



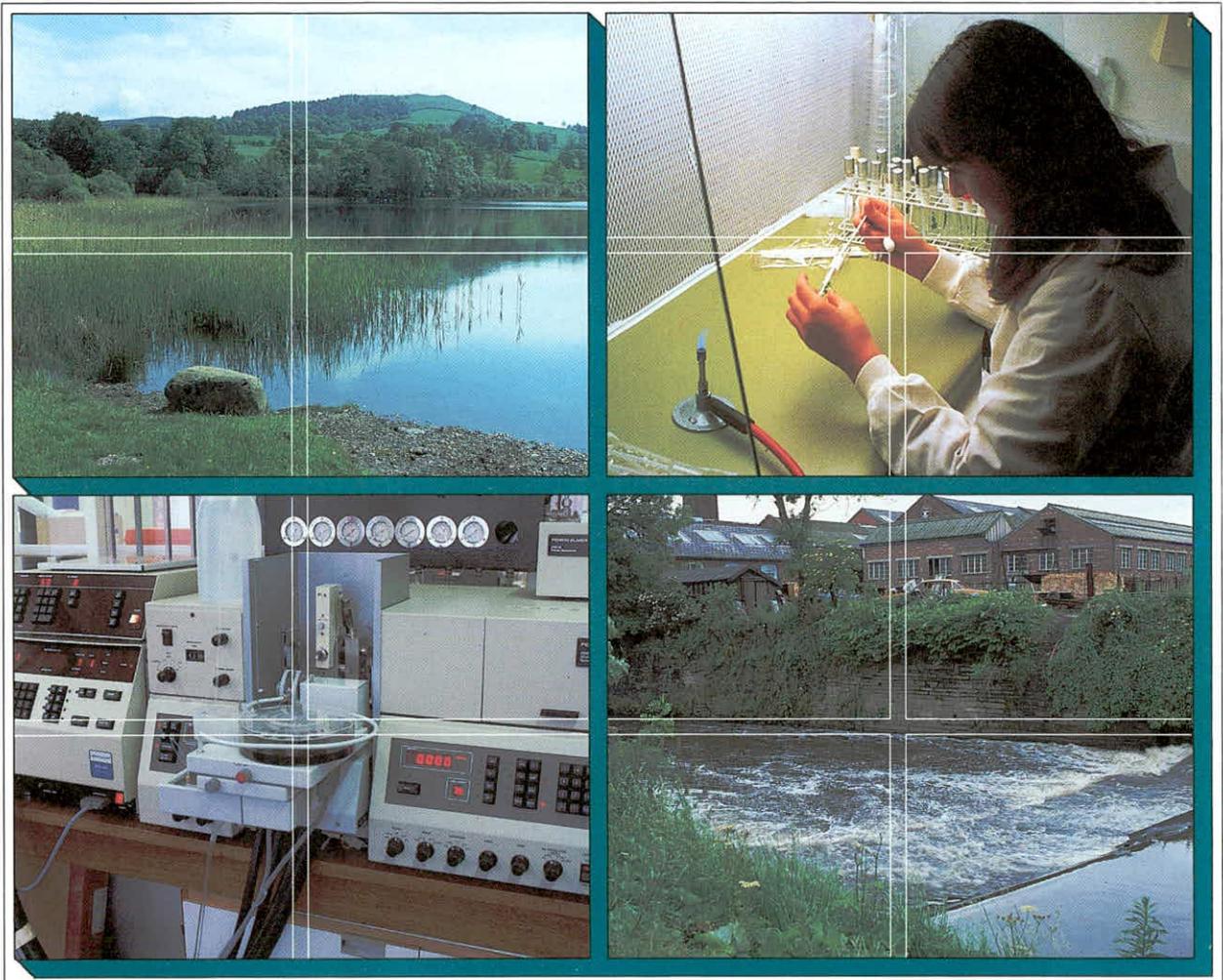
An audit of performance in the processing of macro-invertebrate samples in 1994. NRA South West Area of South Western Region

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South Western Region
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1. INTRODUCTION

In 1994 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 61 samples audited for South West Area of NRA South Western Region. 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.

