STATE OF CONNECTICUT

Department of Environmental Protection

Bureau of Fisheries and Wildlife

Inland Fisheries Division

Federal Aid in Sport Fish Restoration F-66-R-2

Annual Performance Report

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

Job 2. Stream Survey

Job 3. Creel Survey

Period Covered: April 1, 1989 to September 30, 1990

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Acknowledgments

We would like to acknowledge the many private land owners, towns, water districts and Water companies who allowed us access to their properties (Manchester Water Department, Connecticut Water Company, and Town of Glastonbury). A special thanks is extended to Rick Jacobson for his assistance with opening day creeling (a truly thankless task) and to E. J. Machowski who did an excellent job and worked tirelessly as a technician for the project from October 1988 to October 1989. We wish to express our appreciation to Eleanor Mariani and Vic Crecco for their review and comments on this document. Additional thanks is offered to all other project and division staff who's assistance has helped to make our job a little easier.

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ABSTRACT

A comprehensive stream survey was conducted on the Connecticut River valley as part of a multiple year study of Connecticut streams and rivers. A total of 109 sites on 93 streams were sampled for invertebrate populations, fish populations and habitat information. Angler surveys were conducted on seven streams. Preliminary data analyses were 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 52% of the streams sampled. Expansion calculations were presented for determining age class sizes and standing crop values of trout. Due to the one year lag in invertebrate sample processing, preliminary data analyses were conducted on 1988 invertebrate sample results. Streams containing trout all had at least 10 families of insects present. At least 4 of these families had individuals with average weights over 1.0 mg.

Angler surveys indicated heavy fishing pressure on the Salmon River (6,522 hrs/km) and Jeremy River (1,479 hrs/km), and moderate levels on the Scantic River and Cogichaug River (738 and 508 hrs/km , respectively). Safstrom Brook and Parmelee Brook were only lightly fished, whereas there was no detectable effort on the Hockanum River.

Preliminary evaluations were made of the mechanisms and usefulness of the Wild/Non-trout/Habitat/Fertility Model (WNHF) (Engstrom-Heg 1979).

1.0 Introduction:

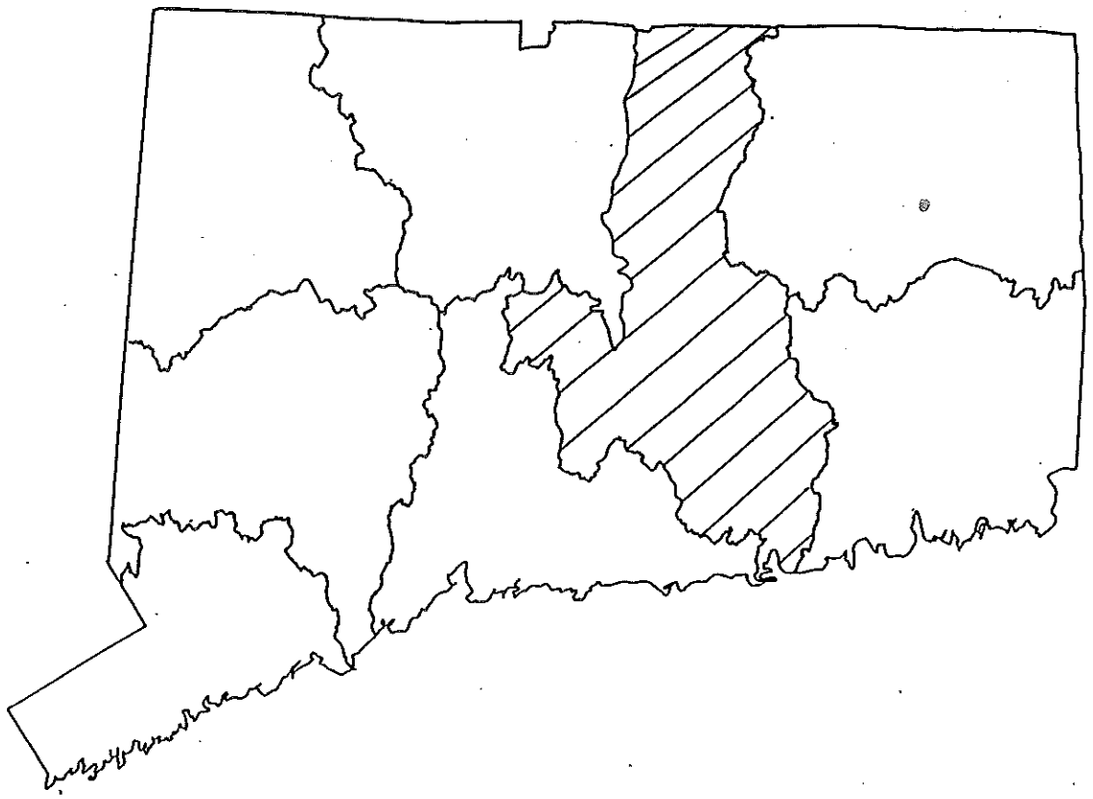
A comprehensive survey of the streams and rivers of the State of Connecticut was begun by the Department of Environmental Protection (DEP) Inland Fisheries Division in 1988. The objectives of this study include: development of trout stocking models to optimize allocation of hatchery fish, compilation 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 second year of a multiple year stream sampling program. The tributaries of the Connecticut River valley were sampled during 1989 (Figure 1). Of eight regional basins in the Connecticut River, the five sampled in 1989 varied in size from 114 to 388 km^2 (Table 1). An additional 14 subregional basins that flow directly into the Connecticut River, comprising 1,037 km^2, were also sampled. This region has been undergoing the second highest level of development in the state with approximately 5.75 construction permits per square mile issued per year. This region also contains the Salmon River drainage, an important area in the effort to restore Atlantic salmon to Connecticut.

This segment was extended to 9/30/90 to allow for expenditures under Jobs 2 and 3, and for work under Jobs 7-9 to be completed. A final report covering Jobs 7-9 (Mapping and landowner survey of the Salmon River and major tributaries) will be submitted under separate cover.

Table 1 Drainage area of Connecticut River Valley tributaries.

Regional Basins	Major and Regional Basin Codes	Year Sampled	Area (km^2)
Stony Brook	41	1988	114.7
Scantic River	42	1989	295.3
Farmington River	43	1988	1,556.6
Park River	44	1988	197.4
Hockanum River	45	1989	197.1
Mattabasset River	46	1989	279.7
Salmon River	47	1989	388.5
Eight Mile River	48	1989	137.3
Additional Subregional Basins	40	1989	1,037.0
Freshwater Brook		Carr Brook	
Salmon Brook		Roaring Brook	
Podunk River		Pattaconk Brook	
Hubbard Brook		Deep River	
Roaring Brook		Falls River	
Goff Brook (Sampled 1988)		Mill Brook	
Reservoir Brook		Black Hall River	



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 Connecticut River Valley varied from slow draining, low gradient streams in the northeast, to very rapidly fluctuating streams in portions of the Salmon River basin (Figure 2). Tributaries in the southern half of the Connecticut River Valley were subject to tidal influence in their lower reaches. In addition, the lower portions of streams south of the confluence of the Salmon and Connecticut Rivers were subject to occasional estuarine influence.

Data were collected from, 109 sites on 93 streams (Figure 2; Appendix B). Salmonids were present at 100 sites on 83 streams. Evidence of brook trout and/or brown trout reproduction was found at 45 sites on 38 streams (Table 2).

Preliminary data analyses were carried out on all chemical, habitat and population data. Standing crop and age class sizes were calculated where possible. Because of the length of time required to process invertebrate samples, data analysis was carried out on 1988 data only. More detailed analyses will be carried out later once more complete data sets have been compiled.

3.1 Chemical:

Means, standard deviations and ranges of values were calculated for dissolved oxygen, pH, conductivity and alkalinity (Table 3). Slight variations in ranges and means were expected because of variability between years and drainages. Statistics were also calculated for streams grouped by presence of trout and

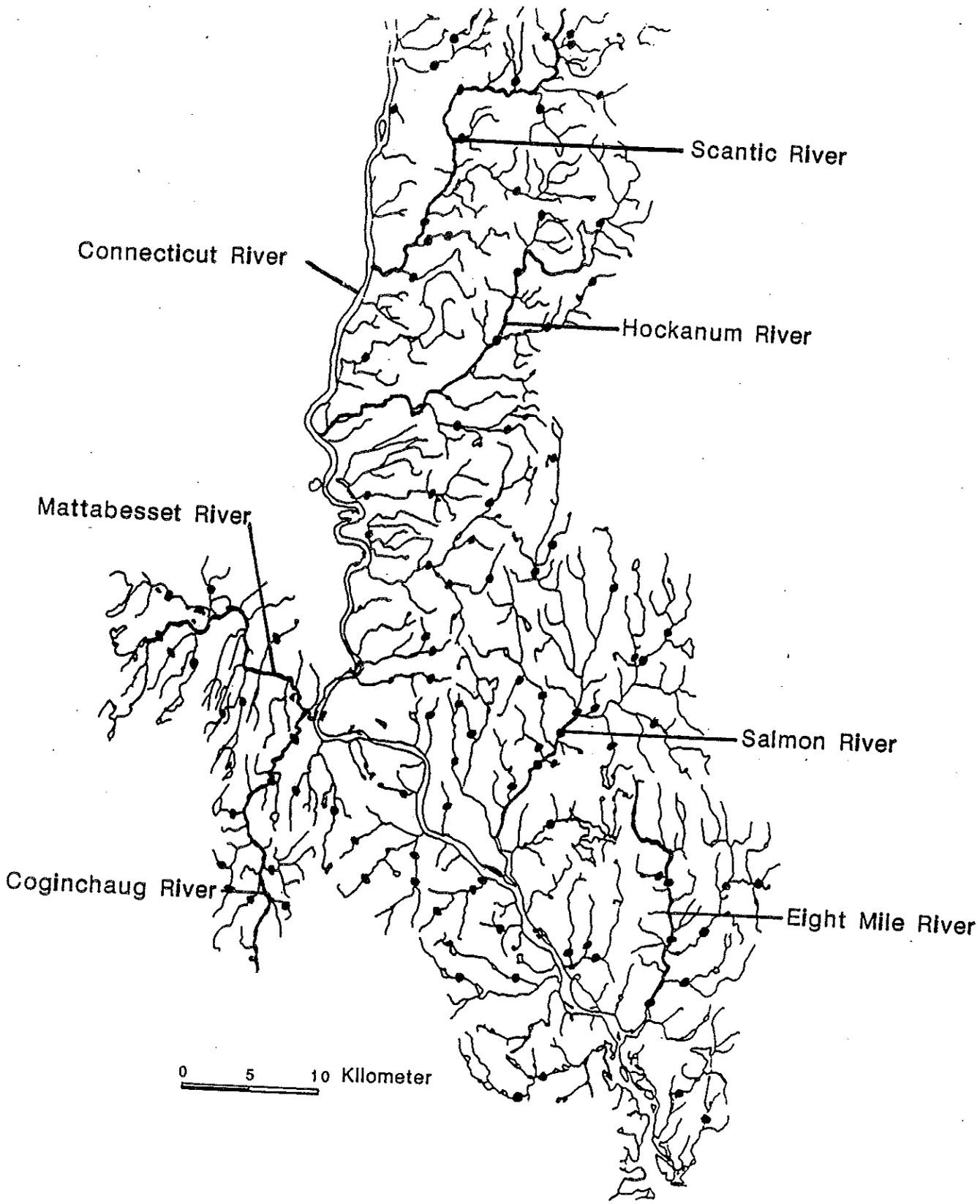


Figure 2. Sites sampled during the 1989 sample season.

Table 2. Percentage of streams with trout reproduction by species and drainage for Connecticut River Tributaries during 1988-89.

Drainage Name and Code	Year Sampled	Number of Streams	Percentage of Streams with Reproduction		
			Brown Tr.	Brook Tr.	Total
Conn. River 4000	1989	37	16.2	24.3	32.4
Stony Brook 4100	1988	4	0.0	0.0	0.0
Scantic River 4200	1989	10	40.0	60.0	70.0
Farmington River 4300	1988	54	44.4	70.4	83.3
Park River 4400	1988	7	0.0	0.0	0.0
Hockanum River 4500	1989	8	25.0	50.0	50.0
Mattabasset River 4600	1989	13	30.8	30.8	46.2
Salmon River 4700	1989	19	15.8	21.1	36.8
Eight Mile River 4800	1989	6	0.0	33.3	33.3
Total		159			52.5

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

Parameter	All Streams by year 88	89	Streams with Trout Present	Streams With Trout Reproduction
Dissolved Oxygen	9.05±1.79 (2.5-16.0)	9.27±1.42 (3.1-11.0)	9.48±1.1 (6.2-11.5)	9.56±1.07 (6.2-11.5)
pH	7.32±0.68 (4.8-9.56)	7.13±0.55 (4.6-8.1)	7.16±0.5 (5.5-8.4)	7.17±0.5 (5.5-8.4)
Conduct-ivity	150.8±130 (20-800)	112.5±80 (22-456)	94.9±61 (20-330)	97.9±64 (20-330)
Alkalinity[1]	39.4±38.7 (0-166)	27.9±30.6 (0-175)	23.0±21.4 (0.003-103)	23.2±21.5 (0.003-103)

[1] mg/l $CaCO_3$ eq.

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, the ranges were not as extreme for streams with trout. It is possible that chemical parameters may be limiting factors in some Connecticut streams.

Raleigh (1982) reported a dissolved oxygen suitability curve for brook trout where values below 8.0 mg/l in waters greater than 15^{o} C were limiting, with no survival at 5.0 mg/l. To date, trout have not been sampled in Connecticut streams where the dissolved oxygen concentration is lower than 6.2 mg/l.

Trout were not found in any streams with either alkalinity or conductivity levels near the high end of the range of values measured. Alkalinity and conductivity are generally believed to be strongly correlated. Engstrom-Heg (1979) developed a regression equation that predicts conductivity from alkalinity. However, using our data, the conductivity values predicted

equation correlated with actual values only 71% of the time. Therefore, it will be necessary to continue to collect alkalinity information. As more data are collected descriptions of chemical factors that indicate habitat that are not appropriate for trout stocking can be formulated.

3.2 Physical:

Means, standard deviation and ranges were calculated for several physical parameters (Table 4). Between-year variability was expected because of the drought in 1988 and the unusually high precipitation rate in 1989. Variables independent of water volume were not effected (Canopy, Pool-Riffle ratio, etc.). The most notable difference between years was the range and mean for average water velocity. The mean for average water velocity was not significantly different between streams with and without trout. The range of velocity values however, was considerably lower for streams with trout than for those without trout, indicating velocity as a possible limiting factor for trout distribution in Connecticut. Several studies indicate focal point velocity preferences for brown trout and brook trout of 0.15 and 0.1 m/sec respectively (Raleigh et al., 1986 and Wesche 1980).

Pool-riffle ratios showed a marked difference in mean values between trout streams and non-trout streams. These values were not tested statistically because they are not normally distributed and will probably have to be tested using nonparametric statistics. Engstrom-Heg (1979) indicated that a pool-riffle ratio value of 0.25-0.50 is optimum for trout, while Needham (1940) indicated a ratio of 1.0 as optimum for brook trout. Raleigh et al. (1986) listed preferred pool and riffle percentages for brown trout that were equivalent to a pool-riffle ratio of 1.0-2.0. The arithmetic mean for trout streams in Connecticut was 0.83. The mode was 1.17 for trout streams. No clear relationship was found between biomass or numbers when

species and the requirements of individual life history stages (fingerling, juveniles and adults) would result in different optimal pool-riffle ratio values. This factor will be reexamined at a later date to determine if interactions exist with specific age groups.

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

Parameter	All Streams by year 1988	1989	Streams with Trout Present	Streams With Trout Reproduction
Mean Water Velocity m/s	0.12 ±0.08 (0.005-0.42)	0.22 ±0.12 (0.032-1.3)	0.16±0.26 (0.014-0.589)	0.16±0.11 (0.014-0.476)
Discharge Volume M^3/s	0.24 ±0.54 (0.003-4.3)	0.27 ±0.41 (0.001-2.6)	0.22 ±0.34 (0.001-2.18)	0.20 ±0.36 (0.002-2.18)
Overhead Canopy (%)	77.1±26.6 (0-100)	79.2±24.9 (0-100)	81.9±21.7 (7.3-100)	82.3±21.1 (18.7-100)
Pool/Riffle Ratio	1.55±5.0 (0-2000)	1.36±5.0 (0-2000)	0.83±3.92 (0-2000)	0.64±3.44 (0.16-2000)
Percent Embeddedness Subtrate				
Type 3	49.7±25.8 (2-100)	42.9±24.6 (0-100)	44.8±23.4 (0-100)	42.0±23.9 (0-90)
Type 4	29.6±21.6 (0-100)	35.9±22 (0-100)	31.1±20.4 (0-100)	29.8±19.3 (0-100)

The mean embeddedness of various substrate types can be related to limitations in overwintering habitat, spawning success and invertebrate production (Cordone and Kelly 1961). Everest (1969) found juvenile rainbow trout overwintering in substrate up to 30 cm deep. If the substrate is heavily embedded it will prevent this type of overwintering behavior and

prevent proper aeration of incubating eggs. At our sample sites the embeddedness of gravel and cobble in trout and non-trout streams was not significantly different (Table 4). This is surprising since it is typically assumed that trout require clean, non-embedded substrate to successfully spawn (Platts et al. 1983). This inconsistency may be explained by the availability of adequate spawning sites in adjacent areas.

Correlation of subjective instream cover estimates with measured instream cover lengths was significant at the 99% level (r^2=30.6%). Our ability to subjectively estimate the length of instream cover however, was not very good. Still, if our analysis shows that cover is limiting when it is 50% or less of the length of the sample site, then the subjective estimates can properly classify the streams as being habitat limited 75% of the time. While the numeric correlation is low, as a classification tool subjective estimates may be a useful.

3.3 Biological:

3.3.1 Invertebrates:

During May to June 1989, 590 invertebrate samples were collected at low flow sample sites. Some invertebrate samples were collected from locations that were not sampled during the summer because of time limitations. Invertebrate samples collected during 1988 were sorted and identified to family (Appendix A) by April 1989. The mean number of families per site were 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

The WNHF stream assessment methodology (Engstrom-Heg, 1979) uses the count of insect species as a metric for determining stream fertility. With this method streams containing 10 or more insect species receive a positive fertility value. We identified insects to family not species, however the number of families is a conservative estimate of the number of species. Sites sampled in 1988 averaged 17.6 (± 5.8) families when trout were present and 9.1 (± 5.4) families when trout were absent. These ranges were in general agreement with the WNHF metric suggesting that invertebrate abundance may be an indicator of trout habitat.

Table 5. Summary of invertebrate data from 1988 samples. Means, ± standard deviation and range ( ) were calculated for number of invertebrate families, average weight and average number of individuals per sq meter for three groups of streams.

Variable Name	Non-Trout Stream	Trout Present in stream	Trout Reproducing in stream
Sample Size (N)	32	61	23
Number of Families	9.1 ± 5.4 (3-24)	17.6 ± 5.8 (10-30)	18.95 ± 5.9 (10-28)
Individual/m^2	790.8 ± 752	1,036 ± 668	931 ± 657
Weight g/m^2	5.0 ± 6.1	9.52 ± 7.2	7.83 ± 6.2
Ind. Wt >1.0 mg			
Number of Families	4.4 ± 5.4 (0-15)	8.9 ± 2.5 (4-14)	9.3 ± 3.8 (4-13)
Individual/m^2	380.8 ± 505	705 ± 530	581 ± 486
Weight g/m^2	4.3 ± 6.1	8.9 ± 7.5	7.9 ± 6.3

3.3.2 Fish Populations:

During 1989 four fish species not previously encountered during the Stream Survey where collected: alewife, *Alosa pseudoharengus*; American shad, *Alosa sapidissima*; burbot, *Lota lota*; and central mudminnow, *Umbra limi*. The burbots collected were two juvenile specimens from a tributary stream approximately 200 m from the Connecticut River. This is the first reporting of *L. lota* in the lower Connecticut River basin since 1965 (Whitworth 1968). The three other species where also found in low gradient stream habitat near the confluence with the Connecticut River.

The capture efficiency (p) of all species combined was over 30% for all sites sampled. The capture efficiencies for individual species were generally above 30% (Table 6). The negatively buoyant species, longnose dace, tesselated darter and slimy sculpin, 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. In addition, capture efficiencies for individual species were nearly identical to those determined in 1988 (Hagstrom et al. 1989).

The reproductive success of trout varied greatly between drainages. Streams were considered to have reproduction if there were any age 0+ or 1+ fish present, and there were no known fingerling stockings in the system. Approximately 50% of the streams examined to date have had some amount of trout reproduction. This number is strongly influenced however, by the large number of samples taken from the Farmington River system. Eighty three percent of the streams in the Farmington River system were found to be inhabited by wild trout whereas occurrences in other drainages were generally less than 50% (Table 2). The Eight Mile River system had no brown trout reproduction. Brook trout have been found to be reproducing in 76 streams and brown trout in 51 out of a total of 167 streams. The majority of streams inhabited by wild brook trout were less

Overall, far more wild trout reproduction was present than had been anticipated. There were indications that the smaller streams were utilized for spawning purposes, as numbers of large trout were captured in October in tributaries to the Scantic and Farmington Rivers. It appears that these small streams may be important nursery areas for the mainstem river populations.

Table 6. Efficiency of capture (p) during the 1989 sample season for selected species.

Species	Number of Sites	Number > 30%(p)	Mean (p)	Maximum (p)	Minimum (p)
American Eel	92	86	55.3	100	20.0
Brown Trout	40	40	64.3	100	33.3
Brook Trout	55	52	63.1	100	16.5
Fallfish	41	35	53.5	100	15.0
Atlantic Salmon	8	8	60.9	100	33.0
White Sucker	70	64	61.0	100	11.0
Blacknose Dace	71	65	57.3	100	11.7
Common Shiner	28	22	53.0	100	9.3
Longnose Dace	40	30	41.4	100	3.6
Tesselated Darter	51	37	43.6	100	9.0

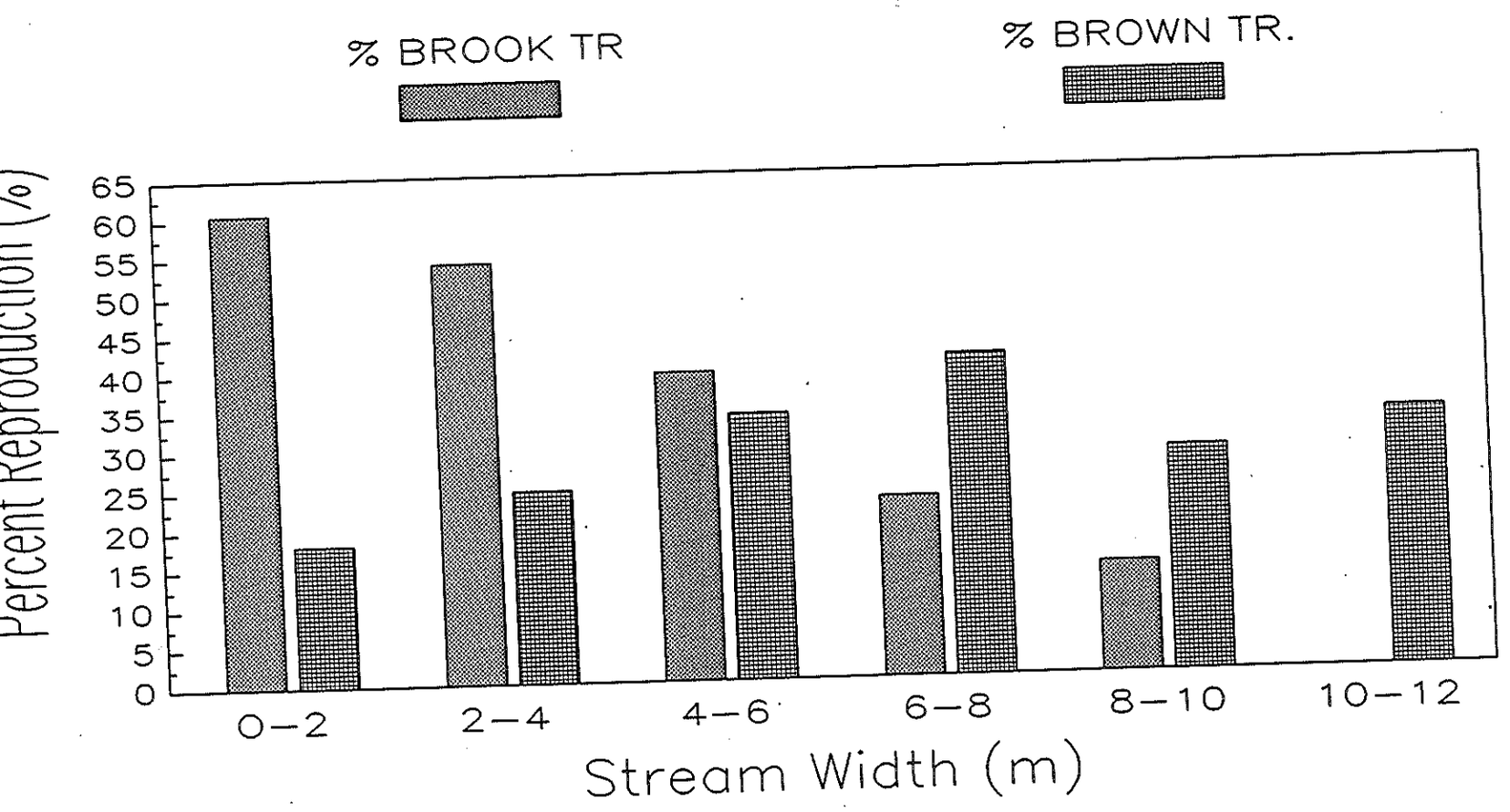


Figure 3. The percentage of streams containing trout with either brook or brown trout reproduction by stream width.

Sufficient data were not collected this year to develop length-weight relationships from local sites. Therefore, biomass estimates were generated using formulas from Carlander (1969) (Table 7). For most species a generalized length-weight formula was used. Separate equations, developed from stream specimens, were used for American eels, brook trout and brown trout.

The biomass of all fish species were generated by multiplying the number of individuals in each cm class by the expected mean weight of individuals in that length class. The weights of all cm classes were totaled and then expanded to a kg/ha basis using equation 1. The mean weight of each centimeter class was determined using the appropriate length-weight relationship (Table 7).

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
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)
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

$$\text{Biomass} = \sum(W_i * Lf_i)*(P/Lf_{tot}) \qquad (1)$$

Where: Biomass = Standing Crop of a species in Kg/ha.

W_i = Weight of an individual in i'th cm class.

Lf_i = Number of individuals in i'th cm class

P = Population estimate of species in number of individuals/ha.

Lf_{tot} = Total number of individuals in a species length frequency.

Mean trout biomass and number per hectare are listed by drainage in Table 8. Trout biomass ranged from 0.33 to 197.4 kg/ha for brook trout and 0.88 to 244 kg/ha for brown trout. Streams in the Farmington River drainage had the highest occurrence of age 0^+ and 1^+ trout, causing the number of individuals per ha to be greater than in other drainages. Paradoxically, standing crop values from the Farmington River drainage were lower than values from other systems. This is probably because heavy fishing pressure resulted in the removal of the larger trout. The sites in the Hockanum River drainage included one apparently unexploited brown trout population which caused the overall mean of that system to be greatly elevated. Engstrom-Heg (1979) assumed a carrying capacity of 110 kg/ha of trout when developing the WNHF stocking system. If Connecticut streams are capable of this mean carrying capacity, the average standing crop values that we have determined to date are low enough to indicate potential for improvement. A more complete assessment of trout carrying capacity in Connecticut streams will be done as more data become available.

The biomass of other fish species varied considerably between drainages and stream sites (Table 9). Biomass of American eel, the dominate piscivore in most Connecticut streams, ranged from 0.1 to 387 kg/ha. In general, the more southern drainages showed lower average numbers of individuals.

