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*National Rivers Authority
South Western Region*

DEVON AREA REPORT

River Culm Fisheries Survey 1994

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ENVIRONMENT AGENCY



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RIVER CULM FISHERIES SURVEY 1994

1) INTRODUCTION

A survey of the populations of freshwater fish at selected sites in the Culm river system was carried out in June and July 1994. The aim of the survey was to assess the distribution and abundance of freshwater fish and to compare with results of previous surveys where possible.

Comprehensive surveys of the Culm system have been carried out in 1981 (Hamilton) and 1989. Limited surveys have been carried out in 1977, 1978, 1982, 1984 and 1987.

For a brief description of the catchment see Hamilton (1981).

2) METHODS

A total of twenty six sites were chosen throughout the catchment. ~~Twenty-four sites were~~ surveyed quantitatively, the remaining two, semi-quantitatively. Site selection was based upon physical accessibility, geographical distribution and habitat characteristics. Site distribution and locations are shown in Figure 1. Site details are given in Table 1.

2.1 Site Clustering

Since 1992, routine sampling has included single-run sites in addition to three-run sites. Sites are clustered on a 'target area' basis - one three-run site is associated with up to four single-run sites. A typical 'cluster' will consist of five sites. The three-run site should be fished first, and should be immediately followed by the single-run sites in that cluster. All sites in a cluster should be fished by the same team of people, with each person performing the same task.

2.2 Fieldwork

All sites were fished using a 240 Volt, 500 Watt generator producing pulsed direct current (PDC) via a control box. Fishing was carried out in an upstream direction, using a single anode.

a) Quantitative Surveys.

Quantitative surveys were carried out using a combination of triple and single shock sites. All sites were between 50 and 100 metres in length, isolated by stop nets. All salmonids were counted, measured (to the nearest mm) and identified by species. The numbers of other species were noted but not removed during the electric fishing process. A subjective assessment of numbers of each species was made using the following abundance indicator :-

Present	-	1-10
Common	-	11-100
Abundant	-	>100

b) Semi-quantitative Surveys.

Semi-quantitative sites were fished for a timed period of twenty minutes. Species were handled in the same way as for quantitative sites.

All fish were returned to the watercourse unharmed.

Population estimates for triple shock sites were obtained according to the methods described by Harding et al (1984). For single shock sites, population estimates were made using the multiplication factor ($N/C1$) - where $C1$ = catch one and N = population estimate, derived from the appropriate triple shock site associated with that cluster.

3) RESULTS AND DISCUSSION

The results are given in the form of population densities ($N/100m^2$) in Table 2. Data for salmonid species are split into densities for fry (0+) and combined for older fish (1++). Historic salmonid data is presented in Tables 3 and 4 to allow comparison with data collected in this survey. The presence or absence of non-salmonid species are recorded in Table 2.

3.1 Salmon (Salmo salar,L.)

The River Culm is not considered to be a prime salmon river. Salmon parr were present, in poor numbers, at only one site (site 16, Stoke Canon). As with other migratory species, distribution is affected by the availability of spawning habitat and accessibility. Silverton Mill Weir is impassable to adult salmon, hence the absence of salmon above this point. Downstream of the weir suitable spawning substrate is scarce. Consequently the salmon population is restricted in both distribution and abundance.

3.2 Trout (Salmo trutta,L.)

The distribution of 0+ fish is mainly restricted to the upper reaches of the River Culm (sites 1, 2 & 3) and some of its tributaries (sites 18, 19, 21, 22, 24, 32, 33, 35 & 37). Notable fry densities were recorded in the Lickham Brook (site 21, $22.7/100m^2$), Fulford Water (site 32, $19.7/100m^2$), Colebrook (site 35, $10.36/100m^2$) and Rull Leat (site 33, $5.08/100m^2$). Fry were present in poor densities ($> 2/100m^2$) in the Madford, Sheldon, Weaver and Whitemoor streams (sites 18, 19, 22, 24 & 37). Trout fry were absent from sites 4-16 on the Culm, the Madford (site 17), the Bolham (site 20), the Sheldon (sites 23 & 25), the Spratford (sites 26-29), the Halberton (sites 30 & 31), the Ken (site 34) and the Weaver (site 36). In comparison to historic data the distribution and abundance of trout fry has not varied to any great extent.

