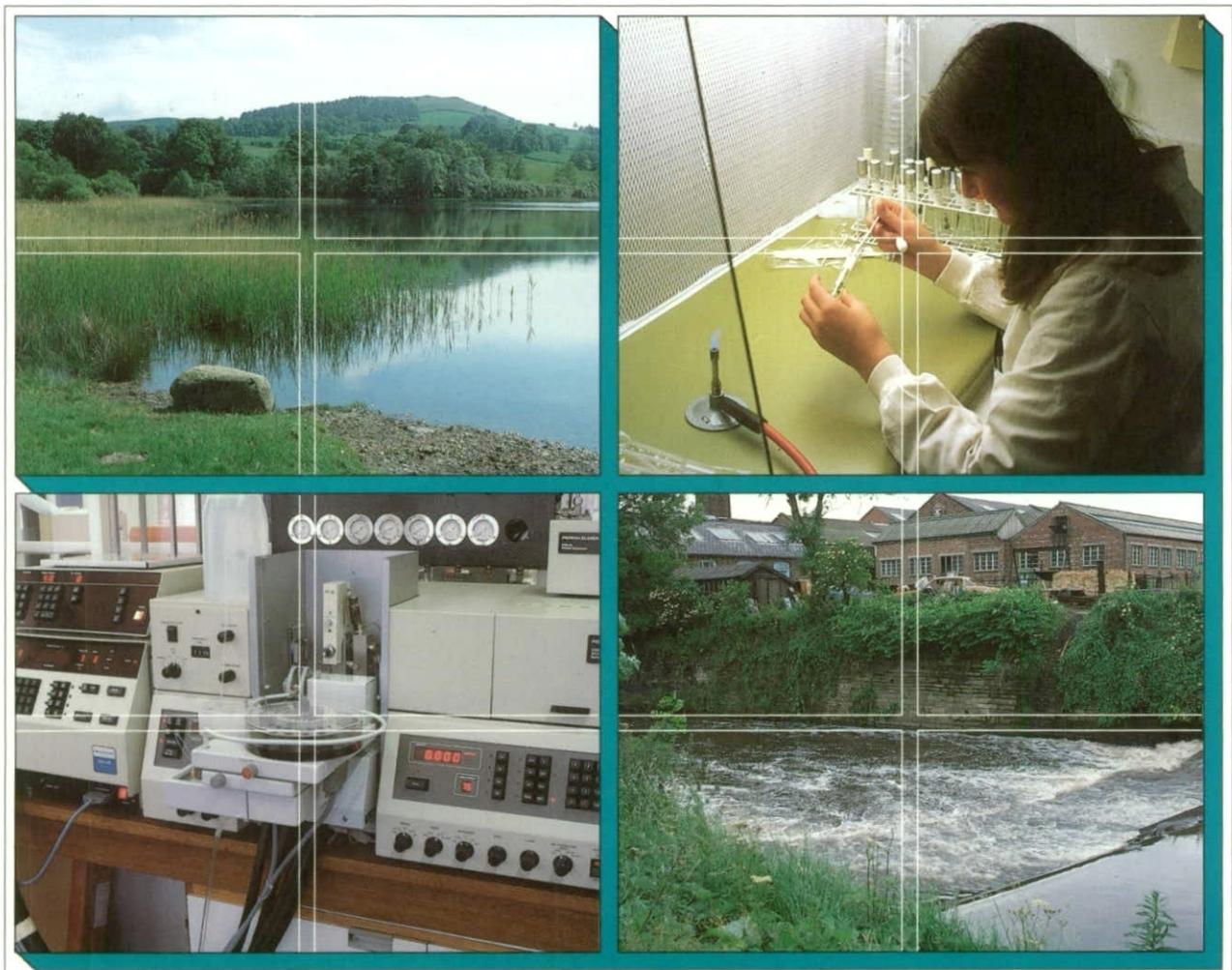




Institute of
Freshwater
Ecology

An audit of performance in the processing of macro-invertebrate samples in 1991. NRA Northumbrian Region