Aging and growth evaluation were done using length frequency tables and by back calculation of fish length from annulus measurements. When length frequency distributions were compared with scale ages of trout from 85 Farmington River sites we observed that it was not possible to accurately distinguish the separate age classes from length frequency information alone for 51 of the sites. In the future, whenever possible, aging will be

were designated as being of hatchery or wild origin based on two criterion: 1) greater than 70% of scales were regenerated and 2) uniformity of growth, as indicated by circulus spacing, during the first two years. The origin of stocked fish could affect the accuracy of these designations. Trout from the Burlington Hatchery are raised in flow through system that utilizes surface water supplies. This arrangement could create scale growth patterns similar to those of wild fish, with high growth rates. Fish from the Quinebaug Hatchery are raised in wellwater which has a more constant temperature year-round. This arrangement is more likely to produce uniform circulus formation and spacing.

Table 8. Mean ± Standard Deviation of standing crop (kg/ha) and number per hectare of trout by drainage in the Connecticut River Basin.

Species/ Drainage	Standing Crop		Number per Hectare	
	Streams with Trout	Streams with Reproduction	Streams with Trout	Streams with Reproduction
Brown Trout				
Conn. R.[1]	14.3±14.4	9.3± 8.3	99± 113	118±128.2
Scantic R.	61.2±78.1	64.4±84.0	428± 692	491± 729
Farmington R.	24.0±31.8	25.4±34.2	1,364±1,871	1,649±1,959
Hockanum R.	95.8±42.5	95.8±42.5	701± 599	701± 599
Mattabasset R.	9.4±11.1	14.4±12.6	50± 45	74± 45
Salmon R.	9.9± 9.1	3.8± 1.4	48± 50	33± 15
Eight Mile R.	40.0±33.4	----±----	61± 65	----± ----
All Drainages	26.2±39.4	27.8±44.7	699±1,412	987±1,621
Brook Trout				
Conn. R.	31.3±27.8	36.8±30.5	1,527±2,097	2,035±2,235
Scantic R.	26.8±27.4	26.9±27.4	1,233±1,711	1,233±1,711
Farmington R.	30.4±31.9	32.4±32.8	3,423±3,590	3,423±3,590
Hockanum R.	34.2±15.9	34.2±15.9	628± 469	628± 469
Mattabasset R.	32.9±32.9	58.1±80.7	662±1,408	1,301±1,774
Salmon R.	13.3±15.6	15.7±15.8	290± 559	226± 212
Eight Mile R.	14.4±18.7	32.7±17.6	193± 250	466.2± 181
All Drainages	28.3±33.1	33.3±35.4	2,339±4,844	2,475±3,099

[1] Streams draining directly into the Connecticut River.

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

Species/ Drainage	Number of Sites	Mean ± sd	Max	Min
White Sucker				
Conn. R.[1]	25	18.3 ± 24.6	121.6	0.69
Stoney B.	5	43.1 ± 26.4	78.0	4.16
Scantic R.	9	56.7 ± 55.2	134.8	4.08
Farmington R.	48	50.1 ± 141.3	739.6	0.22
Park R.	6	271.5 ± 415.2	1,171.8	14.20
Hockanum R.	6	31.6 ± 52.1	147.5	52.8
Mattabasset R.	12	19.2 ± 20.1	64.5	0.60
Salmon R.	13	20.0 ± 42.9	167.9	0.82
Eight Mile R.	5	15.4 ± 10.7	28.6	2.35
American Eel				
Conn. R.[1]	47	206.5 ± 337.8	1,997.0	0.09
Stoney B.	6	407.9 ± 274.5	752.9	3.90
Scantic R.	13	154.2 ± 160.5	476.0	0.87
Farmington R.	48	65.3 ± 99.2	377.0	0.01
Park R.	8	177.5 ± 148.7	502.0	0.55
Hockanum R.	6	17.5 ± 20.9	59.7	0.21
Mattabasset R.	18	127.7 ± 133.7	467.0	0.29
Salmon R.	25	97.8 ± 101.5	333.0	0.02
Eight Mile R.	10	116.7 ± 110.1	369.7	0.01
Blacknose Dace				
Conn. R.[1]	22	5.60 ± 6.60	20.70	0.04
Stoney B.	2	0.56 ± 0.08	0.64	0.48
Scantic R.	6	2.64 ± 3.08	9.16	0.01
Farmington R.	58	8.16 ± 9.50	42.60	0.01
Park R.	4	8.50 ± 5.81	16.10	0.04
Hockanum R.	7	10.09 ± 10.60	27.00	0.09
Mattabasset R.	12	5.82 ± 5.90	16.70	0.26
Salmon R.	13	3.11 ± 3.30	10.50	0.21
Eight Mile R.	6	14.7 ± 30.10	82.20	0.06
Longnose Dace				
Conn. R.[1]	8	2.69 ± 3.10	10.31	0.16
Stoney B.	2	1.34 ± 0.10	1.44	1.24
Scantic R.	7	8.19 ± 10.90	33.12	1.15
Farmington R.	22	6.55 ± 8.18	30.81	0.03
Park R.	1	0.77 ± 0	0.77	0.77
Hockanum R.	2	1.61 ± 1.16	2.77	0.44
Mattabasset R.	3	5.39 ± 4.20	10.66	0.36
Salmon R.	10	5.39 ± 4.48	15.90	0.89
Eight Mile R.	5	3.89 ± 5.07	13.90	0.60

Table 9. Continued.

Species/ Drainage	Number of Sites	Mean ± sd		Max	Min
Fallfish					
Conn. R.[1]	12	19.50 ±	25.10	97.40	0.21
Stoney B.	5	41.30 ±	52.50	142.60	0.20
Scantic R.	3	6.32 ±	5.00	12.79	0.59
Farmington R.	23	10.90 ±	12.30	46.80	0.09
Park R.	3	6.80 ±	1.63	8.46	4.59
Hockanum R.	3	27.70 ±	14.40	46.50	11.40
Mattabasset R.	7	16.40 ±	19.60	63.10	2.80
Salmon R.	7	9.21 ±	13.20	40.90	0.01
Eight Mile R.	6	4.41 ±	4.95	13.40	0.01
Common Shiner					
Conn. R.[1]	6	0.55 ±	0.56	1.40	0.02
Stoney B.	4	3.01 ±	3.07	8.10	0.02
Scantic R.	3	8.89 ±	6.24	13.78	0.08
Farmington R.	23	2.70 ±	4.93	22.20	0.01
Park R.	4	4.21 ±	3.49	9.76	0.08
Hockanum R.	1	2.14 ±	0	2.14	2.14
Mattabasset R.	3	8.21 ±	5.40	15.50	2.61
Salmon R.	8	3.23 ±	4.54	14.88	6.12
Eight Mile R.	4	5.16 ±	5.02	13.57	0.31
Redbreast Sunfish					
Conn. R.[1]	10	2.93 ±	3.05	9.66	0.04
Stoney B.	3	1.70 ±	0.89	2.84	0.67
Scantic R.	3	1.57 ±	0.76	2.58	0.73
Farmington R.	1	6.25 ±	0	6.25	6.25
Park R.	1	6.55 ±	0	6.55	6.55
Hockanum R.	--	--- ±	--	--	--
Mattabasset R.	2	2.44 ±	1.13	3.57	1.30
Salmon R.	2	0.16 ±	0.07	0.23	0.89
Eight Mile R.	3	0.34 ±	0.26	0.64	0.01
Pumpkinseed Sunfish					
Conn. R.[1]	21	2.27 ±	5.12	24.10	0.04
Stoney B.	4	2.61 ±	2.24	5.11	0.36
Scantic R.	6	0.36 ±	0.53	1.55	0.11
Farmington R.	25	1.17 ±	2.61	12.50	0.01
Park R.	6	1.27 ±	1.31	3.70	0.07
Hockanum R.	3	1.33 ±	1.57	3.55	0.13
Mattabasset R.	7	1.98 ±	2.48	7.36	0.04
Salmon R.	13	4.06 ±	8.90	33.70	0.03
Eight Mile R.	6	0.47 ±	0.47	1.38	0.01

[1] Streams draining directly into the Connecticut River.

Table 9. Continued.

Species/ Drainage	Number of Sites	Mean ± sd		Max	Min
Largemouth Bass					
Conn. R.[1]	19	1.05 ±	1.02	3.89	0.03
Stoney B.	2	0.31 ±	0.14	0.45	0.17
Scantic R.	3	0.69 ±	0.71	1.66	0.01
Farmington R.	12	0.66 ±	0.88	3.37	0.01
Park R.	4	3.17 ±	3.42	8.86	0.01
Hockanum R.	4	0.27 ±	0.14	0.48	0.12
Mattabasset R.	9	1.25 ±	1.47	4.01	0.03
Salmon R.	9	0.36 ±	0.42	1.17	0.01
Eight Mile R.	5	0.21 ±	0.34	0.88	0.01
Smallmouth Bass					
Conn. R.[1]	1	1.53 ±	0	1.53	1.53
Stoney B.	1	1.26 ±	0	1.26	1.26
Scantic R.	1	0.01 ±	0	0.01	0.01
Farmington R.	6	2.58 ±	4.54	12.67	0.02
Park R.	--	-- ±	--	--	--
Hockanum R.	1	2.97 ±	0	2.97	2.97
Mattabasset R.	--	-- ±	--	--	--
Salmon R.	2	1.90 ±	1.89	3.79	0.01
Eight Mile R.	--	-- ±	--	--	--

[1] Streams draining directly into the Connecticut River.

Mean length at age information was generated for trout in all drainages and for all ages where a minimum of five individuals were available from each age class. Tables 10 and 11 contain average length at age information for Farmington River drainage sites sampled in 1988. The mean length of age I brook trout varied by 32 percent between streams, (71 mm to 104 mm). The length of age I brown trout varied approximately 20 percent between streams (74 mm to 92 mm).

In general, growth rates of brook trout in Connecticut streams appear to be below average for the first year of life (Table 10). Growth improved during the second year; however, the

Age III brook trout mean lengths were at or above average, however few streams had age III brook trout, possibly due to the extensive fishing pressure, or limited habitat for 200+ mm fish. Brown trout were also below average in mean length at age for all three age classes, but after the first slow year (86 mm) the incremental growth was better than average (69 and 77 mm CT. versus 56 and 58 mm for NY, PA and NH)(Table 11). This additional incremental growth however, did not allow the Connecticut fish to catch up to the averages.

The numbers per hectare of age 0+, 1+ and 2+ fish were calculated from the length frequency information, age class information and number per hectare population estimates as in equation 2.

$$AgeN_i = (Lf_i / Lf_{TOT}) * P \qquad (2)$$

Where $AgeN_i$ = Number of age i fish per hectare.

Lf_i = Number of age i fish in length frequency.

Lf_{TOT} = Total number of individuals in length frequency.

P = Population estimate in numbers/hectare.

The density of age 0^+ brook trout in streams of the Farmington River system ranged from 23 to 9,902 fish per hectare with the highest densities occurring in small headwater streams. Young of the year brown trout densities ranged from 43 to 5,341 fish per hectare. The density of age 1^+ trout, used by some (Engstrom-Heg 1986) to estimate future fishing success, ranged from 13 to 3,090 fish per hectare for brook trout and 0 to 477 fish per hectare for brown trout in streams with reproduction.

Table 10. Mean brook trout length and range at age for tributary streams of the Farmington River and selected reference values from Carlander 1969.

Source	Age I (mm)	Age II (mm)	Age III (mm)
Farmington River Drainage, Conn. (15 streams)	89.2 (71-104)	135.9 (115-161)	191 (183-199)
NY Stream	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)

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

Source	Age I (mm)	Age II(mm)	Age III (mm)
Farmington River Drainage, Conn.	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" (5), "moderate" (11), and "fast" (3) growth rates by Newman (1985).

4.0 Angler Survey Results:

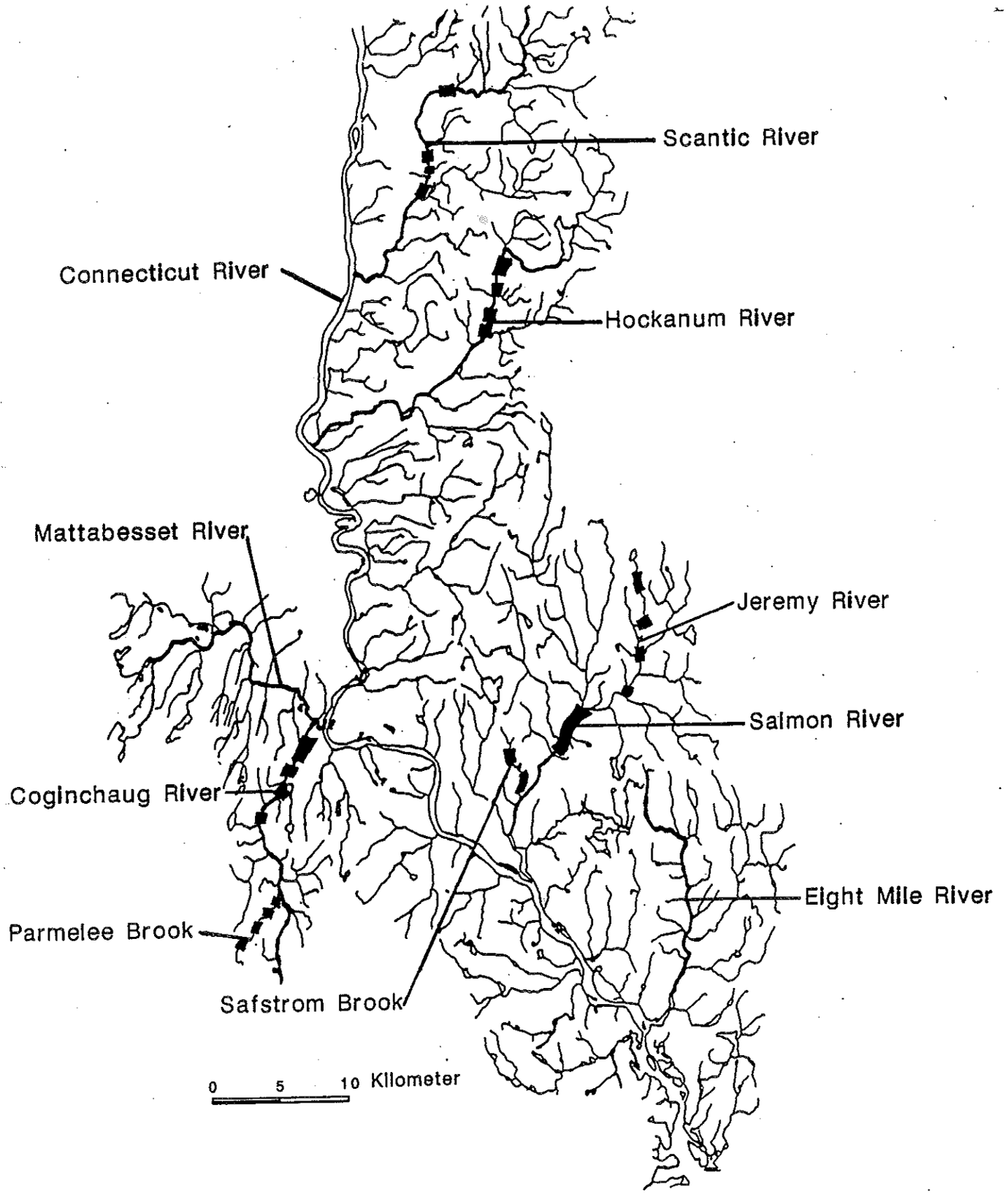
4.1 Angler Survey Site Descriptions:

A total of seven streams were surveyed during 1989 (Figure 4). Table 12 lists the stocking pattern and length of each area. The streams were surveyed in groups of two or three at a time to conserve sampling effort. We sampled four major trout streams, two minor trout stream and one unstocked stream. Average width of the streams ranged from 2 m to 28 m. The most heavily stocked stream was the Salmon River which received one preseason and three inseason stockings. Several of the streams contained large numbers of juvenile Atlantic salmon that were stocked as part of the salmon restoration effort. These streams had a 225 mm minimum length limit in place for trout.

The Salmon River, Jeremy River and Safstrom Brook are part of the Salmon River drainage which has a quick hydrological response to precipitation events. This drainage has granite substrate and streams with many well defined pool and riffle areas.

The Coginchaug River had primarily brownstone substrate with many small dams being present in the sample area. There was one large natural waterfall in the middle of the creeled area. The pools where deep and of good quality, but with deep glides and runs, rather than riffles, between pools. This was due to extensive impoundment of the riffle areas. Parmelee Brook had substrate similar to that of the Coginchaug River but had several open meandering meadow sections with little elevation drop.

The Scantic River was a large, deep (1.0-1.6 m), meandering river with a shifting sand substrate, extensive log snags and poorly defined riffles and pools. This river historically has supported an American shad run.



angler surveys where

Table 12. Stocking information for streams on which angler surveys were done in 1989.

Stream	Species Stocked	Total Number of Trout Stocked	Number Stocked per km	Number of In Season Stockings
Salmon R. open areas	BK, BN, RW*	20,260	3,822	3
Salmon R. Fly area	Bk, BN, RW	5,560	5,050	3
Jeremy R.	BK, BN, RW	4,650	332	2
Coginchaug R.	BK, BN, RW	5,150	533	1
Scantic R.	BK, BN, RW	8,550	251	2
Safstrom Bk.	YBK**	550	128	--
Parmelee Bk.	YBK	320	87	--
Hockanum R.	---	0	0	--

* BK=Brook Trout Adults, BN= Brown Trout adults, RW= Rainbow Trout Adults. (20-30 cm)

** YBK= Yearling Brook Trout (15-20 cm)

The Hockanum River was a shallow (0.4-0.7 m) stream with fairly well defined pools and riffles over most of the sample area. At the top end of the creel section was a waste water treatment plant. The dissolved oxygen was only 5.9 mg/l at the downstream end of the creel area and large quantities of epiphitic algae were present.

4.2 Angler Survey Summaries:

4.2.1 Effort:

The opening day fishing effort in 1989 was included as a strata rather than as a separate sampling period as in 1988. The bridge-pool design (Hagstrom et al. 1989) was successful in

precision in our estimates of angler effort was improved markedly. RSE's for data collected in 1989 ranged from 9.7% to 71.4%, and averaged 29.1% (Table 13), whereas in 1988, values ranged from 25.7% to 96.6% and averaged 67.3% (Hagstrom et al. 1989). In streams where it was possible, canoe surveys were conducted simultaneously with bridge-pool creels to obtain reasonable expansion values for entire stream sections.

Table 13 contains effort estimates for the surveyed streams. The Salmon River was broken up into three sections: a lower open fishing section, middle fly fishing only area, and an upstream open fishing area (Figure 5). The area with the highest level of effort for the entire stream was the Salmon River with 6,522 angler hours/km of stream. The lowest level was on the Hockanum River which had no detectable effort. The fly fishing section of the Salmon River had 7,576 angler hours/km. Opening day effort accounted for an average of 21% of the total effort.

It has become apparent that some of the smaller streams only receive effort on or immediately after opening day. Obtaining accurate measures of effort on these streams has proved difficult. To more adequately survey these small streams during the remainder of this study, samples will be scheduled as close to opening day as possible. It may prove effective to only survey streams stocked with yearling brook trout during the first two to three weeks of the fishing season. The duration of the strata to which the data are expanded will be adjusted accordingly.

The Salmon River and Jeremy River are the only two streams on which spot creel checks between June 15 and October 15 turned up fishing effort. Discussions with anglers indicated there is significant fishing pressure through October on the Salmon River.

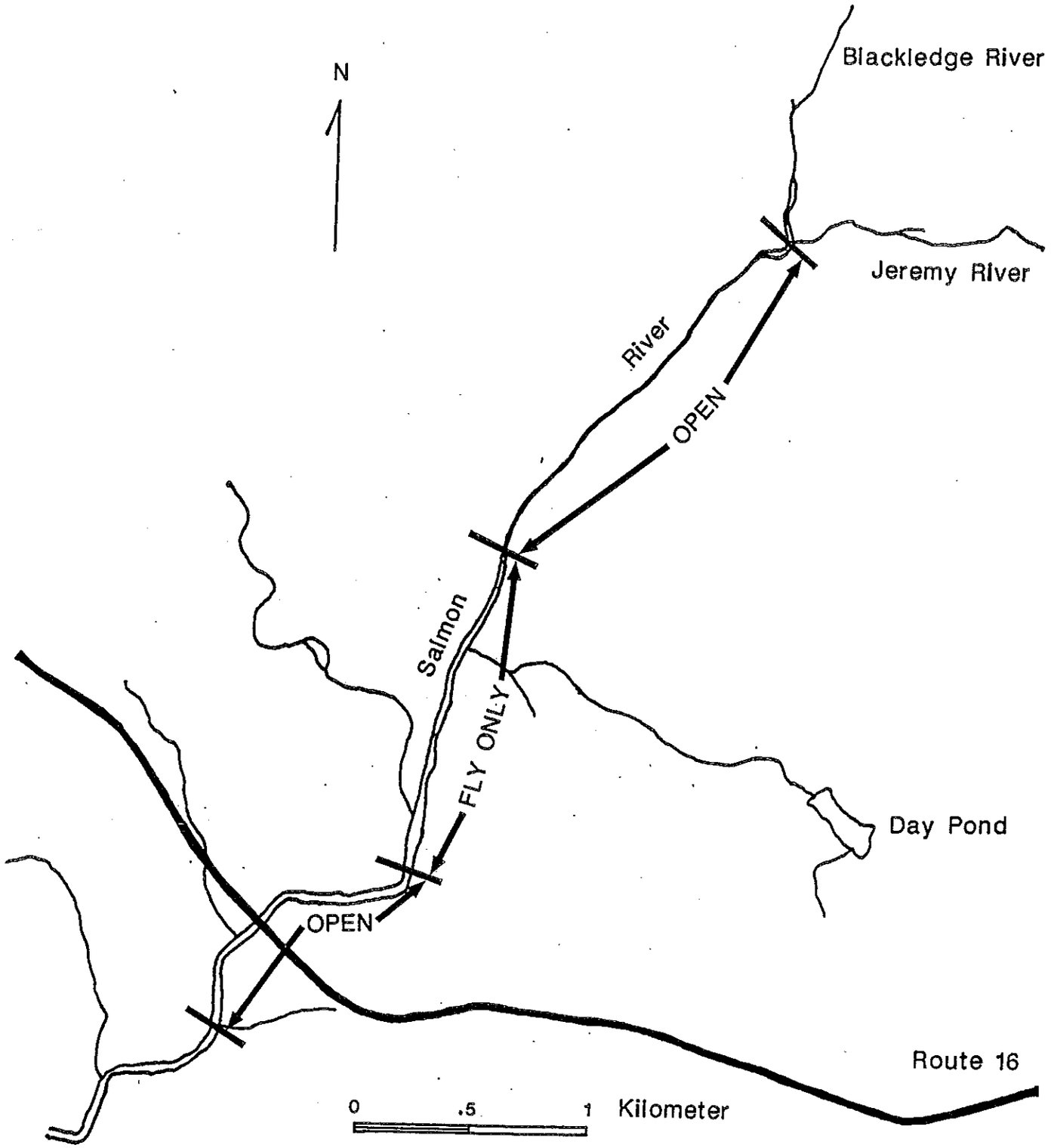


Figure 5. Location of fly fishing only area on the Salmon River Cochester, CT

Table 13. Effort in angler-hours and CPUE in fish per hour for streams surveyed in 1989.

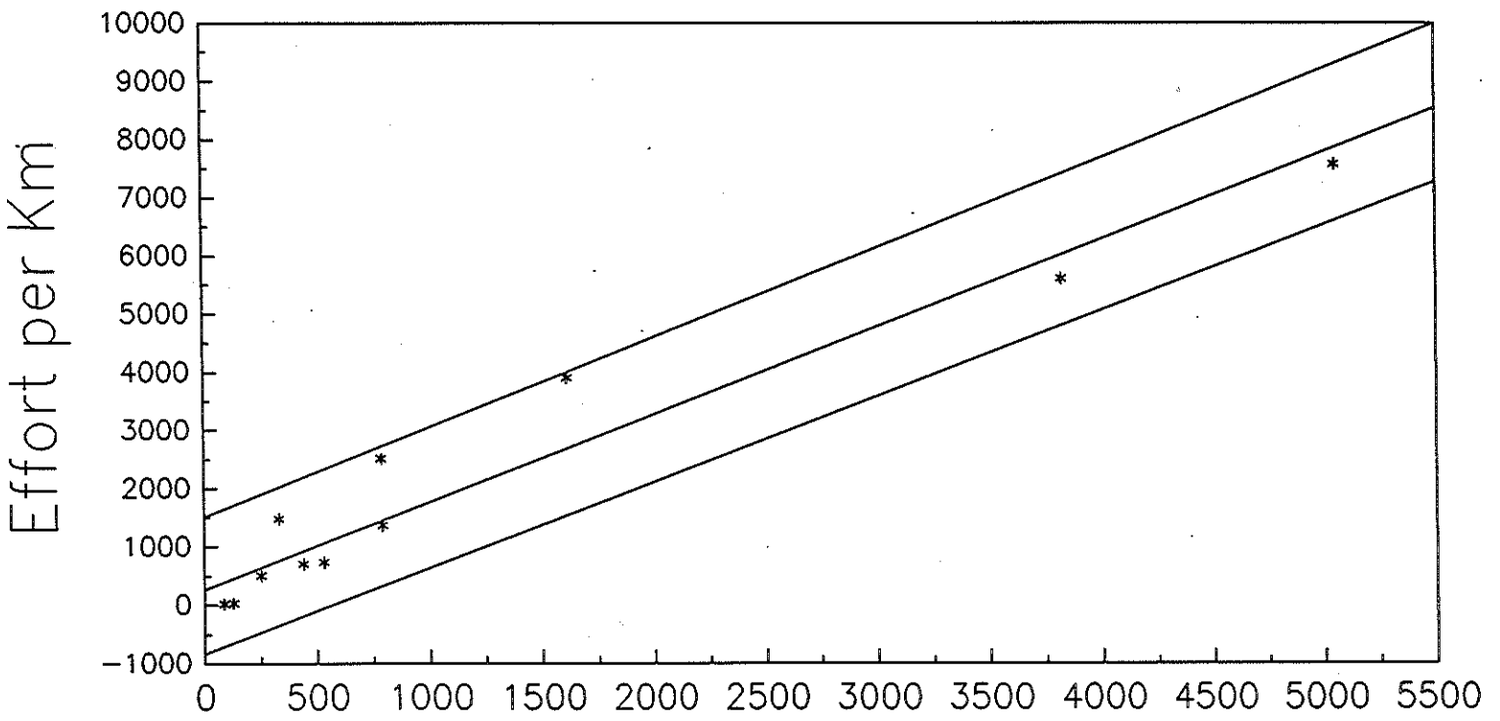
	Angler Effort			Catch Per Unit of Effort			
Stream	Total Hrs	Hrs Per KM	±RSE	Brown Trout	Brook Trout	Rainbow Trout	All Fish
Salmon R. Fly area.	8,336	7,576	± 9.7%	0.509	0.124	0.072	0.711
Salmon R. Upper area	9,363	5,066	±17.7%	0.508	0.129	0.071	0.738
Salmon R. Lower area	8,390	6,356	±15.9%	0.431	0.288	0.228	0.980
Salmon R. Total	26,089	6,522	±14.4%	0.484	0.178	0.122	0.807
Jeremy R.	20,710	1,479	±42.5%	0.151	0.050	0.054	0.199
Coginchaug R.	7,161	738	±37.6%	0.278	0.153	0.045	0.639
Scantic R.	3,560	508	±29.1%	0.216	0.006	0.219	0.626
Parmelee Bk.	89	24	±71.4%	0.0	0.0	0.0	0.0
Safstrom Bk.	152	35	±23.5%	0.0	1.0	0.0	1.0
Hockanum R.	0	0	± 0.0%	0.0	0.0	0.0	0.0

The level of fishing effort was compared to the density of trout stocked to determine how highly correlated supply was with fishing demand. A linear regression model of total number of trout stocked per kilometer of stream versus hours of effort per kilometer (Table 13) resulted in an equation (eq 3) with an r-square of 94.1% and an F value of 159 (d.f.=1,11). Data from three streams surveyed in 1988 (those having Relative Standard Errors for effort equal to or less than 50%: East Branch Salmon Brook, Nepaug River, Sandy Brook), and two areas of the Farmington River (Hyatt 1986), were included in this analysis.