In contrast trout parr were absent from just seven locations (sites 12-15) on the River Culm, sites 30 and 31 on the Halberton Stream and site 36 on the River Weaver. Trout parr densities have been reasonably constant over the last ten to fifteen years. Generally, 1994 data indicates an increase in parr abundance compared to that collected in 1989. It can be seen that parr abundance is broadly consistent with the variation that has been shown in previous years.

In most cases the observed densities of 0+ fish are too low to maintain the observed densities of 1++ fish. This situation is similar to that found in previous surveys. It is possible that poor water quality is having a detrimental affect on fry and ova survival rates. 0+ fish are generally more susceptible to reduced water quality than 1++ fish.

3.3 Other Species

Twelve species of fish were caught and these are shown in the list below :-

Bullhead, *Cottus gobio*,L.
Chub, *Leuciscus cephalus*,L.
Dace, *Leuciscus leuciscus*,L.
Gudgeon, *Gobio gobio*,L.
Eel, *Anguilla anguilla*,L.
Minnow, *Phoxinus phoxinus*,L.
Perch, *Perca fluviatilis*,L.
Pike, *Esox lucius*,L.
Roach, *Rutilus rutilus*,L.
Stone loach, *Noemachelius barbatulus*,L.
Stickleback, *Gasterosteus aculeatus*,L.
Rainbow trout, *Oncorhynchus mykiss*,L.

Bullhead, eel, stone loach and minnow were most abundant at the upstream sites (sites 1-9). Both the distribution and abundance of these species declined in a downstream direction. These species were present at the majority of all other sites. This distribution pattern is to be expected

as these species tend to prefer habitats in shallow water with a gravel substrate.

Chub, dace, perch, pike, roach and gudgeon are generally found in areas with extensive pools and runs where there is adequate cover. Consequently the distribution of these species is restricted to the lower reaches of the River Culm (sites 10-16), the Spratford stream (site 29) and the Weaver (site 37).

Rainbow trout were present in large numbers (>100) on the Sheldon stream and were also present in lesser numbers on the Rivers Ken and Weaver. All rainbow trout were removed from the rivers when encountered.

4) CONCLUSIONS

- i) Trout fry distribution is restricted to the upper reaches of the River Culm and a few of its tributaries.
- ii) Trout fry abundance is poor throughout the catchment.
- iii) Trout parr abundance and distribution is broadly consistent with that observed in previous surveys.
- iv) Observed trout fry densities were too low to maintain the observed parr densities.
- v) Salmon abundance and distribution is extremely poor.
- vi) Silverton Mill Weir and the lack of suitable spawning habitat has restricted salmon distribution to the lower reaches of the River Culm.
- vii) The River Culm supports a diverse coarse fish population of eleven species.

5) RECOMMENDATIONS

- i) Further investigative work should be considered to identify the reasons behind the restricted distribution and abundance of trout fry.
- ii) Consideration should be given to installing a fish pass on Silverton Mill Weir to allow increased salmon and sea trout migration.

REFERENCES

HARDING, A.W. HEATHWOOD, R.G HUNT and K.L.Q. READ, 1984. The Estimation of Animal Population Size by the Removal Method. The Journal of the Royal Statistical Society Series C (Applied Statistics). Volume 33, No2, 1984.

HAMILTON, R.M; 1981. South West Water, Fisheries and Recreational Technical Report.

APPENDIX A.