TABLE 1. The IFE Report form

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	<input type="text"/>	RIVER	<input type="text"/>
DATE	<input type="text"/>	SITE	<input type="text"/>
SORTER	<input type="text"/>	CODE	<input type="text"/>

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 is only completed when no vial is supplied with the sample)	

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

TABLE 2. The 23 spring samples audited for South West Area.

River	Site	Sorter	Losses	Gains	Omissions
Marwood Stream	d/s Marwood STW	LB	0	0	0
Dalch	Barton Bridge	AA	0	4	0
Langham Lake Tributary	u/s Yarnscombe STW fence	AA	1	3	0
Little Dart Tributary	Rackenford	AA	0	2	0
Nadrid Water	Clapworthy	AA	0	0	0
Mole	u/s Footbridge	NB	0	1	0
Taw	East Rowden Bridge	NB	0	3	0
Taw Tributary	South Tawton STW	TAB	0	2	1
Tiddy	Tilland Mill Bridge	TAB	0	0	0
Venn Stream	Bishops Tawton	PG	0	3	0
Kitcott Lake	d/s Meshaw STW	PB	1	3	0
Fal	Tregony GS	KAD	0	2	0
Tamar	Gunnislake Bridge	SDT	0	1	0
Yealm	Yealm Bridge	TAB	0	0	0
Tamar	Dexbeer Bridge	KAD	0	0	0
Connon Stream	d/s Tip discharge	KAD	0	0	0
Penpont Water	Two Bridges	SDT	0	0	0
Withey Brook	u/s R. Lynher	KAD	0	0	0
Tamar	Polson Bridge	SDT	1	0	0
Meavy	u/s Burrator Reservoir	TAB	0	1	0
Claw	Tetcott Bridge	KAD	0	0	0
West Looe	Herodsfoot Bridge	TAB	0	0	0
Pont	Trethake Mill	TAB	0	2	0

TABLE 3. The 31 summer samples audited for South West Area.

River	Site	Sorter	Losses	Gains	Omissions
West Looe	Bosent Bridge	SDT	0	1	0
Connon Stream	Trevillis Wood	KAD	0	3	0
Fowey	Bodithiel Bridge	KAD	0	0	0
Tamar	Dexbeer Bridge	TAB	0	2	0
Tamar	Buses Bridge	KAD	0	1	0
St Neot	Colliford Bridge	KAD	0	0	0
Tamar	Tamerton Bridge	SDT	0	0	0
Wolf	u/s R. Thrushel	SDT	0	0	0
Small Brook	Youldon Bridge	KAD	0	2	0
Newton Creek	Bridgend	SDT	4	0	1
Haye Valley Stream	Haye	SDT	1	1	0
Tamar	Boyton Bridge	KAD	0	1	2
Tamar	Polson Bridge	KAD	0	2	0
Claw	Clawton Bridge	KAD	0	1	0
Wolf	Roadford New Bridge	KAD	1	1	0
Latchley Brook	Latchley	TAB	0	3	0
Hennard Stream	u/s Roadford Lake	SDT	0	0	0
Exe	d/s Rainbow Valley Fish Farm	AA	0	4	0
Shuttern Brook	d/s Morebath STW	AH	0	0	0
Dawlish Water	Burrows WTW	AA	0	0	0
Exe	d/s Exe Valley Fisheries	AA	0	2	0
Culm	u/s Culmstock STW	AA	0	1	0
Withiel Brook	u/s Castle Hill Fish Farm	DO	0	1	0
Jackmoor Brook	Langford	PG	1	3	0
Weaver	d/s Kerswell STW	NB	0	1	0
Torridge	Woodford Bridge	AA	0	0	0

River	Site	Sorter	Losses	Gains	Omissions
Corry Brook	d/s Dalwood STW	AA	0	1	0
Otter	u/s Rawridge STW	AA	0	0	0
Coombe Raleigh Stream	d/s Coombe Raleigh STW	DO	0	3	0
Erme	Sequers Bridge	AA	0	1	0
Lim Tributary	u/s Uplyme STW	AA	0	2	0

