



**NRA**

*National Rivers Authority  
South Western Region*

## **DEVON AREA REPORT**

### **River Creedy Fisheries Survey 1994**

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## RIVER CREEDY FISHERIES SURVEY 1994

### **1) INTRODUCTION**

A survey of the populations of freshwater fish at selected sites in the Creedy River system was carried out in August to September 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. The procedure was undertaken as part of a triennial programme to monitor fish stocks in the Creedy catchment

A comprehensive survey of the Creedy system was carried out in 1978 (Lister) in the wake of the droughts of 1975 & 1976.

### **2) METHODS**

A total of thirty one sites were chosen throughout the catchment. Twenty eight sites were surveyed quantitatively, the remaining three, 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-salmonids are recorded in Table 2.

#### 3.1 Salmon (Salmo salar.L.)

The River Creedy is not considered to be a prime salmon river. Salmon were restricted to the lower reaches being absent from the main river and all its tributaries upstream of the former Higher Marsh Weir. Distribution of migratory salmonids in the catchment is now expected to improve with the removal of Higher Marsh and Gunstone Weirs which previously were both major barriers.

#### 3.2 Trout (Salmo trutta.L.)

Generally the distribution and abundance of trout appears to be broadly consistent with the data collected in 1978. However, the lack of comprehensive historic data makes comparisons difficult.

Fry densities are generally poor to mediocre. The exception being the River Troney (site 22,  $24.10/100m^2$ ).

Parr densities were also considered mediocre, with the exception of the River Yeo and Colebrooke (range  $5.71-42.27/100m^2$ ).

The limited run of sea trout into the Exe catchment suggests that the majority of trout fry and parr are brown trout. Densities might be greater if the area was accessible to migratory trout.

### 3.3 Other Species

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

- Bullhead, *Cottus gobio*,L.
- Dace, *Leuciscus leuciscus*,L.
- Gudgeon, *Gobio gobio*,L.
- Eel, *Anguilla anguilla*,L.
- Minnow, *Phoxinus phoxinus*,L.
- Roach, *Rutilus rutilus*,L.
- Stone loach, *Noemacheilus barbatulus*.L.
- Crayfish, *Austropotamobius pallipes*,L.

Bullheads were encountered at all sites during the survey, numbers being abundant at most sites.

Eels minnows and stone loach were commonly found at the majority of sites.

The distribution of dace, gudgeon, and roach was confined to the three lowest sites 6, 7 & 8 on the Creedy.

Crayfish were present at two sites (4 & 18) on the Creedy and Yeo.

### 4) CONCLUSIONS

- i) Trout fry distribution is restricted to the upper reaches of the Creedy and the majority of its tributaries.
- ii) Trout fry abundance is poor throughout the catchment with the exception of Fuidge Manor on the Troney.
- iii) Trout parr, abundance and distribution are broadly consistent with that observed in 1978.

- iv) Observed trout fry densities were too low to support the observed parr densities.
- v) Marsh Weir and the lack of suitable spawning habitat has restricted salmon distribution to the lower reaches of the River Creedy.
- vi) The River Creedy supports a diverse coarse fish population of eight species in its lower reaches.

## 5) RECOMMENDATIONS

- i) Further investigative work should be considered to identify the reasons behind the restricted distribution and abundance of trout fry.
- ii) Investigation should be undertaken to assess the benefits of the removal of Marsh and Gunstone Weirs to migratory salmonid spawning in the Creedy Catchment.

## 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.

LISTER, R.C.W; 1978. Fisheries Survey of the River Creedy and its Tributaries, South West Water Authority, Directorate of Fisheries and Recreation.

