

EA-NORTH WEST Box 7

ENVIRONMENT AGENCY

NORTH WEST REGION

Water Resources Environmental Monitoring Electricfishing Survey 2001

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EA/NW/C/ETR/02/01

5



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SUMMARY.

A total of 18 sites were surveyed throughout the Douglas catchment in 2001, in June and again in August.

The sites were surveyed quantitatively (3 runs) in order to ascertain the population ~~biomass~~ ^{density}. This form of sampling is a more detailed survey producing better population estimates. Population estimates were calculated by the method of Carle and Strub (1978) and expressed as numbers of fish of each species per 100m². If the overall probability of capture was greater than or equal to 0.3, then the population estimate was considered valid. From the 18 sites there was only one site that did not meet this figure – trout fry at Cross Hall Lane on Black Brook (SD 597 174) had a population estimate of 0.239.

✓ No salmon fry and parr were found in the survey.

→ WOULD YOU EXPECT THESE?

Trout fry production was relatively low with the exception of Baggoneley Lane (SD 597 185) on Black Brook and M61 (SD 604 163) on the R. Yarrow. The lowest densities were on the R. Lostock were the sites were fishless.

→ IN RELATION TO WHAT?

Trout parr production was slightly better than trout fry densities. The most productive sites were Kittiwake Road (SD 602 192), Baggoneley Lane and upstream of Blindhurst Bridge (SD 615 152). Only 28% of sites surveyed on the R. Yarrow did not contain trout parr.

Rheophilic Coarse Fish (Flowing water species) had a very good distribution throughout the Douglas catchment. The most productive sites are downstream of Yarrow Bridge (SD 592 162) on the River Yarrow, and Sheep Mill Lane (NGR SD 562) and Havelock Road (NGR SD 562 254) on the River Lostock

Limnophilic Coarse Fish (Stillwater species) had a wide variation in the density throughout the catchment with the majority in the River Lostock. Again the most productive sites were Sheep Hill Lane and Havelock Road. Downstream of Yarrow Bridge also contained a relatively productive population of limnophilic coarse fish.



1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we consider the case of a single particle in a potential well.

3. The third part is devoted to the case of a system of particles in a potential well.

4. In the fourth part, we consider the case of a system of particles in a potential well.

5. The fifth part is devoted to the case of a system of particles in a potential well.

6. In the sixth part, we consider the case of a system of particles in a potential well.

7. The seventh part is devoted to the case of a system of particles in a potential well.

8. In the eighth part, we consider the case of a system of particles in a potential well.

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1 INTRODUCTION

Mo4??
The report presents data collected for the environmental monitoring program funded by Water Resources function of North West region, Central Area. The main objective of this monitoring program was to gather fishery data at sites immediately downstream of reservoirs that were subject to Drought Orders/Permits during the drought event of 1995/96. The fishery data would then be available to aid decisions on any future Drought Order/Permits. Additional sites were also surveyed in areas of potential low flow. **DETAIL THESE**

The River Lostock receives run off from Rivington Moor and drainage from the town of Leyland and from intensively grazed farmland in its lower reaches. It joins the River Yarrow to the west of Croston village. **WHY SURVEY LOSTOCK** Control.

B/BK
↓
Brinscall
Lodges.
DO.
Black Bk
White Copice Yarrow.
Lodges.
The River Yarrow is principally a rural river though it receives considerable urban drainage from the town of Chorley and the village of Croston. It is joined by the Lostock and flows into the Douglas in its tidal reaches. **WHY SURVEY YARROW**

The general water quality can be defined as fairly good to fair standard (General Quality Assessment Class B to C and River Ecosystem Classification 2 to 3).

Rivington out of DO/DP.
UV. to contact*
if any changes

2 METHODS

A total of 18 sites were surveyed throughout the Douglas catchment in 2001, in June and August. Sites were selected in shallow, wadeable areas to be representative of the available habitat.

The survey commenced on 18 June and was completed on 22 June 2001. The autumn survey commenced on 21 August and was completed on 31st August 2001. All sites were sampled using pulsed DC electricfishing, powered by a 2.5 KVA Honda generator. All sites were electricfished 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 and the total area surveyed at each site ranged from 35m² to 348m². The sites were surveyed quantitatively where each "run" (one electricfishing sample) should catch less fish in that particular stretch of river. This aids us to find a population biomass for a particular section. This form of sampling is a more detailed survey producing better population estimates. Population estimates for fish populations were calculated by the method of Carle and Strub (1978) and expressed as numbers of fish of each species per 100m². If the overall probability of capture was greater than or equal to 0.3 then the population estimate was considered valid. Biomass was calculated by:

$$\text{Biomass of species A} = \frac{\text{Total weight of species A at site}}{\text{Total number of species A at site}} \times \text{population estimate of species A}$$

All salmonids and major coarse fish species and eels were collected for measurement and held in separate tanks for the different "runs". The fork lengths of all the salmonids and 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. Salmonid age classes were identified as 0+ (fry) or greater than 0+ (parr) based on the length frequency method. ~~Minimum densities per 100m² 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 stone loach were not collected but their approximate numbers were estimated as tens, hundreds or thousands per 100m².

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

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		

Table 2 The densities (g or no. per 100m²) of coarse fish and juvenile trout and corresponding NFCS grades.

NFCS Grade (Level 1 classification)	Coarse Fish Densities (g/100m ²)		Trout Densities (no./100m ²)	
	Rheophilic	Limnophilic	Fry (0+)	Parr (>0+)
A	>1514	>1287	>38	>21
B	653-1514	463-1287	17-38	12-21
C	269-653	137-463	8-17	5-12
D	64-269	24-137	3-8	2-5
E	0-64	0-24	0-3	0-2
F	0	0	0	0

3 RESULTS

3.1 Overview

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

chub	(<i>Leuciscus cephalus</i>),
dace	(<i>Leuciscus leuciscus</i>),
roach	(<i>Rutilus rutilus</i>),
gudgeon	(<i>Gobio gobio</i>),
perch	(<i>Perca fluviatilis</i>),
pike	(<i>Esox lucius</i>),
eel	(<i>Anguilla anguilla</i>),
stickleback	(<i>Gasterosteus aculeatus</i>),
bullhead	(<i>Cottus gobio</i>),
stoneloach	(<i>Barbatula barbatula</i>),
brown trout	(<i>Salmo trutta</i>),
and brook lamprey	(<i>Lampetra planeri</i>),

The majority of the sites had very good coarse and juvenile trout populations, with a couple of sites with high densities. Limnophilic coarse fish were present at 61% of the 18 June sites surveyed, with a couple showing very high densities. (Rheophilic coarse fish were present at the same percentage of sites as rheophilic coarse fish). In the August survey, limnophilic and rheophilic coarse fish were present at slightly lower levels (50% and 56% respectively). Juvenile trout were present at 72% of sites in June and August.

3.2 Coarse fish densities 2001

There is a good distribution of coarse fish throughout the River Lostock and lower River Yarrow.

3.2.1 Rheophilic Species

There is a wide variation in the density (biomass) of rheophilic coarse fish in Rivers Yarrow and Lostock. The most productive sites are on the Yarrow downstream of Yarrow Bridge (NGR SD 592 162) and Sheep Mill Lane (NGR SD 567 227) and Havelock Road (NGR SD 562 254) on the River Lostock.



Plate 1 – downstream of Yarrow Bridge

3.2.1.1 River Yarrow and tributaries

Black Brook, a tributary of Yarrow, has a small population of rheophilic coarse fish. From the large size and weight of the few species caught, the population is not sustainable. This is not the case in the Yarrow as rheophilic coarse fish are present in good densities with approximately 60% of sites between 54g and 1233.99g/100m² (± 2.28 g/100m²). The 95% confidence limits of ± 2.28 is split into ± 0.90 for chub and ± 1.38 for dace indicating that from the size of fish caught there is a better probability of capture for chub than for dace.

3.2.1.2 River Lostock and tributaries

The River Lostock is a very good watercourse for rheophilic coarse fish. Fish are present in very high densities. Of the sites surveyed in June, 86% contained fish, compared to 71% in August. The densities ranged from 50.25 to 1185.79g/100m². The most productive site in June is Havelock Road (NGR SD 562 254) and in August is Sheep Mill Lane (NGR SD 567 227).



Plate 2 – Havelock Road

3.2.2 Limnophilic Species

There is a wide variation in the density (biomass) of limnophilic coarse fish. The most productive sites are Sheep Mill Lane (NGR SD 567 227) and Havelock Road (NGR SD 562 254).

3.2.2.1 River Yarrow and tributaries

There is a restricted distribution of limnophilic fish species in the River Yarrow. The most productive site is downstream of Yarrow Bridge (NGR SD 592 162) where 570.44g/100m² (± 6.35 g/100m²) were found in June and 325.17g/100m² (± 1.88 g/100m²) in August. The 95% confidence limits shows that probability of capture is greater for chub in August than in June. The probability of capture for gudgeon (± 0.00 g/100m²) is likely for every electricfishing run. Black Brook has a low population of gudgeon and roach with densities no greater than 81.00g/100m².

3.2.2.2 River Lostock and tributaries

The River Lostock contains the most limnophilic fish. Of the sites that were surveyed, 83-85% contained limnophilic species (June and August respectively). Of this 83-85%, 5 and 6 sites respectively had densities greater than 137g per 100m² according to the National Fisheries Classification Scheme (NFCS). The most productive sites are Sheep Hill Lane (2739.17g and 1679.75g per 100m² respectively) and Havelock Road (1839.55g and 336.86g/100m² respectively).

3.3 Juvenile Trout Densities

There is an abundance of trout in the Douglas catchment, which is mainly concentrated in the River Yarrow sub-catchment. Both trout fry and parr have good densities. The River Lostock has very low densities or are fishless for trout.

*- needs re wordin
as it contradicts
the 1st sentence*

3.3.1 Trout Fry

The River Yarrow is the only sub-catchment that contains trout fry. The majority of these sites have low densities with the exception of Baggoneley Lane on Black Brook and M61 on the Yarrow. The densities were between 9.62 fish/100m² (± 0.00 fish/100m²) and 37.54 fish/100m² (± 0.00 fish/100m²) respectively in August and 26.46 fish/100m² (± 3.34 fish/100m²) and 48.19 fish/100m² (± 1.42 /100m²) respectively in June. Cross Hall Lane on Black Brook is the only site where the population estimate was not valid, the value was 0.239, which failed to meet the criteria of greater than or equal to 0.3.

3.3.2 Trout Parr

The River Lostock has trout parr at 2 sites which contain low densities. These are at Lower Copthurst (SD 593 215) with 5.17 fish/100m² (± 0.00 fish/100m²) in August and 7.39 fish/100m² (± 0.00 fish/100m²) in June and Kern Mill Lane (SD 577 215) with 3.74 fish/100m² (± 0.00 fish/100m²) in August and 5.88 fish/100m² (± 0.00 fish/100m²) in June.

The River Yarrow has the greatest distribution and abundance of trout parr in the Douglas catchment. From the 18 sites that were surveyed, only 28% did not contain trout parr. The most productive sites were Kittiwake Road, Baggoneley Lane and upstream of Blindhurst Bridge with densities recorded as Grade B according to NFCS (12.67 to 19.25 fish/100m²). The rest of the sites were relatively productive with densities between 0.96 and 10.89 fish/100m² (± 0.00 fish/100m²).

3.4 National Fisheries Classification Scheme

The site specific National Fisheries Classification Absolute Grades (Level 1) from the surveys are given for each species/age class in Figures 1-12.

4 DISCUSSION

4.1 Species Composition

The survey showed that the catchment holds a wide variety of fish species with a total of 29 species being found, ~~with all the minor coarse species being observed as well.~~ Of the salmonids, only brown trout were found due to the industrial heritage of the catchment.

*number of impassable
weirs*

4.2 Adult Abundance

Habitat and stocking issues aside, the distribution and abundance of juvenile trout and coarse fish are significantly affected by the abundance of spawning adults, particularly in the two previous years, and the ability of those adults to reach the spawning areas. For example, in low flow years, the ability of the adult stock to penetrate into spawning streams is likely to be reduced, therefore resulting in a more restricted distribution of juveniles in the following years.

4.3 Water Quality

The Environment Agency 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 Rivers Douglas and Yarrow are described as Good/Fair (GQA class B/C) with the River Lostock being Fair (GQA class C).

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 (Table 2), which address the chemical quality requirements of different types of aquatic ecosystems, were introduced by "The Surface Waters (River Ecosystem) Classification Regulations 1994".

Figure 1 - Drought Survey 2001

Distribution and Abundance of
Salmon Fry (0+) in Spring

Population Estimates according
to Carle and Strub (1978)

National Fisheries Classification

Absolute Grades (Level 1)