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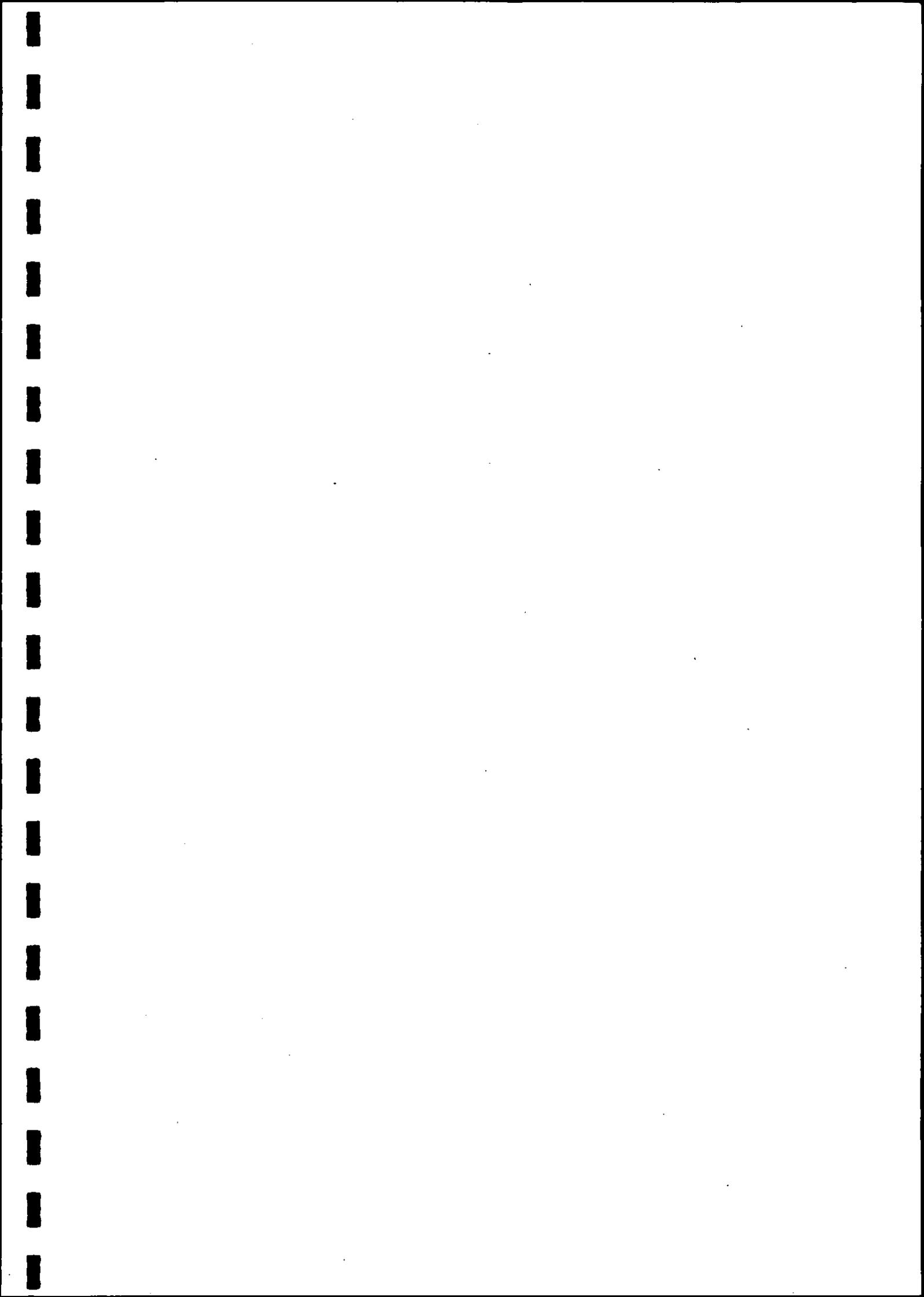
**An audit of performance in the processing
of macro-invertebrate samples in 1991.
NRA Northumbrian Region**

R.J.M. Gunn, J.F. Wright, J.M. Winder & J.H. Blackburn

Project leader:	J.F. Wright
Report date:	May 1992
Report to:	National Rivers Authority Northumbrian Region
IFE Report Ref:	RL/T04053x1/02
TFS Project No:	T04053x1

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The Institute of Freshwater Ecology is part of the Terrestrial and Freshwater Sciences Directorate of the Natural Environment Research Council.



1. INTRODUCTION

In 1991 the sampling of aquatic macro-invertebrates for the biological assessment of river quality continued throughout the United Kingdom. In England and Wales this task was undertaken by the National Rivers Authority (NRA), the River Purification Boards (RPBs) sampled in Scotland and the Department of Economic Development (DED) undertook the work in Northern Ireland.

The majority of sites were sampled in spring, summer and autumn. Standard collection procedures, as used in the 1990 River Quality Survey, were retained and the sampling strategy was therefore compatible with RIVPACS (River InVertebrate Prediction And Classification System), which has been developed by the Institute of Freshwater Ecology (IFE). For a variety of reasons, a few locations were sampled in just one or two seasons.

Samples were sorted by NRA, RPB and DED personnel for the families of macro-invertebrates included in the Biological Monitoring Working Party (BMWP) system. Taxa present were recorded on site data sheets. Sample processing and recording techniques varied from region to region.

In view of the number of staff involved and the variability of sample processing techniques, it was recognised that an independent quality control exercise was necessary to promote a consistently high level of reliability. As in 1990, the IFE was contracted to undertake an audit of the sample sorting and identification performance of each NRA region, several RPBs and the DED. This report presents the results of 60 samples audited for Northumbrian Region of the NRA. The IFE was not required to perform any statistical analyses nor interpretation of the results of the audit.

2. SAMPLE SELECTION

Samples for audit were selected internally by each of the agencies being monitored. The biologists processing these samples had no prior knowledge of the samples to be audited.

The manner of sample selection, which biologists would be monitored and the number of audit samples from each season, were left to the discretion of the agency, within the limits of the total number of samples that IFE was contracted to audit.

3. SAMPLE PROCESSING

The normal protocol for NRA, RPB and DED biologists was to sort their samples within the laboratory and to select examples of each scoring taxon within the BMWP system. In most cases, the invertebrates were placed in a vial of preservative (4% formaldehyde solution or 70% industrial alcohol) and the BMWP taxa were listed on a data sheet. The vial of animals and the sorted material were then returned to the sample container and preservative added. Thus, each sample available to IFE for audit should have included:

- i) a list of the BMWP FAMILIES FOUND IN THE SAMPLE
- ii) a vial containing representatives from each family
- iii) the preserved sample

When these three elements were present, the sequence of operations at IFE was as follows:

- a) The remainder of the sample was sorted and the BMWP families listed
- b) The families contained within the vial were identified and listed
- c) A comparison was made between the NRA listing of families and those identified from the vial by IFE
- d) A comparison was made between the NRA listing of families and those found in the sample by IFE
- e) "Losses" or "gains" from the NRA listing of families were noted. In the case of "gains", each additional family was identified, where possible, to species level, in order to clarify any specific repetitive errors.

For a number of different reasons, some samples did not include a vial containing representative examples of the families listed on the data sheet. Others arrived with the vial damaged in transit such that the representative examples were no longer separated. For these samples, only operations a), d) and c) above were appropriate.

Several directives were issued to IFE relating to the treatment of BMWP taxa. Terrestrial representatives of BMWP scoring families, animals deemed to have been dead at the time of sampling, cast insect skins, pupal exuviae, empty mollusc shells and posterior ends of "living" specimens were to be excluded from the listing of families present. Trichopteran pupae, although not routinely identified by many biologists, were to be included in the listing of families.

