ENVIRONMENT AGENCY
NORTH WEST REGION

River Alt/Crossens Fish Stock Assessment 2001

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SUMMARY

A total of 15 sites were electrofished in the Alt/Crossens catchment between 16th and 25th July 2001. These sites included 7 sites that were surveyed in the previous survey in 1996/1997.

The electrofishing procedure consisted of a single upstream pass at each site. The fish densities (expressed as biomass per $100m^2$) calculated from this method and presented in this report are semi-quantitative, or minimum estimates and therefore do not represent the complete coarse fish population at survey sites in the Alt/Crossens catchment.

The majority of the sites had low fish populations, with a substantial amount where nothing was caught. A high silt level was found at the majority of the Crossens sites so a full survey could not be undertaken, for health and safety reasons.

Limnophilic (stillwater) coarse fish were present at 53% of the sites surveyed, with two showing very high densities at Cheshire Lines and downstream of Cheshire Lines on Downholland Brook. Rheophilic (flowing water) coarse fish were present at slightly less sites, 5 of the 15 sites and in low numbers. The rest of the sites (6) contained either minor coarse fish for example sticklebacks or were fishless.

Water quality has improved since the last survey was done. This is reflected in the number of sites that now contain coarse fish species. In areas of poor fish population and increasing water quality, these could be areas for future stocking to improve the diversity and abundance of coarse fish species.

CONTENTS

1 INTRODUCTION

This report presents data for the Alt/Crossens Catchment as part of the routine 5-year rolling programme of stock assessment surveys carried out by the Fisheries Management Science and Recreation Team, North West Region, Central Area. The aim of the survey was to assess the distribution and abundance of coarse fish species in the Alt catchment in 2001 and to compare these with the results of the last comprehensive survey of the catchment in 1996/1997. The Crossens system has not been surveyed before.

The River Alt rises in Huyton, Liverpool (NGR SJ 448 914) and flows 28km to its tidal limit at Hightown. Huyton is within the Huyton Wetlands Site of Biological Interest (SBI). Upstream of Maghull the river drains mainly urban industrialised areas and has been heavily canalised for flood defence purposes. Water quality problems in this area of the River Alt and its tributaries arise from discharges from WasteWater Treatment Works (WwTW), Combined Sewer Overflows (CSO) and the wrong connection of foul drainage to the surface water system.

Downstream of Maghull the catchment consists of a predominantly pumped drainage system, which flows through a low-lying rural area consisting of extensive farmland. Here the river is constrained by artificially constructed embankments and receives significant inputs of agricultural run-off.

The Crossens catchment comprises of three main watercourses: The Sluice rising in the east of Rufford; Middle or Back Drain which drains the central area of mosslands; and Three Pools which rises in the south east of Ormskirk and flows north west, avoiding Southport. Again flows are pumped within an artificial drainage network. The water quality is affected by the CSO, diffuse agricultural inputs and sewage treatment works.

Within the Crossens is a large area of approximately 13,000 hectares that has been designated as Sites of Special Scientific Interest (SSSI) due to the international importance of the sand dunes along the Sefton Coast. The dunes are also designated as a Special Area of Conservation (SAC) and as a Special Protection Area (SPA). These wetlands support rare species for example Natterjack toads and rare plants and provide habitats for over-wintering waders and wildfowl.

The Alt/Crossens catchment is made up of three major rock types: sandstone underlies the entire Crossens and most of the Alt, with older coal strata on the eastern margins and mudstone on the west of the Alt and most of the Crossens. The Alt/Crossens catchment encroaches on three sandstone aquifers – Liverpool/Ormskirk, Rufford and Fylde and Preston.

The general water quality is of fair standard (General Quality Assessment Class C and D) and River Ecosystem Classification is 3 to 4 (Section 4.2). There are also a few reaches that have a GQA class B (Downholland Brook and Black Brook) and class E (River Alt and Fine Jane's Brook). The majority of the catchment has improved in water quality over recent years.

Th Alt catchment has 12 wastewater treatment works (WwTW) of varying sizes, with the smallest Barrownook and the largest Fazakerley. Water quality is particularly poor below the works due to inadequate treatment and little dilution for the effluent. In the Alt/Crossens area

there are about 79 combined sewer overflows of which 23 are currently designated as having an unsatisfactory impact on the receiving water. There are also 2 direct industrial discharges into the Alt and 3 in the Crossens. Another source of input can be from poorly managed septic tanks, which can overload and have a detrimental impact on local watercourses.

Diffuse sources of pollutants may rise from the intensive agricultural activities in the Lower Alt catchment and discharges of silage, slurry, pesticides, herbicides, fertilisers and other farm wastes which can pollute in both the short and long term.

2 METHODS

A total of 15 survey sites were electricfished throughout the Alt /Crossens catchment, including 7 sites that had been sampled in the last survey of the catchment in 1996/1997. Sites were selected in shallow, wadeable areas to be representative of the available habitat.

The survey commenced on 16th July and was completed on 25th July 2001. All sites were sampled using pulsed DC electricfishing, powered by a 2.5 KVA Honda generator. All sites were electricfished once in an upstream direction using 1 anode for sites less than 4m wide, and 2 anodes for greater than 4m wide. Sites ranged from 21m to 49m in length and the total area surveyed at each site ranged from $35m^2$ to $348m^2$.

