

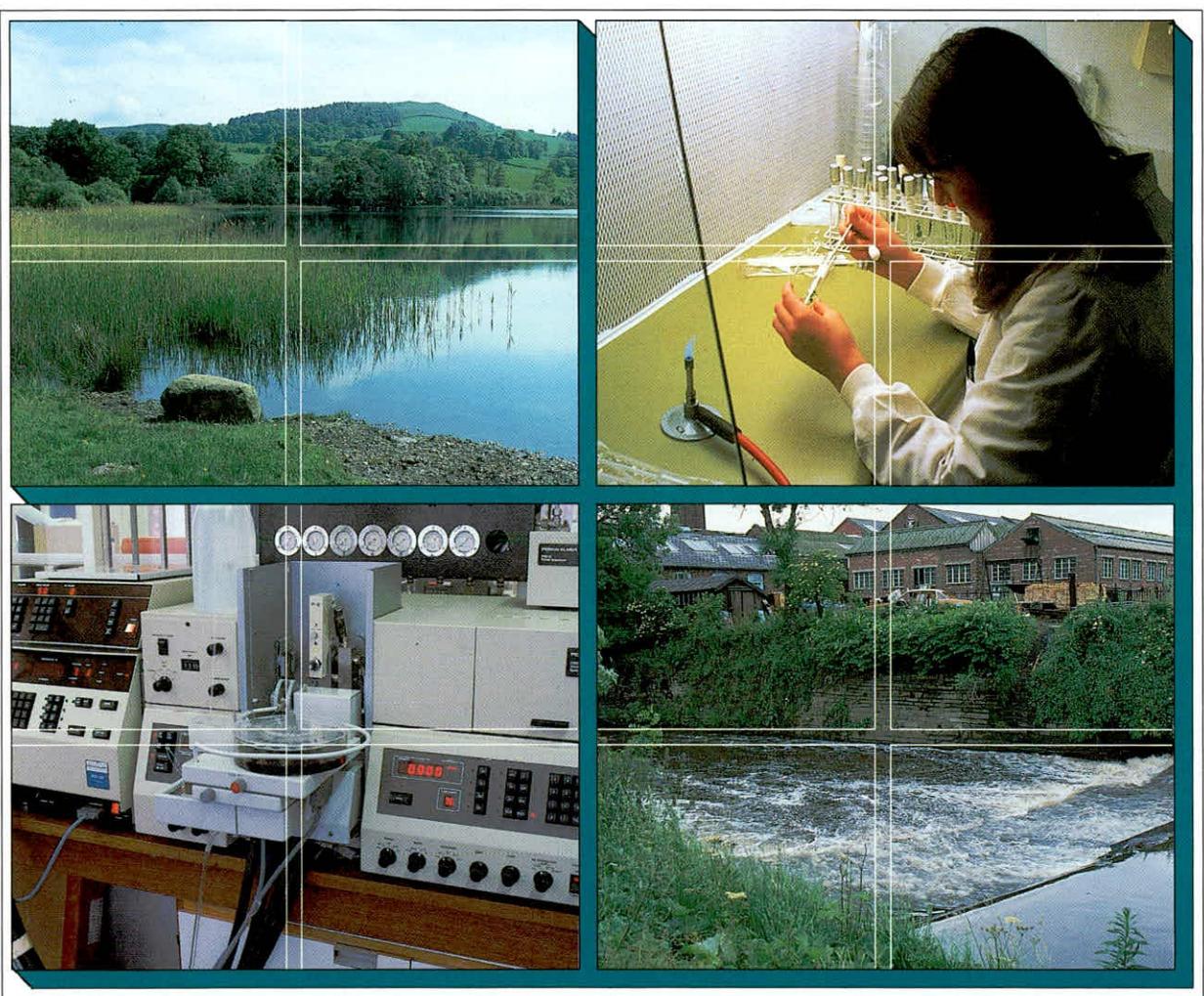
RL 416



**Institute of
Freshwater
Ecology**

An audit of performance in the processing of macro-invertebrate samples in 1992. NRA Welsh Region

R.J.M Gunn, BA
J.M. Winder, PhD
J.H. Blackburn, BSc
J.F. Wright, PhD





INSTITUTE OF FRESHWATER ECOLOGY
River Laboratory, East Stoke, Wareham, Dorset BH20 6BB

Tel: 0929 462314
Fax: 0929 462180

**An audit of performance in the processing
of macro-invertebrate samples in 1992.
NRA Welsh Region**

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

Project leader:	R.J.M. Gunn
Report date:	April 1993
Report to:	National Rivers Authority Welsh Region
IFE Report Ref:	RL/T04071a1/08
TFS Project No:	T04071a1

This is an unpublished report and should not be cited without permission, which should be sought through the Director of the Institute of Freshwater Ecology in the first instance.