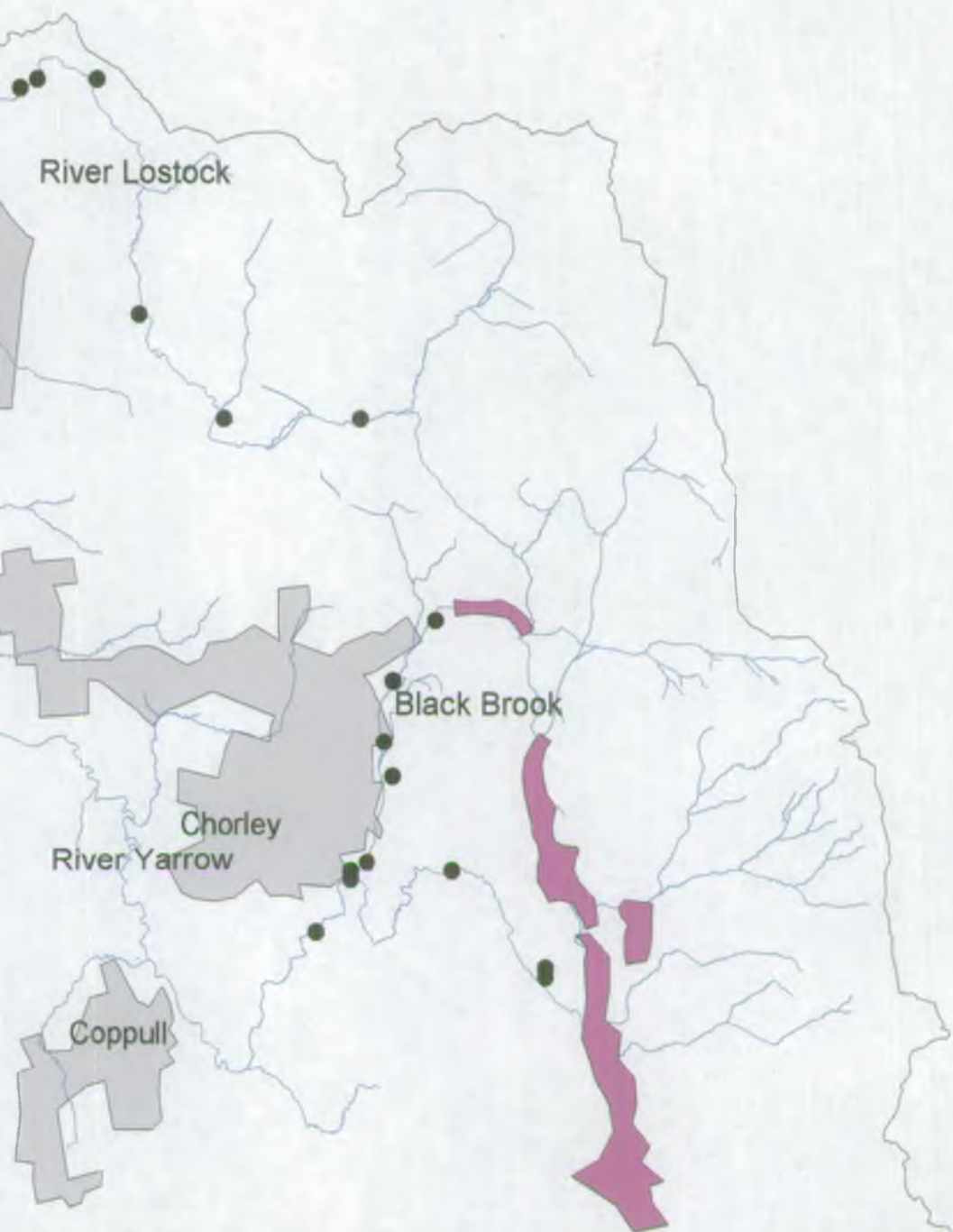
Salmon Fry Spring 01

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

Croston

Leyland

Eccleston



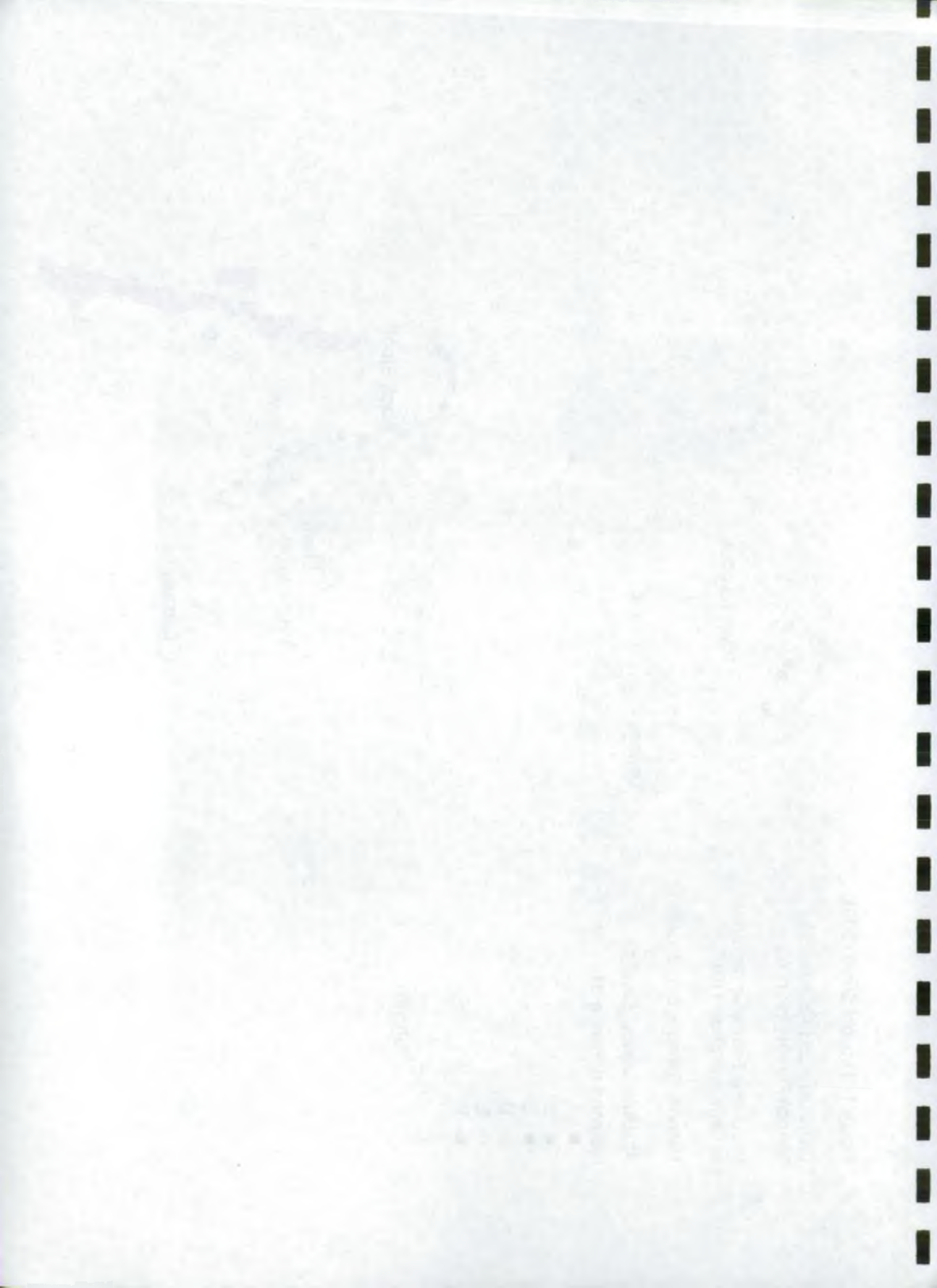


Figure 2 - Drought Survey 2001

Distribution and Abundance of
Salmon Parr (>0+) in Spring

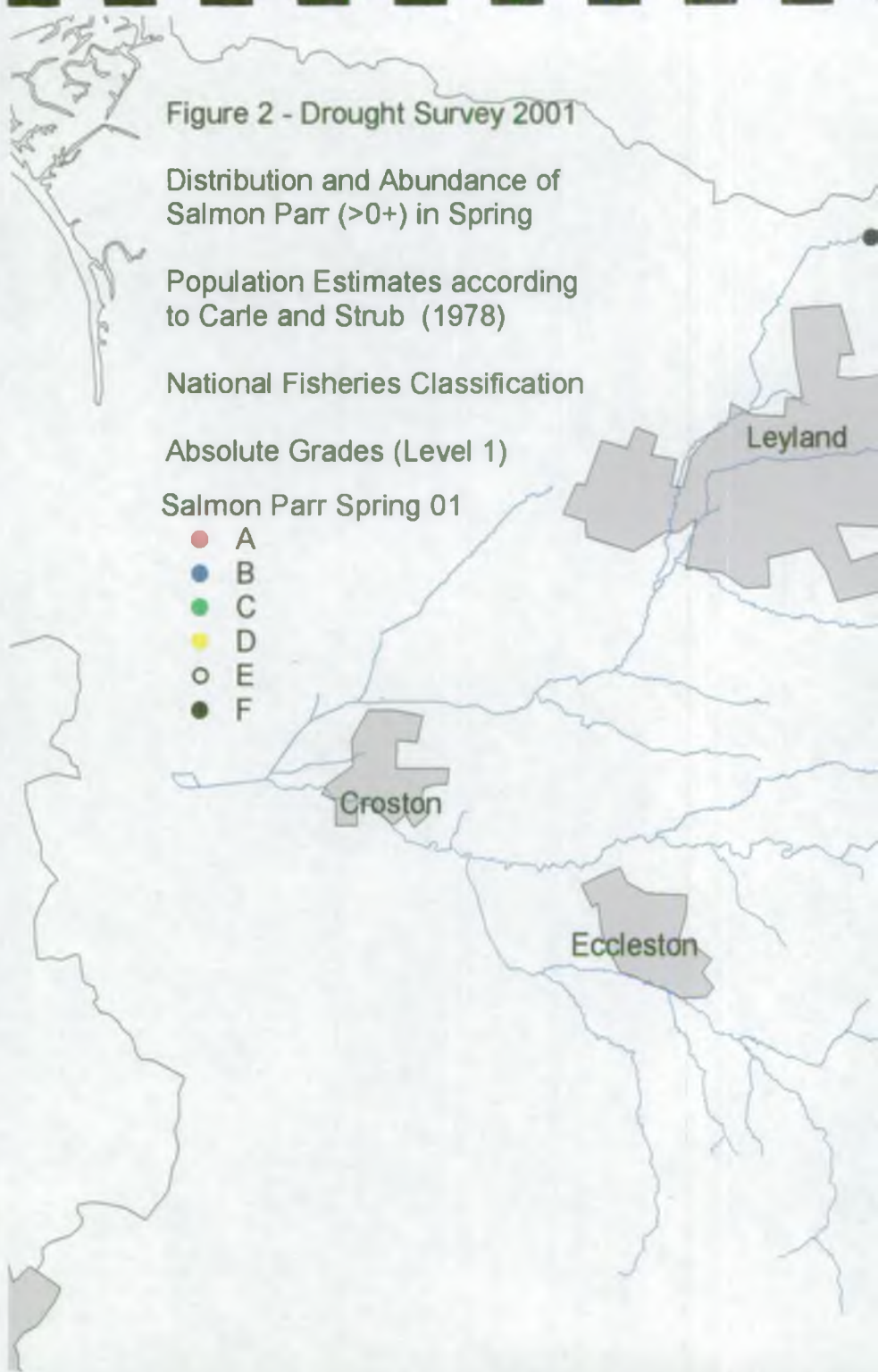
Population Estimates according
to Carle and Strub (1978)

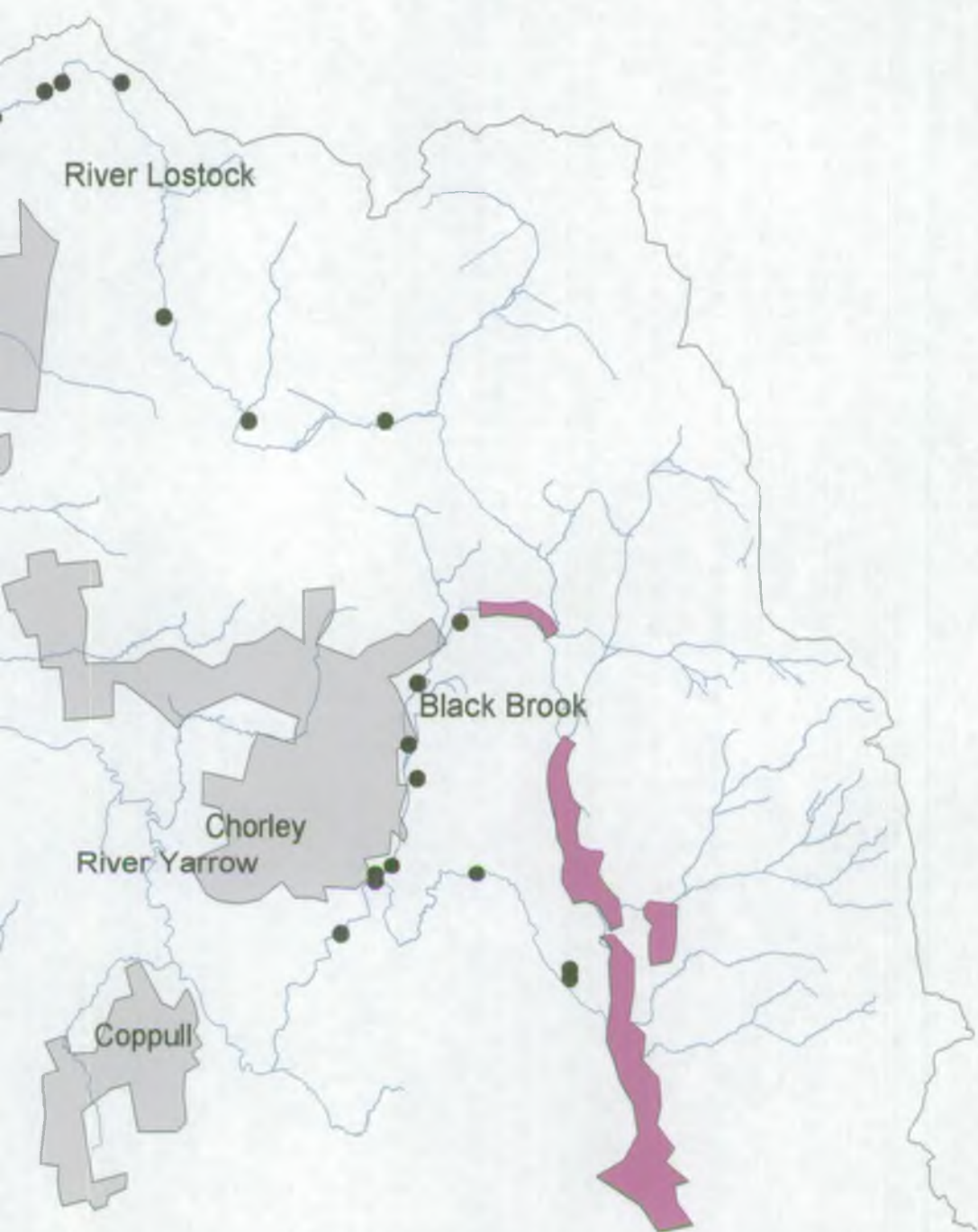
National Fisheries Classification

Absolute Grades (Level 1)

Salmon Parr Spring 01

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





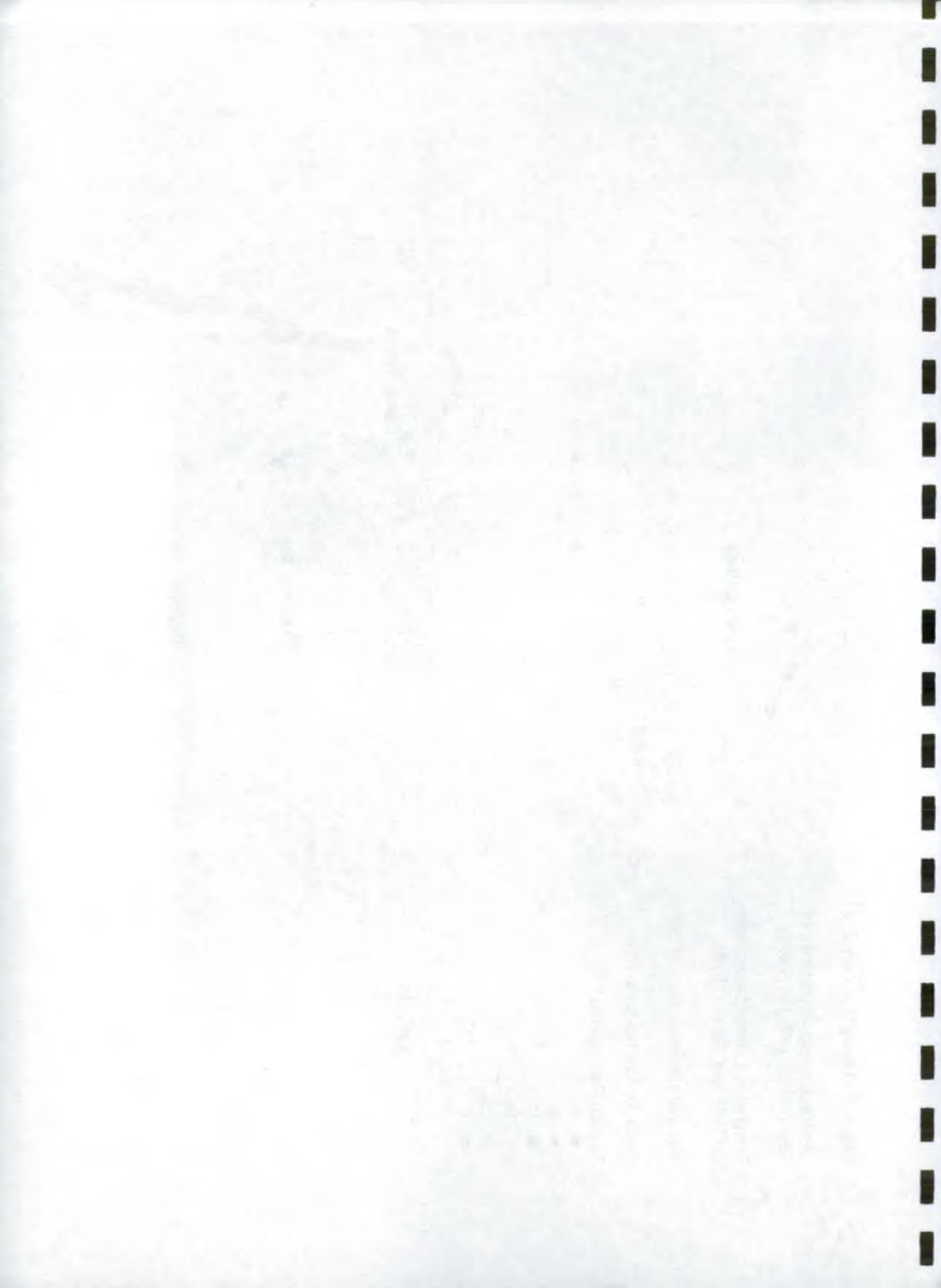


Figure 3 - Drought Survey 2001

Distribution and Abundance of
Trout Fry (0+) in Spring

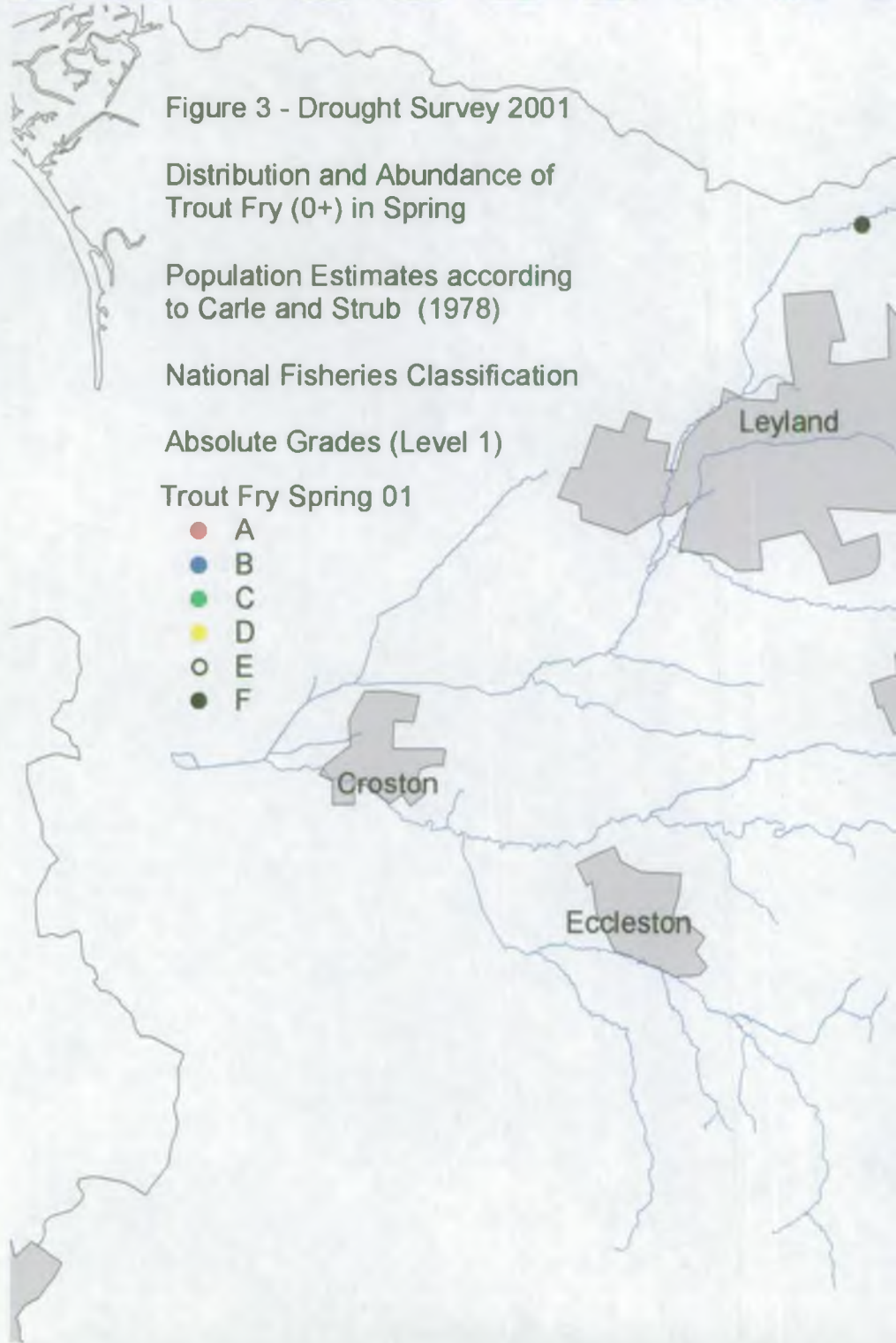
Population Estimates according
to Carle and Strub (1978)

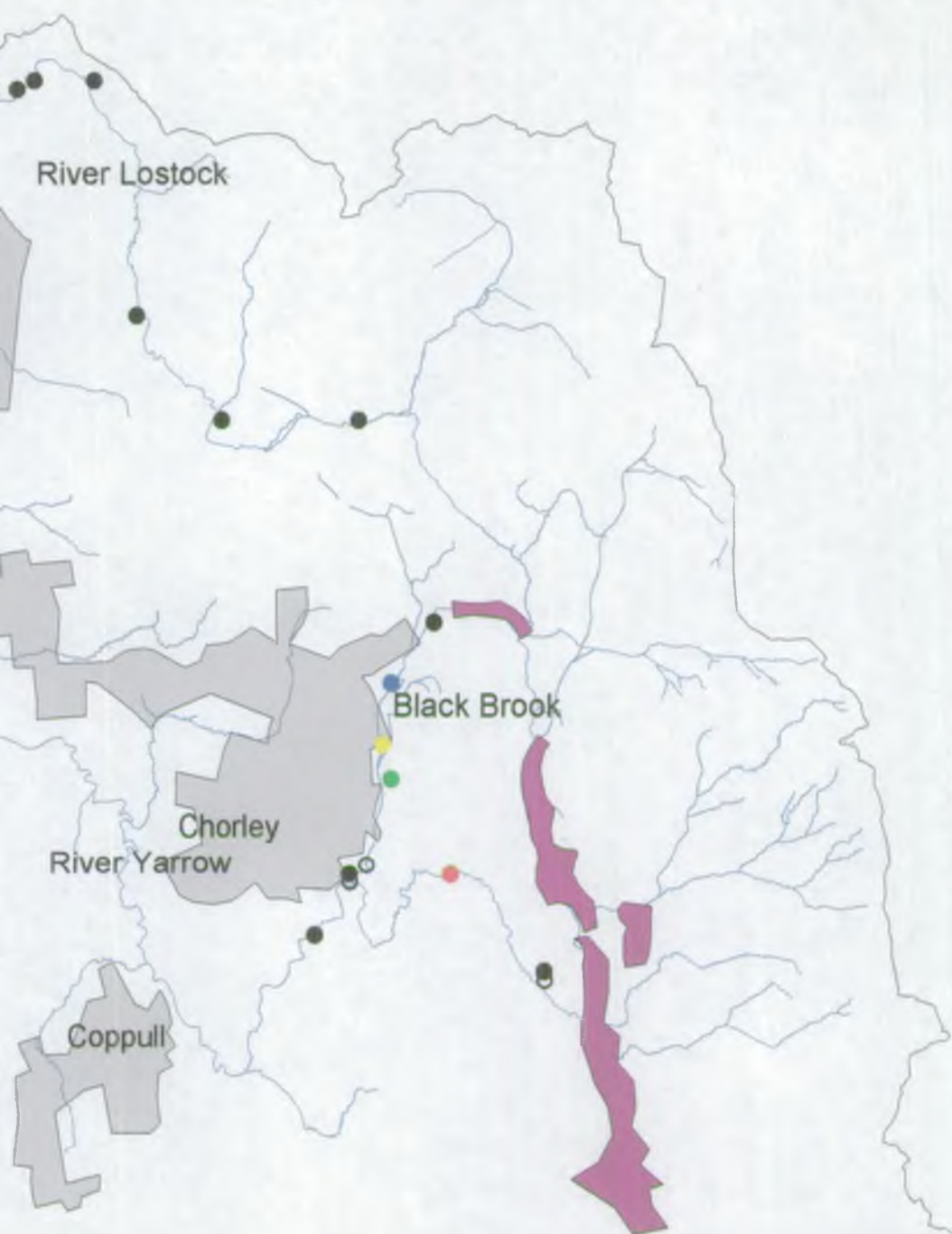
National Fisheries Classification

Absolute Grades (Level 1)