TABLE 4. The 7 autumn samples audited for South West Area

River	Site	Sorter	Losses	Gains	Omissions
Hennard Stream	u/s Roadford Lake	KAD	0	0	0
Otter	Tipton St John	NB	1	1	1
Otter	Fenny Bridges	DO	0	0	0
Taw	d/s Spires Lake	AA	0	1	0
Hayne Brook	d/s Manaton STW	AA	0	0	0
Molland Yeo	Mornacott Moor	DO	0	3	0
Aller Brook Tributary	Coffinswell STW	AA	0	0	0

APPENDIX

Results of individual sample audits

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Marwood Stream
DATE	10.3.94	SITE	d/s Marwood STW
SORTER	LB	CODE	NRA06 SW3003D/S

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Dalch
DATE	15.3.94	SITE	u/s Mill, Barton Bridge
SORTER	AA	CODE	NRA06 3017

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	1 Polycentropodidae

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	2 Leuctridae 3 Leptoceridae 4 Lepidostomatidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- | |
|---|
| 1 Polycentropus flavomaculatus/kingi (juveniles)
2 Leuctra geniculata 1 only
3 Athripsodes sp. (juvenile) 1 only
4 Lepidostoma hirtum 1 only |
|---|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Langham Lake Tributary
DATE	11.3.94	SITE	u/s Yarnscombe STW fence
SORTER	AA	CODE	NRA06 SW3007U/S

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Gyrinidae	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	2 Leuctridae 3 Hydrophilidae 4 Simuliidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- 2 Leuctra nigra 1 only
- 3 Helophorus flavipes/obscurus (adult) 1 only
- 4 Simulium cryophilum gp/vernum gp (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Little Dart Tributary
DATE	15.3.94	SITE	d/s Discharge, Rackenford
SORTER	AA	CODE	NRA06 SW3012D/S

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Hydrophilidae 2 Lepidostomatidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 <i>Limnebius truncatellus</i> (adult), Indet Hydrophilid (larva) 2 <i>Crunoecia irrorata</i> 1 only
--

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Nadrid Water
DATE	27.4.94	SITE	Clapworthy
SORTER	AA	CODE	NRA06 3069

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Mole
DATE	26.4.94	SITE	u/s Footbridge
SORTER	NB	CODE	NRA06 3075

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Chloroperlidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Chloroperla torrentium 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Taw
DATE	15.3.94	SITE	East Rowden Bridge
SORTER	NB	CODE	NRA06 3013

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	1 Ephemerellidae

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	2 Ancyliidae 3 Leptoceridae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- | |
|---|
| 1 Ephemerella ignita
2 Ancylyus fluviatilis 1 only
3 Adicella reducta, Oecetis testacea |
|---|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Taw Tributary
DATE	18.4.94	SITE	South Tawton STW
SORTER	TB	CODE	NRA06 SW3025

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Hydrophilidae*	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	2 Leptophlebiidae 3 Nemouridae 4 Hydrophilidae*

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1,4 Terrestrial species in vial, Anacaena globulus (adult) 1 only in vial
 2 Habrophlebia fusca 1 only
 3 Amphinemura standfussi

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tiddy
DATE	15.3.94	SITE	Tilland Mill Bridge
SORTER	TAB	CODE	NRA06 12141

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Venn Stream
DATE	21.4.94	SITE	Bishops Tawton
SORTER	PG	CODE	NRA06 3076

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Caenidae 2 Hydrophilidae 3 Hydroptilidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Caenis rivulorum 1 only 2 Hydraena gracilis (adults) 3 Hydroptila sp. 1 only
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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Kitcott Lake
DATE	6.4.94	SITE	d/s Meshaw STW
SORTER	PB	CODE	NRA06 3018D/S

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Planariidae	2 Lepidostomatidae

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	3 Lymnaeidae 4 Polycentropodidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- | |
|---|
| 1 Small grey slug in vial
2 Crunoecia irrorata
3 Lymnaea truncatula 1 only
4 Plectrocnemia sp. (juvenile) 1 only |
|---|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Fal
DATE	1.3.94	SITE	Tregony GS
SORTER	KAD	CODE	NRA06 1924