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

1. INTRODUCTION

In 1992 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 Welsh 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 and 3).

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 Kay Symes for help with production of results and to Valerie Palmer for typing the manuscript.

TABLE 1. The IFE Report form

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

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
	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)	

NET LOSSES NET GAINS

NOTES:

TABLE 2. The 32 spring samples audited for Welsh Region.

River	Site	Sorter	Losses	Gains	Omissions
Arrow	Eardisland	WM	0	3	0
Upper Clydach	Rhyd-y-Fro	KL	0	4	0
Dulais	Severn Sisters	KL	1	5	0
Taff	u/s Afon Cynon	AT	1	2	0
Rhondda Fach	Pont-y-Gwaith	JB	0	0	0
Ceri	Cwmcou	JG	1	4	0
Valley Brook	Redbrook	JB	1	3	1
Taff	Ynysangharad Park	WM	1	1	0
Tintern Brook	Tintern	WM	0	0	0
Arberth	Lechrhyd	MS	1	0	0
E. Cleddau	Pont Hywel	MS	0	2	0
Rhymney	Trethomas	MS	0	1	0
Withington Lakes	Cotts Farm	NS	0	0	0
Yazor Brook	Stretton Sugwas	AT	0	3	0
Sien	Gelliwen	DB	0	3	0
Nant-y-Fendrod	Llansamlet P.S.	DB	1	0	0
Nevern	Llwyngwair Manor	MS	0	2	0
Alyn	Rosset	MH	1	2	0
Lledr	Dolwyddelan	JB	1	2	0
Hirnant	Garth Goch	MW	0	4	0
Marlais	Aberlash Mill	KL	0	3	0
Usk	Senny Bridge	PR	1	4	1
Ystrad	Pont Parc Canol	JB	0	1	0
Rhondda Fawr	Pentre	MH	0	0	0
Kinnersley Brook	Kinley	DB	0	4	0
Afon Lwyd	Pontmoel	NS	0	0	0
Gwyfrai	Bontnewydd	PR	1	7	0
Allensmore Brook	u/s Worm Brook	MH	0	1	0
Afon Crai	Danygraig	JB	0	0	0
Usk	d/s Gilieni	PR	0	2	0
Meichion	u/s Elwy	MW	0	2	0
Eglwyseg	Valle Crucis Abbey	JB	0	1	0

TABLE 3. The 28 summer samples audited for Welsh Region

River	Site	Sorter	Losses	Gains	Omissions
Dore	Hinton	MH	0	2	0
Ely	d/s Nant Llanilid	WM	0	2	0
* Cage Brook	d/s Marsh Farm	AT	0	0	0
Seiont	Pen Llyn	MH	0	2	0
Usk	Cilieni	MW	0	1	0
Cynon	u/s Hirwaun	JB	0	2	0
Usk	Chain Bridge	AR	0	1	0
Ebbw Fawr	d/s Ebbw Vale Steel Works	AT	0	1	0
Monnow	Alltyrynys	MW	0	0	0
Wye	Whitney	JB	1	1	0
Honddu	Alltyrynys	NS	0	0	0
Wych	Lower Wych	MH	0	2	0
Rhondda Fawr	Tynewydd	PR	0	1	0
Jury Brook	u/s Worm Brook	PR	1	7	1
Afon Lwyd	Pont Moel	NS	1	0	0
Dewi Fawr	A40 Bridge	KJ	0	5	0
Taf Fechan	d/s Vaynor	WM	1	1	0
Bran	Glansevin Road Bridge	JG	0	6	0
Nant Gwys	Cwmtwrch	JG	1	2	1
Crychian	u/s Road Bridge	SS	0	4	1
Afan	Corlannau	DB	1	4	1
Cothi	d/s Road Bridge	SG	0	2	0
Taff	Merthyr Vale	AR	1	1	0
Nant Menascin	Pencelli	NS	0	0	0
Ogmore	Bridgend Recreation Centre	KJ	1	5	0
Afon Hengwm	d/s Hyddgen	MS	0	1	0
Mellte	Pontneddfechan	MS	0	4	0
Duad	Conwyl Elfed	DB	0	2	1