4. REPORTING

The results of each sample audit were recorded on a standard report form (Table 1). For audit samples where a vial of animals was included, the comparison between the NRA listing and the taxa found in the vial by IFE was shown in box A of the report form. Discrepancies could be due to carelessness, misidentifications or errors in completing the NRA data sheet. Families not on the NRA listing but found by IFE in the remainder of the sample were entered in box B of the report form under "additional families". When the families listed as "losses" in section A of the report form were compared with the full list of families recorded in the sample by IFE, some apparent losses from the vial were offset by the presence of those families in the remainder of the sample. These taxa were therefore listed in the "losses" box of section A and the "gains" box of section B and were neither a net loss nor a net gain. In these cases, the families were marked with an asterisk in both boxes. Such errors are noted as "omissions" in the tables which summarise the results for each season (Tables 2, 3 and 4).

Species identifications, state of development (eg adult or larval coleopterans) and the presence of a single representative of a family within the remainder of the sample were recorded in the notes section of the report form. Where the NRA data sheet indicated that a family was noted and released at the site, this was recorded in the notes section but not included as a "loss", even though the family was not found in the vial.

For those samples in which the vial of animals was damaged or missing, box A of the report form was not applicable (N/a). Families not on the NRA list but present in the sample were listed in box B under "additional families" as before. Families recorded on the NRA list but not found by IFE were indicated on the left hand side of box B. If the vial of animals was retained by the NRA, entries in this box could include the sole representative of a family which was removed by the NRA, a family seen at the site which escaped or was released (without mention being made on the NRA data sheet), inaccurate identification, the wrong family box being ticked on the NRA data sheet or the family being present in the sample but missed by IFE.

Results of the audits of individual samples are presented in the Appendix.

ACKNOWLEDGEMENTS

Thanks to Mike Furse for help and advice, to Kay Symes and Angela Matthews for assistance with cataloguing and storage of samples and to Valerie Palmer and Diana Morton for typing the manuscript.

TABLE 1. The IFE Report form

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION RIVER

DATE SITE

SORTER SAMPLE CODE

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p>

B	<p><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p>
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NET LOSSES NET GAINS

NOTES

TABLE 2. The 20 spring samples audited for Northumbrian Region, with sample sorter initials and numbers of taxa 'lost', 'gained' and 'omitted'

River	Site	Sorter	Losses	Gains	Omissions
Briardene Burn	Whitley Bay	AP	0	1	0
Wear	Wearhead	SS	0	1	0
South Tyne	Alston	DH	0	2	0
Wansbeck	Morpeth	PS	0	1	0
Arngill Burn	Arngill House	DH	1	1	0
Woodham Burn	Low Copelaw	VW	0	1	1
Horsley Hope Burn	D/s Confluence	SS	1	1	1
Long Nanny	Tuggal Grange	AP	0	0	0
Hazon Burn	Whittle Co	PS	0	3	0
Whitton Beck	Whitton	VW	0	2	0
Wreigh Burn	Thropton	PS	0	2	0
Greta	Greta Bridge	VW	0	2	0
Browney	A167 Bridge	DH	1	0	0
Killhope Burn	Wearhead	SS	0	1	0
West Allen	Carr Shield	SS	0	1	0
Smallhope Burn	Low Meadow	SS	0	1	0
Howdon Burn	U/s Wansbeck	PS	1	3	1
Lumley Park Burn	Bournmoor	DH	1	0	0
Barrasford	D/s Gravel Pit	PS	1	1	0
Aln	Abberwick	PS	0	0	0

TABLE 3. The 20 summer samples audited for Northumbrian Region, with sample sorter initials and numbers of taxa 'lost', 'gained' and 'omitted'

River	Site	Sorter	Losses	Gains	Omissions
Morton Wood Beck	B1380 Bridge	VW/PS	0	1	0
Summerhouse Beck	Carlbury	AP	2	2	0
Alwin	Alwinton	PS	0	2	0
Saltergill Beck	Low Worsal	SS	0	0	0
South Tyne	Haydon Bridge	DH	0	1	0
Ouse Burn	Salters Bridge	AP	0	1	0
Tees	Neasham	SS	0	0	0
Kilton Beck	Lodge Wood	VW	0	0	0
Font	Mitford	DH/DH	0	3	0
Langley Beck	Staindrop	DH	1	1	0
Allerdean Mill Burn	Nabhill	PS	0	0	0
West Allen	Burnmouth	AP	0	1	0
Don	Jarrow Cemetery	SS	0	0	0
Coquet	Low Alwinton	PS/DH	0	0	0
Wear	Willington Bridge	VW	0	2	0
Till	Doddington Bridge	PS/SS	0	0	0
Level	Hutton Rudby	VW	1	2	0
Newhouse Burn	A691 Bridge	PS	0	2	1
Killhope Burn	Wearhead	VW	0	2	0
Coldcoats Burn	Eastcoats Farm	DH	0	3	0

TABLE 4. The 20 autumn samples audited for Northumbrian Region, with sample sorter initials and numbers of taxa 'lost', 'gained' and 'omitted'.

River	Site	Sorter	Losses	Gains	Omissions
South Tyne	Haltwhistle	DH	0	2	0
East Allen	U/s Allenheads	SS/SS	0	0	0
Rennington Burn	Howick Hall	AP/DH	0	1	0
Spenn Burn	Rowlands Gill	VW/SS	0	1	0
Long Nanny	Tuggal Grange	AP	0	1	0
Wear	Finchdale Park	SS/VW	0	1	0
Pont Burn	B6310 Bridge	SS	3	2	0
Tees	Low Con	PS	0	2	0
Bedburn Burn	Newhall	SS	1	2	0
Coquet	Pauperhaugh	DH	0	1	0
Tees	Hurworth	AL/SS	2	1	0
Embleton Burn	Embleton Mill	VW	0	0	0
Rookhope Burn	Eastgate	DH	0	1	0
Valley Burn	Woodhouse Farm	SS	0	0	0
Middle Gill	Loftus	SS/AP	0	2	0
Hartley Burn	Burntfoot	SS	0	0	0
Tinklers Gill	Embleton	PS	1	2	0
Kilton Beck	Skinningrove	PS/PS	1	1	0
Grasslees Burn	Swindon	VW	0	0	0
Ridlees Burn	Linshields	DH	0	0	1