Trout Fry Spring 01

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





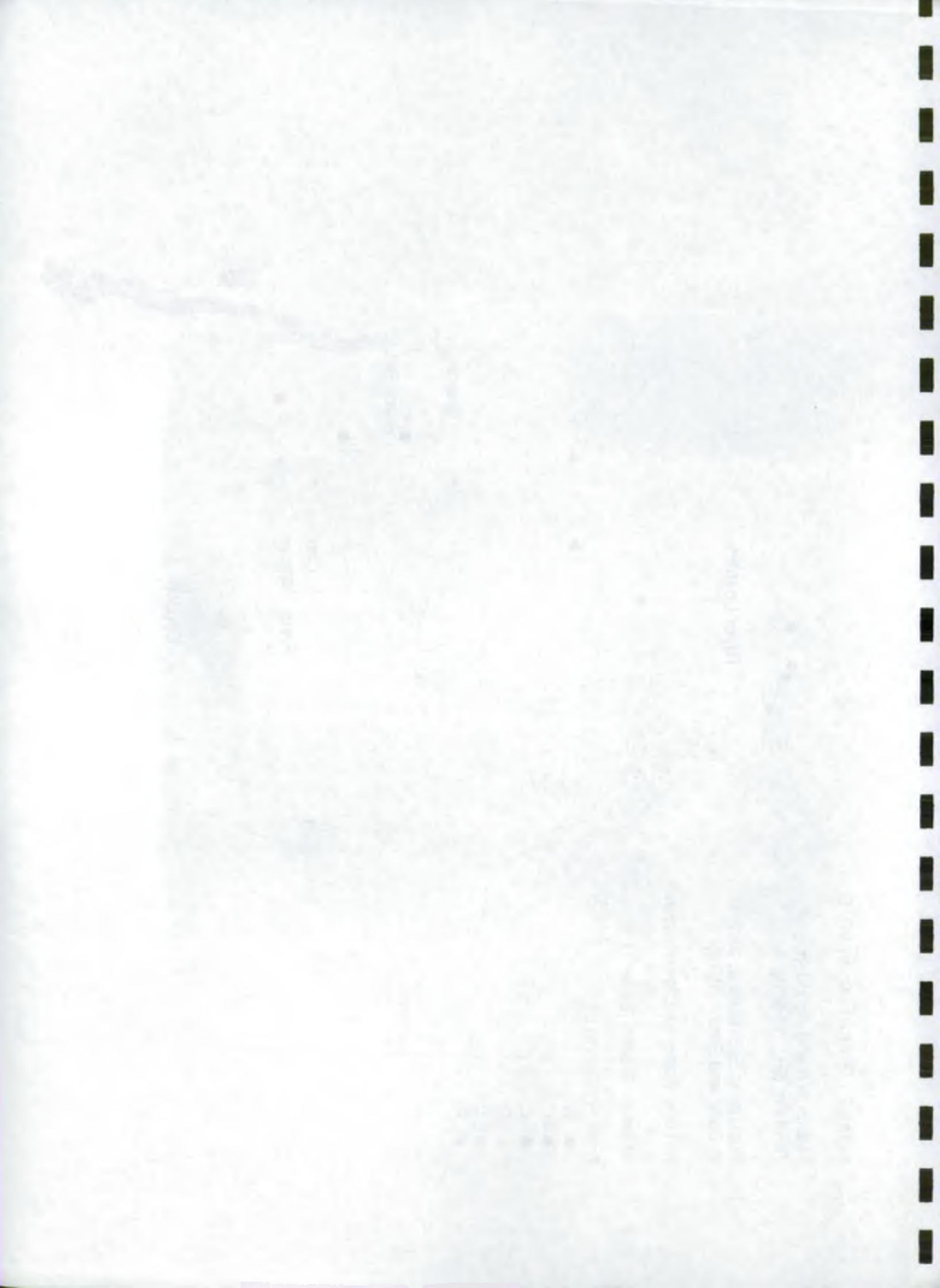


Figure 4 - Drought Survey 2001

Distribution and Abundance of
Trout Parr (>0+) in Spring

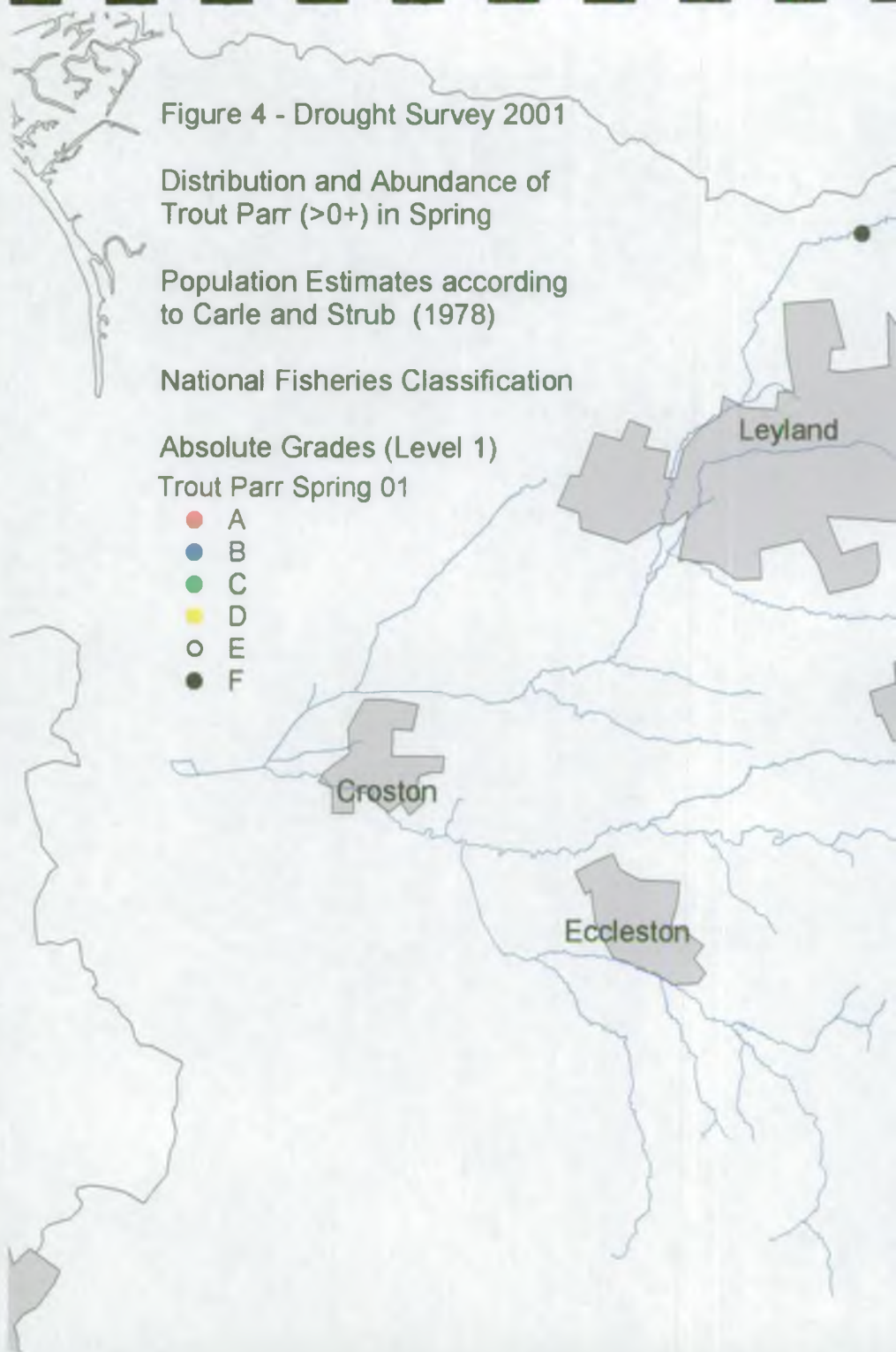
Population Estimates according
to Carle and Strub (1978)

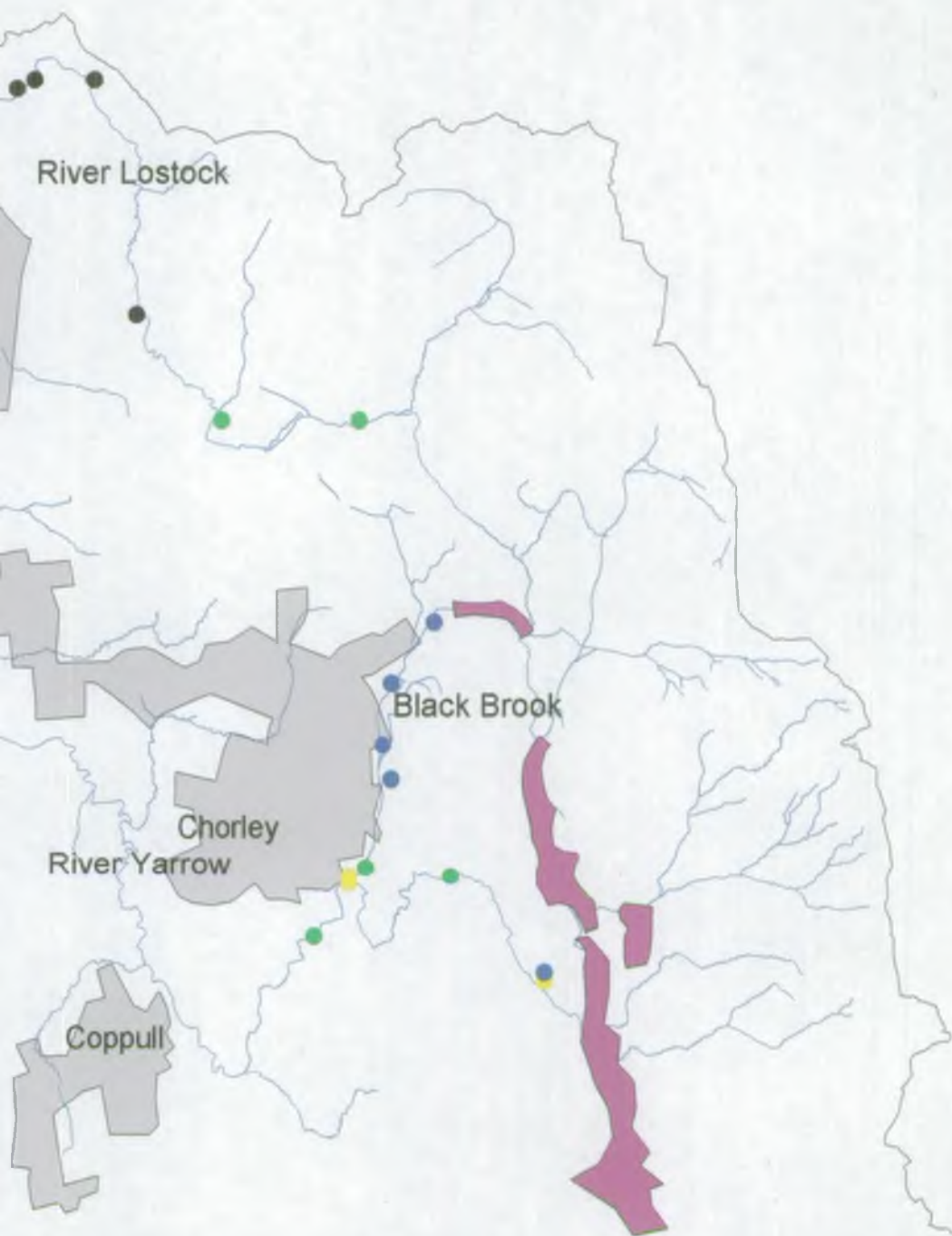
National Fisheries Classification

Absolute Grades (Level 1)

Trout Parr Spring 01

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





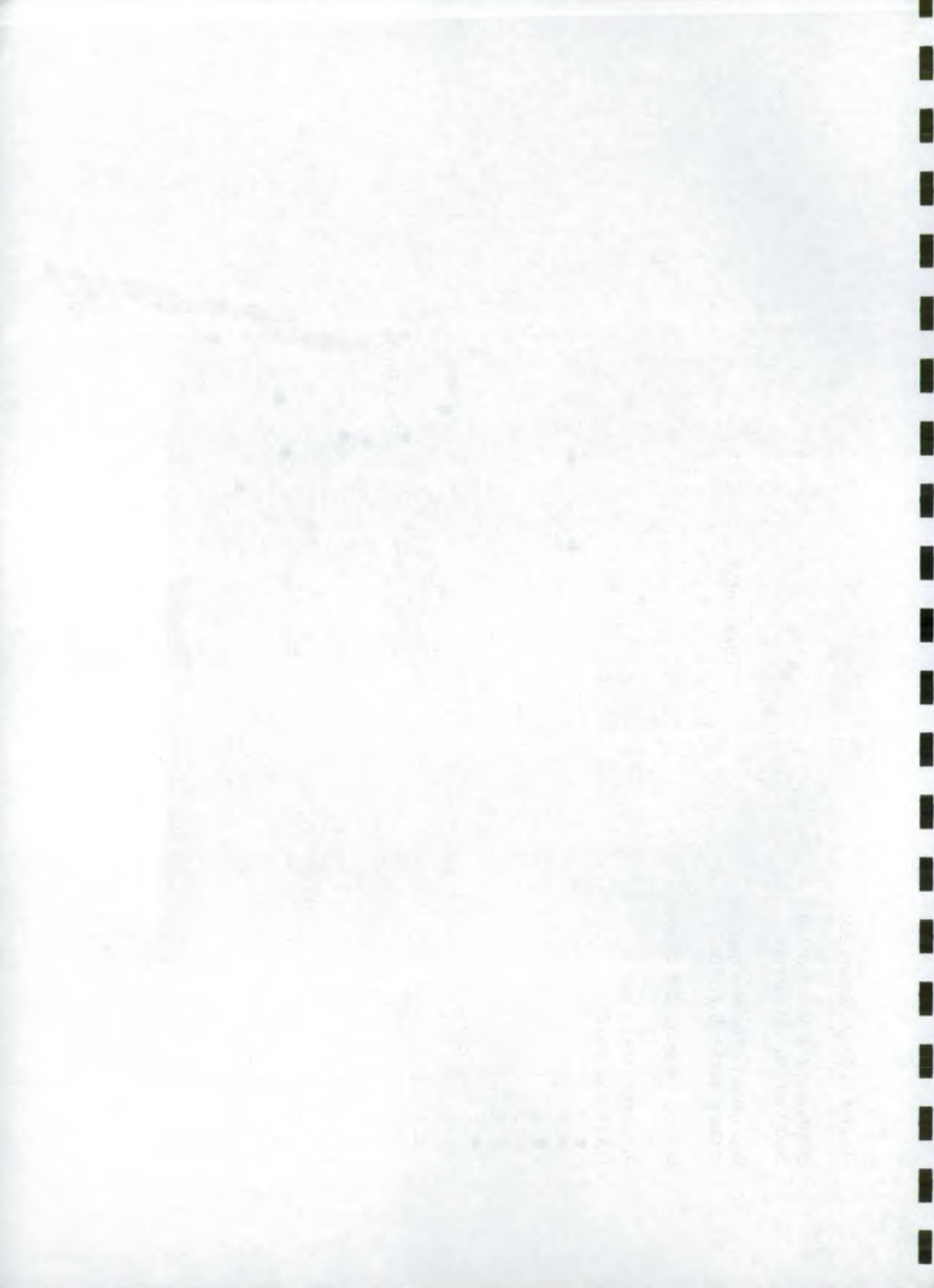


Figure 5 - Drought Survey 2001

Distribution and Abundance of
Salmon Fry (0+) in Autumn

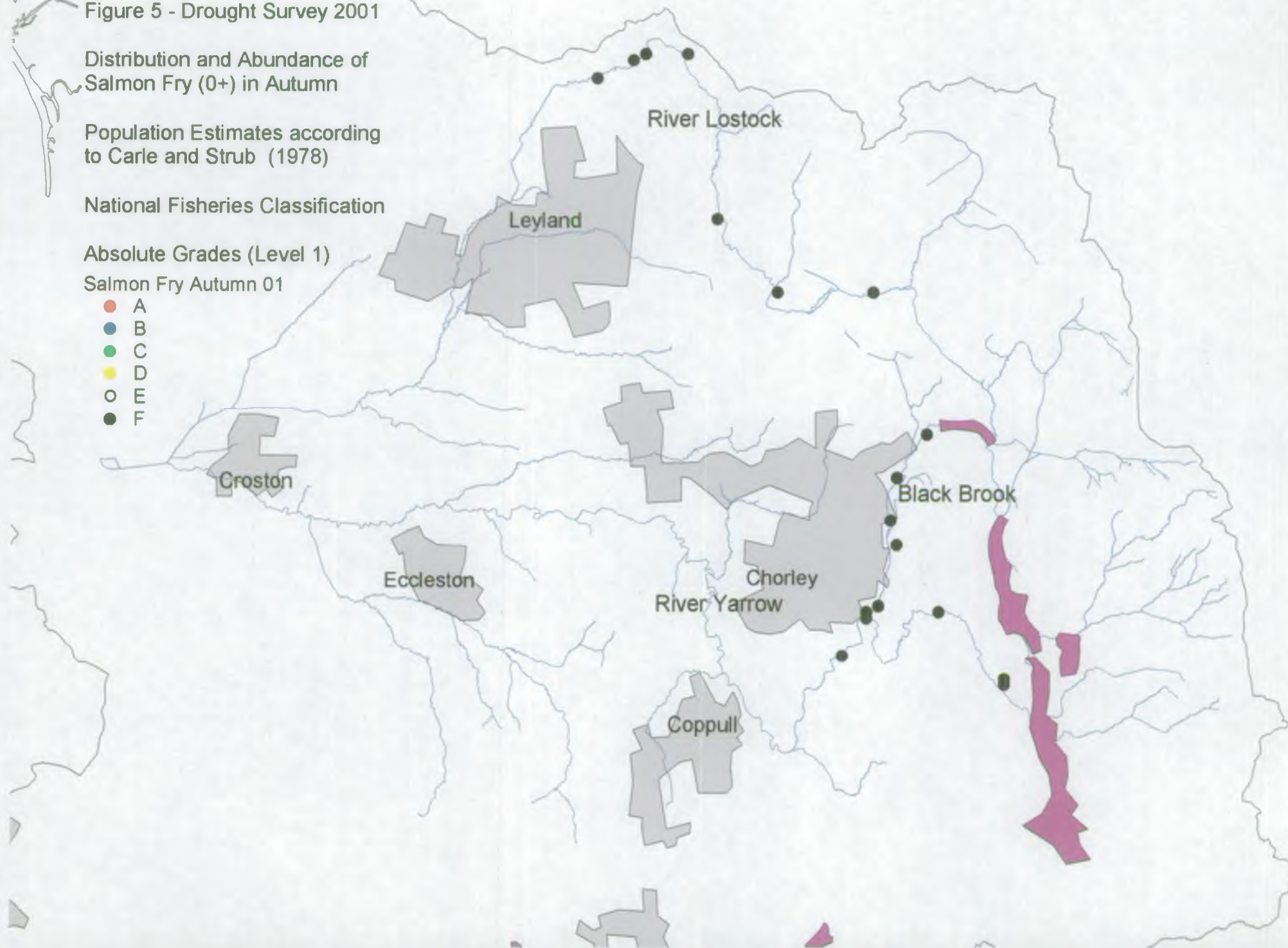
Population Estimates according
to Carle and Strub (1978)

National Fisheries Classification

Absolute Grades (Level 1)

