Salmon Bk.	5,361	2,821	±21.1%	0.403	0.289	0.038	0.773
Sandy Bk.	592	394	±38.8%	0.630	0.137	0.667	1.313
Unionville Bk.	443	277	±65.6	0.029	0.113	0.000	0.140
Nepaug R.	921	837	±34.0%	0.404	0.710	0.160	1.363
Stratton Bk.	217	127	±74.1%	0.101	0.199	0.000	0.295

second set of streams and developed Model II with both data sets combined. They then tested Model II against a third set of streams. In all cases they were able to obtain r-square values in excess of 90%.

All inputs to the models are ratings of raw data based on a scale of zero to four. A production index is incorporated into Model I. The production index is the multiplicative product of variable ratings that affect food and instream cover. Model II used mostly the same variables as Model I, but split the production index into two subcomponent indexes: Food and Shelter. Model II also added an estimate of submerged aquatic vegetation (SAV, including algae) as an estimate of fish food productivity. SAV replaced the fish-food-abundance and fish-food-diversity variables of Model I. All of the variables and indexes of both models are defined below:

X1=Late summer flow as a percentage of average daily flow.
X2=Annual stream flow variation, subjective evaluation of flow variations.
X3=Maximum summer temperature.
X4=Nitrate(mg/l).
X5=Fish food abundance (Number/0.1 m^2)
X6=Fish food diversity: a log transformed diversity index.
X7=Percent usable cover for trout species and sizes present in stream.
X8=Percentage of eroded bank.
X9=Percent abundance of submerged aquatic vegetation (SAV)
X10=Water velocity (M/sec)
X11=Stream width
P=Production index=(X4)(X5)(X6)(X7)(X8)(X10)(X11)
S=Shelter index=(X7)(X8)(X11)
F=Food index=(X3)(X4)(X9)(X10)
Y=Predicted biomass of trout

Model I

$$\log(Y+1)=[(-1.18257)+(0.97329)\log(X1+1)+$$

$$(1.65824)(\log(X2+1)+(1.44821)\log(X3+1)+(0.30762)\log(P+1)][1.12085]$$

MODEL II

$$\log(Y+1)=[(-0.903)+(0.807)\log(X1+1)+(0.877)\log(X2+1)+(1.233)\log(X3+1)+(0.631)\log(F+1)+(0.182)\log(S+1)][1.12085]$$

Data were difficult to obtain for several of the model components. Eroded banks where generally nonexistent in our sample area, thus all sites received the maximum rating of four. Availability of nitrate (X4) data were limited. Some sites had data from USGS gauging sites. For other sites nitrate values were inferred from nearby streams with data, and the level of development in the area. In the majority of cases where data were not available an average rating of two was assigned. A similar problem arose with maximum summer temperature (X3). For streams in which no data were available a rating was estimated based on data from nearby streams with similar conditions and similar temperatures during non-peak periods. Annual flow variability (X2) and summer stream flow (X1) were rated subjectively based on the scale described by Binns and Eiserman (1979) or from USGS gauging station data. All other variables were calculated from physical and invertebrate data collected at each site. In model II SAV estimates were designed to be a substitute for costly and time consuming invertebrate sampling. Equivalent ranges for numbers of invertebrates per 0.1 m^2 are listed with the SAV ratings. Since we had detailed invertebrate data we substituted the more accurate invertebrate data into Model II.

Evaluations of Model I and Model II were based on comparing predicted biomass estimates with the measured total trout biomass at a site. Because the HQI has no component to compensate for fishing pressure, the data set used for comparisons consisted of limited access streams. After initial biomass comparisons each component variable of the models was then correlated with the discrepancy between actual and predicted biomass (delta) to

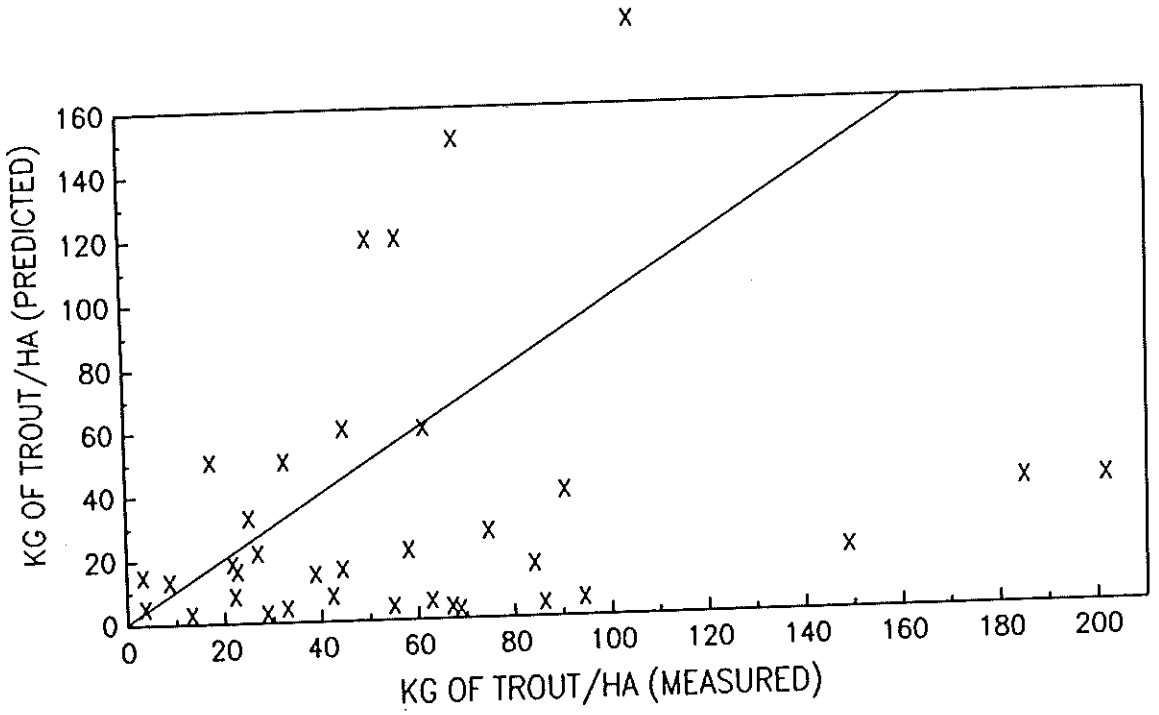

Figure 8.-Predicted trout biomass from HQI Model II versus actual trout biomass from sites with limited access.

determine which variables where controlling the models, and to find possible sources of error in estimating model variables.

The correlations between measured biomass values and predicted values were very low (r-square Model I = 16.3% , Model II = 11.9%, Fig 8). Both r-square values were statistically nonsignificant ($P<0.1$). Bowlby and Roff (1986) tested the HQI against streams in Ontario and obtained r-square values of only 5%. They concluded that other factors were limiting trout biomass in Ontario streams.

One point brought out by several authors who have looked at the HQI (Fausch et al. 1988; Bolwby and Roff 1986) was the fact that the initial data set used by Binns and Eiserman to develop Model I had a datum that anchored the top end of the model at

the 634 kg/ha level (predicted by Model I as 748 kg/ha). The next nearest value was only 284 kg/ha. This tended to generate a good r-square regardless of the relationship around the low end of the model. It is apparent that the top point was assigned maximum ratings for all variables and all other sites were scaled against this point. If this one high biomass stream is dropped out, the precision and predictability of the models suffer markedly.

In our data, the correlations of model components with delta values was highest for the Production Index of Model I (r-square=61%) and the Food Index of Model II (r-square=43.8%). Both relationships were statistically significant. These indexes are multiplicative and an error in the ratings of a component by 1 point could result in a 20-30 kg/ha difference in the predicted biomass. The other components had r-square values of 25% or less and were not highly significant. The variables common to both indexes are food abundance, nitrate, and water velocity values. We had good food abundance estimates and water velocity estimates. We had little confidence in the nitrate values because of the narrow ranges for each rating and the subjectivity of our rating of each stream, but even adjusting the values by one or two rating points would not overcome the differences of up to 179 kg/ha found between the measured and the predicted values.

The mean of the difference between measured and predicted biomass values was 52 kg/ha with a standard deviation of 48 kg/ha. In cases where the model overpredicted the biomass there was a linear increase in the food index indicating an overrating of at least one of its components. There was no clear pattern in cases where the model underrated the streams.

We believe that while the HQI may be a valid approach, it is very detailed with specific data requirements that are unforgiving toward errors. It is possible that with more raw field data the rating system of the HQI could be rescaled and adapted to Connecticut streams. Possibly incorporating some redundant variables for the food index and then averaging these

redundant variables would make the model more forgiving and less subject to large fluctuations resulting from single variable errors or discrepancies.

6.0 Data Utilization:

One of our primary objectives in planning the Stream Survey was to provide data which could be used to comment on proposed construction and land acquisition. Data collected was made available for inquires as soon as all calculations were complete. Attempts have been made to make people aware of the data collected by the project. We had 85 requests for data directed to us during 1990 (Table 19). As additional data analyses are completed it is anticipated that even more use will be made of the data base. As growth and population analysis is completed on individual streams it is possible to make recommendations to management personnel about the potential exhibited by some streams for fry or fingerling trout stocking.

Table 19.-Data information requests: January 1990-January 1991.

Request Type	Information Needed	Number of Requests
1) Access Acquisition.	Socioeconomic	5
2) Environmental Review.	Physical, Chemical Biological	17
3) Use by Bureau of Fish and Wildlife on other programs.	Biological	24
4) Use by other State Agencies.	Physical, Chemical Biological	5
5) Public Information.	Biological	13
6) Land Owner Requests.	Physical, Chemical Biological	24

The state's fishing lease program continues to make use of our angler survey data to determine the price which should be paid to obtain permanent fishing access to private property (Laforte 1989). In addition, all population data in the system will be utilized as part of a statewide rivers assessment program. This program seeks to rate Connecticut's rivers and streams based on combined recreational, municipal, industrial, fisheries, and aesthetic values. Fish population and angler survey data will be used to place a value on the fisheries components of the rating. This assessment will allow prioritizing of rivers for future resource improvements.

7.0 Expenditures:

A total of $155,572 was expended for Job 2 and $41,620 for Job 3. Federal reimbursement under the Federal Aid in Sportfish Restoration Act amounted to 75%, $116,679 and $31,215, respectively. State expenditures for Job 2 were $38,893 and $10,405 for Job 3.

8.0 Literature Cited

Binns, N. A. 1982. Habitat quality index procedures manual. Wyoming Game and Fish Department.

Binns, N. A. and F. M. Eiserman. 1979. Quatification of fluvial trout habitat in Wyoming. Transactions of the American Fisheries Society. 109(3):215-228.

Bowlby, J. N. and J. C. Roff. 1986. Trout biomass and habitat relationships in southern Ontario streams. Transactions of the American Fisheries Society. 115(4):503-514.

Burton, R. A. and T. A. Wesche. 1974. Relationship of duration of flows and selected watershed parameters to the standing crop estimates of trout populations. Wyoming Water Resources Research Institute, Water Resources Series 52, Laramie Wyoming.

Butler, R. L. and D. P. Borgenson. 1965. California catchable trout fisheries. California Department of Fish and Game Bulletin 127.

Carlander, K. D. 1969. Handbook of freshwater fishery biology Vol. I. Iowa State Univ. Press, Ames, Iowa. 752 pp.

Chase Econometrics. 1986. U.S. regional forecasts: short-term selected states and metropolitan areas - second quarter 1986. Chase Econometrics, Bala Cynwyd, Pennsylvania, USA.

Engstrom-Heg, R. 1986. Prediction of wild brown trout catch rates from estimated yearling population density and fishing intensity. North American Journal of Fisheries Management 6(3):410-417.

Fausch, K. D., C. L. Clifford, and M. G. Parsons. 1988. Models that predict standing crop of stream fish from habitat variables: 1950-85. Ge. Tech. Rep. PNW-GTR-213. Portland, OR: U. S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Hagstrom, N. T., W. B. Gerrish, E. A. Machowski, and W. A. Hyatt. 1989. A survey of Connecticut streams and rivers - Farmington River, Park River and Stony Brook drainages. Connecticut Department of Environmental Protection, project progress report, F-66-R-1.

Hagstrom, N. T., M. Humphreys, and W. A. Hyatt. 1990. A survey of Connecticut stream and rivers - Connecticut River tributaries, Scantic River, Mattabesset River, Salmon River, Coginchaug River and Eightmile River drainages. Connecicut Department of Environmental Protection, Project progress report, F-66-R-2.

Jessop, B. M. 1987. Migrating American eels in Nova Scotia. Transactions of the American Fisheries Society 116:161-170.

Laforte, J. D. 1989. Acquisition of recreation rights in private properties based upon economic theory of the net economic value of consumer benefits from recreation activities. Connecticut Department of Environmental Protection, Unpublished project proposal.

Lanka, R. P. 1985. Modeling trout standing stock in small Wyoming streams based upon easily measured habitat and geomorphological characteristics. Laramie. WY: University of Wyoming. M.S. thesis.

Newman, R. M. 1985. Production dynamics of brown trout in South Branch Creek, Minnesota. PhD Thesis, University of Minnesota.

Raleigh, R. F. 1982. Habitat suitability index models: brook trout. U.S. Department of the Interior, Fish and Wildlife Service, FWS/OBS-82/10.24.

Scarnecchia, D. L. 1983. Effects of streamflow and upwelling on yield of wild coho salmon (*Oncorhynchus kisutch*) in Oregon. Canadian Journal of Fisheries and Aquatic Sciences. 38:471-475.

Thorpe, L. M., H. J. Rayner, and D. A. Webster. 1944. Population depletion in brook, brown, and rainbow trout stocked in the Blackledge River, Connecticut in 1942. Transactions of the American Fisheries Society 74:166-187.

Wesche, T. A., D. W. Reiser, W. F. Wichers, and D. L. Wichers. 1977. Fishery resources and instream flow recommendations for streams to be impacted by Cheyenne's proposed phase II development. Laramie, WY:Water Resources Research Institute, University of Wyoming:report submitted to Wyoming Game and Fish Department.

Whitworth, W. R., P. L. Berrien and W. T. Keller. 1968. Freshwater fishes of Connecticut. State Geological and Natural History Survey, Bulletin 101.

Appendix A

Table A-1.-List of invertebrate families found in Connecticut streams during the 1988-89 stream surveys.

Phylum	Class	Order	Family
Platyhelminthes	Turbellaria		
Nematoda			
Nematophorpha			
Tardigrada			
Annelida	Oligochaeta		
	Hirudinea		
Arthropoda	Crustacea		
		Amphipoda	
		Decapoda	
		Isopoda	
	Insecta	Coleoptera	Circulionidae
			Dryopidae
			Dytiscidae
			Elmidae
			Gyrinidae
			Hydrophilidae
			Ptilodactylidae
			Psephenidae
		Collembola	
		Diptera	Athericidiae
			Ceratopogonidae
			Chironomidae
			Culicidae
			Dixidae
			Dolichopodidae
			Empididae
			Muscidae
			Psychodidae
			Simuliidae
			Stratiomyidae
			Tabanidae
			Tipulidae
		Ephemeroptera	Baetidae
			Caenidae
			Ephemeridae
			Ephemerellidae
			Heptageniidae
			Leptophlebiidae
			Oligoneuriidae
			Potamanthidae
			Siphlonuridae
			Tricorythidae
		Hemiptera	Corixidae
			Gerridae
			Saldidae
			Veliidae
		Lepidoptera	Pyralidae
			Totricridae
		Megaloptera	Corydallidae
			Syalidae
		Odonata Anisoptera[1]	
			Aeshnidae
			Cordulegastridae
			Gomphidae
			Macromiidae
		Zygoptera[1]	
			Agrionidae
			Coenagronidae
			Calopterygidae

[1] Super family

Table A-1.-Continued.

Phylum	Class	Order	Family
		Plecoptera	Capniidae
			Chloroperlidae
			Leuctridae
			Nemouridae
			Perlidae
			Perlodidae
			Peltoperlidae
			Pteronarcyidae
		Trichoptera	Brachycentridae
			Glossosomatidae
			Helicopsycidae
			Hydropsychidae
			Hydroptilidae
			Lepidostomatidae
			Leptoceridae
			Limnephilidae
			Molanidae
			Odontoceridae
			Philopotamidae
			Phryganeidae
			Polycentropidae
			Psychomyiidae
			Rhyacophilidae
			Sericostomatidae
		Neuroptera	Sisyridae
Mollusca	Gastropoda	Basommatophora	"limpets"
			Ancylidae
			Lymnaeidae
			Physidae
			Planorbidae
		Mesogastropoda	Viviparidae
	Pelecypoda		Sphaeriidae
Arachnoidea		"Hydracarina"	

Appendix B

Location names and site numbers where data were collected in 1990; and page number on which it is presented.

Location name	Site #	Page #
(Arrigoni Pd. outflow)*	2106	49
(Aspetuck Res. trib)*	2089	91
Aspetuck River	2039	49
Aspetuck River	2072	50
Aspetuck River	2120	50
Barretts Brook	2119	51
Belden Brook	2124	51
(Binney Park stream)*	2062	90
Blackman's Pond Brook	2117	52
Branch Brook	2116	52
Branford River	2011	53
Broad Brook	2017	53
Bruce Brook	2029	54
Butterworth Brook	2107	54
Byrum River	2054	55
Byrum River	2071	55
Calf Pen Meadow Brook	2125	56
Chatfield Hollow Brook	2005	56
Chatfield Hollow Brook	2079	57
Chatfield Hollow Brook	2078	57
(Chatfield Hollow trib)*	2150	89
Chestnut Hill Brook	2088	58
Cold Spring Brook	2066	58
Comstock Brook	2042	59
Converse Pond Brook	2094	59
Converse Pond Brook	2130	60
Cooper Pond Brook	2118	60
Cove River	2063	61
Cove River	2152	61
Cricker Brook	2034	62
Crooked Brook	2126	62
Crow Hollow Brook	2108	63
Cuff Brook	2113	63
Dee Pond Brook	2097	64
East Br. Byrum River	2053	64
East Br. Mianus River	2049	65
East River	2008	65
Eaton Brook	2115	66
Eight Mile River	2014	66
Farm River	2068	67
Farm River	2012	67
Fence Creek	2065	68
Fivemile River	2044	68
Fivemile River	2159	69
(Fivemile River trib)*	2092	88
Godfrey Brook	2085	69
Goodwives River	2045	70
Greenwich Creek	2051	70
Hammonasset River	2006	71
Hammonasset River	2080	71
(Hammonasset R. trib)*	2098	88
(Hammonasset R. trib)*	2104	89
Harbor Brook	2019	72
Haviland Brook	2131	72
Hawleys Brook	2102	73
Hoadley Creek	2064	73
Hog Pond Brook	2099	74
Horsetavern Brook	2101	74
Horseneck Brook	2052	75
Indian River	2004	75
Indian River	2027	76
Iron Stream	2059	76
Island Brook	2132	77
Keelers Brook	2096	77
Little River	2038	78
(Lyons Swamp outflow)*	2122	78
Meetinghouse Brook	2111	79
Menunketesuck River	2003	79
Mianus River	2050	80
Mill River	2023	81
Mill River	2035	82
Mill River	2047	83
Mill River	2154	83
Mill River	2161	84
Misery Brook	2016	84
Mountain Brook	2112	85
Muddy Brook	2061	85
Muddy River	2021	86
Muddy River	2158	86
Munger Brook	2128	87
Neck River	2007	87
Nob Crook Brook	2103	91
Noroton River	2046	92
Norwalk River	2041	92
Norwalk River	2076	93
Notch Hill Brook	2127	93
Patton Brook	2109	94
Pequabuck River	2155	94

*These streams have no official names. Names given to aid in location.

*These streams have no official names. Names given to aid in location.