Variation in effort between streams appears to be greatest when stocking rates are low (Figure 6). This may result from small streams being more sensitive to factors which effect fishing pressure; such as location and access. It might also reflect, in part, our inability to obtain precise estimates of angler effort from these areas due to limited sample sizes and differences in the type and frequency of trout stocking (yearling vs. adult size fish, preseason vs. inseason). It may be possible to improve the model by using class variables; however, more data would be needed to get adequate numbers of streams in all classes. To improve the accuracy and precision of data collected from small yearling trout streams, the duration of the survey will be reduced while the intensity of sampling is increased. Thorpe et al. (1944) and Butler and Borgenson (1965) demonstrated a declining angler effort directly related to time post-stocking. The relative decline in effort following stocking can be used to develop weighting values to assign creels for streams which are only stocked preseason. An alternative for streams which are stocked inseason is to stratify creeling effort using a 4 day period after each stocking as a separate strata. Therefore, in 1990 we will allocate sampling effort between five strata instead of the three used in 1988 and 1989 (Table 14).

Table 14. Stratification to be used in 1990 to better control for short term increases in fishing effort associated with trout stocking.

Recently stocked times		Not Recently stocked times	
I.	weekdays	III.	weekdays
II.	Weekends/holidays	IV.	Weekends/holidays
V.	Opening day		



gure 6. Number of stocked fish per kilometer of stockable stream versus the hours of gler effort (hrs) per kilometer.

4.2.2 Catch per Unit of Effort (CPUE):

Catch Per Unit of Effort (CPUE) ranged from 0.0 to 1.0 total fish per angler hour (Table 13). The highest total CPUE values were from the lower area of the Salmon River and the small brook trout fishery on Safstrom Brook. Salmonids comprised nearly 100% of the catch in all areas except the Coginchaug River, which had non-target catches of largemouth bass and chain pickerel from several of the impounded pools in the surveyed section. Brown trout CPUE ranged from a low of 0.15 fish per hour on the Jeremy River to a high of 0.51 fish per hour in the Fly fishing area of the Salmon River. It is interesting that the fly fishing only area of the Salmon River had a CPUE value which was similar to the two open areas that bracket it (Figure 4). Orciari and Phillips (1986) reported higher CPUE values for brown trout in fly fishing only areas of the Housatonic and Willimantic Rivers (0.8 and 1.3 fish per hour respectively) than in open areas (0.75 and 0.3 fish per hour respectively). These fly fishing areas however were under catch and release restrictions. It is possible that the CPUE in the fly fishing area of the Salmon River would increase if similar regulations were implemented. The fly fisherman in this section currently release approximately 55% of all trout caught.

The main stem of the Scantic River seems to have an unusually low CPUE for brook trout (0.006 fish per hour). This is surprising since the area receives two inseason plantings and was stocked with approximately 2,200 brook trout. The low CPUE could be an artifact of our sampling schedule, or due to an uneven distribution of fish, with most of the brook trout being stocked in unsurveyed sections.

4.2.3 Catch:

Estimated total catch by stream and species is listed in Table 15. Total catch of trout in the Salmon and Jeremy Rivers exceeded the total number of fish stocked. Contributions from

inability of anglers to distinguish brown trout and Atlantic salmon parr, may account for this disparity. In addition to a 55% release rate in the fly fishing area, approximately 33% of all fish were released in the upper open area, whereas only 10% of the trout were released in the lower open area. The Jeremy River, located in close proximity to the Salmon River, had a release rate of approximately 31%. Twenty-seven percent of trout caught at all stream sites were released. Brown trout were released 36% of the time, rainbow trout 31% and brook trout only 17% of the time.

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 12). Return rates ranged from 27% to 119% of the number stocked (Table 16). These large differences were expected since return to the creel can be effected by many variables including, release rates, species of trout, strain of trout, activity patterns of anglers, catchability differences between habitats, and variance within the catch estimates. High release rates have been shown capable of elevating total catch estimates in Connecticut streams (Barry 1988, Hyatt 1991) and, as previously stated, are believed to be partially responsible for the greater than 1:1 return to the creel in the Salmon River.

The Inland Fisheries Division is presently attempting to quantify differences in return rate among four strains of rainbow trout (Phillips 1990). Preliminary results have shown that there may be differences; however, between stream variability on return to the creel for rainbow trout appears greater than variability between or within strains (Phillips 1990). A cursory review suggests that the range in return rate and magnitude of variability is not much different than that present in data collected during the Stream Survey with all trout species combined (Table 16). This further suggests that return rate may be more sensitive to factors such as location, access and release rate, than to trout species mix. These relationships will be

Table 15. Total catch and catch by species for streams surveyed in 1989.

Stream	Trout Per KM	±RSE	Total Catch Brown Trout	Brook Trout	Rainbow Trout	All Fish
Salmon R. Fly area	5,387	±29.1%	4,254	1,029	599	5,926
Salmon R. Upper Open area	3,840	±30.8%	4,756	1,203	661	6,912
Salmon R. Lower Open area	5,673	±31.2%	3,620	2,415	1,916	8,226
Salmon R. Total	4,787	±30.3%	12,630	4,647	3,176	21,064
Jeremy R.	376	± 8.5%	313	102	112	527
Coginchaug R.	351	±102%	1,333	733	217	3,068
Scantic R.	224	±45.7%	576	17	585	1,672
Parmelee Bk.	0	±0%	0	0	0	0
Safstrom Bk.	35	±91.1%	0	144	0	144
Hockanum R.	0	±0%	0	0	0	0

Table 16. Return to the creel for trout in stream sections surveyed in 1989. All trout species combined.

Stream	# Caught per Km	# Stocked per Km	Percentage
Salmon River (Total)	4,787	4,034	119%
Jeremy River	376	332	113%
Scantic River	224	251	89%
Coginchaug River	351	533	66%
Safstrom Brook	35	128	27%
Rainbow Trout Only (Phillips 1990)[1]			
Blackledge River	666	750	89%
Salmon River	413	750	55%
Dickinson Creek	203	500	41%
Quanduck Brook	401	1,300	31%
Five Mile River	370	1,300	28%
Quinebaug River	190	2,200	9%

[1]Rainbow trout data: Years 1988 and 1989 combined for Quanduck Brook, Five Mile River and Quinebaug River: Blackledge River, Salmon River and Dickinson Creek are 1990 data (Phillips 1990)

5.0 Model Development

Trout stocking models and species complex models generally are constructed of one or more of three variable types: basin, physical, and/or habitat (Fausch et al. 1988). The data collected to date include parameters in all three categories. One of the major problems Fausch (1988) noted in some of the models he reviewed was the use of extensive data on one stream to generate a high correlation coefficient and a high level of significance. Consequently, these models have only limited applicability to other systems. We will avoid this shortcoming by using data from a wide variety of sites as we develop our stream models.

5.1 WNHF:

Before going through the time consuming process of developing new models, some of the existing models are being checked for regional applicability by comparing predicted biomass to actual field values. The first model we looked at was the Wild/Non-trout/Habitat/Fertility Model (WNHF) (Engstrom-Heg 1979) which was developed in New York State as part of a stocking rate determination system. The objective of this model, which has been evolving since the 1930's, is the estimation of trout carrying capacity, which is predicted from three index components (eq. 4).

$$C = 72.6\ ((3 * F * H * N)^{0.25} - 0.08) \qquad (4)$$

Where: C = Trout carrying capacity in lb/acre

F = The fertility index of the stream

H = The trout habitat index of the stream

N = A non-trout competition index.

A very interesting aspect of this system is that it was designed to be self correcting. One or two components could be

severely change the predicted biomass. This was accomplished by using the average of two subindices for fertility and three subindices for habitat. The non-trout index takes the H and F values into consideration as part of its calculation. This tends to produce a self-correcting and perhaps somewhat insensitive prediction system.

Using the procedures described in the WNHF manual, data from 32 streams were used to generate estimated carrying capacity values. These values were then compared to the actual standing crop values. The stream sections used for these comparisons were either closed to fishing or received little fishing pressure, and it was assumed that the populations of trout in these areas were at or near carrying capacity.

Initial comparisons between actual and predicted values showed marked differences. Discussions with New York DEC biologists however, indicted that these models were not designed to be used with small brook trout streams. Most of our unexploited populations were brook trout in small (1-5 m) streams. Therefore, further evaluation of the WNHF model will require data from unexploited brown and brook trout populations in larger streams. Streams over 5-7 m wide would probably be best. During 1988 and 1989 only two such brown trout populations have been found where low exploitation rates are believed to occur.

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. To date approximately 32% of the data collected in 1989 and approximately 75% of all data in the data base have been used to respond to information inquires (Table 17). As additional data analyses are completed it is anticipated that even more use will

Several major benefits from the program have been the acquisition of property or fishing leases in rapidly developing areas. Based on information from this survey, property in Granby CT was proposed for acquisition that will help preserve a wild reproducing brown trout population as well as protect additional Atlantic salmon parr habitat. Twelve in perpetuam fishing leases are being purchased based on the net economic value of the fisheries (Laforte 1989) which were determined using angler survey data collected during this study (Hagstrom et al. 1989) and socioeconomic data collected in other CT DEP surveys (Barry 1988, Hyatt 1986). These sites include a 0.4 mile section of Latimers Brook, 1.4 miles of East Branch Salmon Brook, 1.6 miles of the Mt. Hope River, 0.7 miles of the Willimantic River, and 0.3 miles of the Fenton River.

Table 17. Data information Requests: April 1989 - January 1990.

Request Type	Information Needed	Number of Requests
1) Access Acquisition.	Socioeconomic	4
2) Environmental Review.	Physical, Chemical Biological	10
3) Use by Bureau of Fish and Wildlife on other programs.	Biological	28
4) Use by other State Agencies.	Physical, Chemical Biological	4
5) Public Information.	Population data	7
6) Land Owner Requests.	Physical, Chemical Biological	30

7.0 Expenditures:

Total expenditures for Jobs 2 and 3 were $187,788.64. Job 2

7.0 Literature Cited

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Appendix A

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

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

[1]

Table A-1. Continued.

Phyla	Class	Order	Family
		Plecoptera, continued...	
			Nemouridae
			Perlidae
			Perlodidae
			Peltoperlidae
			Pteronarcyidae
		Trichoptera	Brachycentridae
			Glossosomatidae
			Helicopsycidae
			Hydropsychidae
			Hydroptilidae
			Lepidostomatidae
			Leptoceridae
			Limnephilidae
			Molanidae
			Odontoceridae
			Philopotamidae
			Phryganeidae
			Polycentropidae
			Psychomyidae
			Rhyacophilidae
			Sericostomatidae
Mollusca	Gastropoda	Basomnatophora	"limpets"
			Physidae
			Planorbidae
		Mesogastropoda	Viviparidae
	Pelecypoda		Spheridae
Arachnoidea		"Hydracarina"	

Appendix B.

Location names and site numbers where data were collected in 1989; and page number on which it is presented.

Location name	Site #	Page #	Location name	Site #	Page #
ABBEY BROOK	1005	44	HUBBARD BROOK	1016	99
ALLEN BROOK	1046	45	HUBBARD BK TRIB	1117	100
ASMUN BROOK	1073	46	HUNGERFORD BK	1100	101
AXELSON BROOK	1116	47	JAWBUCK BROOK	1053	102
BEAVER BROOK	1036	48	JEREMY RIVER	1027	103
BEAVER MEADOW BK	1097	49	KETCH BROOK	1169	104
BEEMAN'S BROOK	1083	50	KETCH BROOK	1008	105
BELCHER BROOK	1041	51	LONG HILL BK	1061	106
BIBLE ROCK BK	1096	52	LYDALL BROOK	1112	107
BIGELOW BROOK	1119	53	MARSH BROOK	1012	108
BIRCH MTN BK	1056	54	MATTABESSET RIVER	1088	109
BLACKHALL RIVER	1038	55	MEADOW BROOK	1025	110
BLACKLEDGE RIV	1091	56	MILL BROOK	1080	111
BLACKLEDGE RIV	1029	57	MILL CREEK	1099	112
BROAD BROOK	1007	58	MILL CREEK	1049	113
BUCK BROOK	1062	59	MINE BROOK	1065	114
BUCKHORN BROOK	1006	60	MOODUS RIVER	1032	115
CANDLEWOOD HILL BK	1075	61	MUDDY BROOK	1105	116
CARR BROOK	1118	62	MUDDY GUTTER	1063	117
CARR BROOK	1020	63	PARMALEE BK	1071	118
CATTLELOT BK	1066	64	PATTACONK BK	1050	119
CHARTER'S BK	1011	65	PINE BROOK	1031	120
COGINCHAUG RIV	1093	66	PINE BROOK	1026	121
COGINCHAUG RIV	1044	67	PODUNK RIVER	1085	122
COLD BROOK	1017	68	PONSET BROOK	1074	123
COLD SPRINGS BK	1087	69	PONSET BROOK	1048	124
CREAM POT BK	1072	70	RAYMOND BROOK	1092	125
DARK HOLLOW BK	1059	71	RAYMOND BROOK	1023	126
DAY MEADOW BK	1068	72	RESERVOIR BK	1019	127
DEEP RIVER	1051	73	ROARING BROOK	1037	128
DICKINSON CREEK	1030	74	ROARING BROOK	1090	129
DRY BROOK	1084	75	ROARING BROOK	1110	130
E.BR. EIGHTMILE R.	1106	76	ROARING BROOK	1098	131
E.BR. EIGHTMILE R.	1035	77	ROARING BROOK	1018	132
EIGHTMILE RIVER	1104	78	S. FORK HOP BK	1014	133
EIGHTMILE RIVER	1033	79	SAFSTROM BROOK	1069	134
EIGHTMILE RIVER	1150	80	SALMON BROOK	1015	135
ELLEN DOYLE BK	1094	81	SALMON BROOK	1089	136
FALLS BROOK	1095	82	SALMON RIVER	1021	137
FALLS RIVER	1102	83	SALMON RIVER	1022	138
FALLS RIVER	1052	84	SAWMILL BROOK	1045	139
FAWN BROOK	1028	85	SAWMILL BROOK	1043	140
FLAT BROOK	1067	86	SCANTIC RIVER	1081	141
FOOTE SAWMILL BK	1115	87	SCANTIC RIVER	1082	142
FRAZER BROOK	1079	88	SCANTIC RIVER	1108	143
FRENCH BROOK	1114	89	SUCCOR BROOK	1076	144
FRESHWATER BK	1000	90	SUMNER BROOK	1047	145
GAGES BROOK	1111	91	TANKERHOOSEN RIVER	1013	146
GREAT BROOK	1078	92	THRASHER BROOK	1054	147
GREEN RIVER TRIB	1064	93	WATCHAUG BROOK	1002	148
GULF STREAM	1004	94	WEBSTER BROOK	1042	149
HATCHERY BROOK	1060	95	WILLOW BROOK	1039	150
HEMLOCK VALLEY BK	1077	96	WINTERGREEN BROOK	1113	151
HOCKANUM RIVER	1086	97	WOODS STREAM	1055	152
HOCKANUM RIVER	1010	98			

STREAM NAME : ABBEY BROOK SITE #: 1005
SITE DESCRIPTION: UPSTR. OF 9TH DISTRICT ROAD 30M. MEANDERING MEADOW
STREAM WITH SANDY BOTTOM

SAMPLE LENGTH : 100.

SAMPLE DATE: 06/14/89

PHYSICAL

AIR TEMP. . . .	17.	(C)
WATER TEMP. . .	13.	(C)
VELOCITY. . . .	0.227	(m/s)
DISCHARGE . . .	0.436	(m3/s)

CHEMICAL

	MEAN	STD
DISSOLVED OXYGEN (mg/l). . :	7.8	0.
pH . . . . . :	7.1	0.
COND . . . . . (uS/cm3). . :	130.	0.
ALKALINITY .(mg CaCO3 eq/l):	29.47	0.71

	MEAN	STD	
WIDTH. . . . . :	4.2	0.34	(m)
DEPTH. . . . . :	41.8	18.92	(cm)

DOMINANT SUBSTRATE TYPE. . :	1	
TYPE THREE SUBSTRATE . . . :	27.	(%)
EMBEDDEDNESS OF TYPE THREE :	72.2	(%)
OVERHEAD CANOPY. . . . . :	97.	(%)
INSTREAM SHELTER . . . . . :	180.15	(m2)

POOL/RIFFLE RATIO . .: 49.
AIR/WATER TEMP. RATIO: 1.3077

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	2.	0.
Salvelinus fontinalis	77.	34.3
Etheostoma olmstedi	69.	14.9
Catastomus commersoni	2.	0.

STREAM NAME : ALLYN BROOK SITE #: 1046
SITE DESCRIPTION: DOWNSTREAM OF RTE 17, DURHAM

SAMPLE LENGTH : 100. SAMPLE DATE: 07/06/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	28.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.57	0.06
WATER TEMP. . .	18.	(C)	pH . . . . . :	7.63	0.06
VELOCITY. . . .	0.097	(m/s)	COND . . . . . (uS/cm3). . :	125.	0.
DISCHARGE . . .	0.21	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	42.37	0.84

	MEAN	STD	
WIDTH. . . . . :	7.95	0.90	(m)
DEPTH. . . . . :	22.7	20.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.571
TYPE THREE SUBSTRATE . . . :	7.6	(%)	AIR/WATER TEMP. RATIO:	1.555
EMBEDDEDNESS OF TYPE THREE :	70.	(%)		
OVERHEAD CANOPY. . . . . :	86.	(%)		
INSTREAM SHELTER . . . . . :	242.64	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	9.	0.
Lepomis macrochirus	2.	0.
Salvelinus fontinalis	3.	0.
Rhinichthys atratulus	69.	1.14
Salmo trutta	1.	0.
Notropis cornutus	143.	30.39
Semotilus corporalis	92.	22.86
Esox americanus	34.	1.93
Lepomis gibbosus	2.	0.
Etheostoma olmstedi	341.	163.67
Catastomus commersoni	82.	19.05

STREAM NAME : ASMUN BROOK SITE #: 1073
SITE DESCRIPTION: PARALLEL TO MIDDLE FIELD ROAD JUST UP FROM JUNCTION WITH RTE 68 IN DURHAM

SAMPLE LENGTH : 50.

SAMPLE DATE: 06/28/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.	(C)	DISSOLVED OXYGEN (mg/l). . :	8.6	0.1
WATER TEMP. . .	21.	(C)	pH . . . . . :	7.6	0.0
VELOCITY. . . .	0.139	(m/s)	COND . . . . . (uS/cm3). . :	130.0	0.0
DISCHARGE . . .	0.023	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	45.27	0.06

	MEAN	STD	
WIDTH. . . . . :	2.88	0.760	(m)
DEPTH. . . . . :	5.78	4.474	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.694
TYPE THREE SUBSTRATE . . . :	15.0	(%)	AIR/WATER TEMP. RATIO:	1.142
EMBEDDEDNESS OF TYPE THREE :	16.667	(%)		
OVERHEAD CANOPY. . . . . :	92.	(%)		
INSTREAM SHELTER . . . . . :	0.73	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Salvelinus fontinalis	9.	0.
Rhinichthys atratulus	175.	2.50
S.fontenalis X S. trutta	1.	0.

STREAM NAME : AXELSON BROOK SITE #: 1116
SITE DESCRIPTION: COBBLE STREAM OVERGROWN WITH BUSHES DWNSTRM OF HURD PARK RD.

SAMPLE LENGTH : 50. SAMPLE DATE: 06/15/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	14. (C)	DISSOLVED OXYGEN (mg/l). . :	10.2	0.1
WATER TEMP. . .	13. (C)	pH . . . . . :	7.06	0.06
VELOCITY. . . .	0.208 (m/s)	COND . . . . . (uS/cm3). . :	72.67	0.58
DISCHARGE . . .	0.049 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	11.03	0.40

	MEAN	STD	
WIDTH. . . . . :	3.48	0.78	(m)
DEPTH. . . . . :	7.0	5.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	1.173
TYPE THREE SUBSTRATE . . . :	17.8 (%)	AIR/WATER TEMP. RATIO:	1.076
EMBEDDEDNESS OF TYPE THREE :	34. (%)		
OVERHEAD CANOPY. . . . . :	94. (%)		
INSTREAM SHELTER . . . . . :	1.83 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
No Fish	0.	0.

STREAM NAME : BEAVER BROOK SITE #: 1036
SITE DESCRIPTION: OFF BEAVER BROOK RD., LYME, ACROSS FROM FARM AT 50 BEAVER BROOK RD.

SAMPLE LENGTH : 150. SAMPLE DATE: 07/05/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :24.	(C)	DISSOLVED OXYGEN (mg/l). . :	8.6	0.1
WATER TEMP. . . :19.	(C)	pH . . . . . :	6.9	0.1
VELOCITY. . . . : 0.294	(m/s)	COND . . . . . (uS/cm3). . :	48.	0.0
DISCHARGE . . . : 0.217	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.5	0.46

	MEAN	STD	
WIDTH. . . . . :	4.66	0.77	(m)
DEPTH. . . . . :	16.2	11.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:
TYPE THREE SUBSTRATE . . . :	47.2	(%)	AIR/WATER TEMP. RATIO: 1.263
EMBEDDEDNESS OF TYPE THREE :	65.29	(%)	
OVERHEAD CANOPY. . . . . :	100.	(%)	
INSTREAM SHELTER . . . . . :	105.21	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	31.	1.21
Salvelinus fontinalis	10.	0.
Rhinichthys atratulus	4.	0.
Esox niger	1.	0.
Notropis cornutus	46.	18.03
Unknown Cyprinid	3.	0.
Semotilus corporalis	18.	0.
Esox americanus	2.	0.
Rhinichthys cataractae	18.	3.92
Petromyzon marinus	1.	0.
Etheostoma olmstedi	3.	0.
Catastomus commersoni	1.	0.

STREAM NAME : BEAVER MEADOW BROOK SITE #: 1097
SITE DESCRIPTION: PARALLEL TO BEAVER MEADOW ROAD IN COCKAPONSET STATE FOREST

SAMPLE LENGTH : 50. SAMPLE DATE: 07/20/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.	(C)	DISSOLVED OXYGEN (mg/l). . :	11.5	0.0
WATER TEMP. . .	15.	(C)	pH . . . . . :	6.76	0.06
VELOCITY. . . .	0.134	(m/s)	COND . . . . . (uS/cm3). . :	43.33	2.88
DISCHARGE . . .	0.026	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	5.86	0.46

	MEAN	STD	
WIDTH. . . . . :	2.39	0.81	(m)
DEPTH. . . . . :	8.1	6.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.533
TYPE THREE SUBSTRATE . . . :	5.8	(%)	AIR/WATER TEMP. RATIO:	1.266
EMBEDDEDNESS OF TYPE THREE :	90.	(%)		
OVERHEAD CANOPY. . . . . :	98.	(%)		
INSTREAM SHELTER . . . . . :	1.69	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	4.	0.
Salvelinus fontinalis	57.	1.14

STREAM NAME : BEEMAN'S BROOK SITE #: 1083
SITE DESCRIPTION: UPSTREAM OF PARSON'S BROOK NEAR STATE BOAT RAMP

SAMPLE LENGTH : 150.

SAMPLE DATE: 06/19/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :24.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.3
WATER TEMP. . . :19.0	(C)	pH . . . . . :	7.7	0.1
VELOCITY. . . . : 0.261	(m/s)	COND . . . . . (uS/cm3). . :	237.	2.52
DISCHARGE . . . : 0.162	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	63.20	2.16

	MEAN	STD	
WIDTH. . . . . :	4.63	1.02	(m)
DEPTH. . . . . :	14.3	11.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.11
TYPE THREE SUBSTRATE . . . :	0.03	(%)	AIR/WATER TEMP. RATIO:	1.26
EMBEDDEDNESS OF TYPE THREE :	10.00	(%)		
OVERHEAD CANOPY. . . . . :	95.30	(%)		
INSTREAM SHELTER . . . . . :	22.63	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	907.	2.34
Lepomis macrochirus	129.	0.
Rhinichthys atratulus	633.	1.87
Unknown Centrachid	57.	0.
Notropis cornutus	14.	0.
Esox americanus	14.	0.
Notemigonus crysoleucas	14.	0.
Micropterus salmoides	57.	0.
Lepomis gibbosus	14.	0.
Ambloplites rupestris	43.	0.
Lepomis auritus	43.	0.
Micropterus dolomieui	14.	0.
Notropis hudsonius	230.	0.
Etheostoma olmstedi	43.	0.
Catastomus commersoni	245.	0.

STREAM NAME : BELCHER BROOK SITE #: 1041
SITE DESCRIPTION: SOUTH SIDE OF FOUR ROD RD; W. OF RTE 5 AND 15 IN BERLIN

SAMPLE LENGTH : 150. SAMPLE DATE: 06/22/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	22. (C)	DISSOLVED OXYGEN (mg/l). .	10.07	0.12
WATER TEMP. . .	14. (C)	pH	7.9	0.0
VELOCITY. . . .	0.476 (m/s)	COND . . . . . (uS/cm3). .	225.7	12.4
DISCHARGE . . .	0.299 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	76.03	1.01

	MEAN	STD	
WIDTH.	3.89	0.56	(m)
DEPTH.	16.25	9.42	(cm)

DOMINANT SUBSTRATE TYPE. .	4		POOL/RIFFLE RATIO . .:	0.176
TYPE THREE SUBSTRATE . . .	4.1	(%)	AIR/WATER TEMP. RATIO:	1.571
EMBEDDEDNESS OF TYPE THREE	30.	(%)		
OVERHEAD CANOPY.	78.1	(%)		
INSTREAM SHELTER	28.27	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	90.	8.52
Lepomis macrochirus	13.	0.
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	73.	2.32
Salmo trutta	4.	0.
Unknown Centrachid	2.	0.
Semotilus corporalis	10.	0.
Rhinichthys cataractae	57.	12.92
Micropterus salmoides	1.	0.
Etheostoma olmstedi	3.	0.

STREAM NAME : BIBLE ROCK BROOK SITE #: 1096
SITE DESCRIPTION: OFF BRAINARD HILL RD EAST OF INTER. W/ OX BOW ROAD.

SAMPLE LENGTH : 100. SAMPLE DATE: 07/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:21. (C)	DISSOLVED OXYGEN (mg/l). . :	8.73	0.25
WATER TEMP. . .	:17. (C)	pH . . . . . :	6.93	0.06
VELOCITY. . . .	: 0.102 (m/s)	COND . . . . . (uS/cm3). . :	47.	0.0
DISCHARGE . . .	: 0.032 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	7.56	0.15

	MEAN	STD	
WIDTH. . . . . :	3.26	0.80	(m)
DEPTH. . . . . :	9.3	9.14	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .: 0.910
TYPE THREE SUBSTRATE . . . :	21.7	(%)	AIR/WATER TEMP. RATIO: 1.235
EMBEDDEDNESS OF TYPE THREE :	14.	(%)	
OVERHEAD CANOPY. . . . . :	95.	(%)	
INSTREAM SHELTER . . . . . :	3.85	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Rhinichthys atratulus	62.	0.
Semotilus atromaculatus	5.	0.
Unknown Cyprinid	13.	0.