* indicates vial damaged in transit

APPENDIX

Results of individual sample audits

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Arrow
DATE	5.5.92	SITE	Eardisland
SORTER	WM	SAMPLE CODE	NRA08 E091

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 Leptophlebiidae 2 Hydrophilidae 3 Polycentropodidae

NET LOSSES

NET GAINS

NOTES:

- 1 Paraleptophlebia submarginata 1 only
- 2 Hydraena gracilis (adults)
- 3 Polycentropus flavomaculatus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Upper Clydach
DATE	14.4.92	SITE	Rhyd-y-Fro
SORTER	KL	SAMPLE CODE	NRA08 W077

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 Sphaeriidae 3 Leptophlebiidae 4 Beraeidae

NET LOSSES 0 NET GAINS 4

NOTES:

- 1 Ancylus fluviatilis 1 only
- 2 Pisidium sp. 1 only
- 3 Paraleptophlebia sp. 1 only
- 4 Ernodes articularis 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Dulais
DATE	23.4.92	SITE	Severn Sisters
SORTER	KL	SAMPLE CODE	NRA08 W055

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 Mesoveliidae	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)	2 Ancylidae 3 Oligochaeta 4 Erpobdellidae 5 Hydroptilidae 6 Tipulidae

NET LOSSES NET GAINS

NOTES:

- 1 Indet Aphid (nymph) in vial
- 2 Ancylus fluviatilis 1 only
- 3 Naididae
- 4 Dina lineata 1 only
- 5 Hydroptila sp.
- 6 Dicranota sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Taff
DATE	22.4.92	SITE	u/s Afon Cynon
SORTER	AT	SAMPLE CODE	NRA08 E275

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 Dendrocoelidae

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 Elmidae

NET LOSSES NET GAINS

NOTES:

2 Dendrocoelum lacteum
3 Limnius volckmari (larvae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Rhondda Fach
DATE	3.4.92	SITE	Pont-y-Gwaith
SORTER	JB	SAMPLE CODE	NRA08 E291

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Ceri
DATE	7.5.92	SITE	Cwmcou
SORTER	JG	SAMPLE CODE	NRA08 W230

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 Odontoceridae	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 Caenidae 3 Polycentropodidae 4 Hydroptilidae 5 Leptoceridae

NET LOSSES 1 NET GAINS 4

NOTES:

- 2 Caenis rivulorum
- 3 Polycentropus flavomaculatus 1 only
- 4 Ithytrichia sp. 1 only
- 5 Oecetis notata 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Valley Brook
DATE	31.3.92	SITE	Redbrook
SORTER	JB	SAMPLE CODE	NRA08 E021

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 Elmidae*	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)	3 Sphaeriidae 4 Potamanthidae 5 Aphelocheiridae 6 Elmidae*

NET LOSSES NET GAINS

NOTES:

- 1 Terrestrial snail in vial
- 3 Pisidium sp. 1 only
- 4 Potamanthus luteus 1 only
- 5 Aphelocheirus aestivalis 1 only
- 6 Elmis aenea, Limnius volckmari, Oulimnius sp. (larvae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Taff
DATE	21.4.92	SITE	Ynysangharad Park
SORTER	WM	SAMPLE CODE	NRA08 E272

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 Ephemerellidae

NET LOSSES NET GAINS

NOTES:

1 Fragments of empty shell in vial
2 Ephemerella ignita 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Tintern Brook
DATE	31.3.92	SITE	Tintern
SORTER	WM	SAMPLE CODE	NRA08 E020

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 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Arberth
DATE	7.5.92	SITE	Llechrhyd
SORTER	MS	SAMPLE CODE	NRA08 W225

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	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:

1 Terrestrial snail in vial

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	E.Cleddau
DATE	13.4.92	SITE	Pont Hywel
SORTER	MS	SAMPLE CODE	NRA08 W198

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 Ephemerellidae 2 Scirtidae

NET LOSSES

NET GAINS

NOTES:

1 Ephemerella ignita 1 only
2 Hydrocyphon deflexicollis (larva) 1 only
Sample pot labelled 27.5.92, data sheet says 13.4.92.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Rhymney
DATE	10.4.92	SITE	Trethomas
SORTER	MS	SAMPLE CODE	NRA08 E244

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

NET LOSSES NET GAINS

NOTES:

1 Pisidium sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Withington Lakes
DATE	6.5.92	SITE	Cotts Farm
SORTER	NS	SAMPLE CODE	NRA08 E078

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Yazor Brook
DATE	8.5.92	SITE	Stretton Sugwas
SORTER	AT	SAMPLE CODE	NRA08 E111

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 Caenidae 2 Haliplidae 3 Tipulidae

NET LOSSES 0 NET GAINS 3

NOTES:

1 Caenis rivulorum 1 only
2 Haliphus lineatocollis (adult) 1 only
3 Antocha vitripennis

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Sien
DATE	13.4.92	SITE	Gelliwen
SORTER	DB	SAMPLE CODE	NRA08 W136

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 2 Odontoceridae 3 Simuliidae

NET LOSSES NET GAINS

NOTES:

- 1 Hydraena gracilis (adults)
- 2 Odontocerum albicorne 1 only
- 3 Simulium ornatum group 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Nant-y-Fendrod
DATE	14.4.92	SITE	Llansamlet Pumping Station
SORTER	DB	SAMPLE CODE	NRA08 W074

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)	None

NET LOSSES NET GAINS

NOTES:

1 Lymnaea palustris (+ L.peregra) in vial

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Nevern
DATE	10.4.92	SITE	Llwyngwair Manor
SORTER	MS	SAMPLE CODE	NRA08 W210

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 Leptoceridae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Hydraena gracilis (adults)
2 Mystacides azurea 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Alyn
DATE	10.4.92	SITE	Rosset
SORTER	MH	SAMPLE CODE	NRA08 N132

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 Psychomyiidae

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

NET LOSSES NET GAINS

NOTES:

- 1 Terrestrial snail in vial
- 2 Tinodes waeneri
- 3 Erpobdella octoculata 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Lledr
DATE	8.5.92	SITE	Dolwyddelan
SORTER	JB	SAMPLE CODE	NRA08 N074

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 Leptoceridae	2 Nemouridae

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 Hydroptilidae

NET LOSSES NET GAINS

NOTES:

2 Protonemura meyeri, Amphinemura sulcicollis
3 Hydroptila sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Hirnant
DATE	6.5.92	SITE	Garth Goch
SORTER	MW	SAMPLE CODE	NRA08 N195

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 Perlidae 3 Hydrophilidae 4 Hydroptilidae

NET LOSSES

 0

NET GAINS

 4

NOTES:

<p>1 Pisidium sp. 1 only 2 Perla bipunctata 1 only 3 Limnebius truncatellus (adult) 1 only 4 Oxyethira sp. 1 only</p>
--

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Marlais
DATE	9.4.92	SITE	Aberlash Mill
SORTER	KL	SAMPLE CODE	NRA08 W105

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 Nemouridae 3 Leptoceridae

NET LOSSES NET GAINS

NOTES:

- 1 Caenis rivulorum 1 only
- 2 Amphinemura sulcicollis 1 only
- 3 Adicella reducta 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Usk
DATE	30.3.92	SITE	Senny Bridge
SORTER	PR	SAMPLE CODE	NRA08 E175

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 Ephemeroidea 2 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)	3 Planariidae 4 Caenidae 5 Taeniopterygidae 6 Tipulidae 7 Chironomidae*

NET LOSSES 1

NET GAINS 4

NOTES:

- 3 Crenobia alpina
- 4 Caenis rivulorum
- 5 Brachyptera risi
- 6 Dicranota sp. 1 only
- 7 Orthoclaadiinae, Chironomini

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Ystrad
DATE	7.5.92	SITE	Pont Parc Canol
SORTER	JB	SAMPLE CODE	NRA08 N116