**APPENDIX A.**

**TABLE 1 - SITE DETAIL SHEET**

**TABLE 2 - SUMMARY SHEET**

**TABLE 3 - ALL SURVEYS 1978-1994 SALMON DENSITIES**

**TABLE 4 - ALL SURVEYS 1978-1994 TROUT DENSITIES**

**FIGURE 1 - SITE DISTRIBUTION MAP**



**TABLE 1**

**RIVER CREEDY/YEO FISH SURVEY - 1994 SITE DETAIL SHEET**

<b>WATERCOURSE</b>		<b>SITE NAME</b>	<b>N.G.R</b>	<b>DATE</b>	<b>LENGTH (m)</b>	<b>AVERAGE WIDTH</b>	<b>WETTED AREA(m2)</b>
CREEDY	1	KENNERLEIGH	SS 818 - 063	2.09.94	91	2.35	213.85
	2	NORTH CREEDY	SS 833 - 042	23.08.94	87	4.17	362.79
	3	CREEDY BRIDGE	SS 847 - 010	07.09.94	73	4.38	319.74
	4	DOWNES MILL	SX 858 - 991	25.08.94	70	8.02	561.4
	5	U/S NEWTON ST CYRES	SX 880 - 987	26.08.94	102	6.6	673.2
	6	MARSH WEIR	* SX 896 - 974	07.09.94	.	7.33	.
	7	D/S LANGFORD BRIDGE	* SX 901 - 968	07.09.94	.	11.37	.
	8	U/S OAKFORD BRIDGE	* SX 907 - 961	07.09.94	.	8.93	.
BINNEFORD WATER	9	PUDDINGTON BOTTOM	SS 837 - 096	09.08.94	53	2.66	140.98
	10	BINNEFORD BRIDGE	SS 831 - 077	08.08.94	100	3.2	320.00
	11	ASHRIDGE BRIDGE	SS 820 - 062	07.08.94	75	3.64	273.00
HOLLY WATER	12	YEO CROSS	SS 867 - 084	11.08.94	117	2.34	273.78
	13	HOLLYMEAD BRIDGE	SS 856 - 064	12.08.94	80	4.28	342.4
	14	HEATH BRIDGE	SS 845 - 045	11.08.94	90	4.45	400.5
YEO	15	HITTISLEIGH MILL	SX 740 - 945	15.08.94	76	2.96	224.96
	16	MILL BRIDGE	SX 770 - 972	16.08.94	65	2.83	183.95
	17	YEOFORD	SX 787 - 987	16.08.94	107	4.36	466.52
	18	GUNSTONE MILL	SX 805 - 984	27.08.94	85	5.46	464.1
	19	SALMON HUTCH	SX 838 - 990	24.08.94	80	4.74	379.2
COLEBROOKE	20	BUTSFORD BARTON	SS 762 - 002	18.08.94	95	2.64	250.8
	21	KEYMELFORD	SX 779 - 996	18.08.94	97	3.48	337.56
TRONEY	22	FUIDGE MANOR	SX 707 - 942	22.08.94	95	1.76	167.0
	23	SPREYTON WOODS	SX 722 - 970	30.08.94	80	2.61	208.8
	24	NORTHDOWN	SX 770 - 985	10.08.94	70	4.8	336.0
FORD BROOK	25	WINSTODE	SX 792 - 973	17.08.94	77	2.19	168.63
CULVERY	26	CHURCH LANE	SX 810 - 947	05.09.94	105	1.92	201.6
	27	D/S UTON BRIDGE	SX 835 - 986	31.08.94	83	3.82	317.06
LILLYBROOK	28	LILLYBROOK	SX 822 - 944	05.09.94	62	2.05	127.1
SHOBROOKE STREAM	29	WESTWARD FARM	SS 868 - 030	06.09.94	69	2.06	142.14
	30	CREEDY BARTON	SX 867 - 996	06.09.94	74	2.02	149.48
SHUTTERN BROOK	31	U/S CREEDY CONFLUENCE	SX 883 - 984	26.08.94	75	1.46	109.5

