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Restoration of Riverine Fisheries Habitats

**Progress Report for Period
October 1991 - March 1992**

Institute of Freshwater Ecology

March 1992

Progress Report 326/3/A



NRA

National Rivers Authority

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NRA R&D Contract No. DO3.4.90



Research Contractor: Institute of Freshwater Ecology
Project Leader: R.H.K.Mann
Report Date: March 1992
Customer: National Rivers Authority
NRA Report Ref: 326/3/A
IFE Report Ref: ERG/T11050q1/3
TFS Project Ref: T11050q1



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1. TECHNICAL PROGRESS

The second phase of this examination of the effectiveness of the restoration of riverine fisheries is in two parts. Some of the information given appeared in the First Project Report (No. 362/2/A) submitted on 29 February 1992.

1.1 Preliminary results of questionnaire

The questionnaire circulated to NRA staff on 29-30 August 1991 comprised two sections. Section I requested information on the lengths of fisheries (salmon, trout, coarse) in each Region/Division and an assessment of the lengths that would benefit from physical restoration. It was accepted that the assessment of the potential for restoration would be subjective, and based on the knowledge and experience of the NRA staff. A covering letter sent out with the questionnaire emphasised this point.

Twelve Section I replies were received, which covered 9 of the 10 Regions - 6 Regions in full, and part coverage for 3 others. No information was received from the Southwest Region although a follow-up letter was sent requesting information.

Tables 1.1 - 1.9 summarize the Section I information received from the 9 Regions, and Table 1.10 gives an overall summary. For most of the Regions, the total lengths of fisheries do not include very small tributaries. Also, the percentage lengths of streams that would benefit from restoration relate principally to major restoration work and not to the very many small ad hoc schemes that are often carried out in conjunction with river engineering works.

There were considerable differences between the Regions but, overall, rivers supporting coarse fisheries were deemed to require more restoration work than those with salmonid fisheries (coarse fish 34%, salmon 10%, trout 19%).

Bearing in mind that full returns were not received from all Regions, the lengths (km) of rivers plus the lengths needing restoration were:

Salmon 9260 (935); Trout 38 056 (7182); Coarse 61 312 (12 598).

On a percentage basis, the Thames and Yorkshire Regions were the areas requiring most restoration work (about 50%) and the Southern and Welsh Regions requiring the least (about 10%). However, the 10% value for the Welsh NRA represented the largest km distance (3457) needing restoration work in all the Regions.

Table 1.1. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Anglian Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Northern	0	261	977	1238
	%	0	22	4
Central	0	296	1522	1818
	%	0	49	32
Lincoln	0	83	731	814
	%	0	48	50
Norf. Suffolk & Essex	0	200	652	852
	%	0	50	42
Totals	0	840	3882	4722
	%	0	41	30

Table 1.2. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Northumbrian Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Southern	1191	2382	467	4040
	%	14	34	14

Note: No data from the Northern Division

Table 1.3. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Northwest Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Central	161	241	105	507
	%	10	7	0
Southern*	0	350	1550	1750
	%	0	0	52
Totals	161	591	1655	2257
	%	0	3	48

* = Includes 150 km of the same mixed trout/coarse fisheries

Note: No data from the Northern Division

Table 1.4. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Severn-Trent Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Lower Severn	40	90	600	730
%	0	38	12	15
Upper Severn	772*	772*	233	1005
%	10	10	14	11
Lower Trent	0	152	1797	1949
%	0	59	18	21
Totals	812	1014	2630	3684
%	10	20	17	17

* = Same mixed salmon/trout fisheries

Note: No data from the Upper Trent Division

Table 1.5. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Southern Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Hants & IOW	16	97	40	153
%	50	66	0	47
Kent	0	32	805	837
%	0	0	0	0*
Totals	16	129	845	990
%	50	50	0	7

* = Fish passes needed over most weirs

Table 1.6. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Thames region and their potential (% km) for physical restoration.

Division		Salmon	Trout	Coarse	Totals
East		0	1600*	1600*	1600
	%	0	50	50	50
West		0	500	900	1400
	%	0	50	50	50
Totals		0	2100	2500	3000
	%	0	50	50	50

* = Same mixed trout/coarse fisheries

Table 1.7. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Welsh region and their potential (% km) for physical restoration.

