

Discharge Monitoring in the Kennet Catchment

Part 1

Ecological Effects of Sewage and Trade Effluents

Environmental Agency

Thames Region

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KENNET CATCHMENT BIOLOGICAL REPORT SERIES

This report is one of a series of reports about the biology of the River Kennet catchment. The series covers all aspects of biological monitoring of the catchment carried out by the NRA Biology Section. Some reports cover the general status of the catchment, whilst others relate to specific problems identified in the Draft Kennet Catchment Management Plan. A list of reports being produced is given below.

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Bacteriology of the Kennet Catchment

Algal Surveys and Eutrophication in the Kennet Catchment

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Fish Health Checks (Summary)

Discharge Monitoring in the Kennet Catchment

Part 1. Ecological Effects of Sewage and Trade Effluents

Part 2. Ecological Effects of Fish Farm Discharges

A Comparison of the Ecology of the River Kennet and Kennet and Avon Canal

Standing Waters of the Kennet Catchment (Summary)

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Figure 1. Discharges Monitored in the Kennet Catchment

Appendix 1. Biological Laboratory Reports and Taxa Lists

SUMMARY

- Sixteen Thames Water Plc Sewage Treatment Works (STWs), two private STWs and two trade effluent discharges were monitored as part of the Kennet Catchment Survey.
- Biological samples were taken in the receiving watercourses upstream and downstream of each discharge using the three minute kick-sweep technique. RIVPACS was used to predict the biological scores that each site would have achieved assuming there were no pollution.
- Five of the Thames Water Plc STW discharges were found to have a detrimental effect on the fauna of their receiving watercourses in the first season they were sampled.
- Two of these, Hungerford and Silchester STWs appeared to cause no detrimental effect when the two seasons samples were considered together.
- Burghfield and Washwater STWs were found to have an detrimental effect on the faunas of the Clayhill Brook and Pound Street Brook respectively when the two seasons data were considered together. It may be that the consents for these STWs should be assessed.
- Chieveley STW had poor biological quality below the discharge. The watercourse was dry above the STW.
- Eleven STWs appeared to have no effect on the fauna of their receiving watercourses.
- Of the private two STWs monitored, neither was found to have a detrimental effect on the fauna of their receiving watercourses. The biological quality was good both above and below the discharges.
- The biological quality improved below the two trade effluents monitored, Greenaways landfill and ARC gravel pit. Therefore, any leachate from the landfill site was having a negligible effect on the fauna of the Clayhill Brook, and the discharge from the gravel pit was of better quality than the water upstream in Clayhill Brook.

1 INTRODUCTION

1.1 Reason For Survey

Sewage Treatment Works (STWs) and trade effluents were considered as a possible source of pollution to be monitored as part of the Kennet Catchment Survey.

The main type of pollution from these discharges is organic pollution, and sometimes chemical pollutions.

A map showing the location of the discharges monitored for the Kennet catchment survey is given in figure 1.

1.2 Thames Water Plc STWs and Sampling Sites

All those Thames Water Plc STWs with discharge volume greater than 500 cubic metres per day and those which were present on the list of consent failures for 1992/93) were to be sampled.

The sites were selected to allow adequate mixing of effluent with the surface water.

Table 1 contains the Thames Water Plc STWs sampled, the receiving watercourses and the upstream and downstream sampling site codes.

1.3 Private STWs

Originally, no private STWs were to be monitored for this survey due to the small discharge volumes compared with those of the receiving watercourses. However, two were monitored in autumn due to the discharges failing their consents. These are given in table 2 with the receiving watercourse and upstream and downstream sampling sites.

1.4 Trade Effluent Discharges

The presence of a number of gravel pits and their associated dewatering discharges were considered to be a potential source of change to the fauna of the watercourses in the Kennet Catchment. Landfill sites were considered to be a potential source of pollution.

Most of the trade effluents were not sampled due to the small volumes discharged compared with that of the watercourse, or due to the types of discharge. In addition, a number of gravel pit dewatering discharges were discontinued before this survey began. Only two trade effluent discharges were monitored. The two discharges were considered together because access between the them was difficult. The discharges and the upstream and downstream sampling sites are given in table 3.

Table 1. Thames Water Plc STW Discharge Sampling Sites

STW	Watercourse	UPSTREAM	DOWNSTREAM
Burghfield	Clayhill Brook	PKER.0098	PKER.0099
Aldermaston	Fishermans Brook	PKER.9994	PKER.0192
Stratfield Mortimer	Foudry Brook	PKER.0020	PKER.0105
Reading	Foudry Brook	PKER.0170	PKER.0103
Froxfield	Froxfield Stream	PKER.0106	PKER.0150
Fyfield	Kennet	PKER.9999	PKER.0104
Marlborough	Kennet	PKER.0180	PKER.179
Hungerford	Kennet	PKER.0159	PKER.0160
Newbury	Kennet	PKER.154	PKER.0153
Kingsclere	Kingsclere Brook	PKER.0178	PKER.0152
East Shefford	Lambourn	PKER.0063	PKER.0062
Washwater	Pound Street Brook	PKER.0114	PKER.0113
Silchester	Silchester Brook	PKER.0081	PKER.0083
Sulhamstead	Sulhamstead Stream	PKER.9947	PKER.9946
Chieveley	Winterbourne	PKER.9945	PKER.0146
Winterbourne	Winterbourne	PKER.0145	PKER.0155

Table 2. Private STW Discharge Sampling Sites

STW	Watercourse	UPSTREAM	DOWNSTREAM
St Gabriel;s School, Newbury	Enborne	PKER.9993	PKER.9992
Swan Public House, Newtown	Enborne	PKER.0101	PKER.9991

Table 3. Trade Effluent Discharge Sampling Sites

STW	Watercourse	UPSTREAM	DOWNSTREAM
Burghfield Gravel Pit	Clayhill	PKER.9998	PKER.0171
Greenaways Landfill T/E	Brook		

2 METHODS

2.1 Sampling Frequency

For all discharges, invertebrate samples were to be taken for one season unless a detrimental effect was seen. In this instance, samples were to be taken for a second season. The macroinvertebrate fauna was used for monitoring the discharges because it is an indicator of organic pollution, is affected by oxygen sags and can show toxic effects.

2.2 Sampling Technique

Biological samples were taken upstream and downstream of each STW discharge using the three minute kick-sweep technique. The samples were checked in the field and then taken back to the laboratory for sorting and identification of the invertebrates. The Biological Monitoring Working Party (BMWP) score and Average Score Per Taxon (ASPT) were calculated for each sample (Armitage et al, 1983). The River and InVertebrate Prediction And Classification System (RIVPACS) was used to predicted the BMWP score for the site assuming there was no pollution (Wright et al, 1989). The Environmental Quality Indices (EQI) for BMWP score and ASPT were obtained from the observed/predicted ratio. The nearer to one the EQI, the better the biological quality.

3 RESULTS & DISCUSSION

Each discharge was considered separately and overviews given in the conclusion. Routine reports and taxa lists are attached in appendix 1.

3.1 Thames Water Plc STWs

Some of the STW were seen to have a detrimental effect in the first season and were sampled for a second season.

3.1.1 Burghfield STW

The Spring sample revealed a reduced BMWP score and ASPT below the STW compared with that above. Therefore, a second sample was taken in the Autumn and the results combined. The two season's combined data are given below and used from here on.

	Upstream			Downstream		
	OBS	PRED	EQI	OBS	PRED	EQI
BMWP	101	130	0.77	50	137	0.37
ASPT	5.1	5.5	0.92	3.8	5.3	0.73
No. Taxa	20	24	0.84	13	26	0.51

The EQIs for BMWP and ASPT upstream were close to one whilst those downstream were lower than one. High scoring (pollution-sensitive) mayflies, dragonflies, stoneflies and caddisflies were present upstream of the discharge. Downstream, only one caddisfly family scoring greater than six was present. Pollution-tolerant taxa were abundant downstream, as were freshwater shrimps in one of the samples. These facts indicate organic enrichment downstream of the discharge. Therefore, Burghfield STW was having a detrimental effect on the fauna of Clayhill Brook.

3.1.2 Aldermaston STW

When this site was sampled in autumn there were signs of recent dredging upstream. This may account for the low score and EQI for BMWP above the discharge. The ASPT at this site was high and top-scoring mayflies were present. Below the discharge, the EQIs for BMWP and ASPT were near to one and high scoring taxa were present. Therefore, Aldermaston STW was having no effect on the fauna of Fishermans Brook. The low score upstream was probably due to dredging and removal of habitat rather than water quality problems.

3.1.3 Stratfield Mortimer STW

In the summer sample, the BMWP scores and ASPTs were similar upstream and downstream, and were all close to the predictions for the sites. No top-scoring taxa were found at either site but high-scoring caddisflies and damselflies were present. Pollution-tolerant taxa were not markedly abundant below the discharge. Therefore, Stratfield Mortimer STW was having no noticeable detrimental effect on the fauna of Foudry Brook.

3.1.4 Reading STW

The BMWP score was higher upstream than downstream and the EQI for BMWP was 0.75 and 0.41 respectively. The ASPT was lower above the discharge than below with EQIs for ASPT of 0.84 and 0.92. A second sample below the STW taken for routine purposes revealed an intermediate score and taxa list. This indicates that the low score below the STW in spring was possibly due to habitat, flow or toxic problems rather than organic pollution problems. The site below the works was too deep to sample effectively and only the margins could be sampled. In addition, poor-swimming taxa were missing compared with the sample taken upstream in summer. Therefore, the restricted score below the discharge was most likely to be due high winter flows or difficulty in sampling at this site and cannot conclusively be attributed to the discharge from Reading STW. Extensive foaming was seen downstream, possibly due to the shape of the outlet.

3.1.5 Froxfield STW

This discharge was monitored in summer. The BMWP score, ASPT and EQIs were slightly lower, and the abundance of pollution-tolerant chironomid larvae and worms was higher below the discharge than above. This suggests that there was some organic enrichment below the discharge. However the watercourse had been dammed below the discharge and had silted up. Since top-scoring (pollution-sensitive) taxa were present below the discharge, the reduced habitat quality was the most likely cause of the reduced biological quality. Therefore, Froxfield STW was having no marked effect on the fauna of Froxfield Stream.

3.1.6 Fyfield STW

When this site was visited in summer, the site upstream of the discharge was dry. Below the discharge, the BMWP score was close the that predicted and the EQI for ASPT was greater than one indicating the presence of top-scoring taxa. Pollution-tolerant taxa were not markedly abundant. Therefore, there was no sign of any detrimental effect on the fauna of the River Kennet from Fyfield STW.

3.1.7 Marlborough STW

The BMWP score and ASPTs were similar upstream and downstream when visited in summer. Top-scoring taxa were found at both sites and no shift in community structure was

seen below the discharge. Therefore, Marlborough STW was having no detrimental effect on the fauna of the River Kennet.

3.1.8 Hungerford STW

The summer sample revealed a reduced BMWP score and ASPT below the STW compared with that above. Cladophora covered the upstream site and was abundant downstream. Therefore, a second sample was taken in the Autumn and the results combined. The two season's combined data is given below and considered from here on.