STREAM NAME : ARRIGONI POND OUTFLOW SITE #: 2106

SITE DESCRIPTION: DOWNSTREAM OF BLUE HILL RD, DURHAM
SAMPLE LENGTH : 50. SAMPLE DATE: 09/13/1990

PHYSICAL			CHEMICAL		MEAN	STD
AIR TEMP. . . .	:21.0	(C)	DISSOLVED OXYGEN (mg/l). .	:	8.8	0.17
WATER TEMP. . .	:20.0	(C)	pH	:	5.9	0.25
VELOCITY. . . .	: 0.076	(m/s)	COND . . . . . (uS/cm3). .	:	46.0	1.00
DISCHARGE . . .	: 0.015	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		10.3	0.60

	MEAN		STD	
WIDTH. . . . . :	2.2		1.2	(m)
DEPTH. . . . . :	6.8		6.93	(cm)
DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	0.76
TYPE THREE SUBSTRATE . . . :	0.37	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE :	25.71	(%)		
OVERHEAD CANOPY. . . . . :	97.00	(%)		
INSTREAM SHELTER . . . . . :	9.36	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Esox americanus	180	60.33
Micropterus salmoides	90	90.49
Lepomis gibbosus	1447	55.69
Catastomus commersoni	90	90.49
Perca flavescens	11764	17.65
Lepomis macrochirus	904	25.33
Salvelinus fontinalis	180	60.33
Esox niger	90	90.49
Ictalurus nebulosus	1809	27.54
Anguilla rostrata	542	49.36

STREAM NAME : ASPETUCK RIVER SITE #: 2039

SITE DESCRIPTION: ABOVE PINE HILL RD, REDDING, BHC PROP.
SAMPLE LENGTH : 150. SAMPLE DATE: 08/02/1990

PHYSICAL			CHEMICAL		MEAN	STD
AIR TEMP. . . .	:24.0	(C)	DISSOLVED OXYGEN (mg/l). .	:	10.6	0.32
WATER TEMP. . .	:19.0	(C)	pH	:	7.7	0.13
VELOCITY. . . .	: 0.065	(m/s)	COND . . . . . (uS/cm3). .	:	85.7	1.15
DISCHARGE . . .	: 0.031	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		26.5	0.50

	MEAN		STD	
WIDTH. . . . . :	5.3		1.9	(m)
DEPTH. . . . . :	11.5		10.62	(cm)
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.85
TYPE THREE SUBSTRATE . . . :	0.26	(%)	AIR/WATER TEMP. RATIO:	1.26
EMBEDDEDNESS OF TYPE THREE :	42.73	(%)		
OVERHEAD CANOPY. . . . . :	88.50	(%)		
INSTREAM SHELTER . . . . . :	14.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis macrochirus	764	8.44
Rhinichthys atratulus	175	10.96
Salmo trutta	12	12.53
Exoglossum maxillingua	989	9.80
Semotilus atromaculatus	175	10.31
Esox americanus	751	6.75
Notemigonus crysoleucas	100	9.11
Rhinichthys cataractae	162	6.01
Micropterus salmoides	100	7.16
Lepomis gibbosus	426	10.65
Lepomis auritus	225	9.02
Etheostoma olmstedi	1027	6.57
Catastomus commersoni	401	10.02
Ictalurus nebulosus	538	9.29
Anguilla rostrata	62	7.83

STREAM NAME : ASPETUCK RIVER SITE #: 2072

SITE DESCRIPTION: 50 YDS BELOW TO 50 YDS ABOVE PRIVATE BRIDGE AT NORTH END OF POSES PROP.
SAMPLE LENGTH : 100. SAMPLE DATE: 08/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	:25.0	(C)	DISSOLVED OXYGEN (mg/l)	10.0	0.06
WATER TEMP.	:20.0	(C)	pH	7.8	0.00
VELOCITY.	0.147	(m/s)	COND (uS/cm3)	:130.0	0.00
DISCHARGE	0.142	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	21.9	0.25

	MEAN	STD	
WIDTH.	7.3	2.2	(m)
DEPTH.	16.2	13.70	(cm)

DOMINANT SUBSTRATE TYPE.	4		POOL/RIFFLE RATIO	1.70
TYPE THREE SUBSTRATE	0.03	(%)	AIR/WATER TEMP. RATIO:	1.25
EMBEDDEDNESS OF TYPE THREE	5.00	(%)		
OVERHEAD CANOPY.	82.30	(%)		
INSTREAM SHELTER	26.58	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Micropterus salmoides	13	13.73
Lepomis auritus	686	8.97
Etheostoma olmstedi	274	5.23
Catastomus commersoni	412	9.36
Semotilus atromaculatus	82	8.24
Notropis cornutus	879	8.87
Anguilla rostrata	1744	7.90
Salvelinus fontinalis	27	6.86
Rhinichthys atratulus	1497	8.22
Salmo trutta	54	7.84
Unknown Centrarchid	27	5.49
Exoglossum maxillingua	412	10.84
Unknown Cyprinid	315	10.89
Rhinichthys cataractae	1208	5.38

STREAM NAME : ASPETUCK RIVER SITE #: 2120

SITE DESCRIPTION: BELOW HOPEWELL WOODS RD, NEWTOWN
SAMPLE LENGTH : 100. SAMPLE DATE: 08/09/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	:20.0	(C)	DISSOLVED OXYGEN (mg/l)		
WATER TEMP.	:19.0	(C)	pH	7.3	0.15
VELOCITY.	0.108	(m/s)	COND (uS/cm3)	80.0	0.00
DISCHARGE	0.071	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	19.4	0.06

	MEAN	STD	
WIDTH.	7.9	2.8	(m)
DEPTH.	7.5	8.14	(cm)

DOMINANT SUBSTRATE TYPE.	4		POOL/RIFFLE RATIO	0.20
TYPE THREE SUBSTRATE	0.24	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE	23.44	(%)		
OVERHEAD CANOPY.	96.80	(%)		
INSTREAM SHELTER	13.46	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	1356	8.75
Salvelinus fontinalis	215	6.75
Anguilla rostrata	38	9.50
Esox americanus	836	6.44
Etheostoma olmstedi	836	5.77
Catastomus commersoni	88	9.85
Semotilus atromaculatus	443	10.08
Unknown Centrarchid	12	12.67

STREAM NAME : BARRETTS BROOK SITE #: 2119

SITE DESCRIPTION: DOWNSTREAM OF BRANCH BROOK ROAD WILTON
SAMPLE LENGTH : 50. SAMPLE DATE: 08/09/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.9	0.12
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.1	0.00
VELOCITY. . . .	0.062	(m/s)	COND . . . . . (uS/cm3). . :	124.0	5.20
DISCHARGE . . .	0.018	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	22.5	0.32

	MEAN	STD			
WIDTH. . . . . :	2.7	0.7	(m)		
DEPTH. . . . . :	9.8	10.56	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.78	
TYPE THREE SUBSTRATE . . . :	0.17	(%)	AIR/WATER TEMP. RATIO:	1.26	
EMBEDDEDNESS OF TYPE THREE :	28.75	(%)			
OVERHEAD CANOPY. . . . . :	95.80	(%)			
INSTREAM SHELTER . . . . . :	3.08	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Carasius auratus	73	73.26
Semotilus atromaculatus	5787	48.62
Ictalurus nebulosus	73	36.63
Catastomus commersoni	1245	49.81

STREAM NAME : BELDEN BROOK SITE #: 2124

SITE DESCRIPTION: FIRST LEFT PAST FARM(HEADING WEST) OFF
WINTERGREEN AVE. HAMDEN,UPSTREAM OF X-ING
SAMPLE LENGTH : 50. SAMPLE DATE: 09/04/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.9	0.00
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.6	0.06
VELOCITY. . . .	0.214	(m/s)	COND . . . . . (uS/cm3). . :	149.0	0.00
DISCHARGE . . .	0.044	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	33.2	0.50

	MEAN	STD			
WIDTH. . . . . :	2.8	1.3	(m)		
DEPTH. . . . . :	7.5	7.46	(cm)		
DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.15	
TYPE THREE SUBSTRATE . . . :	0.55	(%)	AIR/WATER TEMP. RATIO:	1.00	
EMBEDDEDNESS OF TYPE THREE :	42.50	(%)			
OVERHEAD CANOPY. . . . . :	94.00	(%)			
INSTREAM SHELTER . . . . . :	8.20	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	26379	38.44
Catastomus commersoni	143	47.78
Lepomis auritus	71	35.84
Anguilla rostrata	788	52.56
Unknown Centrarchid	573	47.78

STREAM NAME : BLACKMAN'S POND BROOK SITE #: 2117

SITE DESCRIPTION: ABOVE FIRST RIGHT RD OFF UMPAWAUG RD CROSSING PARALLEL TO STOLTZ DRIVEWAY,REDDING

SAMPLE LENGTH : 50. SAMPLE DATE: 06/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	20.0	(C)	DISSOLVED OXYGEN (mg/l). .	12.1	0.06
WATER TEMP. . .	15.0	(C)	pH	6.7	0.06
VELOCITY. . . .	0.099	(m/s)	COND . . . . . (uS/cm3). .	110.0	0.00
DISCHARGE . . .	0.160	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	46.0	0.68

	MEAN	STD	
WIDTH.	2.0	0.7	(m)
DEPTH.	8.1	6.51	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.18
TYPE THREE SUBSTRATE . . . :	0.20	(%)	AIR/WATER TEMP. RATIO:	1.33
EMBEDDEDNESS OF TYPE THREE :	6.67	(%)		
OVERHEAD CANOPY. . . . . :	1.E2	(%)		
INSTREAM SHELTER . . . . . :	0.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	99	99.50
Catastomus commersoni	796	66.33
Semotilus atromaculatus	7363	83.67
Rhinichthys atratulus	3383	82.51
Salvelinus fontinalis	796	79.60
Etheostoma olmstedi	99	99.50

STREAM NAME : BRANCH BROOK SITE #: 2116

SITE DESCRIPTION: DOWNSTREAM OF GREAT HILL RD IN DURHAM, SCRWA PROP, SHALLOW LEDGE BOTTOM

SAMPLE LENGTH : 100. SAMPLE DATE: 07/06/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.2	0.32
WATER TEMP. . .	18.0	(C)	pH	6.8	0.17
VELOCITY. . . .	0.164	(m/s)	COND . . . . . (uS/cm3). .	131.7	1.15
DISCHARGE . . .	0.067	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	61.3	0.25

	MEAN	STD	
WIDTH.	4.5	1.6	(m)
DEPTH.	8.5	7.46	(cm)

DOMINANT SUBSTRATE TYPE. . :	7		POOL/RIFFLE RATIO . .:	1.94
TYPE THREE SUBSTRATE . . . :	0.28	(%)	AIR/WATER TEMP. RATIO:	1.06
EMBEDDEDNESS OF TYPE THREE :	16.36	(%)		
OVERHEAD CANOPY. . . . . :	77.50	(%)		
INSTREAM SHELTER . . . . . :	5.64	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis macrochirus	2219	10.29
Perca flavescens	1031	14.62
Catastomus commersoni	470	16.81
Lepomis gibbosus	1143	12.25
Notropis bifrenatus	22	22.42
Esox americanus	246	18.97
Salvelinus fontinalis	3609	13.57
Rhinichthys atratulus	2085	16.37
Unknown Centrarchid	112	16.01
Micropterus salmoides	22	22.42

STREAM NAME : BRANFORD RIVER SITE #: 2011

SITE DESCRIPTION: UPSTREAM OF VALLEY RD OFF RT 139 IN BRANFORD

SAMPLE LENGTH : 155. SAMPLE DATE: 06/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	6.0	0.40
WATER TEMP. . .	18.0	(C)	pH	6.6	0.06
VELOCITY. . . .	0.203	(m/s)	COND . . . . . (uS/cm3). .	220.7	0.58
DISCHARGE . . .	0.099	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	88.0	0.44

	MEAN	STD	
WIDTH.	6.1	1.4	(m)
DEPTH.	14.8	13.77	(cm)

DOMINANT SUBSTRATE TYPE. .	3		POOL/RIFFLE RATIO . .:	1.05
TYPE THREE SUBSTRATE . . .	0.47	(%)	AIR/WATER TEMP. RATIO:	1.50
EMBEDDEDNESS OF TYPE THREE	60.00	(%)		
OVERHEAD CANOPY.	97.50	(%)		
INSTREAM SHELTER	51.04	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys cataractae	126	3.39
Lepomis gibbosus	168	3.05
Petromyzon marinus	84	7.67
Catastomus commersoni	116	4.79
Salmo trutta	137	4.30
Esox niger	42	5.27
Semotilus atromaculatus	21	5.27
Carasius auratus	10	5.27
Anguilla rostrata	696	7.14
Lepomis macrochirus	31	7.91
Salvelinus fontinalis	73	5.27
Rhinichthys atratulus	929	5.31

STREAM NAME : BROAD BROOK SITE #: 2017

SITE DESCRIPTION: EAST OF WALLINGFORD RD, 0.5 MILE NORTH OF GAYLORD HOSPITAL, CHESHIRE

SAMPLE LENGTH : 60. SAMPLE DATE: 07/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.7	0.15
WATER TEMP. . .	21.0	(C)	pH	7.0	0.06
VELOCITY. . . .	0.200	(m/s)	COND . . . . . (uS/cm3). .	218.3	7.64
DISCHARGE . . .	0.016	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	87.0	2.68

	MEAN	STD	
WIDTH.	1.2	0.2	(m)
DEPTH.	6.9	6.02	(cm)

DOMINANT SUBSTRATE TYPE. .	2		POOL/RIFFLE RATIO . .:	1.94
TYPE THREE SUBSTRATE . . .	0.40	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE	62.50	(%)		
OVERHEAD CANOPY.		(%)		
INSTREAM SHELTER	3.20	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	5462	88.70
Ictalurus nebulosus	140	140.05
Lepomis macrochirus	140	140.05
Salvelinus fontinalis	9243	105.04
Etheostoma olmstedi	6022	54.73
Notemigonus crysoleucas	1400	93.37
Catastomus commersoni	1400	82.38

STREAM NAME : BRUCE BROOK SITE #: 2029

SITE DESCRIPTION: ABOVE QUAIL ST, STRATFORD, ABOVE WOOSTER POND
SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	30.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.9	0.36
WATER TEMP. . .	22.0	(C)	pH	7.3	0.00
VELOCITY. . . .	0.080	(m/s)	COND . . . . . (uS/cm3). .	224.0	8.72
DISCHARGE . . .	0.013	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	41.2	0.32

	MEAN	STD	
WIDTH.	3.1	0.6	(m)
DEPTH.	11.9	8.86	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.36
EMBEDDEDNESS OF TYPE THREE :	25.63	(%)		
OVERHEAD CANOPY. . . . . :	86.30	(%)		
INSTREAM SHELTER . . . . . :	13.47	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Unknown Cyprinid	321	53.59
Rhinichthys atratulus	0	37.51
Anguilla rostrata	450	37.51
Lepomis gibbosus	8231	35.32
Catastomus commersoni	7138	43.40

STREAM NAME : BUTTERWORTH BROOK SITE #: 2107

SITE DESCRIPTION: UPSTREAM OF RIVER ROAD HAMDEN, SHALLOW LAKE OUTFLOW
SAMPLE LENGTH : 100. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.7	0.67
WATER TEMP. . .	25.0	(C)	pH	8.7	0.00
VELOCITY. . . .	0.090	(m/s)	COND . . . . . (uS/cm3). .	130.0	0.00
DISCHARGE . . .	0.032	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	44.2	0.80

	MEAN	STD	
WIDTH.	4.6	1.6	(m)
DEPTH.	7.8	7.02	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.08
TYPE THREE SUBSTRATE . . . :	0.57	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	50.65	(%)		
OVERHEAD CANOPY. . . . . :	79.70	(%)		
INSTREAM SHELTER . . . . . :	0.96	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Unknown Cyprinid	4199	12.04
Rhinichthys atratulus	389	18.55
Semotilus atromaculatus	21	21.64
Ictalurus nebulosus	303	7.68
Semotilus corporalis	21	10.82
Etheostoma olmstedi	21	21.64
Catastomus commersoni	173	19.24
Micropterus salmoides	1341	7.10
Lepomis macrochirus	216	14.43
Esox americanus	151	8.11
Anguilla rostrata	173	14.43
Lepomis auritus	151	16.83
Rhinichthys cataractae	606	15.15

STREAM NAME : BYRUM RIVER SITE #: 2054

SITE DESCRIPTION: CORP OF ENG. FLOOD CONTROL CHANNEL, UPSTREAM OF COMLY RD GREENWICH.

SAMPLE LENGTH : 75. SAMPLE DATE: 08/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	20.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.8	0.69
WATER TEMP. . .	21.0	(C)	pH . . . . . :	7.0	0.64
VELOCITY. . . .	0.277	(m/s)	COND . . . . . (uS/cm3). . :	240.0	0.00
DISCHARGE . . .	0.916	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	58.1	0.55

	MEAN	STD	
WIDTH. . . . . :	9.3	2.7	(m)
DEPTH. . . . . :	22.5	14.98	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.15
TYPE THREE SUBSTRATE . . . :	0.01	(%)	AIR/WATER TEMP. RATIO:	0.95
EMBEDDEDNESS OF TYPE THREE :	0.00	(%)		
OVERHEAD CANOPY. . . . . :	42.70	(%)		
INSTREAM SHELTER . . . . . :	58.33	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Fundulus diaphanus	7	2.39
Micropterus salmoides	14	4.79
Lepomis gibbosus	172	1.67
Lepomis auritus	100	5.59
Etheostoma olmstedi	57	3.83
Catastomus commersoni	21	3.59
Semotilus atromaculatus	21	7.19
Semotilus corporalis	1043	1.69
Rhinichthys atratulus	14	4.79
Unknown Centrarchid	7	3.59
Anguilla rostrata	3700	3.33
Lepomis macrochirus	14	3.59

STREAM NAME : BYRUM RIVER SITE #: 2071

SITE DESCRIPTION: FROM 50 M ABOVE BEDFORD RD TO 40 M BELOW BEDFORD ROAD, GREENWICH

SAMPLE LENGTH : 100. SAMPLE DATE: 08/28/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.3	0.26
WATER TEMP. . .	21.0	(C)	pH . . . . . :	7.5	0.06
VELOCITY. . . .	0.266	(m/s)	COND . . . . . (uS/cm3). . :	332.0	0.00
DISCHARGE . . .	0.329	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	86.6	0.83

	MEAN	STD	
WIDTH. . . . . :	4.8	2.1	(m)
DEPTH. . . . . :	40.6	28.08	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	3.13
TYPE THREE SUBSTRATE . . . :	0.02	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	50.00	(%)		
OVERHEAD CANOPY. . . . . :	99.00	(%)		
INSTREAM SHELTER . . . . . :	138.53	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis auritus	145.	20.79
Etheostoma olmstedi	478.	6.59
Anguilla rostrata	187.	18.71

STREAM NAME : CALF PEN MEADOW CREEK SITE #: 2125

SITE DESCRIPTION: DOWNSTREAM OF PARKING LOT OFF BAXTER RD
MILFORD. SOFT CLAY OVERGROWN CHANNELIZED
SAMPLE LENGTH : 36. SAMPLE DATE: 08/01/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	5.2	0.12
WATER TEMP. . .	23.0	(C)	pH	6.6	0.00
VELOCITY. . . .		(m/s)	COND . . . . . (uS/cm3). .	251.7	2.89
DISCHARGE . . .		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	54.1	0.67

	MEAN	STD	
WIDTH.	1.0	0.3	(m)
DEPTH.	6.6	5.68	(cm)

DOMINANT SUBSTRATE TYPE. .	1		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . .	0.00	(%)	AIR/WATER TEMP. RATIO:	1.17
EMBEDDEDNESS OF TYPE THREE	42.50	(%)		
OVERHEAD CANOPY.		(%)		
INSTREAM SHELTER	0.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	59	
Pungitius pungitius	229	

STREAM NAME : CHATFIELD HOLLOW BROOK SITE #: 2005

SITE DESCRIPTION: CHATFIELD HOLLOW STATE PARK BOTTOM END 20 M
ABOVE 2ND BRIDGE ABOVE POND.
SAMPLE LENGTH : 100. SAMPLE DATE: 06/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.5	0.06
WATER TEMP. . .	24.0	(C)	pH	6.6	0.17
VELOCITY. . . .	0.182	(m/s)	COND . . . . . (uS/cm3). .	60.0	0.00
DISCHARGE . . .	0.143	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.4	0.49

	MEAN	STD	
WIDTH.	6.2	1.3	(m)
DEPTH.	12.2	9.55	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.96
TYPE THREE SUBSTRATE . . .	0.16	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE	52.22	(%)		
OVERHEAD CANOPY.	69.00	(%)		
INSTREAM SHELTER	40.02	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	16	16.05
Catastomus commersoni	32	10.70
Salmo trutta	144	13.13
Notemigonus crysoleucas	16	8.02
Oncorhynchus mykiss	48	12.03
Ictalurus nebulosus	32	16.05
Anguilla rostrata	192	12.03
Lepomis macrochirus	48	12.03

STREAM NAME : CHATFIELD HOLLOW BROOK SITE #: 2078

SITE DESCRIPTION: AT RIVER CROSSING AT END OF CHAMPLIN ROAD, KILLINGWORTH

SAMPLE LENGTH : 90. SAMPLE DATE: 06/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.9	0.10
WATER TEMP. . .	20.0	(C)	pH	6.3	0.06
VELOCITY. . . .	0.108	(m/s)	COND . . . . . (uS/cm3). .	42.0	0.00
DISCHARGE . . .	0.254	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.4	0.47

	MEAN	STD	
WIDTH.	8.2	3.7	(m)
DEPTH.	24.6	20.53	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.49
TYPE THREE SUBSTRATE . . . :	0.06	(%)	AIR/WATER TEMP. RATIO:	1.15
EMBEDDEDNESS OF TYPE THREE :	27.50	(%)		
OVERHEAD CANOPY. . . . . :	90.60	(%)		
INSTREAM SHELTER . . . . . :	43.77	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1225	5.22
Lepomis macrochirus	32	5.44
Salmo trutta	16	5.44
Esox niger	40	4.08
Lepomis gibbosus	40	6.80
Perca flavescens	57	5.71

STREAM NAME : CHATFIELD HOLLOW BROOK SITE #: 2079

SITE DESCRIPTION: PARALLEL TO ENTRANCE RD AT OLD BOYSCOUT CAMP. MADISON CT 300M BELOW DEER LAKE

SAMPLE LENGTH : 150. SAMPLE DATE: 07/31/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.8	0.40
WATER TEMP. . .	23.0	(C)	pH	6.6	0.12
VELOCITY. . . .	0.240	(m/s)	COND . . . . . (uS/cm3). .	57.7	1.53
DISCHARGE . . .	0.204	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.0	1.56

	MEAN	STD	
WIDTH.	6.1	1.9	(m)
DEPTH.	12.6	15.10	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	1.46
TYPE THREE SUBSTRATE . . . :	0.07	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	47.50	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	90.14	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1606	6.86
Ictalurus nebulosus	44	8.80
Lepomis macrochirus	154	3.96
Rhinichthys atratulus	55	6.87
Micropterus salmoides	44	8.80
Esox niger	11	11.00
Rhinichthys cataractae	209	4.96
Semotilus corporalis	22	11.00
Lepomis gibbosus	11	11.00
Catastomus commersoni	11	11.00
Perca flavescens	11	11.00

STREAM NAME : CHESTNUT HILL BROOK SITE #: 2088

SITE DESCRIPTION: ABOVE RTE 7, WILTON

SAMPLE LENGTH : 50. SAMPLE DATE: 07/31/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.2	0.32
WATER TEMP. . .	18.0	(C)	pH	6.7	0.15
VELOCITY. . . .	0.048	(m/s)	COND . . . . . (uS/cm3). .	155.3	2.89
DISCHARGE . . .	0.009	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	21.9	0.10

	MEAN	STD	
WIDTH.	1.6	0.4	(m)
DEPTH.	10.3	8.57	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	1.82
TYPE THREE SUBSTRATE . . . :	0.07	(%)	AIR/WATER TEMP. RATIO:	1.39
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	93.75	(%)		
INSTREAM SHELTER . . . . . :	1.11	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	2666	86.02
Rhinichthys atratulus	9696	80.12
Anguilla rostrata	363	72.72
Unknown Cyprinid	9212	105.88
Semotilus atromaculatus	9454	91.79

STREAM NAME : COLD SPRING BROOK SITE #: 2066

SITE DESCRIPTION: 1/8 MILE BELOW RAILROAD CROSSING IN WESTBROOK, CT

SAMPLE LENGTH : 50. SAMPLE DATE: 06/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.5	0.10
WATER TEMP. . .	21.0	(C)	pH	6.3	0.10
VELOCITY. . . .		(m/s)	COND . . . . . (uS/cm3). .	217.0	1.73
DISCHARGE . . .		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.4	1.14

	MEAN	STD	
WIDTH.	1.4	0.1	(m)
DEPTH.	10.9	6.85	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.19
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	100	(%)		
INSTREAM SHELTER . . . . . :	2.30	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	2794	107.46
Esox americanus	735	147.05

STREAM NAME : COMSTOCK BROOK SITE #: 2042

SITE DESCRIPTION: ABOVE NOB HILL RD,WILTON
SAMPLE LENGTH : 100. SAMPLE DATE: 07/06/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.9	0.10
WATER TEMP. . .	20.0	(C)	pH . . . . . :	7.3	0.06
VELOCITY. . . .	0.106	(m/s)	COND . . . . . (uS/cm3). . :	146.7	1.53
DISCHARGE . . .	0.061	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	43.5	0.52