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 Hydropsychidae

NET LOSSES NET GAINS

NOTES:

1 Hydropsyche siltalai 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Rhondda Fawr
DATE	3.4.92	SITE	Pentre
SORTER	MH	SAMPLE CODE	NRA08 E288

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Kinnersley Brook
DATE	23.4.92	SITE	Kinley
SORTER	DB	SAMPLE CODE	NRA08 E118

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 Asellidae 3 Sialidae 4 Chironomidae

NET LOSSES 0 NET GAINS 4

NOTES:

1 Lymnaea sp.
2 Asellus aquaticus
3 Sialis lutaria
4 Tanypodinae, Orthocladiinae

Sample poorly preserved

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Afon Lwyd
DATE	30.4.92	SITE	Pontmoel
SORTER	NS	SAMPLE CODE	NRA08 E180

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 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Gwyfrai
DATE	8.5.92	SITE	Bontnewydd
SORTER	PR	SAMPLE CODE	NRA08 N056

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 Lymnaeidae	2 Hydrobiidae

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 Ancylidae 4 Ephemerellidae 5 Caenidae 6 Leuctridae 7 Polycentropodidae 8 Leptoceridae

NET LOSSES 1 NET GAINS 7

NOTES:

- 2 Potamopyrgus jenkinsi
- 3 Ancylus fluviatilis 1 only
- 4 Ephemerella ignita
- 5 Caenis rivulorum
- 6 Leuctra geniculata, L.hippopus
- 7 Polycentropus sp. (juvenile) 1 only
- 8 Oecetis sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Allensmore Brook
DATE	9.4.92	SITE	u/s Worm Brook
SORTER	MH	SAMPLE CODE	NRA08 E042

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 Valvatidae

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 Valvata piscinalis

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Afon Crai
DATE	30.3.92	SITE	Danygraig
SORTER	JB	SAMPLE CODE	NRA08 E212

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Usk
DATE	30.3.92	SITE	d/s Gilieni
SORTER	PR	SAMPLE CODE	NRA08 E174

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 2 Gyrinidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Brachyptera risi
2 Orectochilus villosus (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Meichion
DATE	7.5.92	SITE	u/s Elwy
SORTER	MW	SAMPLE CODE	NRA08 N109

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 Taeniopterygidae

NET LOSSES NET GAINS

NOTES:

1 Habrophlebia fusca 1 only
2 Brachyptera risi 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Eglwyseg
DATE	27.4.92	SITE	Valle Crucis Abbey
SORTER	JB	SAMPLE CODE	NRA08 N180

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 Leptoceridae

NET LOSSES NET GAINS

NOTES:

1 Athripsodes sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Dore
DATE	21.7.92	SITE	Hinton
SORTER	MH	SAMPLE CODE	NRA08 E035

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 Rhyacophilidae 2 Tipulidae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Agapetus sp. (pupa) 1 only
2 Tipula sp. (juvenile), Limonia sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Ely
DATE	20.7.92	SITE	d/s Nant Llanilid
SORTER	WM	SAMPLE CODE	NRA08 E334

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 Dytiscidae 2 Lepidostomatidae

NET LOSSES NET GAINS

NOTES:

1 Oreodytes sanmarkii (larva) 1 only
2 Crunoecia irrorata (pupa) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Cage Brook
DATE	31.7.92	SITE	d/s Marsh Farm
SORTER	AT	SAMPLE CODE	NRA08 E114

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	Lid separated from vial in transit. Identification check not applicable.	N/a

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	None

NET LOSSES 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Seiont
DATE	7.7.92	SITE	Pen Llyn
SORTER	MH	SAMPLE CODE	NRA08 N062

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 Caenidae 2 Nouridae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Caenis luctuosa/macrura 1 only
2 Protonemura sp. (juvenile) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Usk
DATE	22.7.92	SITE	Cilieni
SORTER	MW	SAMPLE CODE	NRA08 E174

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 Tipulidae

NET LOSSES NET GAINS

NOTES:

1 Dicranota sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Cynon
DATE	28.7.92	SITE	u/s Hirwaun
SORTER	JB	SAMPLE CODE	NRA08 E307