	Upstream			Downstream		
	OBS	PRED	EQI	OBS	PRED	EQI
BMWP	151	141	1.07	155	142	1.09
ASPT	5.0	5.1	1.00	5.0	5.1	0.99
No. Taxa	30	28	1.08	31	28	1.11

Above the discharge, there has been a decrease in BMWP score since the summer sample whilst the BMWP score increased considerably below the discharge in that period. There was an increase in the abundance of pollution-tolerant taxa at both sites, most notably above the discharge, indicating organic enrichment from above the STW. The combined data reveals that all EQIs above and below the STW approximated to one. Therefore, no detrimental effect was seen on the fauna of the Kennet as a result of the discharge from Hungerford STW. The River Dun, Eddington Mill Stream, Denford Mill House STW and Water Gardens Fish Farm enter the Kennet above Hungerford STW and should be considered as potential sources of pollution.

3.1.9 Newbury STW

When sampled in summer, the BMWP score was 185 both above and below the discharge, much higher than the predicted scores. The EQIs for ASPT were also greater than one reflecting the fact that a number of top-scoring (pollution-sensitive) taxa were found at each site. Therefore, no detrimental effect was seen on the fauna of the Kennet as a result of the discharge from Newbury STW. A more detailed survey above and below Newbury STW on the 7th December 1993 following a discharge of sludge into the River Kennet revealed a slight depletion in the fauna downstream of the discharge (Anna Macqueen, NRA internal report, reference AM/rep1).

The River Lambourn, Wilderness Stream and Hamstead Stream enter the Kennet between Hungerford and Newbury STWs which may account for the improvement in biological quality between these reaches.

3.1.10 Kingsclere STW

Summer sampling revealed similar scores above and below the discharge (89 and 85 respectively) and EQIs of 0.85 and 0.77 respectively. The ASPT was slightly lower downstream, reflecting the loss of two top-scoring caddisfly families and an increase in the number of pollution-tolerant families, compared with upstream. However, some top-scoring taxa were found below the STW and the community changes were not severe so it cannot be stated conclusively that water quality problems rather than habitat problems were the cause. Therefore, Kingsclere STW was not shown to have a marked detrimental effect on the fauna of Kingsclere Brook.

3.1.11 East Shefford STW

The BMWP scores, ASPTs and taxa lists were similar above and below the discharge. Both scores and ASPTs were similar to those predicted. Therefore East Shefford STW was having no noticeable detrimental effect on the fauna of the River Lambourn.

3.1.12 Washwater STW

The summer sample revealed a reduced BMWP score and ASPT below the STW compared with that above. Red chironomid larvae were present in their thousands and sewage fungus was present below the discharge indicating organic enrichment. Therefore, a second sample was taken in the autumn and the results combined. The two season's combined data is given below and considered from here on.

	Upstream			Downstream		
	OBS	PRED	EQI	OBS	PRED	EQI
BMWP	159	134	1.19	65	137	0.47
ASPT	5.9	5.6	1.05	4.6	5.5	0.84
No. Taxa	27	24	1.13	14	25	0.57

Above the discharge, the fauna was diverse and the EQIs for BMWP and ASPT were greater than one indicating that the sites achieved their potential. Below the discharge, the fauna was restricted, the EQIs were low, pollution-tolerant taxa were abundant and sewage fungus was present downstream. This indicates that there was organic pollution below the discharge. Therefore, Washwater STW was having a detrimental effect on the fauna of Pound Street Brook. This effect was considered to be severe.

3.1.13 Silchester STW

The sites above and below the STW were sampled twice during the survey for other purposes. In the first season, the BMWP score was slightly lower below the discharge than above and pollution-tolerant taxa were more abundant. The two season's combined data were used for greater confidence and these results are considered below.

	Upstream			Downstream		
	OBS	PRED	EQI	OBS	PRED	EQI
BMWP	88	136	0.64	96	139	0.69
ASPT	4.6	5.2	0.90	4.6	5.2	0.88
No. Taxa	19	26	0.72	21	26	0.79

The EQIs for BMWP score and ASPT were similar above and below the STW. There was no sign of severe organic pollution below the STW although the observed scores were below potential at both sites. It is of note that the BMWP score above the STW decreased from 88 in February to 55 in October. There are no consented discharges above Silchester STW although there may be urban run-off. Therefore, the fauna was not detrimentally effected by the discharge from Silchester STW, but any effects may have been masked by poor water quality above the STW. Sewage fungus was seen below the discharge indicating some organic enrichment.

3.1.14 Sulhamstead H/S STW

Although deep soft silts dominated, the fauna has improved both above and below the discharge since 1992. Top-scorers were found at both sites in this spring sample although there were fewer downstream. No shift towards a pollution-tolerant fauna was seen. The instream plants were similar in composition and type at the two sites. Therefore, Sulhamstead STW was having no detrimental effect on the fauna or flora of Sulhamstead Stream.

3.1.15 Chieveley STW

The watercourse was dry above the discharge. Below the discharge, the fauna was restricted with only three abundant pollution-tolerant taxa giving a BMWP score of 10. Since there was no upstream site, a second sample was not taken. This indicates that there is organic pollution below Chieveley STW which is restricting the fauna.

3.1.16 Winterbourne STW

Above the discharge, the fauna was restricted with five pollution-tolerant taxa, some of which were abundant indicating organic enrichment. Below the STW discharge, the fauna was diverse with EQIs of greater than one for BMWP and ASPT. Top-scoring mayflies and caddisflies were present. Therefore, it would seem that the influx of water from the STW to the watercourse has improved the biological quality of the River Winterbourne. The poor water quality upstream is probably either from Chievely STW or lack of flow.

3.2 Private STWs

3.2.1 St Gabriel's School STW

The BMWP scores were high both above and below the STW discharge and the EQIs were greater than one. Therefore, the sites were of high biological quality with diverse faunas. The ASPTs also exceeded the predictions at both sites reflecting the presence of several top-scoring (pollution-sensitive) taxa. Therefore, St Gabriel's School STW was having no detrimental effect on the fauna of the River Enborne.

3.2.2 Swan Public House STW

The BMWP scores above and below the discharge were high with EQIs for BMWP close to one. Several top-scoring taxa were found at each site and the EQI for ASPTs exceeded one. Therefore, the Swan Public House STW was having no detrimental effect on the fauna of the River Enborne.

3.3 Trade Effluent Discharges

The BMWP score was 52 upstream of the two discharges but 101 downstream. The EQI_{BMWP} also increased from 0.56 to 1.13 moving downstream. The ASPT reflected this increase indicating a change in the community structure to a more pollution-intolerant fauna downstream compared with that upstream. This is probably because the Clayhill Brook has poor water quality upstream and so the input of water from the gravel pit diluted the impurities in the water giving an increase in the biological quality. It would appear that any leachate from the landfill site was having a negligible effect on the fauna of the Clayhill Brook.

4 CONCLUSIONS

4.1 Thames Water Plc STWs

Five of the Thames Water Plc STW discharges were found to have a detrimental effect on the fauna of their receiving watercourses in the first season they were sampled.

Two of these, Hungerford and Silchester STWs appeared to cause no detrimental effect when the two seasons samples were considered together. Both were subject to poor biological quality upstream of the discharges. Sewage fungus was seen below Silchester STW on the first visit.

Burghfield and Washwater STWs were found to have an detrimental effect on the faunas of the Clayhill Brook and Pound Street Brook respectively when the two seasons data were considered together. In both cases, a depressed score was seen and pollution-tolerant taxa were abundant downstream, whilst the community was diverse upstream. Sewage fungus was seen below Burghfield STW in the Clayhill Brook. It may be that the consents for these STWs should be assessed or the level of monitoring increased.

The River Winterbourne was dry above Chievely STW. The biological quality was poor below the STW with a low score and only three pollution-tolerant taxa. Above Winterbourne STW, the fauna was restricted indicating organic enrichment or low flow whilst below the STW the fauna was diverse including top-scoring mayflies and caddisflies. It would seem that Winterbourne STW discharge has improved the biological quality of the River Winterbourne. The poor water quality upstream is probably either due to the discharge from Chievely STW or a lack of flow.

Eleven STWs appeared to have no effect on the fauna of their receiving watercourses. Reading and Froxfield STWs had poor scores below the discharges but high ASPTs. This was therefore probably caused by habitat problems which were evident at each site rather than organic pollution.

4.2 Private STWs

Of the private STWs monitored, none were found to have a detrimental effect on the faunas of their receiving watercourse. The biological quality was good both above and below the discharges.

4.3 Trade Effluent Discharges

Overall the biological quality improved below the two discharges, Greenaways landfill and ARC gravel pit. Therefore, any leachate from the landfill site was having a negligible effect on the fauna of the Clayhill Brook, and the discharge from the gravel pit was of better quality than the water upstream in Clayhill Brook.

5 REFERENCES

Armitage, P. D. et al (1983). The Performance of a New Biological Water Quality Score System Based on Macroinvertebrates Over a Wide Range of Unpolluted Running-Water Sites. *Water Res.* Vol. 17. N° 3. pp. 333-347.

Wright, J. F. et al (1989). Prediction of Invertebrate Communities Using Stream Measurements. *Regulated Rivers: Research & Management* Vol4, pp. 147-155.

A handwritten signature in black ink, appearing to read 'JBY', is written over a horizontal line. The signature is stylized and cursive.

JULIE BYWATER
Biology

Figure 1. Discharges Monitored in the Kennet Catchment



0 10km

- | | |
|---------------------------|----------------------|
| 1 Burghfield STW | 9 Newbury STW |
| 2 Aldermaston STW | 10 Kingsclere STW |
| 3 Stratfield Mortimer STW | 11 East Shefford STW |
| 4 Reading STW | 12 Washwater STW |
| 5 Froxfield STW | 13 Silchester STW |
| 6 Fyfield STW | 14 Sulhamstead STW |
| 7 Marlborough STW | 15 Chieveley STW |
| 8 Hungerford STW | 16 Winterbourne STW |

- 17 St Gabriel's School STW
- 18 Swan Public House STW
- 19 Greenaways Landfill T/E
- 20 ARC Ltd M/W

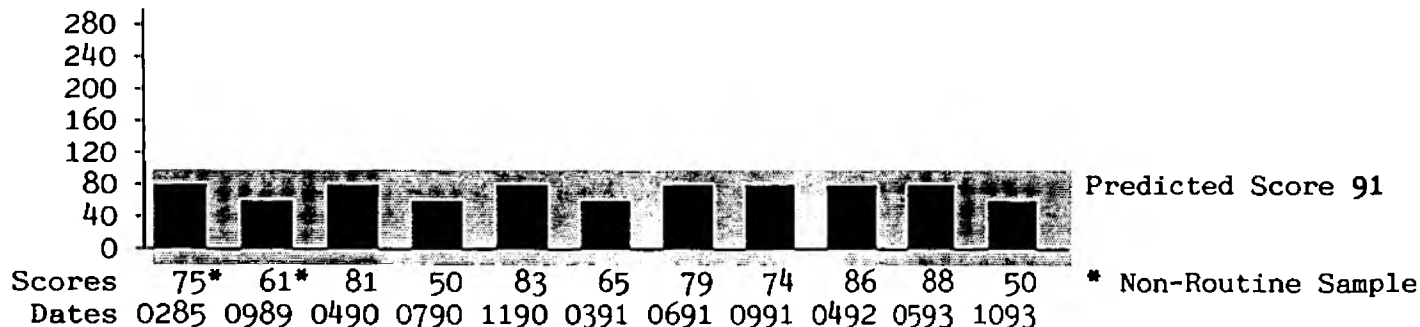
- ← Thames Plc STW
- ← Private STW
- ← Trade Effluents