TABLE 1 - SITE DETAIL SHEET

TABLE 2 - SUMMARY SHEET

TABLE 3 - ALL SURVEYS 1977-1994 TROUT DENSITIES

TABLE 4 - ALL SURVEYS 1977-1994 OTHER SPECIES

TABLE 5 - SEMI-QUANTITATIVE RESULTS 1994

TABLE 6 - OTHER SPECIES SUMMARY SHEET 1994

FIGURE 1 - SITE DISTRIBUTION MAP

TABLE 1

RIVER CULM SITE DETAIL SHEET 1994

<u>RIVER</u>	<u>SITE NO</u>	<u>SITE NAME</u>	<u>N.G.R</u>	<u>CLUSTER</u>
CULM	1	Bagbear Farm	ST 195 158	E
	2	Lears Farm	ST 179 148	E
	3	Palmers Farm	ST 159 141	c
	4	Hemyock	ST 138 139	b
	5	Culmstock	ST 108 138	a
	6	Southey Barton	ST 089 135	A
	7	Uffculme	ST 066 122	a
	8	Skidders Farm	ST 044 103	a
	9	Venn Farm	ST 031 086	B
	10	Lower Kings Mill	ST 028 078	*
	11	Higher Upton	ST 028 070	*
	12	Merry Harriers	ST 013 042	*
	13	U/s Silverton Mill	SS 983 011	*
	14	D/s Silverton Mill	SS 975 012	*
	15	Columjohn	SX 950 996	*
	16	Stoke Canon	SX 938 977	*
MADFORD RIVER	17	Riverside Cottage	ST 152 087	d
	18	Madford Bridge	ST 145 112	d
	19	Culm Bridge	ST 144 134	C
BOLHAM RIVER	20	Hartsmoor Bridge	ST 178 119	e
LICKHAM BROOK	21	Regency House	ST 133 129	e
WHITEMOOR STREAM	22	Brickfields	ST 129 141	f
SHELDON STREAM	23	D/s Hollies	ST 121 080	d
	24	Loosemoore	ST 118 102	D
	25	Ashill	ST 092 117	c
SPRATFORD STREAM	26	Fenacre Farm	ST 069 178	F
	27	U/s A36 Road BR	ST 046 143	f
	28	Five Bridges	ST 025 096	g
	29	St Georges Well	ST 025 085	b
HALBERTON STREAM	30	Doctors Farm	ST 013 117	g
	31	Moorstone Barton	ST 022 100	g
FULFORD WATER	32	Fulford Water	SS 993 090	g
RULL LEAT	33	Sutton Barton	ST 013 091	G
RIVER KEN	34	Goodiford Farm	ST 056 085	h
COLEBROOK	35	U/s Toad Hall	ST 018 065	h
RIVER WEAVER	36	Lower Weaver	ST 041 039	H
	37	Garlandhayes	ST 019 032	h
HEAL-EYE STREAM	38	Silverton Park	SS 963 024	e

* = DIP SITE

TABLE 2

RIVER CULM SUMMARY SHEET 1994

RIVER	SITE NO	SITE NAME	N.Q.R	
CULM	1	Bagbear Farm	ST 195 158	
	2	Lears Farm	ST 179 148	
	3	Palmera Farm	ST 159 141	
	4	Hamyock	ST 138 139	
	5	Culmstock	ST 108 138	
	6	Southey Barton	ST 089 135	
	7	Uffculme	ST 086 122	
	8	Skinners Farm	ST 044 103	
	9	Vann Farm	ST 031 088	
	*10	Lower Kings Mill	ST 028 078	
	*11	Higher Upton	ST 028 070	
	*12	Merry Harriers	ST 013 042	
	*13	U/s Silverton Mill	SS 983 011	
	*14	D/s Silverton Mill	SS 975 012	
	*15	Columjohn	SX 950 998	
	*16	Stoke Canon	SX 938 977	
	MADFORD RIVER	17	Riverside Cottage	ST 152 087
		18	Medford Bridge	ST 145 112
19		Culm Bridge	ST 144 134	
BOLHAM RIVER	20	Hartmoor Bridge	ST 178 119	
LICKHAM BROOK	21	Regency House	ST 133 129	
WHITEMOOR STREAM	22	Brickfields	ST 129 141	
SHELDON STREAM	23	D/s Hollies	ST 121 080	
	24	Loosemoore	ST 118 102	
	25	Ashill	ST 092 117	
SPRATFORD STREAM	26	Fenacre Farm	ST 089 178	
	27	U/s A38 Road BR	ST 046 143	
	28	Five Bridges	ST 025 098	
	29	St Georges Well	ST 025 085	
HALBERTON STREAM	30	Doctors Farm	ST 013 117	
	31	Moorstone Barton	ST 022 100	
FULFORD WATER	32	Fulford Water	SS 993 090	
RULL LEAT	33	Sutton Barton	ST 013 091	
RIVER KEN	34	Goodford Farm	ST 058 085	
COLEBROOK	35	U/s Toad Hall	ST 018 085	
RIVER WEAVER	36	Lower Weaver	ST 041 039	
	37	Garlandhayes	ST 019 032	