All major coarse fish species and eels were collected for measurement. The fork lengths of all the major coarse fish species were measured to the nearest 0.5cm below. In addition, the total wet weight of each major coarse fish species and eels was measured. Coarse fish species were grouped into predator species, rheophilic (flowing water) species and limnophilic (stillwater) species for the purposes of analysis and classification. The definitions of predator, rheophilic and limnophilic coarse fish species are detailed in Table 1. Minimum densities per $100m^2$ were calculated for each age class of each species caught (the number of fish caught divided by the area fished and multiplied by 100). Minor coarse species such as bullheads, minnows and stoneloach were not collected but their approximate numbers were estimated as tens, hundreds or thousands per $100m^2$.

Table 1 Composition of Coarse Fish Species Groups used in the National Fisheries Classification Scheme.

Limnophilic Species	Rheophilic Species	Predator Species
Common Bream	Chub	Pike
Silver Bream	Dace	Perch
Roach	Barbel	Zander
Tench	Grayling	
Rudd		
Bleak		
Common Carp		
Crucian Carp		
Gudgeon		
Ruffe		

The fish data and physical habitat data were used to classify each site according to the National Fisheries Classification Scheme (NFCS). The NFCS compares the species/age class abundance data for each site with a national database of fish abundance, allocating each site to one of five abundance categories that each represents one fifth of the national data set for that species/age class. For example, if the density of chub and dace for a particular site falls within the top fifth of rheophilic fish densities for national sites, then it will be classified as category A, for rheophilic coarse species; a density in the bottom fifth will classify the site as category E. Where the species/age class is absent, the site is classified as category F (absent).

The actual densities of each species and age class that correspond to the NFCS grades are defined in Table 2 below.

Table 2 The densities (g per 100m^2) of coarse fish and corresponding NFCS grades.

NFCS Grade (Level 1 classification)	Coarse Fish Densities (g/100m^2)	
	Rheophilic	**Limnophilic**
A	>1514	>1287
B	653-1514	463-1287
C	269-653	137-463
D	64-269	24-137
E	0-64	0-24
F	0	0

3 RESULTS

3.1 Overview

Nine species of fish were recorded in the 2001 survey, namely;

chub	(*Leuciscus cephalus*),
dace	(*Leuciscus leuciscus*),
roach	(*Rutilus rutilus*),
gudgeon	(*Gobio gobio*),
perch	(*Perca fluviatilus*),
pike	(*Esox lucius*),
eel	(*Anguilla anguilla*),
stickleback	(*Gasterosteus aculeatus*),
and flounder	(*Platichthys flesus*)

The majority of the sites had low fish populations, with a substantial amount where nothing was caught. A high silt level was found at the majority of the Crossens sites so a full survey could not be undertaken. Limnophilic coarse fish were present at 53% of the 15 sites surveyed, with a couple showing very high densities. Rheophilic coarse fish were present at slightly less sites, 5 of the 15 sites.

3.2 Coarse Fish Densities 2001

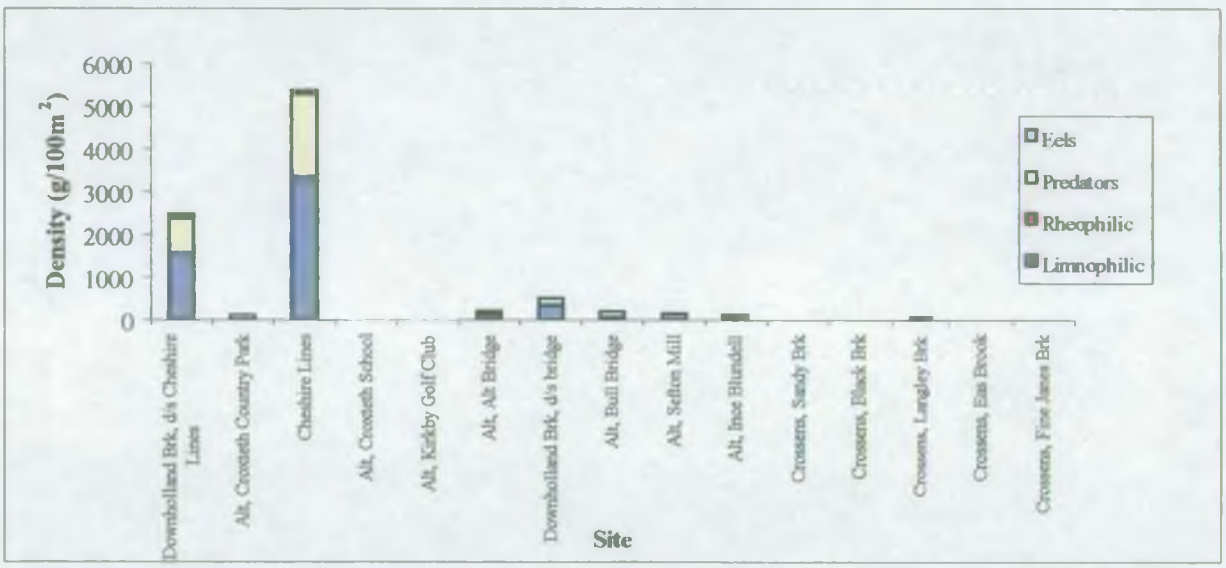


Figure 1 Fish Population in Alt/Crossens 2001

From this figure it clearly identifies 2 main areas where coarse fish are found, these are Cheshire Lines (NGR SD 329 083) and Downholland Brook, downstream of Cheshire Lines (NGR SD 325 086).

3.2.1 Rheophilic Species

The distribution of rheophilic coarse fish species is limited in comparison with limnophilic coarse fish species. The most productive site is Ince Blundell (NGR SD 329 045) with 90.90g/100m^2. The rest of the sites are below this biomass, with 67% of sites absent of rheophilic coarse fish (Map 1).