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
		None	None
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
		(This box is only completed when no vial is supplied with the sample)	1 Elmidae 2 Rhyacophilidae
Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE			

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

<p>1 <i>Elmis aenea</i> (adult + larva) 2 <i>Agapetus</i> sp. 1 only</p>
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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	17.3.94	SITE	Gunnislake Bridge
SORTER	SDT	CODE	NRA06 1288

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 is only completed when no vial is supplied with the sample)	1 Dryopidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Helichus substriatus (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Yealm
DATE	2.3.94	SITE	Yealm Bridge
SORTER	TAB	CODE	NRA06 1002

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	4.3.94	SITE	Dexbeer Bridge
SORTER	KAD	CODE	NRA06 1247

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Cannon Stream
DATE	3.3.94	SITE	d/s Tip Discharge
SORTER	KAD	CODE	NRA06 1408

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Penpont Water
DATE	2.3.94	SITE	Two Bridges
SORTER	SDT	CODE	NRA06 1266

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Withey Brook
DATE	15.3.94	SITE	u/s R.Lynher
SORTER	KAD	CODE	NRA06 1272

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	14.4.94	SITE	Polson Bridge
SORTER	SDT	CODE	NRA06 12106

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Linnephilidae	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Meavy
DATE	17.3.94	SITE	u/s Burrator Reservoir
SORTER	TAB	CODE	NRA06 1114

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 is only completed when no vial is supplied with the sample)	1 Taeniopterygidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Brachyptera risi 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Claw
DATE	3.3.94	SITE	Tetcott Bridge
SORTER	KAD	CODE	NRA06 1242

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

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	West Looe
DATE	3.3.94	SITE	Herodsfoot Bridge
SORTER	TAB	CODE	NRA06 1417

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Pont
DATE	11.3.94	SITE	Trethake Mill
SORTER	TAB	CODE	NRA06 1501

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 is only completed when no vial is supplied with the sample)	1 Hydrophilidae 2 Scirtidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Hydraena gracilis, H. riparia (adults) 2 Elodes sp. (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	West Looe
DATE	9.6.94	SITE	Bosent Bridge
SORTER	SDT	CODE	NRA06 1404

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Gammaridae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Gammarus pulex 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Connon Stream
DATE	23.6.94	SITE	Trevillis Wood
SORTER	KAD	CODE	NRA06 1409

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Planariidae 2 Lymnaeidae 3 Dytiscidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Polycelis felina 2 Lymnaea sp. (without shell) 1 only 3 Stictotarsus duodecimpustulatus (larva) 1 only
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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Fowey
DATE	20.6.94	SITE	Bodithiel Bridge
SORTER	KAD	CODE	NRA06 1515

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	29.6.94	SITE	Dexbeer Bridge
SORTER	TAB	CODE	NRA06 1247

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

B	<p align="center">SAMPLE</p> <p>Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE</p>	<p align="center">BMWP FAMILIES NOT FOUND BY IFE</p>	<p align="center">ADDITIONAL FAMILIES FOUND BY IFE</p>
		(This box is only completed when no vial is supplied with the sample)	1 Planorbidae 2 Calopterygidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Gyraulius albus 1 only
 2 Calopteryx splendens 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	29.6.94	SITE	Buses Bridge
SORTER	KAD	CODE	NRA06 12111

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Leptoceridae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Athripsodes bilineatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	St.Neot
DATE	14.6.94	SITE	Colliford Bridge
SORTER	KAD	CODE	NRA06 1517

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	13.7.94	SITE	Tamerton Bridge
SORTER	SDT	CODE	NRA06 1249

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Wolf
DATE	27.7.94	SITE	u/s R.Thrushel
SORTER	SDT	CODE	NRA06 1234

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Small Brook
DATE	29.6.94	SITE	Youlton Bridge
SORTER	KAD	CODE	NRA06 1254