Salmon Fry Autumn 01

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



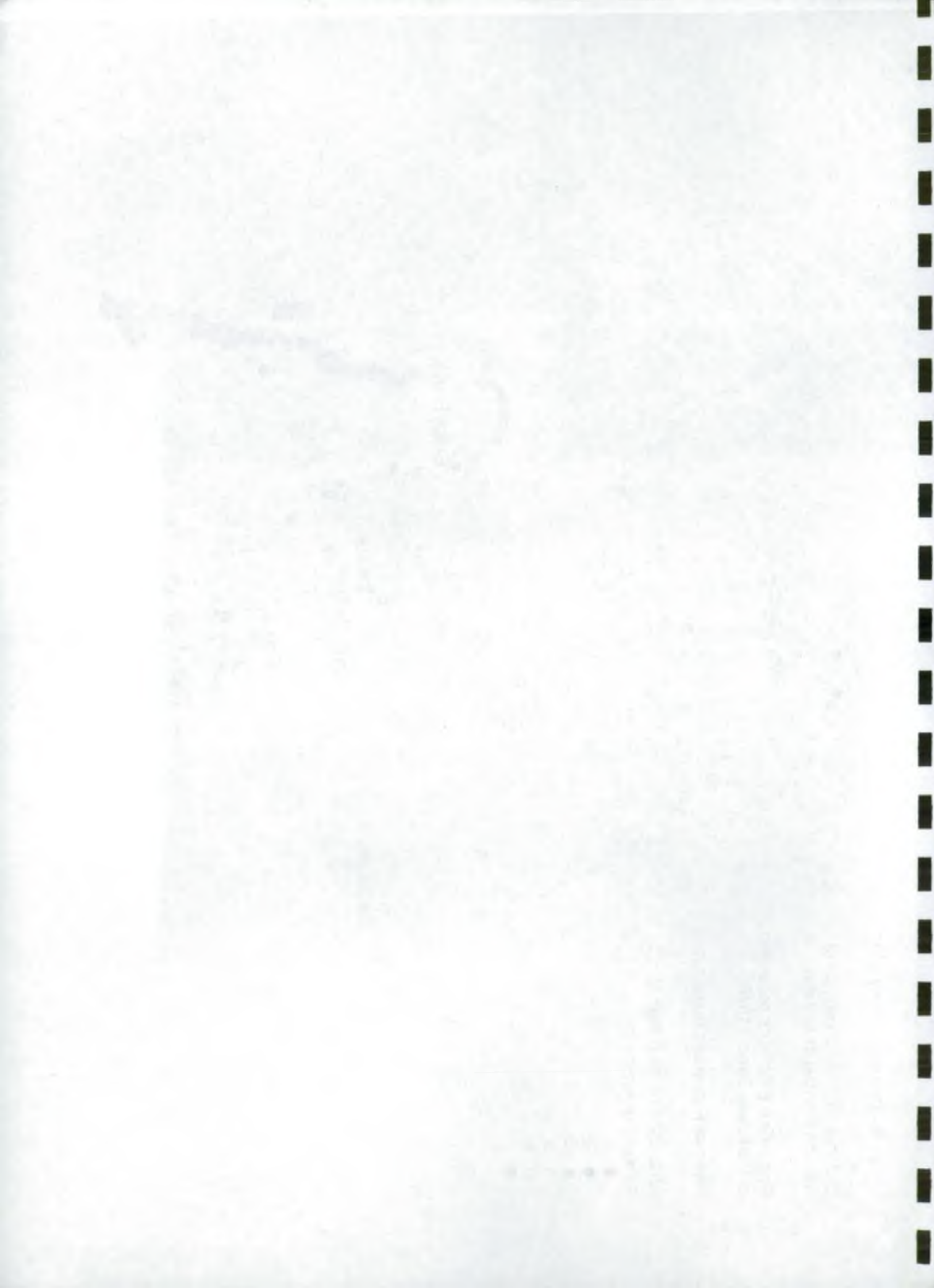


Figure 6 - Drought Survey 2001

Distribution and Abundance of
Salmon Parr (>0+) in Autumn

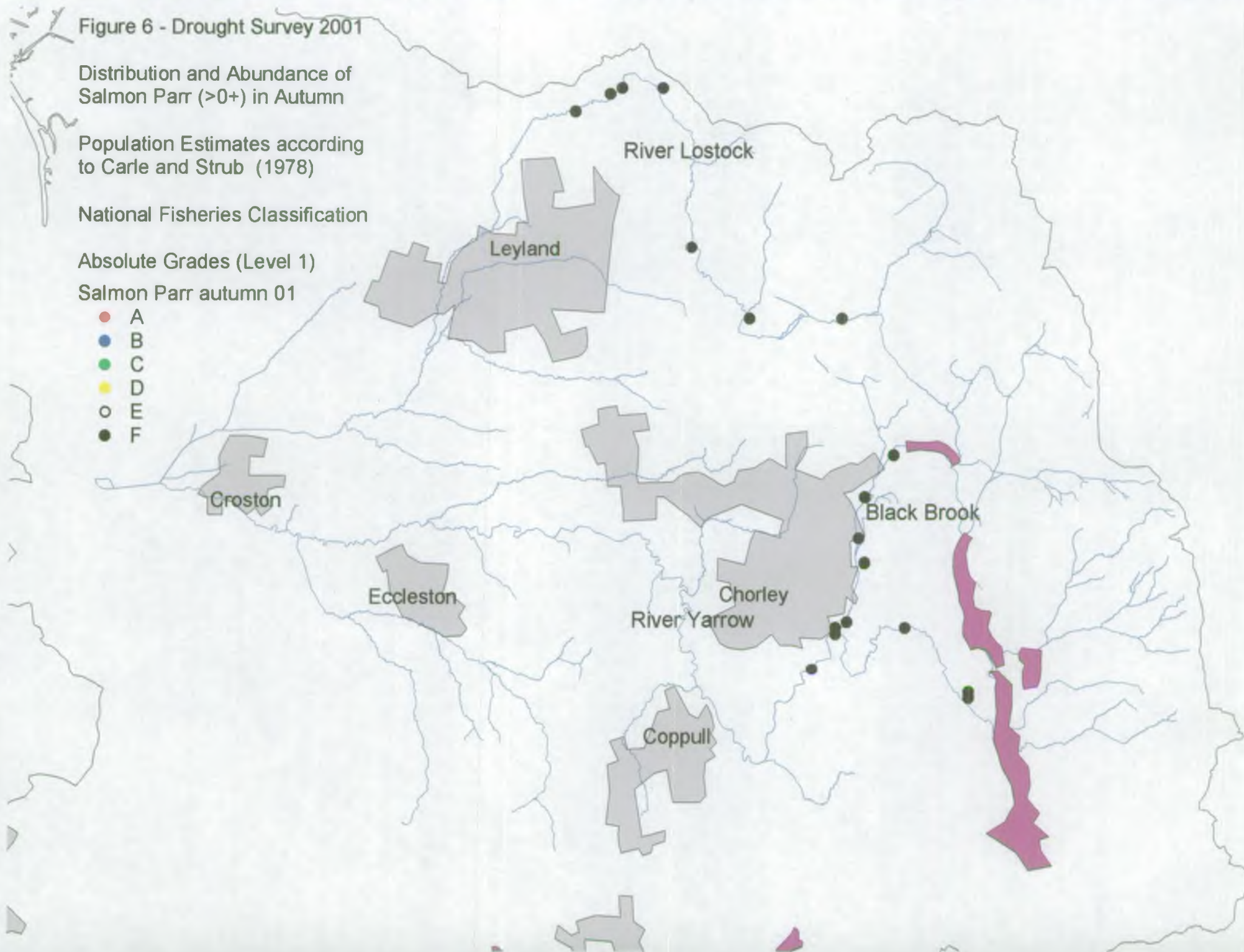
Population Estimates according
to Carle and Strub (1978)

National Fisheries Classification

Absolute Grades (Level 1)

Salmon Parr autumn 01

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



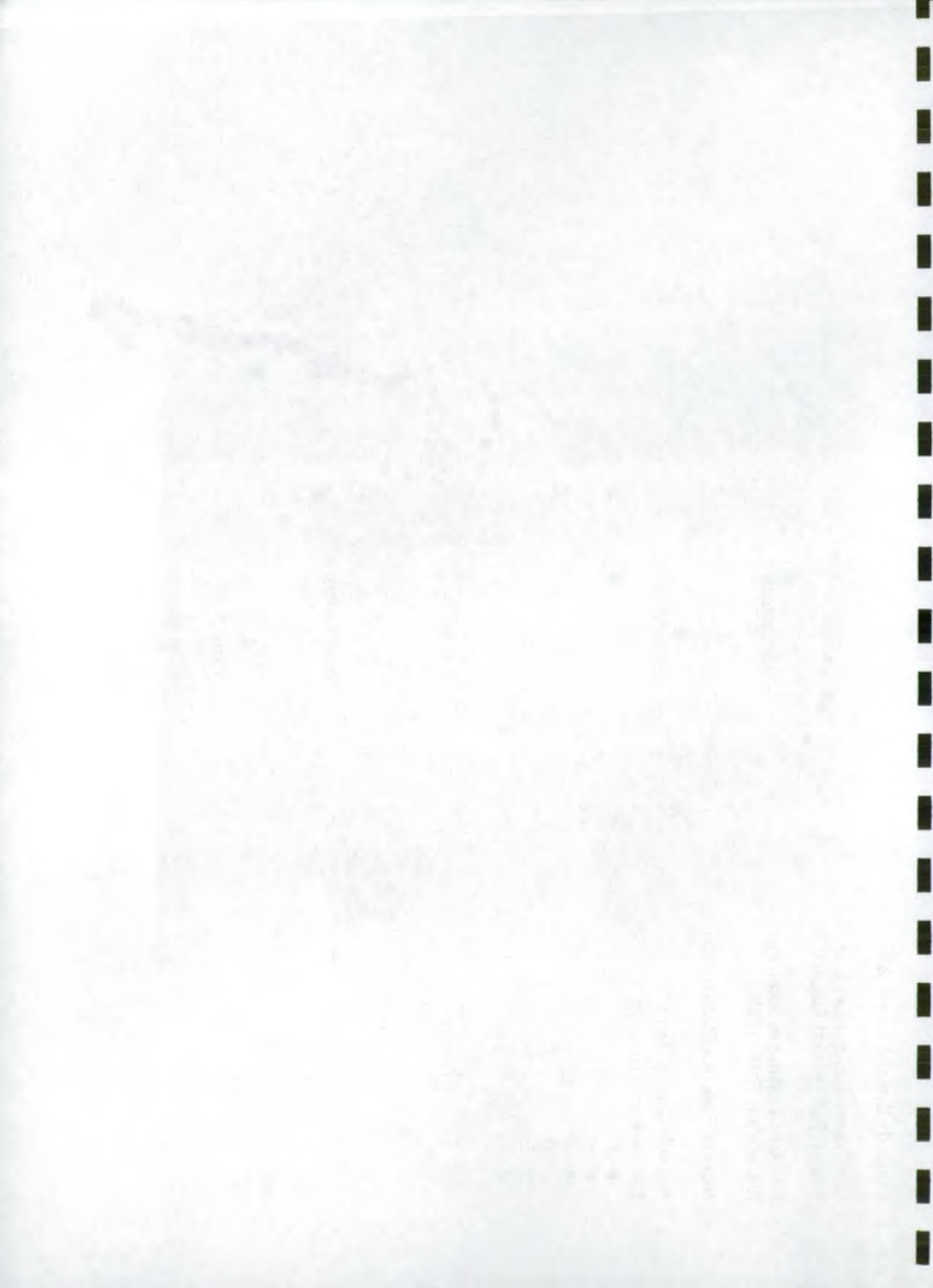


Figure 7 - Drought Survey 2001

Distribution and Abundance of
Trout Fry (0+) in Autumn

Population Estimates according
to Carle and Strub (1978)

National Fisheries Classification

Absolute Grades (Level 1)

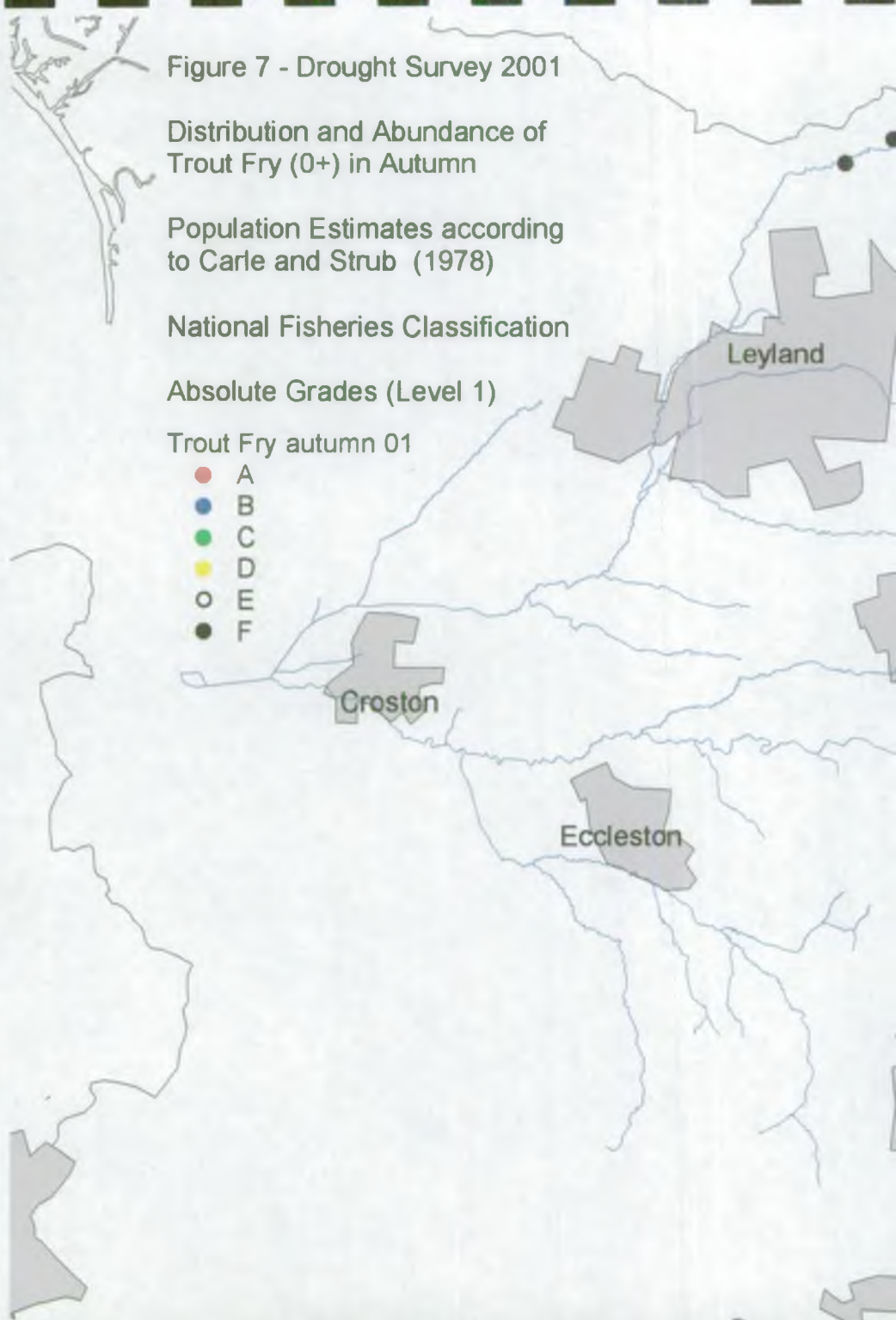
Trout Fry autumn 01

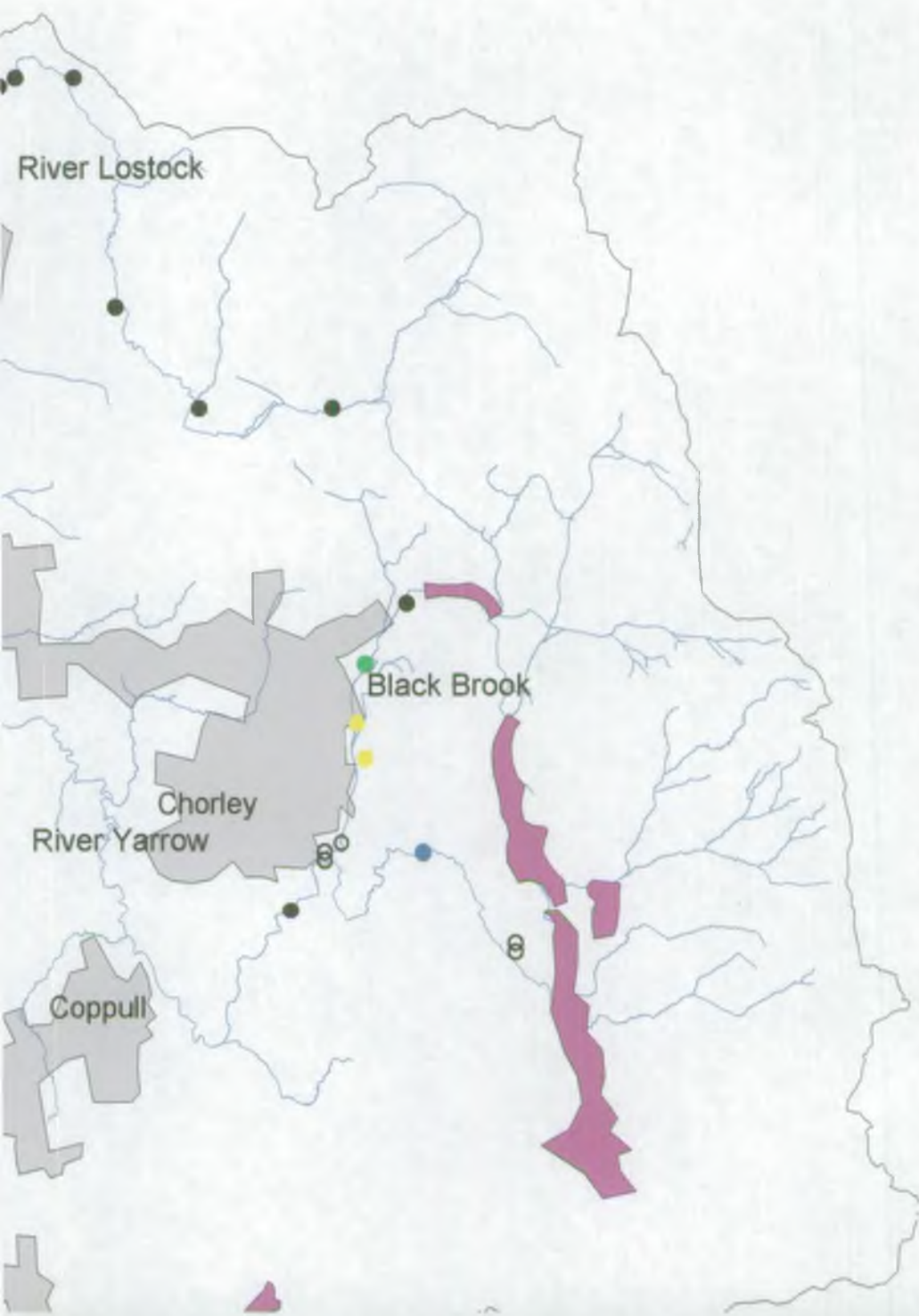
- A
- B
- C
- D
- E
- F

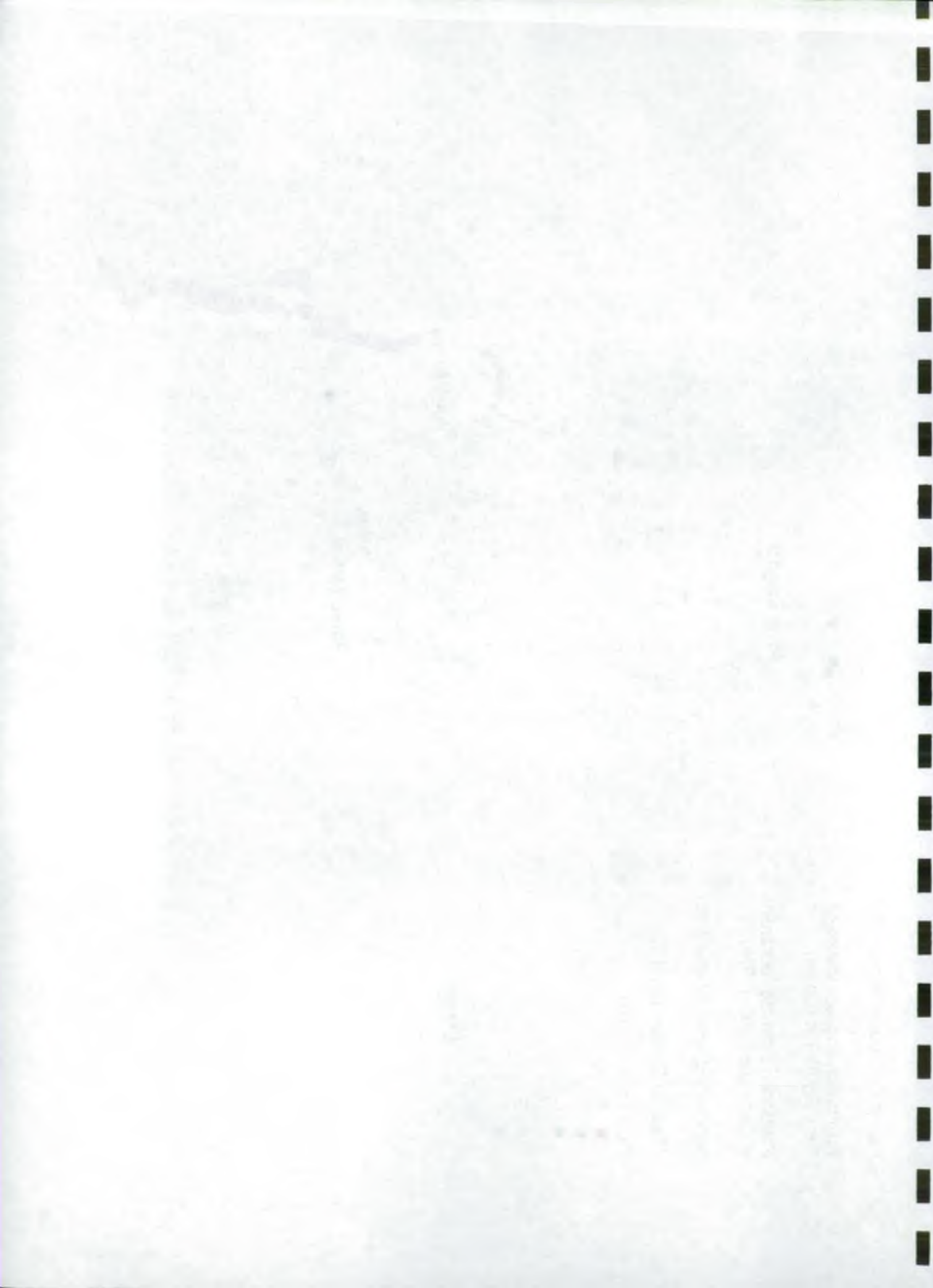
Croston

Leyland

Eccleston







Population Estimates according to Carle and Strub (1978)

