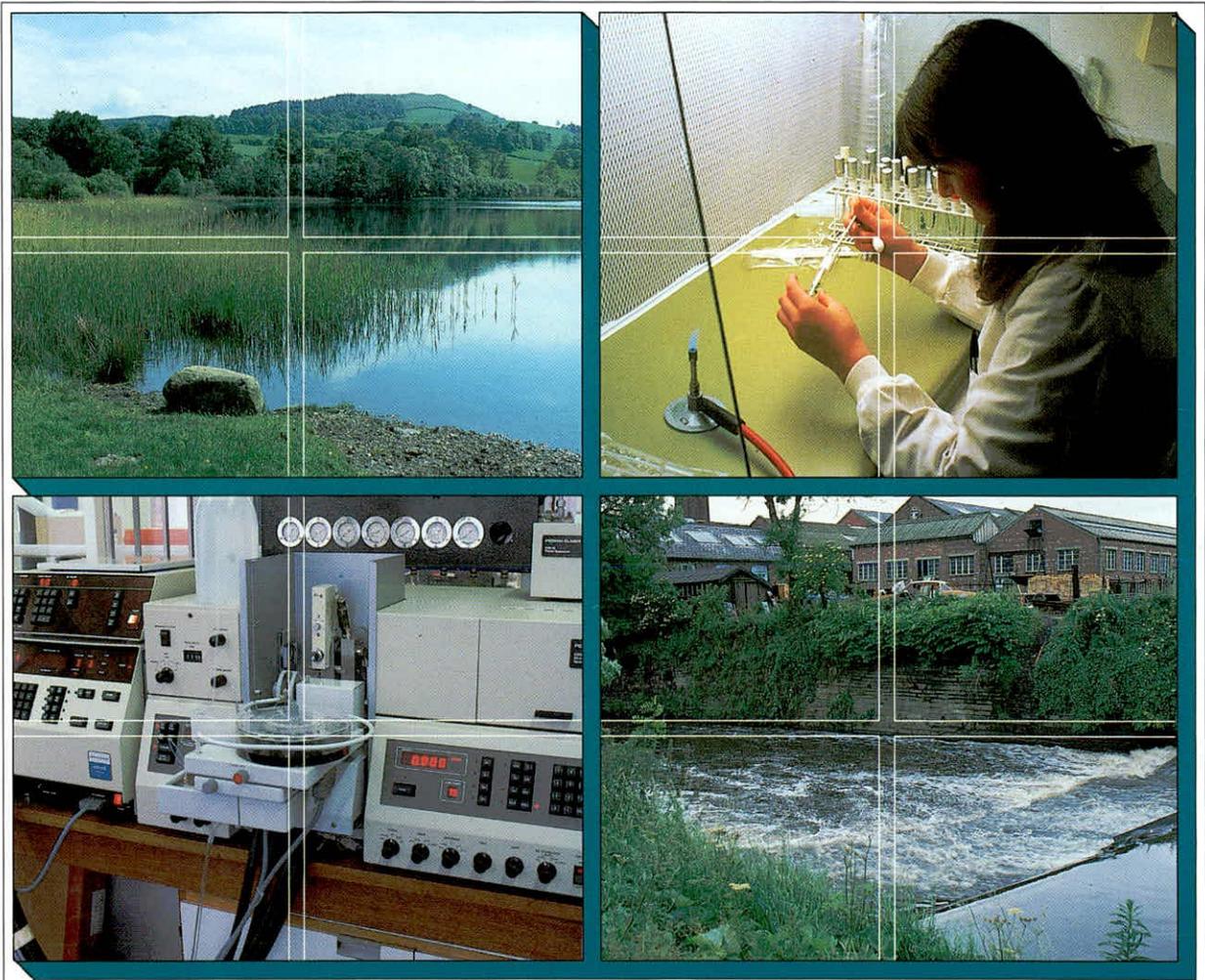




# **An audit of performance in the processing of macro-invertebrate samples in 1993. NRA Severn-Trent Region**

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NRA Severn-Trent Region**

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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 1993 the sampling of aquatic macro-invertebrates for the biological assessment of river quality continued throughout the United Kingdom. This task was undertaken by the National Rivers Authority (NRA) in England and Wales, the River Purification Boards (RPBs) in Scotland and the Industrial Research & Technology Unit (IRTU) in Northern Ireland.