	MEAN	STD			
WIDTH. . . . . :	4.1	1.1	(m)		
DEPTH. . . . . :	13.9	12.90	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:		1.17
TYPE THREE SUBSTRATE . . . :	0.06	(%)	AIR/WATER TEMP. RATIO:		1.15
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)			
OVERHEAD CANOPY. . . . . :	100	(%)			
INSTREAM SHELTER . . . . . :	5.85	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	586	16.29
Rhinichthys atratulus	953	17.99
Anguilla rostrata	146	14.66
Salmo trutta	709	14.56
Semotilus atromaculatus	195	15.04
Lepomis auritus	48	16.29
Catastomus commersoni	733	20.95
Micropterus salmoides	24	12.22
Lepomis gibbosus	73	18.33
Notropis cornutus	48	9.77
Notemigonus crysoleucas	73	18.33

STREAM NAME : CONVERSE POND BROOK SITE #: 2094

SITE DESCRIPTION: PARALLEL TO MERRITT PARKWAY IMMEDIATELY WEST OF EXIT 28, GREENWICH
SAMPLE LENGTH : 100. SAMPLE DATE: 07/30/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.5	0.25
WATER TEMP. . .	20.0	(C)	pH . . . . . :	7.2	0.10
VELOCITY. . . .	0.114	(m/s)	COND . . . . . (uS/cm3). . :	219.7	0.58
DISCHARGE . . .	0.025	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	41.9	0.31

	MEAN	STD			
WIDTH. . . . . :	3.8	0.9	(m)		
DEPTH. . . . . :	6.2	5.87	(cm)		
DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:		0.81
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:		1.05
EMBEDDEDNESS OF TYPE THREE :	80.00	(%)			
OVERHEAD CANOPY. . . . . :	98.00	(%)			
INSTREAM SHELTER . . . . . :	2.57	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	79	19.94
Catastomus commersoni	1329	10.63
Esox americanus	26	26.59
Lepomis gibbosus	26	26.59
Lepomis auritus	0	26.59
Notropis cornutus	292	19.50
Rhinichthys atratulus	18484	15.25
Unknown Cyprinid	611	20.39
Semotilus atromaculatus	771	15.84
Semotilus corporalis	26	26.59

STREAM NAME : CONVERSE POND BROOK SITE #: 2130

SITE DESCRIPTION: ABOVE LAKE AVE. GREENWICH
SAMPLE LENGTH : 95. SAMPLE DATE: 07/30/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.4	0.38
WATER TEMP. . .	22.0	(C)	pH	7.0	0.06
VELOCITY. . . .	0.164	(m/s)	COND . . . . . (uS/cm3). .	84.0	1.00
DISCHARGE . . .	0.031	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	20.1	0.49

	MEAN	STD	
WIDTH.	2.2	0.8	(m)
DEPTH.	9.4	7.25	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.06
TYPE THREE SUBSTRATE . . . :	0.14	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	35.00	(%)		
OVERHEAD CANOPY. . . . . :	95.80	(%)		
INSTREAM SHELTER . . . . . :	1.64	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	191	47.84
Micropterus salmoides	95	31.89
Rhinichthys atratulus	10574	22.78
Semotilus atromaculatus	2870	18.58
Unknown Cyprinid	287	47.84

STREAM NAME : COOPER POND BROOK SITE #: 2118

SITE DESCRIPTION: DOWNSTREAM OF COOPER HILL ROAD , AND ABOVE BRIDGE UNDER POWER LINES ,RIDGEFIELD
SAMPLE LENGTH : 50. SAMPLE DATE: 06/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	5.9	0.06
WATER TEMP. . .	21.0	(C)	pH	6.6	0.28
VELOCITY. . . .	0.090	(m/s)	COND . . . . . (uS/cm3). .	302.7	2.08
DISCHARGE . . .	0.015	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	81.2	0.79

	MEAN	STD	
WIDTH.	1.9	0.8	(m)
DEPTH.	8.6	6.85	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	0.73
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	6.67	(%)		
OVERHEAD CANOPY. . . . . :	100	(%)		
INSTREAM SHELTER . . . . . :	0.74	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Micropterus salmoides	208	104.16
Lepomis gibbosus	104	104.16
Anguilla rostrata	1041	104.16

STREAM NAME : COVE RIVER SITE #: 2063

SITE DESCRIPTION: AT DOWNSTREAM END OF PAINTER PARK, WEST HAVEN.

SAMPLE LENGTH : SAMPLE DATE: 08/01/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	26.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . . :	23.0	(C)	pH . . . . . :		
VELOCITY. . . . :		(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . . :		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :	6.4	1.0	(m)
DEPTH. . . . . :	31.1	12.18	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.02	(%)	AIR/WATER TEMP. RATIO:	1.13
EMBEDDEDNESS OF TYPE THREE :	90.00	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :		(m2)		

BIOLOGICAL

SPECIES	POPULATION Present
Fundulus majalis	
Cyprinodon variegatus	
Fundulus diaphanus	
Fundulus heteroclitus	
Menidia beryllina	

STREAM NAME : COVE RIVER SITE #: 2152

SITE DESCRIPTION: TOP END OF PAINTER PARK, WEST HAVEN

SAMPLE LENGTH : 62. SAMPLE DATE: 08/01/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	27.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.4	0.06
WATER TEMP. . . :	22.0	(C)	pH . . . . . :	7.1	0.06
VELOCITY. . . . :		(m/s)	COND . . . . . (uS/cm3). . :	440.0	10.00
DISCHARGE . . . :		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	94.7	0.82

	MEAN	STD	
WIDTH. . . . . :	3.2	0.5	(m)
DEPTH. . . . . :	16.5	13.53	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.23
EMBEDDEDNESS OF TYPE THREE :	31.25	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	36.47	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	1888	12.61
Lepomis auritus	51	51.04
Fundulus majalis	5767	4.27
Carassius auratus	102	34.02
Notemigonus crysoleucas	204	25.52
Fundulus diaphanus	1173	34.52
Fundulus heteroclitus	1020	31.90
Pungitius pungitius	714	34.02
Ictalurus nebulosus	51	51.04
Anguilla rostrata	2552	22.56

STREAM NAME : CRICKER BROOK SITE #: 2034

SITE DESCRIPTION: ABOVE WILSON RD CROSSING, EASTON
SAMPLE LENGTH : 50. SAMPLE DATE: 07/11/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	17.0	(C)	DISSOLVED OXYGEN (mg/l). . .	9.8	0.00
WATER TEMP. . .	17.0	(C)	pH	6.9	0.10
VELOCITY. . . .	0.054	(m/s)	COND . . . . . (uS/cm3). . .	127.7	1.15
DISCHARGE . . .	0.007	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	22.0	0.66

	MEAN	STD	
WIDTH.	2.6	0.4	(m)
DEPTH.	5.1	3.82	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.79
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	87.50	(%)		
INSTREAM SHELTER . . . . . :	0.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	5348	41.74
Lepomis gibbosus	77	38.75
Catastomus commersoni	620	77.51
Rhinichthys atratulus	13255	48.59
Unknown Cyprinid	930	77.51

STREAM NAME : CROOKED BROOK SITE #: 2126

SITE DESCRIPTION: 50 FT UPSTREAM OF STREAM GAUGING STATION,
NORTH END OF LAKE GAILLARD, SCRWA PROP
SAMPLE LENGTH : 100. SAMPLE DATE: 06/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	19.0	(C)	pH	6.4	0.06
VELOCITY. . . .	0.102	(m/s)	COND . . . . . (uS/cm3). . .	102.3	10.79
DISCHARGE . . .	0.033	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.3	0.44

	MEAN	STD	
WIDTH.	2.9	1.5	(m)
DEPTH.	9.1	9.38	(cm)

DOMINANT SUBSTRATE TYPE. . :	7		POOL/RIFFLE RATIO . .:	1.47
TYPE THREE SUBSTRATE . . . :	0.04	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)		
OVERHEAD CANOPY. . . . . :	93.00	(%)		
INSTREAM SHELTER . . . . . :	6.03	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	103	20.61
Rhinichthys atratulus	15773	16.57
Rhinichthys cataractae	274	21.14
Salvelinus fontinalis	3814	19.04

STREAM NAME : CROW HOLLOW BROOK SITE #: 2108

SITE DESCRIPTION: BETWEEN PONDS IN HUBBARD PARK MERIDEN,
SAMPLE LENGTH : 50. SAMPLE DATE: 06/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.6	0.21
WATER TEMP. . .	24.0	(C)	pH . . . . . :	7.6	0.21
VELOCITY. . . .	0.205	(m/s)	COND . . . . . (uS/cm3). . :	306.7	2.89
DISCHARGE . . .	0.016	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	97.2	0.44

	MEAN	STD	
WIDTH. . . . . :	2.6	1.4	(m)
DEPTH. . . . . :	3.4	3.26	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.09
TYPE THREE SUBSTRATE . . . :	0.17	(%)	AIR/WATER TEMP. RATIO:	1.08
EMBEDDEDNESS OF TYPE THREE :	70.00	(%)		
OVERHEAD CANOPY. . . . . :	81.00	(%)		
INSTREAM SHELTER . . . . . :	0.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	76	76.33
Ictalurus nebulosus	152	76.33
Lepomis gibbosus	229	45.80
Lepomis macrochirus	381	54.52
Micropterus salmoides	229	76.33

STREAM NAME : CUFF BROOK SITE #: 2113

SITE DESCRIPTION: PARALLEL TO HURLY ROAD OFF RTE 70 AT DRIVEWAY
545, PLUNGE POOL,
SAMPLE LENGTH : 50. SAMPLE DATE: 06/28/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	28.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.7	0.10
WATER TEMP. . .	20.0	(C)	pH . . . . . :	7.4	0.00
VELOCITY. . . .	0.154	(m/s)	COND . . . . . (uS/cm3). . :	230.7	1.15
DISCHARGE . . .	0.044	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	27.0	0.25

	MEAN	STD	
WIDTH. . . . . :	2.5	1.2	(m)
DEPTH. . . . . :	11.2	7.64	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.78
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.40
EMBEDDEDNESS OF TYPE THREE :	5.00	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	4.31	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	8	
Rhinichthys atratulus	69	

STREAM NAME : DEE POND BROOK SITE #: 2097

SITE DESCRIPTION: DOWNSTREAM OF POND MEADOW ROAD, WESTBROOK, CT

SAMPLE LENGTH : 100. SAMPLE DATE: 06/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.9	0.17
WATER TEMP. . .	21.0	(C)	pH	5.7	0.10
VELOCITY. . . .	0.136	(m/s)	COND . . . . . (uS/cm3). .	80.0	0.00
DISCHARGE . . .	0.025	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	16.0	0.80

	MEAN	STD	
WIDTH.	2.0	0.4	(m)
DEPTH.	8.1	7.16	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	3.00
TYPE THREE SUBSTRATE . . . :	0.21	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	36.67	(%)		
OVERHEAD CANOPY. . . . . :	97.00	(%)		
INSTREAM SHELTER . . . . . :	11.13	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	253	42.30
Ictalurus nebulosus	50	16.92
Micropterus salmoides	203	25.38
Notemigonus crysoleucas	507	33.84
Anguilla rostrata	5380	22.81
Lepomis macrochirus	1015	35.00

STREAM NAME : EAST BR. BYRUM RIVER SITE #: 2053

SITE DESCRIPTION: PARALLEL TO ENTRANCE ROAD TO EARNEST SETON BOY SCOUT CAMP. GREENWICH, BELOW POND

SAMPLE LENGTH : 150. SAMPLE DATE: 07/24/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	6.5	0.55
WATER TEMP. . .	24.0	(C)	pH	7.0	0.12
VELOCITY. . . .	0.067	(m/s)	COND . . . . . (uS/cm3). .	183.3	2.89
DISCHARGE . . .	0.067	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	39.2	0.15

	MEAN	STD	
WIDTH.	9.1	2.2	(m)
DEPTH.	25.4	32.39	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.34
TYPE THREE SUBSTRATE . . . :	0.18	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	34.00	(%)		
OVERHEAD CANOPY. . . . . :	88.50	(%)		
INSTREAM SHELTER . . . . . :	434.79	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	548	1.59
Catastomus commersoni	14	2.92
Micropterus salmoides	43	4.38
Lepomis auritus	774	3.52
Lepomis macrochirus	21	3.13
Rhinichthys atratulus	124	4.43
Semotilus atromaculatus	29	5.84
Anguilla rostrata	168	5.42
Unknown Cyprinid	299	3.50
Semotilus corporalis	255	5.94
Notropis cornutus	211	1.60

STREAM NAME : EAST BR. MIANUS RIVER SITE #: 2049
SITE DESCRIPTION: PARALLEL TO HARPSICORD LANE, UPSTRM OF WILDWOOD RD BRIDGE, STAMFORD
SAMPLE LENGTH : 150. SAMPLE DATE: 06/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	26.0	(C)	DISSOLVED OXYGEN (mg/l)	8.0	0.21
WATER TEMP.	20.0	(C)	pH	6.8	0.00
VELOCITY.	0.127	(m/s)	COND (uS/cm3)	158.3	0.58
DISCHARGE	0.088	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	22.1	0.66

	MEAN	STD	
WIDTH	7.1	1.6	(m)
DEPTH	17.3	12.10	(cm)

DOMINANT SUBSTRATE TYPE	6		POOL/RIFFLE RATIO	1.46
TYPE THREE SUBSTRATE	0.11	(%)	AIR/WATER TEMP. RATIO:	1.30
EMBEDDEDNESS OF TYPE THREE	21.43	(%)		
OVERHEAD CANOPY	100.	(%)		
INSTREAM SHELTER	17.77	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	84	6.02
Semotilus corporalis	121	6.41
Micropterus salmoides	28	7.03
Anguilla rostrata	225	7.03
Notropis cornutus	93	6.69
Rhinichthys atratulus	1378	6.13
Exoglossum maxillingua	356	6.59
Lepomis gibbosus	9	9.37
Lepomis macrochirus	75	6.81
Etheostoma olmstedi	487	2.05
Catastomus commersoni	909	4.37
Lepomis auritus	225	6.42

STREAM NAME : EAST RIVER SITE #: 2008
SITE DESCRIPTION: DOWNSTREAM OF TOWN SEPTIC LAGOON ACCESS ROAD OFF NUTS PLAINS RD GUILFORD, TIDAL
SAMPLE LENGTH : 150. SAMPLE DATE: 07/11/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	22.0	(C)	DISSOLVED OXYGEN (mg/l)	8.6	0.06
WATER TEMP.	21.0	(C)	pH	6.2	0.38
VELOCITY.	0.606	(m/s)	COND (uS/cm3)	85.0	0.00
DISCHARGE	0.671	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	16.9	0.21

	MEAN	STD	
WIDTH	5.2	2.3	(m)
DEPTH	21.7	15.92	(cm)

DOMINANT SUBSTRATE TYPE	3		POOL/RIFFLE RATIO	5.82
TYPE THREE SUBSTRATE	0.74	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE	48.53	(%)		
OVERHEAD CANOPY		(%)		
INSTREAM SHELTER	138.55	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	3410	3.61
Pungitius pungitius	12	6.45
Ictalurus nebulosus	51	8.61
Semotilus corporalis	904	5.59
Apeltes quadracus	2248	0.73
Notemigonus crysoleucas	12	6.45
Catastomus commersoni	129	4.49
Perca flavescens	12	4.30
Micropterus salmoides	12	12.91
Ictalurus catus	38	5.53
Lepomis auritus	180	7.86
Fundulus majalis	51	5.16
Petromyzon marinus	258	4.40
Fundulus diaphanus	284	3.41
Trinectes maculatus	90	3.39
Salvelinus fontinalis	1	

STREAM NAME : EATON BROOK SITE #: 2115

SITE DESCRIPTION: UPSTREAM OF SHEPARD AVE, HAMDEN. GOOD FINGERLING PRODUCTION STREAM

SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	30.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.4	0.06
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.7	0.06
VELOCITY. . . .	0.436	(m/s)	COND . . . . . (uS/cm3). . :	156.7	2.89
DISCHARGE . . .	0.087	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	37.6	1.80

	MEAN	STD	
WIDTH. . . . . :	2.9	1.3	(m)
DEPTH. . . . . :	7.3	6.96	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.58
EMBEDDEDNESS OF TYPE THREE :	25.38	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	2.11	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salmo trutta	2380	48.59
Salvelinus fontinalis	1564	48.89
Rhinichthys atratulus	1360	54.42

STREAM NAME : EIGHTMILE RIVER SITE #: 2014

SITE DESCRIPTION: UPSTREAM OF PROSPECT RD, SOUTHINGTON. PARALLELS I-84 LEDGE AND LARGE COBBLE

SAMPLE LENGTH : 150. SAMPLE DATE: 07/09/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	31.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	21.0	(C)	pH . . . . . :	7.0	0.06
VELOCITY. . . .	0.261	(m/s)	COND . . . . . (uS/cm3). . :	190.0	0.00
DISCHARGE . . .	0.353	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	40.9	0.50

	MEAN	STD	
WIDTH. . . . . :	7.3	2.2	(m)
DEPTH. . . . . :	19.3	15.89	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.70
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.48
EMBEDDEDNESS OF TYPE THREE :	31.67	(%)		
OVERHEAD CANOPY. . . . . :	65.00	(%)		
INSTREAM SHELTER . . . . . :	96.28	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	26	3.77
Lepomis macrochirus	8	4.40
Catastomus commersoni	167	6.97
Rhinichthys atratulus	4926	3.27
Salmo trutta	61	5.60
Notropis cornutus	193	3.18
Semotilus corporalis	158	5.47
Notemigonus crysoleucas	8	4.40
Anguilla rostrata	35	4.40
Etheostoma olmstedi	176	2.68
Rhinichthys cataractae	2679	3.69

STREAM NAME : FARM RIVER SITE #: 2012

SITE DESCRIPTION: BEHIND TOTEKET VALLEY PARK ON RT 17 NORTH BRANFORD, UPPER END AT PUMP STATION

SAMPLE LENGTH : 150. SAMPLE DATE: 08/23/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.5	0.40
WATER TEMP. . .	16.0	(C)	pH	8.0	0.03
VELOCITY. . . .	0.135	(m/s)	COND . . . . . (uS/cm3). .	273.3	2.89
DISCHARGE . . .	0.168	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	96.6	2.39

	MEAN	STD	
WIDTH.	8.4	2.2	(m)
DEPTH.	21.4	18.11	(cm)

DOMINANT SUBSTRATE TYPE. .	3		POOL/RIFFLE RATIO . .:	32.33
TYPE THREE SUBSTRATE . . .	0.39	(%)	AIR/WATER TEMP. RATIO:	1.19
EMBEDDEDNESS OF TYPE THREE	84.84	(%)		
OVERHEAD CANOPY.	85.00	(%)		
INSTREAM SHELTER	192.28	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis macrochirus	7	3.94
Anguilla rostrata	473	4.25
Salmo trutta	442	7.02
Unknown Centrarchid	7	2.63
Catastomus commersoni	2298	3.79
Rhinichthys atratulus	1248	3.82
Esox americanus	39	3.94
Rhinichthys cataractae	71	3.32
Micropterus salmoides	39	5.64
Lepomis gibbosus	63	5.26
Oncorhynchus mykiss	7	7.89
Etheostoma olmstedi	1224	2.49
Notropis cornutus	963	5.17
Unknown Cyprinid	458	4.22

STREAM NAME : FARM RIVER SITE #: 2068

SITE DESCRIPTION: DOWNSTREAM OF REED GAP RD EAST, NORTH BRANFORD, COBBLE FORESTED DEEP UNDERCUTS

SAMPLE LENGTH : 150. SAMPLE DATE: 07/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.4	0.10
WATER TEMP. . .	17.0	(C)	pH	7.5	0.06
VELOCITY. . . .	0.133	(m/s)	COND . . . . . (uS/cm3). .	270.0	0.00
DISCHARGE . . .	0.069	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	98.4	0.30

	MEAN	STD	
WIDTH.	3.7	0.7	(m)
DEPTH.	15.1	15.54	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.76
TYPE THREE SUBSTRATE . . .	0.32	(%)	AIR/WATER TEMP. RATIO:	1.12
EMBEDDEDNESS OF TYPE THREE	47.22	(%)		
OVERHEAD CANOPY.	86.20	(%)		
INSTREAM SHELTER	38.46	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salmo trutta	1594	11.11
Salvelinus fontinalis	35	17.92
Rhinichthys atratulus	3082	11.55
Anguilla rostrata	143	10.24
Lepomis gibbosus	17	17.92
Etheostoma olmstedi	35	17.92
Catastomus commersoni	89	8.96
Lepomis macrochirus	17	17.92

STREAM NAME : FENCE CREEK SITE #: 2065

SITE DESCRIPTION: AREA JUST NORTH OF RT 1 MADISON. JUST ABOVE SALT WEDGE, SPARTINA PRESENT

SAMPLE LENGTH : SAMPLE DATE: 06/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:27.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	:26.0	(C)	pH . . . . . :		
VELOCITY. . . .	:	(m/s)	COND . . . . . (uS/cm3). . :	1.7E3	0.00
DISCHARGE . . .	:	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :	4.0	0.9	(m)
DEPTH. . . . . :	18.2	11.88	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.36	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	5.00	(%)		
INSTREAM SHELTER . . . . . :		(m2)		

BIOLOGICAL

SPECIES	POPULATION Present
Apeltes quadracus	
Fundulus heteroclitus	
Pungitius pungitius	
Fundulus diaphanus	
Anguilla rostrata	

STREAM NAME : FIVEMILE RIVER SITE #: 2044

SITE DESCRIPTION: UPSTREAM OF KING HWY CROSSING DARIEN-NORWALK TOWNLINE

SAMPLE LENGTH : 150. SAMPLE DATE: 08/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.4	0.47
WATER TEMP. . .	:22.0	(C)	pH . . . . . :	6.7	0.31
VELOCITY. . . .	: 0.171	(m/s)	COND . . . . . (uS/cm3). . :	230.3	0.58
DISCHARGE . . .	: 0.310	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	35.2	0.25

	MEAN	STD	
WIDTH. . . . . :	9.1	2.5	(m)
DEPTH. . . . . :	18.6	16.10	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.59
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE :	47.50	(%)		
OVERHEAD CANOPY. . . . . :	98.90	(%)		
INSTREAM SHELTER . . . . . :	66.38	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Unknown Centrarchid	67	4.24
Lepomis gibbosus	188	4.41
Catastomus commersoni	694	3.02
Pomoxis nigromaculatus	15	5.03
Notemigonus crysoleucas	15	3.01
Rhinichthys atratulus	2308	2.30
Anguilla rostrata	641	4.63