Absolute Grades (Level 1)

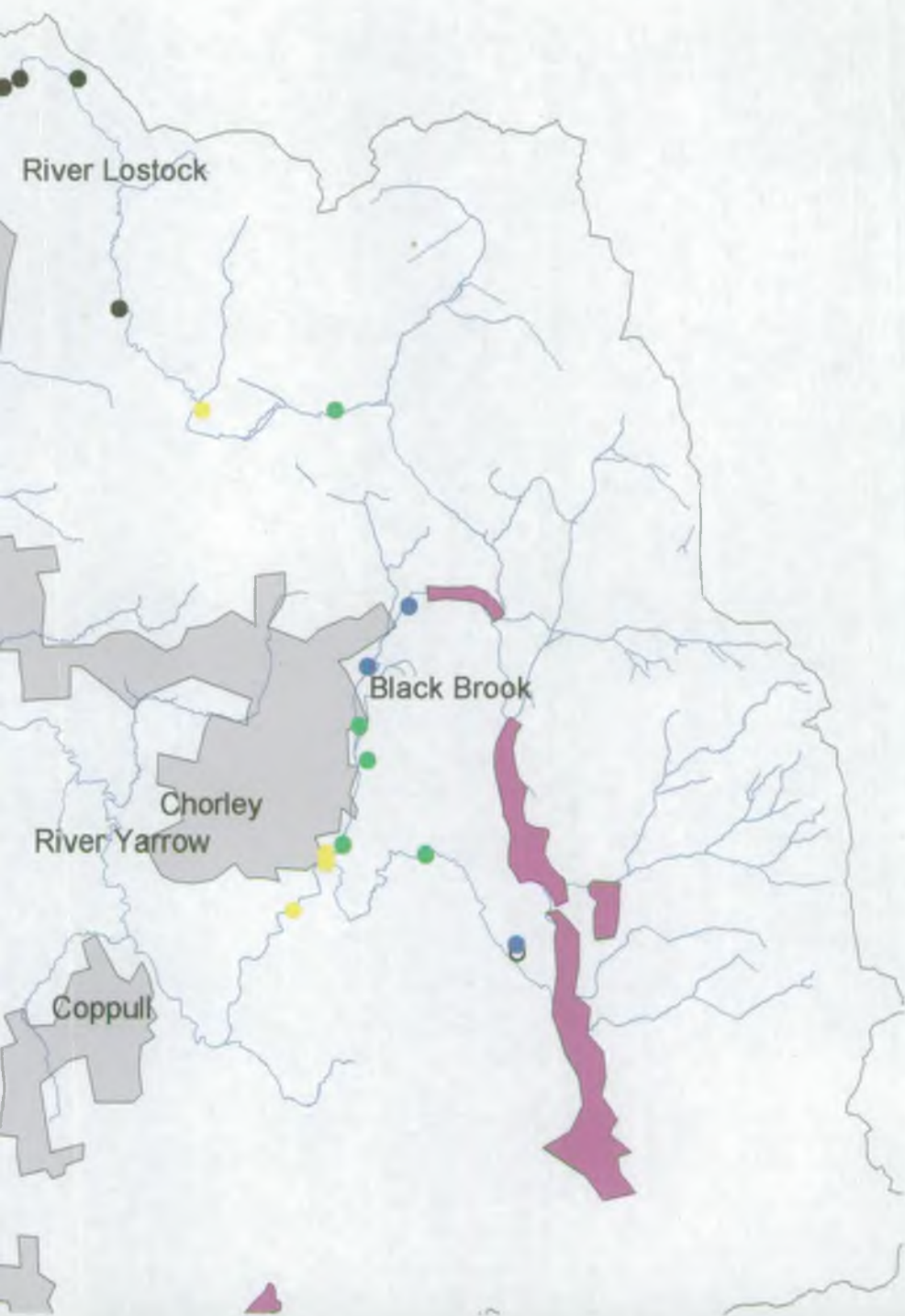
● A
● B
● C
● D
○ E
● F



Leyland

Croston

Eccleston



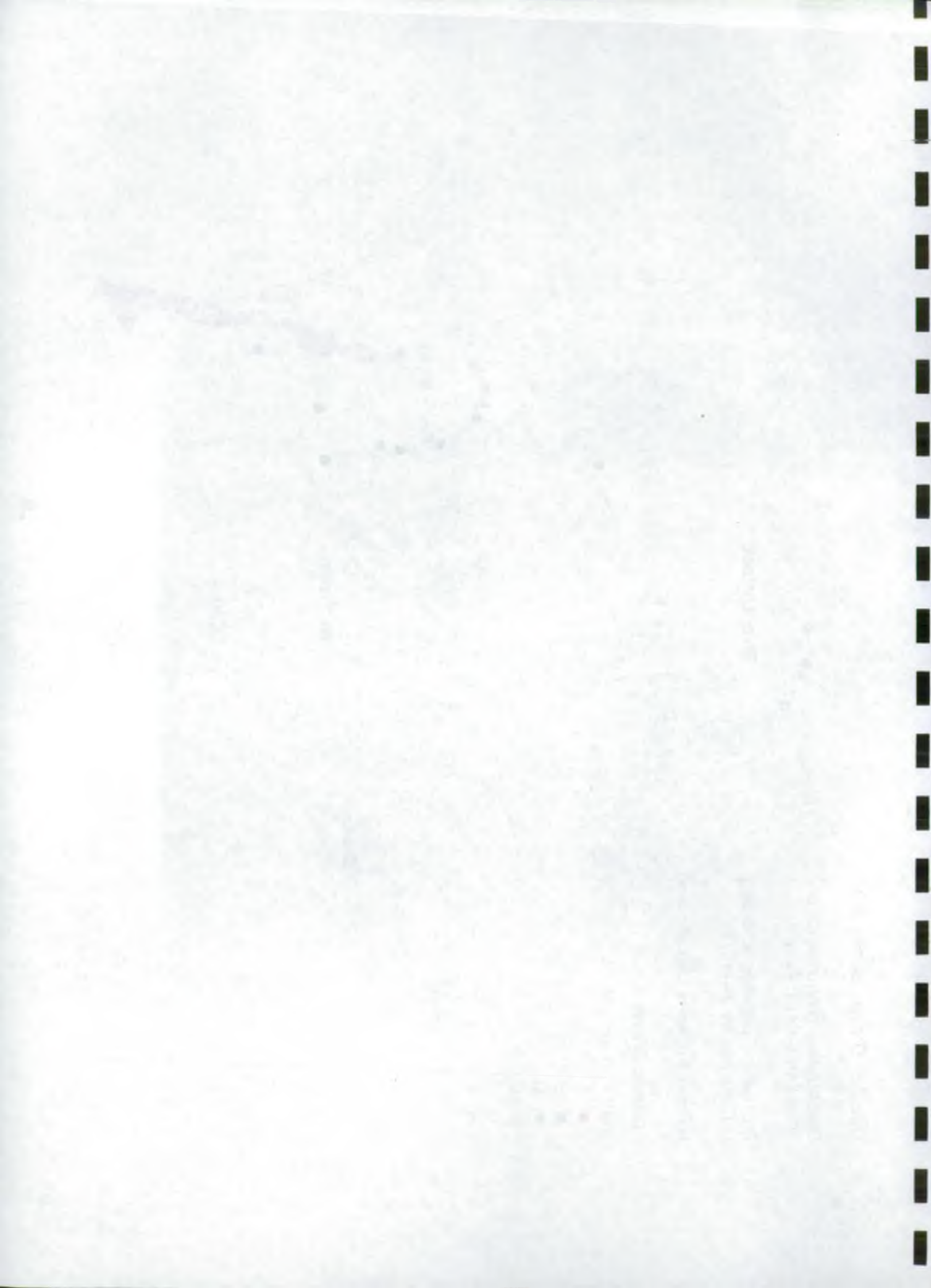


Figure 9 - Drought Survey 2001

Distribution and Abundance of
Rheophilic Coarse Fish in Spring

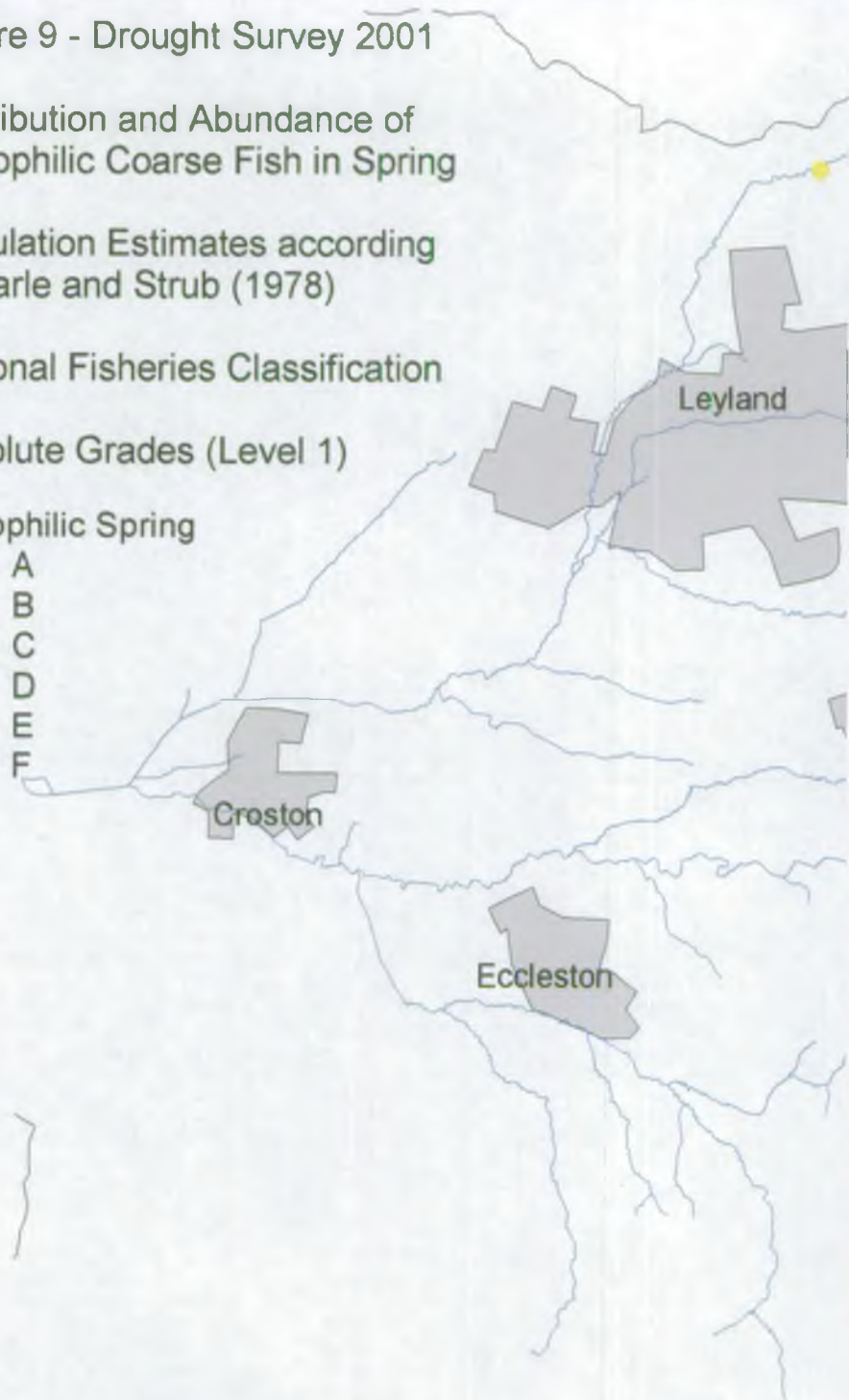
Population Estimates according
to Carle and Strub (1978)

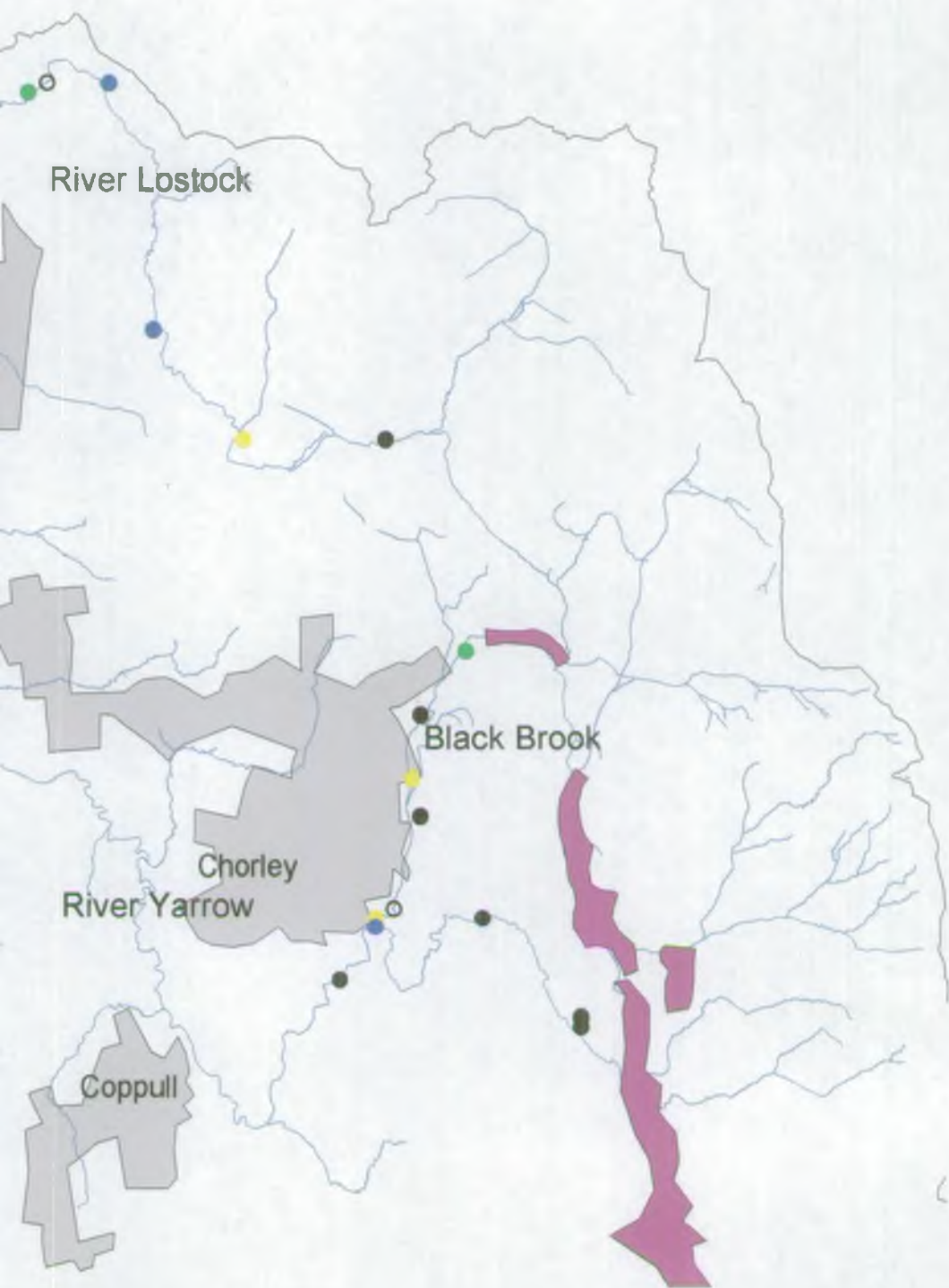
National Fisheries Classification

Absolute Grades (Level 1)