3.2.2 Limnophilic Species

There is a wide variation in limnophilic coarse fish densities in the Alt/Crossens catchment. The most productive sites are at Downholland Brook, d/s of Cheshire Lines (NGR SD 325 086) with 1551.02g/100m^2 and Cheshire Lines (NGR SD 329 083) with 3342.95g/100m^2. 47% of sites were devoid of limnophilic coarse fish species. The remaining 40% had densities ranging from 22.72g/100m^2 and 133.65g/100m^2. From the species present there are a good size range of fish indicating adequate conditions (Map 2).

3.3 Comparison with 1996/1997 results

Although fewer sites were surveyed in the Alt/Crossens catchment in 2001, there has been an overall improvement in Rheophilic and Limnophilic coarse fish densities.

In 1996 the Alt was devoid of rheophilic species (Grade F), this has made a slight improvement with 50% of sites Grade E or above (Map 3). The most productive site for rheophilic species is Ince Blundell on the R. Alt (91g/100m^2 – Grade D).

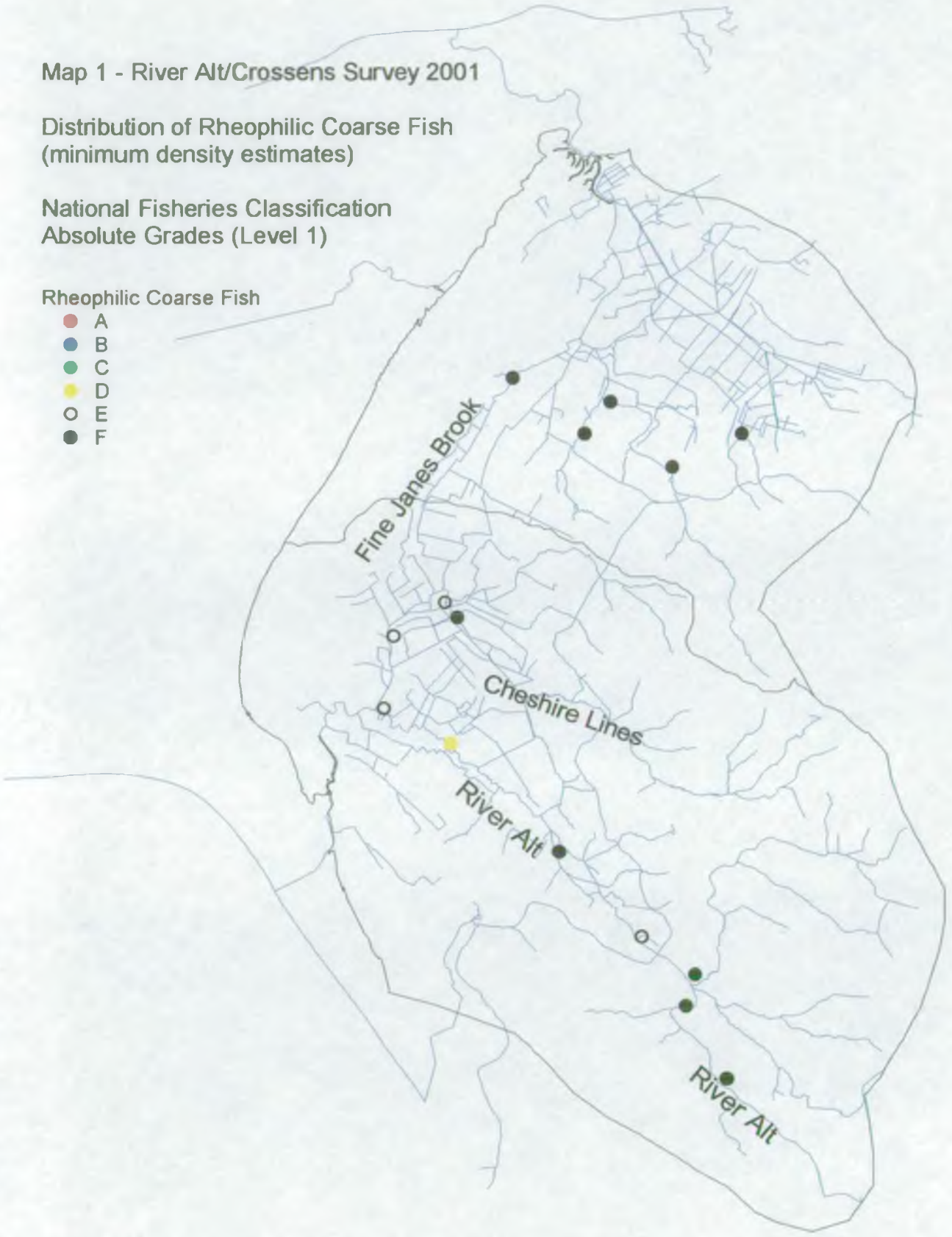
In 1996 limnophilic coarse fish densities were mostly absent from all sites with the exception of the lower Alt, Cheshire Lines and Downholland Brook where good densities were found (Grades A-D). In 2001 70% of sites were Grade E or above compared to 20% in 1996 (Map 4). The most productive site is on Cheshire Lines where 3343g/100m^2 (Grade A) limnophilic species are found. This good productivity has remained over both surveys.

The Crossens has not been surveyed before 2001 so a comparison cannot be made. The Crossens survey was very difficult to survey due to deep water and deep silt levels. From the 5 sites that were surveyed, they were all devoid of rheophilic species and only 1 site contained limnophilic species.