STREAM NAME : BIGELOW BROOK SITE #: 1119
SITE DESCRIPTION: UPSTREAM OF BRIDGE AT UPPER PICNIC AREA IN SALMON RIVER STATE PARK. EAST HADDAM

SAMPLE LENGTH : 50. SAMPLE DATE: 07/19/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26. (C)	DISSOLVED OXYGEN (mg/1). . :	11.13	0.06
WATER TEMP. . .	:19. (C)	pH . . . . . :	7.5	0.1
VELOCITY. . . .	: 0.196 (m/s)	COND . . . . . (uS/cm3). . :	58.33	2.89
DISCHARGE . . .	: 0.032 (m3/s)	ALKALINITY .(mg CaCO3 eq/1):	8.4	0.0

	MEAN	STD	
WIDTH. . . . . :	2.43	0.68	(m)
DEPTH. . . . . :	6.9	5.9	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 0.065
TYPE THREE SUBSTRATE . . . :	5.9	(%)	AIR/WATER TEMP. RATIO: 1.368
EMBEDDEDNESS OF TYPE THREE :	20.	(%)	
OVERHEAD CANOPY. . . . . :	76.	(%)	
INSTREAM SHELTER . . . . . :	0.95	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Salvelinus fontinalis	23.	0.
Rhinichthys atratulus	57.	1.15

STREAM NAME : BIRCH MTN. BROOK SITE #: 1056
SITE DESCRIPTION: OFF GARDENER RD. AT RT. 384 OVERPASS IN MANCHESTER.

SAMPLE LENGTH : 107. SAMPLE DATE: 08/18/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.	(C)	DISSOLVED OXYGEN (mg/l). . :	6.2	0.0
WATER TEMP. . .	19.	(C)	pH . . . . . :	7.5	0.0
VELOCITY. . . .	0.24	(m/s)	COND . . . . . (uS/cm3). . :	114.	1.73
DISCHARGE . . .	0.115	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	18.5	0.26

	MEAN	STD	
WIDTH. . . . . :	4.27	1.06	(m)
DEPTH. . . . . :	11.7	9.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.377
TYPE THREE SUBSTRATE . . . :	40.6	(%)	AIR/WATER TEMP. RATIO:	1.158
EMBEDDEDNESS OF TYPE THREE :	67.692	(%)		
OVERHEAD CANOPY. . . . . :	92.	(%)		
INSTREAM SHELTER . . . . . :	9.43	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Salvelinus fontinalis	7.	0.
Rhinichthys atratulus	252.	5.98
Unknown Cyprinid	44.	0.
Micropterus salmoides	5.	0.
Catastomus commersoni	13.	0.

STREAM NAME : BLACKHALL RIVER SITE #: 1038
SITE DESCRIPTION: SOUTH OF RTE I-95 AT WHIPPOORWILL RD CROSSING, LYME

SAMPLE LENGTH : 150. SAMPLE DATE: 10/04/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	16. (C)	DISSOLVED OXYGEN (mg/l). .	3.1	0.0
WATER TEMP. . .	15. (C)	pH	6.	0.0
VELOCITY. . . .	0.602 (m/s)	COND . . . . . (uS/cm3). .	52.	0.0
DISCHARGE . . .	0.113 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	12.37	0.55

	MEAN	STD	
WIDTH.	2.93	1.32	(m)
DEPTH.	26.8	20.6	(cm)

DOMINANT SUBSTRATE TYPE. . :		POOL/RIFFLE RATIO . .:	
TYPE THREE SUBSTRATE . . . :	50.0	(%)	AIR/WATER TEMP. RATIO: 1.066
EMBEDDEDNESS OF TYPE THREE :	24.	(%)	
OVERHEAD CANOPY. . . . . :	100.	(%)	
INSTREAM SHELTER . . . . . :		(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	8.	0.
Unknown Centrachid	1.	0.
Esox americanus	1.	0.
Micropterus salmoides	2.	0.

STREAM NAME : BLACKLEDGE RIVER SITE #: 1091
SITE DESCRIPTION: UPSTREAM OF RIVER RD. CROSSING , IN WESTCHESTER (COLCHESTER)

SAMPLE LENGTH : 160. SAMPLE DATE: 09/07/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23.0 (C)	DISSOLVED OXYGEN (mg/l). .	: 10.8	0.06
WATER TEMP. . .	:15.0 (C)	pH	: 7.5	0.0
VELOCITY. . . .	: 0.262 (m/s)	COND . . . . . (uS/cm3). .	: 75.00	0.0
DISCHARGE . . .	: 0.468 (m3/s)	ALKALINITY .(mg CaCO3 eq/l)	: 13.67	0.30

	MEAN	STD	
WIDTH.	: 13.31	1.82	(m)
DEPTH.	: 16.4	13.44	(cm)

DOMINANT SUBSTRATE TYPE. .	: 4		POOL/RIFFLE RATIO . .:	0.83
TYPE THREE SUBSTRATE . . .	: 0.01	(%)	AIR/WATER TEMP. RATIO:	1.53
EMBEDDEDNESS OF TYPE THREE	: 50.00	(%)		
OVERHEAD CANOPY.	: 64.00	(%)		
INSTREAM SHELTER	: 48.08	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	178.	1.19
Salvelinus fontinalis	14.	0.
Rhinichthys atratulus	1742.	77.03
Notropis cornutus	1779.	37.97
Unknown Cyprinid	159.	9.24
Rhinichthys cataractae	2422.	224.57
Lepomis gibbosus	9.	0.00
Petromyzon marinus	131.	13.14
Micropterus dolomieui	9.	0.
Etheostoma olmstedi	464.	44.66
Catastomus commersoni	248.	2.47

STREAM NAME : BLACKLEDGE RIVER SITE #: 1029
SITE DESCRIPTION: DOWNSTREAM OF WEST RD MARLBOROUGH
SHIFTING SAND MEADOWS

SAMPLE LENGTH : 120. SAMPLE DATE: 07/26/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	32.	(C)	DISSOLVED OXYGEN (mg/l). . :	8.1	0.
WATER TEMP. . .	24.	(C)	pH . . . . . :	6.8	0.
VELOCITY. . . .	0.073	(m/s)	COND . . . . . (uS/cm3). . :	76.3	1.1547
DISCHARGE . . .	0.212	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	12.2	0.2

	MEAN	STD	
WIDTH. . . . . :	8.95	1.43	(m)
DEPTH. . . . . :	59.8	35.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	10.3	(%)	AIR/WATER TEMP. RATIO:	1.333
EMBEDDEDNESS OF TYPE THREE :	50.	(%)		
OVERHEAD CANOPY. . . . . :	7.5	(%)		
INSTREAM SHELTER . . . . . :	772.4	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	5.	0.
Ictalurus nebulosus	2.	0.
Lepomis macrochirus	1.	0.
Salvelinus fontinalis	1.	0.
Esox niger	61.	1.80
Unknown Cyprinid	2.	0.
Semotilus corporalis	2.	0.
Notemigonus crysoleucas	2.	0.
Micropterus salmoides	2.	0.
Lepomis gibbosus	18.	0.
Erimyzon oblongus	31.	7.50
Petromyzon marinus	137.	41.58
Etheostoma olmstedi	20.	4.76

STREAM NAME : BROAD BROOK SITE #: 1007
SITE DESCRIPTION: DOWNSTREAM OF HATHEWAY RD CROSSING, ELLINGTON, BEHIND TOWN PARK

SAMPLE LENGTH : 150. SAMPLE DATE: 07/24/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:20. (C)	DISSOLVED OXYGEN (mg/l). . :	7.3	0.1
WATER TEMP. . .	:16. (C)	pH . . . . . :	7.1	0.
VELOCITY. . . .	: 0.305 (m/s)	COND . . . . . (uS/cm3). . :	257.	5.57
DISCHARGE . . .	: 0.226 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	64.7	5.07

	MEAN	STD			
WIDTH. . . . . :	5.66	1.95	(m)		
DEPTH. . . . . :	25.53	19.37	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.676	
TYPE THREE SUBSTRATE . . . :	3.0	(%)	AIR/WATER TEMP. RATIO:	1.25	
EMBEDDEDNESS OF TYPE THREE :	38.75	(%)			
OVERHEAD CANOPY. . . . . :	75.	(%)			
INSTREAM SHELTER . . . . . :	145.13	(m2)			

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	4.	0.
Lepomis macrochirus	5.	0.
Salvelinus fontinalis	68.	9.0
Rhinichthys atratulus	167.	84.8
Salmo trutta	17.	0.
Rhinichthys cataractae	224.	34.1
Oncorhynchus mykiss	2.	0.
Etheostoma olmstedi	8.	0.
Catastomus commersoni	143.	14.7

STREAM NAME : BUCK BROOK SITE #: 1062
SITE DESCRIPTION: OFF CLARK HILL RD, N. OF PORTLAND RESERVIOR IN MESOHOMASIC S.F., PORTLAND

SAMPLE LENGTH : 50. SAMPLE DATE: 06/27/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:24. (C)	DISSOLVED OXYGEN (mg/l). . :	10.53	0.12
WATER TEMP. . .	:17. (C)	pH . . . . . :	6.4	0.0
VELOCITY. . . .	: 0.038 (m/s)	COND . . . . . (uS/cm3). . :	36.	0.0
DISCHARGE . . .	: 0.037 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	2.63	0.38

	MEAN	STD	
WIDTH. . . . . :	3.66	0.30	(m)
DEPTH. . . . . :	20.2	14.08	(cm)

DOMINANT SUBSTRATE TYPE. . :	2	POOL/RIFFLE RATIO . .:	44.455
TYPE THREE SUBSTRATE . . . :	17.8 (%)	AIR/WATER TEMP. RATIO:	1.411
EMBEDDEDNESS OF TYPE THREE :	68. (%)		
OVERHEAD CANOPY. . . . . :	100. (%)		
INSTREAM SHELTER . . . . . :	53.51 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	2.	0.
Salvelinus fontinalis	56.	2.41
Catastomus commersoni	23.	0.

STREAM NAME : BUCKHORN BROOK SITE #: 1006
SITE DESCRIPTION: ABBE RD CROSSING DOWNSTREAM, E. WINDSOR

SAMPLE LENGTH : 83. SAMPLE DATE: 10/03/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	19.	(C)	DISSOLVED OXYGEN (mg/1). . :		
WATER TEMP. . .	15.	(C)	pH . . . . . :	6.867	0.0577
VELOCITY. . . .	0.199	(m/s)	COND . . . . . (uS/cm3). . :	202.	1.
DISCHARGE . . .	0.181	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	46.53	4.4736

	MEAN	STD	
WIDTH. . . . . :	5.06	1.14	(m)
DEPTH. . . . . :	30.8	23.11	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	6.5455
TYPE THREE SUBSTRATE . . . :	6.0	(%)	AIR/WATER TEMP. RATIO:	1.2667
EMBEDDEDNESS OF TYPE THREE :	92.5	(%)		
OVERHEAD CANOPY. . . . . :	55.	(%)		
INSTREAM SHELTER . . . . . :	99.6	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	9.	0.
Salvelinus fontinalis	0.	0.
Rhinichthys atratulus	66.	0.
Unknown Cyprinid	3.	0.
Rhinichthys cataractae	0.	0.
Lepomis gibbosus	2.	0.
Catastomus commersoni	133.	54.1

STREAM NAME : CANDLEWOOD HILL BROOK SITE #: 1075
SITE DESCRIPTION: AT INTERSECTION OF WIESE ALBERT RD AND CANDLEWOD HILL RD

SAMPLE LENGTH : 100. SAMPLE DATE: 07/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	20. (C)	DISSOLVED OXYGEN (mg/l). . :	8.26	0.06
WATER TEMP. . .	20. (C)	pH . . . . . :	6.6	0.0
VELOCITY. . . .	0.589 (m/s)	COND . . . . . (uS/cm3). . :	51.	0.0
DISCHARGE . . .	0.448 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	9.16	0.06

	MEAN	STD	
WIDTH. . . . . :	3.64	0.82	(m)
DEPTH. . . . . :	21.9	14.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	15.129
TYPE THREE SUBSTRATE . . . :	51.7 (%)	AIR/WATER TEMP. RATIO:	1.0
EMBEDDEDNESS OF TYPE THREE :	68.66 (%)		
OVERHEAD CANOPY. . . . . :	80. (%)		
INSTREAM SHELTER . . . . . :	71.46 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	7.	0.
Lepomis macrochirus	1.	0.
Salmo trutta	1.	0.
Esox niger	3.	0.

STREAM NAME : CARR BROOK SITE #: 1118
SITE DESCRIPTION: ON DIRT ROAD NORTH OF PORTLAND RESERVOIR
STEEP RIFFLES IN HEMLOCK FOREST

SAMPLE LENGTH : 100. SAMPLE DATE: 07/18/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.43	0.06
WATER TEMP. . .	16.	(C)	pH . . . . . :	5.63	0.06
VELOCITY. . . .	0.093	(m/s)	COND . . . . . (uS/cm3). . :	22.	0.0
DISCHARGE . . .	0.033	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	21.1	0.3

	MEAN	STD	
WIDTH.	3.31	1.34	(m)
DEPTH.	10.3	10.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.757
TYPE THREE SUBSTRATE . . . :	0.	(%)	AIR/WATER TEMP. RATIO:	1.375
EMBEDDEDNESS OF TYPE THREE :	0.	(%)		
OVERHEAD CANOPY. . . . . :	93.	(%)		
INSTREAM SHELTER . . . . . :	22.33	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Salvelinus fontinalis	30.	0.

STREAM NAME : CARR BROOK SITE #: 1020
SITE DESCRIPTION: DONWSTREAM OF GREAT HILL POND RD BRIDGE.

SAMPLE LENGTH : 45. SAMPLE DATE: 06/15/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :14.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.17	0.06
WATER TEMP. . . :16.	(C)	pH . . . . . :	6.46	0.06
VELOCITY. . . . : 0.198	(m/s)	COND . . . . . (uS/cm3). . :	29.33	1.15
DISCHARGE . . . : 0.207	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	1.96	0.31

	MEAN	STD	
WIDTH. . . . . :	5.16	1.52	(m)
DEPTH. . . . . :	21.65	17.71	(cm)

DOMINANT SUBSTRATE TYPE. . :	5	POOL/RIFFLE RATIO . .:	0.373
TYPE THREE SUBSTRATE . . . :	19.5 (%)	AIR/WATER TEMP. RATIO:	0.875
EMBEDDEDNESS OF TYPE THREE :	45.62 (%)		
OVERHEAD CANOPY. . . . . :	97. (%)		
INSTREAM SHELTER . . . . . :	23.44 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	8.	0.
Rhinichthys atratulus	51.	5.63
Lepomis macrochirus	10.	0.
Salvelinus fontinalis	4.	0.
Unknown Centrachid	3.	0.
Esox americanus	1.	0.
Notemigonus crysoleucas	1.	0.
Catastomus commersoni	12.	0.

STREAM NAME : CATTLELOT BROOK SITE #: 1066
SITE DESCRIPTION: OFF QUIN RD NORTH OF BRIDGE CROSSING

SAMPLE LENGTH : 50. SAMPLE DATE: 07/07/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.	(C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.0
WATER TEMP. . .	29.	(C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	0.218	(m/s)	COND . . . . . (uS/cm3). . :	90.	0.0
DISCHARGE . . .	0.106	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	18.3	0.17

	MEAN	STD	
WIDTH. . . . . :	3.5	0.62	(m)
DEPTH. . . . . :	14.0	11.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	4.55
TYPE THREE SUBSTRATE . . . :	7.6	(%)	AIR/WATER TEMP. RATIO:	0.931
EMBEDDEDNESS OF TYPE THREE :	17.5	(%)		
OVERHEAD CANOPY. . . . . :	98.	(%)		
INSTREAM SHELTER . . . . . :	4.61	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	3.	0.
Lepomis macrochirus	6.	0.
Semotilus corporalis	4.	0.
Esox americanus	3.	0.
Rhinichthys cataractae	6.	0.
Micropterus salmoides	1.	0.
Lepomis gibbosus	1.	0.
Etheostoma olmstedi	9.	0.
Catastomus commersoni	9.	0.

STREAM NAME : CHARTER'S BROOK SITE #: 1011
SITE DESCRIPTION: PARALLEL TO SHENIPSIT LAKE RD. IN TOLLAND, LOWER NET AT OLD MILL.

SAMPLE LENGTH : 150. SAMPLE DATE: 07/25/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	29.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.0	0.0
VELOCITY. . . .	0.04	(m/s)	COND . . . . . (uS/cm3). . :	59.0	0.0
DISCHARGE . . .	0.15	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.9	0.3

	MEAN	STD	
WIDTH. . . . . :	7.04	1.11	(m)
DEPTH. . . . . :	45.7	28.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	6.5
TYPE THREE SUBSTRATE . . . :	0.16	(%)	AIR/WATER TEMP. RATIO:	1.53
EMBEDDEDNESS OF TYPE THREE :	84.44	(%)		
OVERHEAD CANOPY. . . . . :	100.00	(%)		
INSTREAM SHELTER . . . . . :	314.67	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Lepomis macrochirus	111.	0.
Salvelinus fontinalis	172.	0.
Salmo trutta	101.	0.
Unknown Centrachid	20.	0.
Semotilus corporalis	172.	1.29
Notemigonus crysoleucas	30.	0.
Micropterus dolomieui	20.	0.
Etheostoma olmstedi	51.	1.36
Catastomus commersoni	132.	0.
Perca flavescens	101.	1.32

STREAM NAME : COGINCHAUG RIVER SITE #: 1093
SITE DESCRIPTION: OFF FISHER RD NEAR MEMORIAL POOL (ABANDONED BRIDGE SITE), MIDDLETOWN

SAMPLE LENGTH : 150. SAMPLE DATE: 08/21/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26. (C)	DISSOLVED OXYGEN (mg/l). . :	9.23	0.06
WATER TEMP. . .	:23. (C)	pH . . . . . :	7.66	0.06
VELOCITY. . . .	: 0.156 (m/s)	COND . . . . . (uS/cm3). . :	174.7	0.58
DISCHARGE . . .	: 1.175 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	60.7	1.47

	MEAN	STD	
WIDTH. . . . . :	13.06	2.39	(m)
DEPTH. . . . . :	46.2	30.3	(cm)

DOMINANT SUBSTRATE TYPE. . : 2
TYPE THREE SUBSTRATE . . . : 15.5 (%)
EMBEDDEDNESS OF TYPE THREE : 83.21 (%)
OVERHEAD CANOPY. . . . . : 65.6 (%)
INSTREAM SHELTER . . . . . : 1414.5 (m2)

POOL/RIFFLE RATIO . .: 9.
AIR/WATER TEMP. RATIO: 1.130

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	144.	10.60
Alosa sapidissima	12.	0.
Lepomis macrochirus	56.	14.69
Salmo trutta	1.	0.
Semotilus corporalis	7.	0.
Micropterus salmoides	4.	0.
Lepomis gibbosus	6.	0.
Ambloplites rupestris	38.	4.76
Lepomis auritus	68.	2.36
Petromyzon marinus	9.	3.21
Etheostoma olmstedi	5.	0.
Catastomus commersoni	10.	1.31
Perca flavescens	1.	0.

STREAM NAME : COGINCHAUG RIVER SITE #: 1044

SITE DESCRIPTION: AT LOWER WADSWORTH FALLS STATE PARK APPROX 100 METERS UPSTREAM OF RTE 157, MIDDLETOWN

SAMPLE LENGTH : 150. SAMPLE DATE: 07/10/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	25. (C)	DISSOLVED OXYGEN (mg/l). .	10.0	0.55
WATER TEMP. . .	23. (C)	pH	7.9	0.
VELOCITY. . . .	0.238 (m/s)	COND . . . . . (uS/cm3). .	184.	0.
DISCHARGE . . .	0.617 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	67.0	1.40

	MEAN	STD	
WIDTH.	11.72	2.54	(m)
DEPTH.	27.2	18.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.125
TYPE THREE SUBSTRATE . . . :	15.2	(%)	AIR/WATER TEMP. RATIO:	1.087
EMBEDDEDNESS OF TYPE THREE :	30.76	(%)		
OVERHEAD CANOPY. . . . . :	80.	(%)		
INSTREAM SHELTER . . . . . :	240.68	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	423.	28.11
Lepomis macrochirus	8.	0.
Salvelinus fontinalis	3.	0.
Rhinichthys atratulus	24.	8.88
Salmo trutta	4.	0.
Semotilus corporalis	42.	0.
Rhinichthys cataractae	361.	207.81
Micropterus salmoides	3.	0.
Lepomis gibbosus	23.	11.62
Lepomis auritus	35.	8.10
Oncorhynchus mykiss	4.	0.
Etheostoma olmstedi	43.	16.41
Catastomus commersoni	6.	0.

STREAM NAME : COLD BROOK SITE #: 1017
SITE DESCRIPTION: OFF COUNTRY CLUB RD IN GLASTONBURY,UPPER END 30 M DOWNSTREAM OF BRIDGE CROSSING. ARMANDO PROP.

SAMPLE LENGTH : 100. SAMPLE DATE: 06/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	25. (C)	DISSOLVED OXYGEN (mg/l). .	10.7	0.
WATER TEMP. . .	15. (C)	pH	6.47	0.12
VELOCITY. . . .	0.274 (m/s)	COND . . . . . (uS/cm3). .	42.	0.
DISCHARGE . . .	0.483 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	2.77	0.15

	MEAN	STD	
WIDTH.	5.24	0.71	(m)
DEPTH.	40.43	23.90	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	16.54
TYPE THREE SUBSTRATE . . . :	61.1	(%)	AIR/WATER TEMP. RATIO:	1.63
EMBEDDEDNESS OF TYPE THREE :	77.5	(%)		
OVERHEAD CANOPY. . . . . :	61.25	(%)		
INSTREAM SHELTER . . . . . :	270.75	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	12.	1.34
Lepomis macrochirus	16.	0.
Salvelinus fontinalis	94.	14.53
Salmo trutta	6.	0.
Esox americanus	20.	0.
Micropterus salmoides	11.	0.
Lepomis gibbosus	20.	7.42
Oncorhynchus mykiss	1.	0.
Cottus cognatus	123.	38.18

STREAM NAME : COLD SPRINGS BROOK SITE #: 1087
SITE DESCRIPTION: DOWNSTREAM 20 M FROM EVERGREEN RD CROMWELL

SAMPLE LENGTH : 100. SAMPLE DATE: 06/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:24. (C)	DISSOLVED OXYGEN (mg/l). . :	9.36	0.06
WATER TEMP. . .	:18. (C)	pH . . . . . :	7.8	0.0
VELOCITY. . . .	: 0.359 (m/s)	COND . . . . . (uS/cm3). . :	270.	0.0
DISCHARGE . . .	: 0.164 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	76.	1.6

	MEAN	STD	
WIDTH. . . . . :	3.88	1.61	(m)
DEPTH. . . . . :	20.22	14.77	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	1.439
TYPE THREE SUBSTRATE . . . :	62.0 (%)	AIR/WATER TEMP. RATIO:	1.333
EMBEDDEDNESS OF TYPE THREE :	40.833 (%)		
OVERHEAD CANOPY. . . . . :	97.2 (%)		
INSTREAM SHELTER . . . . . :	30.67 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	8.	0.
Ictalurus nebulosus	1.	0.
Rhinichthys atratulus	64.	12.19
Esox americanus	1.	0.
Lepomis gibbosus	1.	0.
Etheostoma olmstedi	59.	25.72
Catastomus commersoni	2.	0.

STREAM NAME : CREAM POT BROOK SITE #: 1072
SITE DESCRIPTION: OLD POND/ DAM BROKEN UPSTREAM OF PISGAH RD

SAMPLE LENGTH : 50. SAMPLE DATE: 07/06/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :28.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.43	0.15
WATER TEMP. . . :17.	(C)	pH . . . . . :	7.3	0.1
VELOCITY. . . . : 0.088	(m/s)	COND . . . . . (uS/cm3). . :	80.67	1.15
DISCHARGE . . . : 0.044	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	18.03	0.15

	MEAN	STD	
WIDTH. . . . . :	3.31	0.99	(m)
DEPTH. . . . . :	15.1	13.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	6	POOL/RIFFLE RATIO . .:	2.125
TYPE THREE SUBSTRATE . . . :	31.8 (%)	AIR/WATER TEMP. RATIO:	1.647
EMBEDDEDNESS OF TYPE THREE :	57.143 (%)		
OVERHEAD CANOPY. . . . . :	67. (%)		
INSTREAM SHELTER . . . . . :	5.75 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Lepomis macrochirus	8.	0.
Salvelinus fontinalis	72.	5.58
Rhinichthys atratulus	118.	11.23
Micropterus salmoides	1.	0.

STREAM NAME : DARK HOLLOW BRK SITE #: 1059
SITE DESCRIPTION: END OF CUL DE SAC OFF TOLL GATE RD E. GLASTONBURY, CHANNALIZED MEADOW ALONG RTE 2

SAMPLE LENGTH : 85. SAMPLE DATE: 06/14/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	27. (C)	DISSOLVED OXYGEN (mg/l). .	10.3	0.36
WATER TEMP. . .	14. (C)	pH	5.5	0.17
VELOCITY. . . .	0.364 (m/s)	COND . . . . . (uS/cm3). .	67.67	21.77
DISCHARGE . . .	0.336 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	0.03	0.27

	MEAN	STD	
WIDTH.	4.11	0.85	(m)
DEPTH.	22.4	16.56	(cm)

DOMINANT SUBSTRATE TYPE. .	3	POOL/RIFFLE RATIO . .:	3.106
TYPE THREE SUBSTRATE . . .	33.0 (%)	AIR/WATER TEMP. RATIO:	1.928
EMBEDDEDNESS OF TYPE THREE	23.333 (%)		
OVERHEAD CANOPY.	100. (%)		
INSTREAM SHELTER	13.93 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	4.	0.
Salvelinus fontinalis	81.	16.88

STREAM NAME : DAY MEADOW BRK SITE #: 1068
SITE DESCRIPTION: CROSSING AT RIVER RD N.WESTCHESTER, NEAR CEMETARY

SAMPLE LENGTH : 50. SAMPLE DATE: 06/15/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :13.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.6	0.
WATER TEMP. . . :17.	(C)	pH . . . . . :	6.86	0.153
VELOCITY. . . . : 0.25	(m/s)	COND . . . . . (uS/cm3). . :	68.	0.
DISCHARGE . . . : 0.053	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	9.56	0.208

	MEAN	STD		
WIDTH. . . . . :	2.69	0.85	(m)	
DEPTH. . . . . :	8.3	6.7	(cm)	
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.644
TYPE THREE SUBSTRATE . . . :	11.7	(%)	AIR/WATER TEMP. RATIO:	0.764
EMBEDDEDNESS OF TYPE THREE :	37.5	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	3.99	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	5.	0.
Ictalurus nebulosus	74.	7.99
Lepomis macrochirus	19.	2.11
Rhinichthys atratulus	3.	0.
Unknown Centrachid	2.	0.
Erimyzon oblongus	1.	0.
Notropis cornutus	9.	0.
Unknown Cyprinid	4.	0.
Notemigonus crysoleucas	56.	1.15
Lepomis gibbosus	4.	0.
Catastomus commersoni	2.	0.

STREAM NAME : DEEP RIVER SITE #: 1051
SITE DESCRIPTION: DOWNSTREAM OF HOOPPOLE RD 50 M IN STATE FOREST
DEEP RIVER.

SAMPLE LENGTH : 100. SAMPLE DATE: 08/01/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	22. (C)	DISSOLVED OXYGEN (mg/l). . :	7.5	0.52
WATER TEMP. . .	19. (C)	pH . . . . . :	6.4	0.
VELOCITY. . . .	0.107 (m/s)	COND . . . . . (uS/cm3). . :	42.	0.
DISCHARGE . . .	0.051 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.6	0.06

	MEAN	STD	
WIDTH. . . . . :	2.57	0.78	(m)
DEPTH. . . . . :	17.2	13.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	2.125
TYPE THREE SUBSTRATE . . . :	31.3 (%)	AIR/WATER TEMP. RATIO:	1.158
EMBEDDEDNESS OF TYPE THREE :	56. (%)		
OVERHEAD CANOPY. . . . . :	96.8 (%)		
INSTREAM SHELTER . . . . . :	15.46 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	6.	0.
Lepomis macrochirus	20.	1.29
Salvelinus fontinalis	2.	0.
Esox niger	1.	0.
Esox americanus	3.	0.
Micropterus salmoides	4.	0.