STREAM NAME : FIVEMILE RIVER SITE #: 2159

SITE DESCRIPTION: PARALLEL TO INDIAN ROCK RD, UPSTREAM OF DRIVEWAY AT 108, NEW CANAAN

SAMPLE LENGTH : 100. SAMPLE DATE: 09/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	17.0	(C)	DISSOLVED OXYGEN (mg/l). .	11.0	0.32
WATER TEMP. . .	13.0	(C)	pH	6.6	0.00
VELOCITY. . . .	0.098	(m/s)	COND . . . . . (uS/cm3). .	97.7	1.15
DISCHARGE . . .	0.029	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	25.9	0.81

	MEAN		STD	
WIDTH.	3.4		1.0	(m)
DEPTH.	8.8		6.86	(cm)
DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.58
TYPE THREE SUBSTRATE . . .	0.15	(%)	AIR/WATER TEMP. RATIO:	1.31
EMBEDDEDNESS OF TYPE THREE	10.00	(%)		
OVERHEAD CANOPY.	93.70	(%)		
INSTREAM SHELTER	0.48	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	58	14.66
Lepomis gibbosus	293	24.43
Catastomus commersoni	29	29.32
Semotilus atromaculatus	58	29.32
Micropterus salmoides	58	29.32
Rhinichthys atratulus	5425	20.77

STREAM NAME : GODFREY BROOK SITE #: 2085

SITE DESCRIPTION: ABOVE GODFREY RD CROSSING WESTON

SAMPLE LENGTH : 50. SAMPLE DATE: 07/16/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.1	0.15
WATER TEMP. . .	23.0	(C)	pH	6.2	0.06
VELOCITY. . . .	0.237	(m/s)	COND . . . . . (uS/cm3). .	40.0	0.00
DISCHARGE . . .	0.072	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.1	0.45

	MEAN		STD	
WIDTH.	2.4		0.7	(m)
DEPTH.	12.1		8.25	(cm)
DOMINANT SUBSTRATE TYPE. .	3		POOL/RIFFLE RATIO . .:	1.08
TYPE THREE SUBSTRATE . . .	0.72	(%)	AIR/WATER TEMP. RATIO:	1.09
EMBEDDEDNESS OF TYPE THREE	29.23	(%)		
OVERHEAD CANOPY.	95.00	(%)		
INSTREAM SHELTER	0.40	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Ictalurus nebulosus	164	54.86
Micropterus salmoides	329	54.86
Esox niger	823	58.78
Anguilla rostrata	82	82.30

STREAM NAME : GOODWIVES RIVER SITE #: 2045

SITE DESCRIPTION: IMMEDIATELY BELOW GRANASTON LANE, DARIEN
SAMPLE LENGTH : 100. SAMPLE DATE: 06/15/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	17.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.2	0.26
WATER TEMP. . .	17.0	(C)	pH	7.1	0.10
VELOCITY. . . .	0.106	(m/s)	COND . . . . . (uS/cm3). .	181.3	0.58
DISCHARGE . . .	0.140	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	44.7	0.23

	MEAN	STD	
WIDTH.	5.9	2.6	(m)
DEPTH.	9.1	8.74	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.54
TYPE THREE SUBSTRATE . . . :	0.04	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	7.50	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	6.26	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	458	7.50
Micropterus salmoides	16	16.97
Lepomis gibbosus	84	14.14
Rhinichthys atratulus	475	12.84

STREAM NAME : GREENWICH CREEK SITE #: 2051

SITE DESCRIPTION: UPST. OF DEADEND RD TO SKATING RINK, NORTH OF NORTH END OF HILL RD, GREENWICH
SAMPLE LENGTH : 100. SAMPLE DATE: 06/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.3	0.06
WATER TEMP. . .	21.0	(C)	pH	7.0	0.30
VELOCITY. . . .	0.186	(m/s)	COND . . . . . (uS/cm3). .	221.7	5.51
DISCHARGE . . .	0.089	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	54.5	1.29

	MEAN	STD	
WIDTH.	4.3	0.8	(m)
DEPTH.	25.5	19.08	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.83
TYPE THREE SUBSTRATE . . . :	0.11	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	96.80	(%)		
INSTREAM SHELTER . . . . . :	26.31	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	23	11.52
Lepomis gibbosus	23	11.52
Anguilla rostrata	1451	17.07
Lepomis auritus	161	17.92
Micropterus salmoides	23	23.04
Rhinichthys atratulus	622	11.05

STREAM NAME : HAMMONASSET RIVER SITE #: 2006

SITE DESCRIPTION: ABOVE GREENHILL RD, MADISON
SAMPLE LENGTH : 75. SAMPLE DATE: 07/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.8	0.15
WATER TEMP. . .	22.0	(C)	pH . . . . . :	6.5	0.12
VELOCITY. . . .	0.085	(m/s)	COND . . . . . (uS/cm3). . :	55.7	1.15
DISCHARGE . . .	0.363	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.2	0.40

	MEAN	STD	
WIDTH. . . . . :	13.5	5.3	(m)
DEPTH. . . . . :	27.1	24.60	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	0.42
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.18
EMBEDDEDNESS OF TYPE THREE :	90.00	(%)		
OVERHEAD CANOPY. . . . . :	46.30	(%)		
INSTREAM SHELTER . . . . . :	396.45	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis macrochirus	59	1.58
Rhinichthys atratulus	4	1.64
Salmo trutta	4	4.93
Erimyzon oblongus	4	4.93
Esox niger	24	3.52
Semotilus corporalis	123	3.42
Anguilla rostrata	1248	2.00
Ictalurus nebulosus	39	3.03
Lepomis gibbosus	44	2.77
Petromyzon marinus	108	1.45
Catastomus commersoni	98	2.67
Perca flavescens	98	1.18
Rhinichthys cataractae	207	0.79
Micropterus salmoides	14	2.11

STREAM NAME : HAMMONASSET RIVER SITE #: 2080

SITE DESCRIPTION: 25 M ABOVE HIGH WATER MARK OF HAMM. RES. 250 M ABOVE FIRST RESIDUAL POOL,MADISON
SAMPLE LENGTH : 150. SAMPLE DATE: 07/30/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). . :	4.8	0.75
WATER TEMP. . .	22.0	(C)	pH . . . . . :	6.1	0.21
VELOCITY. . . .	0.096	(m/s)	COND . . . . . (uS/cm3). . :	80.0	0.00
DISCHARGE . . .	0.163	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	11.3	0.46

	MEAN	STD	
WIDTH. . . . . :	6.3	1.4	(m)
DEPTH. . . . . :	25.1	27.10	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.33	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	71.94	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	504.06	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Perca flavescens	13,200	0.19
Anguilla rostrata	31	10.58
Lepomis macrochirus	1015	5.16
Erimyzon oblongus	21	7.05
Esox niger	190	7.32
Esox americanus	5640	4.42
Notemigonus crysoleucas	105	7.55
Micropterus salmoides	21	5.29
Lepomis gibbosus	21	10.58
Ictalurus nebulosus	613	3.58
Catastomus commersoni	137	7.64

STREAM NAME : HARBOR BROOK SITE #: 2019

SITE DESCRIPTION: IN HARBOR PARK MERIDEN UPSTREAM OF I-691 25 METERS, CHANNELIZED, RETAINING WALLS

SAMPLE LENGTH : 150. SAMPLE DATE: 07/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	12.4	0.05
WATER TEMP. . .	27.0	(C)	pH	8.7	0.10
VELOCITY. . . .	0.058	(m/s)	COND . . . . . (uS/cm3). .	391.0	0.00
DISCHARGE . . .	0.106	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	110.1	0.38

	MEAN	STD	
WIDTH.	6.2	1.3	(m)
DEPTH.	19.0	14.75	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .	1.63
TYPE THREE SUBSTRATE . . .	0.22	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE	45.42	(%)		
OVERHEAD CANOPY.	12.50	(%)		
INSTREAM SHELTER	27.20	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	16548	0.48
Anguilla rostrata	42	8.57
Rhinichthys cataractae	3676	3.52
Micropterus salmoides	10	3.57
Lepomis gibbosus	21	4.28
Etheostoma olmstedi	621	3.10
Ictalurus nebulosus	10	10.71
Rhinichthys atratulus	8574	1.63

STREAM NAME : HAVILAND BROOK SITE #: 2131

SITE DESCRIPTION: ABOVE BRIDGE IN CHESTNUT PARK, STAMFORD

SAMPLE LENGTH : 50. SAMPLE DATE: 07/17/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.5	0.38
WATER TEMP. . .	22.0	(C)	pH	7.1	0.00
VELOCITY. . . .	0.184	(m/s)	COND . . . . . (uS/cm3). .	374.3	4.04
DISCHARGE . . .	0.013	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	39.3	0.72

	MEAN	STD	
WIDTH.	1.2	0.3	(m)
DEPTH.	5.8	3.82	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .	0.28
TYPE THREE SUBSTRATE . . .	0.30	(%)	AIR/WATER TEMP. RATIO:	1.18
EMBEDDEDNESS OF TYPE THREE	30.00	(%)		
OVERHEAD CANOPY.	94.80	(%)		
INSTREAM SHELTER	0.71	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	2333	137.25
Esox niger	166	83.33
Anguilla rostrata	333	66.66
Catastomus commersoni	1166	145.83
Micropterus salmoides		

STREAM NAME : HAWLEYS BROOK SITE #: 2102

SITE DESCRIPTION: HAWLEYS RD OFF REDDING ROAD, SW OF SAUG. RES.
BHC PROP 1/4 MILE PAST GATE

SAMPLE LENGTH : 100. SAMPLE DATE: 06/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.5	0.06
WATER TEMP. . .	16.0	(C)	pH	6.3	0.10
VELOCITY. . . .	0.098	(m/s)	COND . . . . . (uS/cm3). .	56.0	1.00
DISCHARGE . . .	0.007	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	12.5	2.37

	MEAN	STD	
WIDTH.	1.7	0.6	(m)
DEPTH.	7.5	6.45	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.22
TYPE THREE SUBSTRATE . . . :	0.75	(%)	AIR/WATER TEMP. RATIO:	1.31
EMBEDDEDNESS OF TYPE THREE :	34.44	(%)		
OVERHEAD CANOPY. . . . . :	56.30	(%)		
INSTREAM SHELTER . . . . . :	2.92	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	1176	20.05
Etheostoma olmstedi	176	35.29
Esox niger	58	58.82
Anguilla rostrata	1058	40.72
Salvelinus fontinalis	27352	25.21

STREAM NAME : HOADLEY CREEK SITE #: 2064

SITE DESCRIPTION: BELOW RTE I-95, MADISON CT
SAMPLE LENGTH : 100. SAMPLE DATE: 06/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	3.5	0.10
WATER TEMP. . .	20.0	(C)	pH	6.2	0.06
VELOCITY. . . .		(m/s)	COND . . . . . (uS/cm3). .	140.0	5.00
DISCHARGE . . .		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	41.3	0.06

	MEAN	STD	
WIDTH.	3.1	0.5	(m)
DEPTH.	9.8	9.42	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.54	(%)	AIR/WATER TEMP. RATIO:	1.35
EMBEDDEDNESS OF TYPE THREE :	36.15	(%)		
OVERHEAD CANOPY. . . . . :	86.00	(%)		
INSTREAM SHELTER . . . . . :	0.60	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	0	
Pungitius pungitius	32	
Notemigonus crysoleucas	0	

STREAM NAME : HOG POND BROOK SITE #: 2099

SITE DESCRIPTION: DOWNSTREAM 40M OF CHESTNUT HILL RD, MADISON.
BEDROCK AND BOULDERS.

SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	31.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.9	0.06
WATER TEMP. . .	28.0	(C)	pH . . . . . :	7.4	0.06
VELOCITY. . . .	0.169	(m/s)	COND . . . . . (uS/cm3). . :	120.0	0.00
DISCHARGE . . .	0.049	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	17.2	1.26

	MEAN	STD	
WIDTH. . . . . :	2.8	0.8	(m)
DEPTH. . . . . :	11.4	8.71	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.17
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.11
EMBEDDEDNESS OF TYPE THREE :	47.00	(%)		
OVERHEAD CANOPY. . . . . :	67.00	(%)		
INSTREAM SHELTER . . . . . :	5.03	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	511	51.11
Anguilla rostrata	567	43.68
Micropterus salmoides	340	37.86

STREAM NAME : HORSE TAVERN BROOK SITE #: 2101

SITE DESCRIPTION: BEHIND DONNALLY HOUSE 150M ABOVE CUL-DE-SAC
ON INDIAN ROAD

SAMPLE LENGTH : 100. SAMPLE DATE: 06/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.15
WATER TEMP. . .	20.0	(C)	pH . . . . . :	6.7	0.35
VELOCITY. . . .	0.109	(m/s)	COND . . . . . (uS/cm3). . :	199.3	5.13
DISCHARGE . . .	0.052	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	20.2	0.70

	MEAN	STD	
WIDTH. . . . . :	7.0	2.2	(m)
DEPTH. . . . . :	7.4	6.53	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.94
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.20
EMBEDDEDNESS OF TYPE THREE :	18.33	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	0.92	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	71	14.26
Lepomis gibbosus	271	9.68
Rhinichthys atratulus	1012	9.98
Notemigonus crysoleucas	85	9.51
Catastomus commersoni	57	14.26
Micropterus salmoides	42	14.26

STREAM NAME : HORSENECK BROOK SITE #: 2052

SITE DESCRIPTION: BELOW DRIVEWAY TO EAGLEHILL SCHOOL, GREENWICH
SAMPLE LENGTH : 100. SAMPLE DATE: 06/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.2	0.23
WATER TEMP. . .	19.0	(C)	pH	6.5	0.00
VELOCITY. . . .	0.127	(m/s)	COND . . . . . (uS/cm3). .	166.0	0.00
DISCHARGE . . .	0.048	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	41.8	0.36

	MEAN	STD	
WIDTH.	5.5	2.5	(m)
DEPTH.	17.8	16.48	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	1.86
TYPE THREE SUBSTRATE . . .	0.02	(%)	AIR/WATER TEMP. RATIO:	1.16
EMBEDDEDNESS OF TYPE THREE	0.00	(%)		
OVERHEAD CANOPY.	95.30	(%)		
INSTREAM SHELTER	39.23	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	561	6.21
Anguilla rostrata	634	12.43
Rhinichthys atratulus	2155	9.05
Lepomis macrochirus	199	11.07
Micropterus salmoides	72	12.07

STREAM NAME : INDIAN RIVER SITE #: 2004

SITE DESCRIPTION: PARALLEL TO RT 81 KILLINGWORTH 0.5 MILE NORTH OF SILVER BIRCH LANE.
SAMPLE LENGTH : 50. SAMPLE DATE: 07/03/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.9	0.31
WATER TEMP. . .	21.0	(C)	pH	6.1	0.10
VELOCITY. . . .	0.121	(m/s)	COND . . . . . (uS/cm3). .	76.0	3.61
DISCHARGE . . .	0.015	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	11.2	0.29

	MEAN	STD	
WIDTH.	1.5	0.4	(m)
DEPTH.	7.9	7.72	(cm)

DOMINANT SUBSTRATE TYPE. .	1		POOL/RIFFLE RATIO . .:	1.78
TYPE THREE SUBSTRATE . . .	0.00	(%)	AIR/WATER TEMP. RATIO:	1.24
EMBEDDEDNESS OF TYPE THREE	16.25	(%)		
OVERHEAD CANOPY.	100.	(%)		
INSTREAM SHELTER	0.96	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	22	
Rhinichthys atratulus	113	

STREAM NAME : INDIAN RIVER SITE #: 2027

SITE DESCRIPTION: UPSTREAM OF POWER LINES OFF LAMBERT RD, ORANGE, FLAT SLATE COBBLE

SAMPLE LENGTH : 100. SAMPLE DATE: 07/17/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:30.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.12
WATER TEMP. . .	:19.0	(C)	pH . . . . . :	7.4	0.26
VELOCITY. . . .	: 0.212	(m/s)	COND . . . . . (uS/cm3). . :	176.7	2.89
DISCHARGE . . .	: 0.070	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	29.4	0.21

	MEAN	STD			
WIDTH. . . . . :	4.3	1.5	(m)		
DEPTH. . . . . :	8.0	6.37	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.49	
TYPE THREE SUBSTRATE . . . :	0.21	(%)	AIR/WATER TEMP. RATIO:	1.58	
EMBEDDEDNESS OF TYPE THREE :	25.63	(%)			
OVERHEAD CANOPY. . . . . :	96.30	(%)			
INSTREAM SHELTER . . . . . :	2.50	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	41	20.89
Rhinichthys atratulus	5684	14.95
Salmo trutta	41	20.89
Anguilla rostrata	271	15.09

STREAM NAME : IRON STREAM SITE #: 2059

SITE DESCRIPTION: UPSTREAM OF TWIN BRIDGE ROAD CROSSING, MADISON, CT. MEANDERING MEADOW STREAM

SAMPLE LENGTH : 150. SAMPLE DATE: 06/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.9	0.30
WATER TEMP. . .	:22.0	(C)	pH . . . . . :	5.8	0.35
VELOCITY. . . .	: 0.098	(m/s)	COND . . . . . (uS/cm3). . :	52.0	0.00
DISCHARGE . . .	: 0.071	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	11.4	0.65

	MEAN	STD			
WIDTH. . . . . :	5.5	1.1	(m)		
DEPTH. . . . . :	26.5	26.73	(cm)		
DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	15.67	
TYPE THREE SUBSTRATE . . . :	0.36	(%)	AIR/WATER TEMP. RATIO:	1.05	
EMBEDDEDNESS OF TYPE THREE :	80.56	(%)			
OVERHEAD CANOPY. . . . . :	89.00	(%)			
INSTREAM SHELTER . . . . . :	161.60	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	2516	4.95
Semotilus corporalis	72	7.25
Ictalurus nebulosus	120	8.06
Lepomis macrochirus	84	6.51
Esox niger	641	5.98
Lepomis auritus	701	5.93
Lepomis gibbosus	12	6.04

STREAM NAME : ISLAND BROOK SITE #: 2132

SITE DESCRIPTION: APPROX 100M ABOVE BRIDGE IN PARK CEMETERY, BRIDGEPORT

SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL		MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .		6.8	0.21
WATER TEMP. . .	21.0	(C)	pH		6.8	0.06
VELOCITY. . . .	0.138	(m/s)	COND . . . . . (uS/cm3). .		283.0	13.00
DISCHARGE . . .	0.052	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)		41.4	1.15

	MEAN	STD	
WIDTH.	3.2	0.8	(m)
DEPTH.	11.6	10.14	(cm)

DOMINANT SUBSTRATE TYPE. .	2		POOL/RIFFLE RATIO . .:	1.50
TYPE THREE SUBSTRATE . . .	0.13	(%)	AIR/WATER TEMP. RATIO:	1.24
EMBEDDEDNESS OF TYPE THREE	70.00	(%)		
OVERHEAD CANOPY.	1.E2	(%)		
INSTREAM SHELTER	3.66	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	437	16.44
Rhinichthys atratulus	17687	29.72
Notemigonus crysoleucas	62	62.49
Catastomus commersoni	18062	11.95
Micropterus salmoides	937	12.19

STREAM NAME : KEELERS BROOK SITE #: 2096

SITE DESCRIPTION: ABOVE FLAX HILL RD, NORWALK

SAMPLE LENGTH : 60. SAMPLE DATE: 06/15/1990

PHYSICAL			CHEMICAL		MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). .		7.3	0.06
WATER TEMP. . .	19.0	(C)	pH		7.0	0.06
VELOCITY. . . .	0.141	(m/s)	COND . . . . . (uS/cm3). .		370.7	8.08
DISCHARGE . . .	0.063	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)		67.6	2.15

	MEAN	STD	
WIDTH.	3.8	0.6	(m)
DEPTH.	12.4	12.20	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.88
TYPE THREE SUBSTRATE . . .	0.11	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE	30.00	(%)		
OVERHEAD CANOPY.	86.00	(%)		
INSTREAM SHELTER	10.15	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	309	44.24
Anguilla rostrata	265	33.18

STREAM NAME : LITTLE RIVER SITE #: 2038

SITE DESCRIPTION: ABOVE CROSS HWY REDDING
SAMPLE LENGTH : 150. SAMPLE DATE: 08/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	17.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.8	0.12
WATER TEMP. . .	16.0	(C)	pH		
VELOCITY. . . .	0.224	(m/s)	COND . . . . . (uS/cm3). .	101.3	0.58
DISCHARGE . . .	0.104	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	28.1	0.25

	MEAN	STD	
WIDTH.	3.9	0.5	(m)
DEPTH.	11.9	9.68	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.27
TYPE THREE SUBSTRATE . . . :	0.32	(%)	AIR/WATER TEMP. RATIO:	1.06
EMBEDDEDNESS OF TYPE THREE :	10.45	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	18.10	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notropis cornutus	3084	4.82
Esox niger	17	17.13
Salmo trutta	17	17.13
Semotilus atromaculatus	4541	8.86
Salvelinus fontinalis	1748	9.86
Rhinichthys atratulus	11773	10.83
Lepomis auritus	17	17.13
Micropterus salmoides	17	17.13
Catastomus commersoni	514	6.74
Exoglossum maxillingua	34	11.42

STREAM NAME : LYONS SWAMP OUTFLOW SITE #: 2122

SITE DESCRIPTION: UPSTREAM OF SPORT HILL ROAD, BELOW LYONS SWAMP REDDING.
SAMPLE LENGTH : 100. SAMPLE DATE: 06/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	18.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.8	0.20
WATER TEMP. . .	16.0	(C)	pH	6.7	0.06
VELOCITY. . . .	0.115	(m/s)	COND . . . . . (uS/cm3). .	75.0	2.65
DISCHARGE . . .	0.020	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	19.0	0.23

	MEAN	STD	
WIDTH.	2.6	0.7	(m)
DEPTH.	21.0	15.93	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	7.33
TYPE THREE SUBSTRATE . . . :	0.15	(%)	AIR/WATER TEMP. RATIO:	1.13
EMBEDDEDNESS OF TYPE THREE :	36.67	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	32.67	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	3088	22.44
Catastomus commersoni	4015	25.65
Lepomis gibbosus	77	25.74
Anguilla rostrata	38	19.30
Rhinichthys atratulus	270	30.03
Micropterus salmoides	115	23.16
Esox americanus	77	38.61
Salvelinus fontinalis	463	25.74
Lepomis macrochirus	154	30.88