APPENDIX

Results of individual sample audits

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Brierdene Burn
DATE	6.5.91	SITE	Whitley Bay
SORTER	AP	SAMPLE CODE	NRA02 1130

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Tipulidae

NET LOSSES

NET GAINS

NOTES

1 Ormosia sp. 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Wear
DATE	28.4.91	SITE	Wearhead
SORTER	SS	SAMPLE CODE	NRA02 2210

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">1 Dytiscidae</p>

NET LOSSES NET GAINS

NOTES

1 Oreodytes sanmarkii (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	South Tyne
DATE	11.3.91	SITE	Alston
SORTER	DH	SAMPLE CODE	NRA02 1650

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Hydroptilidae 2 Limnephilidae

NET LOSSES NET GAINS

NOTES

1 Hydroptila sp. 1 only
2 Drusus annulatus 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Wansbeck
DATE	22.4.91	SITE	Morpeth
SORTER	PS	SAMPLE CODE	NRA02 0780

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">None</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">1 Simuliidae</p>

NET LOSSES NET GAINS

NOTES

1 Simulium equinum, Simulium ornatum group (pupae)

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Arngill Burn
DATE	27.3.90	SITE	Arngill House
SORTER	DH	SAMPLE CODE	NRA02 3980

AQC OF BMWF FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between: i) BMWF families listed on sample data sheet and ii) BMWF families found in VIAL by IFE</p>	<p>BMW FAMILIES NOT FOUND BY IFE</p> <p>1 Hydrobiidae</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>
B	<p><u>SAMPLE</u></p> <p>Differences between: i) BMWF families listed on sample data sheet and ii) BMWF families found in SAMPLE by IFE</p>	<p>BMW FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>2 Oligochaeta</p>

NET LOSSES

NET GAINS

NOTES

1 *Lymnaea truncatula* + *Lymnaea peregra* in vial
 2 Indet Lumbricid 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Woodham Burn
DATE	7.3.91	SITE	Low Copelaw
SORTER	VW	SAMPLE CODE	NRA02 3680

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>1 Oligochaeta*</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>2 Tipulidae</p>
B	<p><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>3 Oligochaeta*</p>

NET LOSSES NET GAINS

NOTES

2 Molophilus sp.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian	RIVER Horsley Hope Burn
DATE 17.4.91	SITE D/s Confluence
SORTER SS	SAMPLE CODE NRA02 1480

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Perlodidae* 2 Sericostomatidae	3 Beraeidae
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	4 Perlodidae*

NET LOSSES 1 NET GAINS 1

NOTES

3 Beraea maurus
4 Isoperla grammatica

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION <input style="width: 100%;" type="text" value="Northumbrian"/>	RIVER <input style="width: 100%;" type="text" value="Long Nanny"/>
DATE <input style="width: 100%;" type="text" value="9.4.91"/>	SITE <input style="width: 100%;" type="text" value="Tuggal Grange"/>
SORTER <input style="width: 100%;" type="text" value="AP"/>	SAMPLE CODE <input style="width: 100%;" type="text" value="NRA02 0290"/>

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Hazon Burn
DATE	3.4.91	SITE	Whittle Co
SORTER	PS	SAMPLE CODE	NRA02 0530

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;"> 1 Perlodidae 2 Scirtidae 3 Tipulidae </p>

NET LOSSES NET GAINS

NOTES

- 1 Isoperla grammatica
 - 2 Elodes sp. (larva) 1 only
 - 3 Tipula sp., Molophilus sp.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Whitton Beck
DATE	10.4.91	SITE	Whitton
SORTER	VW	SAMPLE CODE	NRA02 3280

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>None</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>
B	<p><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>1 Hydrobiidae 2 Glossiphoniidae</p>

NET LOSSES NET GAINS

NOTES

1 Potamopyrgus jenkinsi 1 only
 2 Helobdella stagnalis

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Wreigh Burn
DATE	16.4.91	SITE	Thropton
SORTER	PS	SAMPLE CODE	NRA02 0640

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE None	ADDITIONAL FAMILIES FOUND BY IFE None
B	<u>SAMPLE</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	ADDITIONAL FAMILIES FOUND BY IFE 1 Hydrobiidae 2 Lepidostomatidae

NET LOSSES NET GAINS

NOTES

1 Potamopyrgus jenkinsi 1 only
 2 Lepidostoma hirtum

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Greta
DATE	18.5.91	SITE	Greta Br.
SORTER	VW	SAMPLE CODE	NRA02 3830

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Lymnaeidae 2 Hydrophilidae

NET LOSSES NET GAINS

NOTES

1 Lymnaea peregra 1 only
2 Hydraena gracilis (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Browney
DATE	17.4.91	SITE	A167 Bridge
SORTER	DH	SAMPLE CODE	NRA02 2480

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>1 Erpobdellidae</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>
B	<p><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Killhope Burn
DATE	28.4.91	SITE	Wearhead
SORTER	SS	SAMPLE CODE	NRA02 2830

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Simuliidae

NET LOSSES NET GAINS

NOTES

1 Simulium argyreatum/variegatum (larva) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	West Allen
DATE	2.4.91	SITE	Carr Shield
SORTER	SS	SAMPLE CODE	NRA02 1720

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Polycentropodidae

NET LOSSES NET GAINS

NOTES

1 Plectrocnemia conspersa 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Smallhope Burn
DATE	11.4.91	SITE	Low Meadow
SORTER	SS	SAMPLE CODE	NRA02 2580

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	1 Hydrobiidae
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1 Potamopyrgus jenkinsi

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Howdon Burn
DATE	22.4.91	SITE	U/s Wansbeck
SORTER	PS	SAMPLE CODE	NRA02 0840