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 Hydropsychidae

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 Gammaridae

NET LOSSES 0 NET GAINS 2

NOTES:

1 Hydropsyche sp. (juvenile)
2 Gammarus pulex

Baetidae entered in wrong box on NRA data sheet.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Usk
DATE	22.6.92	SITE	Chain Bridge
SORTER	AR	SAMPLE CODE	NRA08 E168

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

NET LOSSES NET GAINS

NOTES:

1 Hydraena gracilis (adult) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Ebbw Fawr
DATE	7.7.92	SITE	d/s Ebbw Vale Steel Works
SORTER	AT	SAMPLE CODE	NRA08 E221

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. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Monnow
DATE	21.7.92	SITE	Alltyrynys
SORTER	MW	SAMPLE CODE	NRA08 E031

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Wye
DATE	30.7.92	SITE	Whitney
SORTER	JB	SAMPLE CODE	NRA08 E012

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 Dendrocoelidae	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 Corixidae

NET LOSSES NET GAINS

NOTES:

2 Indet Corixid nymphs

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Honddu
DATE	21.7.92	SITE	Alltyrynys
SORTER	NS	SAMPLE CODE	NRA08 E043

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Wych
DATE	22.7.92	SITE	Lower Wych
SORTER	MH	SAMPLE CODE	NRA08 N148

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 Dytiscidae 2 Hydroptilidae

NET LOSSES NET GAINS

NOTES:

1 Oreodytes sanmarkii (adult) 1 only
2 Hydroptila sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Rhondda Fawr
DATE	21.7.92	SITE	Tynewydd
SORTER	PR	SAMPLE CODE	NRA08 E289

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 Hydropsychidae

NET LOSSES 0 NET GAINS 1

NOTES:

1 Hydropsyche pellucidula

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Jury Brook
DATE	21.7.92	SITE	u/s Worm Brook
SORTER	PR	SAMPLE CODE	NRA08 E041

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 Gyrinidae	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 Planorbidae* 4 Leptophlebiidae 5 Ephemerellidae 6 Gerridae 7 Haliplidae 8 Hydrophilidae 9 Sialidae 10 Limnephilidae

NET LOSSES NET GAINS

NOTES:

- 1,3 Empty terrestrial snail in vial, Armiger crista 1 only in sample
- 4 Habrophlebia fusca
- 5 Ephemerella ignita
- 6 Gerris sp (nymph) 1 only
- 7 Haliplus sp. (larvae)
- 8 Helophorus brevipalpis (adults)
- 9 Sialis lutaria
- 10 Indet Limnephilid (juvenile) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Afon Lwyd
DATE	27.7.92	SITE	Pont Moel
SORTER	NS	SAMPLE CODE	NRA08 E180

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	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:

1 Terrestrial snail in vial

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Dewi Fawr
DATE	10.8.92	SITE	A40 Bridge
SORTER	KJ	SAMPLE CODE	NRA08 W135

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 Gyrinidae 2 Hydrophilidae 3 Hydroptilidae 4 Beraeidae 5 Lepidostomatidae

NET LOSSES 0 NET GAINS 5

NOTES:

- 1 Gyrinus sp. (larva) 1 only
- 2 Hydraena gracilis (adult) 1 only
- 3 Hydroptila sp. 1 only
- 4 Beraea pullata 1 only
- 5 Lepidostoma hirtum 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Taf Fechan
DATE	8.7.92	SITE	d/s Vaynor
SORTER	WM	SAMPLE CODE	NRA08 E351

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 Dendrocoelidae	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 Simuliidae

NET LOSSES 1 NET GAINS 1

NOTES:

1 Crenobia alpina in addition to Polycelis felina in vial
2 Simulium aureum group 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Bran
DATE	30.7.92	SITE	Glansevin Road Bridge
SORTER	JG	SAMPLE CODE	NRA08 W170

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 Calopterygidae 3 Haliplidae 4 Sialidae 5 Leptoceridae 6 Lepidostomatidae

NET LOSSES NET GAINS

NOTES:

- 1 Potamopyrgus jenkinsi
- 2 Calopteryx sp. (juvenile) 1 only
- 3 Brychius elevatus (adults)
- 4 Sialis sp. (juvenile) 1 only
- 5 Athripsodes sp. (juvenile) 1 only
- 6 Lepidostoma hirtum