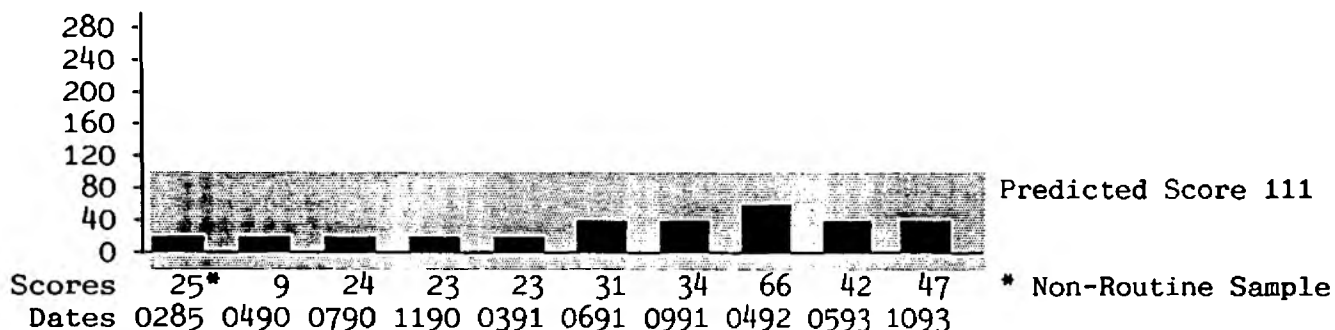
APPENDIX 1

01930415 Clayhill Brook Above Burghfield Stw
 Site Ref PKER.0098 Grid Ref SU65506840 Sampled 04/10/1993 at 10:15
Scores Current 50 Previous 88 Change is 43% Deterioration. Biotic Class D



Comments Lower score than May sample. Leptophlebiidae, Polycentropidae, Tipulidae missing in this sample compared to the May sample.

01930416 Clayhill Brook Below Burghfield Stw
 Site Ref PKER.0099 Grid Ref SU66006880 Sampled 04/10/1993 at 10:45
Scores Current 47 Previous 42 Change is 11% Improvement. Biotic Class D



Comments Similar score to last sample. Hydropsychidae found for the first time at this site. Abundance of Gammaridae reduced by two orders of magnitude compared to the last sample.

Specially selected samples

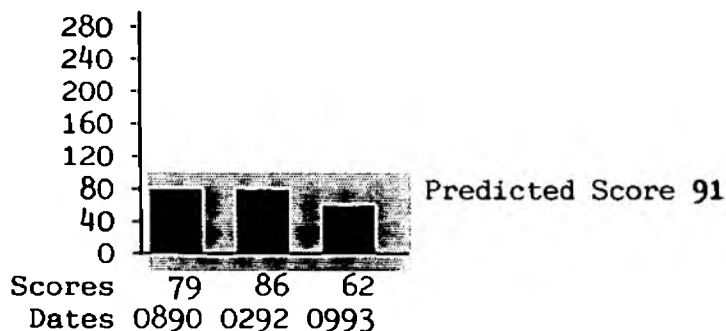
Taxa List for PKER.0098 Clayhill Brook Above Burghfield Stw SU65506840
 PKER.0098 Clayhill Brook Above Burghfield Stw SU65506840
 PKER.0099 Clayhill Brook Below Burghfield Stw SU66006880
 PKER.0099 Clayhill Brook Below Burghfield Stw SU66006880

Biology Area	01	01	01	01
Day	07	04	20	04
Month	May	Oct	May	Oct
Year	1993	1993	1993	1993
*Non Routine Sample				
Sample Number	0137	0415	0153	0416
Site Code	PKER 0098	PKER 0098	PKER 0099	PKER 0099
LEPTOPHLEBIIDAE	**			
AESHNIDAE	*			
NEMOURIDAE	*			
RHYACOPHILIDAE	*	*		
POLYCENTROPIDAE	**			
LIMNEPHILIDAE	**	*	**	*
ANCYLIDAE		*		
GAMMARIDAE	*	*	*****	**
GERRIDAE	*			
DYTISCIDAE			*	*
ELMIDAE	*	*		
HYDROPSYCHIDAE				**
TIPULIDAE	*			
SIMULIIDAE			***	**
PLANARIIDAE	*			
BAETIDAE	*		**	**
SIALIDAE		*		
HYDROBIIDAE	**	**	*	*
SPHAERIIDAE		**	*	
GLOSSIPHONIIDAE	**	**	**	*
ERPOBDELLIDAE	*	**		*
ASELLIDAE			***	**
CHIRONOMIDAE	**	**	****	**
OLIGOCHAETA	*	**	***	**
BMWP Score	88	50	42	47
Pred. BMWP Score	104	91	126	111
BMWP/Pred BMWP	0.85	0.55	0.33	0.42
ASPT	5.18	4.17	3.82	3.92
Predicted ASPT	5.40	5.00	5.20	5.10
ASPT/Pred ASPT	0.96	0.83	0.73	0.77
Biotic Class	C	D	D	D

01930541 **Fishermans Brook Above Aldermaston Stw, Aldermaston**
Site Ref PKER.9994 Grid Ref SU59106550 Sampled 30/11/1993 at 10:30
Scores Current 48 Predicted 91 Biotic Class D

Comments Site sampled for the first time. Despite presence of top scoring Ephemerid mayflies the fauna is quite restricted. Evidence of recent dredging of the channel.

01930379 **Fishermans Brook Above Padworth Stream**
Site Ref PKER.0192 Grid Ref SU60806630 Sampled 09/09/1993 at 12:00
Scores Current 62 Previous 86 Change is 27% Deterioration. Biotic Class C



Comments American signal crayfish (all approx. 2cm long) and Phryganeid caddisflies found for the first time at this site.

Specially selected samples

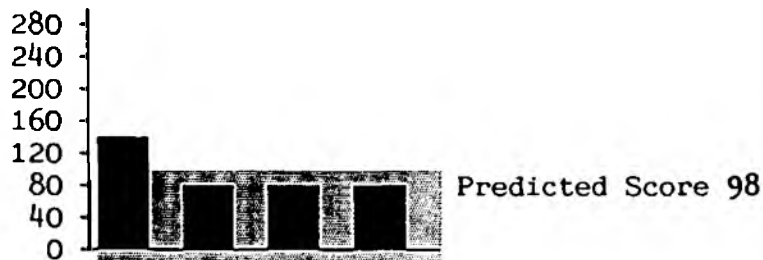
Taxa List for PKER.9994 Fishermans Brook Above Aldermaston Stw, Aldermasto SU59106550
 PCHR.0029 Gallos Brook Above Ray (Oxon) At Islip SP53001420

Biology Area	01	01
Day	30	07
Month	Nov	Sep
Year	1993	1993
*Non Routine Sample		
Sample Number	0541*	0397*
Site Code	PKER 9994	PCHR 0029
EPHEMERIDAE	*	
LIMNAPHILIDAE	*	*
UNIONIDAE		*
GAMMARIDAE	**	*
HYDROMETRIDAE		*
GERRIDAE		*
HALIPLIDAE		*
DYTISCIDAE		*
EIMIDAE	*	**
HYDROPSYCHIDAE	*	*
TIPULIDAE	*	*
SIMULIIDAE		**
SIALIDAE	*	*
VALVATIDAE		***
HYDROBIIDAE		**
LYMNAEIDAE		**
PLANORBIDAE		**
SPHAERIIDAE		***
GLOSSIPHONIIDAE	*	**
ERPOBDELLIDAE		*
ASELLIDAE		**
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	48	90
Pred. BMWP Score	91	92
BMWP/Pred BMWP	0.53	0.98
ASPT	4.80	4.09
Predicted ASPT	4.80	4.50
ASPT/Pred ASPT	1.00	0.91
Biotic Class	D	C

01930351 Foudry Brook At Mortimer Railway Station

Site Ref PKER.0020 Grid Ref SU67206420 Sampled 24/08/1993 at 13:15

Scores Current 73 Previous 80 Change is 8% Deterioration. Biotic Class C



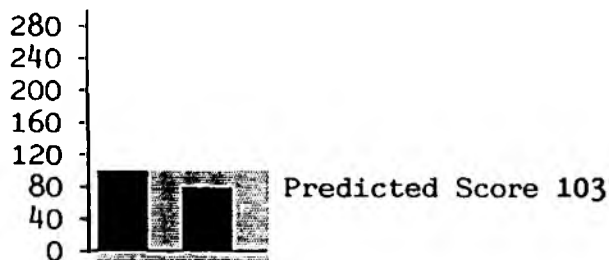
Scores 130 86* 80* 73* * Non-Routine Sample
Dates 0680 0386 0692 0893

Comments Similar score to 1992 sample. Platycnemidae, Gerridae, Notonectidae & Hydrophilidae found for the first time at this site.

01930350 Foudry Brook Below Stratfield Mortimer Stw

Site Ref PKER.0105 Grid Ref SU67906510 Sampled 24/08/1993 at 12:20

Scores Current 86 Previous 90 Change is 4% Deterioration. Biotic Class C



Scores 90* 86* * Non-Routine Sample
Dates 0386 0893

Comments Little change to 1986 score. Top scorers Heptageniidae, Leptoceridae missing in this sample.

Specially selected samples

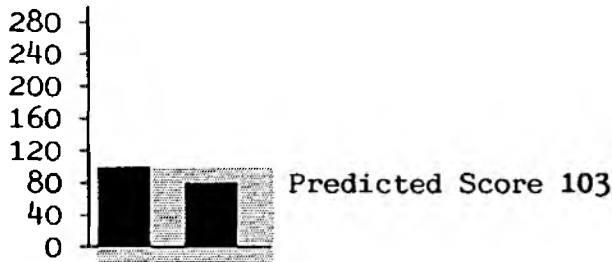
Taxa List for PKER.0020 Foudry Brook At Mortimer Railway Station SU67206420
 PKER.0105 Foudry Brook Below Stratfield Mortimer Stw SU67906510

Biology Area	01	01
Day	24	24
Month	Aug	Aug
Year	1993	1993
*Non Routine Sample		
Sample Number	0351*	0350*
Site Code	PKER 0020	PKER 0105
CALOPTERYGIDAE	*	
PSYCHOMYIIDAE	*	*
CAENIDAE		*
RHYACOPHILIDAE		*
ANCYLIDAE		*
PLATYCNEMIDAE	**	
COENAGRIIDAE		*
GERRIDAE	*	
NOTONECTIDAE	*	
HALIPLIDAE	**	*
DYTISCIDAE	**	*
HYDROPHILIDAE	*	
ELMIDAE	*	**
HYDROPSYCHIDAE		**
TIPULIDAE		*
SIMULIIDAE		**
BAETIDAE		*
LYMNAEIDAE	*	
PLANORBIDAE	**	*
SPHAERIIDAE	**	**
GLOSSIPHONIIDAE	**	*
ERPOBDELLIDAE	**	*
ASELLIDAE	**	*
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	73	86
Pred. BMWP Score	98	103
BMWP/Pred BMWP	0.74	0.83
ASPT	4.29	4.53
Predicted ASPT	4.60	4.70
ASPT/Pred ASPT	0.93	0.96
Biotic Class	C	C

01930280 **Foudry Brook Above Reading Stw**

Site Ref PKER.0170 Grid Ref SU70907030 Sampled 21/07/1993 at 15:00

Scores Current 77 Previous 92 Change is 16% Deterioration. Biotic Class C



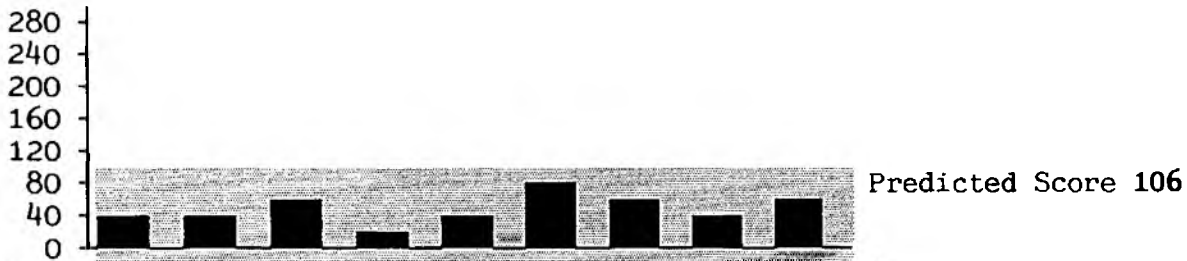
Scores 92* 77* * Non-Routine Sample
Dates 0891 0793

Comments Slightly lower score than 1991 sample. High scoring Agriidae & Limnephilidae missing in this sample. Notonectidae, Haliplidae Hygrobiidae & Sialidae found for the first time.