KEY

- * = DIP SITE
- # - Trout present
- @ - Trout absent
- B - Bullhead
- C - Chub
- D - Dace
- E - Eel
- G - Gudgeon
- M - Minnow
- P - Perch
- Pk - Pike
- R - Roach
- RT - Rainbow Trout
- SS - Salmon (juvenile)
- Sb - Stickleback
- SL - Stone Loach

DATE	AREA (m2)	TROUT DENSITY (100m2)		OTHER SPECIES
		FRY	PARR(1+)	
24.06.94	121.04	18.16	21.88	B.E.M.SL.
24.06.94	172.15	2.32	13.38	B.E.SL.
20.06.94	444.89	1.80	18.87	B.E.M.SL.
16.06.94	428.80	0.00	7.73	B.E.SL.
23.06.94	872.33	0.00	7.18	B.E.M.SL.
22.06.94	980.84	0.00	8.38	B.E.M.SL.
23.06.94	432.76	0.00	9.71	B.E.M.SL.
04.07.94	518.16	0.00	8.89	B.E.M.SL.
16.06.94	532.07	0.00	1.77	B.E.G.M.SL.
30.06.94		⊙	#	B.D.E.G.M.R.SL.
12.07.94		⊙	#	C.D.E.G.M.R.SL.
12.07.94		⊙	⊙	B.D.G.E.SL.
05.07.94		⊙	⊙	E.P.R.
05.07.94		⊙	⊙	C.D.E.P.P.K.R.
13.07.94		⊙	⊙	B.C.D.E.G.M.P.K.R.SL.
13.07.94		⊙	#	C.E.G.R.SS.
30.06.94	181.21	0.00	8.25	B.
29.06.94	227.52	0.44	8.77	B.E.
20.06.94	277.76	0.72	24.24	B.E.SL.
28.06.94	200.70	0.00	21.25	B.E.SL.
28.06.94	98.8	22.77	22.07	B.
01.07.94	108.50	1.84	7.58	B.E.M.SL.
28.06.94	105.53	0.00	13.88	B.E.RT.
28.06.94	145.20	1.38	11.02	B.E.Sb.
01.07.94	355.24	0.00	1.87	B.E.M.RT.SL.
29.06.94	200.94	0.00	0.50	B.E.Sb.SL.
29.06.94	251.58	0.00	0.40	B.E.M.SL.
06.07.94	311.04	0.00	0.32	B.E.SL.
06.07.94	931.30	0.00	1.18	B.E.G.M.Pk.SL.
04.07.94	209.70	0.00	0.00	B.E.
04.07.94	183.50	0.00	0.00	B.E.SL.
30.06.94	98.39	19.71	1.38	B.E.SL.
29.06.94	157.44	5.08	19.44	B.
04.07.94	288.98	0.00	0.49	B.E.RT.SL.
11.07.94	154.38	10.36	18.37	B.E.SL.
08.07.94	205.92	0.00	0.00	B.E.M.RT.SL.
08.07.94	211.05	0.95	4.41	B.E.G.Pk.RT.SL.