**KEY**  
\* = DIP SITE

TABLE 2

## RIVER CREEDY/YEO FISH SURVEY 1984 - SUMMARY SHEET

WATERCOURSE	SITE NAME	NGR	SALMON DENSITY (100m2)		TROUT DENSITY (100m2)		OTHER SPECIES
			ERY	PARR	ERY	PARR(1++)	
CREEDY	KENNERLEIGH	SS 818 - 063	0.00	0.00	5.14	2.71	B,SL
	NORTH CREEDY	SS 833 - 042	0.00	0.00	0.28	6.06	B,SL,E,MW
	CREEDY BRIDGE	SS 847 - 010	0.00	0.00	0.31	4.31	B,SL,E,MW
	DOWNES MILL	SX 858 - 991	0.00	0.00	0.00	8.73	B,SL,E,MW,CF
	U/S NEWTON ST CYRES	SX 880 - 987	0.00	0.00	0.00	2.50	B,SL,E,MW,
	MARSH WEIR	SX 896 - 974	@	#	@	#	B,SL,E,MW,DA,GU,
	D/S LANGFORD BRIDGE	SX 901 - 968	@	@	@	#	B,SL,E,MW,GU,
U/S OAKFORD BRIDGE	SX 907 - 961	#	#	@	#	B,SL,MW,DA,RO,	
BINNEFORD WATER	PUDDINGTON BOTTOM	SS 837 - 096	0.00	0.00	2.84	16.83	B,SL,E,MW
	BINNEFORD BRIDGE	SS 831 - 077	0.00	0.00	0.63	5.36	B,SL,E,MW
	ASHRIDGE BRIDGE	SS 820 - 062	0.00	0.00	0.73	4.14	B,SL,E,MW
HOLLY WATER	YEO CROSS	SS 867 - 084	0.00	0.00	3.65	7.40	B,SL,E
	HOLLYMEAD BRIDGE	SS 856 - 064	0.00	0.00	0.00	0.00	B,SL,E,MW,
	HEATH BRIDGE	SS 845 - 045	0.00	0.00	0.00	3.95	B,SL,MW
YEO	HITTISLEIGH MILL	SX 740 - 945	0.00	0.00	3.56	14.67	B,SL,E
	MILL BRIDGE	SX 770 - 972	0.00	0.00	1.45	5.71	B,SL,E,MW
	YEOFORD	SX 787 - 987	0.00	0.00	0.00	11.25	B,SL,E,MW
	GUNSTONE MILL	SX 805 - 984	0.00	0.00	0.43	20.38	B,SL,E,MW,CF
	SALMON HUTCH	SX 838 - 990	0.00	0.00	0.79	7.65	B,SL,E,MW,
COLEBROOKE	BUTSFORD BARTON	SS 762 - 002	0.00	0.00	3.99	42.27	B,SL,E
	KEYMELFORD	SX 779 - 996	0.00	0.00	0.00	26.87	B,SL,E,MW
TRONEY	FUIDGE MANOR	SX 707 - 942	0.00	0.00	24.10	2.85	B,
	SPREYTON WOODS	SX 722 - 970	0.00	0.00	3.35	14.85	B,SL,E
	NORTHDOWN	SX 770 - 985	0.00	0.00	0.00	5.31	B,SL,E,MW
FORD BROOK	WINSTODE	SX 792 - 973	0.00	0.00	4.15	12.00	B,SL,E,
CULVERY	CHURCH LANE	SX 810 - 947	0.00	0.00	0.99	9.03	B,SL,E,,MW
	D/S UTON BRIDGE	SX 835 - 986	0.00	0.00	0.63	8.83	B,SL,E,
LILLYBROOK	LILLYBROOK	SX 822 - 944	0.00	0.00	0.00	0.00	B,SL,MW
SHOBROOKE STREAM	WESTWARD FARM	SS 868 - 030	0.00	0.00	0.00	3.04	B,SL,E
	CREEDY BARTON	SX 867 - 996	0.00	0.00	2.01	8.70	B,E
SHUTTERN BROOK	U/S CREEDY CONFLUENCE	SX 883 - 984	0.00	0.00	0.00	0.00	B,SL,E,MW

## KEY

\* = DIP SITE  
 # = Species present  
 @ = Species Absent

## SPECIES KEY

B = Bullhead  
 E = Eel  
 SL = Stone Loach  
 DA = Dace  
 RO = Roach  
 MW = Minnow  
 CF = Crayfish  
 GU = Gudgeon