Map 1 - River Alt/Crossens Survey 2001

Distribution of Rheophilic Coarse Fish
(minimum density estimates)

National Fisheries Classification
Absolute Grades (Level 1)



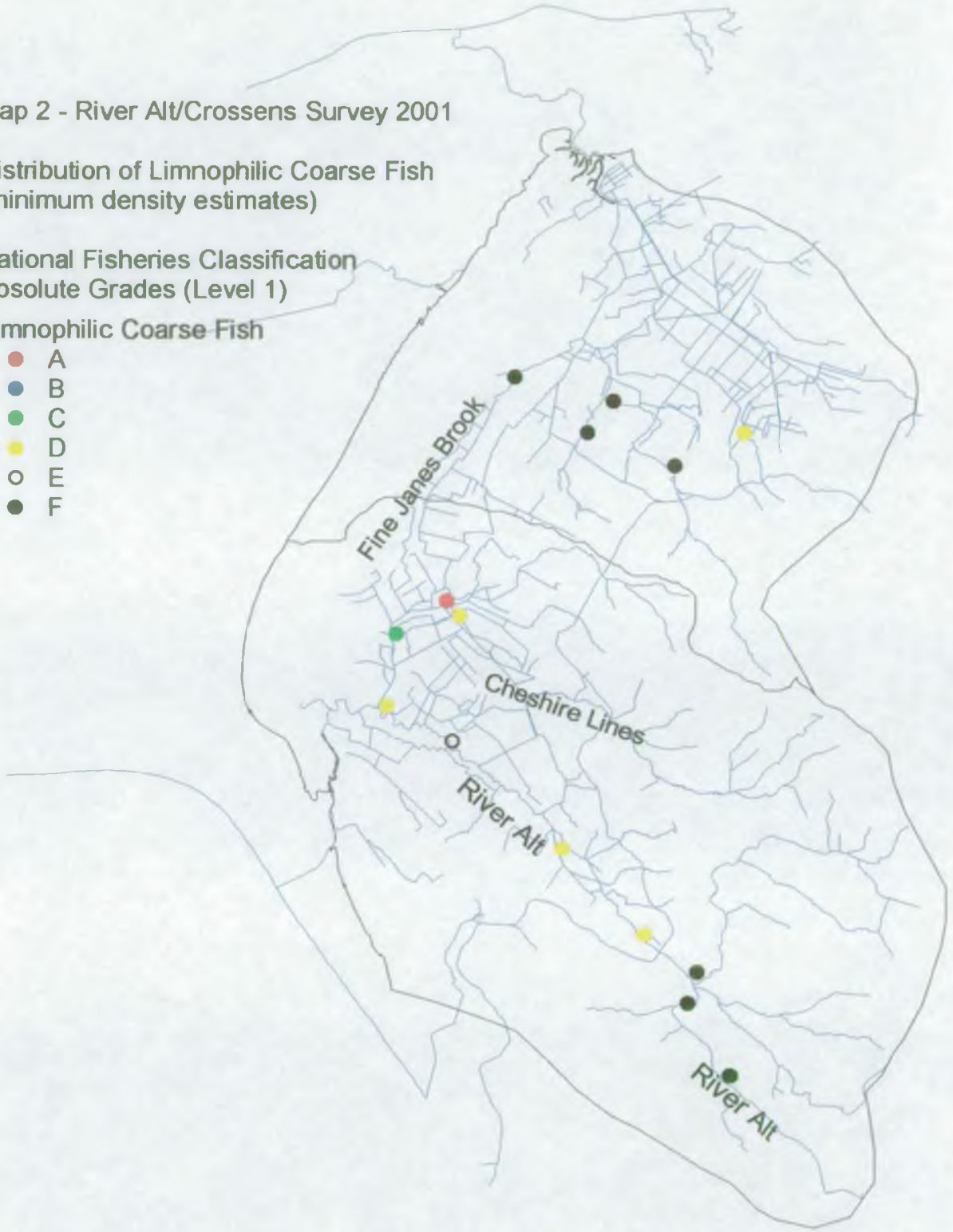
Map 2 - River Alt/Crossens Survey 2001

Distribution of Limnophilic Coarse Fish
(minimum density estimates)

National Fisheries Classification
Absolute Grades (Level 1)