01930483 **Foudry Brook Below Reading Stw**

Site Ref PKER.0103 Grid Ref SU71107080 Sampled 03/11/1993 at 12:00

Scores Current 52 Previous 45 Change is 15% Improvement. Biotic Class C



Scores 49* 46 53 27 37 72* 59 45 52 * Non-Routine Sample
Dates 1283 0688 0989 1190 0691 0891 0892 0493 1193

Comments Little change to score. Agriidae & Hydroptilidae missing in this sample compared to the last sample.

Specially selected samples

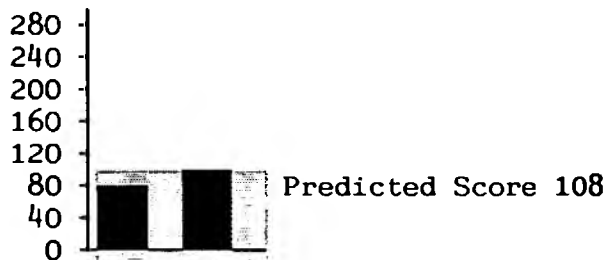
Taxa List for PKER.0170 Foudry Brook Above Reading Stw SU70907030
 PKER.0103 Foudry Brook Below Reading Stw SU71107080
 PKER.0103 Foudry Brook Below Reading Stw SU71107080

Biology Area	01	01	01
Day	21	27	03
Month	Jul	Apr	Nov
Year	1993	1993	1993
*Non Routine Sample			
Sample Number	0280*	0117	0483
Site Code	PKER 0170	PKER 0103	PKER 0103
CALOPTERYGIDAE		*	
ANCYLIDAE	*		
HYDROPTILIDAE		*	
GAMMARIDAE	**	*	*
COENAGRIIDAE	*	**	**
GERRIDAE		*	
NOTONECTIDAE	*		
CORIXIDAE			*
HALIPLIDAE	*		*
HYGROBIIDAE	*		
DYTISCIDAE	*	*	*
TIPULIDAE			*
PLANARIIDAE	*		
BAETIDAE			**
SIALIDAE	*		
PISCICOLIDAE			*
VALVATIDAE	*		
HYDROBIIDAE	*		
LYMNAEIDAE	*	*	*
PHYSIDAE	**		
PLANORBIDAE	*		
SPHAERIIDAE	**		
GLOSSIPHONIIDAE	*		
ERPOBDELLIDAE	*		*
ASELLIDAE	**	**	**
CHIRONOMIDAE	**	**	**
OLIGOCHAETA	**	***	**
BMWP Score	77	45	52
Pred. BMWP Score	103	110	106
BMWP/Pred BMWP	0.75	0.41	0.49
ASPT	3.85	4.50	4.00
Predicted ASPT	4.60	4.90	4.70
ASPT/Pred ASPT	0.84	0.92	0.85
Biotic Class	C	D	C

01930369 Froxfield Stream Just Above Froxfield

Site Ref PKER.0106 Grid Ref SU29706790 Sampled 26/08/1993 at 12:15

Scores Current 99 Previous 87 Change is 13% Improvement. Biotic Class C



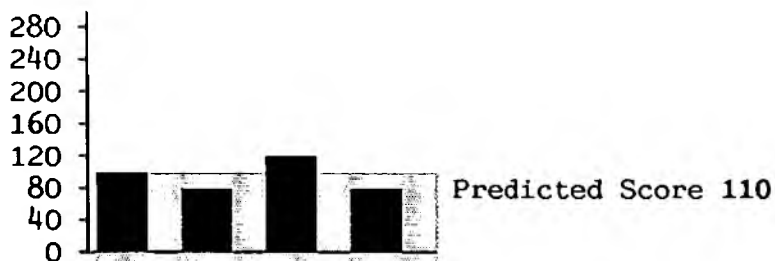
Scores 87* 99* * Non-Routine Sample
Dates 0386 0893

Comments Little change to score. Goeridae, Rhyacophilidae, Haliplidae, Sialidae seen for the first time at this site.

01930239 Froxfield Stream Above Dun

Site Ref PKER.0150 Grid Ref SU30566778 Sampled 06/07/1993 at 13:00

Scores Current 88 Previous 116 Change is 24% Deterioration. Biotic Class C



Scores 94* 71 116 88 * Non-Routine Sample
Dates 0690 1191 0592 0793

Comments Several middle-lower scoring taxa found for the first time at this site. Some high scoring taxa missing compared with previous samples. The stream was dammed above the pub causing the stream to silt up considerably. The pub has also put concrete steps down to the waters edge the width of the garden.

Specially selected samples

Taxa List for PKER.0106 Froxfield Stream Just Above Froxfield SU29706790

PKER.0150 Froxfield Stream Above Dun SU30566778

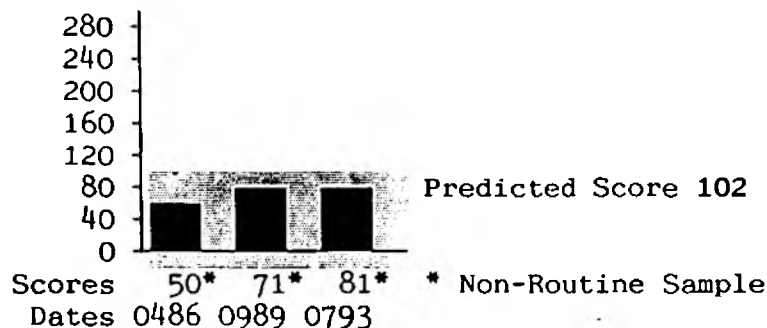
Biology Area	01	01
Day	26	06
Month	Aug	Jul
Year	1993	1993
*Non Routine Sample		
Sample Number	0369*	0239
Site Code	PKER	PKER
	0106	0150
EPHEMERELLIDAE	*	**
GOERIDAE	*	*
SERICOSTOMATIDAE	**	
RHYACOPHILIDAE	**	
LIMNAPHILIDAE	**	**
ANCYLIDAE	**	
GAMMARIDAE	**	**
HALIPLIDAE	*	*
DYTISCIDAE		*
HYDROPHILIDAE		*
ELMIDAE	*	
TIPULIDAE		*
PLANARIIDAE		*
BAETIDAE	*	**
SIALIDAE	*	*
PISCICOLIDAE	*	*
HYDROBIIDAE		*
LYMNAEIDAE	*	
PHYSIDAE	*	
PLANORBIDAE	**	
SPHAERIIDAE	**	**
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	**
ASELLIDAE		*
CHIRONOMIDAE	**	***
OLIGOCHAETA	*	**
BMWP Score	99	88
Pred. BMWP Score	108	110
BMWP/Pred BMWP	0.92	0.80
ASPT	4.95	4.63
Predicted ASPT	5.10	5.00
ASPT/Pred ASPT	0.97	0.93
Biotic Class	C	C

Routine Biological Report. For Fobney - Thames Region Admin Office: Catch STW

01930370 Kennet Above Fyfield Stw At R/b
Site Ref PKER.9999 Grid Ref SU14806715 Sampled 07/09/1993 at 10:15
Scores Current 0 Predicted 0 Biotic Class 00

Comments DRY WATERCOURSE.

01930282 Kennet Above Manton
Site Ref PKER.0104 Grid Ref SU16706860 Sampled 26/07/1993 at 11:30
Scores Current 81 Previous 71 Change is 14% Improvement. Biotic Class C



Comments Slightly higher score than previously. Rhyacophilidae, Leptophlebiidae & Elmidae missing in this sample while Ephemerellidae, Sialidae, Lymnaeidae & Asellidae were found for the first time.

Specially selected samples

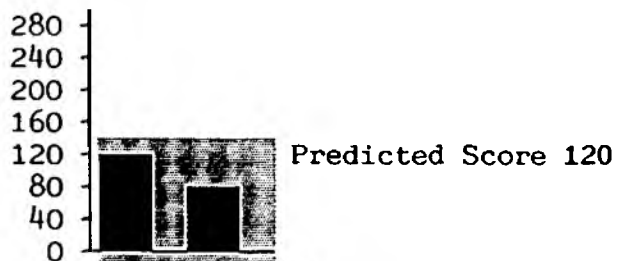
Taxa List for PKER.9999 Kennet Above Fyfield Stw At R/b SU14806815
 PKER.0104 Kennet Above Manton SU16706860

Biology Area	01	01
Day	07	26
Month	Sep	Jul
Year	1993	1993
*Non Routine Sample		
Sample Number	0370	0282*
Site Code	PKER	PKER
	9999	0104
EPHEMERELLIDAE		**
SERICOSTOMATIDAE		**
LIMNAPHILIDAE		*
GAMMARIDAE		**
HALIPLIDAE		*
DYTISCIDAE		*
TIPULIDAE		*
SIMULIIDAE		*
PLANARIIDAE		**
BAETIDAE		**
SIALIDAE		**
LYMNAEIDAE		*
SPHAERIIDAE		*
GLOSSIPHONIIDAE		*
ASELLIDAE		*
CHIRONOMIDAE	REV.	**
OLIGOCHAETA		**
BMWP Score		81
Pred. BMWP Score		102
BMWP/Pred BMWP		0.79
ASPT		4.76
Predicted ASPT		4.60
ASPT/Pred ASPT		1.03
Biotic Class		C

01930283 Kennet Below River Og, Marlborough

Site Ref PKER.0180 Grid Ref SU19686950 Sampled 26/07/1993 at 13:00

Scores Current 89 Previous 112 Change is 20% Deterioration. Biotic Class C



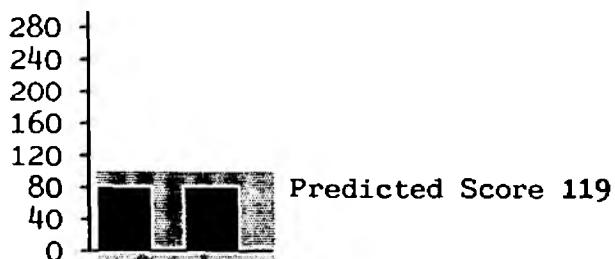
Scores 112* 89* * Non-Routine Sample
Dates 0590 0793

Comments Slightly lower score than 1990 sample. Phryganeidae, Goeridae, Hydroptilidae, Dytiscidae, Lymnaeidae & Physidae not found in this sample.