STREAM NAME : MEETINGHOUSE BROOK SITE #: 2111

SITE DESCRIPTION: BEHIND HEALTHWORKS CLUB NORTH 300 M OF INT. OF RTE 15 AND RTE 5 WALLINGFORD

SAMPLE LENGTH : 100. SAMPLE DATE: 06/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	27.0	(C)	DISSOLVED OXYGEN (mg/l)	9.7	0.32
WATER TEMP.	18.0	(C)	pH	7.7	0.12
VELOCITY.	0.061	(m/s)	COND (uS/cm3)	345.0	21.79
DISCHARGE	0.062	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	99.5	9.14

	MEAN	STD	
WIDTH	4.4	1.8	(m)
DEPTH	19.4	18.98	(cm)

DOMINANT SUBSTRATE TYPE	4		POOL/RIFFLE RATIO	2.85
TYPE THREE SUBSTRATE	0.14	(%)	AIR/WATER TEMP. RATIO:	1.50
EMBEDDEDNESS OF TYPE THREE	86.00	(%)		
OVERHEAD CANOPY	60.00	(%)		
INSTREAM SHELTER	73.04	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	18	18.58
Rhinichthys cataractae	1784	9.86
Salvelinus fontinalis	148	16.52
Catastomus commersoni	743	13.76
Notropis cornutus	223	14.86
Rhinichthys atratulus	8754	11.69

STREAM NAME : MENUNKETESUCK RIVER SITE #: 2003

SITE DESCRIPTION: UPSTREAM OF CONCRETE BRIDGE(DRIVEWAY) ON IRON WORKS ROAD. CLINTON

SAMPLE LENGTH : 60. SAMPLE DATE: 07/03/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	26.0	(C)	DISSOLVED OXYGEN (mg/l)	7.8	0.59
WATER TEMP.	24.0	(C)	pH	6.3	0.00
VELOCITY.		(m/s)	COND (uS/cm3)	56.7	1.15
DISCHARGE		(m3/s)	ALKALINITY (mg CaCO3 eq/l)	10.6	0.85

	MEAN	STD	
WIDTH	7.7	1.3	(m)
DEPTH	28.6	21.25	(cm)

DOMINANT SUBSTRATE TYPE	6		POOL/RIFFLE RATIO	0.52
TYPE THREE SUBSTRATE	0.12	(%)	AIR/WATER TEMP. RATIO:	1.08
EMBEDDEDNESS OF TYPE THREE	16.25	(%)		
OVERHEAD CANOPY	92.00	(%)		
INSTREAM SHELTER	154.93	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	629	4.55
Salmo trutta	34	5.74
Micropterus salmoides	77	4.85
Catastomus commersoni	120	5.03
Anguilla rostrata	370	6.07
Salvelinus fontinalis	8	8.62

STREAM NAME : MIANUS RIVER SITE #: 2050

SITE DESCRIPTION: MIANUS TMA APPROX 200 M ABOVE MERRIBROOK LANE BRIDGE, STAMFORD

SAMPLE LENGTH : 60. SAMPLE DATE: 08/16/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.7	0.21
WATER TEMP. . .	24.0	(C)	pH	6.9	0.25
VELOCITY. . . .	0.164	(m/s)	COND . . . . . (uS/cm3). .	153.0	0.00
DISCHARGE . . .	1.802	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	34.8	0.40

	MEAN	STD	
WIDTH.	15.9	3.7	(m)
DEPTH.	40.5	21.62	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	0.20
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	60.00	(%)		
OVERHEAD CANOPY. . . . . :	83.80	(%)		
INSTREAM SHELTER . . . . . :	515.31	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	8	2.78
Lepomis auritus	16	2.78
Anguilla rostrata	217	1.95
Micropterus salmoides	4	2.08
Lepomis gibbosus	12	2.50
Salmo trutta	75	3.13
Etheostoma olmstedi	459	0.47
Lepomis macrochirus	4	1.39
Rhinichthys atratulus	1885	0.97
Unknown Cyprinid	41	2.61
Erimyzon oblongus	4	2.08
Catastomus commersoni	501	2.82
Notropis cornutus	1496	1.34
Exoglossum maxillingua	367	1.51

STREAM NAME : MILL RIVER SITE #: 2023

SITE DESCRIPTION: BELOW TUTTLE ROAD, HAMDEN, SLEEPING GIANT STATE PARK

SAMPLE LENGTH : 150. SAMPLE DATE: 07/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	23.0	(C)	DISSOLVED OXYGEN (mg/l)	8.3	0.17
WATER TEMP.	21.0	(C)	pH	7.1	0.06
VELOCITY.	0.068	(m/s)	COND (uS/cm3)	186.7	4.16
DISCHARGE	0.246	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	65.6	0.29

	MEAN	STD	
WIDTH.	11.8	1.3	(m)
DEPTH.	24.7	14.41	(cm)

DOMINANT SUBSTRATE TYPE.	4		POOL/RIFFLE RATIO	36.50
TYPE THREE SUBSTRATE	0.13	(%)	AIR/WATER TEMP. RATIO:	1.10
EMBEDDEDNESS OF TYPE THREE	61.15	(%)		
OVERHEAD CANOPY.	91.00	(%)		
INSTREAM SHELTER	64.54	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Ictalurus nebulosus	5	5.64
Salvelinus fontinalis	45	3.00
Lepomis auritus	857	2.52
Anguilla rostrata	45	3.76
Notropis cornutus	39	4.38
Unknown Cyprinid	377	2.08
Semotilus corporalis	78	2.00
Micropterus salmoides	174	1.33
Lepomis gibbosus	11	2.82
Rhinichthys atratulus	4658	0.46
Oncorhynchus mykiss	11	5.64
Etheostoma olmstedi	1026	1.33
Catastomus commersoni	1302	1.83
Esox americanus	39	4.38
Salmo trutta	56	4.33
Esox niger	5	2.82
Semotilus atromaculatus	22	2.50
Rhinichthys cataractae	377	2.99
Apeltes quadracus	39	2.82

STREAM NAME : MILL RIVER SITE #: 2035

SITE DESCRIPTION: DOWNSTREAM OF BROOKSIDE DRIVE CROSSING, FAIRFIELD. TOWN PARK, BELOW SAMP MORTA
SAMPLE LENGTH : 150. SAMPLE DATE: 08/10/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.1	0.20
WATER TEMP. . .	25.0	(C)	pH . . . . . :	7.6	0.00
VELOCITY. . . .	0.180	(m/s)	COND . . . . . (uS/cm3). . :	174.0	1.00
DISCHARGE . . .	0.713	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	19.7	2.14

	MEAN	STD	
WIDTH. . . . . :	12.4	1.7	(m)
DEPTH. . . . . :	21.5	23.81	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.60
TYPE THREE SUBSTRATE . . . :	0.09	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	24.44	(%)		
OVERHEAD CANOPY. . . . . :	78.10	(%)		
INSTREAM SHELTER . . . . . :	115.90	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	5	5.38
Rhinichthys cataractae	560	2.94
Micropterus salmoides	64	3.59
Catastomus commersoni	194	3.42
Anguilla rostrata	3093	2.92
Ictalurus nebulosus	5	5.38
Lepomis macrochirus	5	1.79
Rhinichthys atratulus	167	2.13
Salmo trutta	21	5.38
Esox niger	91	4.16
Lepomis auritus	517	3.14
Petromyzon marinus	16	2.69
Etheostoma olmstedi	377	2.89
Perca flavescens	16	3.23

STREAM NAME : MILL RIVER SITE #: 2047

SITE DESCRIPTION: ABOVE TRINITY PASS RD. STAMFORD-NEW CANAAN LINE. HIGH GRADIENT

SAMPLE LENGTH : 150.

SAMPLE DATE: 06/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.0	0.23
WATER TEMP. . .	21.0	(C)	pH	7.3	0.06
VELOCITY. . . .	0.060	(m/s)	COND . . . . . (uS/cm3). .	195.0	0.00
DISCHARGE . . .	0.209	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	63.2	1.33

	MEAN	STD	
WIDTH.	9.0	4.2	(m)
DEPTH.	18.0	18.03	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.21
TYPE THREE SUBSTRATE . . . :	0.04	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	11.67	(%)		
OVERHEAD CANOPY. . . . . :	85.00	(%)		
INSTREAM SHELTER . . . . . :	166.45	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Esox niger	7	2.48
Micropterus salmoides	7	7.44
Rhinichthys cataractae	386	4.10
Ictalurus nebulosus	7	7.44
Etheostoma olmstedi	59	2.23
Unknown Cyprinid	7	3.72
Anguilla rostrata	44	4.96
Micropterus dolomieui	52	3.72
Lepomis gibbosus	7	3.72
Catastomus commersoni	200	2.74
Lepomis auritus	133	2.35
Salmo trutta	208	2.82
Pomoxis nigromaculatus	7	7.44
Ambloplites rupestris	104	4.96
Rhinichthys atratulus	877	3.41
Lepomis macrochirus	401	1.86

STREAM NAME : MILL RIVER SITE #: 2154

SITE DESCRIPTION: UPSTREAM 50 M FROM THE WHITNEY RD BRIDGE, HAMDEN AT RT 15 ENTRANCE RAMP

SAMPLE LENGTH : 150.

SAMPLE DATE: 08/06/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.4	0.12
WATER TEMP. . .	20.0	(C)	pH	7.1	0.12
VELOCITY. . . .	0.286	(m/s)	COND . . . . . (uS/cm3). .	227.3	2.08
DISCHARGE . . .	0.419	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	72.3	0.42

	MEAN	STD	
WIDTH.		1.6	(m)
DEPTH.	16.5	12.71	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	4.17
TYPE THREE SUBSTRATE . . . :	0.27	(%)	AIR/WATER TEMP. RATIO:	1.10
EMBEDDEDNESS OF TYPE THREE :	53.10	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	22.31	(m2)		

BIOLOGICAL

SPECIES	POPULATION (Present)
Notropis cornutus	
Unknown Centrarchid	
Etheostoma olmstedi	
Catastomus commersoni	
Semotilus corporalis	
Rhinichthys cataractae	
Micropterus salmoides	
Anguilla rostrata	
Rhinichthys atratulus	
Salmo trutta	
Lepomis auritus	

STREAM NAME : MILL RIVER SITE #: 2161
SITE DESCRIPTION: AT WHITNEY RD EXIT OF RT 15 AT STATE OWNED PARK AND RIDE. POPEST AND VEL ONLY
SAMPLE LENGTH : SAMPLE DATE: 09/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :		(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . . :		(C)	pH . . . . . :		
VELOCITY. . . . :	0.228	(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . . :	0.419	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :	16.5	1.6	(m)
DEPTH. . . . . :	16.5	12.71	(cm)

DOMINANT SUBSTRATE TYPE. . :		POOL/RIFFLE RATIO . .:	
TYPE THREE SUBSTRATE . . . :	(%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :	(%)		
OVERHEAD CANOPY. . . . . :	(%)		
INSTREAM SHELTER . . . . . :	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	2569	1.25
Notropis cornutus	56	1.67
Unknown Centrarchid	549	0.38
Semotilus corporalis	64	2.08
Salmo trutta	20	2.88
Anguilla rostrata	36	3.03
Lepomis auritus	840	1.65
Notropis hudsonius	56	2.35
Esox americanus	8	1.61
Rhinichthys cataractae	3179	0.63
Etheostoma olmstedi	1179	0.40
Carasius auratus	16	2.30
Micropterus salmoides	117	1.43
Lepomis gibbosus	96	0.44
Catastomus commersoni	1078	1.73

STREAM NAME : MISERY BROOK SITE #: 2016
SITE DESCRIPTION: DOWNSTREAM OF RT 120 SOUTHINGTON. OLD HALF LOG DROPS AND CHANNELIZATION.
SAMPLE LENGTH : 50. SAMPLE DATE: 06/28/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	28.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.2	0.15
WATER TEMP. . . :	18.0	(C)	pH . . . . . :	7.2	0.00
VELOCITY. . . . :	0.150	(m/s)	COND . . . . . (uS/cm3). . :	235.7	0.58
DISCHARGE . . . :	0.069	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	96.7	1.47

	MEAN	STD	
WIDTH. . . . . :	3.0	0.8	(m)
DEPTH. . . . . :	15.4	11.73	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	4.56
TYPE THREE SUBSTRATE . . . :	0.44 (%)	AIR/WATER TEMP. RATIO:	1.56
EMBEDDEDNESS OF TYPE THREE :	74.55 (%)		
OVERHEAD CANOPY. . . . . :	97.00 (%)		
INSTREAM SHELTER . . . . . :	16.21 (m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	66	66.88
Rhinichthys atratulus	1070	42.80
Etheostoma olmstedi	3344	43.70
Catastomus commersoni	66	66.88
Semotilus corporalis	936	66.88
Anguilla rostrata	66	66.88
Esox americanus	802	50.16

STREAM NAME : MOUNTAIN BROOK SITE #: 2112
SITE DESCRIPTION: PARALLEL TO NOTCH RD, IMMEDIATLY DOWNSTREAM OF OLD RR BRIDGE, CHESHIRE
SAMPLE LENGTH : 50. SAMPLE DATE: 07/26/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	26.0	(C)	DISSOLVED OXYGEN (mg/l)	10.0	0.26
WATER TEMP.	21.0	(C)	pH	7.0	0.06
VELOCITY.	0.071	(m/s)	COND (uS/cm3)	143.3	0.58
DISCHARGE	0.207	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	27.1	0.91

	MEAN	STD	
WIDTH	2.9	2.1	(m)
DEPTH	9.2	10.89	(cm)

DOMINANT SUBSTRATE TYPE	7		POOL/RIFFLE RATIO	0.36
TYPE THREE SUBSTRATE	0.00	(%)	AIR/WATER TEMP. RATIO:	1.24
EMBEDDEDNESS OF TYPE THREE	86.00	(%)		
OVERHEAD CANOPY		(%)		
INSTREAM SHELTER	12.25	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	68	68.96
Salvelinus fontinalis	1310	45.18
Rhinichthys atratulus	206	51.72
Lepomis gibbosus	137	27.58
Ictalurus nebulosus	68	34.48
Notemigonus crysoleucas	68	34.48
Micropterus salmoides	482	53.63

STREAM NAME : MUDDY BROOK SITE #: 2061
SITE DESCRIPTION: DRIVEWAY BRIDGE(BOX 67) OFF CLAPBOARD HILL RD, WESTPORT
SAMPLE LENGTH : 50. SAMPLE DATE: 07/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	20.0	(C)	DISSOLVED OXYGEN (mg/l)	9.9	0.06
WATER TEMP.	19.0	(C)	pH	6.8	0.10
VELOCITY.	0.189	(m/s)	COND (uS/cm3)	192.3	0.58
DISCHARGE	0.087	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	29.4	0.21

	MEAN	STD	
WIDTH	4.7	1.2	(m)
DEPTH	16.5	11.56	(cm)

DOMINANT SUBSTRATE TYPE	4		POOL/RIFFLE RATIO	1.10
TYPE THREE SUBSTRATE	0.45	(%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE	31.11	(%)		
OVERHEAD CANOPY	1.E2	(%)		
INSTREAM SHELTER	12.20	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Carasius auratus	42	42.82
Unknown Cyprinid	42	42.82
Semotilus atromaculatus	342	12.84
Fundulus diaphanus	128	25.69
Anguilla rostrata	1456	24.04
Lepomis macrochirus	85	17.13

STREAM NAME : MUDDY RIVER SITE #: 2021
SITE DESCRIPTION: NORTH END OF JULES HANSEN PARK,NEW HAVEN,APPROX 200M ABOVE PATTON RD CROSING
SAMPLE LENGTH : 150. SAMPLE DATE: 08/30/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.4	0.00
WATER TEMP. . .	22.0	(C)	pH	7.4	0.00
VELOCITY. . . .	0.143	(m/s)	COND . . . . . (uS/cm3). .	218.7	0.58
DISCHARGE . . .	0.135	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	70.7	1.07

	MEAN	STD	
WIDTH.	7.3	2.3	(m)
DEPTH.	20.7	16.71	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	7.47
TYPE THREE SUBSTRATE . . . :	0.51	(%)	AIR/WATER TEMP. RATIO:	1.09
EMBEDDEDNESS OF TYPE THREE :	40.29	(%)		
OVERHEAD CANOPY. . . . . :	75.00	(%)		
INSTREAM SHELTER . . . . . :	60.85	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	36	9.13
Anguilla rostrata	1643	5.25
Lepomis auritus	447	5.57
Catastomus commersoni	5744	5.93
Fundulus diaphanus	219	2.87
Rhinichthys cataractae	5552	2.12
Micropterus salmoides	511	5.10
Salmo trutta	63	9.13
Unknown Centrarchid	54	4.98
Petromyzon marinus	611	2.08
Etheostoma olmstedi	1726	1.53
Semotilus corporalis	410	7.08
Rhinichthys atratulus	4456	4.31
Notropis cornutus	8410	3.90
Unknown Cyprinid	18	9.13

STREAM NAME : MUDDY RIVER SITE #: 2158
SITE DESCRIPTION: UPSTREAM OF TYLER MILL RD, WALLINGFORD
SAMPLE LENGTH : 100. SAMPLE DATE: 09/24/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	14.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.1	0.42
WATER TEMP. . .	12.0	(C)	pH		
VELOCITY. . . .	0.117	(m/s)	COND . . . . . (uS/cm3). .	203.0	0.00
DISCHARGE . . .	0.153	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	85.1	2.11

	MEAN	STD	
WIDTH.	5.1	1.2	(m)
DEPTH.	23.2	25.93	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.48
TYPE THREE SUBSTRATE . . . :	0.11	(%)	AIR/WATER TEMP. RATIO:	1.17
EMBEDDEDNESS OF TYPE THREE :	64.00	(%)		
OVERHEAD CANOPY. . . . . :	82.30	(%)		
INSTREAM SHELTER . . . . . :	92.40	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	1829	9.52
Catastomus commersoni	1870	11.88
Esox americanus	82	8.22
Notropis cornutus	760	10.12
Micropterus salmoides	534	6.27
Perca flavescens	308	12.84
Anguilla rostrata	1747	10.55
Ictalurus nebulosus	20	20.55
Lepomis auritus	20	6.85
Lepomis gibbosus	41	8.22
Rhinichthys cataractae	2590	6.33
Etheostoma olmstedi	102	10.27

STREAM NAME : MUNGER BROOK SITE #: 2128
SITE DESCRIPTION: UPSTREAM OF WEST POND RD. EXT, N. BRANFORD(BEHIND CUMBERLAND FARMS).
SAMPLE LENGTH : 30. SAMPLE DATE: 09/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	19.0	(C)	pH . . . . . :		
VELOCITY. . . .	0.042	(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . .	0.039	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	78.4	0.55

	MEAN	STD	
WIDTH. . . . . :	2.9	0.6	(m)
DEPTH. . . . . :	13.0	9.40	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	14.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.37
EMBEDDEDNESS OF TYPE THREE :	63.00	(%)		
OVERHEAD CANOPY. . . . . :	94.00	(%)		
INSTREAM SHELTER . . . . . :	17.04	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	94	
Salvelinus fontinalis	7	
Esox niger	14	

STREAM NAME : NECK RIVER SITE #: 2007
SITE DESCRIPTION: UPSTREAM OF BLINN SHED RD, GUILFORD, LOOSE SMALL BOULDER WITH LONG POOLS
SAMPLE LENGTH : 100. SAMPLE DATE: 09/10/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.6	0.55
WATER TEMP. . .	21.0	(C)	pH . . . . . :	5.9	0.25
VELOCITY. . . .	0.123	(m/s)	COND . . . . . (uS/cm3). . :	181.7	2.89
DISCHARGE . . .	0.128	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	15.1	0.31

	MEAN	STD	
WIDTH. . . . . :	5.2	3.5	(m)
DEPTH. . . . . :	15.9	16.26	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	3.76
TYPE THREE SUBSTRATE . . . :	0.33	(%)	AIR/WATER TEMP. RATIO:	1.10
EMBEDDEDNESS OF TYPE THREE :	8.93	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	48.41	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1472	13.45
Ictalurus nebulosus	155	12.91
Lepomis macrochirus	19	19.37
Salvelinus fontinalis	77	19.37
Esox niger	290	15.29

STREAM NAME : NO NAME SITE #: 2092
SITE DESCRIPTION: BELOW LITTLE BROOK RD, NEW CANAAN BEHIND EAST SCHOOL
SAMPLE LENGTH : 50. SAMPLE DATE: 07/06/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.2	0.46
WATER TEMP. . .	19.0	(C)	pH	6.9	0.20
VELOCITY. . . .	0.070	(m/s)	COND . . . . . (uS/cm3). .	218.7	2.31
DISCHARGE . . .	0.008	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	52.8	0.59

	MEAN	STD	
WIDTH.	2.2	0.4	(m)
DEPTH.	5.3	4.24	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	3.17
TYPE THREE SUBSTRATE . . . :	0.13	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE :	80.00	(%)		
OVERHEAD CANOPY. . . . . :	47.50	(%)		
INSTREAM SHELTER . . . . . :	0.50	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	178	89.28
Lepomis cyanellus		
Micropterus salmoides	625	52.08
Rhinichthys atratulus	8035	49.73
Catastomus commersoni	5000	59.88
Lepomis gibbosus		
Anguilla rostrata		

STREAM NAME : NO NAME SITE #: 2098
SITE DESCRIPTION: DOWNSTREAM OF NOD ROAD, UPSTREAM OF I-95, LOW GRADIENT SHALLOW STREAM
SAMPLE LENGTH : 49. SAMPLE DATE: 07/31/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	6.4	0.49
WATER TEMP. . .	23.0	(C)	pH	6.9	0.00
VELOCITY. . . .	0.133	(m/s)	COND . . . . . (uS/cm3). .	118.0	24.76
DISCHARGE . . .	0.039	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	30.3	0.21

	MEAN	STD	
WIDTH.	2.1	0.7	(m)
DEPTH.	10.9	16.34	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	2.33
TYPE THREE SUBSTRATE . . . :	0.63	(%)	AIR/WATER TEMP. RATIO:	1.13
EMBEDDEDNESS OF TYPE THREE :	47.00	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	15.77	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	2080	90.45
Lepomis macrochirus	297	99.06
Ictalurus nebulosus	396	79.25
Anguilla rostrata	4458	79.25

STREAM NAME : NO NAME SITE #: 2104
SITE DESCRIPTION: BELOW BURR RD, KILLINGWORTH

SAMPLE LENGTH : 50. SAMPLE DATE: 07/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	4.8	0.61
WATER TEMP. . .	24.0	(C)	pH	5.4	0.06
VELOCITY. . . .	0.087	(m/s)	COND . . . . . (uS/cm3). .	32.0	0.00
DISCHARGE . . .	0.036	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.2	0.31