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Nant Gwys
DATE	5.8.92	SITE	Cwmtwrch
SORTER	JG	SAMPLE CODE	NRA08 W081

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 Asellidae 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 Perlidae 4 Dytiscidae* 5 Hydrophilidae

NET LOSSES NET GAINS

NOTES:

- 1 Terrestrial Isopod in vial
- 3 Perla bipunctata 1 only
- 4 Oreodytes sanmarkii (adult) 1 only
- 5 Helophorus flavipes (adult) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Crychian
DATE	24.7.92	SITE	u/s Road Bridge
SORTER	SS	SAMPLE CODE	NRA08 W292

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 Limnephilidae*	2 Goeridae

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 Dytiscidae 4 Hydrophilidae 5 Hydroptilidae 6 Limnephilidae*

NET LOSSES 0 NET GAINS 4

NOTES:

- 2 Silo pallipes
- 3 Oreodytes sanmarkii (adults)
- 4 Hydraena gracilis, Helophorus sp. (adults)
- 5 Hydroptila sp.
- 6 Drusus annulatus

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Afan
DATE	18.8.92	SITE	Corlannau
SORTER	DB	SAMPLE CODE	NRA08 W036

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* 2 Tipulidae	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 Hydrobiidae* 4 Sphaeriidae 5 Glossiphoniidae 6 Perlodidae 7 Elmidae

NET LOSSES NET GAINS

NOTES:

- 3 Potamopyrgus jenkinsi
- 4 Pisidium sp. 1 only
- 5 Glossiphonia complanata
- 6 Perlodes microcephala 1 only
- 7 Elmis aenea, Limnius volckmari, Oulimnius sp. (adults + larvae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Cothi
DATE	4.8.92	SITE	d/s Road Bridge
SORTER	SG	SAMPLE CODE	NRA08 W149

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 2 Odontoceridae

NET LOSSES NET GAINS

NOTES:

1. Brychius elevatus (adult) 1 only
2 Odontocerum albicorne 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Taff
DATE	8.7.92	SITE	Merthyr Vale
SORTER	AR	SAMPLE CODE	NRA08 E277

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 Valvatidae

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 1

NOTES:

2 Valvata cristata

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Nant Menascin
DATE	8.7.92	SITE	Pencelli
SORTER	NS	SAMPLE CODE	NRA08 E204

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:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Ogmore
DATE	19.8.92	SITE	Bridgend Recreation Centre
SORTER	KJ	SAMPLE CODE	NRA08 W001

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 Ephemeraeidae	2 Ephemerellidae

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 Caenidae 4 Perlodidae 5 Leptoceridae 6 Simuliidae

NET LOSSES 1 NET GAINS 5

NOTES:

- 2 Ephemerella ignita
- 3 Caenis rivulorum 1 only
- 4 Perlodes microcephala 1 only
- 5 Mystacides azurea
- 6 Simulium ornatum group, S.cryophilum group

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Afon Hengwm
DATE	18.8.92	SITE	d/s Hyddgen
SORTER	MS	SAMPLE CODE	NRA08 W271

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 Hydropsychidae

NET LOSSES NET GAINS

NOTES:

1 Hydropsyche siltalai 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Mellte
DATE	10.8.92	SITE	Pontneddfechan
SORTER	MS	SAMPLE CODE	NRA08 W059

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 Asellidae 3 Caenidae 4 Hydrophilidae

NET LOSSES NET GAINS

NOTES:

- 1 Pisidium sp. 1 only
- 2 Asellus aquaticus 1 only
- 3 Caenis rivulorum 1 only
- 4 Hydraena gracilis (adult) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Welsh	RIVER	Duad
DATE	05.8.92	SITE	Conwyl Elfed
SORTER	DB	SAMPLE CODE	NRA03 W147

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 Sericostomatidae*	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 Ancyliidae 3 Polycentropodidae 4 Sericostomatidae*

NET LOSSES 0 NET GAINS 2

NOTES:

2 Ancylyus fluviatilis 1 only
 3 Polycentropus flavomaculatus/kingi 1 only
 4 Sericostoma personatum 1 only
 Data sheet gives date as 05.08.92, sample label as 15.08.92