01930284 Kennet Below Marlborough Stw

Site Ref PKER.0179 Grid Ref SU20226918 Sampled 26/07/1993 at 13:45

Scores Current 84 Previous 72 Change is 16% Improvement. Biotic Class C



Scores 72* 84* * Non-Routine Sample
Dates 1190 0793

Comments Slightly higher score than 1990 sample. Limnephilidae, Ancyridae, Tipulidae, Simuliidae & Baetidae found for the first time.

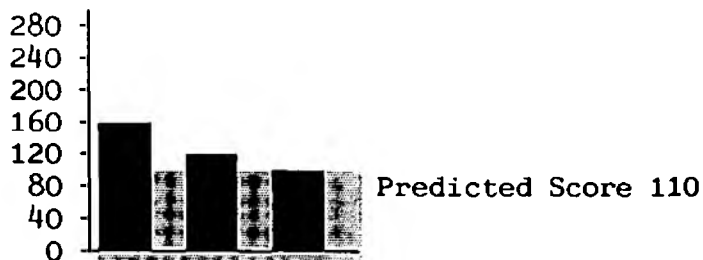
Specially selected samples

Taxa List for PKER.0180 Kennet Below River Og, Marlborough SU19686950

PKER.0179 Kennet Below Marlborough Stw SU20226918

Biology Area	01	01
Day	26	26
Month	Jul	Jul
Year	1993	1993
*Non Routine Sample		
Sample Number	0283*	0284*
Site Code	PKER	PKER
	0180	0179
EPHEMERELLIDAE	*	**
SERICOSTOMATIDAE	**	
RHYACOPHILIDAE	*	*
LIMNEPHILIDAE	**	*
ANCYLIDAE	*	**
GAMMARIDAE	****	**
DYTISCIDAE		*
ELMIDAE	*	*
TIPULIDAE	*	*
SIMULIIDAE	**	*
PLANARIIDAE	*	*
BAETIDAE	**	*
PISCICOLIDAE	*	*
PLANORBIDAE	*	*
SPHAERIIDAE		**
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	**
ASELLIDAE	*	
CHIRONOMIDAE	**	***
OLIGOCHAETA	**	**
BMWP Score	89	84
Pred. BMWP Score	120	119
BMWP/Pred BMWP	0.74	0.71
ASPT	4.94	4.67
Predicted ASPT	5.10	5.10
ASPT/Pred ASPT	0.97	0.92
Biotic Class	C	C

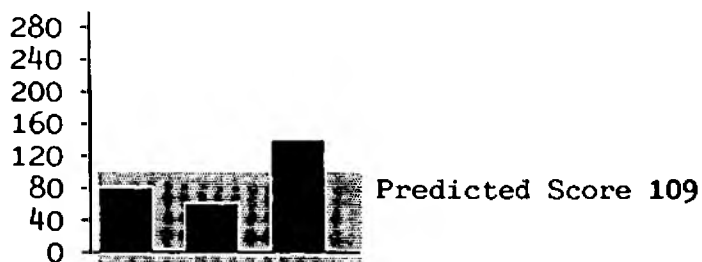
01930508 Kennet D/s Confluence Kennet And Dun
Site Ref PKER.0159 Grid Ref SU35306825 Sampled 26/11/1993 at 11:30
Scores Current 106 Previous 128 Change is 17% Deterioration. Biotic Class B



Scores 165* 128* 106* * Non-Routine Sample
Dates 0392 0893 1193

Comments This site was deeper with moor silt than below the STW. Too deep to sample all available habitats.

01930509 Kennet 200m Below Hungerford Stw
Site Ref PKER.0160 Grid Ref SU35556822 Sampled 26/11/1993 at 11:45
Scores Current 140 Previous 65 Change is 115% Improvement. Biotic Class B



Scores 83* 65* 140* * Non-Routine Sample
Dates 0392 0893 1193

Comments Filamentous alge present.

Specially selected samples

Taxa List for PKER.0159 Kennet D/s Confluence Kennet And Dun SU35306825
 PKER.0159 Kennet D/s Confluence Kennet And Dun SU35306825
 PKER.0160 Kennet 200m Below Hungerford Stw SU35556822
 PKER.0160 Kennet 200m Below Hungerford Stw SU35556822

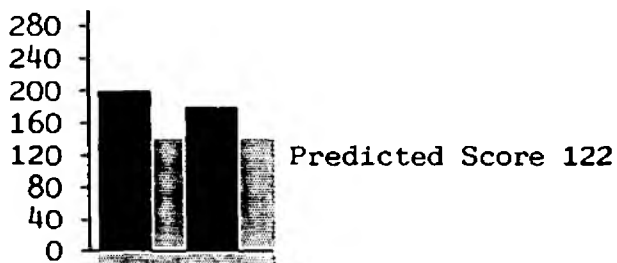
Biology Area	01	01	01	01
Day	19	26	19	26
Month	Aug	Nov	Aug	Nov
Year	1993	1993	1993	1993
*Non Routine Sample				
Sample Number	0368*	0508*	0359*	0509*
Site Code	PKER 0159	PKER 0159	PKER 0160	PKER 0160
EPHEMERELLIDAE	*			*
EPHEMERIDAE		*		*
LEPTOCERIDAE	*	*	*	
CALOPTERYGIDAE				*
PSYCHOMYIIDAE	*			
CAENIDAE	*			
RHYACOPHILIDAE	*	*		**
POLYCENTROPIDAE		*		*
LIMNEPHILIDAE	*			*
HYDROPTILIDAE	**	**		*
GAMMARIDAE	**	***	**	***
NOTONECTIDAE			*	
CORIXIDAE	*	**	*	**
HALIPLIDAE	*	*	**	**
DYTISCIDAE	*	**	*	**
GYRINIDAE				*
ELMIDAE	*			*
HYDROPSYCHIDAE	*	**		*
TIPULIDAE	*	*		*
PLANARIIDAE	*			*
BAETIDAE	**	*	*	*
SIALIDAE	**	***	**	**
PISCICOLIDAE				*
VALVATIDAE	*	***	*	**
HYDROBIIDAE	*			
LYMNAEIDAE		*		**
PHYSIDAE		**		**
PLANORBIDAE	**	***	**	***
SPHAERIIDAE	**	***	**	**
GLOSSIPHONIIDAE	**	***	**	**
ERPOBDELLIDAE	*	**	*	**
ASELLIDAE	*	***	**	**
CHIRONOMIDAE	**	****	**	***
OLIGOCHAETA	**	**	**	**
BMWP Score	128	106	65	140
Pred. BMWP Score	113	110	113	109
BMWP/Pred BMWP	1.13	0.96	0.58	1.28
ASPT	4.92	4.61	4.06	4.83
Predicted ASPT	4.80	4.80	4.80	4.80
ASPT/Pred ASPT	1.03	0.96	0.85	1.01
Biotic Class	B	B	C	B

.. Cont

01930348 Kennet Above Newbury Stw

Site Ref PKER.0154 Grid Ref SU49756677 Sampled 27/08/1993 at 11:45

Scores Current 185 Previous 194 Change is 4% Deterioration. Biotic Class A



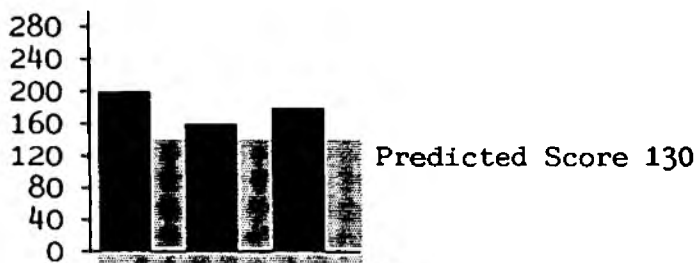
Scores 194* 185* * Non-Routine Sample
Dates 1189 0893

Comments Similar score to last sample. Ephemerellidae, Leuctridae, Goeridae & Dytiscidae found for the first time at this site. Heptageniidae together with several middle scoring taxa not found in this sample however.

01930349 Kennet Below Newbury Stw

Site Ref PKER.0153 Grid Ref SU50206648 Sampled 27/08/1993 at 12:00

Scores Current 185 Previous 151 Change is 22% Improvement. Biotic Class A



Scores 201* 151* 185* * Non-Routine Sample
Dates 1189 0592 0893

Comments Slightly higher score. Hydroptilidae & Nepidae found for the first time. Several middle scoring taxa missing in this sample however. For example Coenagriidae, Hydrometridae & Haliplidae.

Specially selected samples

Taxa List for PKER.0154 Kennet Above Newbury Stw SU49756677

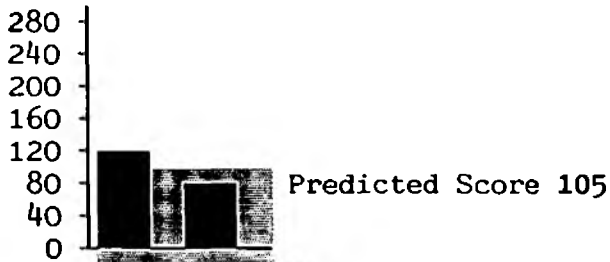
PKER.0153 Kennet Below Newbury Stw SU50206648

Biology Area	01	01
Day	27	27
Month	Aug	Aug
Year	1993	1993
*Non Routine Sample		
Sample Number	0348*	0349*
Site Code	PKER 0154	PKER 0153
EPHEMERELLIDAE	**	*
EPHEMERIDAE	**	**
LEUCTRIDAE	*	
APHELOCHEIRIDAE	**	**
MOLANNIDAE	*	*
LEPTOCERIDAE	*	*
GOERIDAE	*	*
BRACHYCENTRIDAE	**	**
SERICOSTOMATIDAE	*	*
CALOPTERYGIDAE	*	*
NERITIDAE	*	*
ANCYLIDAE	**	**
HYDROPTILIDAE	*	*
GAMMARIDAE	**	**
GERRIDAE		*
NEPIDAE		*
DYTISCIDAE	*	*
GYRINIDAE		*
ELMIDAE	**	*
HYDROPSYCHIDAE	**	*
TIPULIDAE	**	
SIMULIIDAE	**	*
BAETIDAE	**	*
SIALIDAE	*	*
VALVATIDAE	*	**
HYDROBIIDAE	*	**
LYMNAEIDAE	*	*
PHYSIDAE	*	*
PLANORBIDAE	*	*
SPHAERIIDAE	*	*
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	*
ASELLIDAE	**	*
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	185	185
Pred. BMWP Score	122	130
BMWP/Pred BMWP	1.52	1.42
ASPT	5.78	5.61
Predicted ASPT	5.00	5.00
ASPT/Pred ASPT	1.16	1.12
Biotic Class	A	A

01930356 Kingsclere Brook At Harriden Farm

Site Ref PKER.0178 Grid Ref SU53005990 Sampled 18/08/1993 at 11:30

Scores Current 89 Previous 117 Change is 23% Deterioration. Biotic Class C



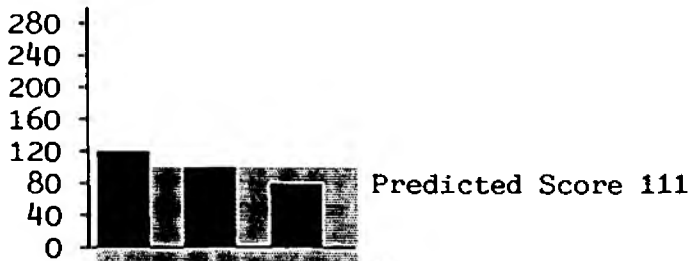
Scores 117* 89* * Non-Routine Sample
Dates 1091 0893

Comments Liverworts covered 50% of the pebbles. Slightly lower score compared to 1991 sample. Leptophlebiidae, Leptoceridae & Lepidostomatidae missing in this sample. Ancyliidae, Elmidae, Simuliidae & Piscicolidae found for the first time at this site.