Limnophilic Coarse Fish

- A
- B
- C
- D
- E
- F



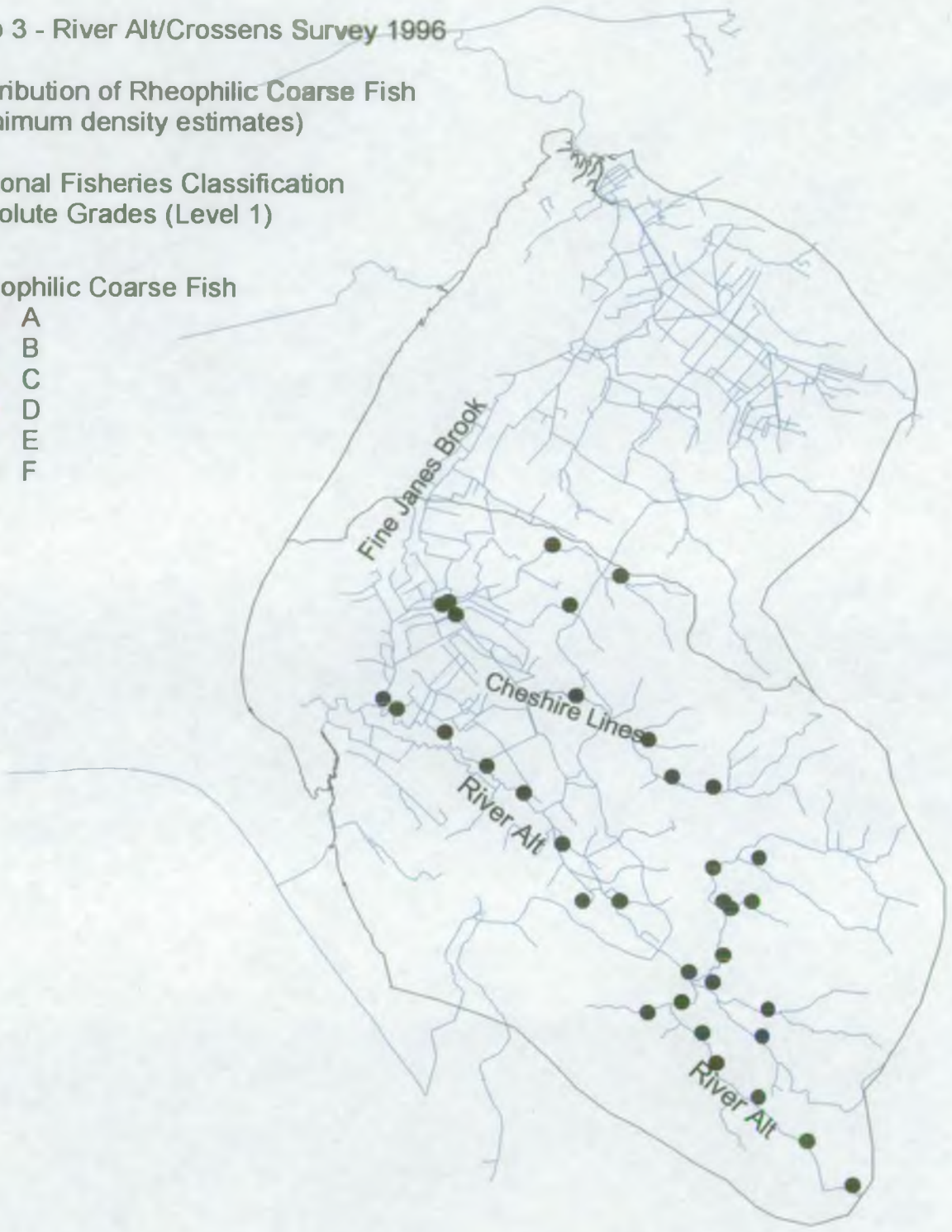
Map 3 - River Alt/Crossens Survey 1996

Distribution of Rheophilic Coarse Fish
(minimum density estimates)

National Fisheries Classification
Absolute Grades (Level 1)