STREAM NAME : DICKINSON CREEK SITE #: 1030
SITE DESCRIPTION: IN SALMON RIVER FOREST APPROX 0.25 MILES DOWNSTREAM OF FLOOD RD

SAMPLE LENGTH : 150. SAMPLE DATE: 07/27/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	28.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.66	0.31
WATER TEMP. . . :	24.	(C)	pH . . . . . :	7.	0.
VELOCITY. . . . :	0.115	(m/s)	COND . . . . . (uS/cm3). . :	115.7	2.08
DISCHARGE . . . :	0.178	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.87	0.12

	MEAN	STD	
WIDTH. . . . . :	12.72	2.41	(m)
DEPTH. . . . . :	19.8	14.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	3.64
TYPE THREE SUBSTRATE . . . :	10.2	(%)	AIR/WATER TEMP. RATIO:	1.166
EMBEDDEDNESS OF TYPE THREE :	56.11	(%)		
OVERHEAD CANOPY. . . . . :	76.5	(%)		
INSTREAM SHELTER . . . . . :	76.00	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	3.	0.
Lepomis macrochirus	2.	0.
Rhinichthys atratulus	14.	0.
Salmo trutta	9.	0.
Unknown Cyprinid	5.	0.
Semotilus corporalis	42.	0.
Esox americanus	16.	3.06
Rhinichthys cataractae	34.	1.19
Micropterus salmoides	73.	9.99
Lepomis gibbosus	5.	0.
Salmo salar	21.	0.
Etheostoma olmstedi	129.	11.73
Catastomus commersoni	72.	2.32

STREAM NAME : DRY BROOK SITE #: 1084
SITE DESCRIPTION: DOWNSTREAM OF RYE RD CROSSING, E. WINDSOR

SAMPLE LENGTH : 100. SAMPLE DATE: 07/24/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.3	0.2646
WATER TEMP. . .	20.	(C)	pH . . . . . :	7.77	0.0577
VELOCITY. . . .		(m/s)	COND . . . . . (uS/cm3). . :		
DISCHARGE . . .		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	48.6	3.6428

	MEAN	STD	
WIDTH. . . . . :	2.49	0.65	(m)
DEPTH. . . . . :	14.5	10.73	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .: 0.739
TYPE THREE SUBSTRATE . . . :	43.7	(%)	AIR/WATER TEMP. RATIO: 1.2
EMBEDDEDNESS OF TYPE THREE :	59.286	(%)	
OVERHEAD CANOPY. . . . . :	100.	(%)	
INSTREAM SHELTER . . . . . :	23.85	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	37.	2.61
Lepomis macrochirus	6.	0.
Rhinichthys atratulus	6.	0.
Salmo trutta	5.	0.
Unknown Centrachid	5.	0.
Esox americanus	2.	0.
Notemigonus crysoleucas	1.	0.
Rhinichthys cataractae	7.	2.30
Lepomis gibbosus	7.	0.
Lepomis auritus	5.	0.
Petromyzon marinus	4.	0.
Catastomus commersoni	10.	0.

STREAM NAME : E. BR. EIGHTMILE RIVER SITE #: 1106
SITE DESCRIPTION: PARALLEL TO DARLING RD UPSTREAM OF BRIDGE IN HADLYME

SAMPLE LENGTH : 105. SAMPLE DATE: 08/24/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :24.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.36	0.16
WATER TEMP. . . :21.	(C)	pH . . . . . :	7.16	0.06
VELOCITY. . . . : 0.311	(m/s)	COND . . . . . (uS/cm3). . :	75.	0.0
DISCHARGE . . . : 0.661	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	12.23	0.50

	MEAN	STD	
WIDTH. . . . . :	10.76	3.63	(m)
DEPTH. . . . . :	19.7	12.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	5	POOL/RIFFLE RATIO . .:	0.0
TYPE THREE SUBSTRATE . . . :	0. (%)	AIR/WATER TEMP. RATIO:	1.142
EMBEDDEDNESS OF TYPE THREE :	0. (%)		
OVERHEAD CANOPY. . . . . :	55. (%)		
INSTREAM SHELTER . . . . . :	47.76 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	224.	29.72
Salvelinus fontinalis	2.	0.
Rhinichthys atratulus	149.	16.04
Salmo trutta	1.	0.
Notropis cornutus	83.	7.01
Unknown Cyprinid	211.	37.45
Semotilus corporalis	10.	0.
Esox americanus	4.	0.
Rhinichthys cataractae	291.	90.10
Micropterus salmoides	1.	0.
Lepomis gibbosus	1.	0.
Lepomis auritus	3.	0.
Oncorhynchus mykiss	1.	0.
Etheostoma olmstedi	40.	3.90

STREAM NAME : EIGHT MILE RIVER (E. BRANCH) SITE #: 1035
SITE DESCRIPTION: HALF MILE BEFORE END OF RTE. 11 FROM OVERPASS UPSTREAM.

SAMPLE LENGTH : 90. SAMPLE DATE: 08/24/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.4	0.1
WATER TEMP. . .	21.	(C)	pH . . . . . :	7.3	0.0
VELOCITY. . . .	0.142	(m/s)	COND . . . . . (uS/cm3). . :	71.	0.0
DISCHARGE . . .	0.43	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	9.8	0.1

	MEAN	STD	
WIDTH. . . . . :	8.9	2.06	(m)
DEPTH. . . . . :	34.2	32.82	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	1.459
TYPE THREE SUBSTRATE . . . :	35.3	(%)	AIR/WATER TEMP. RATIO:	1.142
EMBEDDEDNESS OF TYPE THREE :	43.47	(%)		
OVERHEAD CANOPY. . . . . :	12.5	(%)		
INSTREAM SHELTER . . . . . :	193.71	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	24.	2.04
Ictalurus nebulosus	1.	0.
Rhinichthys atratulus	72.	1.76
Salmo trutta	11.	0.
Unknown Centrachid	1.	0.
Esox niger	6.	0.
Notropis cornutus	652.	64.37
Unknown Cyprinid	73.	6.78
Semotilus corporalis	53.	1.82
Esox americanus	8.	0.
Rhinichthys cataractae	52.	4.35
Micropterus salmoides	4.	0.
Lepomis gibbosus	5.	0.
Lepomis auritus	8.	0.
Etheostoma olmstedi	376.	34.52
Catastomus commersoni	40.	3.90

STREAM NAME : EIGHT MILE RIVER SITE #: 1104
SITE DESCRIPTION: IN DEVIL'S HOP YARD S.P. 50 M UPSTREAM OF SOUTHERN MOST PICNIC AREA

SAMPLE LENGTH : 150. SAMPLE DATE: 08/09/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :22.	(C)	DISSOLVED OXYGEN (mg/1). . :	10.23	0.23
WATER TEMP. . . :18.	(C)	pH . . . . . :	7.06	0.05
VELOCITY. . . . : 0.088	(m/s)	COND . . . . . (uS/cm3). . :	37.	1.73
DISCHARGE . . . : 0.115	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	6.5	0.17

	MEAN	STD	
WIDTH. . . . . :	9.99	2.43	(m)
DEPTH. . . . . :	29.1	27.4	(cm)

DOMINANT SUBSTRATE TYPE. . :	5	POOL/RIFFLE RATIO . .:	3.83
TYPE THREE SUBSTRATE . . . :	3.9 (%)	AIR/WATER TEMP. RATIO:	1.222
EMBEDDEDNESS OF TYPE THREE :	50. (%)		
OVERHEAD CANOPY. . . . . :	88. (%)		
INSTREAM SHELTER . . . . . :	335.36 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	91.	6.23
Salvelinus fontinalis	2.	0.
Rhinichthys atratulus	28.	1.22
Salmo trutta	17.	0.
Unknown Centrachid	3.	0.
Notropis cornutus	53.	0.
Unknown Cyprinid	3.	0.
Semotilus corporalis	50.	0.
Esox americanus	5.	0.
Rhinichthys cataractae	25.	5.25
Micropterus salmoides	1.	0.
Lepomis gibbosus	16.	4.
Erimyzon oblongus	1.	0.
Petromyzon marinus	16.	2.13
Etheostoma olmstedi	34.	4.94
Catastomus commersoni	32.	1.21
Perca flavescens	3.	0.

STREAM NAME : EIGHTMILE RIVER SITE #: 1033
SITE DESCRIPTION: UPSTREAM 75 M FROM RTE 156 BRIDGE

SAMPLE LENGTH : 150. SAMPLE DATE: 07/12/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	22. (C)	DISSOLVED OXYGEN (mg/l). . :	10.	0.36
WATER TEMP. . .	19. (C)	pH . . . . . :	6.6	0.
VELOCITY. . . .	0.251 (m/s)	COND . . . . . (uS/cm3). . :	38.	0.
DISCHARGE . . .	0.713 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.83	0.35

	MEAN	STD	
WIDTH. . . . . :	11.03	1.54	(m)
DEPTH. . . . . :	26.1	18.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	3.285
TYPE THREE SUBSTRATE . . . :	40.0 (%)	AIR/WATER TEMP. RATIO:	1.157
EMBEDDEDNESS OF TYPE THREE :	61.28 (%)		
OVERHEAD CANOPY. . . . . :	89. (%)		
INSTREAM SHELTER . . . . . :	213.93 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	91.	4.75
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	29.	5.07
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	5.	0.
Salmo trutta	1.	0.
Esox niger	4.	0.
Notropis cornutus	23.	0.
Semotilus corporalis	5.	0.
Esox americanus	9.	0.
Rhinichthys cataractae	25.	1.22
Micropterus salmoides	4.	0.
Lepomis gibbosus	10.	0.
Petromyzon marinus	95.	2.70
Etheostoma olmstedi	72.	19.81
Catastomus commersoni	7.	0.
Perca flavescens	1.	0.

STREAM NAME : EIGHT MILE RIVER SITE #: 1150
SITE DESCRIPTION: ALONG JOSHUA TOWN RD. IN LYME, JUST ABOVE HEAD OF TIDE IN HAMBURG COVE., SINGLE PASS SAMPLE.

SAMPLE LENGTH : 250 SAMPLE DATE: 10/04/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	16.	(C)	DISSOLVED OXYGEN (mg/l). .		
WATER TEMP. . .	15.	(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: 1.0667
EMBEDDEDNESS OF TYPE THREE		(%)	
OVERHEAD CANOPY.	63.	(%)	
INSTREAM SHELTER		(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	76.	
Unknown Centrachid	1.	
Esox niger	1.	
Unknown Cyprinid	5.	
Semotilus corporalis	7.	
Micropterus salmoides	4.	
Lepomis gibbosus	28.	
Lepomis auritus	31.	
Notropis hudsonius	4.	
Etheostoma olmstedi	2.	

STREAM NAME : ELLEN DOYLE BROOK SITE #: 1094
SITE DESCRIPTION: OFF RTE. 147 WEST OF MIDDLEFIELD.

SAMPLE LENGTH : 100. SAMPLE DATE: 07/19/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.	(C)	DISSOLVED OXYGEN (mg/l). . :	8.367	0.15
WATER TEMP. . .	23.	(C)	pH . . . . . :	7.9	0.0
VELOCITY. . . .	0.183	(m/s)	COND . . . . . (uS/cm3). . :	154.3	7.51
DISCHARGE . . .	0.066	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	44.83	2.58

	MEAN	STD		
WIDTH. . . . . :	4.43	1.48	(m)	
DEPTH. . . . . :	9.4	9.3	(cm)	
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.233
TYPE THREE SUBSTRATE . . . :	9.3	(%)	AIR/WATER TEMP. RATIO:	1.173
EMBEDDEDNESS OF TYPE THREE :	5.	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	25.77	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	21.	2.07
Lepomis macrochirus	3.	0.
Rhinichthys atratulus	178.	4.71
Unknown Centrachid	1.	0.
Unknown Cyprinid	3.	0.
Catastomus commersoni	8.	0.

STREAM NAME : FALLS BROOK SITE #: 1095
SITE DESCRIPTION: UPSTRM OF MINER ROAD IN MIDDLETOWN. 100 M FROM WEST FIELD FALLS

SAMPLE LENGTH : 75. SAMPLE DATE: 08/07/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23. (C)	DISSOLVED OXYGEN (mg/1). . :	10.6	1.48
WATER TEMP. . .	:20. (C)	pH . . . . . :	7.9	0.0
VELOCITY. . . .	: 0.193 (m/s)	COND . . . . . (uS/cm3). . :	125.7	2.52
DISCHARGE . . .	: 0.083 (m3/s)	ALKALINITY .(mg CaCO3 eq/1):	48.27	0.81

	MEAN	STD	
WIDTH. . . . . :	4.44	1.56	(m)
DEPTH. . . . . :	10.	6.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	2.571
TYPE THREE SUBSTRATE . . . :	8.0 (%)	AIR/WATER TEMP. RATIO:	1.15
EMBEDDEDNESS OF TYPE THREE :	30. (%)		
OVERHEAD CANOPY. . . . . :	53. (%)		
INSTREAM SHELTER . . . . . :	4.37 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	6.	0.
Lepomis macrochirus	2.	0.
Rhinichthys atratulus	1684.	53.03
Lepomis gibbosus	2.	0.
Catastomus commersoni	426.	53.53

STREAM NAME : FALLS RIVER SITE #: 1102
SITE DESCRIPTION: OFF RTE. 144 CENTER OF IVORYTON BELOW PIANO FACTORY

SAMPLE LENGTH : 100. SAMPLE DATE: 09/06/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26. (C)	DISSOLVED OXYGEN (mg/l). . :	10.23	0.06
WATER TEMP. . .	:24. (C)	pH . . . . . :	7.06	0.06
VELOCITY. . . .	: 0.075 (m/s)	COND . . . . . (uS/cm3). . :	72.	0.0
DISCHARGE . . .	: 0.104 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	13.8	0.69

	MEAN	STD	
WIDTH. . . . . :	7.47	2.06	(m)
DEPTH. . . . . :	16.3	11.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 1.564
TYPE THREE SUBSTRATE . . . :	6.7	(%)	AIR/WATER TEMP. RATIO: 1.083
EMBEDDEDNESS OF TYPE THREE :	77.5	(%)	
OVERHEAD CANOPY. . . . . :	23.	(%)	
INSTREAM SHELTER . . . . . :	57.54	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	106.	6.39
Lepomis macrochirus	93.	5.20
Esox niger	5.	0.
Semotilus corporalis	141.	1.09
Micropterus salmoides	9.	0.
Lepomis gibbosus	1.	0.
Lepomis auritus	24.	0.
Erimyzon oblongus	1.	0.
Etheostoma olmstedi	132.	42.01

STREAM NAME : FALLS RIVER SITE #: 1052
SITE DESCRIPTION: IN WOODS NORTH OF POND MEADOW RD.,WESTBROOK/ESSEX, WEST OF TURBO PRODUCTS CO.

SAMPLE LENGTH : 150. SAMPLE DATE: 08/01/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:25. (C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	:23. (C)	pH . . . . . :	7.03	0.15
VELOCITY. . . .	: 0.076 (m/s)	COND . . . . . (uS/cm3). . :	50.	0.0
DISCHARGE . . .	: 0.053 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	13.07	0.12

	MEAN	STD	
WIDTH. . . . . :	6.52	1.44	(m)
DEPTH. . . . . :	11.7	10.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		
TYPE THREE SUBSTRATE . . . :	29.2	(%)	POOL/RIFFLE RATIO . .: 1.351
EMBEDDEDNESS OF TYPE THREE :	46.071	(%)	AIR/WATER TEMP. RATIO: 1.111
OVERHEAD CANOPY. . . . . :	98.	(%)	
INSTREAM SHELTER . . . . . :	22.86	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	144.	19.32
Lepomis macrochirus	66.	16.17
Salvelinus fontinalis	12.	1.33
Esox niger	3.	0.
Semotilus corporalis	38.	3.31
Lepomis gibbosus	1.	0.
Lepomis auritus	12.	0.
Etheostoma olmstedi	21.	1.25

STREAM NAME : FAWN BROOK SITE #: 1028
SITE DESCRIPTION: AT OLD BRIDGE CROSSING IN SALMON RIVER S.F. AT END OF SLOCUM RD, DOWNSTREAM OF BRIDGE

SAMPLE LENGTH : 150. SAMPLE DATE: 07/25/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	28.	(C)	DISSOLVED OXYGEN (mg/l). . :	7.3	0.50
WATER TEMP. . .	26.	(C)	pH . . . . . :	6.9	0.1
VELOCITY. . . .	0.136	(m/s)	COND . . . . . (uS/cm3). . :	100.	0.
DISCHARGE . . .	0.128	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	25.83	0.55

	MEAN	STD	
WIDTH. . . . . :	5.91	0.98	(m)
DEPTH. . . . . :	16.0	11.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.595
TYPE THREE SUBSTRATE . . . :	6.5	(%)	AIR/WATER TEMP. RATIO:	1.077
EMBEDDEDNESS OF TYPE THREE :	26.667	(%)		
OVERHEAD CANOPY. . . . . :	95.	(%)		
INSTREAM SHELTER . . . . . :	15.73	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	25.	0.
Rhinichthys atratulus	435.	64.86
Unknown Centrachid	15.	4.17
Esox niger	6.	0.
Notropis cornutus	8.	0.
Rhinichthys cataractae	130.	54.73
Lepomis auritus	9.	3.26
Salmo salar	1.	0.
Petromyzon marinus	15.	5.19
Etheostoma olmstedi	33.	15.29
Catastomus commersoni	12.	0.

STREAM NAME : FLAT BROOK SITE #: 1067
SITE DESCRIPTION: UPSTREAM OF RTE 16 BRIDGE NEAREST SALMON RIVER

SAMPLE LENGTH : 50. SAMPLE DATE: 06/27/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :28.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.3	0.06
WATER TEMP. . . :18.0	(C)	pH . . . . . :	6.8	0.06
VELOCITY. . . . : 0.214	(m/s)	COND . . . . . (uS/cm3). . :	50.00	0.0
DISCHARGE . . . : 0.153	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.43	0.45

	MEAN	STD	
WIDTH. . . . . :	4.84	1.13	(m)
DEPTH. . . . . :	14.6	14.55	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	1.27
TYPE THREE SUBSTRATE . . . :	0.13 (%)	AIR/WATER TEMP. RATIO:	1.55
EMBEDDEDNESS OF TYPE THREE :	27.00 (%)		
OVERHEAD CANOPY. . . . . :	95.00 (%)		
INSTREAM SHELTER . . . . . :	15.35 (m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	68.	0.
Ictalurus nebulosus	13.	0.
Salvelinus fontinalis	303.	2.08
Rhinichthys atratulus	2520.	16.08
Notropis cornutus	220.	2.13
Notemigonus crysoleucas	41.	0.
Fundulus diaphanus	13.	0.
Rhinichthys cataractae	413.	4.28
Lepomis gibbosus	13.	0.
Salmo salar	151.	0.
Petromyzon marinus	13.	0.
Catastomus commersoni	82.	0.

STREAM NAME : FOOTE SAWMILL BROOK SITE #: 1115
SITE DESCRIPTION: SOUTH SIDE OF RTE 94 CROSSING HEBRON RD

SAMPLE LENGTH : 50. SAMPLE DATE: 07/26/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	32.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.17	0.12
WATER TEMP. . .	27.	(C)	pH . . . . . :	7.07	0.15
VELOCITY. . . .	0.12	(m/s)	COND . . . . . (uS/cm3). . :	171.3	3.21
DISCHARGE . . .	0.038	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	25.03	0.38

	MEAN		STD	
WIDTH. . . . . :	2.58		1.1233	(m)
DEPTH. . . . . :	11.42		8.7145	(cm)
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.242
TYPE THREE SUBSTRATE . . . :	19.0	(%)	AIR/WATER TEMP. RATIO:	1.185
EMBEDDEDNESS OF TYPE THREE :	20.	(%)		
OVERHEAD CANOPY. . . . . :	0.	(%)		
INSTREAM SHELTER . . . . . :	6.26	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	15.	0.
Ictalurus nebulosus	4.	0.
Lepomis macrochirus	42.	3.19
Rhinichthys atratulus	1.	0.
Notropis cornutus	4.	0.
Notemigonus crysoleucas	41.	0.
Micropterus salmoides	11.	0.
Lepomis gibbosus	31.	0.
Erimyzon oblongus	2.	0.
Catastomus commersoni	32.	1.19

STREAM NAME : FRAZER BROOK SITE #: 1079
SITE DESCRIPTION: WEST OF RTE 85 CROSSING TOP OF SITE APPROX 20 M DOWNSTRM OF BRIDGE, SALEM

SAMPLE LENGTH : 50. SAMPLE DATE: 07/06/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :	(C)	DISSOLVED OXYGEN (mg/l). . :	8.95	0.21
WATER TEMP. . . :	(C)	pH . . . . . :	7.15	
VELOCITY. . . . : 0.155	(m/s)	COND . . . . . (uS/cm3). . :	91.	0.0
DISCHARGE . . . : 0.032	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	16.4	

	MEAN	STD	
WIDTH. . . . . :	2.8	0.561	(m)
DEPTH. . . . . :	7.3	5.804	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .: 0.351
TYPE THREE SUBSTRATE . . . :	44.4	(%)	AIR/WATER TEMP. RATIO:
EMBEDDEDNESS OF TYPE THREE :	48.75	(%)	
OVERHEAD CANOPY. . . . . :	100.	(%)	
INSTREAM SHELTER . . . . . :	10.77	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	11.	0.
Lepomis macrochirus	1.	0.
Salvelinus fontinalis	4.	0.
Esox americanus	23.	2.89
Lepomis gibbosus	1.	0.
Etheostoma olmstedi	3.	0.

STREAM NAME : FRENCH BROOK SITE #: 1114
SITE DESCRIPTION: UPSTREAM OF FRENCH RD.,MARLBOROUGH.

SAMPLE LENGTH : 30. SAMPLE DATE: 10/10/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	12. (C)	DISSOLVED OXYGEN (mg/l). . :	10.9	0.1
WATER TEMP. . .	8. (C)	pH . . . . . :	7.13	0.06
VELOCITY. . . .	0.128 (m/s)	COND . . . . . (uS/cm3). . :	70.33	0.58
DISCHARGE . . .	0.294 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	1.	0.2

	MEAN	STD	
WIDTH. . . . . :	1.97	0.34	(m)
DEPTH. . . . . :	11.042	10.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	1.142
TYPE THREE SUBSTRATE . . . :	16.6	(%)	AIR/WATER TEMP. RATIO:	1.5
EMBEDDEDNESS OF TYPE THREE :	50.	(%)		
OVERHEAD CANOPY. . . . . :	97.	(%)		
INSTREAM SHELTER . . . . . :	7.39	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Ictalurus nebulosus	2.	0.
Rhinichthys atratulus	4.	0.
Etheostoma olmstedi	1.	0.

STREAM NAME : FRESHWATER BROOK SITE #: 1000
SITE DESCRIPTION: UPSTREAM OF PALOMHA DR. ENFIELD, CHANNALIZED STORM CHANNEL

SAMPLE LENGTH : 100. SAMPLE DATE: 09/11/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	28. (C)	DISSOLVED OXYGEN (mg/l). . :	8.8	0.1
WATER TEMP. . .	21. (C)	pH . . . . . :	7.4	0.0
VELOCITY. . . .	0.19 (m/s)	COND . . . . . (uS/cm3). . :	396.7	5.77
DISCHARGE . . .	0.084 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	49.2	0.45

	MEAN	STD	
WIDTH. . . . . :	3.97	0.53	(m)
DEPTH. . . . . :	9.775	6.93	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	0.0
TYPE THREE SUBSTRATE . . . :	0.	(%)	AIR/WATER TEMP. RATIO:	1.33
EMBEDDEDNESS OF TYPE THREE :	0.	(%)		
OVERHEAD CANOPY. . . . . :	14.	(%)		
INSTREAM SHELTER . . . . . :	14.3	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Lepomis macrochirus	1.	0.
Unknown Centrachid	16.	0.
Unknown Cyprinid	1.	0.
Semotilus corporalis	0.	0.
Esox americanus	5.	0.
Micropterus salmoides	7.	0.
Lepomis gibbosus	5.	0.
Etheostoma olmstedi	44.	7.97
Catastomus commersoni	0.	0.

STREAM NAME : GAGES BROOK SITE #: 1111
SITE DESCRIPTION: UPSTREAM OF RTE. 84, VERNON

SAMPLE LENGTH : 52. SAMPLE DATE: 08/31/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	21.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.83	0.12
WATER TEMP. . .	17.	(C)	pH . . . . . :	7.27	0.06
VELOCITY. . . .	0.112	(m/s)	COND . . . . . (uS/cm3). . :	129.3	16.74
DISCHARGE . . .	0.02	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.83	0.55

	MEAN	STD	
WIDTH. . . . . :	1.96	0.69	(m)
DEPTH. . . . . :	8.9	5.9	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.401
TYPE THREE SUBSTRATE . . . :	21.4	(%)	AIR/WATER TEMP. RATIO:	1.272
EMBEDDEDNESS OF TYPE THREE :	60.	(%)		
OVERHEAD CANOPY. . . . . :	66.	(%)		
INSTREAM SHELTER . . . . . :	2.00	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Salvelinus fontinalis	12.	0.
Rhinichthys atratulus	134.	0.
Pimephales promelas	3.	0.
Micropterus salmoides	1.	0.
Lepomis gibbosus	2.	0.
Catastomus commersoni	9.	0.

STREAM NAME : GREAT BROOK SITE #: 1078
SITE DESCRIPTION: OFF WIG RD. IN CHESTER ON NORTH SIDE OF BRIDGE CROSSING

SAMPLE LENGTH : 100. SAMPLE DATE: 06/29/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :21.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.23	0.06
WATER TEMP. . . :22.	(C)	pH . . . . . :	6.8	0.
VELOCITY. . . . : 0.315	(m/s)	COND . . . . . (uS/cm3). . :	58.33	0.58
DISCHARGE . . . : 0.207	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.63	0.40

	MEAN	STD	
WIDTH. . . . . :	4.86	0.89	(m)
DEPTH. . . . . :	13.5	12.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	5.410
TYPE THREE SUBSTRATE . . . :	2.6 (%)	AIR/WATER TEMP. RATIO:	0.976
EMBEDDEDNESS OF TYPE THREE :	60. (%)		
OVERHEAD CANOPY. . . . . :	100. (%)		
INSTREAM SHELTER . . . . . :	8.69 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	42.	1.89
Rhinichthys atratulus	35.	2.65
Semotilus corporalis	50.	8.60
Rhinichthys cataractae	4.	0.

STREAM NAME : GREEN RIVER TRIB SITE #: 1064
SITE DESCRIPTION: AT END OF CHAMPION HILL RD E. HAMPTON SITE FROM OLD BRIDGE 50M UPSTREAM

SAMPLE LENGTH : 50. SAMPLE DATE: 06/15/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	13. (C)	DISSOLVED OXYGEN (mg/l). . :	9.93	0.06
WATER TEMP. . .	13. (C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	0.167 (m/s)	COND . . . . . (uS/cm3). . :	29.67	0.58
DISCHARGE . . .	0.044 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.33	0.15

	MEAN	STD	
WIDTH. . . . . :	2.2	0.46	(m)
DEPTH. . . . . :	13.	11.36	(cm)

DOMINANT SUBSTRATE TYPE. . :	5	POOL/RIFFLE RATIO . .:	3.504
TYPE THREE SUBSTRATE . . . :	27.2 (%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	91.667 (%)		
OVERHEAD CANOPY. . . . . :	100. (%)		
INSTREAM SHELTER . . . . . :	3.91 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
No Fish	0.	0.