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. The IFE was contracted to undertake an audit of the sample sorting and identification performance of each NRA region, several RPBs and the IRTU. This report presents the results of 60 samples audited for Severn-Trent Region of the NRA. The IFE was not required to perform any statistical analyses nor interpretation of the results of the audit.

Each organisation employed standard collection procedures, as used in the 1990 River Quality Survey, 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).

Samples were sorted by NRA, RPB and IRTU 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.

## **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 IRTU 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 e) 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. Chrysomelidae and Curculionidae, which appear in the BMWP list, were also to be excluded for the purposes of the audit. 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 Diana Morton for typing the report.

TABLE 1. The IFE Report form

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION  RIVER

DATE  SITE

SORTER  SAMPLE CODE

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

A	VIAL	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		

B	SAMPLE	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 is supplied with sample)	

NOTES: NET LOSSES  NET GAINS

TABLE 2. The 22 spring samples audited for Severn-Trent Region.

River	Site	Sorter	Losses	Gains	Omissions
Owlands Wood Dyke	Cornmill Farm	4.3	1	3	0
Wye	Millers Dale	4.1	0	0	0
Bradgate Brook	Newtown Linford	4.3	1	10	0
Hampney Brook	Copland Wood	2.4	0	4	0
Whissendine Brook	u/s Langham Brook	4.2	0	5	1
Maun	Haughton	4.1	0	6	0
Bow Brook	Defford Bridge	2.4	1	1	2
Bow Brook	Letts Mill Ford	2.5	0	3	1
Alne	Little Alne	2.4	0	3	0
Slad Brook	The Vatch	2.4	1	4	0
Tean	Dilhorne Road	3.1	0	2	0
Terne	d/s Knucklas WRW	1.3	0	2	0
Sence	Heather	3.9	0	3	0
Gayton Brook	Weston	3.8	0	3	0
Frome	u/s Stanley Downton WRW	2.5	0	2	0
Onny	d/s Craven Arms WRW	1.6	0	1	0
Mule	Glan Mule	1.6	0	2	0
Quinny Brook	u/s Church Stretton WRW	1.6	0	0	0
Blythe	Packington Ford	3.8	0	2	0
Minsterley Brook	u/s Ditch	1.6	0	4	0
Thurgarton Beck	u/s Causway Dyke	4.2	0	5	0
Onny	Wistanstow	1.3	0	2	1

TABLE 3. The 24 summer samples audited for Severn-Trent Region

River	Site	Sorter	Losses	Gains	Omissions
Derwent	Darley Dale	4.1	0	6	0
Severn	Llandrinio	1.3	1	3	0
Leigh Brook	Stains Bridge	2.4	0	5	0
Itchen	Ufton	2.4	0	1	0
Stour	Tredington	2.5	0	0	1
Finham Brook	u/s Common Lane	2.5	0	3	0
Bow Brook	Shell Ford	2.5	0	1	0
Cannop Brook	New Mills	2.4	0	2	0
Trent	Yoxall Bridge	3.9	1	2	1
Saltersford Brook	Oakthorpe	3.9	0	3	0
Dove	Marston	3.8	0	5	0
Blithe	Newton Bridge	3.8	0	3	0
Lea Brook	Lea	4.3	0	2	0
Devon	Staunton in the Vale	4.2	0	1	0
Trannon	Trefeglwys	1.6	0	1	0
Polser Brook	A52 Bridge	4.4	0	2	0
Leek Brook	Leekbrook	3.1	0	2	0
Torne	Tickhill	4.4	0	3	0
Idle	Gamston	4.4	0	7	0
Churnet	Cheddleton Station	3.1	0	0	1
Aberbechan Source	Llandinam Bridge	1.6	0	2	0
Ledwyche Brook	Ledwyche Bridge	1.0	0	0	0
Redlake	Jay	1.3	1	0	0
The Mule	Glanmule	1.3	0	2	0