TABLE 3

RIVER CULM ALL SURVEYS 1977 - 1994

RIVER	SITE NAME	TROUT DENSITIES						
		TROUT FRY(0+)						
		1977	1978	1981	1982	1984	1987	1989
CULM	Bagbear Farm	-	-	-	-	-	-	-
	Lears Farm	-	-	-	-	-	-	-
	Palmers Farm	17.99	4.01	5.11	-	-	-	0.69
	Hemyock	2.74	1.14	0.00	-	-	-	0.00
	Culmstock	-	-	-	-	-	-	-
	Southey Barton	-	-	-	-	-	-	-
	Uffculme	2.30	1.77	0.24	-	-	-	0.00
	Skinnars Farm	0.00	0.00	0.73	-	-	-	0.51
	Venn Farm	-	-	0.31	-	-	-	0.00
	Lower Kings Mill	-	-	0.00	-	-	-	-
	Higher Upton	0.00	0.00	0.00	-	-	-	-
	Merry Hamers	-	0.00	0.00	-	-	-	@*
	U/s Silverton Mill	-	0.00	0.00	-	-	-	@*
	D/s Silverton Mill	-	0.00	0.00	-	-	-	@*
	Columjohn	-	0.00	0.05	-	-	-	-
Stoke Canon	-	0.00	0.00	-	-	-	-	
MADFORD RIVER	Dunkerswell Village	-	-	-	0.00	-	-	-
	Riverside Cottage	-	-	-	0.00	-	-	-
	Madford Bridge	-	-	0.00	0.00	-	-	0.00
	Lemon Hill	-	-	-	0.00	-	-	-
	Culm Bidge	-	-	-	-	-	-	0.00
BOLHAM RIVER	Hartsmoor Bridge	-	-	4.88	-	-	-	0.00
LICKHAM BROOK	Regency House	-	-	-	-	-	-	-
WHITEMOOR STREAM	Brickfields	-	-	-	-	-	-	-
SHELDON STREAM	D/s Hollies	-	-	-	-	-	-	-
	Loosemoore	-	-	-	-	-	-	-
	Ashill	-	-	0.55	-	-	-	-
SPRATFORD STREAM	Fenacre Farm	-	-	-	-	-	-	-
	U/s A38 Road BR	-	-	-	-	-	-	-
	Tiverton Junction	-	0.00	0.00	-	-	-	0.00
	Five Bridges	-	-	0.00	-	-	-	0.00
	St Georges Well	-	-	0.00	-	-	-	0.00
M5 Slip Road	-	-	0.37	-	-	-	-	
HALBERTON STREAM	Doctors Farm	-	-	-	-	-	0.00	-
	Moorstone Barton	-	-	-	-	-	0.00	-
FULFORD WATER	Fulford Water	-	-	-	-	-	-	-
RULL LEAT	Sutton Barton	-	-	-	-	-	1.09	-
RIVER KEN	Goodiford Farm	-	-	-	-	-	-	-
COLEBROOK	U/s Toad Halt	-	-	-	-	-	-	-
RIVER WEAVER	Lower Weaver	-	-	0.00	-	0.00	-	-
	Tye	-	-	0.94	-	1.07	-	-
	Garlandhayes	-	-	19.00	-	1.78	-	-

KEY

* = DIP SITE

#-Trout present

@-Trout absent

TROUT PARR(1++)

1984	1977	1978	1981	1982	1984	1987	1989	1994
18.18	-	-	-	-	-	-	-	21.68
2.32	-	-	-	-	-	-	-	13.36
1.80	15.62	20.58	13.61	-	-	-	7.93	18.67
0.00	7.26	6.16	7.03	-	-	-	6.63	7.73
0.00	-	-	-	-	-	-	-	7.18
0.00	-	-	-	-	-	-	-	8.36
0.00	0.00	1.42	3.37	-	-	-	3.52	9.71
0.00	5.26	0.68	0.00	-	-	-	1.28	6.89
0.00	-	-	0.31	-	-	-	0.26	1.77
@*	-	-	0.00	-	-	-	-	#*
@*	0.78	0.00	0.00	-	-	-	-	#*
@*	-	0.05	0.00	-	-	-	#*	@*
@*	-	0.00	0.00	-	-	-	@*	@*
@*	-	0.00	0.00	-	-	-	@*	@*
@*	-	0.08	0.05	-	-	-	-	@*
@*	-	0.21	0.12	-	-	-	-	#*
-	-	-	-	41.52~	-	-	-	-
0.00	-	-	-	25.97~	-	-	-	8.25
0.44	-	-	0.00	2.65~	-	-	0.00	8.77
-	-	-	-	6.71~	-	-	-	-
0.72	-	-	-	-	-	-	6.21	24.24
0.00	-	-	22.59	-	-	-	15.94	21.25
22.77	-	-	-	-	-	-	-	22.07
1.84	-	-	-	-	-	-	-	7.56
0.00	-	-	-	-	-	-	-	13.86
1.38	-	-	-	-	-	-	-	11.02
0.00	-	-	6.56	-	-	-	-	1.67
0.00	-	-	-	-	-	-	-	0.50
0.00	-	-	-	-	-	-	-	0.40
-	-	1.50	0.58	-	-	-	0.00	-
0.00	-	1.29	-	-	-	-	0.00	0.32
0.00	-	-	0.60	-	-	-	1.60	1.18
0.00	-	-	-	-	-	9.92	-	0.00
0.00	-	-	-	-	-	6.43	-	0.00
19.71	-	-	-	-	-	-	-	1.38
5.08	-	-	-	-	-	7.40	-	19.44
0.00	-	-	-	-	-	-	-	0.49
10.36	-	-	-	-	-	-	-	16.37
0.00	-	-	0.72	0.00	0.00	-	-	0.00
-	-	-	3.78	0.00	1.07	-	-	-
0.95	-	-	18.88	0.00	0.00	-	-	4.41