Rheophilic Spring

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





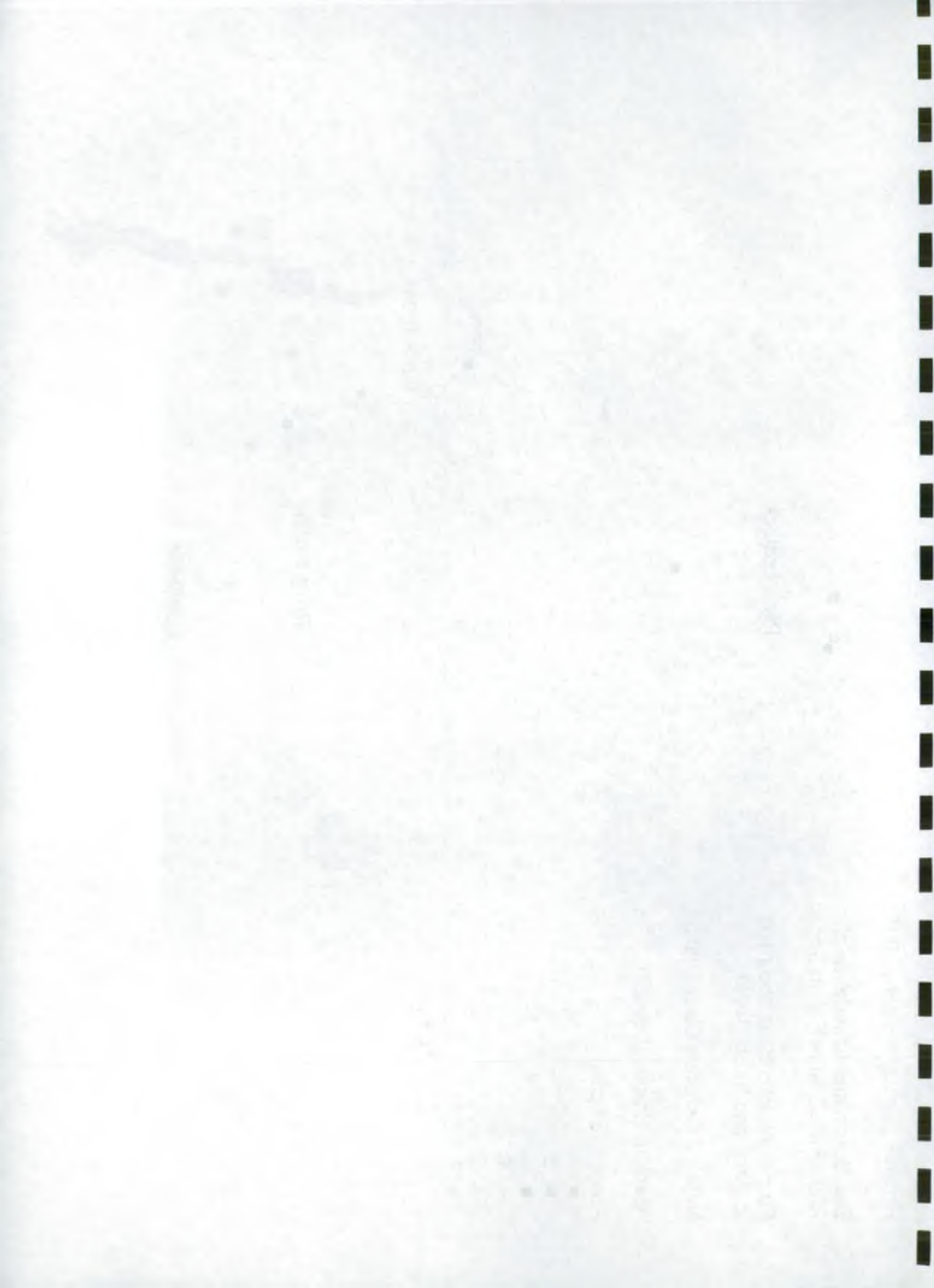


Figure 10 - Drought Survey 2001

Distribution and Abundance of
Rheophilic Coarse Fish in Autumn

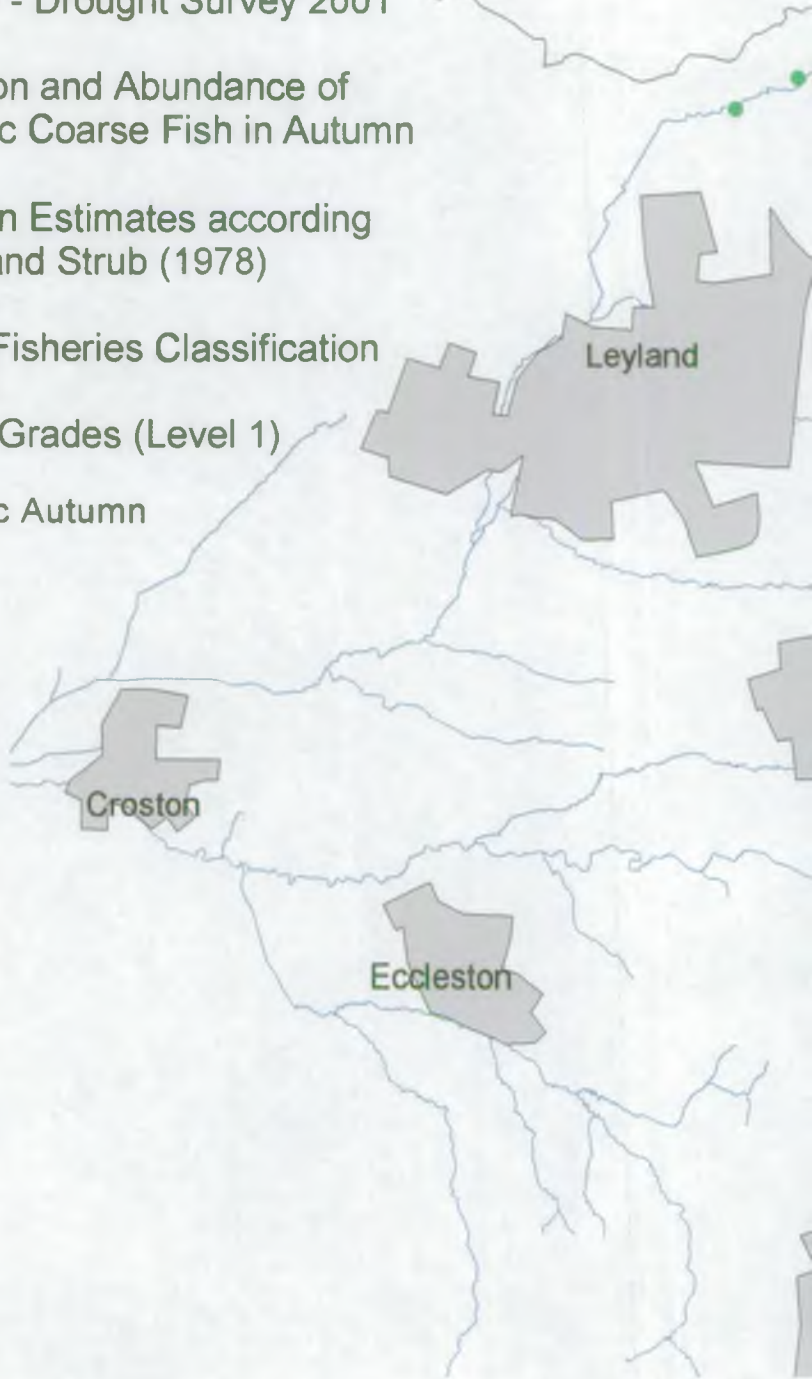
Population Estimates according
to Carle and Strub (1978)

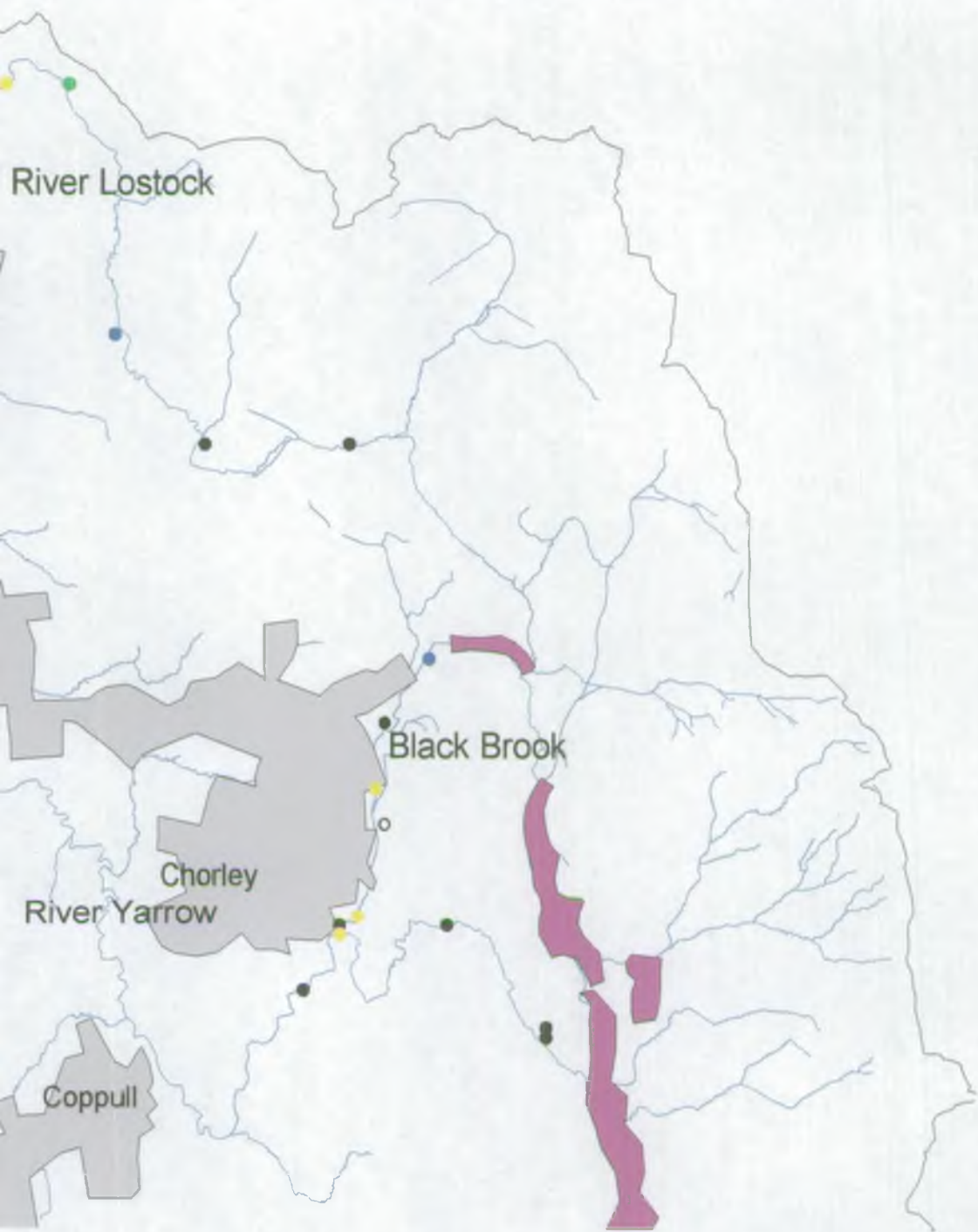
National Fisheries Classification

Absolute Grades (Level 1)

Rheophilic Autumn

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





River Lostock

Black Brook

Chorley

River Yarrow

Coppull

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

Figure 11 - Drought Survey 2001

Distribution and Abundance of
Limnophilic Coarse Fish in Spring

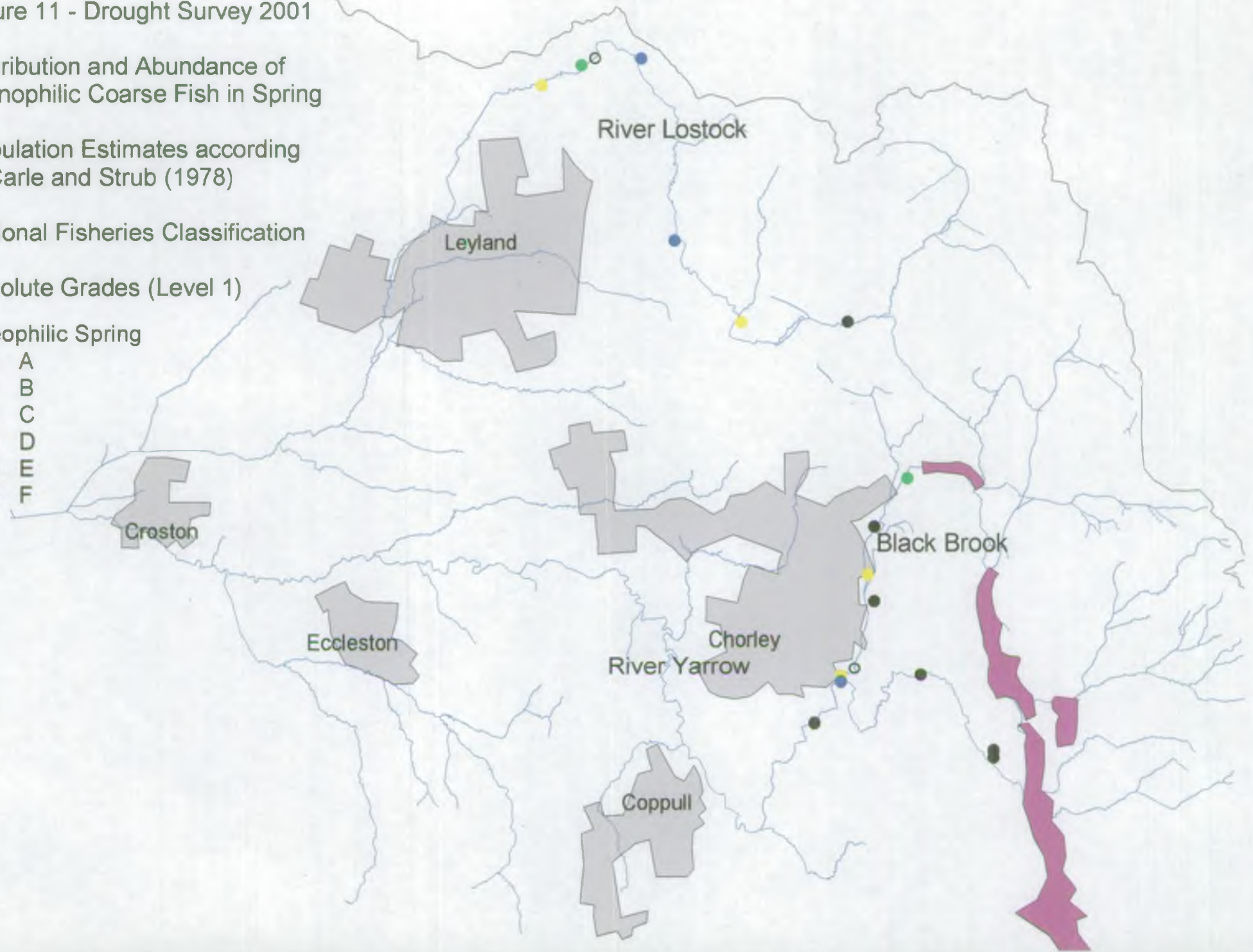
Population Estimates according
to Carle and Strub (1978)

National Fisheries Classification

Absolute Grades (Level 1)

Rheophilic Spring

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



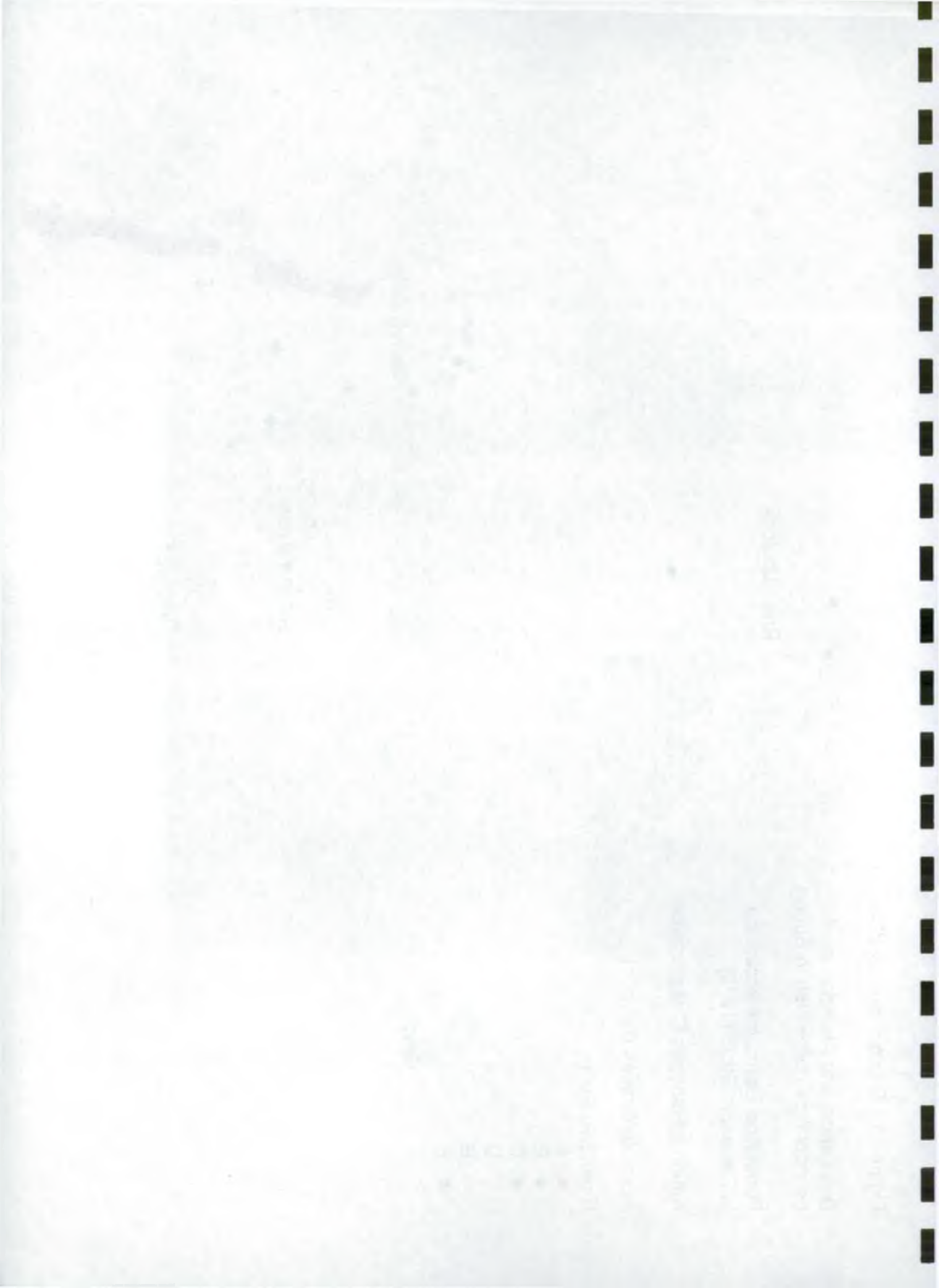


Figure 12 - Drought Survey 2001

Distribution and Abundance of
Limnophilic Coarse Fish in Autumn

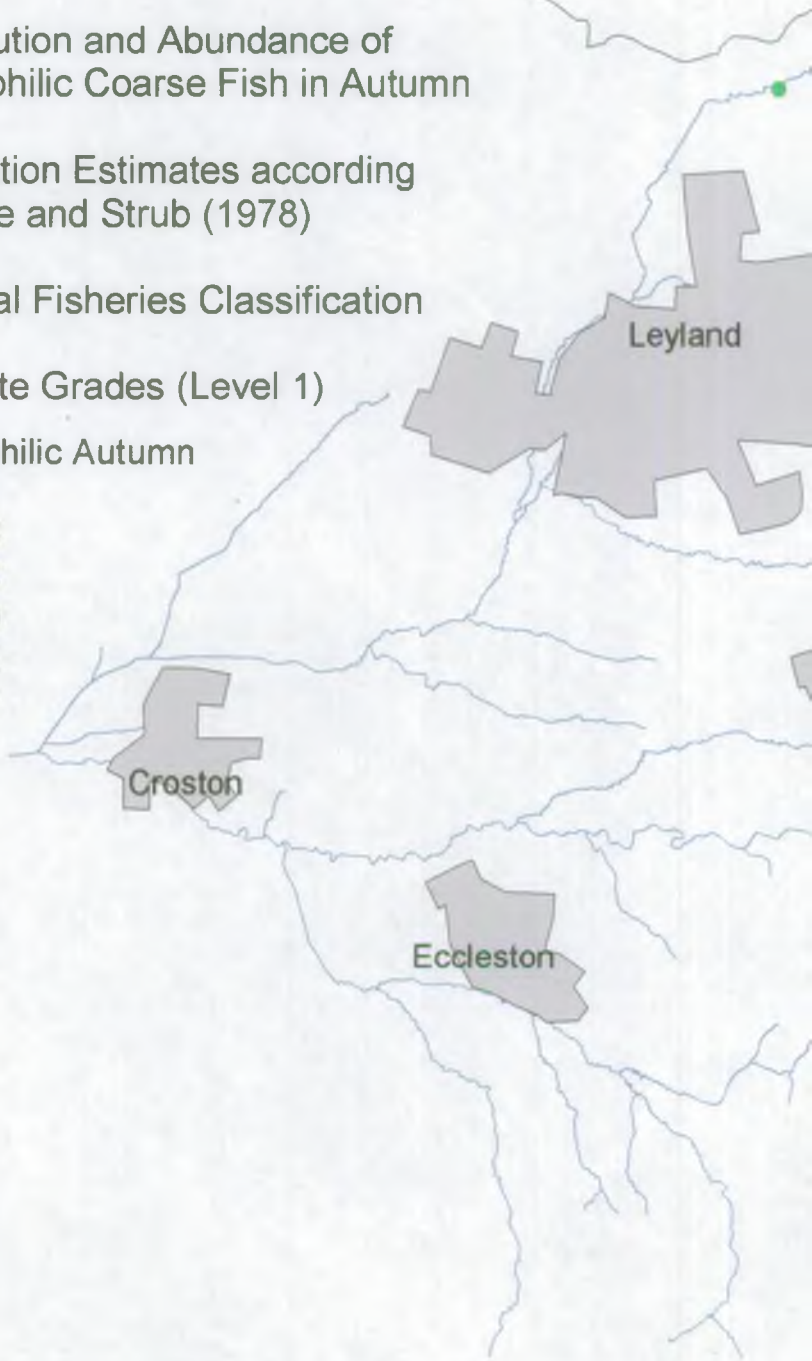
Population Estimates according
to Carle and Strub (1978)

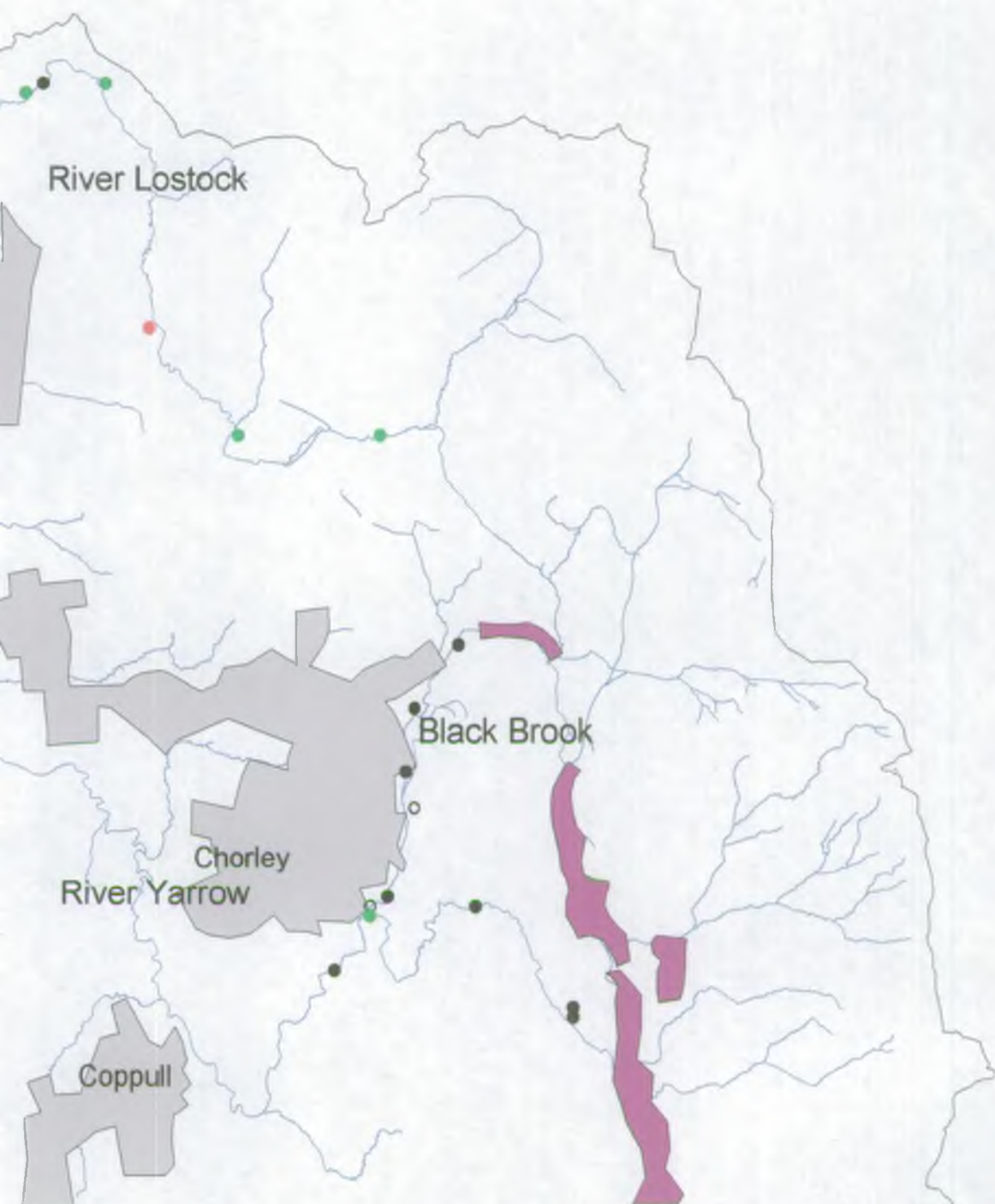
National Fisheries Classification

Absolute Grades (Level 1)