STREAM NAME : GULF STREAM SITE #: 1004
SITE DESCRIPTION: OFF GULF RD IN SOMERS, UPPER END OF SITE APPROX 20M DOWNSTREAM OF CROSSING

SAMPLE LENGTH : 150. SAMPLE DATE: 06/19/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.8	0.3
WATER TEMP. . .	16.	(C)	pH . . . . . :	6.87	0.0577
VELOCITY. . . .	0.36	(m/s)	COND . . . . . (uS/cm3). . :	47.67	1.5275
DISCHARGE . . .	0.18	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	5.3	0.2

	MEAN	STD	
WIDTH. . . . . :	5.23	1.16	(m)
DEPTH. . . . . :	13.6	12.51	(cm)

DOMINANT SUBSTRATE TYPE. . : 4 POOL/RIFFLE RATIO . .: 0.8963
TYPE THREE SUBSTRATE . . . : 7.9 (%) AIR/WATER TEMP. RATIO: 1.375
EMBEDDEDNESS OF TYPE THREE : 45. (%)
OVERHEAD CANOPY. . . . . : 87.5 (%)
INSTREAM SHELTER . . . . . : 13.44 (m2)

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Lepomis macrochirus	1.	0.
Salvelinus fontinalis	51.	3.7
Rhinichthys atratulus	24.	2.8
Notemigonus crysoleucas	1.	0.
Lepomis gibbosus	3.	0.
Cottus cognatus	37.	8.8

STREAM NAME : HATCHERY BROOK SITE #: 1060
SITE DESCRIPTION: DOWNSTREAM OF CROSSING ON NORTON RD IN BERLIN, ACROSS FROM LION'S CLUB POOL

SAMPLE LENGTH : 100. SAMPLE DATE: 06/22/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.2	0.15
WATER TEMP. . .	19.0	(C)	pH . . . . . :	7.9	0.06
VELOCITY. . . .	0.44	(m/s)	COND . . . . . (uS/cm3). . :	210.	0.0
DISCHARGE . . .	0.23	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	102.57	2.15

	MEAN	STD	
WIDTH. . . . . :	4.47	1.36	(m)
DEPTH. . . . . :	13.4	8.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.18
TYPE THREE SUBSTRATE . . . :	0.21	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE :	37.86	(%)		
OVERHEAD CANOPY. . . . . :	95.00	(%)		
INSTREAM SHELTER . . . . . :	5.43	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	313.	1.31
Salvelinus fontinalis	201.	0.
Rhinichthys atratulus	2214.	17.01
Salmo trutta	536.	3.66
Unknown Cyprinid	44.	0.
Fundulus diaphanus	22.	0.
Catastomus commersoni	44.	0.

STREAM NAME : HEMLOCK VALLEY BROOK SITE #: 1077
SITE DESCRIPTION: UPSTREAM OF HEMLOCK VALLEY ROAD HADLYME

SAMPLE LENGTH : 100. SAMPLE DATE: 07/31/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :23.	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . . :19.	(C)	pH . . . . . :	7.5	0.0
VELOCITY. . . . : 0.312	(m/s)	COND . . . . . (uS/cm3). . :	62.	0.0
DISCHARGE . . . : 0.077	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	13.57	0.12

	MEAN	STD	
WIDTH. . . . . :	3.41	0.68	(m)
DEPTH. . . . . :	7.9	8.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 0.479
TYPE THREE SUBSTRATE . . . :	4.0	(%)	AIR/WATER TEMP. RATIO: 1.210
EMBEDDEDNESS OF TYPE THREE :	30.	(%)	
OVERHEAD CANOPY. . . . . :	97.5	(%)	
INSTREAM SHELTER . . . . . :	6.85	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	132.	13.16
Lepomis macrochirus	5.	0.
Salvelinus fontinalis	3.	0.
Rhinichthys atratulus	129.	18.20
Salmo trutta	15.	0.
Unknown Cyprinid	2.	0.
Micropterus salmoides	1.	0.
Lepomis gibbosus	1.	0.
Salmo salar	2.	0.
Etheostoma olmstedi	2.	0.

STREAM NAME : HOCKANUM RIVER SITE #: 1086
SITE DESCRIPTION: Upstream of Hilliard Rd, Manchester, near East Catholic High.

SAMPLE LENGTH : SAMPLE DATE:

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :	(C)	DISSOLVED OXYGEN (mg/l). . :	7.00	
WATER TEMP. . . :	(C)	pH . . . . . :	6.90	
VELOCITY. . . . :	(m/s)	COND . . . . . (uS/cm3). . :	110.00	
DISCHARGE . . . :	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	30.00	

	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 SIZE	STANDARD ERROR
Not Sampled		

STREAM NAME : HOCKANUM RIVER SITE #: 1010
SITE DESCRIPTION: BEHIND "CONN GOLF LAND" ON RTE 83 IN VERNON, SITE UPSTREAM OF TANKERHOOSEN R. CONFLUENCE.

SAMPLE LENGTH : 150. SAMPLE DATE: 08/31/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :25.	(C)	DISSOLVED OXYGEN (mg/l). . :	5.133	0.06
WATER TEMP. . . :19.	(C)	pH . . . . . :	7.	0.
VELOCITY. . . . : 0.361	(m/s)	COND . . . . . (uS/cm3). . :	186.3	1.53
DISCHARGE . . . : 1.267	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	40.77	0.51

	MEAN	STD	
WIDTH. . . . . :	9.81	1.05	(m)
DEPTH. . . . . :	32.33	18.17	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	54.8 (%)	AIR/WATER TEMP. RATIO:	1.3158
EMBEDDEDNESS OF TYPE THREE :	66. (%)		
OVERHEAD CANOPY. . . . . :	53. (%)		
INSTREAM SHELTER . . . . . :	374.54 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	9.	0.
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	3.	0.
Rhinichthys atratulus	6.	0.
Cyprinus carpio	16.	0.
Notropis cornutus	26.	7.15
Unknown Cyprinid	18.	6.65
Semotilus corporalis	187.	56.94
Rhinichthys cataractae	19.	3.04
Micropterus salmoides	1.	0.
Lepomis gibbosus	3.	0.
Notropis hudsonius	1.	0.
Etheostoma olmstedi	17.	0.
Catastomus commersoni	127.	8.81

STREAM NAME : HUBBARD BROOK SITE #: 1016
SITE DESCRIPTION: DIRT RD OFF OLD MAIN ST GLASTONBURY, PAUL LONGWOOD PROPERTY , LOW GRADIENT MEAD.

SAMPLE LENGTH : 155. SAMPLE DATE: 09/13/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	22.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.1	0.0
WATER TEMP. . .	23.0	(C)	pH . . . . . :	7.6	0.0
VELOCITY. . . .	0.08	(m/s)	COND . . . . . (uS/cm3). . :	249.	1.2
DISCHARGE . . .	0.12	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	48.90	2.87

	MEAN	STD	
WIDTH. . . . . :	5.29	0.95	(m)
DEPTH. . . . . :	18.6	13.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	0.96
EMBEDDEDNESS OF TYPE THREE :	0.00	(%)		
OVERHEAD CANOPY. . . . . :	35.9	(%)		
INSTREAM SHELTER . . . . . :	221.2	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	4622.	20.2
Lepomis macrochirus	341.	1.97
Rhinichthys atratulus	0.	0.
Cyprinus carpio	1109.	1.69
Unknown Centrachid	2744.	26.13
Notropis cornutus	12.	0.
Unknown Cyprinid	109.	0.
Semotilus corporalis	158.	0.
Apeltes quadracus	8890.	358.29
Esox americanus	707.	0.
Notemigonus crysoleucas	73.	0.
Micropterus salmoides	256.	2.07
Umbra limi	646.	1.8
Esox lucius	12.	0.
Lepomis gibbosus	134.	0.
Lepomis auritus	0.	0.
Petromyzon marinus	121.	0.
Etheostoma olmstedi	9390.	371.80
Catastomus commersoni	73.	0.
Perca flavescens	195.	0.

STREAM NAME : HUBBARD BROOK TRIB SITE #: 1117
SITE DESCRIPTION: UPSTREAM OF JCT W/ HUBBARD BROOK 50M UPSTREAM OF AIRPORT RD BRIDGE

SAMPLE LENGTH : 50. SAMPLE DATE: 06/28/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:20. (C)	DISSOLVED OXYGEN (mg/l). . :	9.26	0.06
WATER TEMP. . .	:17. (C)	pH . . . . . :	7.1	0.0
VELOCITY. . . .	: 0.094 (m/s)	COND . . . . . (uS/cm3). . :	75.67	0.58
DISCHARGE . . .	: 0.014 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	5.16	0.06

	MEAN	STD	
WIDTH. . . . . :	1.93	0.5417	(m)
DEPTH. . . . . :	7.4	6.8754	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .: 0.779
TYPE THREE SUBSTRATE . . . :	7.7	(%)	AIR/WATER TEMP. RATIO: 1.176
EMBEDDEDNESS OF TYPE THREE :	50.	(%)	
OVERHEAD CANOPY. . . . . :	100.	(%)	
INSTREAM SHELTER . . . . . :	6.86	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	10.	0.
Ictalurus nebulosus	0.	0.
Salvelinus fontinalis	71.	0.
Rhinichthys atratulus	6.	0.
Petromyzon marinus	0.	0.

STREAM NAME : HUNGERFORD BROOK SITE #: 1100
SITE DESCRIPTION: OFF RTE 82 APPROX 200 M DOWNSTREAM OF CROSSING, HADLYME

SAMPLE LENGTH : 150. SAMPLE DATE: 07/31/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23. (C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	:20. (C)	pH . . . . . :	7.3	0.0
VELOCITY. . . .	: 0.162 (m/s)	COND . . . . . (uS/cm3). . :	48.	0.0
DISCHARGE . . .	: 0.035 (m3/s)	ALKALINITY .(mg CaCO3 eq/1):	12.4	0.81

	MEAN	STD	
WIDTH. . . . . :	3.23	0.50	(m)
DEPTH. . . . . :	6.8	6.23	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		
TYPE THREE SUBSTRATE . . . :	0.	(%)	
EMBEDDEDNESS OF TYPE THREE :	0.	(%)	
OVERHEAD CANOPY. . . . . :	90.	(%)	
INSTREAM SHELTER . . . . . :	1.83	(m2)	

POOL/RIFFLE RATIO . .: 0.068
AIR/WATER TEMP. RATIO: 1.15

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	25.	0.
Rhinichthys atratulus	186.	2.85
Unknown Cyprinid	14.	0.
Rhinichthys cataractae	112.	6.31

STREAM NAME : JAWBUCK BROOK SITE #: 1053
SITE DESCRIPTION: DOWNSTREAM OF BROOK RD CROSSING, ENFIELD RESIDENTIAL AREA WITH WIDE RIPARIAN AREA

SAMPLE LENGTH : 100. SAMPLE DATE: 06/26/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.	(C)	DISSOLVED OXYGEN (mg/l). . :	7.8	0.1
WATER TEMP. . .	22.	(C)	pH . . . . . :	7.03	0.12
VELOCITY. . . .	0.278	(m/s)	COND . . . . . (uS/cm3). . :	156.	1.0
DISCHARGE . . .	0.166	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	26.63	0.67

	MEAN	STD	
WIDTH. . . . . :	2.9	0.45	(m)
DEPTH. . . . . :	21.2	15.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	0.653
TYPE THREE SUBSTRATE . . . :	18.0	(%)	AIR/WATER TEMP. RATIO:	1.045
EMBEDDEDNESS OF TYPE THREE :	62.5	(%)		
OVERHEAD CANOPY. . . . . :	98.7	(%)		
INSTREAM SHELTER . . . . . :	28.73	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	3.	0.
Salvelinus fontinalis	0.	0.
Rhinichthys atratulus	260.	31.21
Semotilus corporalis	15.	0.
Rhinichthys cataractae	35.	7.28
Catastomus commersoni	2.	0.

STREAM NAME : JEREMY RIVER SITE #: 1027

SITE DESCRIPTION: NORTH OF BRIDGE CROSSING AT END OF GRAYVILLE RD.
HEBRON, CT

SAMPLE LENGTH : 150. SAMPLE DATE: 07/07/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.5	0.
WATER TEMP. . .	24.	(C)	pH . . . . . :	6.93	0.06
VELOCITY. . . .	0.22	(m/s)	COND . . . . . (uS/cm3). . :	69.	1.
DISCHARGE . . .	0.324	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	14.27	0.70

	MEAN	STD	
WIDTH. . . . . :	8.68	3.14	(m)
DEPTH. . . . . :	30.3	17.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 3.967
TYPE THREE SUBSTRATE . . . :	14.5	(%)	AIR/WATER TEMP. RATIO: 1.083
EMBEDDEDNESS OF TYPE THREE :	51.5	(%)	
OVERHEAD CANOPY. . . . . :	92.5	(%)	
INSTREAM SHELTER . . . . . :	50.58	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	24.	2.80
Ictalurus nebulosus	4.	0.
Lepomis macrochirus	5.	0.
Salvelinus fontinalis	1.	0.
Salmo trutta	3.	0.
Unknown Centrachid	1.	0.
Esox niger	18.	3.92
Notropis cornutus	5.	0.
Semotilus corporalis	12.	3.20
Notemigonus crysoleucas	12.	0.
Rhinichthys cataractae	16.	0.
Lepomis gibbosus	19.	2.11
Etheostoma olmstedi	39.	9.47
Catastomus commersoni	15.	0.
Perca flavescens	3.	0.

STREAM NAME : KETCH BROOK SITE #: 1169
SITE DESCRIPTION: UPSTREAM OF RAILROAD BRIDGE, MANCHESTER SAND AND GRAVEL, E. WINDSOR

SAMPLE LENGTH : 165. SAMPLE DATE: 09/25/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:19. (C)	DISSOLVED OXYGEN (mg/l). . :	10.5	0.17
WATER TEMP. . .	:16. (C)	pH . . . . . :	7.43	0.21
VELOCITY. . . .	: 0.447 (m/s)	COND . . . . . (uS/cm3). . :	157.3	1.15
DISCHARGE . . .	:0.229 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	37.8	1.15

	MEAN	STD	
WIDTH. . . . . :	5.98	1.03	(m)
DEPTH. . . . . :	16.7	14.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	0.875
TYPE THREE SUBSTRATE . . . :	9.5 (%)	AIR/WATER TEMP. RATIO:	1.187
EMBEDDEDNESS OF TYPE THREE :	32.5 (%)		
OVERHEAD CANOPY. . . . . :	95. (%)		
INSTREAM SHELTER . . . . . :	41.99 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	189.	31.43
Lepomis macrochirus	2.	0.
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	299.	29.34
Salmo trutta	40.	1.17
Cyprinus carpio	0.	0.
Unknown Centrachid	1.	0.
Unknown Cyprinid	3.	0.
Rhinichthys cataractae	68.	13.35
Micropterus salmoides	0.	0.
Catastomus commersoni	7.	1.38

STREAM NAME : KETCH BROOK SITE #: 1008
SITE DESCRIPTION: UPSTREAM OF RYE RD IN EAST WINDSOR STOCKED PRIVATELY WITH BROWN TROUT,F.FAY PROP

SAMPLE LENGTH : 150. SAMPLE DATE: 09/18/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	18. (C)	DISSOLVED OXYGEN (mg/l). . :	9.6	0.
WATER TEMP. . .	17. (C)	pH . . . . . :	7.8	0.
VELOCITY. . . .	0.227 (m/s)	COND . . . . . (uS/cm3). . :	224.3	1.1547
DISCHARGE . . .	0.27 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	69.83	1.6623

	MEAN	STD	
WIDTH. . . . . :	6.02	1.62	(m)
DEPTH. . . . . :	20.73	16.67	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	1.0671
TYPE THREE SUBSTRATE . . . :	6.1 (%)	AIR/WATER TEMP. RATIO:	1.0588
EMBEDDEDNESS OF TYPE THREE :	31.071 (%)		
OVERHEAD CANOPY. . . . . :	(%)		
INSTREAM SHELTER . . . . . :	62.3 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	123.	41.99
Lepomis macrochirus	40.	3.25
Salvelinus fontinalis	5.	0.
Salmo trutta	198.	8.15
Esox americanus	1.	0.
Rhinichthys cataractae	15.	2.21
Micropterus salmoides	2.	0.
Umbra limi	1.	0.
Lepomis gibbosus	2.	0.
Petromyzon marinus	2.	0.
Catastomus commersoni	7.	0.

STREAM NAME : LONG HILL BROOK SITE #: 1061
SITE DESCRIPTION: UPPER END OF SITE IS 30 METERS DOWNSTREAM FROM CROSSING WITH RTE 17 IN MIDDLETOWN

SAMPLE LENGTH : 100. SAMPLE DATE: 07/19/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :	(C)	DISSOLVED OXYGEN (mg/l). . :	7.6	0.1
WATER TEMP. . . :21.	(C)	pH . . . . . :	7.5	0.0
VELOCITY. . . . : 0.185	(m/s)	COND . . . . . (uS/cm3). . :	161.	0.0
DISCHARGE . . . : 0.059	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	53.7	0.59

	MEAN	STD	
WIDTH. . . . . :	3.25	0.56	(m)
DEPTH. . . . . :	9.85	7.56	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	1.079
TYPE THREE SUBSTRATE . . . :	34.7 (%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :	76.875 (%)		
OVERHEAD CANOPY. . . . . :	36. (%)		
INSTREAM SHELTER . . . . . :	7.56 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	9.	0.
Lepomis macrochirus	12.	0.
Esox americanus	1.	0.
Micropterus salmoides	10.	1.31
Catastomus commersoni	49.	1.83

STREAM NAME : LYDALL BROOK SITE #: 1112
SITE DESCRIPTION: AT INTERSECTION OF VERNON ST. AND LYDALL ST.
MANCHESTER-UPSTREAM OF BRIDGE

SAMPLE LENGTH : 120. SAMPLE DATE: 07/06/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:24. (C)	DISSOLVED OXYGEN (mg/1). . :	9.23	0.06
WATER TEMP. . .	:22. (C)	pH . . . . . :	7.33	0.06
VELOCITY. . . .	: 0.286 (m/s)	COND . . . . . (uS/cm3). . :	117.7	0.58
DISCHARGE . . .	: 0.169 (m3/s)	ALKALINITY .(mg CaCO3 eq/1):	11.47	0.50

	MEAN	STD	
WIDTH. . . . . :	3.86	0.70	(m)
DEPTH. . . . . :	14.6	11.9	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	0.616
TYPE THREE SUBSTRATE . . . :	28.0 (%)	AIR/WATER TEMP. RATIO:	1.091
EMBEDDEDNESS OF TYPE THREE :	52.98 (%)		
OVERHEAD CANOPY. . . . . :	56. (%)		
INSTREAM SHELTER . . . . . :	8.84 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Ictalurus nebulosus	4.	0.
Lepomis macrochirus	1.	0.
Rhinichthys atratulus	1.	0.
Esox niger	5.	0.
Oncorhynchus mykiss	1.	0.
Perca flavescens	4.	0.

STREAM NAME : MARSH BROOK SITE #: 1012
SITE DESCRIPTION: UPSTREAM OF RTE 83, ELLINGTON

SAMPLE LENGTH : 50. SAMPLE DATE: 10/05/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	15.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.87	0.12
WATER TEMP. . .	10.	(C)	pH . . . . . :	7.67	0.06
VELOCITY. . . .	0.1	(m/s)	COND . . . . . (uS/cm3). . :	140.	0.0
DISCHARGE . . .	0.01	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	39.17	0.57

	MEAN	STD			
WIDTH. . . . . :	1.405	0.2114	(m)		
DEPTH. . . . . :	7.275	6.3367	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.213	
TYPE THREE SUBSTRATE . . . :	22.2	(%)	AIR/WATER TEMP. RATIO:	1.5	
EMBEDDEDNESS OF TYPE THREE :	37.5	(%)			
OVERHEAD CANOPY. . . . . :	73.44	(%)			
INSTREAM SHELTER . . . . . :	0.13	(m2)			

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Rhinichthys atratulus	64.	2.52
Unknown Cyprinid	28.	0.

STREAM NAME : MATTABESSET RIVER SITE #: 1088
SITE DESCRIPTION: UPSTREAM OF RTE 71-1 PARALLEL TO VALLEY RD, BERLIN

SAMPLE LENGTH : 150. SAMPLE DATE: 08/22/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0	(C)	DISSOLVED OXYGEN (mg/l). . :	8.3	0.2
WATER TEMP. . .	21.5	(C)	pH . . . . . :	7.3	0.1
VELOCITY. . . .	0.16	(m/s)	COND . . . . . (uS/cm3). . :	174.67	2.31
DISCHARGE . . .	0.30	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	74.63	3.36

	MEAN	STD	
WIDTH. . . . . :	9.28	3.18	(m)
DEPTH. . . . . :	23.9	22.4	(cm)

DOMINANT SUBSTRATE TYPE. . :	4.		POOL/RIFFLE RATIO . .:	1.21
TYPE THREE SUBSTRATE . . . :	0.00	(%)	AIR/WATER TEMP. RATIO:	1.16
EMBEDDEDNESS OF TYPE THREE :	0.00	(%)		
OVERHEAD CANOPY. . . . . :	94.00	(%)		
INSTREAM SHELTER . . . . . :	241.16	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	82.	0.
Lepomis macrochirus	443.	2.88
Salvelinus fontinalis	44.	0.
Rhinichthys atratulus	82.	0.
Salmo trutta	82.	0.
Unknown Centrachid	38.	0.
Esox niger	12.	0.
Unknown Cyprinid	12.	0.
Semotilus corporalis	133.	0.
Esox americanus	38.	0.
Notemigonus crysoleucas	95.	0.
Unknown Centrachid Hydrid	6.	0.
Micropterus salmoides	63.	0.
Lepomis gibbosus	107.	0.
Catastomus commersoni	285.	4.55

STREAM NAME : MEADOW BROOK SITE #: 1025
SITE DESCRIPTION: OFF MILL HILL RD, COLCHESTER, DOWNSTREAM OF BRIDGE
THOMAS LEONARD PROPERTIES

SAMPLE LENGTH : 150. SAMPLE DATE: 09/14/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	23. (C)	DISSOLVED OXYGEN (mg/l). .	7.73	0.06
WATER TEMP. . .	20. (C)	pH	6.83	0.15
VELOCITY. . . .	0.139 (m/s)	COND . . . . . (uS/cm3). .	183.7	2.31
DISCHARGE . . .	0.081 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	10.4	0.17

	MEAN	STD	
WIDTH.	4.63	1.00	(m)
DEPTH.	15.8	10.48	(cm)

DOMINANT SUBSTRATE TYPE. .	3	POOL/RIFFLE RATIO . .	3.285
TYPE THREE SUBSTRATE . . .	84.3 3 (%)	AIR/WATER TEMP. RATIO:	1.15
EMBEDDEDNESS OF TYPE THREE	33.704 (%)		
OVERHEAD CANOPY.	76.6 (%)		
INSTREAM SHELTER	111.81 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	20.	2.92
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	1.	0.
Rhinichthys atratulus	8.	0.
Unknown Centrachid	2.	0.
Unknown Cyprinid	1.	0.
Notemigonus crysoleucas	15.	0.
Rhinichthys cataractae	26.	7.15
Micropterus salmoides	1.	0.
Lepomis gibbosus	8.	0.
Salmo salar	1.	0.
Erimyzon oblongus	2.	0.
Etheostoma olmstedi	17.	1.26
Catastomus commersoni	19.	0.

STREAM NAME : MILL BROOK SITE #: 1080
SITE DESCRIPTION: UPSTREAM OF MILL LANE BRIDGE 50 M

SAMPLE LENGTH : 150. SAMPLE DATE: 06/29/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23.0 (C)	DISSOLVED OXYGEN (mg/l). . :	7.2	0.06
WATER TEMP. . .	:22.0 (C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	: 0.143 (m/s)	COND . . . . . (uS/cm3). . :	60.00	0.0
DISCHARGE . . .	: 0.199 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	9.43	0.47

	MEAN	STD	
WIDTH. . . . . :	5.25	0.84	(m)
DEPTH. . . . . :	21.6	20.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	9.0
TYPE THREE SUBSTRATE . . . :	0.56 (%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	47.05 (%)		
OVERHEAD CANOPY. . . . . :	84.00 (%)		
INSTREAM SHELTER . . . . . :	209.74 (m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	2133.	9.66
Alosa pseudiharengus	12.	0.
Ictalurus nebulosus	304.	4.56
Lepomis macrochirus	50.	0.
Cyprinus carpio	0.	0.
Unknown Centrachid	38.	0.
Esox niger	25.	0.
Notemigonus crysoleucas	165.	0.
Fundulus diaphanus	3377.	17.66
Lepomis gibbosus	76.	0.
Lepomis auritus	330.	0.
Petromyzon marinus	12.	0.
Notropis hudsonius	876.	6.27
Etheostoma olmstedi	1434.	11.96
Catastomus commersoni	63.	0.

STREAM NAME : MILL CREEK SITE #: 1099
SITE DESCRIPTION: DOWNSTREAM OF RTE. 154, HADDAM

SAMPLE LENGTH : 100. SAMPLE DATE: 08/23/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.7	0.0
WATER TEMP. . . :		(C)	pH . . . . . :		
VELOCITY. . . . :		(m/s)	COND . . . . . (uS/cm3). . :	70.	0.0
DISCHARGE . . . :		(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.93	1.88

	MEAN	STD	
WIDTH. . . . . :	18.52	5.41	(m)
DEPTH. . . . . :	38.0	27.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	1		POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	14.4	(%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :	73.462	(%)		
OVERHEAD CANOPY. . . . . :	47.	(%)		
INSTREAM SHELTER . . . . . :	1609.8	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	321.	22.74
Lepomis macrochirus	3.	0.
Salmo trutta	1.	0.
Esox americanus	2.	0.
Micropterus salmoides	3.	0.
Lepomis gibbosus	45.	19.09
Lepomis auritus	130.	69.86
Petromyzon marinus	5.	1.35
Etheostoma olmstedi	37.	7.99
Catastomus commersoni	11.	0.
Perca flavescens	1.	0.

STREAM NAME : MILL CREEK SITE #: 1049
SITE DESCRIPTION: PARALLEL TO PARK RD IN HADDAM

SAMPLE LENGTH : 45. SAMPLE DATE: 08/23/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.13	0.06
WATER TEMP. . .	20.	(C)	pH . . . . . :		
VELOCITY. . . .	0.083	(m/s)	COND . . . . . (uS/cm3). . :	72.	0.
DISCHARGE . . .	0.108	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.1	0.26

	MEAN	STD	
WIDTH. . . . . :	6.67	2.11	(m)
DEPTH. . . . . :	17.8	12.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .:	1.173
TYPE THREE SUBSTRATE . . . :	3.5	(%)	AIR/WATER TEMP. RATIO:	1.2
EMBEDDEDNESS OF TYPE THREE :	10.	(%)		
OVERHEAD CANOPY. . . . . :	87.5	(%)		
INSTREAM SHELTER . . . . . :	64.96	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	55.	0.
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	124.	1.64
Salmo trutta	2.	0.
Unknown Cyprinid	6.	0.
Rhinichthys cataractae	39.	2.57
Catastomus commersoni	11.	0.

STREAM NAME : MINE BROOK SITE #: 1065
SITE DESCRIPTION: DOWNSTREAM OF GADPAUNCH RD 50 M, COBALT

SAMPLE LENGTH : 50. SAMPLE DATE: 07/31/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.07	0.06
WATER TEMP. . .	18.	(C)	pH . . . . . :	6.96	0.25
VELOCITY. . . . :		(m/s)	COND . . . . . (uS/cm3). . :	51.33	2.31
DISCHARGE . . . :	0.003	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	11.13	0.31

	MEAN	STD	
WIDTH. . . . . :	1.22	0.67	(m)
DEPTH. . . . . :	5.6	5.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.592
TYPE THREE SUBSTRATE . . . :	22.2	(%)	AIR/WATER TEMP. RATIO:	1.388
EMBEDDEDNESS OF TYPE THREE :	77.5	(%)		
OVERHEAD CANOPY. . . . . :	92.3	(%)		
INSTREAM SHELTER . . . . . :	0.83	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	81.	0.
Salmo trutta	1.	0.