TABLE 4

RIVER CULM ALL SURVEYS 1977 - 1994

OTHER FISH SPECIES

RIVER	SITE NAME	N.G.R	1977
CULM	Bagbear Farm	ST 195 158	-
	Lears Farm	ST 179 148	-
	Palmer's Farm	ST 159 141	B.E.M.S.L.
	Hemyock	ST 138 139	B.E.M.S.L.
	Culmstock	ST 108 138	-
	Southey Barton	ST 089 135	-
	Uffculme	ST 066 122	B.E.M.Sb.SL.
	Skinner's Farm	ST 044 103	B.E.G.M.SL.
	Venn Farm	ST 031 088	-
	Lower Kings Mill	ST 028 078	-
	Higher Upton	ST 028 070	B.D.E.G.M.R.Sb.SL.
	Merry Hamers	ST 013 042	-
	U/s Silverton Mill	SS 983 011	-
	D/s Silverton Mill	SS 975 012	-
Columjohn	SX 950 996	-	
Stoke Canon	SX 938 977	-	
MADFORD RIVER	Dunkerswell Village	ST 142 077	-
	Riverside Cottage	ST 152 087	-
	Madford Bridge	ST 145 112	-
	Lemon Hill	ST 148 125	-
	Sawmills	ST 145 133	-
Culm Bridge	ST 144 134	-	
BOLHAM RIVER	Hartsmoor Bridge	ST 178 119	-
LICKHAM BROOK	Regency House	ST 133 129	-
WHITEMOOR STREAM	Brickfields	ST 129 141	-
SHELDON STREAM	D/s Hollies	ST 121 080	-
	Loosemoore	ST 118 102	-
	Ashill	ST 092 117	-
SPRATFORD STREAM	Fenacre Farm	ST 069 178	-
	U/s A36 Road BR	ST 046 143	-
	Tiverton Junction	ST 033 117	-
	Five Bridges	ST 025 096	-
	St Georges Well	ST 025 085	-
M5 Slip Road	ST 026 077	-	
HALBERTON STREAM	Doctors Farm	ST 013 117	-
	Moorstone Barton	ST 022 100	-
FULFORD WATER	Fulford Water	SS 993 090	-
RULL LEAT	Sutton Barton	ST 013 091	-
RIVER KEN	Goodiford Farm	ST 056 085	-
COLEBROOK	U/s Toad Hall	ST 018 065	-
RIVER WEAVER	Lower Weaver	ST 041 039	-
	Tye	ST 028 033	-
	Garlandhayes	ST 019 032	-