TABLE 3

RIVER CREEDY/YEO - ALL SURVEYS 1978 - 1994 SALMON DENSITIES

<u>WATERCOURSE</u>	<u>SITE NAME</u>	<u>SALMON FRY (0+)</u>	
		<u>1978</u>	<u>1994</u>
CREEDY	KENNERLEIGH	-	0.00
	NORTH CREEDY	-	0.00
	CREEDY BRIDGE	-	0.00
	CODSHEAD BR.	0.00	-
	DOWNES MILL	-	0.00
	U/S NEWTON ST CYRES	-	0.00
	MARSH WEIR	@	@
	D/S LANGFORD BRIDGE	-	@
	U/S OAKFORD BRIDGE	-	#
BINNEFORD WATER	PUDDINGTON BOTTOM	-	0.00
	BINNEFORD BRIDGE	-	0.00
	ASHRIDGE BRIDGE	-	0.00
HOLLY WATER	YEO CROSS	-	0.00
	HOLLYMEAD BRIDGE	-	0.00
	HEATH BRIDGE	-	0.00
YEO	HITTISLEIGH MILL	0.00	0.00
	MILL BRIDGE	-	0.00
	YEOFORD	-	0.00
	GUNSTONE MILL	0.00	0.00
	SALMON HUTCH	0.00	0.00
COLEBROOKE	BUTSFORD BARTON	0.00	0.00
	KEYMELFORD	0.00	0.00
TRONEY	FUIDGE MANOR	0.00	0.00
	SPREYTON WOODS	-	0.00
	NORTHDOWN	0.00	0.00
FORD BROOK	WINSTODE	-	0.00
CULVERY	CHURCH LANE	-	0.00
	D/S UTON BRIDGE	0.00	0.00
LILLYBROOK	LILLYBROOK	-	0.00
SHOBROOKE STREAM	WESTWARD FARM	-	0.00
	CREEDY BARTON	-	0.00
SHUTTERN BROOK	U/S CREEDY CONFLUENCE	-	0.00

KEY

\* = DIP SITE

# = Species present

@ = Species Absent



**TABLE 4**

**RIVER CREEDY/YEO - ALL SURVEYS 1978 - 1994 TROUT DENSITIES**

WATERCOURSE	SITE NAME	TROUT FRY (0+)	
		1978	1994
CREEDY	KENNERLEIGH	-	5.14
	NORTH CREEDY	-	0.28
	CREEDY BRIDGE	0.30	0.31
	CODSHEAD BR	0.50	-
	DOWNES MILL	-	0.00
	U/S NEWTON ST CYRES	-	0.00
	MARSH WEIR	*	@
	D/S LANGFORD BRIDGE	-	@
U/S OAKFORD BRIDGE	-	@	
BINNEFORD WATER	PUDDINGTON BOTTOM	-	2.84
	BINNEFORD BRIDGE	-	0.63
	ASHRIDGE BRIDGE	-	0.73
HOLLY WATER	YEO CROSS	-	3.65
	HOLLYMEAD BRIDGE	-	0.00
	HEATH BRIDGE	-	0.00
YEO	HITTISLEIGH MILL	3.30	3.56
	MILL BRIDGE	2.20	1.45
	YEOFORD	-	0.00
	GUNSTONE MILL	1.80	0.43
	SALMON HUTCH	1.10	0.79
COLEBROOKE	BUTSFORD BARTON	37.80	3.99
	KEYMELFORD	4.50	0.00
TRONEY	FUIDGE MANOR	23.80	24.10
	SPREYTON WOODS	-	3.35
	NORTHDOWN	4.34	0.00
FORD BROOK	WINSTODE	-	4.15
CULVERY	CHURCH LANE	-	0.99
	D/S UTON BRIDGE	0.90	0.63
LILLYBROOK	LILLYBROOK	-	0.00
SHOBROOKE STREAM	WESTWARD FARM	-	0.00
	CREEDY BARTON	-	2.01
SHUTTERN BROOK	U/S CREEDY CONFLUENCE	-	0.00

**KEY**

\* = DIP SITE

# = Species present

@ = Species Absent

PARR (1+) AND OLDER

<u>1978</u>	<u>1994</u>
-	2.71
-	6.06
5.20	4.31
5.80	-
-	8.73
-	2.50
#	#
-	#
-	#
-	16.83
-	5.63
-	4.14
-	7.40
-	0.00
-	3.95
0.00	14.67
24.10	5.71
-	11.25
22.90	20.38
10.40	7.65
15.40	42.27
15.80	26.87
0.00	2.85
-	14.85
15.80	5.31
-	12.00
-	9.03
12.20	8.83
-	0.00
-	3.04
-	8.70
-	0.00

Figure 1

# RIVER CREEDY & YEO SITES 1994

**KEY**

- Quantitative Survey site
- Semi - Quantitative survey site