STREAM NAME : MOODUS RIVER SITE #: 1032
SITE DESCRIPTION: OFF RTE 151 MOODUS AT ABANDONED FACTORY SITE (OLD DAM IN STREAM)

SAMPLE LENGTH : 150. SAMPLE DATE: 08/09/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:20. (C)	DISSOLVED OXYGEN (mg/l). . :	9.43	0.15
WATER TEMP. . .	:18. (C)	pH . . . . . :	7.33	0.25
VELOCITY. . . .	: 0.032 (m/s)	COND . . . . . (uS/cm3). . :	71.67	2.89
DISCHARGE . . .	: 0.024 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	11.7	0.3

	MEAN	STD	
WIDTH. . . . . :	5.42	2.14	(m)
DEPTH. . . . . :	12.4	12.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.144
TYPE THREE SUBSTRATE . . . :	21.9	(%)	AIR/WATER TEMP. RATIO:	1.111
EMBEDDEDNESS OF TYPE THREE :	50.	(%)		
OVERHEAD CANOPY. . . . . :	89.	(%)		
INSTREAM SHELTER . . . . . :	49.40	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	36.	0.
Lepomis macrochirus	4.	0.
Rhinichthys atratulus	40.	0.
Salmo trutta	1.	0.
Notropis cornutus	7.	0.
Semotilus corporalis	286.	11.16
Lepomis gibbosus	10.	3.27
Lepomis auritus	1.	0.
Etheostoma olmstedi	35.	0.
Catastomus commersoni	36.	0.

STREAM NAME : MUDDY BROOK SITE #: 1105
SITE DESCRIPTION: UPSTREAM OF DEVILS HOP YARD RD BRIDGE, CASSCADES AND LONG POOLS

SAMPLE LENGTH : 50. SAMPLE DATE: 07/12/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.9	0.1
WATER TEMP. . .	19.	(C)	pH . . . . . :	7.	0.
VELOCITY. . . .	0.07	(m/s)	COND . . . . . (uS/cm3). . :	33.33	1.16
DISCHARGE . . .	0.038	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.23	0.12

	MEAN	STD	
WIDTH. . . . . :	4.02	0.75	(m)
DEPTH. . . . . :	13.1	11.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	2.125
TYPE THREE SUBSTRATE . . . :	6.4	(%)	AIR/WATER TEMP. RATIO:	1.316
EMBEDDEDNESS OF TYPE THREE :	55.	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	5.68	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	20.	0.
Ictalurus nebulosus	2.	0.
Salvelinus fontinalis	13.	0.
Rhinichthys atratulus	19.	0.
Salmo trutta	1.	0.
Rhinichthys cataractae	2.	0.
Catastomus commersoni	5.	0.
Perca flavescens	1.	0.

STREAM NAME : MUDDY GUTTER SITE #: 1063
SITE DESCRIPTION: DOWNSTREAM OF RTE 16, EAST HADDAM.

SAMPLE LENGTH : 50. SAMPLE DATE: 09/27/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	13. (C)	DISSOLVED OXYGEN (mg/l). . :	11.27	0.1528
WATER TEMP. . .	12. (C)	pH . . . . . :	6.7	0.
VELOCITY. . . .	0.194 (m/s)	COND . . . . . (uS/cm3). . :	77.33	1.1547
DISCHARGE . . .	0.13 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	13.6	0.8544

	MEAN	STD	
WIDTH. . . . . :	3.35	0.72	(m)
DEPTH. . . . . :	19.025	14.80	(cm)

DOMINANT SUBSTRATE TYPE. . :	2	POOL/RIFFLE RATIO . .:	2.205
TYPE THREE SUBSTRATE . . . :	23.0 (%)	AIR/WATER TEMP. RATIO:	1.083
EMBEDDEDNESS OF TYPE THREE :	45. (%)		
OVERHEAD CANOPY. . . . . :	87.5 (%)		
INSTREAM SHELTER . . . . . :	6.39 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	21.	1.25
Salvelinus fontinalis	9.	0.
Esox americanus	5.	0.

STREAM NAME : PARMALEE BROOK SITE #: 1071
SITE DESCRIPTION: OFF SAWMILL RD, DURHAM APPROX. 40 M DOWNSTREAM

SAMPLE LENGTH : 100. SAMPLE DATE: 07/11/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26. (C)	DISSOLVED OXYGEN (mg/l). . :	8.63	0.21
WATER TEMP. . .	:21. (C)	pH . . . . . :	7.7	0.
VELOCITY. . . .	: 0.281 (m/s)	COND . . . . . (uS/cm3). . :	173.7	0.57
DISCHARGE . . .	: 0.239 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	59.7	0.72

	MEAN	STD	
WIDTH. . . . . :	8.17	2.04	(m)
DEPTH. . . . . :	11.1	9.8	(cm)

DOMINANT SUBSTRATE TYPE. . :	6	POOL/RIFFLE RATIO . .:	0.434
TYPE THREE SUBSTRATE . . . :	1.6 (%)	AIR/WATER TEMP. RATIO:	1.238
EMBEDDEDNESS OF TYPE THREE :	70. (%)		
OVERHEAD CANOPY. . . . . :	(%)		
INSTREAM SHELTER . . . . . :	43.58 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	7.	0.
Salvelinus fontinalis	1.	0.
Rhinichthys atratulus	398.	20.36
Salmo trutta	2.	0.
Pimephales promelas	1.	0.
Unknown Cyprinid	18.	2.98
Etheostoma olmstedi	4.	0.
Catastomus commersoni	11.	0.

STREAM NAME : PATTACONK BROOK SITE #: 1050
SITE DESCRIPTION: DOWNSTREAM OF WOODEN BRIDGE JUST BELOW PATTACONK RES IN COCKAPONSET STATE FOREST

SAMPLE LENGTH : 50. SAMPLE DATE: 08/01/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.0	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	19.0	(C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	0.068	(m/s)	COND . . . . . (uS/cm3). . :	46.7	0.6
DISCHARGE . . .	0.018	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.43	0.58

	MEAN	STD	
WIDTH. . . . . :	3.88	1.45	(m)
DEPTH. . . . . :	7.3	7.5	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.19
TYPE THREE SUBSTRATE . . . :	0.14	(%)	AIR/WATER TEMP. RATIO:	1.21
EMBEDDEDNESS OF TYPE THREE :	42.50	(%)		
OVERHEAD CANOPY. . . . . :	95.00	(%)		
INSTREAM SHELTER . . . . . :	3.37	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	103.	0.
Lepomis macrochirus	463.	0.
Fundulus diaphanus	103.	0.
Micropterus salmoides	360.	0.
Lepomis gibbosus	360.	1.38

STREAM NAME : PINE BROOK SITE #: 1031
SITE DESCRIPTION: OFF CHESTNUT HILL RD THROUGH MARKHAMS SEPTAGE LAGOONS
APPROXIMATELY 3/4 MILE DOWN DIRT RD

SAMPLE LENGTH : 100. SAMPLE DATE: 08/09/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:23. (C)	DISSOLVED OXYGEN (mg/l). . :	5.6	0.46
WATER TEMP. . .	:25. (C)	pH . . . . . :	6.5	0.1
VELOCITY. . . .	:0.067 (m/s)	COND . . . . . (uS/cm3). . :	60.	0.0
DISCHARGE . . .	: 0.035 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	16.7	0.36

	MEAN	STD	
WIDTH. . . . . :	4.52	2.09	(m)
DEPTH. . . . . :	9.15	10.05	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.6447
TYPE THREE SUBSTRATE . . . :	11.1	(%)	AIR/WATER TEMP. RATIO:	0.92
EMBEDDEDNESS OF TYPE THREE :	21.25	(%)		
OVERHEAD CANOPY. . . . . :	98.	(%)		
INSTREAM SHELTER . . . . . :	20.97	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	41.	9.36
Ictalurus nebulosus	15.	6.6
Rhinichthys atratulus	4.	0.
Semotilus corporalis	8.	0.
Notemigonus crysoleucas	57.	6.83
Lepomis gibbosus	1.	0.

STREAM NAME : PINE BROOK SITE #: 1026
SITE DESCRIPTION: W. SIDE OF CATO CORNER RD, N. WESTCHESTER, SITE FROM BARBED WIRE FENCE 100M UPSTREAM, MEADOW STREAM

SAMPLE LENGTH : 100. SAMPLE DATE: 06/26/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	21. (C)	DISSOLVED OXYGEN (mg/l). . :	8.8	0.17
WATER TEMP. . .	20. (C)	pH . . . . . :	6.2	0.0
VELOCITY. . . .	0.392 (m/s)	COND . . . . . (uS/cm3). . :	62.67	3.21
DISCHARGE . . .	0.377 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.03	0.76

	MEAN	STD	
WIDTH.	3.26	0.76	(m)
DEPTH.	30.6	17.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	3	POOL/RIFFLE RATIO . .:	27.571
TYPE THREE SUBSTRATE . . . :	52.2 (%)	AIR/WATER TEMP. RATIO:	1.05
EMBEDDEDNESS OF TYPE THREE :	39.167 (%)		
OVERHEAD CANOPY. . . . . :	75. (%)		
INSTREAM SHELTER . . . . . :	92.21 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Salvelinus fontinalis	1.	0.
Esox americanus	1.	0.
Micropterus salmoides	2.	0.
Etheostoma olmstedi	1.	0.

STREAM NAME : PODUNK RIVER SITE #: 1085
SITE DESCRIPTION: DOWNSTREAM OF KING RD CROSSING NEAR RTE 291 IN SOUTH WINDSOR.

SAMPLE LENGTH : 150. SAMPLE DATE: 08/08/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :		(C)	DISSOLVED OXYGEN (mg/l). . :	7.1	0.0
WATER TEMP. . . :		(C)	pH . . . . . :	7.3	0.0
VELOCITY. . . . :	0.159	(m/s)	COND . . . . . (uS/cm3). . :	255.	0.0
DISCHARGE . . . :	0.223	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	54.17	0.25

	MEAN	STD	
WIDTH. . . . . :	6.96	1.30	(m)
DEPTH. . . . . :	26.3	23.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	24.
TYPE THREE SUBSTRATE . . . :	0.	(%)	AIR/WATER TEMP. RATIO:	
EMBEDDEDNESS OF TYPE THREE :	0.	(%)		
OVERHEAD CANOPY. . . . . :	85.9	(%)		
INSTREAM SHELTER . . . . . :	189.04	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	67.	6.36
Lepomis macrochirus	32.	3.38
Unknown Centrachid	1.	0.
Notropis cornutus	14.	0.
Semotilus corporalis	81.	0.
Esox americanus	11.	0.
Micropterus salmoides	1.	0.
Umbra limi	4.	0.
Esox lucius	1.	0.
Lepomis gibbosus	73.	41.78
Lepomis auritus	8.	0.
Etheostoma olmstedi	86.	36.54
Catastomus commersoni	52.	3.74

STREAM NAME : PONSET BROOK SITE #: 1048
SITE DESCRIPTION: OFF DISH MILL RD. , HIGGANUM.

SAMPLE LENGTH : 130. SAMPLE DATE: 09/06/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:19. (C)	DISSOLVED OXYGEN (mg/l). . :	10.8	0.0
WATER TEMP. . .	:14. (C)	pH . . . . . :	7.66	0.06
VELOCITY. . . .	: 0.076 (m/s)	COND . . . . . (uS/cm3). . :	74.	0.0
DISCHARGE . . .	: 0.066 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	15.3	0.2

	MEAN	STD	
WIDTH. . . . . :	6.24	1.96	(m)
DEPTH. . . . . :	17.9	20.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	6	POOL/RIFFLE RATIO . .:	0.733
TYPE THREE SUBSTRATE . . . :	0. (%)	AIR/WATER TEMP. RATIO:	1.357
EMBEDDEDNESS OF TYPE THREE :	0. (%)		
OVERHEAD CANOPY. . . . . :	84. (%)		
INSTREAM SHELTER . . . . . :	102.43 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	17.	0.
Lepomis macrochirus	2.	0.
Salvelinus fontinalis	4.	0.
Rhinichthys atratulus	3.	0.
Salmo trutta	4.	0.
Semotilus atromaculatus	3.	0.
Unknown Cyprinid	26.	14.27
Notemigonus crysoleucas	1.	0.
Rhinichthys cataractae	3.	0.
Lepomis gibbosus	13.	0.
Catastomus commersoni	24.	6.75

STREAM NAME : PONSET BROOK SITE #: 1074
SITE DESCRIPTION: ALONG RTE 81 IN HIGGANUM UPSTREAM OF EXIT RAMP #9 OFF RTE 9 SOUTH.

SAMPLE LENGTH : 150. SAMPLE DATE: 06/28/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:25. (C)	DISSOLVED OXYGEN (mg/l). . :	9.37	0.06
WATER TEMP. . .	:21. (C)	pH . . . . . :	6.93	0.06
VELOCITY. . . .	: 0.388 (m/s)	COND . . . . . (uS/cm3). . :	60.	0.0
DISCHARGE . . .	: 0.195 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.33	0.25

	MEAN	STD	
WIDTH. . . . . :	5.39	1.46	(m)
DEPTH. . . . . :	21.0	20.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .: 2.605
TYPE THREE SUBSTRATE . . . :	0.	(%)	AIR/WATER TEMP. RATIO: 1.190
EMBEDDEDNESS OF TYPE THREE :	0.	(%)	
OVERHEAD CANOPY. . . . . :	33.75	(%)	
INSTREAM SHELTER . . . . . :	94.60	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Rhinichthys atratulus	763.	113.18
Salmo trutta	2.	0.
Semotilus atromaculatus	47.	10.56
Notemigonus crysoleucas	1.	0.
Rhinichthys cataractae	36.	13.59
Micropterus salmoides	1.	0.
Lepomis gibbosus	5.	0.
Catastomus commersoni	24.	0.

STREAM NAME : RAYMOND BROOK SITE #: 1092
SITE DESCRIPTION: DOWNSTREAM 10 M FROM GRAYVILLE RD. HEBRON.

SAMPLE LENGTH : 150. SAMPLE DATE: 07/19/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	26. (C)	DISSOLVED OXYGEN (mg/l). . :	9.96	0.06
WATER TEMP. . .	22. (C)	pH . . . . . :	7.1	0.0
VELOCITY. . . .	0.305 (m/s)	COND . . . . . (uS/cm3). . :	70.33	0.58
DISCHARGE . . .	0.617 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	17.03	0.38

	MEAN	STD	
WIDTH. . . . . :	7.76	1.63	(m)
DEPTH. . . . . :	18.5	12.3	(cm)

DOMINANT SUBSTRATE TYPE. . :	5		POOL/RIFFLE RATIO . .: 0.612
TYPE THREE SUBSTRATE . . . :	1.5	(%)	AIR/WATER TEMP. RATIO: 1.181
EMBEDDEDNESS OF TYPE THREE :	70.	(%)	
OVERHEAD CANOPY. . . . . :	91.	(%)	
INSTREAM SHELTER . . . . . :	107.24	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	125.	10.78
Rhinichthys atratulus	98.	11.70
Rhinichthys cataractae	175.	13.15
Catastomus commersoni	36.	2.59

STREAM NAME : RAYMOND BROOK SITE #: 1023
SITE DESCRIPTION: DOWNSTREAM 10 m FROM RTE 85 BRIDGE, HEBRON
OVERGROWN WITH ALDER SLOW LONG POOLS.

SAMPLE LENGTH : 150. SAMPLE DATE: 07/05/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	23. (C)	DISSOLVED OXYGEN (mg/l). .	8.63	0.25
WATER TEMP. . .	21. (C)	pH	7.0	0.0
VELOCITY. . . .	0.075 (m/s)	COND . . . . . (uS/cm3). .	87.33	1.15
DISCHARGE . . .	0.093 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	20.63	0.60

	MEAN	STD	
WIDTH.	5.84	1.50	(m)
DEPTH.	37.8	30.7	(cm)

DOMINANT SUBSTRATE TYPE. .	4	POOL/RIFFLE RATIO . .:	10.538
TYPE THREE SUBSTRATE . . .	12.5 (%)	AIR/WATER TEMP. RATIO:	1.0952
EMBEDDEDNESS OF TYPE THREE	53.333 (%)		
OVERHEAD CANOPY.	84.4 (%)		
INSTREAM SHELTER	547.28 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	23.	0.
Ictalurus nebulosus	2.	0.
Lepomis macrochirus	2.	0.
Salmo trutta	1.	0.
Unknown Centrachid	36.	4.04
Esox americanus	19.	0.
Micropterus salmoides	5.	0.
Lepomis gibbosus	53.	7.05
Perca flavescens	4.	0.

STREAM NAME : RESERVIOR BROOK SITE #: 1019
SITE DESCRIPTION: MESHOMASIC S. F., E. OF PORTLAND RESERVIOR IN PORTLAND

SAMPLE LENGTH : 50. SAMPLE DATE: 06/21/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :	(C)	DISSOLVED OXYGEN (mg/l). . :	11.1	0.36
WATER TEMP. . . :	(C)	pH . . . . . :	4.63	0.06
VELOCITY. . . . :	0.281 (m/s)	COND . . . . . (uS/cm3). . :	29.	0.0
DISCHARGE . . . :	0.103 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	-1.42	0.34

	MEAN	STD	
WIDTH. . . . . :	4.78	1.28	(m)
DEPTH. . . . . :	16.17	12.44	(cm)

DOMINANT SUBSTRATE TYPE. . : 6 POOL/RIFFLE RATIO . .: 0.727
TYPE THREE SUBSTRATE . . . : 1.0 (%) AIR/WATER TEMP. RATIO:
EMBEDDEDNESS OF TYPE THREE : 50. (%)
OVERHEAD CANOPY. . . . . : 100. (%)
INSTREAM SHELTER . . . . . : 15.14 (m2)

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
No Fish	0.	0.

STREAM NAME : ROARING BROOK SITE #: 1037
SITE DESCRIPTION: 30M DOWNSTREAM OF RTE 82 BRIDGE, CHESTER

SAMPLE LENGTH : 60. SAMPLE DATE: 06/21/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :25.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.4	0.26
WATER TEMP. . . :18.	(C)	pH . . . . . :	6.86	0.06
VELOCITY. . . . : 0.291	(m/s)	COND . . . . . (uS/cm3). . :	40.	0.0
DISCHARGE . . . : 0.498	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.43	0.12

	MEAN	STD	
WIDTH. . . . . :	7.84	1.41	(m)
DEPTH. . . . . :	28.0	18.78	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	2.191
TYPE THREE SUBSTRATE . . . :	12.5 (%)	AIR/WATER TEMP. RATIO:	1.388
EMBEDDEDNESS OF TYPE THREE :	35. (%)		
OVERHEAD CANOPY. . . . . :	89. (%)		
INSTREAM SHELTER . . . . . :	59.31 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	68.	5.19
Ictalurus nebulosus	4.	0.
Lepomis macrochirus	3.	0.
Salvelinus fontinalis	2.	0.
Rhinichthys atratulus	33.	1.92
Salmo trutta	4.	0.
Semotilus corporalis	5.	0.
Notemigonus crysoleucas	1.	0.
Rhinichthys cataractae	63.	32.48
Lepomis gibbosus	3.	0.
Petromyzon marinus	16.	0.
Etheostoma olmstedi	15.	0.
Catastomus commersoni	2.	0.

STREAM NAME : ROARING BROOK SITE #: 1090
SITE DESCRIPTION: OLD COOP SAWMILL RD.,GLASTONBURY. WATER COMPANY PROPERTY

SAMPLE LENGTH : 150. SAMPLE DATE: 10/10/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . . :	7.	(C)	DISSOLVED OXYGEN (mg/l). . :	11.2	0.17
WATER TEMP. . . :	7.5	(C)	pH . . . . . :	6.5	0.2
VELOCITY. . . . :	0.096	(m/s)	COND . . . . . (uS/cm3). . :	23.	1.73
DISCHARGE . . . :	0.052	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	8.133	0.42

	MEAN	STD	
WIDTH. . . . . :	4.36	1.18	(m)
DEPTH. . . . . :	12.7	10.5	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.830
TYPE THREE SUBSTRATE . . . :	30.3	(%)	AIR/WATER TEMP. RATIO:	0.933
EMBEDDEDNESS OF TYPE THREE :	28.5	(%)		
OVERHEAD CANOPY. . . . . :	99.	(%)		
INSTREAM SHELTER . . . . . :	20.47	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	2.	0.
Salvelinus fontinalis	9.	0.
Esox niger	5.	0.
Lepomis gibbosus	1.	0.

STREAM NAME : ROARING BROOK SITE #: 1110
SITE DESCRIPTION: UPSTREAM 50 M FROM RTE 17 IN COTTON HOLLOW PRESERVE
GLASTONBURY

SAMPLE LENGTH : 150. SAMPLE DATE: 08/02/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :28.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.2	0.1
WATER TEMP. . . :21.	(C)	pH . . . . . :	7.63	0.06
VELOCITY. . . . : 0.17	(m/s)	COND . . . . . (uS/cm3). . :	118.	0.
DISCHARGE . . . : 0.376	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	19.3	0.17

	MEAN	STD	
WIDTH. . . . . :	10.99	1.13	(m)
DEPTH. . . . . :	19.3	13.1	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 1.152
TYPE THREE SUBSTRATE . . . :	1.1	(%)	AIR/WATER TEMP. RATIO: 1.333
EMBEDDEDNESS OF TYPE THREE :	30.	(%)	
OVERHEAD CANOPY. . . . . :	78.	(%)	
INSTREAM SHELTER . . . . . :	11.67	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	655.	57.59
Lepomis macrochirus	20.	3.83
Rhinichthys atratulus	15.	1.28
Salmo trutta	18.	0.
Notropis cornutus	4.	0.
Unknown Cyprinid	9.	0.
Semotilus corporalis	7.	0.
Rhinichthys cataractae	45.	9.13
Micropterus salmoides	4.	0.
Ambloplites rupestris	5.	0.
Lepomis auritus	38.	2.55
Petromyzon marinus	15.	7.53
Notropis hudsonius	1.	0.
Etheostoma olmstedi	16.	4.
Catastomus commersoni	26.	0.

STREAM NAME : ROARING BROOK SITE #: 1098
SITE DESCRIPTION: PARALLEL TO RTE 82 BRIDGE IN HADDAM

SAMPLE LENGTH : 50. SAMPLE DATE: 07/31/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.47	0.12
WATER TEMP. . .	17.	(C)	pH . . . . . :	6.36	0.06
VELOCITY. . . .	0.061	(m/s)	COND . . . . . (uS/cm3). . :	38.	0.0
DISCHARGE . . .	0.012	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	3.733	0.42

	MEAN	STD	
WIDTH. . . . . :	1.86	0.79	(m)
DEPTH. . . . . :	12.4	10.3	(cm)

DOMINANT SUBSTRATE TYPE. . :	6		POOL/RIFFLE RATIO . .:	0.779
TYPE THREE SUBSTRATE . . . :	0.	(%)	AIR/WATER TEMP. RATIO:	1.470
EMBEDDEDNESS OF TYPE THREE :	0.	(%)		
OVERHEAD CANOPY. . . . . :	66.	(%)		
INSTREAM SHELTER . . . . . :	10.9	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Salvelinus fontinalis	29.	0.
Rhinichthys atratulus	46.	0.

STREAM NAME : ROARING BROOK SITE #: 1018
SITE DESCRIPTION: UPSTREAM 50 M FROM COLD BROOK RD BRIDGE. DOWNSTREAM OF MDC PUMP RESERVIOR.

SAMPLE LENGTH : 155. SAMPLE DATE: 07/11/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	27.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.2	0.0
WATER TEMP. . .	21.	(C)	pH . . . . . :	6.7	0.0
VELOCITY. . . .	0.3	(m/s)	COND . . . . . (uS/cm3). . :	95.	0.0
DISCHARGE . . .	0.875	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	14.1	0.26

	MEAN	STD			
WIDTH. . . . . :	8.35	1.72	(m)		
DEPTH. . . . . :	38.8	22.62	(cm)		
DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.125	
TYPE THREE SUBSTRATE . . . :	8.4	(%)	AIR/WATER TEMP. RATIO:	1.285	
EMBEDDEDNESS OF TYPE THREE :	39.17	(%)			
OVERHEAD CANOPY. . . . . :	82.8	(%)			
INSTREAM SHELTER . . . . . :	467.92	(m2)			

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	87.	25.57
Ictalurus nebulosus	2.	0.
Lepomis macrochirus	1.	0.
Rhinichthys atratulus	11.	0.
Salmo trutta	7.	0.
Unknown Centrachid	3.	0.
Esox niger	1.	0.
Notropis cornutus	2.	0.
Unknown Cyprinid	2.	0.
Semotilus corporalis	26.	5.37
Esox americanus	2.	0.
Micropterus salmoides	6.	0.
Lepomis gibbosus	9.	0.
Ambloplites rupestris	2.	0.
Etheostoma olmstedi	12.	0.
Catastomus commersoni	11.	0.
Perca flavescens	2.	0.

STREAM NAME : S. FORK HOP BROOK SITE #: 1014
SITE DESCRIPTION: PARALLEL TO HARTFORD RD. BEHIND DAIRY MART, MANCHESTER
CHANNALIZED BY BUILDINGS. SHIFTING SAND

SAMPLE LENGTH : 150. SAMPLE DATE: 08/29/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.	(C)	DISSOLVED OXYGEN (mg/l). . :	10.23	0.0577
WATER TEMP. . .	16.	(C)	pH . . . . . :	7.7	0.0
VELOCITY. . . .	0.265	(m/s)	COND . . . . . (uS/cm3). . :	200.	0.0
DISCHARGE . . .	0.237	(m3/s)	ALKALINITY .(mg CaCO3 eq/1):	166.2	211.99

	MEAN	STD	
WIDTH. . . . . :	5.89	1.19	(m)
DEPTH. . . . . :	15.9	14.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.43
TYPE THREE SUBSTRATE . . . :	17.7	(%)	AIR/WATER TEMP. RATIO:	1.5
EMBEDDEDNESS OF TYPE THREE :	46.25	(%)		
OVERHEAD CANOPY. . . . . :	75.	(%)		
INSTREAM SHELTER . . . . . :	35.78	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	13.	0.
Lepomis macrochirus	3.	0.
Rhinichthys atratulus	137.	3.41
Unknown Cyprinid	3.	0.
Notemigonus crysoleucas	1.	0.
Lepomis gibbosus	40.	0.
Catastomus commersoni	55.	1.14
Perca flavescens	1.	0.

STREAM NAME : SAFSTROM BROOK SITE #: 1069
SITE DESCRIPTION: EAST OF DIRT LOT ON WOPOWAG RD IN E. HAMPTON. START WOOD BRIDGE AND GOES UPSTM.

SAMPLE LENGTH : 100. SAMPLE DATE: 06/27/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.66	0.06
WATER TEMP. . .	21.	(C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	0.208	(m/s)	COND . . . . . (uS/cm3). . :	49.67	0.58
DISCHARGE . . .	0.115	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	6.1	0.61

	MEAN	STD	
WIDTH. . . . . :	4.14	0.99	(m)
DEPTH. . . . . :	13.55	9.56	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.802
TYPE THREE SUBSTRATE . . . :	18.1	(%)	AIR/WATER TEMP. RATIO:	1.190
EMBEDDEDNESS OF TYPE THREE :	30.83	(%)		
OVERHEAD CANOPY. . . . . :	100.	(%)		
INSTREAM SHELTER . . . . . :	24.45	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	5.	0.
Salvelinus fontinalis	2.	0.
Rhinichthys atratulus	131.	7.73
Notemigonus crysoleucas	1.	0.
Rhinichthys cataractae	38.	1.18
Salmo salar	8.	0.
Petromyzon marinus	6.	2.29
Catastomus commersoni	12.	0.

STREAM NAME : SALMON BROOK SITE #: 1015
SITE DESCRIPTION: DOWNSTREAM OF BRIDGE CROSSING ON BELL ST. GLASTONBURY, BEHIND HEBRON SCHOOL. OVER GROWN BY ALDERS.