1978	1981	1982	1984	1987	1989	1994
-	-	-	-	-	-	B.E.M.SL.
-	-	-	-	-	-	B.E.SL.
B.E.M.SL.	B.E.M.SL.	-	-	-	B.E.M.SL.	B.E.M.SL.
B.E.M.SL.	B.E.M.RT.SL.	-	-	-	B.E.M.SL.	B.E.SL.
-	-	-	-	-	-	B.E.M.SL.
B.E.M.Sb.SL.	B.E.M.Sb.SL.	-	-	-	B.E.M.SL.	B.E.M.SL.
B.E.M.SL.	B.E.G.M.SL.	-	-	-	B.E.M.SL.	B.E.M.SL.
-	B.D.E.G.M.SL.	-	-	-	B.D.E.G.M.Sb.SL.	B.E.G.M.SL.
-	E.M.	-	-	-	-	B.D.E.G.M.R.SL.
B.E.G.M.R.Sb.SL.	B.E.M.SL.	-	-	-	-	C.D.E.G.M.R.SL.
D.E.G.M.R.Sb.SL.	O.E.G.M.SL.	-	-	-	B.D.G.M.Pk.SL.	B.D.G.E.SL.
D.E.G.M.P.Pk.R.SL.	E.G.M.Pk.R.	-	-	-	B.E.G.M.Pk.R.SL.	E.P.R.
D.E.G.M.P.Pk.R.	D.E.G.M.Pk.R.SL.	-	-	-	B.D.G.M.Pk.R.SL.	C.D.E.P.Pk.R.
D.E.G.M.Pk.R.SL.	D.E.G.M.Pk.R.SL.	-	-	-	-	B.C.D.E.G.M.Pk.R.SL.
D.E.G.M.R.SL.	D.E.G.M.SS.	-	-	-	-	C.E.G.R.SS.
-	-	B	-	-	-	-
-	-	B.E.	-	-	-	B.
-	B.	B.RT.	-	-	-	B.E.
-	-	B.E.	-	-	-	-
-	-	-	-	-	B.E.M.SL.	-
-	-	-	-	-	B.E.M.SL.	B.E.SL.
-	B.E.	-	-	-	B.E.	B.E.SL.
-	-	-	-	-	-	B.
-	-	-	-	-	-	B.E.M.SL.
-	-	-	-	-	-	B.E.RT.
-	-	-	-	-	-	B.E.Sb.
-	B.E.M.SL.	-	-	-	-	B.E.M.RT.SL.
-	-	-	-	-	-	-
-	-	-	-	-	-	B.E.Sb.SL.
-	-	-	-	-	-	B.E.M.SL.
B.D.E.G.M.R.Sb.SL.	B.E.M.Pk.SL.	-	-	-	E.	-
-	B.D.E.G.M.Sb.SL.	-	-	-	B.D.E.G.M.Pk.SL.	B.E.SL.
-	B.D.E.G.M.Pk.Sb.SL.	-	-	-	B.E.G.M.Pk.Sb.SL.	B.E.G.M.Pk.SL.
-	B.D.E.G.M.SL.	-	-	-	-	-
-	-	-	-	B.E.Sb.SL.	-	B.E.
-	-	-	-	B.E.Sb.SL.	-	B.E.SL.
-	-	-	-	-	-	B.E.SL.
-	-	-	-	B.E.Sb.SL.	-	B.
-	-	-	-	-	-	B.E.RT.SL.
-	-	-	-	-	-	B.E.SL.
-	D.E.G.M.Sb.SL.	-	-	-	-	B.E.M.RT.SL.
-	B.E.G.M.Sb.SL.	-	-	-	-	-
-	E.SL.	-	-	-	-	B.E.G.Pk.RT.SL.

TABLE 5

CULM FISH SURVEY 1994 SEMI - QUANTATATIVE RESULTS

<u>WATERCOURSE</u>	<u>SITE NAME</u>	<u>N G R</u>	<u>SALMON</u> <u>0+</u>
CULM	Lower Kingsmill	ST 028 - 078	0
CULM	Higher Upton	ST 028 - 070	0
CULM	Merry Harriers	ST 013 - 042	0
CULM	U's Silverton Mill	SS 983 - 011	0
CULM	D's Silverton Mill	SS 975 - 012	0
CULM	Columbjohn	SX 950 - 996	0
CULM	Stoke Cannon	SX 938 - 977	0