01930357 Kingsclere Brook Above Headley/maybush Lane Hs Stw

Site Ref PKER.0152 Grid Ref SU53006140 Sampled 18/08/1993 at 12:15

Scores Current 85 Previous 92 Change is 7% Deterioration. Biotic Class C



Scores 116* 92* 85* * Non-Routine Sample
Dates 1189 1091 0893

Comments Little change to score. Ephemerellidae found for the first time. Limnephilidae & Hydropsychidae missing in this sample.

Specially selected samples

Taxa List for PKER.0178 Kingsclere Brook At Harriden Farm SU53005990

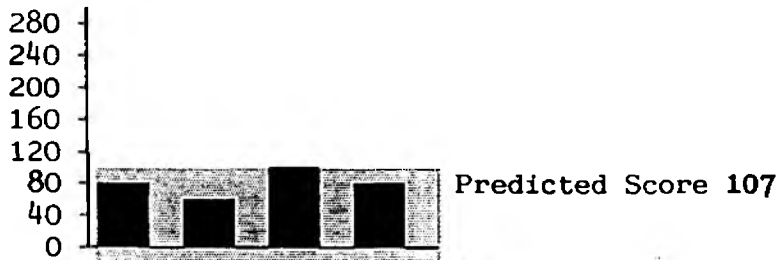
PKER.0152 Kingsclere Brook Above Headley/maybush Lane Hs Stw SU53006140

Biology Area	01	01
Day	18	18
Month	Aug	Aug
Year	1993	1993
*Non Routine Sample		
Sample Number	0356*	0357*
Site Code	PKER 0178	PKER 0152
EPHEMERELLIDAE	*	*
EPHEMERIDAE	*	*
GOERIDAE	*	
SERICOSTOMATIDAE	*	
ANCYLIDAE	*	**
HYDROPTILIDAE		*
GAMMARIDAE	***	**
DYTISCIDAE	*	*
ELMIDAE	**	*
HYDROPSYCHIDAE	*	
TIPULIDAE		**
SIMULIIDAE	**	*
BAETIDAE	*	*
SIALIDAE		*
PISCICOLIDAE	*	*
HYDROBIIDAE		**
SPHAERIIDAE	*	**
GLOSSIPHONIIDAE	*	**
ASELLIDAE		*
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	89	85
Pred. BMWP Score	105	111
BMWP/Pred BMWP	0.85	0.77
ASPT	5.56	4.72
Predicted ASPT	4.90	5.00
ASPT/Pred ASPT	1.13	0.94
Biotic Class	C	C

01930291 Lambourn At Guaging Station, East Shefford

Site Ref PKER.0063 Grid Ref SU38907470 Sampled 02/08/1993 at 11:30

Scores Current 83 Previous 105 Change is 20% Deterioration. Biotic Class C



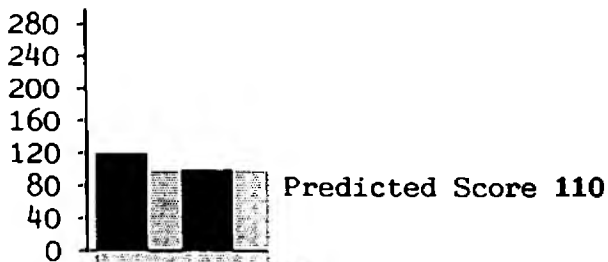
Scores 86* 68* 105* 83* * Non-Routine Sample
Dates 0987 0188 0889 0893

Comments Moderate score, slightly lower than last ('89) sample. Goeridae, Corixidae & Planaridae not found in this sample. Planorbidae found for the first time. No instream macrophytes. Compact gravel substrate.

01930290 Lambourn At Elton Farm, Weston

Site Ref PKER.0062 Grid Ref SU39707400 Sampled 02/08/1993 at 11:10

Scores Current 96 Previous 110 Change is 12% Deterioration. Biotic Class C



Scores 110* 96* * Non-Routine Sample
Dates 0889 0893

Comments Little change in score compared to last ('89) sample. Ephemerellidae, Sericostomatidae, Sialidae, Valvatidae & Sphaeidae found for the first time. Ephemeridae, Goeridae & Ancylidae not found in this sample. Overall all taxa less abundant. No instream macrophytes. Mobile gravel substrate.

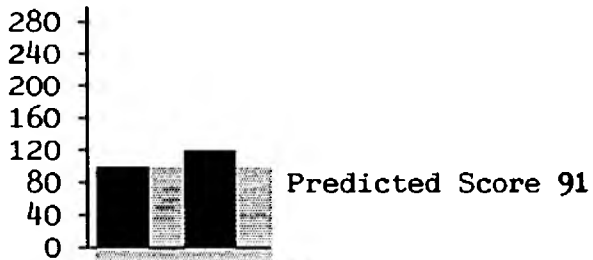
Specially selected samples

Taxa List for PKER.0063 Lambourn At Guaging Station, East Shefford SU38907470
 PKER.0062 Lambourn At Elton Farm, Weston SU39707400

Biology Area	01	01
Day	02	02
Month	Aug	Aug
Year	1993	1993
*Non Routine Sample		
Sample Number	0291*	0290*
Site Code	PKER	PKER
	0063	0062
EPHEMERELLIDAE	*	*
SERICOSTOMATIDAE		**
RHYACOPHILIDAE	**	**
LIMNEPHILIDAE	**	**
GAMMARIDAE	**	**
HALIPLIDAE	*	*
DYTISCIDAE	*	*
TIPULIDAE	*	*
SIMULIIDAE	**	*
BAETIDAE	**	**
SIALIDAE	*	**
PISCICOLIDAE	*	*
VALVATIDAE		*
PHYSIDAE	*	*
PLANORBIDAE	*	*
SPHAERIIDAE	*	*
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	*
ASELLIDAE	*	**
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	83	96
Pred. BMWP Score	107	110
BMWP/Pred BMWP	0.78	0.87
ASPT	4.37	4.57
Predicted ASPT	4.90	4.90
ASPT/Pred ASPT	0.89	0.93
Biotic Class	C	C

Routine Biological Report. For Fobney - Thames Region Admin Office. Catchment Survey

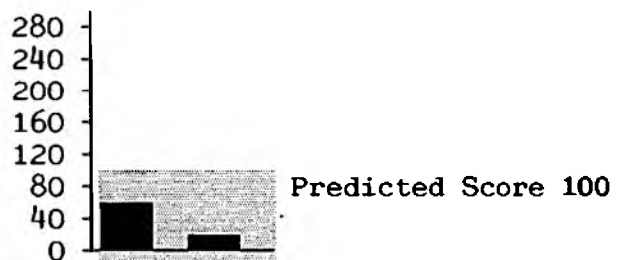
01930513 **Pound Street Brook Above Washwater Stw**
Site Ref PKER.0114 Grid Ref SU45426260 Sampled 26/11/1993 at 10:35
Scores Current 123 Previous 108 Change is 13% Improvement. Biotic Class B



Scores 108* 123* * Non-Routine Sample
Dates 0193 1193

Comments Four top-scoring taxa found. Observed BMWP score, ASPT and number of taxa all greater than those predicted.

01930512 **Pound Street Brook Below Washwater Stw**
Site Ref PKER.0113 Grid Ref SU45406274 Sampled 26/11/1993 at 10:10
Scores Current 27 Previous 65 Change is 58% Deterioration. Biotic Class D



Scores 65* 27* * Non-Routine Sample
Dates 0193 1193

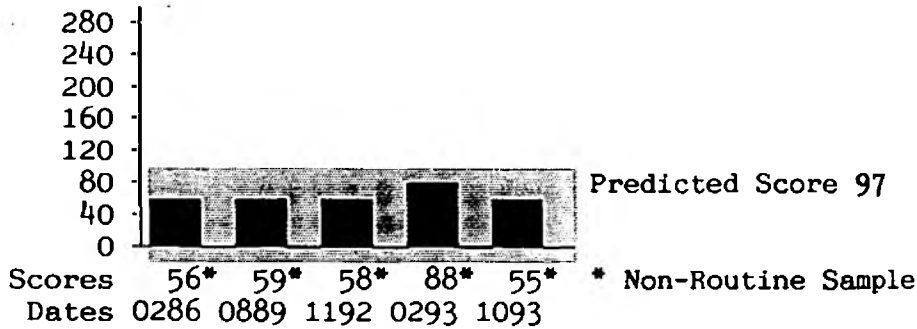
Comments Red chironomids were present in their 1000's. No taxa found scoring >7. Observed BMWP score, ASPT and number of taxa much lower than those predicted.

Specially selected samples

Taxa List for PKER.0114 Pound Street Brook Above Washwater Stw SU45426260
 PKER.0114 Pound Street Brook Above Washwater Stw SU45426260
 PKER.0113 Pound Street Brook Below Washwater Stw SU45406274
 PKER.0113 Pound Street Brook Below Washwater Stw SU45406274