	MEAN	STD	
WIDTH.	2.9	1.4	(m)
DEPTH.	13.2	11.74	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	3.17
TYPE THREE SUBSTRATE . . . :	0.14	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	1.67	(%)		
OVERHEAD CANOPY. . . . . :	1.E2	(%)		
INSTREAM SHELTER . . . . . :	12.03	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Esox niger	487.	69.68
Salvelinus fontinalis	557.	61.94

STREAM NAME : NO NAME SITE #: 2150
SITE DESCRIPTION: UPSTREAM 5M OF PAPERMILL RD BRIDGE ON CHATFIELD HOLLOW BROOK MADISON
SAMPLE LENGTH : 50. SAMPLE DATE: 07/31/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.4	0.06
WATER TEMP. . .	19.0	(C)	pH	6.8	0.06
VELOCITY. . . .	0.051	(m/s)	COND . . . . . (uS/cm3). .	53.0	0.00
DISCHARGE . . .	0.005	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	13.3	0.12

	MEAN	STD	
WIDTH.	2.1	0.8	(m)
DEPTH.	4.8	4.07	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.45
TYPE THREE SUBSTRATE . . . :	0.25	(%)	AIR/WATER TEMP. RATIO:	1.32
EMBEDDEDNESS OF TYPE THREE :	31.25	(%)		
OVERHEAD CANOPY. . . . . :	1.E2	(%)		
INSTREAM SHELTER . . . . . :	0.00	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	2508	58.33
Catastomus commersoni	209	52.25
Rhinichthys atratulus	4180	62.39
Anguilla rostrata	69	69.67

STREAM NAME : NO NAME (BINNEY PARK) SITE #: 2062
SITE DESCRIPTION: 75 M NORTH OF RAILROAD TRACKS IN BINNEY PARK, GREENWICH, SOUTH END OF PARK
SAMPLE LENGTH : 150. SAMPLE DATE: 06/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.3	1.06
WATER TEMP. . .	26.0	(C)	pH	7.1	0.20
VELOCITY. . . .	0.021	(m/s)	COND . . . . . (uS/cm3). .	2.8E3	4.1E3
DISCHARGE . . .	0.090	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	60.3	5.23

	MEAN	STD	
WIDTH.	7.4	1.6	(m)
DEPTH.	73.8	48.61	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	1500.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	31.11	(%)		
OVERHEAD CANOPY. . . . . :	38.00	(%)		
INSTREAM SHELTER . . . . . :	545.41	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	161	1.90
Morone saxatilis	8	8.94
Micropterus salmoides	26	3.83
Morone americanus	53	5.36
Menidia beryllina	8	2.98
Fundulus diaphanus	8	4.47
Lepomis macrochirus	53	4.88
Fundulus heteroclitus	250	0.97
Notemigonus crysoleucas	8	8.94
Carasius auratus	554	5.65

STREAM NAME : NO NAME (SUCCESS LAKE OUTFLOW) SITE #: 2030
SITE DESCRIPTION: 50M BELOW SUCCESS LAKE BRIDGEPORT, REMINGTON PROPERTIES.
SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	30.0	(C)	DISSOLVED OXYGEN (mg/l). .	6.0	0.12
WATER TEMP. . .	27.0	(C)	pH	6.8	0.00
VELOCITY. . . .	0.034	(m/s)	COND . . . . . (uS/cm3). .		
DISCHARGE . . .	0.010	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	32.1	0.68

	MEAN	STD	
WIDTH.	4.1	1.0	(m)
DEPTH.	14.3	16.83	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2.33
TYPE THREE SUBSTRATE . . . :	0.18	(%)	AIR/WATER TEMP. RATIO:	1.11
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)		
OVERHEAD CANOPY. . . . . :	97.50	(%)		
INSTREAM SHELTER . . . . . :	15.39	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1658	29.81
Lepomis macrochirus	0	32.52
Esox niger	97	32.52
Micropterus salmoides	146	36.58
Ictalurus nebulosus	97	32.52
Notemigonus crysoleucas		
Unknown Centrarchid	97	24.39
Lepomis gibbosus	926	42.12

STREAM NAME : NO NAME (TRIB. TO ASPETUCK R.) SITE #: 2089
SITE DESCRIPTION: 200 YDS ABOVE APSETUCK RESERVIOR, PARALLEL TO CENTER RD, EASTON
SAMPLE LENGTH : 50.
SAMPLE DATE: 07/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	20.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.2	0.06
WATER TEMP. . .	18.0	(C)	pH	7.0	0.12
VELOCITY. . . .	0.061	(m/s)	COND . . . . . (uS/cm3). .	120.0	1.00
DISCHARGE . . .	0.005	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	22.5	0.30

	MEAN		STD		
WIDTH.	1.8		0.6	(m)	
DEPTH.	4.1		3.33	(cm)	
DOMINANT SUBSTRATE TYPE. .	5		POOL/RIFFLE RATIO . .:		0.31
TYPE THREE SUBSTRATE . . .	0.07	(%)	AIR/WATER TEMP. RATIO:		1.11
EMBEDDEDNESS OF TYPE THREE	20.00	(%)			
OVERHEAD CANOPY.	100.	(%)			
INSTREAM SHELTER	0.56	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Micropterus salmoides	110	110.49
Salvelinus fontinalis		

STREAM NAME : NOB CROOK BROOK SITE #: 2103
SITE DESCRIPTION: ABOVE RTE 107 BRIDGE, REDDING BHC PROP. AT UPPER EDGE OF FALL LINE
SAMPLE LENGTH : 50.
SAMPLE DATE: 06/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.8	0.62
WATER TEMP. . .	17.0	(C)	pH	6.7	0.10
VELOCITY. . . .	0.051	(m/s)	COND . . . . . (uS/cm3). .	128.3	16.07
DISCHARGE . . .	0.009	(m3/s)	ALKALINITY .(mg CaCO3 eq/l)	38.1	2.97

	MEAN		STD		
WIDTH.	2.5		1.0	(m)	
DEPTH.	7.2		6.46	(cm)	
DOMINANT SUBSTRATE TYPE. .	3		POOL/RIFFLE RATIO . .:		0.92
TYPE THREE SUBSTRATE . . .	0.29	(%)	AIR/WATER TEMP. RATIO:		1.12
EMBEDDEDNESS OF TYPE THREE	41.67	(%)			
OVERHEAD CANOPY.	99.00	(%)			
INSTREAM SHELTER	0.00	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Semotilus atromaculatus	8064	51.27
Rhinichthys atratulus	2016	65.03

STREAM NAME : NOROTON RIVER SITE #: 2046
SITE DESCRIPTION: AREA AT SOUTH END OF ST JOHN'S CEMETERY ON HOYT ST IN STAMFORD
SAMPLE LENGTH : 150. SAMPLE DATE: 06/14/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:19.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.8	0.17
WATER TEMP. . .	:18.0	(C)	pH . . . . . :	7.0	0.42
VELOCITY. . . .	: 0.310	(m/s)	COND . . . . . (uS/cm3). . :	230.7	2.89
DISCHARGE . . .	: 0.234	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	40.5	2.12

	MEAN	STD	
WIDTH. . . . . :	5.9	1.1	(m)
DEPTH. . . . . :	19.3	17.04	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.05
TYPE THREE SUBSTRATE . . . :	0.27	(%)	AIR/WATER TEMP. RATIO:	1.06
EMBEDDEDNESS OF TYPE THREE :	46.43	(%)		
OVERHEAD CANOPY. . . . . :	85.00	(%)		
INSTREAM SHELTER . . . . . :	116.21	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	860	7.41
Rhinichthys atratulus	1233	7.81
Salvelinus fontinalis	11	5.65
Lepomis gibbosus	22	11.31
Lepomis auritus	837	6.71
Lepomis macrochirus	860	4.77
Micropterus salmoides	56	6.28
Catastomus commersoni	158	9.90
Unknown Centrarchid	181	4.95
Hybrid Sunfish	67	5.65

STREAM NAME : NORWALK RIVER SITE #: 2041
SITE DESCRIPTION: ABOVE WOLF PIT ROAD, RTE 7 IN WILTON
SAMPLE LENGTH : 200. SAMPLE DATE: 07/05/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:30.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.6	0.06
WATER TEMP. . .	:22.0	(C)	pH . . . . . :	8.5	0.15
VELOCITY. . . .	: 0.104	(m/s)	COND . . . . . (uS/cm3). . :	305.0	0.00
DISCHARGE . . .	: 0.357	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	74.3	1.47

	MEAN	STD	
WIDTH. . . . . :	9.3	2.9	(m)
DEPTH. . . . . :	28.5	18.74	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.27
TYPE THREE SUBSTRATE . . . :	0.07	(%)	AIR/WATER TEMP. RATIO:	1.36
EMBEDDEDNESS OF TYPE THREE :	60.83	(%)		
OVERHEAD CANOPY. . . . . :	70.00	(%)		
INSTREAM SHELTER . . . . . :	375.08	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	2362	2.27
Exoglossum maxillingua	161	3.58
Lepomis gibbosus	5	5.38
Notemigonus crysoleucas	10	5.38
Salmo trutta	37	3.42
Notropis cornutus	96	3.45
Lepomis auritus	306	3.19
Catastomus commersoni	1194	1.92
Semotilus atromaculatus	5	1.79
Anguilla rostrata	791	2.67
Lepomis cyanellus	10	2.69
Micropterus salmoides	5	5.38
Lepomis macrochirus	5	2.69

STREAM NAME : NORWALK RIVER SITE #: 2076
SITE DESCRIPTION: PARALLEL TO ROUTE 7 AT RIDGEFIELD-REDDING TOWN LINE,
SAMPLE LENGTH : 120. SAMPLE DATE: 07/16/1990

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:27.0 (C)	DISSOLVED OXYGEN (mg/l). .	9.4	0.15
WATER TEMP. . .	:22.0 (C)	pH	7.7	0.00
VELOCITY. . . .	: 0.286 (m/s)	COND . . . . . (uS/cm3). .	:370.0	6.08
DISCHARGE . . .	: 0.254 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	99.5	0.60

	MEAN	STD	
WIDTH.	5.7	1.1	(m)
DEPTH.	31.9	24.40	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.27
TYPE THREE SUBSTRATE . . . :	0.08	(%)	AIR/WATER TEMP. RATIO:	1.23
EMBEDDEDNESS OF TYPE THREE :	45.00	(%)		
OVERHEAD CANOPY. . . . . :	99.00	(%)		
INSTREAM SHELTER . . . . . :	87.81	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis auritus	23	11.69
Rhinichthys atratulus	23	7.79
Salmo trutta	23	7.79
Exoglossum maxillingua	385	7.19
Anguilla rostrata	116	8.35

STREAM NAME : NOTCH HILL BROOK SITE #: 2127
SITE DESCRIPTION: UPSTREAM OF VALLEY RD OFF RTE 22 NEAR GAS LINE. SHALLOW COBBLE STREAM
SAMPLE LENGTH : 50. SAMPLE DATE: 09/12/1990

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:22.0 (C)	DISSOLVED OXYGEN (mg/l). .	8.6	0.35
WATER TEMP. . .	:18.0 (C)	pH	7.4	0.10
VELOCITY. . . .	: 0.046 (m/s)	COND . . . . . (uS/cm3). .	:282.3	3.21
DISCHARGE . . .	: 0.005 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	88.0	0.98

	MEAN	STD	
WIDTH.	1.9	0.9	(m)
DEPTH.	4.3	4.86	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.03
TYPE THREE SUBSTRATE . . . :	0.42	(%)	AIR/WATER TEMP. RATIO:	1.22
EMBEDDEDNESS OF TYPE THREE :	63.00	(%)		
OVERHEAD CANOPY. . . . . :	96.00	(%)		
INSTREAM SHELTER . . . . . :	0.15	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	418	104.71
Semotilus atromaculatus	13193	71.95
Rhinichthys atratulus	9424	95.19
Lepomis macrochirus	104	52.35
Micropterus salmoides	2827	20.94
Petromyzon marinus	1989	82.89
Catastomus commersoni		

STREAM NAME : PATTON BROOK SITE #: 2109
SITE DESCRIPTION: BETWEEN DUNHAM RD AND I-84, SOUTHNGTON. SANDY BOTTOM PASTURE.
SAMPLE LENGTH : 50. SAMPLE DATE: 07/16/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:30.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.8	0.78
WATER TEMP. . .	:19.0	(C)	pH . . . . . :	7.6	0.06
VELOCITY. . . .	: 0.306	(m/s)	COND . . . . . (uS/cm3). . :	288.3	28.87
DISCHARGE . . .	: 0.181	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	115.3	0.44

	MEAN	STD	
WIDTH. . . . . :	4.1	0.5	(m)
DEPTH. . . . . :	14.5	9.91	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	0.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.58
EMBEDDEDNESS OF TYPE THREE :	70.00	(%)		
OVERHEAD CANOPY. . . . . :	8.70	(%)		
INSTREAM SHELTER . . . . . :	3.60	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Apeltes quadracus	653	10.34
Esox americanus	1933	16.00
Catastomus commersoni	1334	14.58
Etheostoma olmstedi	1851	13.50
Micropterus salmoides	245	14.41

STREAM NAME : PEQUABUCK RIVER SITE #: 2155
SITE DESCRIPTION: ROCKWELL PARK BRISTOL. UPPER END ON SITE IS 20 M BELOW RT 72 CROSSING.
SAMPLE LENGTH : 100. SAMPLE DATE: 09/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:17.0	(C)	DISSOLVED OXYGEN (mg/l). . :	6.2	0.15
WATER TEMP. . .	:15.0	(C)	pH . . . . . :	7.2	0.06
VELOCITY. . . .	: 0.305	(m/s)	COND . . . . . (uS/cm3). . :	148.0	2.65
DISCHARGE . . .	: 0.323	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :	6.1	1.3	(m)
DEPTH. . . . . :	18.0	14.30	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.90
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.13
EMBEDDEDNESS OF TYPE THREE :	53.00	(%)		
OVERHEAD CANOPY. . . . . :	93.75	(%)		
INSTREAM SHELTER . . . . . :	23.98	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	97	16.31
Lepomis macrochirus	48	9.78
Salmo trutta	32	16.31
Rhinichthys atratulus	97	10.87
Micropterus salmoides	16	16.31
Semotilus atromaculatus	16	8.15
Fundulus diaphanus	16	16.31
Catastomus commersoni	7569	12.40

STREAM NAME : PEQUABUCK RIVER SITE #: 2157

SITE DESCRIPTION: UPSTREAM OF CENTRAL ST BRIDGE BRISTOL, SALMON AND TROUT FOUND

SAMPLE LENGTH : 150. SAMPLE DATE: 09/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	20.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.8	0.40
WATER TEMP. . .	17.0	(C)	pH	8.1	0.12
VELOCITY. . . .	0.280	(m/s)	COND . . . . . (uS/cm3). .	245.0	5.00
DISCHARGE . . .	0.955	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD			
WIDTH.	13.4	2.5	(m)		
DEPTH.	20.8	15.31	(cm)		
DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:		0.36
TYPE THREE SUBSTRATE . . .	0.05	(%)	AIR/WATER TEMP. RATIO:		1.18
EMBEDDEDNESS OF TYPE THREE	50.00	(%)			
OVERHEAD CANOPY.	60.40	(%)			
INSTREAM SHELTER	67.44	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	194	2.07
Catastomus commersoni	1348	1.89
Anguilla rostrata	159	3.09
Lepomis macrochirus	24	2.77
Rhinichthys atratulus	1478	2.08
Salmo trutta	29	4.28
Unknown Centrarchid	4	1.66
Notemigonus crysoleucas	4	4.99
Rhinichthys cataractae	709	1.52
Micropterus salmoides	14	3.74
Lepomis gibbosus	14	2.49
Oncorhynchus mykiss	4	4.99
Salmo salar	4	4.99
Semotilus corporalis	24	2.77

STREAM NAME : PEQUABUCK RIVER SITE #: 2156
SITE DESCRIPTION: UPSTREAM OF NORTHWEST RD, BRISTOL,
SAMPLE LENGTH : 75. SAMPLE DATE: 09/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:17.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.2	0.10
WATER TEMP. . .	:16.0	(C)	pH . . . . . :	7.4	0.00
VELOCITY. . . .	: 0.293	(m/s)	COND . . . . . (uS/cm3). . :	225.7	10.79
DISCHARGE . . .	: 1.088	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :	8.5	1.3	(m)
DEPTH. . . . . :	50.8	33.48	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2000.00
TYPE THREE SUBSTRATE . . . :	0.01	(%)	AIR/WATER TEMP. RATIO:	1.06
EMBEDDEDNESS OF TYPE THREE :	10.00	(%)		
OVERHEAD CANOPY. . . . . :	67.70	(%)		
INSTREAM SHELTER . . . . . :	453.95	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notropis hudsonius	39	4.91
Etheostoma olmstedi	204	3.11
Catastomus commersoni	353	2.84
Perca flavescens	7	2.62
Anguilla rostrata	404	4.67
Lepomis macrochirus	55	4.58
Rhinichthys atratulus	7	7.86
Salmo trutta	15	5.24
Unknown Centrarchid	227	5.56
Semotilus corporalis	23	4.71
Esox americanus	62	4.19
Notemigonus crysoleucas	39	5.61
Micropterus salmoides	125	3.00
Lepomis gibbosus	298	1.75
Ambloplites rupestris	7	7.86
Esox niger	23	4.71

STREAM NAME : PEQUONNOCK RIVER SITE #: 2032
SITE DESCRIPTION: UPSTREAM OF FIRST CUL-DE-SAC AT SOUTH END OF TRUMBULL BASIN PARK, TRUMBULL
SAMPLE LENGTH : 150. SAMPLE DATE: 07/09/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	:25.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.7	0.06
WATER TEMP. . .	:21.0	(C)	pH . . . . . :	7.6	0.17
VELOCITY. . . .	: 0.206	(m/s)	COND . . . . . (uS/cm3). . :	218.0	0.00
DISCHARGE . . .	: 0.271	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.0	0.12

	MEAN	STD	
WIDTH. . . . . :	7.2	1.0	(m)
DEPTH. . . . . :	31.5	21.47	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	2.63
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.19
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)		
OVERHEAD CANOPY. . . . . :	89.00	(%)		
INSTREAM SHELTER . . . . . :	236.97	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Esox niger	18	2.63
Etheostoma olmstedi	9	9.23
Micropterus salmoides	18	4.61
Semotilus atromaculatus	304	2.59
Lepomis macrochirus	27	3.46
Catastomus commersoni	498	4.70
Salmo trutta	36	5.27
Lepomis gibbosus	36	7.38
Anguilla rostrata	295	5.47
Rhinichthys atratulus	849	4.24
Ictalurus nebulosus	9	9.23
Exoglossum maxillingua	747	4.44

STREAM NAME : PEQUONNOCK RIVER SITE #: 2160
SITE DESCRIPTION: MEADOW SECTION OF TRUMBULL BASIN 150 M ABOVE FORD, SINGLE PASS 400 M ABOVE SITE
SAMPLE LENGTH : 150. SAMPLE DATE: 09/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.2	0.10
WATER TEMP. . .	16.0	(C)	pH	6.6	0.20
VELOCITY. . . .	0.065	(m/s)	COND . . . . . (uS/cm3). .	188.0	0.00
DISCHARGE . . .	0.147	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.0	0.60

	MEAN	STD	
WIDTH.	7.4	1.4	(m)
DEPTH.	34.3	28.80	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.38
EMBEDDEDNESS OF TYPE THREE :	58.33	(%)		
OVERHEAD CANOPY. . . . . :	77.10	(%)		
INSTREAM SHELTER . . . . . :	509.92	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	538	4.61
Esox niger	62	5.71
Anguilla rostrata	422	3.84
Ictalurus nebulosus	17	4.49
Rhinichthys atratulus	467	3.21
Salmo trutta	17	8.98
Unknown Centrarchid	143	2.24
Exoglossum maxillingua	269	4.93
Lepomis auritus	71	5.52
Semotilus atromaculatus	170	4.89
Micropterus salmoides	71	5.98
Lepomis gibbosus	467	3.50
Etheostoma olmstedi	164	1.64

STREAM NAME : PEQUONNOCK RIVER SITE #: 2162
SITE DESCRIPTION: 450 M SECTION ABOVE SITE 2160 TOP OF MEADOW IN PEQUONNOCK BASIN.
SAMPLE LENGTH : SAMPLE DATE: 09/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :		(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . . :		(C)	pH . . . . . :		
VELOCITY. . . . :		(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . . :		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD	
WIDTH. . . . . :			(m)
DEPTH. . . . . :			(cm)

DOMINANT SUBSTRATE TYPE. . :			POOL/RIFFLE RATIO . .:	
TYPE THREE SUBSTRATE . . . :		(%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :		(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :		(m2)		

BIOLOGICAL

SPECIES	POPULATION (present)
Salmo trutta	

STREAM NAME : PINEWOOD LAKE OUTFLOW SITE #: 2031
SITE DESCRIPTION: DOWNSTREAM OF FRANKLIN STREET IN TWIN BROOKS PARK, TRUMBULL
SAMPLE LENGTH : 150. SAMPLE DATE: 06/26/1990

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:28.0 (C)	DISSOLVED OXYGEN (mg/l). . :	9.1	0.10
WATER TEMP. . .	:22.0 (C)	pH . . . . . :	6.7	0.06
VELOCITY. . . .	: 0.122 (m/s)	COND . . . . . (uS/cm3). . :	141.7	2.89
DISCHARGE . . .	: 0.043 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	14.3	0.42

	MEAN	STD	
WIDTH. . . . . :	4.1	1.3	(m)
DEPTH. . . . . :	15.1	10.98	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.39
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.27
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)		
OVERHEAD CANOPY. . . . . :	85.00	(%)		
INSTREAM SHELTER . . . . . :	26.86	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1969	9.61
Etheostoma olmstedi	112	12.55
Lepomis gibbosus	80	8.96
Catastomus commersoni	258	7.06
Esox niger	32	16.14
Ictalurus nebulosus	32	10.76
Lepomis macrochirus	1275	8.36
Rhinichthys atratulus	371	2.86
Micropterus salmoides	16	16.14
Lepomis auritus	1969	7.18

STREAM NAME : QUINNIPIAC RIVER SITE #: 2060
SITE DESCRIPTION: PARALLEL TO RTE 70, MERIDEN GORGE AREA 1/4 MILE UPSTREAM OF HANOVER POND
SAMPLE LENGTH : 200. SAMPLE DATE: 07/10/1990

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:27.0 (C)	DISSOLVED OXYGEN (mg/l). . :	9.5	0.00
WATER TEMP. . .	:19.0 (C)	pH . . . . . :	7.2	0.06
VELOCITY. . . .	: 0.230 (m/s)	COND . . . . . (uS/cm3). . :	282.3	2.52
DISCHARGE . . .	: 1.696 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	74.9	0.64