<u>1++</u>	TROUT		OTHER
	<u>0+</u>	<u>1++</u>	<u>SPECIES</u>
0	0	28	B,D,E,G,MW,R,SL
0	0	4	C,D,E,G,MW,R,SL
0	0	0	B,D,G,E,SL
0	0	0	E,P,R
0	0	0	C,D,E,P,PK,R
0	0	0	B,C,D,E,G,MW,PK,R,SL
3	0	2	C,E,G,R

KEY

B = Bullhead
 C = Chub
 D = Dace
 E = Eel
 G = Gudgeon
 MW = Minnow
 P = Perch
 P = Pike
 R = Roach
 SL = Stoneloach

TABLE 6

RIVER CULM FISH SURVEY SUMMARY SHEET 1994

RIVER	SITE NO	SITE NAME	DATE	BULLHEAD	STONE LOACH	EEL	STICKLEBACK	MINNOW
CULM	1	Bagbear Farm	24-Jun	C	C	P		C
CULM	2	Lears Farm	24-Jun	A	C	P		
CULM	3	Palmers Farm	20-Jun	C	C	P		P
CULM	4	Hemyock	16-Jun	A	C	C		
CULM	5	Culmstock	23-Jun	A	C	C		A
CULM	6	Southey Barton	22-Jun	A	C	P		C
CULM	7	Uffculme	23-Jun	A	C	C		C
CULM	8	Skinnars Farm	04-Jul	A	C	C		P
CULM	9	Vann Farm	16-Jun	C	C	C		C
CULM	*10	Lower Kings Mill	30-Jun	C	C	C		C
CULM	*11	Higher Upton	12-Jul		P	C		C
CULM	*12	Merry Harriers	12-Jul	A	A	A		
CULM	*13	U/S Silverton Mill	06-Jul			C		
CULM	*14	D/S Silverton Mill	05-Jul			A		
CULM	*15	Columjohn	13-Jul	A	A	C		
CULM	*16	Stoke Canon	13-Jul			A		
MADFORD RIVER	17	Riverside Cottage	30-Jun	C				
MADFORD RIVER	18	Madford Bridge	29-Jun	A		P		
MADFORD RIVER	19	Culm Bridge	20-Jun	C	C	P		
BOLHAM RIVER	20	Hartmoor Bridge	28-Jun	A	P	P		
LICKHAM BROOK	21	Regency House	28-Jun	C				
WHITEMOOR STREAM	22	Brickfields	01-Jul	C	C	P		P
SHELDON STREAM	23	D/S Hollies	28-Jun	C		P		
SHELDON STREAM	24	Loosemoore	28-Jun	C		P	P	
SHELDON STREAM	25	Ashill	01-Jul	C	C	P		P
SPRATFORD STREAM	26	Fenacre Farm	29-Jun	P	C	P	P	
SPRATFORD STREAM	27	U/S A36 Road Bridge	29-Jun	A	A	C		P
SPRATFORD STREAM	28	Five Bridges	06-Jul	P	C	C		
SPRATFORD STREAM	29	St Georges Well	06-Jul	C	C	C		A
HALBERTON STREAM	30	Doctors Farm	04-Jul	C		C		
HALBERTON STREAM	31	Moorstone Barton	04-Jul	P	P	P		
FULFORD WATER	32	Fulford Water	30-Jun	C	C	P		
RULL LEAT	33	Sutton Barton	29-Jun	C				
RIVER KEN	34	Goodiford Farm	04-Jul	C		C		
COLEBROOK	35	U/S Toad Hall	11-Jul	C	C	P		
RIVER WEAVER	36	Lower Weaver	08-Jul	C	A	C		
	37	Gartandhayes	08-Jul	C	C	C		

KEY

* = DIP SITE

C = Common

A = Abundant

P = Present

CHUB GUDGEON PERCH PIKE ROACH RAINBOW SALMON DACE
 TROUT (JUVENILE)

	2						
	6			5		14	
6	1			2		6	
	4					2	
		1		2			
1		1	5	2		1	
8	16		2	3		1	
2	6			1			

.132

1

4

1

4

2

1

1

1

Figure 1

RIVER CULM SURVEY SITES 1994