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE 1 Planorbidae 2 Simuliidae*	ADDITIONAL FAMILIES FOUND BY IFE None
B	<u>SAMPLE</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	ADDITIONAL FAMILIES FOUND BY IFE 3 Hydrophilidae 4 Elmidae 5 Limnephilidae 6 Simuliidae*

NET LOSSES NET GAINS

NOTES

1 Terrestrial snail in vial
 2,6 Cast pupal skin in vial, Simulium ornatum group (pupa) in sample
 3 Indet Hydrophilid (larva) 1 only
 4 Elmis aenea, Limnius volckmari (adults)
 5 Limnephilus lunatus 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Lumley Park Burn
DATE	10.4.91	SITE	Bournmoor
SORTER	DH	SAMPLE CODE	NRA02 2280

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Planorbidae	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES 1 Terrestrial snail found in vial

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Barrasford
DATE	Spring	SITE	D/s Gravel Pit
SORTER	PS	SAMPLE CODE	NRA02 1830

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE 1 Hydrophilidae	ADDITIONAL FAMILIES FOUND BY IFE 2 Dytiscidae
B	<u>SAMPLE</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	ADDITIONAL FAMILIES FOUND BY IFE None

NET LOSSES

NET GAINS

NOTES

2 Agabus bipustulatus (adult)

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

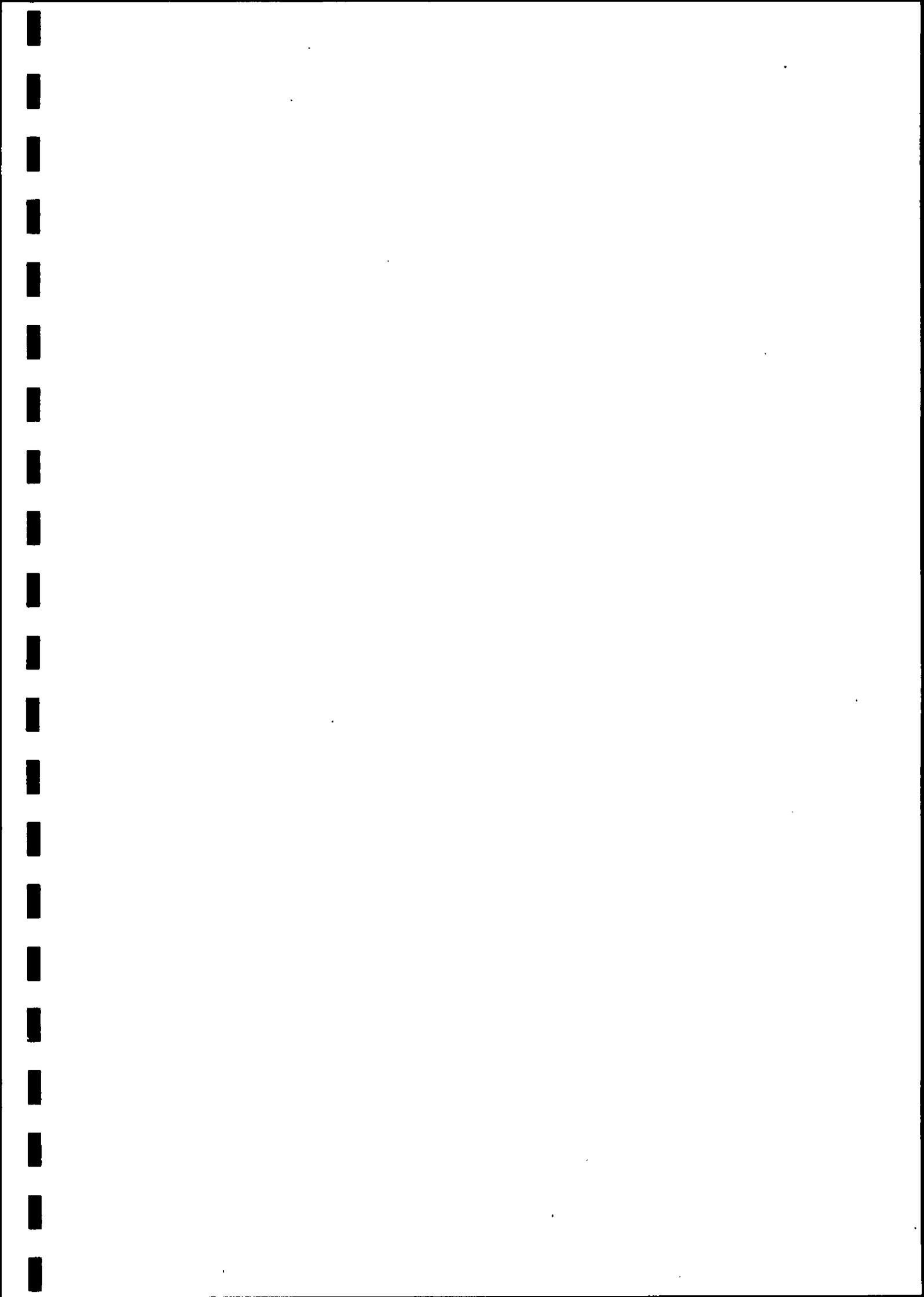
REGION	Northumbrian	RIVER	Aln
DATE	14.3.91	SITE	Abberwick
SORTER	PS	SAMPLE CODE	NRA02 0330

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-size: 1.2em;">None</p>

NET LOSSES NET GAINS

NOTES



1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian	RIVER Morton Wood Beck
DATE 17.7.91	SITE B1380 Bridge
SORTER VW/PS	SAMPLE CODE NRA02 3220

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Glossiphoniidae

NET LOSSES NET GAINS

NOTES

1 Glossiphonia complanata 1 only

 This sample repicked as part of an internal AQC exercise by NRA.
 1 Additional family added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Summerhouse Beck
DATE	13.8.91	SITE	Carlbury
SORTER	AP	SAMPLE CODE	NRA02 3770

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Planorbidae 2 Hydroptilidae	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	3 Lymnaeidae 4 Erpobdellidae