	MEAN	STD	
WIDTH. . . . . :	20.7	5.8	(m)
DEPTH. . . . . :	32.8	23.53	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.90
TYPE THREE SUBSTRATE . . . :	0.06	(%)	AIR/WATER TEMP. RATIO:	1.42
EMBEDDEDNESS OF TYPE THREE :	65.00	(%)		
OVERHEAD CANOPY. . . . . :	85.00	(%)		
INSTREAM SHELTER . . . . . :	613.69	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	301	1.69
Perca flavescens	14	1.44
Lepomis macrochirus	19	1.60
Cyprinus carpio	4	1.20
Salmo trutta	38	1.83
Anguilla rostrata	37	1.72
Semotilus corporalis	45	1.83
Salvelinus fontinalis	2	2.41
Micropterus salmoides	7	1.44
Lepomis gibbosus	4	1.20
Ambloplites rupestris	2	2.41
Etheostoma olmstedi	65	1.67
Rhinichthys cataractae	108	1.26

STREAM NAME : RACE BROOK SITE #: 2123
SITE DESCRIPTION: DOWNSTREAM OF RT 15, ORANGE, FORESTED, FLAT COBBLE
SAMPLE LENGTH : 100. SAMPLE DATE: 07/17/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	30.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.8	0.26
WATER TEMP. . .	19.0	(C)	pH	6.8	0.06
VELOCITY. . . .	0.148	(m/s)	COND . . . . . (uS/cm3). .	192.7	2.52
DISCHARGE . . .	0.062	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	37.7	0.17

	MEAN	STD	
WIDTH.	3.9	0.9	(m)
DEPTH.	10.8	9.88	(cm)

DOMINANT SUBSTRATE TY[illegible] . .	4		POOL/RIFFLE RATIO . .:	1.93
TYPE THREE SUBSTRATE . . .	0.22	(%)	AIR/WATER TEMP. RATIO:	1.58
EMBEDDEDNESS OF TYPE THREE	24.29	(%)		
OVERHEAD CANOPY.	88.30	(%)		
INSTREAM SHELTER	3.43	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	4048	17.37
Salvelinus fontinalis	1542	11.22
Micropterus salmoides	428	9.10
Lepomis gibbosus	42	21.42
Catastomus commersoni	685	9.99
Semotilus atromaculatus	1756	10.56
Lepomis macrochirus	342	6.20
Anguilla rostrata	107	9.73

STREAM NAME : RIDGEFIELD BROOK SITE #: 2075
SITE DESCRIPTION: ABOVE RTE 35 RIDGEFIELD, STOCKED STREAM
SAMPLE LENGTH : 100. SAMPLE DATE: 07/31/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.3	0.10
WATER TEMP. . .	21.0	(C)	pH	7.8	0.06
VELOCITY. . . .	0.075	(m/s)	COND . . . . . (uS/cm3). .	578.3	2.89
DISCHARGE . . .	0.030	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	174.8	1.30

	MEAN	STD	
WIDTH.	5.0	1.1	(m)
DEPTH.	12.2	8.96	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	1.80
TYPE THREE SUBSTRATE . . .	0.23	(%)	AIR/WATER TEMP. RATIO:	1.29
EMBEDDEDNESS OF TYPE THREE	38.50	(%)		
OVERHEAD CANOPY.	96.70	(%)		
INSTREAM SHELTER	16.54	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Micropterus salmoides	39	19.84
Notropis cornutus	79	11.33
Unknown Cyprinid	59	9.92
Esox americanus		
Anguilla rostrata	297	16.53
Rhinichthys atratulus	515	11.53
Salmo trutta	19	19.84
Exoglossum maxillingua	3234	10.90
Semotilus atromaculatus	357	6.29
Lepomis gibbosus	357	14.88
Catastomus commersoni	952	5.59

STREAM NAME : RIPPOWAM RIVER SITE #: 2048
SITE DESCRIPTION: ABOVE PIPER HILL SCHOOL DRIVEWAY BRIDGE, OFF LONG RIDGE RD STAMFORD.
SAMPLE LENGTH : 150. SAMPLE DATE: 07/17/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.6	0.10
WATER TEMP. . .	23.0	(C)	pH	7.1	0.00
VELOCITY. . . .	0.139	(m/s)	COND . . . . . (uS/cm3). .	239.0	0.00
DISCHARGE . . .	0.370	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	32.9	0.46

	MEAN	STD	
WIDTH.	10.1	1.6	(m)
DEPTH.	20.0	14.59	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	7.43
TYPE THREE SUBSTRATE . . .	0.13	(%)	AIR/WATER TEMP. RATIO:	1.17
EMBEDDEDNESS OF TYPE THREE	7.92	(%)		
OVERHEAD CANOPY.	85.40	(%)		
INSTREAM SHELTER	27.96	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	502	3.15
Rhinichthys cataractae	640	3.24
Perca flavescens	6	2.20
Semotilus corporalis	581	2.39
Lepomis cyanellus	52	3.52
Notropis cornutus	825	3.68
Unknown Cyprinid	303	0.95
Anguilla rostrata	264	3.12
Pomoxis nigromaculatus	6	3.30
Lepomis macrochirus	6	2.20
Rhinichthys atratulus	422	2.74
Salmo trutta	6	3.30
Unknown Centrarchid	6	6.60
Etheostoma olmstedi	660	0.94
Lepomis gibbosus	19	3.96
Lepomis auritus	409	3.04
Micropterus salmoides	39	2.20
Oncorhynchus mykiss		

STREAM NAME : RIPPOWAM RIVER SITE #: 2070
SITE DESCRIPTION: SCALZI PARK 100M BELOW BRIDGE ST BRIDGE, STAMFORD, CHANNELIZED AND SHALLOW
SAMPLE LENGTH : 150. SAMPLE DATE: 08/14/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.8	0.15
WATER TEMP. . .	24.0	(C)	pH	7.3	0.12
VELOCITY. . . .	0.246	(m/s)	COND . . . . . (uS/cm3). .	251.0	2.65
DISCHARGE . . .	0.508	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	36.1	0.17

	MEAN	STD	
WIDTH.	11.8	1.4	(m)
DEPTH.	17.5	11.36	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.76
TYPE THREE SUBSTRATE . . . :	0.11	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	55.45	(%)		
OVERHEAD CANOPY. . . . . :	22.50	(%)		
INSTREAM SHELTER . . . . . :	90.91	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notropis cornutus	2761	3.08
Semotilus corporalis	254	2.15
Salmo trutta	5	2.82
Unknown Centrarchid	5	5.65
Perca flavescens	5	5.65
Rhinichthys cataractae	594	2.16
Micropterus salmoides	147	2.44
Lepomis gibbosus	33	2.82
Lepomis auritus	33	3.08
Oncorhynchus mykiss	16	2.82
Etheostoma olmstedi	5806	1.87
Catastomus commersoni	4504	2.31
Anguilla rostrata	407	2.40
Rhinichthys atratulus	18709	1.91
Lepomis cyanellus	124	1.19
Fundulus diaphanus	294	1.23
Carassius auratus		

STREAM NAME : ROCKWOOD LAKE OUTFLOW SITE #: 2095
SITE DESCRIPTION: BELOW RT 15, MERRITT PARKWAY GREENWICH

SAMPLE LENGTH : 50. SAMPLE DATE: 07/24/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.4	0.72
WATER TEMP. . .	19.0	(C)	pH	7.0	0.21
VELOCITY. . . .	0.086	(m/s)	COND . . . . . (uS/cm3). .	246.7	5.77
DISCHARGE . . .	0.010	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	56.7	0.70

	MEAN	STD	
WIDTH.	1.7	0.6	(m)
DEPTH.	6.3	6.72	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	2.85
TYPE THREE SUBSTRATE . . . :	0.08	(%)	AIR/WATER TEMP. RATIO:	1.32
EMBEDDEDNESS OF TYPE THREE :	60.00	(%)		
OVERHEAD CANOPY. . . . . :	98.60	(%)		
INSTREAM SHELTER . . . . . :	1.03	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	955	95.52
Rhinichthys atratulus	12537	93.56
Anguilla rostrata	477	68.23

STREAM NAME : ROOSTER RIVER SITE #: 2033
SITE DESCRIPTION: BELOW RTE 1, MT GROVE CEMETERY, BRIDGEPORT
SAMPLE LENGTH : 100. SAMPLE DATE: 08/10/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.35
WATER TEMP. . .	20.0	(C)	pH . . . . . :	7.1	0.06
VELOCITY. . . .	0.086	(m/s)	COND . . . . . (uS/cm3). . :	241.0	7.81
DISCHARGE . . .	0.159	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.0	0.30

	MEAN	STD	
WIDTH. . . . . :	7.0	1.2	(m)
DEPTH. . . . . :	30.3	20.38	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	49.00
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.15
EMBEDDEDNESS OF TYPE THREE :	70.83	(%)		
OVERHEAD CANOPY. . . . . :	80.00	(%)		
INSTREAM SHELTER . . . . . :	99.86	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Unknown Centrarchid	257	11.19
Anguilla rostrata	3047	8.54
Catastomus commersoni	3848	7.92
Fundulus heteroclitus	185	8.45
Lepomis gibbosus	586	9.94
Lepomis auritus	42	14.30
Rhinichthys atratulus	3161	7.79

STREAM NAME : SANFORD BROOK SITE #: 2114
SITE DESCRIPTION: DOWNSTREAM OF SECOND CROSSING ABOVE LAKE BETHANY, SCRWA.
SAMPLE LENGTH : 150. SAMPLE DATE: 06/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). . :	6.0	0.10
WATER TEMP. . .	19.0	(C)	pH . . . . . :	6.5	0.00
VELOCITY. . . .	0.118	(m/s)	COND . . . . . (uS/cm3). . :	90.7	1.15
DISCHARGE . . .	0.051	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	20.7	0.21

	MEAN	STD	
WIDTH. . . . . :	3.0	0.7	(m)
DEPTH. . . . . :	18.0	12.06	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.24
TYPE THREE SUBSTRATE . . . :	0.52	(%)	AIR/WATER TEMP. RATIO:	1.11
EMBEDDEDNESS OF TYPE THREE :	25.38	(%)		
OVERHEAD CANOPY. . . . . :	87.50	(%)		
INSTREAM SHELTER . . . . . :	78.78	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	2697	11.86
Rhinichthys atratulus	3267	7.92
Catastomus commersoni	131	10.96

STREAM NAME : SARGENT RIVER SITE #: 2024
SITE DESCRIPTION: UPSTREAM OF SPERRY RD BRIDGE 250 M SCRWA PROP.
SAMPLE LENGTH : 75. SAMPLE DATE: 06/20/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.7	0.06
WATER TEMP. . .	13.0	(C)	pH	6.4	0.15
VELOCITY. . . .	0.510	(m/s)	COND . . . . . (uS/cm3). .	61.0	1.00
DISCHARGE . . .	0.481	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	49.8	0.57

	MEAN	STD	
WIDTH.	4.5	1.2	(m)
DEPTH.	17.6	10.18	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.65
TYPE THREE SUBSTRATE . . .	0.30	(%)	AIR/WATER TEMP. RATIO:	1.62
EMBEDDEDNESS OF TYPE THREE	3.64	(%)		
OVERHEAD CANOPY.	55.00	(%)		
INSTREAM SHELTER	17.64	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	1773	9.34
Semotilus atromaculatus	29	7.39
Rhinichthys atratulus	1330	9.14
Catastomus commersoni	14	7.39

STREAM NAME : SASCO BROOK SITE #: 2036
SITE DESCRIPTION: DOWNSTREAM OF HULLS FARM RD, ON FAIRFIELD/WESTPORT TOWN LINE
SAMPLE LENGTH : 100. SAMPLE DATE: 07/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	12.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.5	0.06
WATER TEMP. . .	18.0	(C)	pH	6.1	0.06
VELOCITY. . . .	0.205	(m/s)	COND . . . . . (uS/cm3). .	116.7	2.89
DISCHARGE . . .	0.295	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	19.0	0.55

	MEAN	STD	
WIDTH.	6.2	1.1	(m)
DEPTH.	29.8	20.41	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	7.00
TYPE THREE SUBSTRATE . . .	0.05	(%)	AIR/WATER TEMP. RATIO:	0.67
EMBEDDEDNESS OF TYPE THREE	20.00	(%)		
OVERHEAD CANOPY.	75.00	(%)		
INSTREAM SHELTER	257.88	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1886	9.16
Salmo trutta	43	7.22
Rhinichthys atratulus	476	5.12
Catastomus commersoni	0	10.38
Lepomis auritus	563	10.38

STREAM NAME : SAUGATUCK RIVER SITE #: 2037
SITE DESCRIPTION: AT KEENE TOWN PARK OFF RIVER RD WESTON. AT NORTH END OF PARK DAM IN UPPER END
SAMPLE LENGTH : 90. SAMPLE DATE: 07/12/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :		(C)	DISSOLVED OXYGEN (mg/l). . :	9.0	0.25
WATER TEMP. . . :		(C)	pH . . . . . :	7.1	0.00
VELOCITY. . . . :	0.159	(m/s)	COND . . . . . (uS/cm3). . :	128.7	0.58
DISCHARGE . . . :	0.270	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	29.0	0.51

	MEAN	STD	
WIDTH. . . . . :	19.6	3.4	(m)
DEPTH. . . . . :	19.9	19.62	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.05
TYPE THREE SUBSTRATE . . . :	0.01	(%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :	10.00	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	166.27	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys cataractae	553	1.89
Unknown Cyprinid	94	1.80
Lepomis gibbosus	3	1.69
Exoglossum maxillingua	658	2.18
Esox niger	14	2.03
Semotilus atromaculatus	3	3.39
Salmo trutta	27	3.01
Anguilla rostrata	1353	1.91
Salvelinus fontinalis	3	3.39
Micropterus salmoides	6	1.69
Notropis cornutus	495	2.06
Lepomis auritus	6	2.26
Etheostoma olmstedi	101	1.86
Catastomus commersoni	597	1.70
Rhinichthys atratulus	1659	2.05

STREAM NAME : SAUGATUCK RIVER SITE #: 2067
SITE DESCRIPTION: 50M ABOVE RTE 107 BRIDGE ABOVE SAUGATUCK RES.
REDDING
SAMPLE LENGTH : 150. SAMPLE DATE: 07/23/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	28.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.9	0.52
WATER TEMP. . .	23.0	(C)	pH	7.0	0.10
VELOCITY. . . .	0.068	(m/s)	COND . . . . . (uS/cm3). .	225.0	0.00
DISCHARGE . . .	0.174	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	73.0	0.70

	MEAN	STD	
WIDTH.	10.0	2.4	(m)
DEPTH.	24.9	21.92	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	2.13
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.22
EMBEDDEDNESS OF TYPE THREE :	22.50	(%)		
OVERHEAD CANOPY. . . . . :	68.70	(%)		
INSTREAM SHELTER . . . . . :	257.49	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	6	2.21
Micropterus salmoides	79	4.19
Anguilla rostrata	79	5.69
Notropis bifrenatus	6	6.64
Esox americanus	6	3.32
Salvelinus fontinalis	13	3.32
Semotilus corporalis	159	4.42
Lepomis macrochirus	33	3.68
Oncorhynchus mykiss	19	3.98
Rhinichthys atratulus	6	3.32
Ambloplites rupestris	39	5.69
Lepomis auritus	132	4.15
Notropis cornutus	46	4.64
Etheostoma olmstedi	551	1.39
Catastomus commersoni	66	6.64
Exoglossum maxillingua	657	3.20
Salmo trutta	212	5.90
Unknown Cyprinid	6	3.32

STREAM NAME : SAUGATUCK RIVER SITE #: 2077
SITE DESCRIPTION: AT WESTON TOWN PARK, PARALLEL TO REDDING
ROAD, 0.5 MILE BELOW SAUG. RES.
SAMPLE LENGTH : 45. SAMPLE DATE: 07/11/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	17.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.6	0.06
WATER TEMP. . .	14.0	(C)	pH	7.2	0.15
VELOCITY. . . .	0.089	(m/s)	COND . . . . . (uS/cm3). .	117.3	1.15
DISCHARGE . . .	0.189	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.3	0.06

	MEAN	STD	
WIDTH.	12.3	4.3	(m)
DEPTH.	34.2	24.36	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	1.38
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE :	45.00	(%)		
OVERHEAD CANOPY. . . . . :	62.50	(%)		
INSTREAM SHELTER . . . . . :	173.18	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis auritus	24	4.99
Micropterus dolomieui	24	4.99
Anguilla rostrata	636	1.60
Lepomis macrochirus	6	6.24
Salmo trutta	131	5.24
Micropterus salmoides	12	4.16
Ambloplites rupestris	6	3.12

STREAM NAME : SAUGATUCK RIVER (FLY AREA) SITE #: 2073
SITE DESCRIPTION: FROM POOL AT BOTTOM OF ISLAND IN FLY AREA TO 40 M BELOW BRIDGE, WESTON
SAMPLE LENGTH : 120. SAMPLE DATE: 08/14/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.1	0.06
WATER TEMP. . .	23.0	(C)	pH	7.4	0.00
VELOCITY. . . .	0.339	(m/s)	COND . . . . . (uS/cm3). .	133.0	2.00
DISCHARGE . . .	2.569	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	29.4	1.54

	MEAN	STD	
WIDTH.	21.9	2.0	(m)
DEPTH.	38.5	26.19	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.55
TYPE THREE SUBSTRATE . . .	0.40	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE	31.75	(%)		
OVERHEAD CANOPY.	64.60	(%)		
INSTREAM SHELTER	389.53	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Perca flavescens	2	2.27
Catastomus commersoni	27	1.51
Rhinichthys cataractae	467	0.65
Rhinichthys atratulus	366	0.30
Etheostoma olmstedi	127	0.45
Pomoxis nigromaculatus	15	1.13
Lepomis macrochirus	6	1.70
Micropterus salmoides	45	0.96
Salmo trutta	79	1.40
Unknown Centrarchid	4	2.27
Exoglossum maxillingua	93	0.77
Notropis cornutus	505	0.13
Unknown Cyprinid	6	1.13
Semotilus corporalis	2	2.27
Lepomis auritus	278	0.65
Oncorhynchus mykiss	2	2.27
Lepomis gibbosus	18	0.68
Ambloplites rupestris	36	0.87
Anguilla rostrata	3254	0.22

STREAM NAME : SILVERMINE RIVER SITE #: 2043
SITE DESCRIPTION: BEHIND SILVERMINE SCHOOL ABOVE FOOT BRIDGE
WEST OF BALL FIELD, NORWALK
SAMPLE LENGTH : 150. SAMPLE DATE: 06/28/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.3	0.06
WATER TEMP. . .	23.0	(C)	pH	7.4	0.06
VELOCITY. . . .	0.278	(m/s)	COND . . . . . (uS/cm3). .	192.3	2.52
DISCHARGE . . .	0.119	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	32.6	0.95

	MEAN	STD	
WIDTH.	7.5	2.3	(m)
DEPTH.	19.7	17.66	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.35
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.13
EMBEDDEDNESS OF TYPE THREE :	40.00	(%)		
OVERHEAD CANOPY. . . . . :	86.20	(%)		
INSTREAM SHELTER . . . . . :	30.12	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	385	2.86
Micropterus dolomieui	40	4.46
Etheostoma olmstedi	233	3.65
Semotilus corporalis	1824	3.29
Lepomis auritus	144	5.56
Anguilla rostrata	3102	4.30
Lepomis macrochirus	32	8.03
Rhinichthys atratulus	208	4.19
Salmo trutta	8	8.03
Notropis cornutus	482	3.79
Unknown Cyprinid	64	4.59

STREAM NAME : SLUICE CREEK SITE #: 2009
SITE DESCRIPTION: BEHIND OFFICE COMPLEX 100 YDS SOUTH OF
INTERSECTION OF RTE 1 AND RTE 146
SAMPLE LENGTH : 68. SAMPLE DATE: 06/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	34.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.2	0.12
WATER TEMP. . .	18.0	(C)	pH	6.8	0.06
VELOCITY. . . .	0.062	(m/s)	COND . . . . . (uS/cm3). .	360.0	0.00
DISCHARGE . . .	0.018	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	82.2	0.84

	MEAN	STD	
WIDTH.	1.4	0.2	(m)
DEPTH.	26.3	12.33	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	33.00
TYPE THREE SUBSTRATE . . . :	0.20	(%)	AIR/WATER TEMP. RATIO:	1.89
EMBEDDEDNESS OF TYPE THREE :	60.00	(%)		
OVERHEAD CANOPY. . . . . :	95.00	(%)		
INSTREAM SHELTER . . . . . :	30.78	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Apeltes quadracus	5141	68.05
Fundulus diaphanus	102	102.83
Pungitius pungitius	17379	46.53
Gasterosteus aculeatus	0	46.53
Anguilla rostrata	7095	33.11

STREAM NAME : SODOM BROOK SITE #: 2018
SITE DESCRIPTION: PARALLEL TO PLATT HIGH SCHOOL, MERIDEN, MOSTLY SLOW POOLS, LOTS OF GARBAGE
SAMPLE LENGTH : 110. SAMPLE DATE: 08/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.5	0.10
WATER TEMP. . .	18.0	(C)	pH	7.0	0.06
VELOCITY. . . .	0.198	(m/s)	COND . . . . . (uS/cm3). .	263.3	11.55
DISCHARGE . . .	0.285	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	86.4	3.33

	MEAN	STD	
WIDTH.	5.3	1.6	(m)
DEPTH.	24.0	22.74	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2.79
TYPE THREE SUBSTRATE . . . :	0.11	(%)	AIR/WATER TEMP. RATIO:	1.44
EMBEDDEDNESS OF TYPE THREE :	56.00	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	99.36	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis macrochirus	17	8.51
Cyprinus carpio	17	17.02
Etheostoma olmstedi	476	9.03
Lepomis gibbosus	153	10.21
Salvelinus fontinalis	68	9.72
Catastomus commersoni	1327	8.82
Perca flavescens	17	8.51
Rhinichthys cataractae	34	11.34
Esox americanus	34	8.51
Rhinichthys atratulus	153	13.92
Micropterus salmoides	187	11.70
Salmo trutta	7	17.02

STREAM NAME : SPRING LOT BROOK SITE #: 2002
SITE DESCRIPTION: UPSTREAM OF ACCESS ROAD IN TOWN DUMP WEST BROOK CT. OFF MCVEAUGH ROAD
SAMPLE LENGTH : 100. SAMPLE DATE: 06/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.8	0.06
WATER TEMP. . .	20.0	(C)	pH	6.3	0.06
VELOCITY. . . .	0.267	(m/s)	COND . . . . . (uS/cm3). .	74.7	0.58
DISCHARGE . . .	0.097	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	17.6	0.57