Rheophilic Coarse Fish

- A
- B
- C
- D
- E
- F



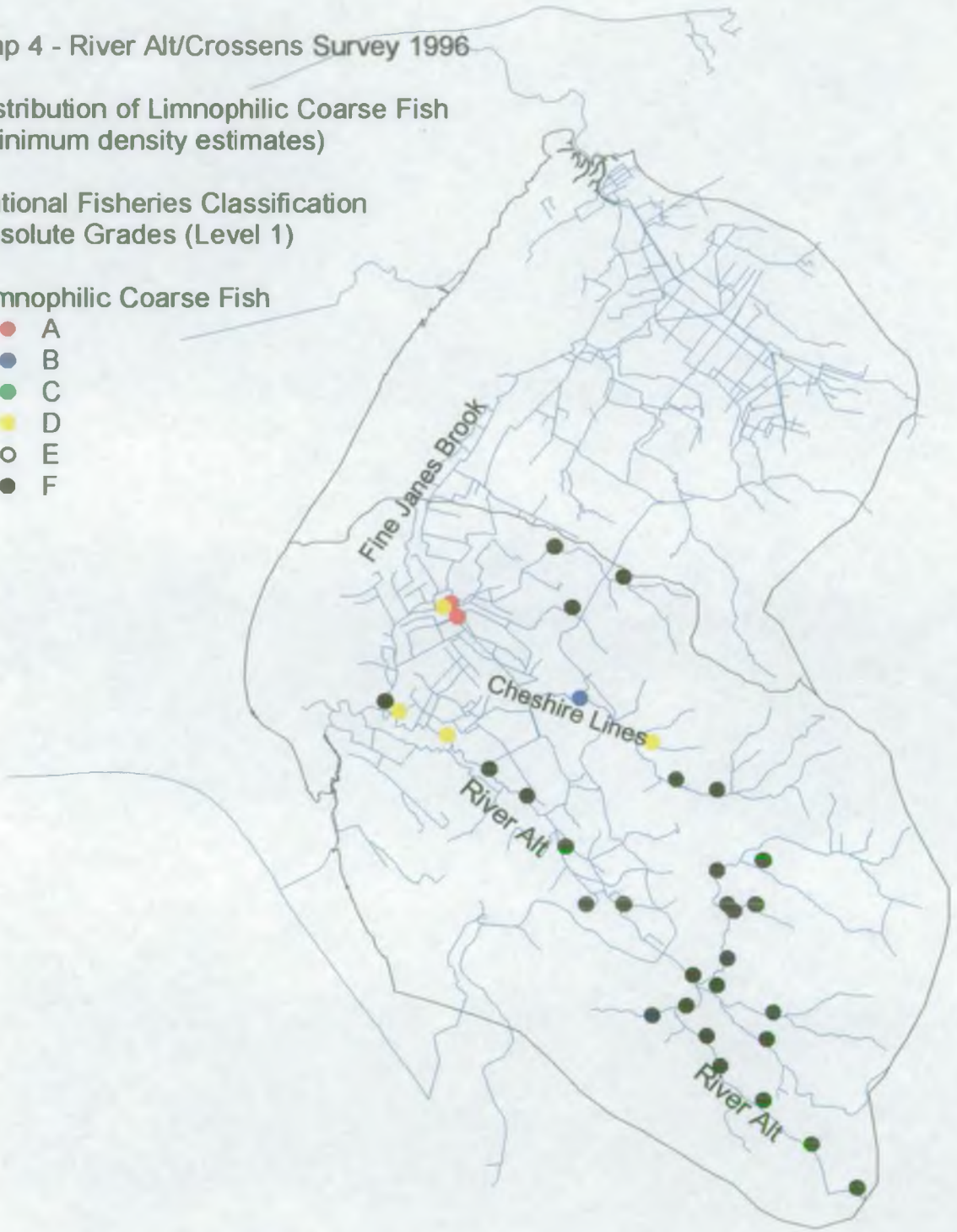
Map 4 - River Alt/Crossens Survey 1996

Distribution of Limnophilic Coarse Fish
(minimum density estimates)

National Fisheries Classification
Absolute Grades (Level 1)

Limnophilic Coarse Fish

- A
- B
- C
- D
- E
- F



4 DISCUSSION

4.1 Species Composition

Foot and Mouth Disease outbreaks restricted the full survey of the Alt/Crossens catchment. This survey will therefore provide a minimum estimate of the total coarse fish populations present.

4.2 Water Quality

There are uses two principal schemes for the reporting and management of river water quality; the General Quality Assessment (GQA) scheme and the Water Quality Objectives (WQO) scheme. The GQA scheme is used to make periodic assessments of the quality of river water in terms of general chemistry and general biology, in order to monitor geographical and temporal trends. GQA chemistry and biology are defined by six grades ranging from A (Very good) to F (bad). In terms of GQA chemistry from 1998 to 2000, the majority of the Alt/Crossens is described as fairly good (GQA classes C and D), with the River Alt being described as poor (class E) and Dovers Brook as bad (F).

The WQO scheme establishes clear quality targets to provide a commonly agreed planning framework for regulatory bodies and discharges alike. This scheme is based upon the recognised uses to which a stretch of river may be put. Standards defining the five-tiered River Ecosystem (RE) use classes, which address the chemical quality requirements of different types of aquatic ecosystems, were introduced by "The Surface Waters (River Ecosystem) Classification Regulations 1994".

Table 1 – General descriptions of the five River Ecosystem classes.

River Ecosystem Class	Description
RE 1	Water of very good quality suitable for all fish species
RE 2	Water of good quality suitable for all fish species
RE 3	Water of fair quality suitable for high class coarse fish populations
RE 4	Water of fair quality suitable for coarse fish populations
RE 5	Water of poor quality which is likely to limit coarse fish populations
Waters that do not achieve RE 5 are of bad quality in which fish are unlikely to survive.	

River Ecosystem objectives are set for all of the specified reaches of the river system, on short, medium and long term basis. Short to medium term objectives are set where investment or campaigns are likely to result in a rapid improvement in water quality, and long term objectives are set where short term investment is not planned but an improvement in water quality is sought. The long term River Ecosystem objectives for the Alt/Crossens system are mostly set at RE2 or RE4 which are levels that are capable of sustaining coarse fish. The Alt is a mixture of RE4 and RE5.

4.3 Stocking

A total of 11700 1+ Roach Fry were stocked out in Nov/Dec 2001. These fish are part of a 5-year stocking plan established by the Agency as part of its stocking plan for the Alt.

Cheshire Lines	Bickerstaffe WwTW to B5197	3000
Sandy Brook	QSL Hurleston Brook to Conf with Black Brook	700
Black Brook	QSL to Three Pools	1500
Chisnall Brook	QSL Chisnall Brook to Downholland Brook	3000
Barton Brook	QSL at Carr Moss Lane to Chisnall Brook	1000
Simonswood Brook	Kirby Brook to Alt	500
Croxteth/Knowsley Brook	QSL at Knowsley Brook to Alt	500
Knowsley Brook	QSL at Knowsley WwTW to Croxteth Brook	1500
Total		11700

When this survey is next completed in 2006, if water quality has remained the same or improved, it is hoped that these stockings will improve the sustainable populations within the Alt/Crossens catchment.

5 CONCLUSION

The restrictions from foot and mouth disease resulted in the under-representation of major coarse fish within the Alt/Crossens catchment.

Major coarse fish densities were generally low throughout the catchment, with a few areas showing excellent numbers. Overall there has been an improvement from 1996 in the Alt but a comparison with the Crossens cannot be made due to lack of previous data.

Rheophilic coarse fish species have gradually increased to produce the low densities present in the 2001 survey. Limnophilic coarse fish densities have remained fairly constant with the exception of 3 sites – 2 on the middle Alt and one on Downholland Brook that have increased slightly.

There have been improvements in the water quality since 1996, which are reflected in the 2001 coarse fish densities and stocking. If this improvement is continued then the Alt/Crossens could see a significant improvement in coarse fish densities. The Crossens is due to be desilted in 2002, as part of the Crossens flood defence management plan. Once this work has been undertaken, fish populations may start to increase, the water quality is suitable to sustain coarse fish populations. If the silt loading can be reduced this may have a beneficial impact on the surviving coarse fish due to greater survival of juvenile coarse fish.

The most productive area for rheophilic coarse fish within the Alt/Crossens catchment is Ince Blundell on the River Alt. The most productive areas for limnophilic coarse fish are the lower and middle sections of the River Alt, Downholland Brook and Cheshire Lines. There is one site on the Crossens on Langley Brook that contains limnophilic coarse fish at a Grade D.