NET LOSSES NET GAINS

NOTES

- 1 Terrestrial snail in vial
- 2 Empty Hydroptilid cases in vial
- 3 Lymnaea peregra
- 4 Indet Erpobdellid juveniles

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Alwin
DATE	17.7.91	SITE	Alwinton
SORTER	PS	SAMPLE CODE	NRA02 0670

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Ancylidae 2 Hydrophilidae

NET LOSSES NET GAINS

NOTES

1 Ancylus fluviatilis
2 Hydraena gracilis (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION <input style="width: 100%;" type="text" value="Northumbrian"/>	RIVER <input style="width: 100%;" type="text" value="Saltergill Beck"/>
DATE <input style="width: 100%;" type="text" value="29.7.91"/>	SITE <input style="width: 100%;" type="text" value="Low Worsal"/>
SORTER <input style="width: 100%;" type="text" value="SS"/>	SAMPLE CODE <input style="width: 100%;" type="text" value="NRA02 3540"/>

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

	LOSSES	GAINS
A <u>VIAL</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE None	ADDITIONAL FAMILIES FOUND BY IFE None

B <u>SAMPLE</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	ADDITIONAL FAMILIES FOUND BY IFE None
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NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	South Tyne
DATE	24.6.91	SITE	Haydon Bridge
SORTER	DH	SAMPLE CODE	NRA02 1590

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Dytiscidae

NET LOSSES NET GAINS

NOTES

1 Oreodytes septentrionalis (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian	RIVER Ouse Burn
DATE 2.7.91	SITE Salter's Bridge
SORTER AP	SAMPLE CODE NRA02 1300

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE None	ADDITIONAL FAMILIES FOUND BY IFE None
B	<u>SAMPLE</u> Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	ADDITIONAL FAMILIES FOUND BY IFE 1 Planorbidae

NET LOSSES NET GAINS

NOTES

1 Gyraulus albus

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Tees
DATE	15.8.91	SITE	Neasham
SORTER	SS	SAMPLE CODE	NRA02 2920

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES

NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Kilton Beck
DATE	10.7.91	SITE	Lodge Wood
SORTER	VW	SAMPLE CODE	NRA02 4120

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Font
DATE	13.8.91	SITE	Mitford
SORTER	DH/DH	SAMPLE CODE	NRA02 0860

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Haliplidae 2 Hydrophilidae 3 Sericostomatidae

NET LOSSES NET GAINS

NOTES

1 Indet Haliplid larva 1 only
 2 Hydraena gracilis (adults)
 3 Sericostoma personatum 1 only

This sample repicked as part of an internal AQC exercise by NRA.
 2 additional families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Langley Beck
DATE	13.8.91	SITE	Staindrop
SORTER	DH	SAMPLE CODE	NRA02 3790

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">1 Psychomyiidae</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">2 Hydrophilidae</p>

NET LOSSES NET GAINS

NOTES

2 Hydraena gracilis (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Allerdean Mill Burn
DATE	13.6.91	SITE	Nabhill
SORTER	PS	SAMPLE CODE	NRA02 0190

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	West Allen
DATE	7.6.91	SITE	Burnmouth
SORTER	AP	SAMPLE CODE	NRA02 1710

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

	LOSSES	GAINS
A	VIAL	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE
	BMW FAMILIES NOT FOUND BY IFE	BMW FAMILIES NOT FOUND BY IFE
	None	None

B	SAMPLE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE
	BMW FAMILIES NOT FOUND BY IFE	BMW FAMILIES NOT FOUND BY IFE
	(This box only completed when no vial supplied with sample)	(This box only completed when no vial supplied with sample)
		1 Caenidae

NET LOSSES NET GAINS

NOTES

1 Caenis rivulorum 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Don
DATE	7.8.91	SITE	Jarrow Cem
SORTER	SS	SAMPLE CODE	NRA02 1270

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Coquet
DATE	17.7.91	SITE	Low Alwinton
SORTER	PS/DH	SAMPLE CODE	NRA02 0480

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p style="text-align: center;">BMW FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center; font-weight: bold;">None</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-weight: bold;">None</p>

B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p style="text-align: center;">BMW FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">(This box only completed when no vial supplied with sample)</p>	<p style="text-align: center;">ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center; font-weight: bold;">None</p>
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NET LOSSES NET GAINS

NOTES

This sample repicked as part of an internal AQC exercise by NRA. 7 additional families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Wear
DATE	18.7.91	SITE	Willington Br
SORTER	VW	SAMPLE CODE	NRA02 2130

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE		None	None
B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE		(This box only completed when no vial supplied with sample)	1 Hydrobiidae 2 Lymnaeidae

NET LOSSES NET GAINS

NOTES

1 Potamopyrgus jenkinsi
 2 Lymnaea peregra 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Till
DATE	20.6.91	SITE	Doddington Br
SORTER	PS/SS	SAMPLE CODE	NRA02 0060

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

This sample repicked as part of an internal AQC exercise by NRA. No additional families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Leven
DATE	25.7.91	SITE	Hutton Rudby
SORTER	VW	SAMPLE CODE	NRA02 3410

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>1 Psychomyiidae</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>2 Lymnaeidae 3 Hydroptilidae</p>

NET LOSSES NET GAINS

NOTES

2 Lymnaea peregra 1 only
3 Hydroptila sp. 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Newhouse Burn
DATE	8.8.91	SITE	A691 Bridge
SORTER	PS	SAMPLE CODE	NRA02 2590

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p style="text-align: center;"><u>VIAL</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p style="text-align: center;">1 Hydrobiidae*</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">2 Lymnaeidae</p>
B	<p style="text-align: center;"><u>SAMPLE</u></p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p style="text-align: center;">3 Hydrobiidae* 4 Perlodidae</p>

NET LOSSES NET GAINS

NOTES

2 Lymnaea palustris
 3 Potamopyrgus jenkinsi
 4 Isoperla grammatica 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Killhope Burn
DATE	28.6.91	SITE	Wearhead
SORTER	VW	SAMPLE CODE	NRA02 2830