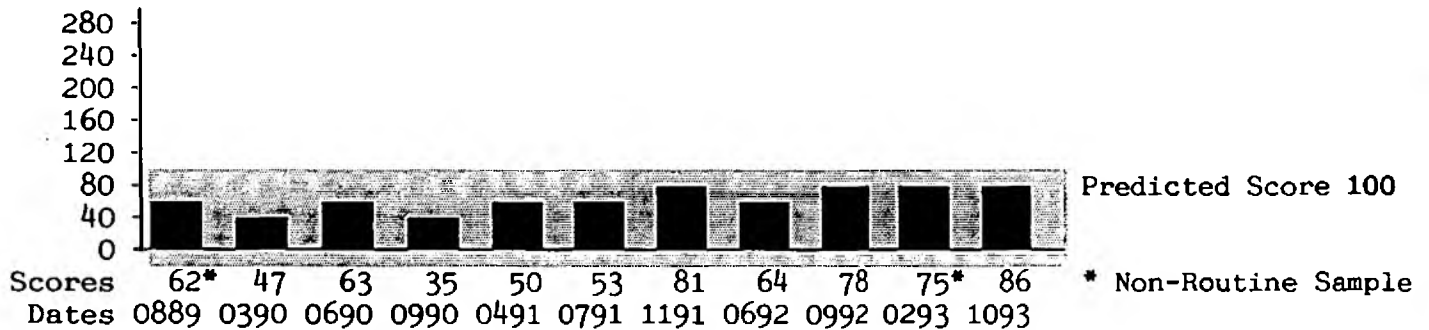
Biology Area	01	01	01	01
Day	21	26	21	26
Month	Jan	Nov	Jan	Nov
Year	1993	1993	1993	1993
*Non Routine Sample				
Sample Number	0007*	0513*	0008*	0512*
Site Code	PKER 0114	PKER 0114	PKER 0113	PKER 0113
LEPTOPHLEBIIDAE		*		
LEUCTRIDAE		**		
CHLOROPERLIDAE	*			
LEPTOCERIDAE		*		
GOERIDAE	*	*		
SERICOSTOMATIDAE	*		*	
PSYCHOMYIIDAE		*		
NEMOURIDAE	**	*	*	
RHYACOPHILIDAE	*	*		
LIMNAPHILIDAE	**	*	**	*
ANCYLIDAE	**	*		
GAMMARIDAE	***	**	**	*
NOTONECTIDAE	*			
DYTISCIDAE			*	
SCIRTIDAE	*	*		
ELMIDAE	*			
HYDROPSYCHIDAE	*	**	*	
TIPULIDAE	*	*	**	
SIMULIIDAE	**	*	***	**
PLANARIIDAE		*		
BAETIDAE		*		
SIALIDAE		*		
HYDROBIIDAE	**	**	*	*
SPHAERIIDAE	*	*	*	
GLOSSIPHONIIDAE			**	*
ERPOBDELLIDAE	*			
ASELLIDAE	*		*	
CHIRONOMIDAE	**	*	***	****
OLIGOCHAETA	**	*	***	**
PSYCHODIDAE		*		
PTYCHOPTERIDAE		*		
BMWP Score	108	123	65	27
Pred. BMWP Score	108	91	108	100
BMWP/Pred BMWP	1.00	1.35	0.60	0.27
ASPT	5.40	5.86	4.64	3.86
Predicted ASPT	5.50	5.00	5.30	5.20
ASPT/Pred ASPT	0.98	1.17	0.88	0.74
Biotic Class	B	B	C	D

01930467 **Silchester Brook Above Silchester Stw**
 Site Ref PKER.0081 Grid Ref SU62206140 Sampled 27/10/1993 at 12:00
Scores Current 55 Previous 88 Change is 37% Deterioration. Biotic Class C



Comments Reduced score compared to Spring 93 sample. Top scoring Leptoceridae missing together with Nemouridae, Dytiscidae & Leeches.

01930418 **Silchester Brook Below Silchester Stw**
 Site Ref PKER.0083 Grid Ref SU62406070 Sampled 04/10/1993 at 11:45
Scores Current 86 Previous 75 Change is 14% Improvement. Biotic Class C



Comments Little change to score. Hydrometridae seen for the first time in this sample, Elmidae since 1989 and Coenagriidae since 1987. Some sewage fungus seen growing on tree roots.

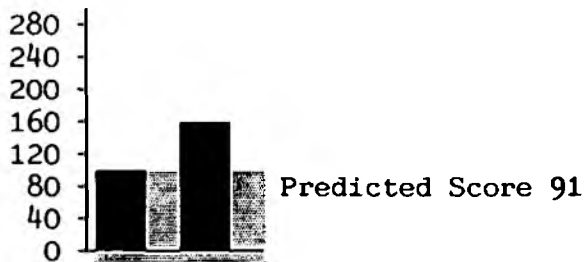
Specially selected samples

Taxa List for PKER.0081 Silchester Brook Above Silchester Stw SU62206140
 PKER.0081 Silchester Brook Above Silchester Stw SU62206140
 PKER.0083 Silchester Brook Below Silchester Stw SU62406070
 PKER.0083 Silchester Brook Below Silchester Stw SU62406070

Biology Area	01	01	01	01
Day	18	27	18	04
Month	Feb	Oct	Feb	Oct
Year	1993	1993	1993	1993
*Non Routine Sample				
Sample Number	0037*	0467*	0038*	0418
Site Code	PKER 0081	PKER 0081	PKER 0083	PKER 0083
LEPTOCERIDAE	*		*	
CALOPTERYGIDAE	*	*	*	*
NEMOURIDAE	*			
LIMNEPHILIDAE	*	*	*	*
ANCYLIDAE	**	*	*	*
GAMMARIDAE	**	**	*	*
COENAGRIIDAE	*	*		*
HYDROMETRIDAE				*
DYTISCIDAE	*			*
ELMIDAE				*
TIPULIDAE	*	*	*	*
SIMULIIDAE			*	**
BAETIDAE	**		**	**
HYDROBIIDAE	*	*	*	**
LYMNAEIDAE	*	*	*	*
PLANORBIDAE	*	*	*	**
SPHAERIIDAE	**	*	**	**
GLOSSIPHONIIDAE	*		*	*
ERPOBDELLIDAE	*		***	**
ASELLIDAE	**	*	**	**
CHIRONOMIDAE	**	*	**	**
OLIGOCHAETA	**		***	**
BMWP Score	88	55	75	86
Pred. BMWP Score	108	97	111	100
BMWP/Pred BMWP	0.81	0.57	0.68	0.86
ASPT	4.63	4.58	4.41	4.30
Predicted ASPT	5.10	4.70	5.20	4.80
ASPT/Pred ASPT	0.91	0.97	0.85	0.90
Biotic Class	C	C	C	C

Routine Biological Report. For Fobney - Thames Region Admin Office. Catch STW

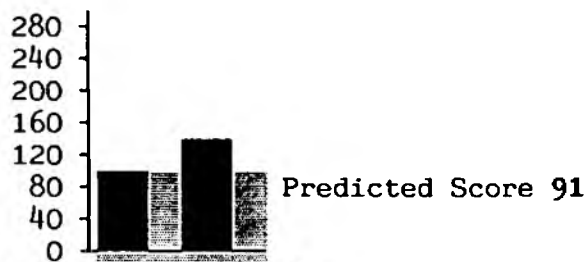
01930044 Sulhamstead Stream Above Sulhamstead H/s Stw
Site Ref PKER.9947 Grid Ref SU62706880 Sampled 22/02/1993 at 11:40
Scores Current 158 Previous 105 Change is 50% Improvement. Biotic Class A



Scores 105* 158* * Non-Routine Sample
Dates 1192 0293

Comments Deep soft silt present. Reed bed present. Six top-scoring families present.

01930045 Sulhamstead Stream 50m Below Sulhamstead H/s Stw
Site Ref PKER.9946 Grid Ref SU62906895 Sampled 22/02/1993 at 10:00
Scores Current 131 Previous 93 Change is 40% Improvement. Biotic Class B



Scores 93* 131* * Non-Routine Sample
Dates 1192 0293

Comments Substrate dominated by thick fine silt. A reed-bed and some *Berula erecta* present.

Specially selected samples

Taxa List for PKER.9947 Sulhamstead Stream Above Sulhamstead H/s Stw SU62706880

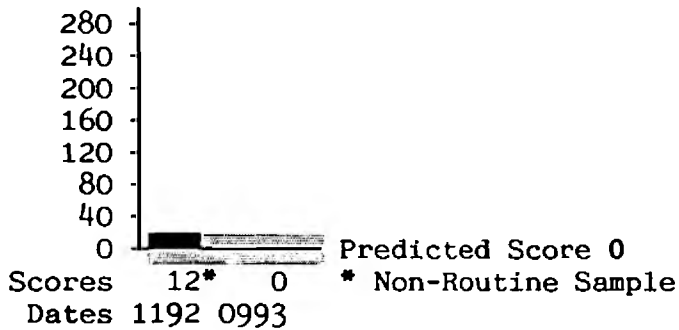
PKER.9946 Sulhamstead Stream 50m Below Sulhamstead H/s Stw SU62906895

Biology Area	01	01
Day	22	22
Month	Feb	Feb
Year	1993	1993
*Non Routine Sample		
Sample Number	0044*	0045*
Site Code	PKER 9947	PKER 9946
EPHEMERIDAE	*	*
APHELOCHEIRIDAE	**	
BERAEIDAE	*	
LEPTOCERIDAE	*	*
GOERIDAE	*	
SERICOSTOMATIDAE	*	
CALOPTERYGIDAE	*	*
CAENIDAE	*	*
LIMNEPHILIDAE	**	**
ANCYLIDAE		*
UNIONIDAE	*	*
GAMMARIDAE	**	**
COENAGRIIDAE	*	*
NOTONECTIDAE		*
CORIXIDAE	**	**
HALIPLIDAE		*
DYTISCIDAE	*	*
ELMIDAE	*	
HYDROPSYCHIDAE	*	
TIPULIDAE		*
SIMULIIDAE		*
SIALIDAE	**	**
PISCICOLIDAE	*	*
VALVATIDAE	**	**
HYDROBIIDAE	**	*
LYMNAEIDAE	*	*
PHYSIDAE	*	**
PLANORBIDAE	*	*
SPHAERIIDAE	*	**
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	
ASELLIDAE	**	**
CHIRONOMIDAE	**	**
OLIGOCHAETA	*	**
BMWP Score	158	131
Pred. BMWP Score	91	91
BMWP/Pred BMWP	1.74	1.44
ASPT	5.45	4.85
Predicted ASPT	4.50	4.50
ASPT/Pred ASPT	1.21	1.08
Biotic Class	A	B

01930401 Winterbourne Above Chieveley Stw

Site Ref PKER.9945 Grid Ref SU46907395 Sampled 23/09/1993 at 10:45

Scores Current 0 Previous 12 Biotic Class 00

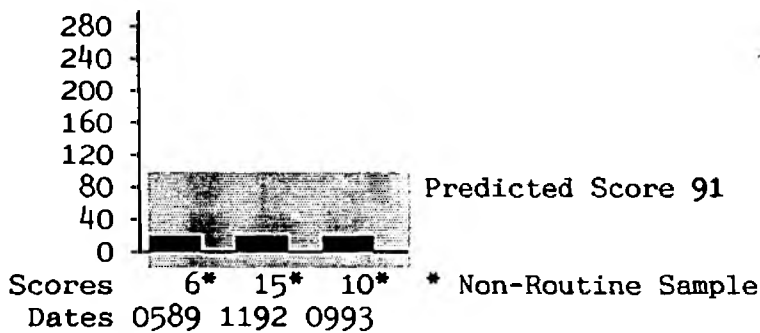


Comments Streambed dry.

01930402 Winterbourne Below Chieveley Stw

Site Ref PKER.0146 Grid Ref SU46707380 Sampled 23/09/1993 at 10:45

Scores Current 10 Previous 15 Change is 33% Deterioration. Biotic Class E



Comments Very restricted fauna similar to 1992 sample. Dytiscidae found for the first time at this site.