6 RECOMMENDATIONS

A new monitoring programme has been implemented during 2001. The sites that have been identified are part of a 5-year rolling programme.

As the Crossens catchment is a flood management scheme, only slight improvements can be made. If the Alt catchment sewage works and combined sewer overflows did not discharge into the Alt then this would improve the water quality of the catchment. With this improvement a sustainable population like Cheshire Lines and Downholland Brook could be achieved. Also the diffuse agricultural inputs and pollution incidents need to be reduced in order to improve the coarse fisheries within the Alt/Crossens catchment.

Habitat restoration could also improve the fish densities returning the canalised catchment back to a natural river network that would potentially support the high densities present elsewhere in the catchment.

A continuation in water quality improvement within the entire catchment will allow a more diverse and sustainable fishery to be developed assuming no other limiting factors. With an improvement in water quality more fishless sites/low densities can be stocked with suitable species for example, roach and possibly chub and dace.

7 APPENDICES

SITE REPORT SHEETS

SITE REPORT

Site Details

River System:-	Crossens	Site Code:-	Lb01
Watercourse:-	Langley Brook	Date Fished:-	25-Jul-01
Location:-	Langleys Farm	NGR:-	SD 412 138

Habitat Features

Length (m):-	42	Mean width (m):-	2.37
Area (m^2):-	99.54	Mean depth (m):-	0.1
Gradient (m/km)	4.3	Max. depth (m):-	0.2
Water level:-	Summer Flow		
Site description:-	0 % Pool	70 % Glide	30 % Riffle
Adjacent land use:-	Arable		
Method:-	Upstream electric-fishing, Backpack, I anode, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	D

Comments

Species Caught: Gudgeon, Stickleback
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		60.27
Total		60.27

SITE REPORT

Site Details

River System:-	Crossens	Site Code:-	Eb01
Watercourse:-	Eas Brook	Date Fished:-	25-Jul-01
Location:-	Scarisbrick Hall	NGR:-	SD 393 127

Habitat Features

Length (m):-	30	Mean width (m):-	3.1
Area (m^2):-	93	Mean depth (m):-	0.1
Gradient (m/km)	7.1	Max. depth (m):-	0.3
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	School Grounds, trees		
Method:-	Upstream electric-fishing, 1 anode, pulsed DC, wading, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	F

Comments

Species Caught: Stickleback
Stocking: Sandy Brook stocked with 700 1+ Roach Fry in Nov 2001

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		0
Total		0

SITE REPORT

Site Details

River System:-	Crossens	Site Code:-	Sb01
Watercourse:-	Sandy Brook	Date Fished:-	25-Jul-01
Location:-		NGR:-	SD 374 147

Habitat Features

Length (m):-	35	Mean width (m):-	1
Area (m^2):-	35	Mean depth (m):-	0.1
Gradient (m/km)	1	Max. depth (m):-	0.25
Water level:-	Summer Flow		
Site description:-	10 % Pool	60 % Glide	30 % Riffle
Adjacent land use:-	Arable		
Method:-	Upstream electric-fishing, Backpack, 1 anode, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	F

Comments

Species Caught: Nothing
Stocking: Sandy Brook stocked with 700 1+Roach Fry in Nov 2001

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		0
Total		0

SITE REPORT

Site Details

River System:-	Crossens	Site Code:-	Bb01
Watercourse:-	Black Brook	Date Fished:-	25-Jul-01
Location:-	Black Brook Bridge	NGR:-	SD 367 137

Habitat Features

Length (m):-	34	Mean width (m):-	2.8
Area (m^2):-	95.2	Mean depth (m):-	0.15
Gradient (m/km)	1	Max. depth (m):-	0.2
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Arable		
Method:-	Upstream electric-fishing, Backpack, I anode, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	F

Comments

Species Caught: Roach Fry, Stickleback
Stocking: Black Brook stocked with 1500 1+Roach in Nov 2001

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		0
Total		0

SITE REPORT

Site Details

River System:-	Crossens	Site Code:-	FJ01
Watercourse:-	Fine Janes Brook	Date Fished:-	25-Jul-01
Location:-		NGR:-	SD 347 153

Habitat Features

Length (m):-	43	Mean width (m):-	4.25
Area (m^2):-	182.75	Mean depth (m):-	0.4
Gradient (m/km)	1	Max. depth (m):-	0.6
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Grassland		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	F

Comments

Species Caught: Stickleback
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		0
Total		0

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al08a
Watercourse:-	Alt	Date Fished:-	17-Jul-01
Location:-	Bull Bridge	NGR:-	SJ 383 988

Habitat Features

Length (m):-	35	Mean width (m):-	7.4
Area (m^2):-	259	Mean depth (m):-	0.5
Gradient (m/km)	1.5	Max. depth (m):-	0.9
Water level:-	Summer Flow		
Site description:-	0 % Pool	10 % Glide	90 % Riffle
Adjacent land use:-	Pasture, Housing, Grassland, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	E	D

Comments

Species Caught: Roach, Chub, Gudgeon, Eel, Stickleback
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		28.95
Limnophilic		28.95
Total		57.9

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al10
Watercourse:-	Alt	Date Fished:-	17-Jul-01
Location:-	Sefton Mill	NGR:-	SD 360 013

Habitat Features

Length (m):-	21.5	Mean width (m):-	8.7
Area (m^2):-	187.05	Mean depth (m):-	0.4
Gradient (m/km)	1.5	Max. depth (m):-	0.6
Water level:-	Summer Flow		
Site description:-	0 % Pool	70 % Glide	30 % Riffle
Adjacent land use:-	Agricultural, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	F
2001 Classification	F	D