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

	LOSSES	GAINS
A	<u>VIAL</u>	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	BMWP FAMILIES NOT FOUND BY IFE None	None

B	<u>SAMPLE</u>	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	BMWP FAMILIES NOT FOUND BY IFE (This box only completed when no vial supplied with sample)	1 Nouridae 2 Perlodidae

NET LOSSES NET GAINS

NOTES

1 *Amphinemura sulcicollis* 1 only
 2 *Diura bicaudata* 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Coldcoats Burn
DATE	4.7.91	SITE	Eastcoats Farm
SORTER	DH	SAMPLE CODE	NRA02 1050

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

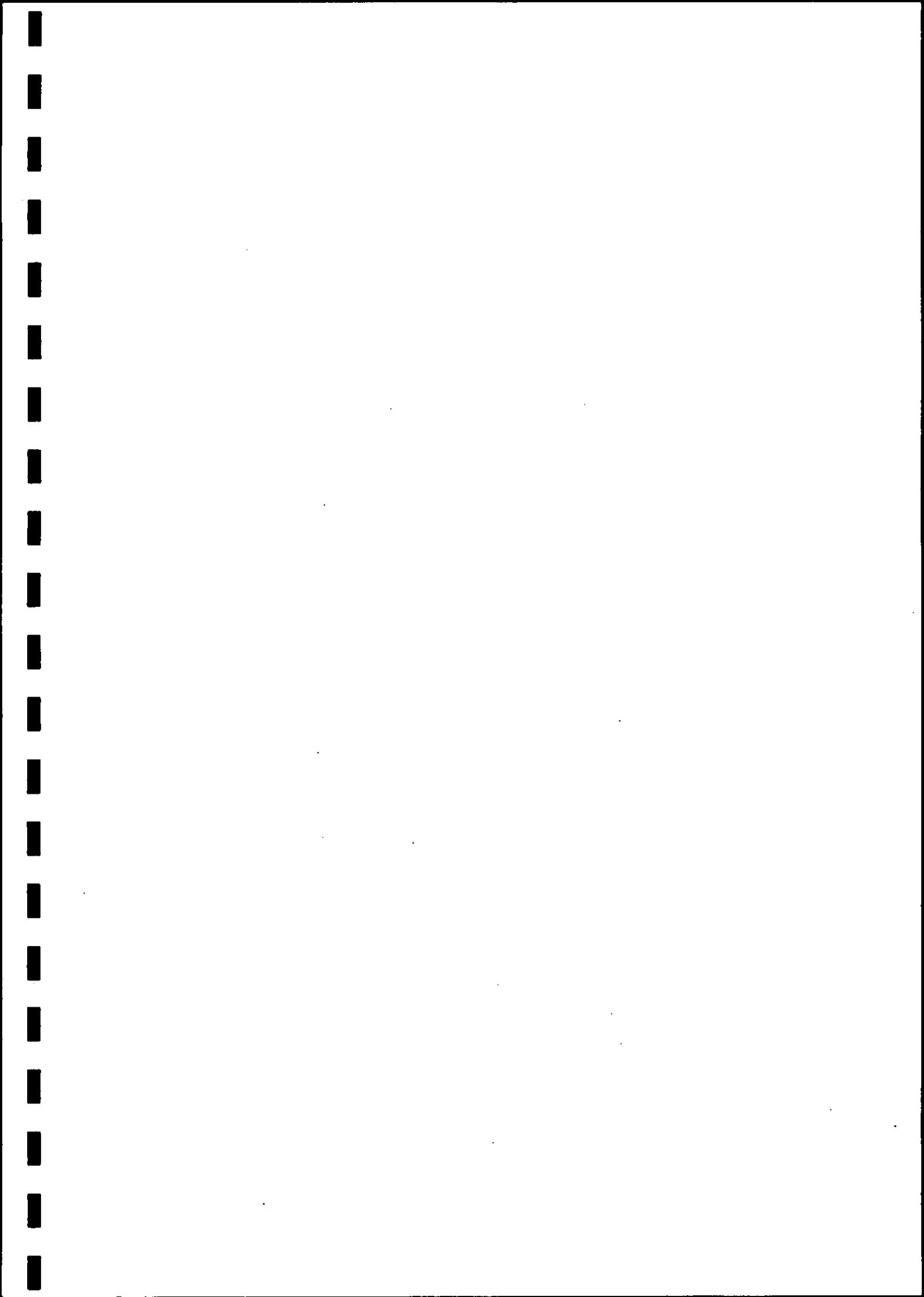
		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Oligochaeta 2 Corixidae 3 Hydroptilidae

NET LOSSES NET GAINS

NOTES

1 Naididae, Tubificidae
2 Indet Corixid nymphs
3 Hydroptila sp. 1 only



1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER S. Tyne

DATE 19.9.91

SITE Haltwhistle

SORTER DH

SAMPLE CODE NRA02 1620

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Lymnaeidae 2 Ephemerellidae

NET LOSSES 0

NET GAINS 2

NOTES

1 Lymnaea peregra 1 only
2 Ephemerella ignita 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER East Allen

DATE 17.9.91

SITE U/s Allenheads

SORTER SS/SS

SAMPLE CODE NRA02 1700

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE		None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE		(This box only completed when no vial supplied with sample)	None

NET LOSSES 0

NET GAINS 0

NOTES

This sample repicked by NRA as part of an internal AQC exercise. 1 family added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian		RIVER	Rennington Burn
DATE	13.9.91		SITE	Howick Hall
SORTER	AP/DH		SAMPLE CODE	NRA02 0310

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Planorbidae

NET LOSSES

NET GAINS

NOTES

1 Anisus leucostoma 1 only

This sample repicked by NRA as part of an internal AQC exercise. No families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian		RIVER	Spen Burn
DATE	11.10.91		SITE	Rowlands Gill
SORTER	VW/SS		SAMPLE CODE	NRA02 1420