TABLE 4. The 14 autumn samples audited for Severn-Trent Region

River	Site	Sorter	Losses	Gains	Omissions
Corve	Beambridge	1.6	0	1	0
Great Whitley Brook	Astley	1.6	0	1	0
Clun	Leintwardine	1.1	0	1	0
Bechan Brook	Aberbechan	1.1	0	2	1
Severn-Bewdley to Barbour	Redstone Rock (Mid)	1.3	1	1	0
Dog Lane Brook	Lea Marston	3.9	0	3	0
Noe	Hope	4.1	0	5	0
Chumet	Froghall d/s Boltons	3.8	0	2	0
Whiston/Longnor Brook	Whiston Mill	3.1	0	1	0
Torne	Low Common	4.1	0	2	0
Cam	Rockstowes	2.5	1	4	2
Sherbourne Brook	Heath End	2.3	0	0	0
Welby Brook	Welby Grange	4.2	0	1	0
Blackpool Brook	Barracks Bridge	2.5	0	2	1

**APPENDIX**

**Results of individual sample audits**

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn Trent	RIVER	Owlands Wood Dyke
DATE	22.3.93	SITE	Cornmill Farm
SORTER	4.3	SAMPLE CODE	NRA04 5710

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

A	VIAL	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 Hydrobiidae	None

B	SAMPLE	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 is supplied with sample)	2 Planariidae 3 Lymnaeidae 4 Glossiphoniidae

NET LOSSES  1  NET GAINS  3

NOTES:

- 1 Empty shells in vial and sample
- 2 Polycelis felina
- 3 Lymnaea peregra 1 only
- 4 Glossiphonia complanata

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Wye
DATE	24.3.93	SITE	Millers Dale
SORTER	4.1	SAMPLE CODE	NRA04 5103

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	None

NET LOSSES  NET GAINS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Bradgate Brook
DATE	11.3.93	SITE	Newtown Linford
SORTER	4.3	SAMPLE CODE	NRA04 4142

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

A	VIAL	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 Hydrophilidae	None

B	SAMPLE	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 is supplied with sample)	2 Hydrobiidae 3 Lymnaeidae 4 Planorbidae 5 Asellidae 6 Ephemeridae 7 Caenidae 8 Nemouridae 9 Leptoceridae 10 Lepidostomatidae 11 Sericostomatidae

NET LOSSES  1 NET GAINS  10

NOTES:

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 2 Potamopyrgus jenkinsi              |                                  |
| 3 Lymnaea sp. (shell damaged) 1 only |                                  |
| 4 Gyraulus albus 1 only              |                                  |
| 5 Asellus aquaticus 1 only           |                                  |
| 6 Ephemera sp. (juvenile) 1 only     |                                  |
| 7 Caenis rivulorum                   | 10 Lepidostoma hirtum            |
| 8 Amphinemura standfussi             | 11 Sericostoma personatum 1 only |
| 9 Athripsodes albifrons/bilineatus   |                                  |

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Hampney Brook
DATE	6.5.93	SITE	Copland Wood
SORTER	2.4	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Lymnaeidae 2 Gammaridae 3 Ephemerellidae 4 Hydrophilidae

NET LOSSES  0 NET GAINS  4

NOTES:

- 1 Lymnaea palustris
- 2 Gammarus pulex
- 3 Ephemerella ignita 1 only
- 4 Hydraena nigrita (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Whissendine Brook
DATE	13.4.93	SITE	u/s Langham Brook
SORTER	4.2	SAMPLE CODE	NRA04 4311

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

A	VIAL	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 Oligochaeta*	2 Hydrobiidae 3 Hydrophilidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	4 Oligochaeta* 5 Asellidae 6 Scirtidae 7 Simuliidae

NET LOSSES  0 NET GAINS  5

NOTES:

- 2 Potamopyrgus jenkinsi
- 3 Limnebius nitidus (adult)
- 4 Tubificidae, Lumbricidae
- 5 Asellus meridianus 1 only
- 6 Cyphon sp. (larva) 1 only
- 7 Simulium ornatum group (pupa) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Maun
DATE	4.3.93	SITE	Haughton
SORTER	4.1	SAMPLE CODE	

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

A	VIAL	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 Tipulidae

B	SAMPLE	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 is supplied with sample)	2 Lymnaeidae 3 Planorbidae 4 Erpobdellidae 5 Caenidae 6 Hydroptilidae

NET LOSSES  0 NET GAINS  6

NOTES:

- 1 Palaria (Palaria) sp.
- 2 Lymnaea peregra, L.stagnalis
- 3 Armiger crista
- 4 Erpobdella octoculata 1 only
- 5 Caenis luctuosa/macrura 1 only
- 6 Hydroptila sp. 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Bow Brook
DATE	19.4.93	SITE	Defford Bridge
SORTER	2.4	SAMPLE CODE	

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

A	VIAL	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 Calopterygidae* 3 Hydrometridae	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	4 Planorbidae* 5 Calopterygidae* 6 Hydroptilidae

NET LOSSES  1 NET GAINS  1

NOTES:

4 Armiger crista, Bathyomphalus contortus, Gyraulus albus  
5 Calopteryx splendens 1 only  
6 Hydroptila sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Bow Brook
DATE	19.4.93	SITE	Letts Mill Ford
SORTER	2.5	SAMPLE CODE	

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

A	VIAL	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 Chironomidae*	2 Tipulidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	3 Sphaeriidae 4 Chironomidae* 5 Simuliidae

NET LOSSES  NET GAINS

NOTES:

- 2 Molophilus sp.
- 3 Pisidium sp. 1 only
- 4 Orthoclaadiinae
- 5 Simulium ornatum group 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Alne
DATE	15.2.93	SITE	Little Alne
SORTER	2.4	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Caenidae 2 Limnephilidae 3 Lepidostomatidae

NET LOSSES  0 NET GAINS  3

NOTES:

1 Caenis luctuosa/macrura 1 only  
2 Halesus sp. 1 only  
3 Lepidostoma hirtum 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Slad Brook
DATE	4.2.93	SITE	The Vatch
SORTER	2.4	SAMPLE CODE	NRA04 2215

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

A	VIAL	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 Philopotamidae	2 Lepidostomatidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	3 Planariidae 4 Nemouridae 5 Goeridae

NET LOSSES  NET GAINS

NOTES:

- 2 Lasiocephala basalis
- 3 Polycelis felina
- 4 Nemoura cambrica/erratica 1 only
- 5 Silo pallipes

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Tean
DATE	7.4.93	SITE	Dilhorne Road
SORTER	3.1	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Sphaeriidae 2 Elmidae

NET LOSSES  0 NET GAINS  2

NOTES:

1 Pisidium sp.  
2 Oulimnius tuberculatus (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Teme
DATE	8.3.93	SITE	d/s Knucklas WRW
SORTER	1.3	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Polycentropodidae 2 Sericostomatidae

NET LOSSES  NET GAINS

NOTES:

1 Polycentropus flavomaculatus 1 only  
2 Sericostoma personatum 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Sence
DATE	17.2.93	SITE	Heather
SORTER	3.9	SAMPLE CODE	NRA04 8104

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Elmidae 2 Psychomyiidae 3 Leptoceridae

NET LOSSES  NET GAINS

NOTES:

- 1 Elmis aenea (larva) 1 only
- 2 Tinodes waeneri 1 only
- 3 Athripsodes sp. (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Gayton Brook
DATE	11.3.93	SITE	Weston
SORTER	3.8	SAMPLE CODE	NRA04 7291

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Heptageniidae 2 Taeniopterygidae 3 Hydroptilidae

NET LOSSES  NET GAINS

NOTES:

1 Rhithrogena sp. 1 only  
2 Brachyptera risi 1 only  
3 Hydroptila sp. (pupa) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Frome
DATE	8.3.93	SITE	u/s Stanley Downton WRW
SORTER	2.5	SAMPLE CODE	NRA04 2210

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Ancylidae 2 Hydroptilidae

NET LOSSES  0 NET GAINS  2

NOTES:

1 Ancylus fluviatilis 1 only  
2 hydroptila sp. 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Onny
DATE	20.4.93	SITE	d/s Craven Arms WRW
SORTER	1.6	SAMPLE CODE	NRA04 1844

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Taeniopterygidae

NET LOSSES  0 NET GAINS  1

NOTES:

1 Brachyptera risi 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Mule
DATE	24.5.93	SITE	Glan Mule
SORTER	1.6	SAMPLE CODE	NRA04 1036

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Perlidae 2 Leptoceridae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Dinocras cephalotes  
2 Athripsodes bilineatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Quinny Brook
DATE	20.4.93	SITE	u/s Church Stretton WRW
SORTER	1.6	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	None

NET LOSSES  NET GAINS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Blythe
DATE	17.5.93	SITE	Packington Ford
SORTER	3.8	SAMPLE CODE	NRA04 8406