Comments

Species Caught: Roach, Eel, Gudgeon, Flounder
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	0
Limnophilic	0	133.65
Total	0	133.65

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al13
Watercourse:-	Alt	Date Fished:-	17-Jul-01
Location:-	Ince Blundell	NGR:-	SD 329 045

Habitat Features

Length (m):-	25	Mean width (m):-	8.8
Area (m^2):-	220	Mean depth (m):-	0.8
Gradient (m/km)	1.5	Max. depth (m):-	0.8
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Agricultural, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	D
2001 Classification	D	E

Comments

Species Caught: Chub, Roach
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	90.9
Limnophilic	25	22.72
Total	25	113.62

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Dh01
Watercourse:-	Downholland Brook	Date Fished:-	17-Jul-01
Location:-	d/s bridge	NGR:-	SD 311 077

Habitat Features

Length (m):-	38	Mean width (m):-	6.5
Area (m^2):-	247	Mean depth (m):-	0.7
Gradient (m/km)	1.5	Max. depth (m):-	1
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Flood Banks, grassland, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	E	C

Comments

Species Caught: Roach, Chub, Eel, Roach Fry
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		16.19
Limnophilic		323.88
Total		340.07

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al14
Watercourse:-	Alt	Date Fished:-	17-Jul-01
Location:-	Alt Bridge	NGR:-	SD 308 056

Habitat Features

Length (m):-	24.5	Mean width (m):-	10.4
Area (m^2):-	254.8	Mean depth (m):-	0.7
Gradient (m/km)	1.5	Max. depth (m):-	1.25
Water level:-	Summer Flow		
Site description:-	0 % Pool	85 % Glide	15 % Riffle
Adjacent land use:-	Agricultural, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	D
2001 Classification	E	D

Comments

Species Caught: Roach, Roach Fry, Chub, Eel, Gudgeon, Flounder, Stickleback
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	19.6
Limnophilic	37	105.96
Total	37	125.56

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al04
Watercourse:-	Alt	Date Fished:-	16-Jul-01
Location:-	Croxteth Country Park	NGR:-	SJ 406 948

Habitat Features

Length (m):-	44	Mean width (m):-	3.4
Area (m^2):-	149.6	Mean depth (m):-	0.4
Gradient (m/km)	1.5	Max. depth (m):-	1.3
Water level:-	Summer Flow		
Site description:-	90 % Pool	0 % Glide	10 % Riffle
Adjacent land use:-	Parkland, grass,Dense Vegetation		
Method:-	Upstream electric-fishing, 1 anode, pulsed DC, wading, no stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	F
2001 Classification	F	F

Comments

Species Caught: Pike, Stickleback
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	0
Limnophilic	0	0
Total	0	0

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al07
Watercourse:-	Alt	Date Fished:-	16-Jul-01
Location:-	Kirby Golf Club	NGR:-	SJ 397 977

Habitat Features

Length (m):-	43.5	Mean width (m):-	8
Area (m^2):-	348	Mean depth (m):-	0.3
Gradient (m/km)	1.5	Max. depth (m):-	0.4
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Golf Club, Scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream and downstream stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	F
2001 Classification	F	F

Comments

Species Caught: Nothing
Stocking: Simonswood Brook stocked with 500 1+ Roach in Nov 2001

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	0
Limnophilic	0	0
Total	0	0

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Al04a
Watercourse:-	Alt	Date Fished:-	16-Jul-01
Location:-	Croxteth School	NGR:-	SJ 395 968

Habitat Features

Length (m):-	47	Mean width (m):-	6.95
Area (m^2):-	326.65	Mean depth (m):-	0.5
Gradient (m/km)	1.5	Max. depth (m):-	1
Water level:-	Summer Flow		
Site description:-	0 % Pool	40 % Glide	60 % Riffle
Adjacent land use:-	Road/Housing, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification		
2001 Classification	F	F

Comments

Species Caught: Nothing
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic		0
Limnophilic		0
Total		0

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Dh02
Watercourse:-	Downholland Brook	Date Fished:-	16-Jul-01
Location:-	d/s Cheshire Lines	NGR:-	SD 325 086

Habitat Features

Length (m):-	49	Mean width (m):-	5
Area (m^2):-	245	Mean depth (m):-	0.75
Gradient (m/km)	1.5	Max. depth (m):-	1.25
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Agricultural, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream and downstream stopnets		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	D
2001 Classification	E	A

Comments

Species Caught: Roach, Perch, Gudgeon, Dace, Pike, Eels
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	4.08
Limnophilic	135	1551.02
Total	135	1555.10

SITE REPORT

Site Details

River System:-	Alt	Site Code:-	Cl01
Watercourse:-	Cheshire Lines	Date Fished:-	16-Jul-01
Location:-	Upto road bridge	NGR:-	SD 329 083

Habitat Features

Length (m):-	21	Mean width (m):-	4.95
Area (m^2):-	103.95	Mean depth (m):-	0.75
Gradient (m/km)	1.5	Max. depth (m):-	1.25
Water level:-	Summer Flow		
Site description:-	0 % Pool	100 % Glide	0 % Riffle
Adjacent land use:-	Flood Banks, grassland, scrub		
Method:-	Upstream electric-fishing, 2 anodes, pulsed DC, wading, upstream stopnet		

Fishery Classification (level 1)

	Rheophilic	Limnophilic
1996 Classification	F	A
2001 Classification	F	A

Comments

Species Caught: Pike, Roach, Gudgeon, Eel
Stocking: None

Species	Density (g. per $100m^2$)	
	1996	2001
Rheophilic	0	0
Limnophilic	2188	3342.95
Total	2188	3342.95