SAMPLE LENGTH : 150. SAMPLE DATE: 07/18/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	23.	(C)	DISSOLVED OXYGEN (mg/l). . :		
WATER TEMP. . .	15.	(C)	pH . . . . . :	7.567	0.06
VELOCITY. . . .	0.374	(m/s)	COND . . . . . (uS/cm3). . :	116.	0.0
DISCHARGE . . .	0.297	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	31.53	0.42

	MEAN	STD	
WIDTH.	4.39	0.73	(m)
DEPTH.	18.6	10.95	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . . :	1.44
TYPE THREE SUBSTRATE . . . :	21.2	(%)	AIR/WATER TEMP. RATIO:	1.59
EMBEDDEDNESS OF TYPE THREE :	45.	(%)		
OVERHEAD CANOPY. . . . . :	84.	(%)		
INSTREAM SHELTER . . . . . :	41.03	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	17.	2.16
Ictalurus nebulosus	1.	0.
Salvelinus fontinalis	312.	25.71
Rhinichthys atratulus	25.	2.06
Micropterus salmoides	10.	0.
Petromyzon marinus	589.	279.33
Catastomus commersoni	9.	0.

STREAM NAME : SALMON BROOK SITE #: 1089
SITE DESCRIPTION: UPSTREAM OF RD IN GLASTONBURY APPROX. 75 M
FROM KEENEY COVE

SAMPLE LENGTH : 150. SAMPLE DATE: 07/18/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	23. (C)	DISSOLVED OXYGEN (mg/l). .	11.1	0.0
WATER TEMP. . .	17. (C)	pH	7.4	0.0
VELOCITY. . . .	0.212 (m/s)	COND . . . . . (uS/cm3). .	130.	0.0
DISCHARGE . . .	0.353 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	33.8	0.52

	MEAN	STD	
WIDTH.	7.61	1.36	(m)
DEPTH.	23.3	17.2	(cm)

DOMINANT SUBSTRATE TYPE. . :	2	POOL/RIFFLE RATIO . .:	0.807
TYPE THREE SUBSTRATE . . . :	14.0 (%)	AIR/WATER TEMP. RATIO:	1.352
EMBEDDEDNESS OF TYPE THREE :	106.67 (%)		
OVERHEAD CANOPY. . . . . :	82.2 (%)		
INSTREAM SHELTER . . . . . :	78.68 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	189.	18.31
Lepomis macrochirus	15.	0.
Rhinichthys atratulus	16.	2.14
Salmo trutta	2.	0.
Unknown Centrachid	1.	0.
Notropis cornutus	43.	2.55
Unknown Cyprinid	7.	0.
Semotilus corporalis	138.	26.46
Esox americanus	1.	0.
Notemigonus crysoleucas	5.	0.
Lota lota	2.	0.
Micropterus salmoides	3.	0.
Umbra limi	2.	0.
Lepomis gibbosus	6.	0.
Ambloplites rupestris	1.	0.
Lepomis auritus	14.	0.
Petromyzon marinus	73.	9.98
Notropis hudsonius	310.	60.86
Etheostoma olmstedi	109.	32.61
Catastomus commersoni	37.	6.34

STREAM NAME : SALMON RIVER SITE #: 1021
SITE DESCRIPTION: AT SALMON RIVER STATE PARK DOWNSTREAM OF RTE 16

SAMPLE LENGTH : 120. SAMPLE DATE: 08/03/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	24.0	(C)	DISSOLVED OXYGEN (mg/l). .	10.1	0.05
WATER TEMP. . .	23.0	(C)	pH	7.6	0.0
VELOCITY. . . .	0.15	(m/s)	COND . . . . . (uS/cm3). .	90.	0.0
DISCHARGE . . .	1.36	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	14.43	0.28

	MEAN	STD	
WIDTH.	23.07	4.49	(m)
DEPTH.	24.3	17.4	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	0.68
TYPE THREE SUBSTRATE . . . :	0.03	(%)	AIR/WATER TEMP. RATIO:	1.04
EMBEDDEDNESS OF TYPE THREE :	41.67	(%)		
OVERHEAD CANOPY. . . . . :	35.	(%)		
INSTREAM SHELTER . . . . . :	254.3	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	209.	8.32
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	32.	12.36
Salvelinus fontinalis	10.	0.
Rhinichthys atratulus	24.	2.16
Salmo trutta	39.	6.02
Esox niger	3.	0.
Notropis cornutus	219.	34.5
Semotilus corporalis	3.	0.
Fundulus diaphanus	1.	0.
Rhinichthys cataractae	322.	76.82
Lepomis gibbosus	1.	0.
Oncorhynchus mykiss	1.	0.
Salmo salar	838.	24.46
Petromyzon marinus	32.	7.33
Micropterus dolomieui	133.	20.30
Etheostoma olmstedi	17.	0.
Catastomus commersoni	67.	6.59

STREAM NAME : SALMON RIVER SITE #: 1022
SITE DESCRIPTION: DOWNSTREAM OF DAY MEADOW BRIDGE AREA

SAMPLE LENGTH : 240. SAMPLE DATE: 08/03/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26.0 (C)	DISSOLVED OXYGEN (mg/l). . :	10.3	0.06
WATER TEMP. . .	:21.0 (C)	pH . . . . . :	7.6	0.06
VELOCITY. . . .	: 0.146 (m/s)	COND . . . . . (uS/cm3). . :	90.	0.0
DISCHARGE . . .	: 0.65 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	15.93	0.15

	MEAN	STD	
WIDTH. . . . . :	20.21	2.68	(m)
DEPTH. . . . . :	21.4	16.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	5	POOL/RIFFLE RATIO . .:	0.98
TYPE THREE SUBSTRATE . . . :	0.07 (%)	AIR/WATER TEMP. RATIO:	1.24
EMBEDDEDNESS OF TYPE THREE :	21.67 (%)		
OVERHEAD CANOPY. . . . . :	57.80 (%)		
INSTREAM SHELTER . . . . . :	207.74 (m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	249.	5.23
Lepomis macrochirus	10.	0.
Salvelinus fontinalis	49.	0.
Rhinichthys atratulus	333.	33.
Salmo trutta	156.	2.79
Esox niger	6.	0.
Notropis cornutus	517.	26.58
Unknown Cyprinid	134.	28.67
Semotilus corporalis	2.	0.
Rhinichthys cataractae	329.	17.43
Micropterus salmoides	37.	0.
Lepomis gibbosus	2.	0.
Oncorhynchus mykiss	16.	0.
Salmo salar	103.	3.08
Petromyzon marinus	103.	0.
Micropterus dolomieui	88.	3.21
Etheostoma olmstedi	80.	12.40
Catastomus commersoni	127.	2.92

STREAM NAME : SAWMILL BROOK SITE #: 1045
SITE DESCRIPTION: BELOW TRIMOUNTAIN BROOK ROAD, DURHAM

SAMPLE LENGTH : 50. SAMPLE DATE: 06/28/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:26. (C)	DISSOLVED OXYGEN (mg/l). . :	8.1	0.1
WATER TEMP. . .	:24. (C)	pH . . . . . :	7.9	0.0
VELOCITY. . . .	: 0.098 (m/s)	COND . . . . . (uS/cm3). . :	169.3	1.15
DISCHARGE . . .	: 0.014 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	59.27	0.21

	MEAN	STD	
WIDTH. . . . . :	2.09	0.55	(m)
DEPTH. . . . . :	7.00	6.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	0.470
TYPE THREE SUBSTRATE . . . :	25.0 (%)	AIR/WATER TEMP. RATIO:	1.083
EMBEDDEDNESS OF TYPE THREE :	0. (%)		
OVERHEAD CANOPY. . . . . :	96.9 (%)		
INSTREAM SHELTER . . . . . :	0.43 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Ictalurus nebulosus	4.	0.
Lepomis macrochirus	13.	1.30
Notropis cornutus	3.	0.
Semotilus corporalis	15.	1.28
Micropterus salmoides	3.	0.
Lepomis gibbosus	4.	0.
Catastomus commersoni	41.	3.93

STREAM NAME : SAWMILL BROOK SITE #: 1043
SITE DESCRIPTION: ALONG BELL ST., MIDDLETOWN

SAMPLE LENGTH : 100. SAMPLE DATE: 08/17/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:25. (C)	DISSOLVED OXYGEN (mg/l). .	: 8.93	0.23
WATER TEMP. . .	:23. (C)	pH	: 7.9	0.0
VELOCITY. . . .	: 0.295 (m/s)	COND . . . . . (uS/cm3). .	: 200.	0.0
DISCHARGE . . .	: 0.169 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	70.03	0.55

	MEAN	STD	
WIDTH.	3.76	0.85	(m)
DEPTH.	15.3	13.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	1.439
TYPE THREE SUBSTRATE . . . :	34.6	(%)	AIR/WATER TEMP. RATIO:	1.087
EMBEDDEDNESS OF TYPE THREE :	28.33	(%)		
OVERHEAD CANOPY. . . . . :	92.	(%)		
INSTREAM SHELTER . . . . . :	30.38	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	10.	0.
Lepomis macrochirus	2.	0.
Rhinichthys atratulus	33.	4.88
Notropis cornutus	91.	32.38
Unknown Cyprinid	9.	0.
Semotilus corporalis	73.	6.12
Rhinichthys cataractae	5.	0.
Micropterus salmoides	5.	0.
Etheostoma olmstedi	9.	0.
Catastomus commersoni	34.	0.

STREAM NAME : SCANTIC RIVER SITE #: 1081
SITE DESCRIPTION: DOWNSTM OF RTE 192 BRIDGE, POWDER MILL POND, SOMERS

SAMPLE LENGTH : 200. SAMPLE DATE: 08/07/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.0 (C)	DISSOLVED OXYGEN (mg/l). .	6.4	1.0
WATER TEMP. . .	23.0 (C)	pH	7.7	0.1
VELOCITY. . . .	0.234 (m/s)	COND . . . . . (uS/cm3). .	190.	0.0
DISCHARGE . . .	0.764 (m3/s)	ALKALINITY .(mg CaCO3 eq/1):	30.87	10.31

	MEAN	STD			
WIDTH.	16.98	5.50	(m)		
DEPTH.	34.9	38.7	(cm)		
DOMINANT SUBSTRATE TYPE. .	3		POOL/RIFFLE RATIO . .:	2.18	
TYPE THREE SUBSTRATE . . .	0.29	(%)	AIR/WATER TEMP. RATIO:	1.08	
EMBEDDEDNESS OF TYPE THREE	58.46	(%)			
OVERHEAD CANOPY.	85.00	(%)			
INSTREAM SHELTER	718.18	(m2)			

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	895.	28.90
Pomoxis nigromaculatus	8.	0.
Lepomis macrochirus	97.	1.18
Rhinichthys atratulus	447.	6.49
Salmo trutta	14.	0.
Notropis cornutus	1684.	282.76
Unknown Cyprinid	103.	1.19
Semotilus corporalis	642.	26.29
Notemigonus crysoleucas	32.	0.
Rhinichthys cataractae	5659.	1220.06
Micropterus salmoides	5.	0.
Lepomis gibbosus	14.	0.
Ambloplites rupestris	41.	3.12
Lepomis auritus	106.	9.93
Petromyzon marinus	35.	0.
Micropterus dolomieui	2.	0.
Notropis hudsonius	2.	0.
Etheostoma olmstedi	147.	8.
Catastomus commersoni	306.	3.
Perca flavescens	8.	0.

STREAM NAME : SCANTIC RIVER SITE #: 1082
SITE DESCRIPTION: UPSTREAM OF KING RD BRIDGE IN SOMERS

SAMPLE LENGTH : 150. SAMPLE DATE: 09/11/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :34.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.7	0.0
WATER TEMP. . . :19.	(C)	pH . . . . . :	7.3	0.0
VELOCITY. . . . : 0.293	(m/s)	COND . . . . . (uS/cm3). . :	90.	0.0
DISCHARGE . . . : 1.038	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	21.23	0.66

	MEAN	STD	
WIDTH. . . . . :	6.15	1.24	(m)
DEPTH. . . . . :	36.4	29.5	(cm)

DOMINANT SUBSTRATE TYPE. . :	2	POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	2.2 (%)	AIR/WATER TEMP. RATIO:	1.789
EMBEDDEDNESS OF TYPE THREE :	20. (%)		
OVERHEAD CANOPY. . . . . :	29.7 (%)		
INSTREAM SHELTER . . . . . :	428.55 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	16.	0.
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	1.	0.
Salvelinus fontinalis	12.	0.
Salmo trutta	5.	0.
Notropis cornutus	255.	22.43
Semotilus corporalis	33.	0.
Esox americanus	21.	0.
Rhinichthys cataractae	29.	2.72
Micropterus salmoides	1.	0.
Lepomis gibbosus	2.	0.
Etheostoma olmstedi	131.	24.38
Catastomus commersoni	38.	3.96

STREAM NAME : SCANTIC RIVER SITE #: 1108
SITE DESCRIPTION: UPSTREAM OF WOODEN ROAD IN EAST WINDSOR

SAMPLE LENGTH : 200. SAMPLE DATE: 07/13/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:24.0 (C)	DISSOLVED OXYGEN (mg/l). . :	8.6	0.0
WATER TEMP. . .	:20.0 (C)	pH . . . . . :	7.5	0.05
VELOCITY. . . .	: 0.247 (m/s)	COND . . . . . (uS/cm3). . :	191.00	0.0
DISCHARGE . . .	: 2.180 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	40.87	0.23

	MEAN	STD	
WIDTH. . . . . :	17.73	3.24	(m)
DEPTH. . . . . :	43.4	31.15	(cm)

DOMINANT SUBSTRATE TYPE. . :	6	POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	0.06 (%)	AIR/WATER TEMP. RATIO:	1.20
EMBEDDEDNESS OF TYPE THREE :	56.00 (%)		
OVERHEAD CANOPY. . . . . :	52.00 (%)		
INSTREAM SHELTER . . . . . :	2082.07 (m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	998.	21.72
Pomoxis nigromaculatus	3.	0.
Lepomis macrochirus	36.	0.
Rhinichthys atratulus	5.	0.
Salmo trutta	28.	0.
Notropis cornutus	5.	0.
Semotilus corporalis	36.	1.30
Esox americanus	16.	0.
Notemigonus crysoleucas	5.	0.
Rhinichthys cataractae	459.	14.21
Ambloplites rupestris	31.	0.
Lepomis auritus	25.	0.
Petromyzon marinus	146.	28.66
Micropterus dolomieui	3.	0.
Notropis hudsonius	73.	0.
Etheostoma olmstedi	428.	36.38
Catastomus commersoni	975.	166.39

STREAM NAME : SUCCOR BROOK SITE #: 1076
SITE DESCRIPTION: UPSTREAM OF LUMBERYARD RD. IN EAST HADDAM, NEAR GOODSPEED OPERA HOUSE.

SAMPLE LENGTH : 100. SAMPLE DATE: 09/27/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	11.	(C)	DISSOLVED OXYGEN (mg/l). . :	11.1	0.
WATER TEMP. . .	13.	(C)	pH . . . . . :	7.2	0.1
VELOCITY. . . .	0.135	(m/s)	COND . . . . . (uS/cm3). . :	80.33	0.58
DISCHARGE . . .	0.106	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	19.23	1.02

	MEAN	STD	
WIDTH. . . . . :	4.86	1.33	(m)
DEPTH. . . . . :	16.8	13.0	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .:	2.225
TYPE THREE SUBSTRATE . . . :	8.8	(%)	AIR/WATER TEMP. RATIO:	0.846
EMBEDDEDNESS OF TYPE THREE :	60.	(%)		
OVERHEAD CANOPY. . . . . :	40.	(%)		
INSTREAM SHELTER . . . . . :	49.47	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	50.	9.37
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	6.	0.
Rhinichthys atratulus	1.	0.
Unknown Centrachid	7.	0.
Esox niger	1.	0.
Semotilus corporalis	182.	76.85
Esox americanus	7.	0.
Notemigonus crysoleucas	17.	0.
Rhinichthys cataractae	7.	0.
Micropterus salmoides	9.	3.21
Umbra limi	1.	0.
Lepomis gibbosus	162.	64.82
Ambloplites rupestris	1.	0.
Lepomis auritus	35.	7.28
Notropis hudsonius	9.	1.36
Etheostoma olmstedi	30.	4.28
Catastomus commersoni	18.	0.

STREAM NAME : SUMNER BROOK SITE #: 1047
SITE DESCRIPTION: UPSTREAM 10M FROM LYCEUM RD BRIDGE. TREE COVERED MEADOW STREAM, MIDDLETOWN

SAMPLE LENGTH : 70. SAMPLE DATE: 06/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:24. (C)	DISSOLVED OXYGEN (mg/l). . :	8.3	0.26
WATER TEMP. . .	:19. (C)	pH . . . . . :	7.66	0.06
VELOCITY. . . .	: 0.217 (m/s)	COND . . . . . (uS/cm3). . :	70.	0.0
DISCHARGE . . .	: 0.253 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	18.47	0.15

	MEAN	STD	
WIDTH. . . . . :	3.67	0.84	(m)
DEPTH. . . . . :	27.7	15.9	(cm)

DOMINANT SUBSTRATE TYPE. . :	4		POOL/RIFFLE RATIO . .: 2.226
TYPE THREE SUBSTRATE . . . :	28.0	(%)	AIR/WATER TEMP. RATIO: 1.263
EMBEDDEDNESS OF TYPE THREE :	29.14	(%)	
OVERHEAD CANOPY. . . . . :	84.4	(%)	
INSTREAM SHELTER . . . . . :	44.64	(m2)	

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	22.	6.47
Salvelinus fontinalis	2.	0.
Rhinichthys atratulus	59.	0.
Salmo trutta	4.	0.
Semotilus corporalis	47.	10.56
Catastomus commersoni	17.	0.

STREAM NAME : TANKERHOOSEN RIVER SITE #: 1013
SITE DESCRIPTION: DOWNSTREAM OF BRIDGE ON BOLTON RD, VERNON

SAMPLE LENGTH : 140. SAMPLE DATE: 08/28/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:20. (C)	DISSOLVED OXYGEN (mg/l). . :	10.23	0.06
WATER TEMP. . .	:15. (C)	pH . . . . . :	7.3	0.0
VELOCITY. . . .	: 0.138 (m/s)	COND . . . . . (uS/cm3). . :	137.3	13.3
DISCHARGE . . .	: 0.113 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	20.67	2.0

	MEAN	STD	
WIDTH. . . . . :	5.05	1.15	(m)
DEPTH. . . . . :	22.6	17.44	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	2.5
TYPE THREE SUBSTRATE . . . :	32.5 (%)	AIR/WATER TEMP. RATIO:	1.33
EMBEDDEDNESS OF TYPE THREE :	47.308 (%)		
OVERHEAD CANOPY. . . . . :	69. (%)		
INSTREAM SHELTER . . . . . :	41.42 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Lepomis macrochirus	31.	7.5
Salvelinus fontinalis	71.	0.
Rhinichthys atratulus	81.	1.75
Salmo trutta	92.	3.23
Esox niger	1.	0.
Semotilus corporalis	13.	0.
Notemigonus crysoleucas	5.	0.
Rhinichthys cataractae	22.	2.09
Micropterus salmoides	17.	2.16
Oncorhynchus mykiss	1.	0.
Etheostoma olmstedi	3.	0.
Catastomus commersoni	9.	0.
Perca flavescens	3.	0.

STREAM NAME : THRASHER BROOK SITE #: 1054
SITE DESCRIPTION: DOWNSTREAM OF KINGS RD. CROSSING, SOMERS

SAMPLE LENGTH : 30. SAMPLE DATE: 09/11/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	:32. (C)	DISSOLVED OXYGEN (mg/l). . :	10.17	0.38
WATER TEMP. . .	:18. (C)	pH . . . . . :		
VELOCITY. . . .	: 0.25 (m/s)	COND . . . . . (uS/cm3). . :	89.67	1.53
DISCHARGE . . .	: 0.124 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	30.07	0.50

	MEAN	STD	
WIDTH. . . . . :	3.54	0.76	(m)
DEPTH. . . . . :	13.9	11.84	(cm)

DOMINANT SUBSTRATE TYPE. . :	2		POOL/RIFFLE RATIO . .:	1.0
TYPE THREE SUBSTRATE . . . :	23.5	(%)	AIR/WATER TEMP. RATIO:	1.77
EMBEDDEDNESS OF TYPE THREE :	72.5	(%)		
OVERHEAD CANOPY. . . . . :	94.	(%)		
INSTREAM SHELTER . . . . . :	2.98	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	1.	0.
Salvelinus fontinalis	55.	3.01
Esox americanus	2.	0.
Etheostoma olmstedi	8.	0.
Catastomus commersoni	6.	0.

STREAM NAME : WATCHAUG BROOK SITE #: 1002
SITE DESCRIPTION: UPSTREAM OFF WATCHAUG RD., SOMERS

SAMPLE LENGTH : 50. SAMPLE DATE: 10/05/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . . :	14. (C)	DISSOLVED OXYGEN (mg/l). . :	8.9	0.1
WATER TEMP. . . :	11. (C)	pH . . . . . :	7.06	0.1155
VELOCITY. . . . :	0.114 (m/s)	COND . . . . . (uS/cm3). . :	109.	0.0
DISCHARGE . . . :	0.151 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	27.33	0.1528

	MEAN	STD	
WIDTH. . . . . :	5.82	1.1788	(m)
DEPTH. . . . . :	36.5	24.177	(cm)

DOMINANT SUBSTRATE TYPE. . :	1	POOL/RIFFLE RATIO . .:	2000.
TYPE THREE SUBSTRATE . . . :	0. (%)	AIR/WATER TEMP. RATIO:	1.2727
EMBEDDEDNESS OF TYPE THREE :	0. (%)		
OVERHEAD CANOPY. . . . . :	83.75 (%)		
INSTREAM SHELTER . . . . . :	600. (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
No Fish	0.	0.

STREAM NAME : WEBSTER BROOK SITE #: 1042
SITE DESCRIPTION: OF KELSEY RD, BEHIND LIQUER STORE

SAMPLE LENGTH : 150. SAMPLE DATE: 09/21/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	26.0	(C)	DISSOLVED OXYGEN (mg/l). . :	9.4	0.1
WATER TEMP. . .	20.0	(C)	pH . . . . . :	8.1	0.0
VELOCITY. . . .	0.20	(m/s)	COND . . . . . (uS/cm3). . :	456.67	2.88
DISCHARGE . . .	0.31	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	175.40	0.50

	MEAN	STD	
WIDTH. . . . . :	5.32	1.279	(m)
DEPTH. . . . . :	26.9	24.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	2.		POOL/RIFFLE RATIO . .:	5.82
TYPE THREE SUBSTRATE . . . :	0.05	(%)	AIR/WATER TEMP. RATIO:	1.30
EMBEDDEDNESS OF TYPE THREE :	50.00	(%)		
OVERHEAD CANOPY. . . . . :	83.00	(%)		
INSTREAM SHELTER . . . . . :	292.86	(m2)		

BIOLOGICAL

SPECIES	POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	375.	1.21
Lepomis macrochirus	25.	0.
Rhinichthys atratulus	50.	0.
Unknown Centrachid	37.	0.
Unknown Cyprinid	12.	0.
Esox americanus	100.	0.
Unknow Centrachid Hybird	87.	0.
Micropterus salmoides	25.	0.
Lepomis gibbosus	250.	1.28
Erimyzon oblongus	25.	0.
Petromyzon marinus	764.	28.13
Etheostoma olmstedi	1040.	3.77
Catastomus commersoni	275.	0.

STREAM NAME : WILLOW BROOK SITE #: 1039
SITE DESCRIPTION: IN WILLOW BROOK PARK DUE EAST OF NEW BRITIAN HIGH SCHOOL, NEW BRITIAN

SAMPLE LENGTH : 150. SAMPLE DATE: 09/12/89

PHYSICAL			CHEMICAL	MEAN	STD
AIR TEMP. . . .	25.	(C)	DISSOLVED OXYGEN (mg/l). . :	9.6	0.26
WATER TEMP. . .	18.	(C)	pH . . . . . :	8.03	0.06
VELOCITY. . . .	0.2	(m/s)	COND . . . . . (uS/cm3). . :	355.7	3.06
DISCHARGE . . .	0.127	(m3/s)	ALKALINITY .(mg CaCO3 eq/l):	124.3	10.26

	MEAN	STD	
WIDTH. . . . . :	5.9	1.55	(m)
DEPTH. . . . . :	10.9	10.165	(cm)

DOMINANT SUBSTRATE TYPE. . :	3		POOL/RIFFLE RATIO . .:	0.825
TYPE THREE SUBSTRATE . . . :	73.3	(%)	AIR/WATER TEMP. RATIO:	1.389
EMBEDDEDNESS OF TYPE THREE :	58.182	(%)		
OVERHEAD CANOPY. . . . . :	81.2	(%)		
INSTREAM SHELTER . . . . . :	16.903	(m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	84.	8.16
Ictalurus nebulosus	1.	0.
Lepomis macrochirus	3.	0.
Rhinichthys atratulus	33.	1.20
Unknown Cyprinid	3.	0.
Esox americanus	2.	0.
Micropterus salmoides	2.	0.
Catastomus commersoni	22.	7.33

STREAM NAME : WINTERGREEN BROOK SITE #: 1113
SITE DESCRIPTION: APPROX. 150M S. OF GOODALE HILL RD.,E. OF INT. WITH THOMPSON ST., GLASTONBURY

SAMPLE LENGTH : 50. SAMPLE DATE: 06/20/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	24. (C)	DISSOLVED OXYGEN (mg/l). . :	10.53	0.06
WATER TEMP. . .	17. (C)	pH . . . . . :	6.8	0.0
VELOCITY. . . .	0.178 (m/s)	COND . . . . . (uS/cm3). . :	39.67	0.58
DISCHARGE . . .	0.052 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	4.93	0.23

	MEAN	STD	
WIDTH. . . . . :	2.12	0.29	(m)
DEPTH. . . . . :	13.5	8.7	(cm)

DOMINANT SUBSTRATE TYPE. . :	2	POOL/RIFFLE RATIO . .:	3.347
TYPE THREE SUBSTRATE . . . :	33.3 (%)	AIR/WATER TEMP. RATIO:	1.382
EMBEDDEDNESS OF TYPE THREE :	51.66 (%)		
OVERHEAD CANOPY. . . . . :	93.75 (%)		
INSTREAM SHELTER . . . . . :	7.88 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	5.	0.
Rhinichthys atratulus	6.	0.
Unknown Cyprinid	1.	0.
Catastomus commersoni	16.	0.

STREAM NAME : WOODS STREAM SITE #: 1055
SITE DESCRIPTION: DOWNSTREAM OF RTE 190 IN SOMERS

SAMPLE LENGTH : 48. SAMPLE DATE: 08/08/89

PHYSICAL		CHEMICAL	MEAN	STD
AIR TEMP. . . .	21. (C)	DISSOLVED OXYGEN (mg/l). . :	7.4	0.44
WATER TEMP. . .	21. (C)	pH . . . . . :	7.3	0.0
VELOCITY. . . .	0.041 (m/s)	COND . . . . . (uS/cm3). . :	228.3	0.58
DISCHARGE . . .	0.029 (m3/s)	ALKALINITY .(mg CaCO3 eq/l):	50.4	0.35

	MEAN	STD	
WIDTH. . . . . :	3.52	0.99	(m)
DEPTH. . . . . :	15.1	12.6	(cm)

DOMINANT SUBSTRATE TYPE. . :	4	POOL/RIFFLE RATIO . .:	2.69
TYPE THREE SUBSTRATE . . . :	14.2 (%)	AIR/WATER TEMP. RATIO:	1.0
EMBEDDEDNESS OF TYPE THREE :	41.25 (%)		
OVERHEAD CANOPY. . . . . :	85.9 (%)		
INSTREAM SHELTER . . . . . :	8.91 (m2)		

BIOLOGICAL

SPECIES	(NUMBER/HA) POPULATION SIZE	STANDARD ERROR
Anguilla rostrata	10.	0.
Ictalurus nebulosus	2.	0.
Lepomis macrochirus	17.	0.
Rhinichthys atratulus	56.	0.
Unknown Centrachid	3.	0.
Notropis cornutus	6.	0.
Semotilus corporalis	20.	2.13
Esox americanus	1.	0.
Notemigonus crysoleucas	3.	0.
Rhinichthys cataractae	14.	0.
Lepomis gibbosus	8.	0.
Etheostoma olmstedi	12.	0.
Catastomus commersoni	18.	0.