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Valvatidae 2 Ephemeridae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Valvata piscinalis  
2 Ephemera danica 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Minsterley Brook
DATE	9.3.93	SITE	u/s Ditch
SORTER	1.6	SAMPLE CODE	

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Hydrobiidae 2 Ancylidae 3 Sphaeriidae 4 Polycentropodidae

NET LOSSES  0 NET GAINS  4

NOTES:

- 1 Potamopyrgus jenkinsi 1 only
- 2 Ancylus fluviatilis 1 only
- 3 Pisidium sp.
- 4 Plectrocnemia conspersa 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Thurgarton Beck
DATE	4.5.93	SITE	u/s Causeway Dyke
SORTER	4.2	SAMPLE CODE	NRA04 4064

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

A	VIAL	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 Elmidae

B	SAMPLE	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 is supplied with sample)	2 Asellidae 3 Gammaridae 4 Hydropsychidae 5 Hydroptilidae

NET LOSSES  0 NET GAINS  5

NOTES:

- 1 Elmis aenea adult in vial, larva in sample
- 2 Asellus aquaticus
- 3 Crangonyx pseudogracilis
- 4 Hydropsyche angustipennis
- 5 Hydroptila sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Onny
DATE	20.4.93	SITE	Wistanstow
SORTER	1.3	SAMPLE CODE	NRA04 1842

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

A	VIAL	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 Erpobdellidae*	2 Glossiphoniidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	3 Erpobdellidae* 4 Hydrophilidae

NET LOSSES  0 NET GAINS  2

NOTES:

2 Helobdella stagnalis  
3 Trocheta subviridis 1 only  
4 Hydraena gracilis (adults)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Derwent
DATE	31.8.93	SITE	Darley Dale
SORTER	4.1	SAMPLE CODE	NRA04 BI 151293

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Planariidae 2 Lymnaeidae 3 Sphaeriidae 4 Erpobdellidae 5 Hydrophilidae 6 Lepidostomatidae

NET LOSSES  0

NET GAINS  6

NOTES:

- |  |
|--|
| <ul style="list-style-type: none"> <li>1 Polycelis felina 1 only</li> <li>2 Lymnaea peregra</li> <li>3 Pisidium sp.</li> <li>4 Erpobdella octoculata 1 only</li> <li>5 Hydraena gracilis (adult) 1 only</li> <li>6 Lepidostoma hirtum</li> </ul> |
|--|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Severn
DATE	28.6.93	SITE	Llandrinio
SORTER	1.3	SAMPLE CODE	NRA04 BI 111577

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

A	VIAL	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 Hydroptilidae	None

B	SAMPLE	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 is supplied with sample)	2 Hydropsychidae 3 Leptoceridae 4 Tipulidae

NET LOSSES 1 NET GAINS 3

NOTES:

- 1 Empty cases in sample
- 2 Hydropsyche pellucidula (pupa) 1 only
- 3 Athripsodes sp. (juvenile) 1 only
- 4 Dicranota sp., Hexatoma sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Leigh Brook
DATE	8.6.93	SITE	Stains Bridge
SORTER	2.4	SAMPLE CODE	NRA04 BI 125373

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Physidae 2 Notonectidae 3 Corixidae 4 Gyrinidae 5 Elmidae

NET LOSSES  NET GAINS

NOTES:

- |  |
|--|
| <p>1 Physa fontinalis<br/>2 Notonecta sp. (nymph) 1 only<br/>3 Indet Corixid (nymph) 1 only<br/>4 Gyrinus sp. (larvae)<br/>5 Elmis aenea (adults + larvae)</p> |
|--|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Itchen
DATE	10.6.93	SITE	A425 Thorpe Bridge, Ufton
SORTER	2.4	SAMPLE CODE	NRA04 BI 135457

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Planariidae

NET LOSSES 0 NET GAINS 1

NOTES:

1 Polycelis nigra/tenuis 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Stour
DATE	9.6.93	SITE	Tredington
SORTER	2.5	SAMPLE CODE	NRA04 BI 135442

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

A	VIAL	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 Baetidae*	None

B	SAMPLE	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 is supplied with sample)	2 Baetidae*

NET LOSSES 0 NET GAINS 0

NOTES:

2 Baetis scambus/fuscatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Finham Brook
DATE	13.7.93	SITE	u/s Common Lane
SORTER	2.5	SAMPLE CODE	NRA04 BI 135624

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Lymnaeidae 2 Glossiphoniidae 3 Leptoceridae

NET LOSSES  0 NET GAINS  3

NOTES:

1 Lymnaea peregra 1 only  
2 Glossiphonia complanata  
3 Athripsodes sp. (pupa) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Bow Brook
DATE	29.7.93	SITE	Shell Ford
SORTER	2.5	SAMPLE CODE	NRA04 BI 135714

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Haliplidae

NET LOSSES  NET GAINS

NOTES:

1 Haliplus sp. (larvae)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Cannop Brook
DATE	28.6.93	SITE	New Mills
SORTER	2.4	SAMPLE CODE	NRA04 BI 125512

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Sphaeriidae 2 Oligochaeta

NET LOSSES 0 NET GAINS 2

NOTES:

1 Pisidium sp.  
2 Lumbriculidae 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Trent
DATE	5.7.93	SITE	Yoxall Bridge
SORTER	3.9	SAMPLE CODE	NRA04 BI 171540

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

A	VIAL	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 Valvatidae* 2 Dytiscidae	None

B	SAMPLE	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 is supplied with sample)	3 Valvatidae* 4 Haliplidae 5 Leptoceridae

NET LOSSES

1

NET GAINS

2

NOTES:

3 Valvata piscinalis  
4 Halipus lineatocollis (adult) 1 only  
5 Ceraclea albimacula 1 only

Astacidae not found by IFE in vial or sample. Assumed returned to river.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Saltersford Brook
DATE	8.6.93	SITE	Oakthorpe
SORTER	3.9	SAMPLE CODE	NRA04 BI 171373

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Lymnaeidae 2 Baetidae 3 Caenidae

NET LOSSES  NET GAINS

NOTES:

1 Lymnaea peregra  
2 Baetis rhodani  
3 Caenis luctuosa/macrura 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Dove
DATE	27.7.93	SITE	Marston
SORTER	3.8	SAMPLE CODE	NRA04 BI 171600

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

A	VIAL	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 Limnephilidae 2 Tipulidae

B	SAMPLE	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 is supplied with sample)	3 Hydrobiidae 4 Goeridae 5 Simuliidae

NET LOSSES 0

NET GAINS 5

NOTES:

- 1 Anobolia nervosa, Drusus/Ecclisopteryx (juvenile)
- 2 Dicranota sp.
- 3 Potamopyrgus jenkinsi 1 only
- 4 Goera pilosa 1 only
- 5 Simulium (Wilhelmia) sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Blithe
DATE	14.7.93	SITE	Newton Bridge
SORTER	3.8	SAMPLE CODE	NRA04 BI 171557

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Ephemeraidae 2 Limnephilidae 3 Simuliidae

NET LOSSES 0 NET GAINS 3

NOTES:

1 Ephemera danica 1 only  
2 Limnephilus lunatus 1 only  
3 Simulium erythrocephalum, S.(Wilhelmia) sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Lea Brook
DATE	28.7.93	SITE	Lea
SORTER	4.3	SAMPLE CODE	NRA04 BI 151228

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Leptophlebiidae 2 Perlodidae

NET LOSSES  NET GAINS

NOTES:

1 Habrophlebia fusca 1 only  
2 Isoperla grammatica 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Devon
DATE	17.8.93	SITE	Staunton in the Vale
SORTER	4.2	SAMPLE CODE	NRA04 BI 141478

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Dendrocoelidae

NET LOSSES  NET GAINS

NOTES:

1 Dendrocoelum lacteum

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Trannon
DATE	14.6.93	SITE	Trefeglwys
SORTER	1.6	SAMPLE CODE	NRA04 BI 111502

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Brachycentridae

NET LOSSES  NET GAINS

NOTES:

1 Brachycentrus subnubilus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Polser Brook
DATE	21.7.93	SITE	A52 Bridge
SORTER	4.4	SAMPLE CODE	NRA04 BI 141416

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Lymnaeidae 2 Hydrophilidae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Lymnaea peregra, L.stagnalis  
2 Indet Hydrophilid (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Leek Brook
DATE	10.8.93	SITE	Leekbrook
SORTER	3.1	SAMPLE CODE	NRA04 BI 171715

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Sphaeriidae 2 Hydrophilidae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Pisidium sp. 1 only  
2 Hydraena gracilis (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Torne
DATE	14.7.93	SITE	Goole Bridge, Tickhill
SORTER	4.4	SAMPLE CODE	NRA04 BI 151181

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Hydrophilidae 2 Hydroptilidae 3 Limnephilidae

NET LOSSES  0 NET GAINS  3

NOTES:

- 1 Indet Hydrophilid (larva) 1 only
- 2 Hydroptila sp.
- 3 Limnephilus lunatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Idle
DATE	7.7.93	SITE	Gamston
SORTER	4.4	SAMPLE CODE	NRA04 BI 151146

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Planariidae 2 Planorbidae 3 Caenidae 4 Haliplidae 5 Hydroptilidae 6 Leptoceridae 7 Simuliidae

NET LOSSES  NET GAINS

NOTES:

- 1 Polycelis nigra/tenuis
- 2 Gyraulus albus 1 only
- 3 Caenis luctuosa/macrura 1 only
- 4 Haliplus fluviatilis (adults)
- 5 Hydroptila sp.
- 6 Oecetis ochracea 1 only
- 7 Simulium (Wilhelmia) sp., S.erythrocephalum

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Churnet
DATE	12.8.93	SITE	Cheddleton Station
SORTER	3.1	SAMPLE CODE	NRA04 BI 171700

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

A	VIAL	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 Ancylidae*	None

B	SAMPLE	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 is supplied with sample)	2 Ancylidae*

NET LOSSES 0

NET GAINS 0

NOTES:

1,2 Empty shell in vial, Ancylus fluviatilis in sample

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Severn Aberbechan Source
DATE	16.8.93	SITE	Llandinam
SORTER	1.6	SAMPLE CODE	NRA04 BI 111799

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Nemouridae 2 Dytiscidae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Protonemura sp. (juvenile) 1 only  
2 Oreodytes septentrionalis (adult + larva)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Ledwyche Brook
DATE	12.8.93	SITE	Ledwyche Bridge
SORTER	1.0	SAMPLE CODE	NRA04 BI 111791

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	None

NET LOSSES  NET GAINS

NOTES:

Astacidae not found by IFE in vial or sample. Assumed returned to river.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Redlake
DATE	9.8.93	SITE	Jay
SORTER	1.3	SAMPLE CODE	NRA04 BI 111771

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

A	VIAL	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 Caenidae	None

B	SAMPLE	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 is supplied with sample)	None

NET LOSSES 1 NET GAINS 0

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	The Mule
DATE	11.8.93	SITE	Glanmule
SORTER	1.3	SAMPLE CODE	NRA04 BI 111785

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Chloroperlidae 2 Sericostomatidae

NET LOSSES

NET GAINS

NOTES:

1 Chloroperla torrentium 1 only  
2 Sericostoma personatum 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Corve
DATE	12.11.93	SITE	Beambridge
SORTER	1.6	SAMPLE CODE	NRA04 112177

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Limnephilidae

NET LOSSES

NET GAINS

NOTES:

1 Indet Limnephilid (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Great Whitley Brook
DATE	18.11.93	SITE	Astley
SORTER	1.6	SAMPLE CODE	NRA04 112215

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

A	VIAL	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	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	1 Hydrophilidae

NET LOSSES 0

NET GAINS 1

NOTES:

1 Indet Hydrophilid (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Clun
DATE	11.11.93	SITE	Leintwardine
SORTER	1.1	SAMPLE CODE	NRA04 112175

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Erpobdellidae

NET LOSSES

NET GAINS

NOTES:

1 Trocheta subviridis 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Bechan Brook
DATE	16.11.93	SITE	Aberbechan
SORTER	1.1	SAMPLE CODE	NRA04 112191

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

A	VIAL	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 Rhyacophilidae*	None

B	SAMPLE	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 is supplied with sample)	2 Planorbidae 3 Glossiphoniidae 4 Rhyacophilidae*

NET LOSSES

NET GAINS

NOTES:

2 Gyraulus albus 1 only  
3 Glossiphonia complanata 1 only  
4 Glossosoma sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Severn-Bewdley to Barbour
DATE	25.10.93	SITE	Redstone Rock (mid)
SORTER	1.3	SAMPLE CODE	NRA04 112098