Limnophilic Autumn

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





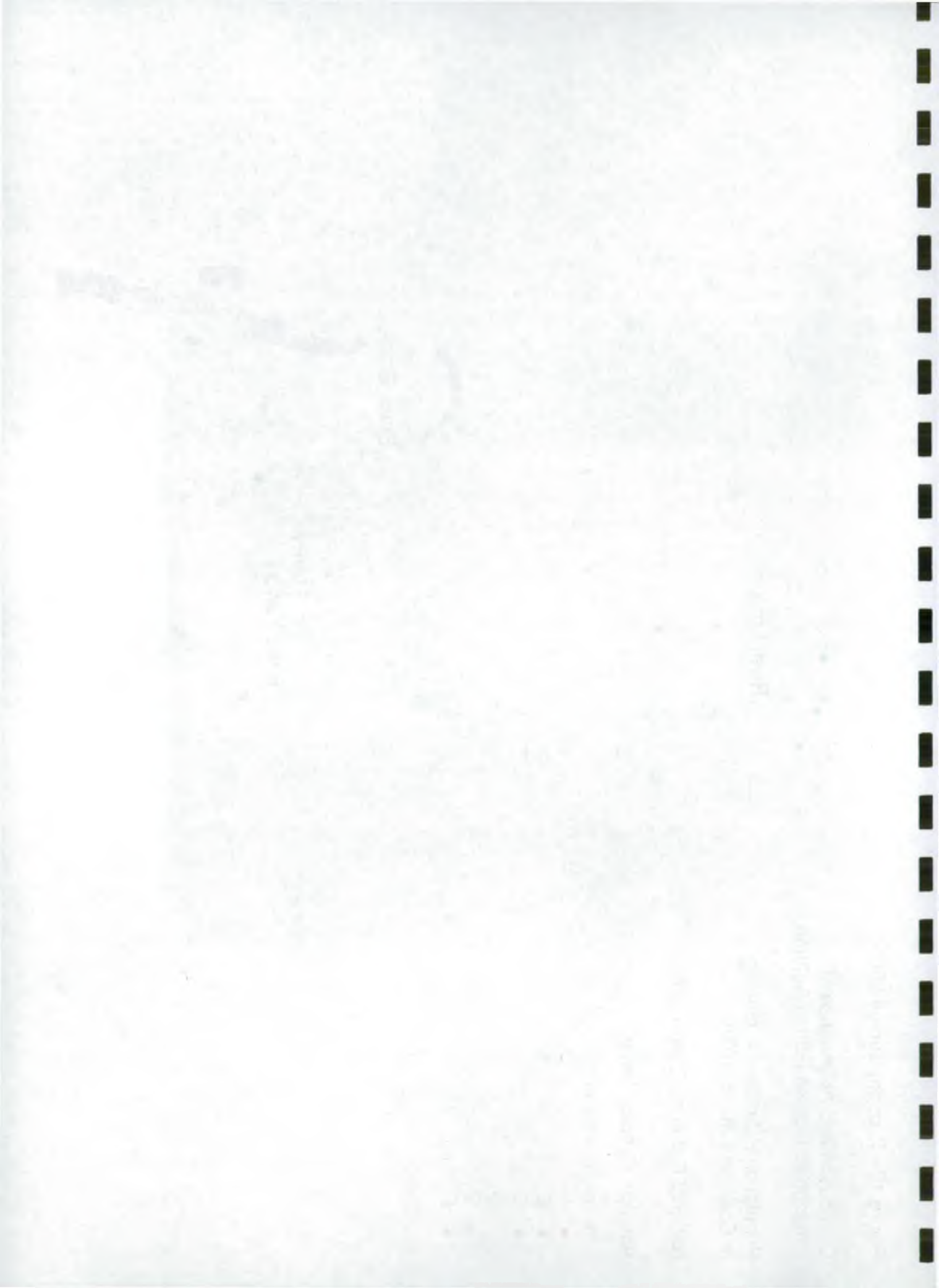


Table 2 – General descriptions of the five River Ecosystems classes

River Ecosystem Class	Description
RE1	Water of very good quality suitable for all fish species
RE2	Water of good quality suitable for all fish species
RE3	Water of fair quality suitable for high class coarse fish populations
RE4	Water of fair quality suitable for coarse fish populations
RE5	Water of poor quality which is likely to limit coarse fish populations
Waters that do not achieve RE5 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 both short to medium term basis 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 Yarrow system are set to RE1 and RE3 in different stretches of the river. The Rivers Lostock and Douglas objectives are set to RE2/3. The level of water quality is capable of sustaining a good quality fishery in most parts of the Douglas catchment. There are a couple of exceptions, the first being above Squirrel Bridge with an objective of RE1, the second is the lower stretch of the Douglas with an objective RE5.

4.4 Sub-Catchment Descriptions

River Lostock

The River Lostock is a very poor catchment for salmonids; there are only 2 sites that contain trout parr. These are Lower Copthurst (SD 593 215) and Kem Mill Lane (SD 577 215). Both sites are relatively productive with grades C and D. From the water quality the river should support a good salmonid fishery. Lower Copthurst was stocked with 2000 brown trout ²⁵⁰parr in 1999 (Appendix 1). This will have had a direct affect on the results in 2001 survey. Coarse fish densities for both rheophilic and limnophilic are relatively productive (Grades A to E) at most sites with the exception of the uppermost site at Lower Copthurst for Rheophilic species where the site was fishless.

River Yarrow

The River Yarrow including Black Brook is very poor catchment for salmon ^{as the upper} ~~due to the nature of the upper waters being too small~~ ^{tributaries are}. However the trout populations are very good with high densities present at most of the sites. Trout parr seem to favour the upper reaches better than trout fry. Limnophilic coarse fish have a varied

distribution between spring and autumn surveys. In spring the densities are between grades C and F, whereas in autumn the grades are on average grades E and F with the exception of 1 site at downstream of Black Brook (Grade C). The densities of Rheophilic coarse fish are less variable with both spring and autumn sampling resulting in grades B to F.

4.5 Stocking

Approximately 240,000 fish have been introduced to the catchment between 1994 and 2001. Appendix 1 shows numbers of fish stocked, locations and dates.

5 CONCLUSIONS

? more results than previous

✓ Juvenile salmon densities were absent throughout the 18 sites ~~that were~~ surveyed in both June and August 2001.

✓ Juvenile trout were more successful, with relatively good densities at the majority of sites. The most productive site for trout fry was ~~in spring~~ at the M61 on the Yarrow. For trout parr, Black Brook overall was the most productive area with grades B/C in both spring and autumn sampling.

Rheophilic coarse fish densities were evenly distributed throughout both the River Lostock and River Yarrow with approximately 40% of sites being absent of rheophilic coarse fish.

Limnophilic coarse fish densities showed a varied distribution and abundance in the sampling times. In spring there were greater densities at a higher frequency in both rivers Lostock and Yarrow. The most productive sites were Sheep Mill Lane and Havelock Road on the River Lostock (Grades A). In the autumn, Sheep Mill Lane was still the most productive site on the River Lostock, but the rest of the sites had declined in abundance to a grade C or the fish were not present (Grade F).

6 RECOMMENDATIONS

✓ The River Lostock, although it supports a rich community of fish, does not seem to be very productive in terms of juvenile fish. No juveniles (coarse fish or trout) were seen during the 2001 survey. However, given that the population of coarse fish is largely made up of fish stocked by the Agency in the last few years, it is possible many of these fish are still immature and are therefore not viable in terms of successful spawning and may be more productive in subsequent years. ~~If this is the case, then fry should be seen in the forthcoming years.~~ Having said this, some fish seen during the survey are big enough, and therefore old enough to commence spawning. It maybe that fry are not surviving once spawned either due to incorrect habitats or high flows that are washing fry out of the river. It is recommended that measures to improve the juvenile production and survival rates are made. This could be in the form of an Off River Spawning Unit (ORSU) which is an area of slack water which can be used by juvenile fish to hide in times of high flows and used by mature fish to spawn.

✓ The River Yarrow is in need of fish easements on all its main weirs. ^{We} It is recommended that fish passes are installed as soon as possible on the weirs to allow the native brown trout populations to have easy access to spawning grounds as well as the returning migratory fish. ^{by creating a scale} It is hoped in the next five years (subject to funding), a population of migratory fish can be established, ~~subject to fish easement on the weirs.~~ ^{It should be} It is recommended that, ^{The reason for this} in order of priority, fish easement devices are installed on Birkacre weir, then Duxbury weir, then Croston weir. ^{the reason for this} This is recommended as Croston weir does allow a selective number of fish to scale the weir given suitable flow conditions but Birkacre weir is totally impassable. ^{Duxbury weir} Duxbury weir is the next weir in the series and is also totally impassable. Once these weirs are passable, Black Brook and the upper Yarrow will provide the necessary spawning environments to encourage the return of a migratory fish population. This is supported by the encouraging brown trout populations in these sections, which have improved, indication good spawning and recruiting environments.

Appendix 1. Douglas Catchment Fish Stocking 1994 - 2001 (Leyland Fish Farm)						
Year	River	Location	NGR	Species/Number Stocked		
				Chub	Roach	Dace
1994	Douglas	-	Various	1000	-	10000
1995	Douglas	-	Various	1000	10000	10000
1996	Douglas	Squirrel Lane Bridge, Horwich	SD 613 123	1000	1000	1000
1996	Yarrow	Eccleston Bridge	SD 515 178	10000	10000	10000
1997	Tawd	Summer Street, Skelmersdale	SD 478 076	3000	3000	3000
1997	Yarrow	Eccleston Bridge, Eccleston	SD 515 178	12000	-	2000
1997	Douglas	Gathurst	SD 541 073	2000	-	2000
1997	Douglas	Squirrel Lane Bridge, Horwich	SD 613 123	1000	1000	1000
1996-98	Lostock	Above Farington Weir	Various	4500	4500	4500
1998	Douglas	-	Various	5000	-	-
1998	Douglas	-	Various	10000	-	-
1998	Douglas	-	Various	5000	-	-
1999	Douglas	Grimeford Bridge	SD 613 123	-	2000	-
1999	Douglas	Appley Bridge	SD 523 092	2500	5000	5000
1999	Douglas	Gathurst	SD 541 073	2500	2500	-
1999	Yarrow	Ecclestons Br, Eccleston	SD 515 178	2500	2500	5000
1999	Yarrow	D/S Pnook Br, Euxton	SD 554 178	2500	2500	-
1999	Lostock	U/S Fowler Lane Br	SD 540 249	2500	2500	2500
1999	Lostock	U/S Watkin Lane Br	SD 550 252	1000	1000	1000
1999	Lostock	Havelock Rd, Bamber Bridge	SD 553 253	2500	2500	2500
1999	Lostock	D/S Kern Mill Lane	SD 577 2127	2000	2000	-
1999	Tawd	Summer Street, Skelmersdale	SD 478 076	1000	1000	-
1999	Tawd	Obbys Clough Road, Skelmersdale	SD 484 082	1000	1500	-
1999	Tawd	Spencer Bridge, Lathom	SD 469 104	500	500	-
1999	Tawd	Tawdside Farm, Deans Lane, Hoscote	SD 473 117	1500	1000	-
2000	Yarrow	Ecclestons Br	SD 515 178	2000	3000	1250
2000	Syd Br	Syd Brook Lane, Croston	SD 501 176	1000	-	-
2000	Yarrow	D/S Pnook Br, Euxton	SD 554 178	2500	2500	1250
2000	Tawd	Spencer Bridge, Lathom	SD 469 104	1000	1000	-
2000	Tawd	Obbys Clough Road, Skelmersdale	SD 478 082	750	-	-
2000	Tawd	Skelmersdale College, Skelmersdale	SD 484 063	500	-	-
2000	Tawd	Summer Street, Skelmersdale	SD 478 076	500	-	-
2000	Tawd	Nipe Lane, Skelmersdale	SD 488 044	250	-	-
2001	Douglas	Grimeford Bridge	SD 613 123	3000	-	3000
2001	Douglas	Adlington Ford, Adlington	SD 594 118	-	-	1000
2001	Douglas	Robin Park, Wigan	SD 571 052	-	10000	-
2001	Douglas	Gathurst	SD 541 073	-	-	-
2001	Tawd	Nipe Lane, Skelmersdale	SD 488 044	1500	-	1000
2001	Syd Br	Syd Brook Lane, Croston	SD 501 176	1500	-	1000
2001	Eller Br	Wharm Bridge, Lathom	SD 463 137	1000	-	1000
Total				93000	72500	69000
1999	Lostock	Lower Copthurst	SD 593 210	2000 Brown Trout		

Appendix 2 – Site Report Sheets

SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Black Brook	Date Fished:-	18-Jun-01
Location:-	Froom Street d/s bridge	NGR:-	SD 596 178

Habitat Features

Length (m):-	44	Mean width (m):-	3.23
Area (m ²):-	142.12	Mean depth (m):-	0.2
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	10 % Glide	70 % Riffle
Adjacent land use:-	Rough Grazing		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	D	B	D	F

Comments

Species Caught: Trout, Chub, Pike, Eels, and Bullhead
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	7.04	-
>0+ Trout	12.66	-
Rheophilic	-	105.54
Limnophilic	-	0
Total	19.7	105.54



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	bb02
Watercourse:-	Black Brook	Date Fished:-	18-Jun-01
Location:-	Off Cross Hall Lane	NGR:-	SD 597 174

Habitat Features

Length (m):-	58	Mean width (m):-	3.2
Area (m ²):-	185.6	Mean depth (m):-	0.2
Gradient (m/km)	7.3	Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	0 % Pool	20 % Glide	80 % Riffle
Adjacent land use:-	Industrial		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	C	B	F	D

Comments

Species Caught: Trout, Gudgeon, Eels, and Bullhead
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	8.62	-
>0+ Trout	14	-
Rheophilic	-	0
Limnophilic	-	80.82
Total	22.62	80.82



SITE REPORT

Site Details

River System:- Douglas
 Watercourse:- Black Brook
 Location:- Baggonly Lane u/s bridge
 Site Code:-
 Date Fished:- 18-Jun-01
 NGR:- SD 597 185

Habitat Features

Length (m):- 43
 Area (m²):- 124.7
 Gradient (m/km)
 Water level:- Low summer flow
 Site description:- 0 % Pool 70 % Glide 30 % Riffle
 Adjacent land use:- Rough Grazing
 Method:- Upstream electric fishing, 1 anode, pulsed DC (50V), wading, u/s stopnet
 Mean width (m):- 2.9
 Mean depth (m):- 0.3
 Max. depth (m):- 0.5

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	B	B	F	F

Comments

Species Caught: Trout, Eels
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	24.86	-
>0+ Trout	20.85	-
Rheophilic	-	0
Limnophilic	-	0
Total	45.71	0



SITE REPORT

Site Details

River System:- Douglas
 Watercourse:- trib. of Black Brk
 Location:- Kittiwake Road
 Site Code:-
 Date Fished:- 18-Jun-01
 NGR:- SD 602 192

Habitat Features

Length (m):- 38
 Area (m²):- 122.74
 Gradient (m/km)
 Water level:- Low summer flow
 Site description:- 20 % Pool 60 % Glide 20 % Riffle
 Adjacent land use:- Urban/ Rough Grazing
 Method:- Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	B	C	D

Comments

Species Caught: Trout, Chub, Roach, and Eels
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	20.37	-
Rheophilic	-	488.84
Limnophilic	-	81.47
Total	20.37	570.31



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Black Brook	Date Fished:-	19-Jun-01
Location:-	Above Yarrow	NGR:-	SD 592 163

Habitat Features

Length (m):-	33	Mean width (m):-	4.3
Area (m ²):-	141.9	Mean depth (m):-	0.2
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	50 % Glide	30 % Riffle
Adjacent land use:-	Scrub		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	D	D	D

Comments

Species Caught: Trout, Chub, Gudgeon, Pike, and Bullhead

Stocking: None

Access for migratory salmonids:

Species	Density (no (g). per 100m ²)	
	no	g
2001		
0+ Trout	0	-
>0+ Trout	4.93	-
Rheophilic	-	70.47
Limnophilic	-	28.19
Total	4.93	98.66



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw04
Watercourse:-	Yarrow	Date Fished:-	19-Jun-01
Location:-	upstream of Black Brook	NGR:-	SD 594 164

Habitat Features

Length (m):-	44	Mean width (m):-	4.175
Area (m ²):-	183.7	Mean depth (m):-	0.15
Gradient (m/km)	11.76	Max. depth (m):-	1
Water level:-	Low summer flow		
Site description:-	20 % Pool	40 % Glide	40 % Riffle
Adjacent land use:-	Woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	C	E	F

Comments

Species Caught: Trout, Chub
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0.54	-
>0+ Trout	10.88	-
Rheophilic	-	54.43
Limnophilic	-	0
Total	11.42	54.43



SITE REPORT

Site Details

River System:- Douglas
 Watercourse:- Yarrow
 Location:- M61
 Site Code:-
 Date Fished:- 19-Jun-01
 NGR:- SD 604 163

Habitat Features

Length (m):- 34
 Area (m²):- 159.8
 Gradient (m/km)
 Water level:- Low summer flow
 Site description:- 0 % Pool 50 % Glide 50 % Riffle
 Adjacent land use:- Woodland
 Method:- Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	A	C	F	F

Comments

Species Caught: Trout, Stickleback
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	47.56	-
>0+ Trout	8.14	-
Rheophilic	-	0
Limnophilic	-	0
Total	55.70	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw06
Watercourse:-	Yarrow	Date Fished:-	20-Jun-01
Location:-	End of Carr Lane	NGR:-	SD 588 156

Habitat Features

Length (m):-	60	Mean width (m):-	5.23
Area (m ²):-	313.8	Mean depth (m):-	0.25
Gradient (m/km)	13.3	Max. depth (m):-	1.1
Water level:-	Low summer flow		
Site description:-	0 % Pool	70 % Glide	30 % Riffle
Adjacent land use:-	Woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	C	F	E

Comments

Species Caught: Trout, Gudgeon, Eels, and Bullhead
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	7.01	-
Rheophilic	-	0
Limnophilic	-	23.9
Total	7.01	23.90



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw05
Watercourse:-	Yarrow	Date Fished:-	20-Jun-01
Location:-	downstream of Black Brook	NGR:-	SD 592 162

Habitat Features

Length (m):-	63	Mean width (m):-	4.88
Area (m ²):-	307.44	Mean depth (m):-	0.4
Gradient (m/km)	11.76	Max. depth (m):-	1.1
Water level:-	Low summer flow		
Site description:-	10 % Pool	60 % Glide	30 % Riffle
Adjacent land use:-	Woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	D	B	C