	MEAN	STD	
WIDTH.	2.7	0.8	(m)
DEPTH.	14.1	10.77	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.70
TYPE THREE SUBSTRATE . . . :	0.29	(%)	AIR/WATER TEMP. RATIO:	1.10
EMBEDDEDNESS OF TYPE THREE :	53.33	(%)		
OVERHEAD CANOPY. . . . . :	98.00	(%)		
INSTREAM SHELTER . . . . . :	16.05	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	1207	28.53

STREAM NAME : SPRINGDALE BROOK SITE #: 2134
SITE DESCRIPTION: ABOVE END OF CUL-DE-SAC AT END OF PARRY COURT, NEW CANAAN
SAMPLE LENGTH : 50. SAMPLE DATE: 06/18/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.4	0.32
WATER TEMP. . .	19.0	(C)	pH	7.2	0.00
VELOCITY. . . .	0.082	(m/s)	COND . . . . . (uS/cm3). .	332.0	0.00
DISCHARGE . . .	0.012	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	65.3	1.70

	MEAN	STD	
WIDTH.	2.3	0.9	(m)
DEPTH.	6.3	4.78	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.56
TYPE THREE SUBSTRATE . . .	0.17	(%)	AIR/WATER TEMP. RATIO:	1.11
EMBEDDEDNESS OF TYPE THREE	58.33	(%)		
OVERHEAD CANOPY.	97.00	(%)		
INSTREAM SHELTER	0.12	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis auritus	256	85.47
Rhinichthys atratulus	11794	59.17

STREAM NAME : STANNARD POND OUTFLOW SITE #: 2105
SITE DESCRIPTION: AT RT 79 CROSSING MADISON, DOWNSTREAM OF BRIDGE CROSSING
SAMPLE LENGTH : 50. SAMPLE DATE: 09/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.0	0.87
WATER TEMP. . .	20.0	(C)	pH	6.2	0.17
VELOCITY. . . .	0.025	(m/s)	COND . . . . . (uS/cm3). .	40.7	1.15
DISCHARGE . . .	0.003	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	2.2	0.70

	MEAN	STD	
WIDTH.	1.0	0.3	(m)
DEPTH.	10.9	10.69	(cm)

DOMINANT SUBSTRATE TYPE. .	1		POOL/RIFFLE RATIO . .:	12.51
TYPE THREE SUBSTRATE . . .	0.10	(%)	AIR/WATER TEMP. RATIO:	1.20
EMBEDDEDNESS OF TYPE THREE	40.00	(%)		
OVERHEAD CANOPY.	87.50	(%)		
INSTREAM SHELTER	3.82	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Ictalurus nebulosus	32	
Esox americanus	164	
Lepomis gibbosus		
Salvelinus fontinalis		

STREAM NAME : STONY BROOK SITE #: 2081
SITE DESCRIPTION: ABOVE HIGH SCHOOL LANE AT DARIEN METHODIST CHURCH PARKING LOT.
SAMPLE LENGTH : 50. SAMPLE DATE: 08/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	25.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.7	0.06
WATER TEMP. . . :	22.0	(C)	pH . . . . . :	6.3	0.00
VELOCITY. . . . :	0.060	(m/s)	COND . . . . . (uS/cm3). . :	158.3	2.89
DISCHARGE . . . :	0.027	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	32.3	0.40

	MEAN	STD			
WIDTH. . . . . :	3.2	0.7	(m)		
DEPTH. . . . . :	8.9	7.21	(cm)		
DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.94	
TYPE THREE SUBSTRATE . . . :	0.72	(%)	AIR/WATER TEMP. RATIO:	1.14	
EMBEDDEDNESS OF TYPE THREE :	42.62	(%)			
OVERHEAD CANOPY. . . . . :	97.50	(%)			
INSTREAM SHELTER . . . . . :	4.28	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	62	20.70
Lepomis gibbosus	310	28.23
Micropterus salmoides	62	62.11
Anguilla rostrata	372	41.40
Rhinichthys atratulus	5632	44.01
Unknown Centrarchid	683	18.40

STREAM NAME : TATETUCK BROOK SITE #: 2121
SITE DESCRIPTION: DOWNSTREAM OF EVERETT RD, EASTON BHC PROP.

SAMPLE LENGTH : 100. SAMPLE DATE: 08/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	20.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.8	0.06
WATER TEMP. . . :	16.0	(C)	pH . . . . . :	7.2	0.00
VELOCITY. . . . :	0.149	(m/s)	COND . . . . . (uS/cm3). . :	135.0	0.00
DISCHARGE . . . :	0.075	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	21.5	1.01

	MEAN	STD			
WIDTH. . . . . :	4.2	1.0	(m)		
DEPTH. . . . . :	12.6	9.43	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.96	
TYPE THREE SUBSTRATE . . . :	0.03	(%)	AIR/WATER TEMP. RATIO:	1.25	
EMBEDDEDNESS OF TYPE THREE :	10.00	(%)			
OVERHEAD CANOPY. . . . . :		(%)			
INSTREAM SHELTER . . . . . :	7.55	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	4700	13.60
Anguilla rostrata	95	15.98
Ictalurus nebulosus	23	11.99
Esox niger	23	11.99
Micropterus salmoides	287	15.14
Lepomis gibbosus	119	17.12
Etheostoma olmstedi	47	9.59
Catastomus commersoni	47	15.98
Perca flavescens	71	14.38
Rhinichthys atratulus	959	15.08
Unknown Centrarchid	95	19.18
Lepomis macrochirus		

STREAM NAME : TATETUCK BROOK SITE #: 2174
SITE DESCRIPTION: BELOW EVERETT RD, EASTON, BHC PROP. DIRECTLY BELOW SITE 2121
SAMPLE LENGTH : SAMPLE DATE: 08/21/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	20.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	16.0	(C)	pH . . . . . :		
VELOCITY. . . .		(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . .		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):		

	MEAN	STD			
WIDTH.			(m)		
DEPTH.			(cm)		
DOMINANT SUBSTRATE TYPE. . :			POOL/RIFFLE RATIO . .:		
TYPE THREE SUBSTRATE . . . :		(%)	AIR/WATER TEMP. RATIO:	1.25	
EMBEDDEDNESS OF TYPE THREE :		(%)			
OVERHEAD CANOPY. . . . . :		(%)			
INSTREAM SHELTER . . . . . :		(m2)			

BIOLOGICAL

SPECIES	POPULATION (Present)
Lepomis macrochirus	
Salvelinus fontinalis	
Rhinichthys atratulus	
Unknown Centrarchid	
Lepomis gibbosus	
Etheostoma olmstedi	
Catastomus commersoni	
Ictalurus nebulosus	

STREAM NAME : TEN MILE RIVER SITE #: 2015
SITE DESCRIPTION: UPSTREAM OF WEST JOHNSON RD, MILLDALE. STOCKED, MEANDERING MEADOW, DEEP HOLES
SAMPLE LENGTH : 150. SAMPLE DATE: 07/19/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	31.0	(C)	DISSOLVED OXYGEN (mg/l). . :	7.6	0.32
WATER TEMP. . .	26.0	(C)	pH . . . . . :	7.0	0.06
VELOCITY. . . .	0.225	(m/s)	COND . . . . . (uS/cm3). . :	216.0	1.73
DISCHARGE . . .	0.437	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	60.3	0.64

	MEAN	STD			
WIDTH.	7.2	1.4	(m)		
DEPTH.	64.4	43.86	(cm)		
DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	2000.00	
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.19	
EMBEDDEDNESS OF TYPE THREE :	31.67	(%)			
OVERHEAD CANOPY. . . . . :	53.00	(%)			
INSTREAM SHELTER . . . . . :	838.04	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Etheostoma olmstedi	250	2.04
Anguilla rostrata	18	4.63
Semotilus corporalis	9	3.09
Esox americanus	64	4.63
Lepomis gibbosus	18	4.63
Lepomis auritus	111	5.85
Lepomis macrochirus	37	5.29
Catastomus commersoni	287	6.38
Salmo trutta	9	9.27

STREAM NAME : TITICUS RIVER SITE #: 2056
SITE DESCRIPTION: DOWNSTREAM OF WASHINGTON HIGHWAY RD, RIDGEFIELD
SAMPLE LENGTH : 120. SAMPLE DATE: 08/02/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.0	0.12
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.2	0.17
VELOCITY. . . .	0.093	(m/s)	COND . . . . . (uS/cm3). . :	397.0	5.29
DISCHARGE . . .	0.030	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	156.8	0.36

	MEAN	STD	
WIDTH. . . . . :	4.8	0.4	(m)
DEPTH. . . . . :	31.3	21.02	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	124.00
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.26
EMBEDDEDNESS OF TYPE THREE :	0.00	(%)		
OVERHEAD CANOPY. . . . . :	95.80	(%)		
INSTREAM SHELTER . . . . . :	189.97	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	293	10.47
Lepomis auritus	17	8.62
Etheostoma olmstedi	448	4.38
Catastomus commersoni	483	10.35
Notropis cornutus	465	11.64
Esox americanus	810	9.15
Rhinichthys cataractae	17	17.25
Micropterus salmoides	569	5.75
Lepomis macrochirus	172	6.00
Salvelinus fontinalis	17	17.25
Exoglossum maxillingua	1035	6.70
Semotilus atromaculatus	224	7.02

STREAM NAME : WACCABUC RIVER SITE #: 2057
SITE DESCRIPTION: PARALLEL TO EAST SIDE OF RIPPOWAM ROAD 200 YARDS ABOVE ROAD CROSSING, RIDGEFIELD
SAMPLE LENGTH : 50. SAMPLE DATE: 06/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.6	0.06
WATER TEMP. . .	17.0	(C)	pH . . . . . :	6.5	0.31
VELOCITY. . . .	0.086	(m/s)	COND . . . . . (uS/cm3). . :	114.3	1.15
DISCHARGE . . .	0.009	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	22.5	0.44

	MEAN	STD	
WIDTH. . . . . :	2.9	1.3	(m)
DEPTH. . . . . :	3.7	4.15	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.63
TYPE THREE SUBSTRATE . . . :	0.04	(%)	AIR/WATER TEMP. RATIO:	1.24
EMBEDDEDNESS OF TYPE THREE :	30.00	(%)		
OVERHEAD CANOPY. . . . . :	97.00	(%)		
INSTREAM SHELTER . . . . . :	1.26	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis	3194	54.14
Rhinichthys atratulus	10625	59.69
Semotilus atromaculatus	2361	54.90
Notemigonus crysoleucas	69	69.44

STREAM NAME : WEPAWAUG RIVER SITE #: 2069
SITE DESCRIPTION: 200 M UPSTREAM OF POWERLINE WHICH CROSS THROUGH TOWN PARK, MILFORD
SAMPLE LENGTH : 145. SAMPLE DATE: 08/22/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	23.0	(C)	DISSOLVED OXYGEN (mg/l)	8.6	0.15
WATER TEMP.	19.0	(C)	pH	7.1	0.00
VELOCITY.	0.177	(m/s)	COND (uS/cm3)	164.7	3.21
DISCHARGE	0.138	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	26.4	0.06

	MEAN	STD	
WIDTH.	8.9	2.5	(m)
DEPTH.	25.0	18.93	(cm)

DOMINANT SUBSTRATE TYPE.	3		POOL/RIFFLE RATIO	11.08
TYPE THREE SUBSTRATE	0.59	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE	48.44	(%)		
OVERHEAD CANOPY.	82.30	(%)		
INSTREAM SHELTER	422.43	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Esox niger	93	5.82
Ambloplites rupestris	108	5.17
Salmo trutta	15	7.76
Unknown Centrarchid	434	2.78
Lepomis gibbosus	427	4.08
Rhinichthys atratulus	100	5.31
Lepomis auritus	155	5.17
Etheostoma olmstedi	5250	0.84
Catastomus commersoni	535	2.82
Unknown Cyprinid	46	7.76
Semotilus corporalis	17233	0.56
Micropterus salmoides	194	3.63
Anguilla rostrata	660	2.00

STREAM NAME : WEST BR PEQUONNOCK RIVER SITE #: 2074
SITE DESCRIPTION: CHANNELIZED SECTION DNSTM OR PEPPER ST BRIDGE, MONROE
SAMPLE LENGTH : 100. SAMPLE DATE: 08/27/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP.	26.0	(C)	DISSOLVED OXYGEN (mg/l)	8.9	0.21
WATER TEMP.	19.0	(C)	pH	6.7	0.12
VELOCITY.	0.061	(m/s)	COND (uS/cm3)	113.0	0.00
DISCHARGE	0.137	(m3/s)	ALKALINITY (mg CaCO3 eq/l)	23.4	0.35

	MEAN	STD	
WIDTH.	5.7	0.4	(m)
DEPTH.	48.4	22.49	(cm)

DOMINANT SUBSTRATE TYPE.	1		POOL/RIFFLE RATIO	2000.00
TYPE THREE SUBSTRATE	0.12	(%)	AIR/WATER TEMP. RATIO:	1.37
EMBEDDEDNESS OF TYPE THREE	42.50	(%)		
OVERHEAD CANOPY.		(%)		
INSTREAM SHELTER	373.74	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Perca flavescens	35	11.75
Anguilla rostrata	35	17.63
Salvelinus fontinalis	17	8.81
Esox niger	52	8.81
Esox americanus	17	5.87
Micropterus salmoides	35	5.87
Lepomis gibbosus	229	8.46
Etheostoma olmstedi	52	6.61

STREAM NAME : WEST BR. SAUGATUCK RIVER SITE #: 2040
SITE DESCRIPTION: 15M ABOVE ABANDONED BRDGE TO 135M BELOW, SITE 200 M BELOW STONEBRIDGE RD, WILTON
SAMPLE LENGTH : 150. SAMPLE DATE: 07/03/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.6	0.15
WATER TEMP. . .	20.0	(C)	pH	6.8	0.06
VELOCITY. . . .	0.073	(m/s)	COND . . . . . (uS/cm3). .	116.0	1.00
DISCHARGE . . .	0.134	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	21.2	0.23

	MEAN	STD	
WIDTH.	10.6	3.5	(m)
DEPTH.	25.1	19.72	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	4.73
TYPE THREE SUBSTRATE . . . :	0.08	(%)	AIR/WATER TEMP. RATIO:	1.15
EMBEDDEDNESS OF TYPE THREE :	68.57	(%)		
OVERHEAD CANOPY. . . . . :	85.00	(%)		
INSTREAM SHELTER . . . . . :	453.66	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Rhinichthys atratulus	181	5.18
Ictalurus nebulosus	6	3.12
Catastomus commersoni	2322	1.06
Notemigonus crysoleucas	6	2.08
Rhinichthys cataractae	256	1.61
Lepomis gibbosus	25	2.78
Lepomis auritus	682	2.34
Etheostoma olmstedi	488	1.43
Anguilla rostrata	794	2.72
Unknown Cyprinid	31	3.47
Lepomis macrochirus	12	4.17
Esox niger	50	1.87
Salmo trutta	43	4.38
Unknown Centrarchid	6	2.08
Exoglossum maxillingua	81	4.52
Notropis cornutus	6	6.25
Lepomis cyanellus	6	2.08

STREAM NAME : WEST RIVER SITE #: 2010
SITE DESCRIPTION: UPSTREAM OF SAWMILL RD GUILFORD

SAMPLE LENGTH : 150. SAMPLE DATE: 06/25/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	5.7	0.15
WATER TEMP. . .	21.0	(C)	pH . . . . . :	7.1	0.06
VELOCITY. . . .	0.072	(m/s)	COND . . . . . (uS/cm3). . :	137.0	1.73
DISCHARGE . . .	0.093	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	41.1	0.12

	MEAN	STD	
WIDTH. . . . . :	8.1	2.7	(m)
DEPTH. . . . . :	26.0	19.98	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	3.05
TYPE THREE SUBSTRATE . . . :	0.10	(%)	AIR/WATER TEMP. RATIO:	1.14
EMBEDDEDNESS OF TYPE THREE :	44.29	(%)		
OVERHEAD CANOPY. . . . . :	87.00	(%)		
INSTREAM SHELTER . . . . . :	241.32	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Lepomis gibbosus	69	4.94
Anguilla rostrata	1291	4.27
Ictalurus nebulosus	15	3.84
Lepomis macrochirus	222	5.30
Salvelinus fontinalis	138	5.53
Salmo trutta	7	3.84
Unknown Centrarchid	15	7.68
Esox niger	7	3.84
Notropis cornutus	15	3.07
Semotilus corporalis	276	3.50
Rhinichthys cataractae	246	3.34
Perca flavescens	30	4.39
Catastomus commersoni	246	3.34
Lepomis auritus	338	3.38
Micropterus salmoides		
Rhinichthys atratulus		

STREAM NAME : WEST RIVER SITE #: 2026
SITE DESCRIPTION: UPSTREAM OF BLAKE ST 200M. NEW HAVEN. SHALLOW COBBLE STREAM
SAMPLE LENGTH : 168. SAMPLE DATE: 08/13/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	28.0	(C)	DISSOLVED OXYGEN (mg/l). .	8.8	0.98
WATER TEMP. . .	28.0	(C)	pH	6.9	0.25
VELOCITY. . . .	0.614	(m/s)	COND . . . . . (uS/cm3). .	133.3	1.15
DISCHARGE . . .	1.151	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	33.8	0.40

	MEAN	STD	
WIDTH.	10.9	3.2	(m)
DEPTH.	23.0	18.33	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.07
TYPE THREE SUBSTRATE . . . :	0.30	(%)	AIR/WATER TEMP. RATIO:	1.00
EMBEDDEDNESS OF TYPE THREE :	48.27	(%)		
OVERHEAD CANOPY. . . . . :		(%)		
INSTREAM SHELTER . . . . . :	228.39	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Notemigonus crysoleucas	5	1.81
Catastomus commersoni	837	2.73
Lepomis auritus	902	2.33
Micropterus salmoides	92	3.55
Lepomis gibbosus	125	2.71
Ambloplites rupestris	10	3.62
Lepomis macrochirus	201	4.19
Etheostoma olmstedi	21	2.41
Unknown Centrarchid	1016	0.84
Esox niger	21	5.43
Ictalurus nebulosus	65	2.09
Anguilla rostrata	619	1.81
Pomoxis nigromaculatus	54	3.19
Rhinichthys atratulus	451	2.12

STREAM NAME : WHARTON BROOK SITE #: 2020
SITE DESCRIPTION: SAND PIT BRIDGE OFF TOELLES RD WALLINGFORD APPROX. 300M FROM QUINNIPIAC RIVER
SAMPLE LENGTH : 75. SAMPLE DATE: 06/15/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.2	0.40
WATER TEMP. . .	20.0	(C)	pH	6.9	0.06
VELOCITY. . . .	0.463	(m/s)	COND . . . . . (uS/cm3). .	249.7	0.58
DISCHARGE . . .	0.505	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	69.4	1.10

	MEAN	STD	
WIDTH.	5.5	1.7	(m)
DEPTH.	21.4	14.57	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	6.50
TYPE THREE SUBSTRATE . . . :	0.30	(%)	AIR/WATER TEMP. RATIO:	1.20
EMBEDDEDNESS OF TYPE THREE :	52.86	(%)		
OVERHEAD CANOPY. . . . . :	98.00	(%)		
INSTREAM SHELTER . . . . . :	95.43	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	396	8.38
Anguilla rostrata	375	6.42
Ictalurus nebulosus	10	10.71
Lepomis macrochirus	139	8.19
Rhinichthys atratulus	364	6.34
Salmo trutta	21	7.14
Notropis cornutus	53	8.92
Esox americanus	21	10.71
Notemigonus crysoleucas	10	5.35
Rhinichthys cataractae	21	5.35
Micropterus salmoides	21	10.71
Lepomis gibbosus	21	10.71
Etheostoma olmstedi	300	2.67

STREAM NAME : WILLOW BROOK SITE #: 2022
SITE DESCRIPTION: UPSTREAM OF HARRIS RD AND MT. SANFORD RD, CHESHIRE, SCRWA PROP.
SAMPLE LENGTH : 150. SAMPLE DATE: 07/16/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	31.0	(C)	DISSOLVED OXYGEN (mg/l). .	9.2	0.20
WATER TEMP. . .	21.0	(C)	pH	6.9	0.06
VELOCITY. . . .	0.461	(m/s)	COND . . . . . (uS/cm3). .	170.0	0.00
DISCHARGE . . .	0.870	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	60.8	0.46

	MEAN	STD	
WIDTH.	6.0	1.9	(m)
DEPTH.	31.1	21.46	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	6.14
TYPE THREE SUBSTRATE . . .	0.17	(%)	AIR/WATER TEMP. RATIO:	1.48
EMBEDDEDNESS OF TYPE THREE	70.00	(%)		
OVERHEAD CANOPY.	93.70	(%)		
INSTREAM SHELTER	232.59	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Anguilla rostrata	178	5.77
Ictalurus nebulosus	33	6.58
Lepomis macrochirus	11	3.72
Salvelinus fontinalis	424	5.58
Rhinichthys atratulus	1373	1.92
Salmo trutta	312	5.47
Semotilus corporalis	100	6.28
Esox americanus	11	11.16
Rhinichthys cataractae	167	5.58
Etheostoma olmstedi	122	6.82
Catastomus commersoni	323	3.96

STREAM NAME : WINTERGREEN BROOK SITE #: 2025
SITE DESCRIPTION: BELOW WINTERGREEN AVE, NEW HAVEN

SAMPLE LENGTH : 105. SAMPLE DATE: 09/04/1990

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.0	(C)	DISSOLVED OXYGEN (mg/l). .	7.5	0.15
WATER TEMP. . .	17.0	(C)	pH	6.8	0.06
VELOCITY. . . .	0.101	(m/s)	COND . . . . . (uS/cm3). .	210.3	10.07
DISCHARGE . . .	0.081	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	78.0	20.14

	MEAN	STD	
WIDTH.	5.6	2.0	(m)
DEPTH.	33.4	27.87	(cm)

DOMINANT SUBSTRATE TYPE. .	1		POOL/RIFFLE RATIO . .:	4.25
TYPE THREE SUBSTRATE . . .	0.17	(%)	AIR/WATER TEMP. RATIO:	1.12
EMBEDDEDNESS OF TYPE THREE	45.00	(%)		
OVERHEAD CANOPY.	94.00	(%)		
INSTREAM SHELTER	211.01	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Catastomus commersoni	2452	7.91
Petromyzon marinus	84	9.39
Etheostoma olmstedi	405	4.83
Anguilla rostrata	473	7.51
Rhinichthys atratulus	1590	10.57
Unknown Centrarchid	67	8.45
Esox americanus	16	8.45
Lepomis gibbosus	101	16.91
Lepomis auritus	202	10.14

Appendix C