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Elmidae

NET LOSSES NET GAINS

NOTES 1 *Limnius volckmari* (adult) 1 only

This sample repicked by NRA as part of an internal AQC exercise.
2 families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Long Nanny

DATE 13.9.91

SITE Tuggal Grange

SORTER AP

SAMPLE CODE NRA02 0290

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

LOSSES

GAINS

A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Sialidae

NET LOSSES 0

NET GAINS 1

NOTES 1 Sialis lutaria 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian		RIVER	Wear
DATE	20.9.91		SITE	Finchale Park
SORTER	SS/VW		SAMPLE CODE	NRA02 2090

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Nemouridae

NET LOSSES NET GAINS

NOTES **1 Amphinemura sp. 1 only**

This sample repicked by NRA as part of an internal AQC exercise. No families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Pont Burn

DATE 11.10.91

SITE B6310 Bridge

SORTER SS

SAMPLE CODE NRA02 1430

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Planorbidae 2 Leptoceridae 3 Lepidostomatidae	4 Limnephilidae 5 Sericostomatidae

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES 3

NET GAINS 2

NOTES

- 1 Indet terrestrial snail in vial
- 4 Indet limnephilid (juvenile)
- 5 Sericostoma personatum

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian		RIVER	Tees
DATE	5.10.91		SITE	Low Con
SORTER	PS		SAMPLE CODE	NRA02 2950

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Lymnaeidae 2 Leptophlebiidae

NET LOSSES NET GAINS

NOTES

1 *Lymnaea* sp. (juvenile) 1 only
2 *Paraleptophlebia submarginata* 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Bedburn Burn

DATE 10.9.91

SITE Newhall

SORTER SS

SAMPLE CODE NRA02 2720

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

LOSSES

GAINS

A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Leptoceridae	2 Hydrophilidae 3 Sericostomatidae

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES 1

NET GAINS 2

NOTES

- 2 Hydraena gracilis (adults)
- 3 Sericostoma personatum

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Coquet
DATE	16.10.91	SITE	Pauperhaugh
SORTER	DH	SAMPLE CODE	NRA02 0450

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Planorbidae

NET LOSSES NET GAINS

NOTES 1 Armiger crista 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Tees
DATE	5.10.91	SITE	Hurworth
SORTER	AL/SS	SAMPLE CODE	NRA02 2930

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<p><u>VIAL</u></p> <p>Differences between:</p> <p>i) BMWP families listed on sample data sheet and</p> <p>ii) BMWP families found in VIAL by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>1 Ephemeroidea 2 Polycentropodidae</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>None</p>
B	<p><u>SAMPLE</u></p> <p>Differences between:</p> <p>i) BMWP families listed on sample data sheet and</p> <p>ii) BMWP families found in SAMPLE by IFE</p>	<p>BMWP FAMILIES NOT FOUND BY IFE</p> <p>(This box only completed when no vial supplied with sample)</p>	<p>ADDITIONAL FAMILIES FOUND BY IFE</p> <p>3 Gammaridae</p>

NET LOSSES

NET GAINS

NOTES

1,2 Found by NRA in field sorting but not in lab sorting.
3 Crangonyx pseudogracilis

This sample repicked by NRA as part of an internal AQC exercise.
5 families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Embleton Burn
DATE	13.9.91	SITE	Embleton Mill
SORTER	VW	SAMPLE CODE	NRA02 0300

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES NET GAINS

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Rookhope Burn

DATE 10.9.91

SITE Eastgate

SORTER DH

SAMPLE CODE NRA02 2770

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Hydrophilidae

NET LOSSES 0

NET GAINS 1

NOTES

1 *Hydraena gracilis*, *Helophorus brevipalpis* (adults)

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Valley Burn

DATE 24.9.91

SITE Woodhouse Farm

SORTER SS

SAMPLE CODE NRA02 2610

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES 0

NET GAINS 0

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Middle Gill
DATE	6.11.91	SITE	Loftus
SORTER	SS/AP	SAMPLE CODE	NRA02 4140

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	1 Nouridae 2 Elmidae

NET LOSSES

NET GAINS

NOTES

- 1 Amphinemura sp. 1 only
- 2 Oulimnius tuberculatus (adult) 1 only

This sample repicked by NRA as part of an internal AQC exercise.
1 family added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Hartley Burn

DATE 6.9.91

SITE Burnfoot

SORTER SS

SAMPLE CODE NRA02 1770

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	None

NET LOSSES 0

NET GAINS 0

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Tinklers Gill

DATE 30.10.91

SITE Embleton

SORTER PS

SAMPLE CODE NRA02 3150

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Perlodidae	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	2 Hydrobiidae 3 Hydrophilidae

NET LOSSES 1

NET GAINS 2

NOTES

2 Potamopyrgus jenkinsi
3 Hydraena gracilis (adult) 1 only

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian		RIVER	Kilton Beck
DATE	6.11.91		SITE	Skinningrove
SORTER	PS/PS		SAMPLE CODE	NRA02 4110

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Ephemereleidæ	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	2 Heptageniidae

NET LOSSES 1

NET GAINS 1

NOTES

1 Ephemereleidæ recorded in lab sorting but not in repick
2 Rhithrogena sp. 1 only

This sample repicked by NRA as part of an internal AQC exercise.
3 families added as a result of this repick.

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Grasslees Burn

DATE 8.10.91

SITE Swindon

SORTER VW

SAMPLE CODE NRA02 0650

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE		None	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE		(This box only completed when no vial supplied with sample)	None

NET LOSSES 0

NET GAINS 0

NOTES

1991 RIVER QUALITY SURVEY

AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Ridlees Burn

DATE 8.10.91

SITE Linshields

SORTER DH

SAMPLE CODE NRA02 0680

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

		LOSSES	GAINS
A	<u>VIAL</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Sericostomatidae*	None

B	<u>SAMPLE</u>	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial supplied with sample)	2 Sericostomatidae*

NET LOSSES 0

NET GAINS 0

NOTES 2 Sericostoma personatum