Comments

Species Caught: Trout, Chub, Dace, Roach, Gudgeon and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0.33	-
>0+ Trout	3.58	-
Rheophilic	-	1154.69
Limnophilic	-	455.37
Total	3.91	1610.06



SITE REPORT

Site Details

River System:- Douglas Site Code:- yw01
 Watercourse:- Yarrow Date Fished:- 20-Jun-01
 Location:- D/S Blindhurst Bridge NGR:- SD 615 151

Habitat Features

Length (m):- 49 Mean width (m):- 2.12
 Area (m²):- 103.88 Mean depth (m):- 0.2
 Gradient (m/km) 7.14 Max. depth (m):- 0.4
 Water level:- Low summer flow
 Site description:- 0 % Pool 70 % Glide 30 % Riffle
 Adjacent land use:- Grazing
 Method:- Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	D	F	F

Comments

Species Caught: Trout, Bullhead, Sticklebacks and Brook Lamprey
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	1.92	-
>0+ Trout	4.81	-
Rheophilic	-	0
Limnophilic	-	0
Total	6.73	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw01
Watercourse:-	Yarrow	Date Fished:-	20-Jun-01
Location:-	U/S Blindhurst Bridge	NGR:-	SD 615 152

Habitat Features

Length (m):-	38	Mean width (m):-	2.05
Area (m ²):-	77.9	Mean depth (m):-	0.2
Gradient (m/km)		Max. depth (m):-	0.4
Water level:-	Low summer flow		
Site description:-	10 % Pool	80 % Glide	10 % Riffle
Adjacent land use:-	Grazing		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, d/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	B	F	F

Comments

Species Caught: Trout, Bullheads and Sticklebacks
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	16.68	-
Rheophilic	-	0
Limnophilic	-	0
Total	16.68	0



SITE REPORT

Site Details

River System:- Douglas Site Code:- Lk06
 Watercourse:- Lostock Date Fished:- 21-Jun-01
 Location:- Todd Lane South NGR:- SD 553 253

Habitat Features

Length (m):- 52 Mean width (m):- 5.325
 Area (m²):- 276.9 Mean depth (m):- 0.15
 Gradient (m/km) Max. depth (m):- 0.4
 Water level:- Low summer flow
 Site description:- 0 % Pool 40 % Glide 60 % Riffle
 Adjacent land use:- Urban
 Method:- Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, d/s stopnet

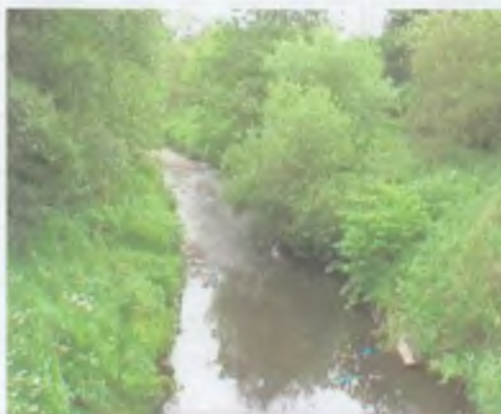
Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	C	D

Comments

Species Caught: Chub, Dace, Roach and Eels
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	469.48
Limnophilic	-	54.17
Total	0	523.65



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk05
Watercourse:-	Lostock	Date Fished:-	21-Jun-01
Location:-	Tudor Croft	NGR:-	SD 555 254

Habitat Features

Length (m):-	30	Mean width (m):-	4.975
Area (m ²):-	149.25	Mean depth (m):-	0.2
Gradient (m/km)	3.5	Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	5 % Pool	85 % Glide	10 % Riffle
Adjacent land use:-	Grazing/ Urban		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	E	F

Comments

Species Caught: Dace, Eels, Stoneloach and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	50.25
Limnophilic	-	0
Total	0	50.25



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk03
Watercourse:-	Lostock	Date Fished:-	21-Jun-01
Location:-	Sheep Mill Lane	NGR:-	SD 567 227

Habitat Features

Length (m):-	44	Mean width (m):-	5.1
Area (m ²):-	224.4	Mean depth (m):-	0.4
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	60 % Glide	20 % Riffle
Adjacent land use:-	Rough Grazing		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	B	A

Comments

Species Caught: Roach, Gudgeon, Chub, Dace, Eels, Sticklebacks, Bullheads and Stoneloach

Stocking: None

Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	967.01
Limnophilic	-	2704.98
Total	0	3671.99



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk02
Watercourse:-	Lostock	Date Fished:-	21-Jun-01
Location:-	Kem Mill Lane	NGR:-	SD 577 215

Habitat Features

Length (m):-	48	Mean width (m):-	3.9
Area (m ²):-	187.2	Mean depth (m):-	0.3
Gradient (m/km)	5.6	Max. depth (m):-	0.75
Water level:-	Low summer flow		
Site description:-	70 % Pool	10 % Glide	20 % Riffle
Adjacent land use:-	Grazing /Deciduous woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	C	D	D

Comments

Species Caught: Trout, Chub, Roach, and Eels
 Stocking: 2000 chub and 2000 roach were stocked in 1999 d/s of Kem Mill Lane
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	5.88	-
Rheophilic	-	106.84
Limnophilic	-	32.05
Total	5.88	138.89



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	LK01
Watercourse:-	Lostock	Date Fished:-	21-Jun-01
Location:-	Lower Copthurst	NGR:-	SD 593 215

Habitat Features

Length (m):-	44	Mean width (m):-	3.075
Area (m ²):-	135.3	Mean depth (m):-	0.4
Gradient (m/km)	6	Max. depth (m):-	0.75
Water level:-	Low summer flow		
Site description:-	40 % Pool 50 % Glide 10 % Riffle		
Adjacent land use:-	Garden/Rough Grazing		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	C	F	B

Comments

Species Caught: Trout, Gudgeon, Roach, Eels, Bullheads and Stoneloach
 Stocking: 2000 Brown Trout Parr stocked in 1999 at site
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	7.39	-
Rheophilic	-	0
Limnophilic	-	646.71
Total	7.39	646.71



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Lostock	Date Fished:-	22-Jun-01
Location:-	Sherdeley Rd	NGR:-	SD 547 250

Habitat Features

Length (m):-	42	Mean width (m):-	5.1
Area (m ²):-	214.2	Mean depth (m):-	0.3
Gradient (m/km)		Max. depth (m):-	0.5
Water level:-	Low summer flow		
Site description:-	10 % Pool	80 % Glide	10 % Riffle
Adjacent land use:-	Improved pasture/Industrial		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	D	D

Comments

Species Caught: Dace, Roach, Chub and Eels

Stocking: 1000 of Chub, Roach and Dace were stocked in 1999 into SD 550 252

Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	163.39
Limnophilic	-	25.67
Total	0	189.06



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk05
Watercourse:-	Lostock	Date Fished:-	22-Jun-01
Location:-	Havelock Rd Bamber Bridge	NGR:-	SD 562 254

Habitat Features

Length (m):-	38	Mean width (m):-	4.45
Area (m ²):-	169.1	Mean depth (m):-	0.3
Gradient (m/km)		Max. depth (m):-	1.2
Water level:-	Low summer flow		
Site description:-	30 % Pool	70 % Glide	0 % Riffle
Adjacent land use:-	Urban		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	B	A

Comments

Species Caught: Roach, Chub, Gudgeon, Dace, and Eels
 Stocking: 2500 of Chub, Roach and Dace were stocked into this site in 1999
 Access for migratory salmonids:

Species 2001	Density (no (g). per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	1028.98
Limnophilic	-	1839.14
Total	0	2868.12



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Black Brook	Date Fished:-	21-Aug-01
Location:-	Above Yarrow	NGR:-	SD 592 163

Habitat Features

Length (m):-	33	Mean width (m):-	4.3
Area (m ²):-	141.9	Mean depth (m):-	0.2
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	50 % Glide	30 % Riffle
Adjacent land use:-	Scrub		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	D	F	E

Comments

Species Caught: Trout, Gudgeon, and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0.7	-
>0+ Trout	3.52	-
Rheophilic	-	0
Limnophilic	-	17.61
Total	4.22	17.61



SITE REPORT

Site Details

River System:- Douglas
 Watercourse:- Black Brook
 Location:- Froom Street d/s bridge
 Site Code:-
 Date Fished:- 21-Aug-01
 NGR:- SD 596 178

Habitat Features

Length (m):- 44
 Area (m²):- 142.12
 Gradient (m/km)
 Water level:- Low summer flow
 Site description:- 20 % Pool 10 % Glide 70 % Riffle
 Adjacent land use:- Rough grazing
 Method:- Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	D	C	D	F

Comments

Species Caught: Trout, Chub, Dace, and Eels
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	5.63	-
>0+ Trout	6.33	-
Rheophilic	-	140.66
Limnophilic	-	0
Total	11.96	140.66



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	bb02
Watercourse:-	Black Brook	Date Fished:-	21-Aug-01
Location:-	Off Cross Hall Lane	NGR:-	SD 597 174

Habitat Features

Length (m):-	58	Mean width (m):-	3.2
Area (m ²):-	185.6	Mean depth (m):-	0.2
Gradient (m/km)	7.3	Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	0 % Pool	20 % Glide	80 % Riffle
Adjacent land use:-	Industrial		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	D	C	E	E

Comments

Species Caught: Trout, Gudgeon, Dace and Eel
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	6.46	-
>0+ Trout	8.08	-
Rheophilic	-	8.08
Limnophilic	-	13.46
Total	14.54	21.54



SITE REPORT

Site Details

River System:- Douglas
 Watercourse:- Black Brook
 Location:- Baggonly Lane u/s bridge
 Site Code:-
 Date Fished:- 21-Aug-01
 NGR:- SD 597 185

Habitat Features

Length (m):- 43
 Area (m²):- 124.7
 Gradient (m/km)
 Water level:- Low summer flow
 Site description:- 0 % Pool 70 % Glide 30 % Riffle
 Adjacent land use:- Rough grazing
 Method:- Upstream electric fishing, 1 anode, pulsed DC (50V), wading, u/s stopnet

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	C	B	F	F

Comments

Species Caught: Trout, Eels and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	9.62	-
>0+ Trout	14.43	-
Rheophilic	-	0
Limnophilic	-	0
Total	24.05	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Black Brook	Date Fished:-	21-Aug-01
Location:-	Kittiwake Road	NGR:-	SD 602 192

Habitat Features

Length (m):-	38	Mean width (m):-	3.23
Area (m ²):-	122.74	Mean depth (m):-	0.4
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	60 % Glide	20 % Riffle
Adjacent land use:-	Urban/Rough Grazing		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	B	B	F

Comments

Species Caught: Trout, Chub, Eels, Stoneloach, Bullheads and Sticklebacks
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	13.03	-
Rheophilic	-	896.2
Limnophilic	-	0
Total	13.03	896.2



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk06
Watercourse:-	Lostock	Date Fished:-	23-Aug-01
Location:-	Todd Lane South	NGR:-	SD 553 253

Habitat Features

Length (m):-	52	Mean width (m):-	5.325
Area (m ²):-	276.9	Mean depth (m):-	0.15
Gradient (m/km)		Max. depth (m):-	0.4
Water level:-	Low summer flow		
Site description:-	0 % Pool	40 % Glide	60 % Riffle
Adjacent land use:-	Urban		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	C	C

Comments

Species Caught: Roach, Dcae, Chub and Eels
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	523.65
Limnophilic	-	180.57
Total	0	704.22



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk05
Watercourse:-	Lostock	Date Fished:-	23-Aug-01
Location:-	Tudor Croft	NGR:-	SD 555 254

Habitat Features

Length (m):-	30	Mean width (m):-	4.975
Area (m ²):-	149.25	Mean depth (m):-	0.2
Gradient (m/km)	3.5	Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	50 % Pool	85 % Glide	10 % Riffle
Adjacent land use:-	Urban/Rough Grazing		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	D	F

Comments

Species Caught: Chub, Eels, Bullheads and Stoneloach
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	100.5
Limnophilic	-	0
Total	0	100.5



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk03
Watercourse:-	Lostock	Date Fished:-	23-Aug-01
Location:-	Sheep Mill Lane	NGR:-	SD 567 227

Habitat Features

Length (m):-	44	Mean width (m):-	5.1
Area (m ²):-	224.4	Mean depth (m):-	0.4
Gradient (m/km)		Max. depth (m):-	0.6
Water level:-	Low summer flow		
Site description:-	20 % Pool	60 % Glide	20 % Riffle
Adjacent land use:-	Rough grazing		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	B	A

Comments

Species Caught: Roach, Gudgeon, Chub, Dace, Eels, Stoneloach, Sticklebacks and Bullheads

Stocking: None

Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	1185.37
Limnophilic	-	1680.02
Total	0	2865.39



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk02
Watercourse:-	Lostock	Date Fished:-	23-Aug-01
Location:-	Kem Mill Lane	NGR:-	SD 577 215

Habitat Features

Length (m):-	48	Mean width (m):-	3.9
Area (m ²):-	187.2	Mean depth (m):-	0.2
Gradient (m/km)	5.6	Max. depth (m):-	0.75
Water level:-	Low summer flow		
Site description:-	70 % Pool	10 % Glide	20 % Riffle
Adjacent land use:-	Grazing/Deciduous woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	D	F	C

Comments

Species Caught: Trout, Eels, Roach, Bullheads and Stoneloach
 Stocking: 2000 chub and 2000 roach were stocked in 1999 d/s of Kem Mill Lane
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	3.74	-
Rheophilic	-	0
Limnophilic	-	160.25
Total	3.74	160.25



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	LK01
Watercourse:-	Lostock	Date Fished:-	23-Aug-01
Location:-	Lower Cophurst	NGR:-	SD 593 215

Habitat Features

Length (m):-	44	Mean width (m):-	3.075
Area (m ²):-	135.3	Mean depth (m):-	0.4
Gradient (m/km)	6	Max. depth (m):-	0.75
Water level:-	Low summer flow		
Site description:-	40 % Pool	50 % Glide	10 % Riffle
Adjacent land use:-	Urban/Rough Grazing		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	C	F	C

Comments

Species Caught: Trout, Roach, Gudgeon and Eels
 Stocking: 2000 Brown trout parr stocked in 1999 at site
 Access for migratory salmonids:

Species	Density (no. per 100m ²)	
	no	g
2001		
0+ Trout	0	-
>0+ Trout	5.17	-
Rheophilic	-	0
Limnophilic	-	314.11
Total	5.17	314.11



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Lostock	Date Fished:-	24-Aug-01
Location:-	Sherdeley Rd	NGR:-	SD 547 250

Habitat Features

Length (m):-	42	Mean width (m):-	5.1
Area (m ²):-	214.2	Mean depth (m):-	0.3
Gradient (m/km)		Max. depth (m):-	0.5
Water level:-	Low summer flow		
Site description:-	10 % Pool	80 % Glide	10 % Riffle
Adjacent land use:-	Industrial		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, no stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	C	C

Comments

Species Caught: Dace, Chub, Roach, Gudgeon and Eels

Stocking: 1000 of Chub, Roach and Dace were stocked in 1999 into SD 550 252

Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	448.17
Limnophilic	-	246.02
Total	0	694.19



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Lk05
Watercourse:-	Lostock	Date Fished:-	24-Aug-01
Location:-	Havelock Rd Bamber Bridge	NGR:-	SD 562 254

Habitat Features

Length (m):-	38	Mean width (m):-	4.45
Area (m ²):-	169.1	Mean depth (m):-	0.3
Gradient (m/km)		Max. depth (m):-	1.2
Water level:-	Low summer flow		
Site description:-	30 % Pool	70 % Glide	0 % Riffle
Adjacent land use:-	Urban		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	F	C	C

Comments

Species Caught: Chub, Roach, Perch, Gudgeon and Eels
 Stocking: 2500 of Chub, Roach and Dace were stocked into this site in 1999
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	0	-
Rheophilic	-	354.81
Limnophilic	-	337.07
Total	0	691.88



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw04
Watercourse:-	Yarrow	Date Fished:-	29-Aug-01
Location:-	upstream of Black Brook	NGR:-	SD 594 164

Habitat Features

Length (m):-	44	Mean width (m):-	4.175
Area (m ²):-	183.7	Mean depth (m):-	0.15
Gradient (m/km)	11.76	Max. depth (m):-	1
Water level:-	Low summer flow		
Site description:-	20 % Pool	40 % Glide	40 % Riffle
Adjacent land use:-	Deciduous woodland		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	C	D	F

Comments

Species Caught: Trout and Chub
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	2.72	-
>0+ Trout	9.79	-
Rheophilic	-	76.21
Limnophilic	-	0
Total	12.51	76.21



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	
Watercourse:-	Yarrow	Date Fished:-	29-Aug-01
Location:-	M61	NGR:-	SD 604 163

Habitat Features

Length (m):-	34	Mean width (m):-	4.7
Area (m ²):-	159.8	Mean depth (m):-	0.1
Gradient (m/km)		Max. depth (m):-	0.4
Water level:-	Low summer flow		
Site description:-	0 % Pool	50 % Glide	50 % Riffle
Adjacent land use:-	Deciduous woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, nostopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	B	C	F	F

Comments

Species Caught: Trout and Sticklebacks
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	37.54	-
>0+ Trout	5.63	-
Rheophilic	-	0
Limnophilic	-	0
Total	43.17	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	yw01
Watercourse:-	Yarrow	Date Fished:-	29-Aug-01
Location:-	D/S Blindhurst Bridge	NGR:-	SD 615 151

Habitat Features

Length (m):-	49	Mean width (m):-	2.12
Area (m ²):-	103.88	Mean depth (m):-	0.2
Gradient (m/km)	7.14	Max. depth (m):-	0.4
Water level:-	Low summer flow		
Site description:-	0 % Pool	70 % Glide	30 % Riffle
Adjacent land use:-	Grazing		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, both stopnets		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	E	F	F

Comments

Species Caught: Trout, Sticklebacks and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	2.88	-
>0+ Trout	0.96	-
Rheophilic	-	0
Limnophilic	-	0
Total	3.84	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw01
Watercourse:-	Yarrow	Date Fished:-	29-Aug-01
Location:-	U/S Blindhurst Bridge	NGR:-	SD 615 152

Habitat Features

Length (m):-	38	Mean width (m):-	2.05
Area (m ²):-	77.9	Mean depth (m):-	0.2
Gradient (m/km)		Max. depth (m):-	0.4
Water level:-	Low summer flow		
Site description:-	10 % Pool	80 % Glide	10 % Riffle
Adjacent land use:-	Grazing		
Method:-	Upstream electric fishing, 1 anode, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	B	F	F

Comments

Species Caught: Trout, Sticklebacks and Bullheads
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	1.28	-
>0+ Trout	14.12	-
Rheophilic	-	0
Limnophilic	-	0
Total	15.40	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw06
Watercourse:-	Yarrow	Date Fished:-	31-Aug-01
Location:-	End of Carr Lane	NGR:-	SD 588 156

Habitat Features

Length (m):-	60	Mean width (m):-	5.23
Area (m ²):-	313.8	Mean depth (m):-	0.25
Gradient (m/km)	13.3	Max. depth (m):-	1.1
Water level:-	Low summer flow		
Site description:-	0 % Pool	70 % Glide	30 % Riffle
Adjacent land use:-	Deciduous woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	F	D	F	F

Comments

Species Caught: Trout
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0	-
>0+ Trout	2.23	-
Rheophilic	-	0
Limnophilic	-	0
Total	2.23	0



SITE REPORT

Site Details

River System:-	Douglas	Site Code:-	Yw05
Watercourse:-	Yarrow	Date Fished:-	31-Aug-01
Location:-	downstream of Black Brook	NGR:-	SD 592 162

Habitat Features

Length (m):-	63	Mean width (m):-	4.88
Area (m ²):-	307.44	Mean depth (m):-	0.4
Gradient (m/km)	11.76	Max. depth (m):-	1.1
Water level:-	Low summer flow		
Site description:-	10 % Pool	60 % Glide	30 % Riffle
Adjacent land use:-	Deciduous woodland		
Method:-	Upstream electric fishing, 2 anodes, pulsed DC (50V), wading, u/s stopnet		

Fishery Classification (level 1)

	0+ trout	>0+ trout	Rheophilic	Limnophilic
2001 Classification	E	D	D	C

Comments

Species Caught: Chub, Roach, Dace, Gudgeon, Trout, Bullheads and Minnows
 Stocking: None
 Access for migratory salmonids:

Species 2001	Density (no. per 100m ²)	
	no	g
0+ Trout	0.32	-
>0+ Trout	1.62	-
Rheophilic	-	178.89
Limnophilic	-	302.81
Total	1.94	481.70