Specially selected samples

Taxa List for PKER.9945 Winterbourne Above Chieveley Stw SU46907395
PKER.0146 Winterbourne Below Chieveley Stw SU46707380

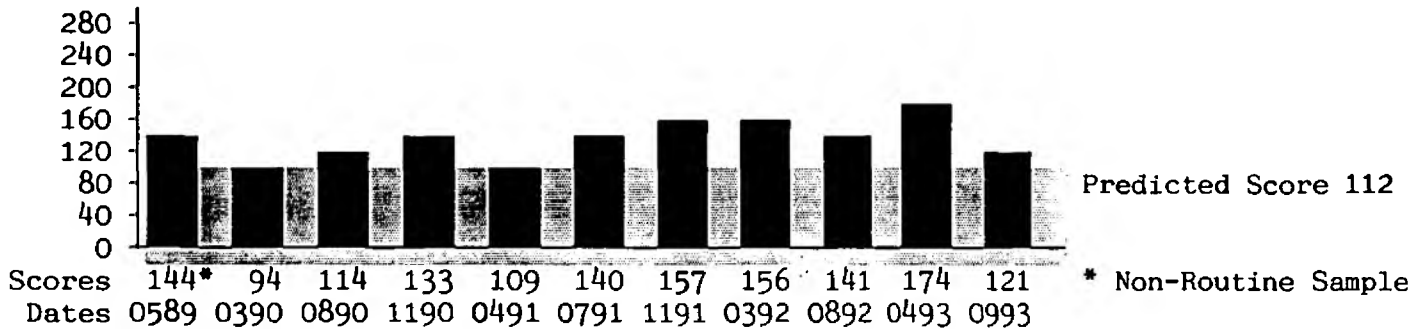
Biology Area	01	01
Day	23	23
Month	Sep	Sep
Year	1993	1993
*Non Routine Sample		
Sample Number	0401	0402*
Site Code	PKER	PKER
	9945	0146
DYTISCIDAE		**
LYMNAEIDAE	DRY	*
CHIRONOMIDAE		**
BMWP Score		10
Pred. BMWP Score		91
BMWP/Pred BMWP		0.11
ASPT		3.33
Predicted ASPT		4.80
ASPT/Pred ASPT		0.69
Biotic Class		E

Routine Biological Report. For Fobney - Thames Region Admin Office. Catch STW

01930288 Winterbourne Opposite New Inn, Winterbourne
Site Ref PKER.0145 Grid Ref SU45627225 Sampled 02/08/1993 at 10:00
Scores Current 14 Predicted 92 Biotic Class E

Comments Very restricted fauna with only 5 taxa present. Planorbidae, Chironomidae & Oligochaeta abundant. Channel completely covered in Cladophora. Sampled for the first time.

01930407 Winterbourne At Gs, Bagnor
Site Ref PKER.0089 Grid Ref SU45306950 Sampled 23/09/1993 at 11:00
Scores Current 121 Previous 174 Change is 30% Deterioration. Biotic Class B



Comments Lower score compared to most recent samples. Top scoring Leptophlebiidae, Ephemerellidae & Goeridae absent in this sample together with several middle scoring taxa. Psychomyiidae found for the first time at this site.

Specialy selected samples

Taxa List for PKER.0145 Winterbourne Opposite New Inn, Winterbourne SU45627225
 PKER.0089 Winterbourne At Gs, Bagnor SU45306950

Biology Area	01	01
Day	02	23
Month	Aug	Sep
Year	1993	1993
*Non Routine Sample		
Sample Number	0288*	0407
Site Code	PKER 0145	PKER 0089
EPHEMERIDAE		**
LEPTOCERIDAE		***
SERICOSTOMATIDAE		**
PSYCHOMYIIDAE		*
RYACOPHILIDAE		***
LIMNAPHILIDAE		**
GAMMARIDAE		***
HALIPLIDAE		*
DYTISCIDAE	*	*
ELMIDAE		**
TIPULIDAE		*
SIMULIIDAE		**
PLANARIIDAE		*
BAETIDAE		**
SIALIDAE		*
PISCICOLIDAE		**
HYDROBIIDAE		***
LYMNAEIDAE	*	*
PHYSIDAE		**
PLANORBIDAE	***	**
GLOSSIPHONIIDAE		*
ERPODELLIDAE		*
ASELLIDAE		*
CHIRONOMIDAE	***	**
OLIGOCHAETA	***	**
BMWP Score	14	121
Pred. BMWP Score	92	112
BMWP/Pred BMWP	0.15	1.08
ASPT	2.80	5.04
Predicted ASPT	4.60	5.00
ASPT/Pred ASPT	0.61	1.01
Biotic Class	E	B

01930542 Enborne Above St Gabriel's School Stw
Site Ref **PKER.9993** Grid Ref **SU47326390** Sampled 30/11/1993 at 12:30
Scores Current 130 Predicted 119 Biotic Class B

Comments Site sampled for the first time. Diverse fauna with five top scoring taxa present.

01930543 Enborne Below St Gabriel's School Stw
Site Ref **PKER.9992** Grid Ref **SU47436390** Sampled 30/11/1993 at 12:45
Scores Current 133 Predicted 116 Biotic Class B

Comments Site sampled for the first time. Diverse fauna with six top scoring taxa.

Specially selected samples

Taxa List for PKER.9993 Enborne Above St Gabriel's School Stw SU47326390
 PKER.9992 Enborne Below St Gabriel's School Stw SU47436390

Biology Area	01	01
Day	30	30
Month	Nov	Nov
Year	1993	1993
*Non Routine Sample		
Sample Number	0542*	0543*
Site Code	PKER	PKER
	9993	9992
HEPTAGENIIDAE	*	*
LEPTOPHLEBIIDAE	**	**
EPHEMERIDAE	*	*
LEPTOCERIDAE		*
GOERIDAE	*	*
LEPIDOSTOMATIDAE	**	**
CALOPTERYGIDAE	*	
CAENIDAE		*
NEMOURIDAE		*
LIMNAPHILIDAE	*	
ANCYLIDAE		*
GAMMARIDAE	**	**
DYTISCIDAE		*
GYRINIDAE	*	
SCIRTIDAE	*	
ELMIDAE	*	**
HYDROPSYCHIDAE	*	*
TIPULIDAE	*	**
SIMULIIDAE	**	**
BAETIDAE	**	**
PISCICOLIDAE	*	
HYDROBIIDAE	*	*
PLANORBIDAE	*	*
SPHAERIIDAE	*	
GLOSSIPHONIIDAE	**	*
ERPOBDELLIDAE	**	*
ASELLIDAE	*	*
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	130	133
Pred. BMWP Score	119	116
BMWP/Pred BMWP	1.09	1.15
ASPT	5.42	5.78
Predicted ASPT	5.20	5.10
ASPT/Pred ASPT	1.04	1.13
Biotic Class	B	B

Specially selected samples

Taxa List for PKER.0101 Enborne At A34 Newtown, Newbury SU47706390

PKER.9991 Enborne Below Swan Public House Stw, Newt SU47706400

Biology Area	01	01
Day	30	30
Month	Nov	Nov
Year	1993	1993
*Non Routine Sample		
Sample Number	0538*	0544*
Site Code	PKER	PKER
	0101	9991
HEPTAGENIIDAE	*	*
LEPTOPHLEBIIDAE	**	*
EPHEMERIDAE		*
LEPTOCERIDAE	*	
GOERIDAE		*
LEPIDOSTOMATIDAE	**	*
CALOPTERYGIDAE	*	
PSYCHOMYIIDAE	*	
POLYCENTROPIDAE	*	
LIMNEPHILIDAE	*	*
ANCYLIDAE		*
GAMMARIDAE	**	**
CORIXIDAE	*	
DYTISCIDAE	*	
ELMIDAE	**	*
HYDROPSYCHIDAE	*	*
TIPULIDAE	*	*
SIMULIIDAE	**	**
BAETIDAE	*	*
PISCICOLIDAE		*
VALVATIDAE	*	
HYDROBIIDAE	*	*
PLANORBIDAE		*
SPHAERIIDAE		*
GLOSSIPHONIIDAE	*	*
ERPOBDELLIDAE	*	*
ASELLIDAE		*
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	125	118
Pred. BMWP Score	121	123
BMWP/Pred BMWP	1.03	0.96
ASPT	5.68	5.36
Predicted ASPT	5.20	5.20
ASPT/Pred ASPT	1.09	1.03
Biotic Class	B	B

Routine Biological Report. For Fobney - Thames Region Admin Office. Private STW

01930538 Enborne At A34 Newtown, Newbury
Site Ref PKER.0101 Grid Ref SU47706390 Sampled 30/11/1993 at 12:00
Scores Current 125 Predicted 121 Biotic Class B

Comments Site sample for the first time. A diverse fauna including three top scoring caddisflies. Fauna is slightly more restricted compared to upstream PKER.0014.

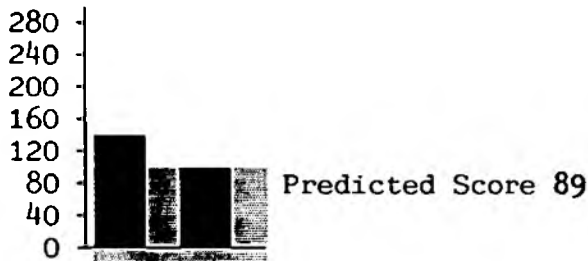
01930544 Enborne Below Swan Public House Stw, Newton
Site Ref PKER.9991 Grid Ref SU47706400 Sampled 30/11/1993 at 11:45
Scores Current 118 Predicted 123 Biotic Class B

Comments Site sampled for the first time. Fairly diverse fauna with five top scoring taxa.

01930423 Clayhill Brook Above Greenways Landfill T/e
Site Ref PKER.9998 Grid Ref SU66546975 Sampled 11/10/1993 at 11:30
Scores Current 52 Predicted 93 Biotic Class C

Comments Agriid damselflies (score = 8) was the only family found scoring greater than 6. Pollution-tolerant Hydrobiidae snails were abundant. The observed score was 0.56 of that predicted.

01930424 Clayhill Brook Above River Kennet At Mill Road
Site Ref PKER.0171 Grid Ref SU67307080 Sampled 11/10/1993 at 11:10
Scores Current 101 Previous 144 Change is 29% Deterioration. Biotic Class B



Scores 144* 101* * Non-Routine Sample
Dates 0891 1093

Comments Three top-scoring (pollution-sensitive) families found. The observed score was greater than that predicted.

Specially selected samples

Taxa List for PKER.9998 Clayhill Brook Above Greenways Landfill T/e SU66546975

PKER.0171 Clayhill Brook Above River Kennet At Mill Road SU67307080

Biology Area	01	01
Day	11	11
Month	Oct	Oct
Year	1993	1993
*Non Routine Sample		
Sample Number	0423*	0424*
Site Code	PKER	PKER
	9998	0171
EPHEMERIDAE		**
MOLANNIDAE		*
LEPTOCERIDAE		*
CALOPTERYGIDAE	*	
PSYCHOMYIIDAE		*
CAENIDAE		*
LIMNEPHILIDAE		*
ANCYLIDAE	*	
UNIONIDAE		*
GAMMARIDAE	**	*
CORIXIDAE		*
DYTISCIDAE	*	*
HYDROPSYCHIDAE		*
SIMULIIDAE	*	
SIALIDAE	*	**
HYDROBIIDAE	***	*
LYMNAEIDAE	*	*
SPHAERIIDAE	*	**
GLOSSIPHONIIDAE	*	
ERPOBDELLIDAE		*
ASELLIDAE	**	**
CHIRONOMIDAE	**	**
OLIGOCHAETA	**	**
BMWP Score	52	101
Pred. BMWP Score	93	89
BMWP/Pred BMWP	0.56	1.13
ASPT	4.00	5.32
Predicted ASPT	4.60	4.40
ASPT/Pred ASPT	0.87	1.21
Biotic Class	C	B