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 is only completed when no vial is supplied with the sample)	1 Ephemerellidae 2 Elmidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Ephemerella ignita 1 only
2 Oulimnius sp. (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Newton Creek
DATE	2.8.94	SITE	Bridgend
SORTER	SDT	CODE	NRA06 1017

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Baetidae 2 Ephemeridae 3 Dytiscidae 4 Hydrophilidae 5 Tipulidae*	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	6 Tipulidae*

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- | |
|--|
| 1 Abdomen only. IFE instructed not to include posterior ends of animals in the audit
2 Last 4 abdominal segments only
3 Empty larval skin in vial
4 Specimen of <i>Octhebius dilatatus</i> considered dead at time that sample was taken
6 Dicranota sp. |
|--|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Haye Valley Stream
DATE	19.8.94	SITE	Haye
SORTER	SDT	CODE	NRA06 12139

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	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 is only completed when no vial is supplied with the sample)	2 Linnephilidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

<p>1 Nematode in vial 2 Indet Linnephilid (juvenile) 1 only</p>

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	13.7.94	SITE	Boyton Bridge
SORTER	KAD	CODE	NRA06 12104

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		1 Sphaeriidae* 2 Hydrophilidae*	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	3 Unionidae 4 Sphaeriidae* 5 Hydrophilidae*

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

3 Anodonta sp. (juvenile) 1 only
 4 Pisidium sp.
 5 Hydraena gracilis (adults)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Tamar
DATE	14.7.94	SITE	Polson Bridge
SORTER	KAD	CODE	NRA06 12106

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Planariidae 2 Hydroptilidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Polycelis felina 1 only
 2 Hydroptila sp. (pupae)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Claw
DATE	29.6.94	SITE	Clawton Bridge
SORTER	KAD	CODE	NRA06 12108

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 is only completed when no vial is supplied with the sample)	1 Sphaeriidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Pisidium sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Wolf
DATE	14.7.94	SITE	Roadford New Bridge
SORTER	KAD	CODE	NRA06 1298

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	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 is only completed when no vial is supplied with the sample)	2 Calopterygidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

2 Calopteryx splendens 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Latchley Brook
DATE	24.8.94	SITE	Latchley
SORTER	TAB	CODE	NRA06 1217

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Sphaeriidae 2 Cordulegasteridae 3 Lepidostomatidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- 1 Pisidium sp. 1 only
- 2 Cordulegaster boltonii 1 only
- 3 Crunoecia irrorata 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Hennard Stream
DATE	14.7.94	SITE	u/s Roadford Lake
SORTER	SDT	CODE	NRA06 12142

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Exe
DATE	23.8.94	SITE	d/s Rainbow Valley Fish Farm
SORTER	AA	CODE	05E FF0511

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 is only completed when no vial is supplied with the sample)	1 Planariidae 2 Asellidae 3 Nemouridae 4 Hydrophilidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- 1 Polycelis felina 1 only
- 2 Asellus aquaticus 1 only
- 3 Protonemura sp. 1 only
- 4 Hydraena gracilis (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Shuttern Brook
DATE	12.8.94	SITE	d/s Morebath STW
SORTER	AH	CODE	05F SW0516

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Dawlish Water
DATE	8.8.94	SITE	u/s Burrows WTW
SORTER	AA	CODE	05A WT0502

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Exe
DATE	19.8.94	SITE	d/s Exe Valley Fisheries
SORTER	AA	CODE	05E FF0509

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Glossiphoniidae 2 Polycentropodidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Helobdella stagnalis 1 only
 2 Note on data sheet under heading of Other Taxa "Polycentropodidae head?". One anterior end of Polycentropus sp. found by IFE in sample.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Culm
DATE	10.8.94	SITE	u/s Culmstock STW
SORTER	AA	CODE	05C SW0512

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 is only completed when no vial is supplied with the sample)	1 Sphaeriidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Sphaerium sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Withiel Brook
DATE	12.8.94	SITE	u/s Castle Hill Fish Farm
SORTER	DO	CODE	05G FF0515