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

A	VIAL	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 Platycnemididae	2 Coenagriidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	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 is supplied with sample)	None

NET LOSSES 1 NET GAINS 1

NOTES:

2 Ischnura elegans

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Dog Lane Brook
DATE	26.10.93	SITE	B4098 Bridge, Lea Marston
SORTER	3.9	SAMPLE CODE	NRA04 171876

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

A	VIAL	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 2 Planorbidae 3 Psychomyiidae

B	SAMPLE	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 is supplied with sample)	None

NET LOSSES  NET GAINS

NOTES:

- 1 Potamopyrgus jenkinsi
- 2 Anisus vortex
- 3 Tinodes waeneri

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Noe
DATE	15.11.93	SITE	Hope
SORTER	4.1	SAMPLE CODE	NRA04 151509

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Ephemerellidae 2 Caenidae 3 Nemouridae 4 Chloroperlidae 5 Dytiscidae

NET LOSSES 0 NET GAINS 5

NOTES:

- 1 Ephemerella ignita
- 2 Caenis luctuosa/macrura 1 only
- 3 Protonemura sp. 1 only
- 4 Chloroperla torrentium 1 only
- 5 Platambus maculatus (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Churnet
DATE	29.11.93	SITE	Froghall d/s Boltons
SORTER	3.8	SAMPLE CODE	NRA04 172024

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Ephemerellidae 2 Polycentropodidae

NET LOSSES

NET GAINS

NOTES:

1 Ephemerella ignita 1 only  
2 Plectrocnemia conspersa 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Whiston/Longnor Brook
DATE	28.10.93	SITE	Whiston Mill
SORTER	3.1	SAMPLE CODE	NRA04 171926

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	1 Hydroptilidae

NET LOSSES

NET GAINS

NOTES:

1 Hydroptila sp. (pupae)

Note in vial that Calopterygidae and Phryganeidae "returned". Not found by IFE in vial or sample.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Torne
DATE	27.10.93	SITE	Low Common
SORTER	4.1	SAMPLE CODE	NRA04 151452

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

A	VIAL	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 Hydroptilidae

B	SAMPLE	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 is supplied with sample)	2 Tipulidae

NET LOSSES  NET GAINS

NOTES:

1 Hydroptila sp. (pupa)  
2 Dicranota sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Cam
DATE	9.11.93	SITE	Rockstowes
SORTER	2.5	SAMPLE CODE	NRA04 126171

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

A	VIAL	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 Planariidae* 2 Leptoceridae 3 Goeridae*	4 Sericostomatidae

B	SAMPLE	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 is supplied with sample)	5 Planariidae* 6 Gyrinidae 7 Polycentropodidae 8 Limnephilidae 9 Goeridae*

NET LOSSES

NET GAINS

NOTES:

3,9 Empty case in vial, Silo pallipes 1 only in sample  
 4 Sericostoma personatum  
 5 Polycelis nigra/tenuis  
 6 Orectochilus villosus (larvae)  
 7 Indet Polycentropodid (juvenile) 1 only  
 8 Indet Limnephilid (juvenile) 1 only  
 9 Silo pallipes 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Sherbourne Brook
DATE	6.12.93	SITE	Heath End
SORTER	2.3	SAMPLE CODE	NRA04 136322

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

A	VIAL	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	SAMPLE	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 is supplied with sample)	None

NET LOSSES  NET GAINS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Welby Brook
DATE	3.11.93	SITE	Welby Grange
SORTER	4.2	SAMPLE CODE	NRA04 141689

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

A	VIAL	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 Sphaeriidae

B	SAMPLE	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 is supplied with sample)	None

NET LOSSES 0 NET GAINS 1

NOTES:

1 Pisidium sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	Severn-Trent	RIVER	Blackpool Brook
DATE	16.11.93	SITE	Barracks Bridge
SORTER	2.5	SAMPLE CODE	NRA04 126204

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

A	VIAL	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 Chironomidae*	None

B	SAMPLE	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 is supplied with sample)	2 Chloroperlidae 3 Scirtidae 4 Chironomidae*

NET LOSSES

NET GAINS

NOTES:

2 Chloroperla torrentium 1 only  
3 Elodes sp. (larva) 1 only  
4 Orthocladiinae