Division		Salmon	Trout	Coarse	Totals
North		755	4094	121	4970
	%	20	10	26	12
Southwest		2506	5393	0	7899
	%	12	6	0	8
Whole Region		7000	27000	570	34570
	%	10	10	10	10

* = Separate data not available for all the Divisions

Table 1.8. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Wessex Region and their potential (% km) for physical restoration.

Division	Salmonid* (EC designated)	Coarse	Totals
Avon & Dorset	1178	298	1476
%	18	36	21
Bristol Avon	377	139	516
%	13	28	17
Somerset	214	263	477
%	17	30	25
Totals	1769	700	2469
%	17	32	21

* = Combined salmon/trout fisheries

Table 1.9. Details of the available lengths (km) of salmon, trout and coarse fisheries in the Yorkshire Region and their potential (% km) for physical restoration.

Division	Salmon	Trout	Coarse	Totals
Whole Region	80	4000	1500	5580
%	63	50	67*	55

* = This represents 1000 km; a further 800 km have the potential for physical restoration if water quality is improved sufficiently for fish to return there.

Note: Data not available for the separate Divisions.

Table 1.10. Summary of Tables 1.1-1.9, inclusive, showing the available lengths (km) of salmon, trout and coarse fisheries in the NRA Regions and their potential (% km) for physical restoration.

Region	Salmon	Trout	Coarse	Totals
Anglian	0	840	3882	4722
%	0	41	30	32
Northumbrian	1191	2382	467	4040
%	14	34	14	25
Northwest	161	591	1655	2257
%	10	3	48	37
Severn-Trent	812*	1014*	2630	3684
%	10	20	17	17
Southern	16	129	845	990
%	50	50	0	7
Thames	0	2100^^	2500^^	3000
%	0	50	50	50
Welsh	7000	27000	570	34570
%	10	10	10	10
Wessex	----- 1769** -----		700	2469
%		17	32	21
Yorkshire	80	4000	1500	5580
%	63	50	67	55
Totals	9260\$	38056	14749	61312
%	10	19	34	21

* = Includes 772 km same mixed salmon/trout fisheries

** = Mixed salmonid fisheries

^^ = Includes 1600 km same mixed trout/coarse fisheries

\$ = Totals excluding the Wessex combined salmonid data

Note: No data available from the Southwest Region

1.2 Literature search and review

The First Project Report (No. 362/2/A) listed 197 papers on restoration schemes and procedures in the U.K., Europe and North America. The list also included some general papers on fish community structure in rivers, knowledge of which is needed to underpin fishery management decisions. Since that bibliography was produced, a few more references have been found and these will be included in the final bibliography.

Table 1.11 gives a breakdown of the numbers of references according to the country (U.K., Europe, North America) and fishery (salmon, trout, coarse). 'Salmonid' refers to papers that do not separate salmon and trout, and 'General' refers to papers that deal with basic principles of stream fish ecology and/or restoration projects.

Table 1.11. The numbers of papers examined in the literature review, divided according to country and fishery.

	U.K.	Europe	N.America	Totals
Salmon	6	2	13	21
Trout	6	2	47	55
Salmonid	5	1	12	18
Coarse	13	5	8	26
General	16	3	61	80
Totals	46	13	141	200

All these papers have been examined by Mr Mann and/or Dr Winfield and their contents are being collated for the literature review. Mr Mann is responsible for the review of salmonid studies and Dr Winfield for the coarse fish studies.

2. PROGRAMME FOR NEXT REPORTING PERIOD

2.1 Analysis and summary of replies to Section II of the questionnaire

2.2 Completion of the literature review

3. FINANCIAL INFORMATION

3.1 Cost of work during period of report

Category	Cost During Period	Annual Budget	Project Budget
Staff	14000	16400	22500
T & S	850	850	1000
Capital	-	-	-
Consumables	1294	1500	1750
Reports	500	500	1500
Online searches	1000	1000	1000
TOTAL	17644	20250	27500

3.2 Estimate of total project costs at date of report submission

Category	Cost During Period
Staff	16400
T & S	850
Capital	-
Consumables	1500
Reports	500
Online searches	1000
TOTAL	20250

3.3 Anticipated cost during the period up to the next report

Category	Cost During Period
Staff	5850
T & S	150
Capital	-
Consumables	250
Reports	1000
TOTAL	7250

4. FACTORS WHICH MAY AFFECT COMPLETION OF PLANNED WORK

None.