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 is only completed when no vial is supplied with the sample)	1 Planariidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Polycelis nigra/tenuis 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Jackmoor Brook
DATE	9.8.94	SITE	Langford
SORTER	PG	CODE	NRA06 0596

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 Lymnaeidae	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 is only completed when no vial is supplied with the sample)	2 Asellidae 3 Hydrometridae 4 Gyrinidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- 1 Succinea sp. in vial
- 2 Asellus meridianus 1 only
- 3 Hydrometra stagnorum (nymphs)
- 4 Orectochilus villosus (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Weaver
DATE	27.7.94	SITE	d/s Kerswell STW
SORTER	NB	CODE	05C SW0502

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 is only completed when no vial is supplied with the sample)	1 Hydrophilidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Anacaena globulus (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Torridge
DATE	7.7.94	SITE	Woodford Bridge
SORTER	AA	CODE	NRA06 2916

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Corry Brook
DATE	4.7.94	SITE	d/s Dalwood STW
SORTER	AA	CODE	NRA06 SW0204

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 is only completed when no vial is supplied with the sample)	1 Gammaridae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Gammarus pulex, Crangonyx pseudogracilis

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Otter
DATE	14.7.94	SITE	u/s Rawridge STW
SORTER	AA	CODE	NRA06 PW0405

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Coombe Raleigh Stream
DATE	20.7.94	SITE	d/s Coombe Raleigh STW
SORTER	DO	CODE	NRA06 SW0404

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	1 Hydrometridae

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	2 Planariidae 3 Leptophlebiidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- | |
|--|
| 1 Hydrometra sp. (nymph)
2 Polycelis sp. 1 only
3 Habrophlebia fusca |
|--|

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Erme
DATE	16.8.94	SITE	Sequers Bridge
SORTER	AA	CODE	NRA06 0903

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 is only completed when no vial is supplied with the sample)	1 Beraeidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Beraea maurus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Lim Tributary
DATE	12.7.94	SITE	u/s Uplyme STW
SORTER	AA	CODE	NRA06 SW0101

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Baetidae 2 Tipulidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Baetis muticus 1 only
 2 Tipula sp. (juvenile), Scleroprocta sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Hennard Stream
DATE	29.11.94	SITE	u/s Roadford Lake
SORTER	KAD	CODE	NRA06 12142

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 is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Otter
DATE	13.10.94	SITE	Tipton St.John
SORTER	NB	CODE	NRA06 0405

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* 2 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 is only completed when no vial is supplied with the sample)	3 Dytiscidae 4 Hydrophilidae*

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

- 2 Empty cases only in sample
- 3 Oreodytes sanmarkii (adult) 1 only
- 4 Hydraena gracilis (adults)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Otter
DATE	12.10.94	SITE	Fenny Bridges
SORTER	DO	CODE	NRA06 0414

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Taw
DATE	28.9.94	SITE	d/s Spires Lake confluence
SORTER	AA	CODE	NRA06 3078

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	1 Gyrinidae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

1 Orectochilus villosus (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Hayne Brook
DATE	2.9.94	SITE	d/s Manaton STW
SORTER	AA	CODE	NRA06 SW0604

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Molland Yeo
DATE	29.9.94	SITE	Mornacott Moor
SORTER	DO	CODE	NRA06 3063

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 is only completed when no vial is supplied with the sample)	1 Caenidae 2 Odontoceridae 3 Leptoceridae

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

<p>1 <i>Caenis rivulorum</i> 2 <i>Odontocerum albicorne</i> 1 only 3 <i>Athripsodes albifrons</i></p>

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1994

REGION	South West	RIVER	Aller Brook Tributary
DATE	8.9.94	SITE	Track at Coffinswell STW
SORTER	AA	CODE	NRA06 SW0602

A	VIAL 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	ADDITIONAL FAMILIES FOUND BY IFE
		None	None

B	SAMPLE 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	ADDITIONAL FAMILIES FOUND BY IFE
		(This box is only completed when no vial is supplied with the sample)	None

* Taxa recorded on data sheet but absent from vial and found by I.F.E. in sample (omissions)

NET LOSSES NET GAINS OMISSIONS

NOTES:

