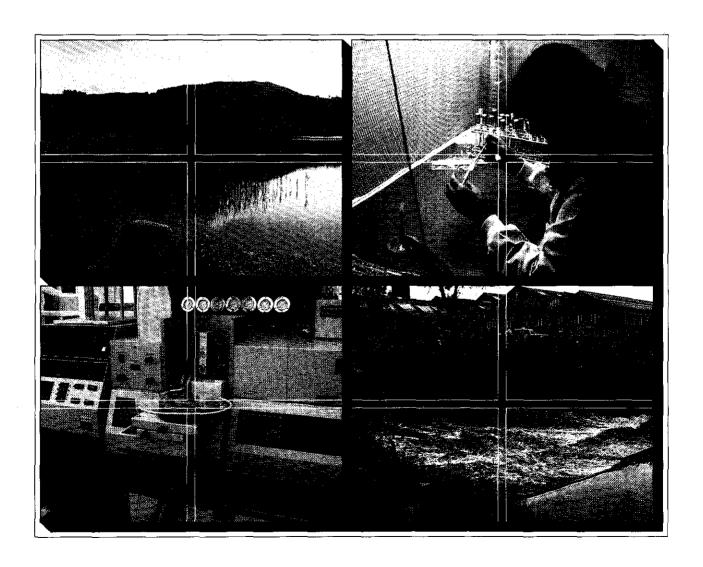


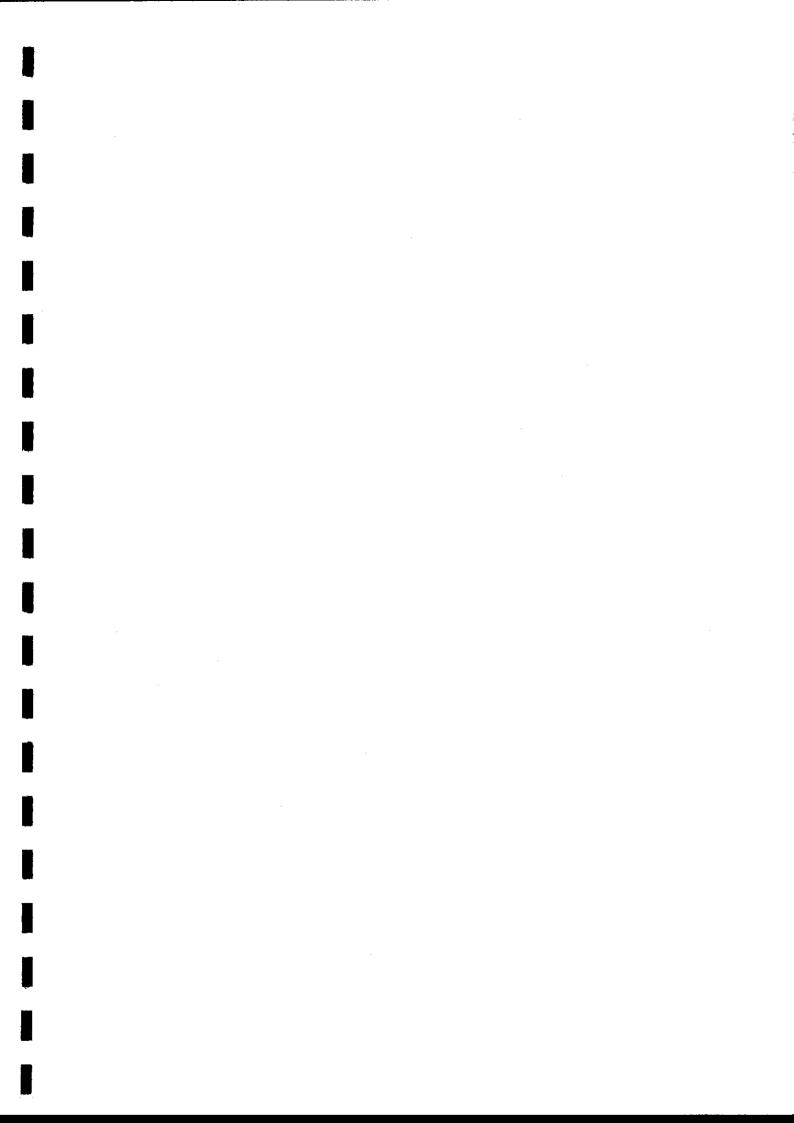
MID-KENT STREAM SURVEY

Report to: Environmental Assessment Services Limited

(May 1995) Compiled by J.A.B.Bass

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Report date:

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Report to:

Environmental Assessment Services Limited

(Annette Mills)

IFE Report No: ER/T11064J7/51

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Kent Streams

Site Locations	January 95	April 95
Stream 1		
Upstream site	NGR TQ904510	NRG TQ905508
Downstream site	NGR TQ902502	NGR TQ902502
Stream 2		
Upstream site	NGR TQ926504	NGR TQ926504
Downstream site	NGR TQ926492	NGR TQ926492
Stream 3		
Upstream site	NGR TQ943488	NGR TQ943488
Downstream site	NGR TQ937477	NGR TQ937477
Stream 4		
Upstream site	NGR TQ952476	NGR TQ952476
Downstream site	NGR TQ949467	NGR TQ949467

Kent Streams

General Overview

Streams 1-4 receive water from chalk springs at their sources. Streams 1 and 4 have inputs from sewage treatment works.

Stream 3 receives intermittent pumped water from a sand quarry, which can include sand and silt after heavy rain. The close proximity of the deep quarry to stream 3, which is said to flow throughout the year (Mid-Kent Water, monitoring staff), indicates minimal infiltration from the stream, but the possible installation of an impervious membrane when the stream was realigned should be checked.

All streams are influenced by overland runoff from agricultural land. At its source, stream 2 may also receive runoff from a major road (A20).

The extremes of discharge appear to differ between the streams, with trapped debris at greater heights alongside streams 2 and 4. Discharge monitoring and general observations by Mid-Kent Water staff, confirm that stream 2 is particularly variable and short lengths have become dry during the period mid-1993 to 1995. When stream discharges are low the sewage treatment works effluent received by streams 1 and 4 will tend to maintain flows but at such times reduced dilution may adversely affect water quality. This is of particular concern given the decline in water quality downstream from the confluence of stream 4 with the Great Stour (indicated by NRA chemical monitoring data, see Appendix II).

Whilst perenial discharge regimes are maintained it is considered the invertebrate communities will not exhibit serious degradation over the short lengths of streams 1-4. However, should future changes to groundwater abstraction reduce the dilution of STW effluents, particularly under low river discharge conditions, it is considered that the freshwater invertebrate community in the Great Stour may be impacted.

The most vulnerable freshwater invertebrate groups present in streams 1-4 require high water quality and are characteristic of well oxygenated flowing water, they are generally within Families with high BMWP scores. In spring 1995 several Families were recorded from upstream but not downstream sites on individual streams, this will be associated with water temperature preferences, as well as changes in water chemistry. Greater contrasts between upstream and downstream sites are considered likely to develop in mid- to late summer, as the natural seasonal discharges decline. Changes observed at sampling sites between January and April 1995 are noted below.

Site Descriptions

(Summarised from field data sheets, Appendix III)

Stream 1

1 - Upstream site

January 1995

The stream passes between hawthorn scrub on the NE boundary of the STW compound. The sample site was about 40m upstream from the treatment works outlet, stream banks were poached by grazing animals. Substrates included large flints, cobbles and pebbles, with fine sediments within stands of Apium nodiflorum and Mimulus (naturalised garden escape). Stream width about 1.5m, water depth 5-15cm, water velocity 0.25-0.5m sec⁻¹, the water was clear and uncoloured. Some large stones had a thin algal film present.

April 1995

The sample site was changed to just downstream from the STW outfall, to match the aquifer location. The channel had been dredged in January, consequently no in-stream vegetation was present restricting the habitats available to invertebrates. The close proximity of the STW outfall will impact the fauna, but continuous passive collonisation by downstream drift permits the transient occurrence of some species.

1 - Downstream site

January 1995

Following recent dredging, this stream was not sampled in January 1995.

April 1995

Previously unstable stream banks had become revegetated and access to the stream was possible. The stream bed remained atypical with a few pebbles overlying liquid mud over much of the stream and little habitat diversity was evident.

Stream 2

2 - Upstream Site

January 1995

The sampling location was about 200m upstream from the railway line. The stream forms a field boundary between an arable and a grazed field (NE). The sample point was adjacent to a footpath crossing the stream. A low hedge was present on the NE bank, whilst a winter cereal crop had been sown close to the open SW bank. Low herbs and grasses were present on the steep SW bank. Substrates were dominated by sandy silts trapped between dense stands of Apium nodiflorum (about 85% cover) and some Glyceria fluitans (?). A few pebbles were present near the footbridge, where water flow was greatest. This section of stream was heavily vegetated, possibly because of a

shallow gradient at this point, resulting in lower water velocity than observed at other sites on streams 1 - 4. Average water velocity was about 0.25m sec-1, water depth 10-25cm, stream width about 1.2m. The water was clear with no colour. Coarse organic detritus was present within the silty substrate.

April 1995

Little change was evident since the site visit in January. The vegetation in the stream had become more dense causing the water to back-up.

2 - Downstream Site

January 1995

The sample site was about 40m downstream from the road bridge. The stream runs alongside a recreation field with a high garden hedge to the east. The west bank had low vegetation on a steep bank. Dead stems of tall herbs were present and within the channel Apium nodiflorum, Veronica beccabunga, Glyceria fluitans occurred with Juneus sp. at the margins. The stream bed had a broad range of substrates and varied velocity patterns between submerged plant stands and sediment banks.

Mean velocity was estimated to be 0.25-0.50m sec⁻¹ and depth 15-25cm.

April 1995

An extremely luxurient growth of filamentous algae was present on all submerged surfaces, reducing the microhabitat variability for invertebrates normally evident in a range of plants and other substrata.

Stream 3

3 - Upstream Site

January 1995

The surveyed area was situated about 150m upstream of the road bridge, above and below a pumped discharge from a sand quarry. Owing to possible impacts from the intermittent quarry discharge, an extra freshwater invertebrate sample was obtained 10m upstream, just to check for additional taxa. The main sample site was on a sinuous channel through grazed meadows with alder trees on the east bank, with 45° banks of rough grass. Water width was 0.8m, average depth 10cm and water velocity 0.5-1.0m sec-1. Stream substrates included some large flints, pebbles and gravel, with sand and silt occupying about one third of the stream bed, there was no organic detritus present. Isolated stands of Apium nodiflorum and Myosotis scorpioides (?) provided about 10% cover within the channel. Water colour was yellow/sandy and highly turbid. Upstream from the quarry discharge (supplying about one quarter of the stream flow) the water was clear and uncoloured, flowing within a straightened channel beside the quarry. The stream bed was hard clay or tupha, with a few flints. A footpath ran adjacent to the stream course.

April 1995

There had been an increase in filamentous algae on the stream bed since January, in

other respects the site was unchanged. There was no indication of recent pumped discharges from the sand quarry.

3 - Downstream Site

January 1995

An area 10m upstream from the road access point was selected for sampling. The stream had a straight channel with steep banks lined by alder, ash and oak to the west and woodland herbs and a hedge to the east. Stream width was about 1.4m, water depth 10-15cm, flow velocity 0.5-1.0m sec⁻¹. The substrates were dominated by flint cobbles, with pebbles, gravel and some silty sand. The water was slightly coloured but the stream bed was clearly visible. Lime encrusted the stones and woody debris, little detritus was present and rapid flow combined with tree shading restricted water plants to small patches of Apium nodiflorum.

April 1995

The stream was unchanged in appearance since the visit in January. Heavy shading may restrict algal growth, in contrast to other stream sites.

Stream 4

4 - Upstream Site

January 1995

The site was about 200m upstream of the road bridge access, just downstream from a collapsed farm bridge. The stream flows through a straightened channel with 45° groomed banks, winter wheat crops are present to within 1.5m of the stream, with a hedge and issolated ash trees on one bank. Water width was about 1.2m, depth 5-15cm, velocity 0.5-1.0m sec⁻¹. The bank had a steep gradient and some bank erosion was apparent downstream.

Stream substrates were dominated by large flints with some smaller gravel, diatoms were present on the largest stable flints, also lime deposits. Aquatic plants provided about 5% cover (Apium nodiflorum), detritus was absent, bankside plants included Oenanthe sp (dropwort), figwort and dock. Water clarity was good with no colour.

April 1995

Little change was evident within the stream channel, with the exception of more algae being present on the stones. Marginal plants were not encroaching into the stream, in April.

4 - Downstream Site

January 1995

Sampling took place 10m upstream from the road access, by a woodyard. The channel skirting a private garden lawn to the NE, with shading from a 3m conifer hedge on the SW bank. The NE bank had been recently inundated during flooding. Mean water width was 1.8m (1.5-2.0m), depth 10-15cm and velocity 0.5-1.0m sec⁻¹. Substrates consisted of cobbles and pebbles with some sand, detritus was absent. About 20% cover

was provided by Apium nodiflorum. Water clarity was clear and bright.

April 1995

This site receives moderate shading and plants within the channel appeared to have put on little growth since January, however some bankside maintenance was evident and it is possible aquatic plants have been trimmed. Algal coatings and well-developed filamentous growths were present on some stones.

Aquatic plants

Within-stream and emergent vegetation was surveyed at each stream site. In January many plant species have died back and their presence can pass undetected or identification of over-wintering growth forms are uncertain. Consequently, the list of species at each site will be incomplete. A second assessment of the streams in mid-April, provided confirmation of species present where spring growth had commenced, but the list is likely to be incomplete with some plants occurring at other times of year.

Stream 1 - Upstream Site

Apium nodiflorum occurred at the stream margins, where shading from scrub was absent. A stand of Mimulus guttatus (a common garden escape) was also present. The change in sample location in April gave rise to no further species being recorded, but those present were restricted to the stream margins.

Stream 1 -Downstream Site

All vegetation had been removed from the stream within the preceding week by an excavator. Stream sediment covered bankside plants. In April some sparse growth of Sparganium erectum was evident within the channel and marginal plants were also becoming established.

Stream 2 - Upstream Site

This was the most heavily vegetated of the sites surveyed on streams 1-4, with 90% cover provided by Apium nodiflorum. Isolated plants of Glyceria fluitans and Nasturtium officinale (water cress) were present. The presence of Mentha aquatica was noted in April and other species had emerged above the water surface, causing some restriction to stream flow.

Stream 2 - Downstream Site

Plants within the stream were <u>Apium nodiflorum</u>, <u>Veronica beccabunga</u> and <u>Glyceria fluitans</u>, whilst semi-aquatic bankside vegetation included <u>Juncus</u> sp. and <u>Sparganium</u> sp. There were indications that extensive aquatic plant stands occur at this site during the growing season. In April <u>Mentha aquatica</u> was widespread, other submerged species had not greatly increased in biomass, possibly because of the heavy shade provided by algae.

Site 3 - Upstream Site

There were few aquatic plants at this site, accessibility to grazing stock and partial shade may restrict plants in such a shallow stream. Apium nodiflorum and Myosotis sp were present as isolated plants, the banks had predominately coarse grasses. No changes to

the plants were noted in April.

Site 3 - Downstream Site

Heavy bankside shade, a straight channel with fast-flowing water and an absence of fine sediment deposits restricted the establishment of aquatic plants. Apium nodiflorum was present and dormant rhizomes of a Sparganium (?) sp. occurred near the road bridge. The stream appeared similar in April, the presence of Sparganium erectum was confirmed.

Site 4 - Upstream Site

The rapid current at this sample site restricted aquatic plants to the marginal zone, where <u>Apium nodiflorum</u> and <u>Oenanthe</u> sp., (water dropwort) were present. In April no further plant species had appeared.

Site 4 - Downstream Site

A greater variety of substrates and flow conditions had permitted the establishment of <u>Apium nodiflorum</u> within 20% of the channel. At the margins a few <u>Oenanthe</u> sp. (water dropwort) plants were present. As at the upstream site, no new plant species were evident in April.

Freshwater Invertebrates

Records of all invertebrates recovered from sites on streams 1-4 in January 1995 are presented in Tables 1-8 (Appendix I). A summarising table (Table 9) permits comparison between all sites and with NRA data for Stream 4 (full data in Appendix II).

General comments on freshwater inverterbrates recorded

From an examination of site data it was found that five taxa occurred in all January samples (Oligochaeta, Glossiphoniidae, Hydracarina, Gammaridae and Chironomidae), with the exception of Glossiphoniidae, these Families were also present at all sites in April. Fauna confined to "upstream" sites included seven frequently associated with stream sources, headwaters and springs, (Polycelis felina, Niphargus sp, Nemoura 2spp, Simulium 3spp). Some are restricted to the close proximity of stream sources by water temperature, precise habitat requirements or egg-laying site selection. These species do not migrate downstream in response to irregular stream drying events.

It is noteworthy that no species recorded in January 1995 were indicative of winterbournes (chalkstream headwaters which flow in late winter and dry up each year in late spring). Identification was confined to Family level for the April samples.

The presence of nine taxa at downstream sites and their absence from upstream sites is less easily explained. Generally a downstream increase in variety of habitat and food resources provides more niches leading to a more varied fauna, however within the streams under consideration there was little visual indication of increased habitat variety at downstream sites. It is stressed that species recorded as single specimens may result from chance captures.

When considered at Family level the range of BMWP scoring taxa increased downstream on streams 2, 3 and 4 in January and on streams 2 and 4 in April. The downstream reduction in taxa observed in stream 1 (April) may be associated with the major dredging activity in January and the impact of STW effluent which contributes a large proportion of the stream discharge. The downstream reduction in taxa on stream 3 is not easily explained, being possibly a combination of loss of headwater "specialist" species coupled with the presence of very similar within-stream habitats at the upsteam and downstream sites.

The BMWP total scores showed overall declines in April, this was unexpected. The taxa contributing to these losses include Glossiphonidae (previously ubiquitous but at low abundance), also Simuliidae and Tipulidae which may have pupated and emerged as adults. Other Families apparently absent in April had all been at low abundance levels in January and failure to record some of them may be attributed to chance, however the appearance of new taxa (by chance) did not counterbalance this. There are no visual indications of water quality decline (aside from those associated with changing the Stream 1 upstream sample location.

Some freshwater invertebrates are restricted to the close proximity of stream sources by water temperature, precise habitat or egg-laying site requirements (eg, certain Planariidae, stoneflies and Simuliidae). These species do not migrate downstream in response to irregular stream drying events. The restricted fauna present in stream 2 in 1995 is considered to be atypical of a permanently flowing chalkstream, therefore greater faunal diversity should develop whilst this stream continues to flow. Streams 1,3 and 4 would develop similar invertebrate faunal communities to stream 2 if their discharge was greatly reduced for short periods (Bickerton et al, 1993). The presence of STW discharges near the source of stream 1 and in stream 4 will buffer any reduction in baseline stream flows but stream 3 is believed to have no major inputs downstream from its spring sources.

Table 9. Freshwater invertebrate "Families" recorded on Kent stream sites in January and April 1995 (present study) and from NRA monitoring data (Appendix II). * - site 1 upstream relocated in April.

	Stream	1	Stream 2		Stream 3		Stream 4	
January 1995	Upstr*	D/st	Upstr l	D/st	Upstr l	D/st	Upst D)/str
BMWP scoring taxa	14	-	8	12	15	16	15	20
Total Score	61	-	26	45	71	78	71	94
ASPT	4.36	-	3.25	3.75	4.73	4.87	4.73	4.70
April 1995								
BMWP scoring taxa	8	6	7	8	13	11	13	19
Total Score	29	19	23	31	63	51	55	94
ASPT	3.62	3.17	3.29	3.87	4.85	4.64	4.23	4.95

NRA data for Stream 4. (between the present studies Upstream and Downstream sites)

Autumn/Spring (equivalent data)

BMWP	Mar	90 Oct	90 Ma	r91 M	ar92	Apr93	Oct93	Mar94	Nov94
Scoring taxa	19	20	18	14	17	18	19	17	
Total Score	85	100	91	69	90	84	92	80	
ASPT	4.47	5.00	5.06	4.93	5.29	4.67	4.84	4.71	

[BMWP - Biological Monitoring Working Party - a scoring system based on perceived susceptibility/resistance to pollution. ASPT - Average Score Per Taxon, derived from the sum of the BMWP taxa scores divided by the number of scoring taxa].

Invertebrate community structure

The general approach to investigate freshwater invertebrate richness and community structure at a particular site is to survey during three seasonal periods "spring" (Feb-May), "summer"(Jun-Aug) and "autumn"(Sept-Nov). In this way a composite picture of invertebrates at a site through the year is established. The Institute of Freshwater Ecology have developed techniques for predicting the faunal composition of streams and rivers, in the absence of pollution (RIVPACS - River InVertebrate Prediction and Classification System). The NRA have adopted this approach in comparing predictions with the fauna actually present, leading on to monitoring biological water quality and the setting of specific water quality objectives. These predictions can also be used to detect unusually rich or impoverished sites (based on a range of physical and chemical descriptive variables). This can be done on seasonal or annual data. In the present study, January samples from the Kent streams were taken between the "autumn" and "spring" periods, followed by further sampling during the spring period (April). Generation of more robust RIVPACS predictions in streams of such small size is currently under development by IFE. For the present, the RIVPACS I package provided very similar predictions of BMWP score, number of scoring taxa and ASPT for all 8 sites (Table 10).

Table 10. Kent Streams, RIVPACS (I) a) predictions of BMWP scores, number of taxa and ASPT in spring.(see text for abreviations); b) Taxa with the highest probability of occurrence.

a)	BMWP Score	Number of 7	Taxa ASPT
Stream 1(Upstream)	114	21	5.5
Stream 1(D/stream)		20	5.2
Stream 2(Upstream)		20	5.5
Stream 2(D/stream)		20	5.5
Stream 3(Upstream)		20	5.7
Stream 3(D/stream)		20	5.5
Stream 4(Upstream)		20	5.6
Stream 4(D/stream)		21	5.5

b) Predicted probability (%) of occurrence (excludes taxa below 50% probability at most sites). Families showing wide deviation from predictions underlined.

	Stream		dictions Strean		Strean	n 3	Stream	n 4	
	Up/stI	O/st	Up/st[)/st	Up/stI	O/st	Up/stI	O/st	Mean
									%
	100	100	100	100	100	100	100	100	occurence 100
Oligochaeta	100	100	100	100		100	100	100	100
Chironomidae	100	100	100	100	100		100	98	75
Sphaeriidae	98.	99	100	99	100	98			
Limnephilidae	98	98	100	99	100	98	100	98	75
Gammaridae	99	97	100	99	100	97	100	98	100
Simuliidae	96	93	98	97	100	98	100	96	60
Tipulidae	93	87	98	94	100	87	99	90	75
<u>Nemouridae</u>	83	72	92	86	99	86	97	82	<u>25</u>
Baetidae	80	79	74	78	75	82	75	81	88
Hydrobiidae	75	74	76	75	75	71	75	74	47
Elmidae	72	77	67	70	63	69	64	72	60
Perlodidae	67	<50	77	69	86	62	84	62	<u>0</u>
Glossi-									
phoniidae	64	74	56	62	51	66	52	67	88
Planariidae	67	68	78	68	75	58	75	62	60
Dytiscidae	55	< 50	57	57	62	57	61	55	<u>12</u>
Scirtidae	<50	< 50	57	< 50	62	< 50	60	<50	25
Sericostomatidae	53	55	52	62	< 50	60	< 50	<50	40
Hydropsychidae	<50	50	<50	< 50	<50	< 50	<50	<50	47
Asellidae	<50	55	<50	< 50	<50	< 50	<50	<50	25
Erpobdellidae	<50	<50	<50	<50	<50	<50	<50	<50	<u>100</u>

Certain invertebrate groups have not been identified to species (Oligochaeta, Chironomidae, some caddis, eg Limnephilidae), as this is too time-consuming within the present study. Other families have been taken to species (for January samples), except when juvenile forms are not covered in identification keys. For the purposes of water quality assessment the normal procedure adopted is to identify to the Family level. A diverse range of beetles are normally found close to stream sources (generally as adults during winter), but with the exception of Elmidae (Streams 3 & 4, Upstream and Downstream), Scirtidae (Stream 3 Upstream and Downstream) and Dytiscidae (Stream 2 Downstream) no beetles were present. NRA monitoring data indicates Haliplidae were recorded in previous years (Stream 4, Appendix II).

The present survey is regarded as an incomplete audit of freshwater invertebrates utilising the sites on streams 1-4. Should a more detailed investigation be required the preserved invertebrate material will be retained and available for further study.

The fauna of headwater streams (first and second order) has been the focus of recent IFE studies, such headwaters were identified as "important sources of species diversity in need of protection from further environmental degradation". Unpolluted chalkstream headwaters would be expected to yield between 15 and 25 BMWP scoring taxa, whilst exceptionally rich streams have up to 30 scoring taxa (Furse, pers com). The "value" of the Kent streams within the present survey has not been clearly established by the visits in January and April 1995. An assessment of the invertebrate communities present follows and should be considered within the above constraints.

When considered in terms of invertebrate diversity and the types of taxa represented, streams 1,3 and 4 have communities closely similar to other chalkstream headwaters with perennial flow (Wright & Berrie 1987). The total number of BMWP scoring taxa, the Total Score and the Average Score Per Taxon for these sites in the January samples (Table 9) were at the lower end of the broad range indicative of high water quality. The less rich fauna in stream 2 may result from the lag in recovery following periods when the stream became dry in some reaches (Mid-Kent Water monitoring data), rather than poor water quality. The reduction in scoring taxa at most sites in April was unexpected and may result from loss of habitat diversity associated with algal overgrowths and the seasonal emergence of some insect species.

It should be noted that such high gradient streams with unpolluted sources provide important dilution for effluent discharges downstream. Similarly, the headwater invertebrate community is constantly "seeding" downstream sites with fauna capable of rapidly replacing components lost during periods of reduced water quality or quantity (note exceptions provided by taxa restricted to stream sources). Other natural recolonisation routes are available but tend to operate more slowly, in these cases complete faunal recovery following a stress event can take several months (Wood & Petts, 1994) or in excess of one year (Ladle & Bass, 1981).

Predictions versus Occurences (Table 10)

As the BMWP scores for streams 1-4 are generally lower than predictions, it is to be expected that many individual Families will also have occurred at lower occurrence rates than those predicted by RIVPACS (Table 10). It should be noted that most Families have occurrence rates only slightly less than predicted, but the overall depression of rates has driven down the observed BMWP scores.

These results may be attributed to the possible impacts of STW effluent streams 1 and 4, dredging activities on stream 1, the intermittent flow regime on stream 2 and lack of habitat diversity on stream 3. Further interpretation is confined to those Families with very much lower or higher occurrence rates than predicted rates.

Nemouridae, as with most Families of stonefly, are associated with high water quality, rapid velocities and low water temperatures. In S.E.England this largely restricts their occurence to the winter-spring period and (comparatively few) headwater localities.

Such local regional anomalies can explain depressed occurence rates.

Two leech Families (Glossiphonidae & Erpobdellidae) showed elevated occurrence rates (over predicted), both feed on a range of prey types, but it is not clear why they should be favoured by conditions in streams 1-4.

In the Simuliidae the impact of STW effluent (stream 1), lack of suitable flow in the preceding autumn for oviposition (stream 2, upper), lack of suitable substrate (extensive algae in April) contribute to low occurence.

Such influences may also impact other Families, but the precise conditions preffered and, more importantly, what the aquatic fauna is subjected to in the period prior to and between sample collections will always be difficult to establish.

Invertebrate community structure - site specific anomalies.

Stream 1 - Upstream site

No molluscs were found at this site in January, apart from one species of bivalve. Other expected groups were generally represented. The reduced number of Families recorded in April (at the revised site location) depressed the BMWP score and may be attributed to the dredging noted in January, the STW effluent, or both.

Stream 1 -Downstream site

Data were available for April, when the stream showed physical signs of recovery from the dredging undertaken in January. The faunal diversity was particularly low (Table 2) and further recovery over the coming weeks can be anticipated.

Stream 2 - Upstream site

The absence of Baetidae (Mayflies), Simuliidae (Blackflies) and Tipulidae (Craneflies), when they were found at each of the other upstream sites in January, was surprising. This, combined with the abundance of Lymnaea palustris (the Marsh Snail), may indicate the stream was dry at this point in the previous autumn.

Stream 2 - Downstream site

Despite the presence of a broader range of habitat types at this site, the invertebrate fauna was relatively poor (12 BMWP scoring taxa), when compared with streams 3 and 4 (16 and 20, respectively). No taxa recorded at this site were particularly noteworthy. The <u>Simulium aureum</u> species group have a widespread occurrence in lowland England and are associated with aquatic plants, which were relatively plentiful at this site.

Stream 3 - Upstream site

The blackfly <u>Simulium costatum</u>, found only at this site, is confined to permanent spring sources. Stoneflies (<u>Nemoura spp.</u>) are also of restricted occurrence and are intollerant of organic pollution.

Stream 3 - Downstream site

The absence of simuliid (blackfly) larvae, despite suitable flow conditions was surprising. This site yielded no <u>Asellus</u> or small bivalves (Sphaeriidae), in contrast to the downstream sites on other streams, but the habitats available were considered unsuitable for these groups.

Stream 4 - Upstream site

Acknowledgements

NRA (Southern) staff kindly supplied biological and chemical monitoring data, at very short notice. IFE staff generated RIVPACS predictions, retrieved archived data on adjacent streams and provided helpful comments on data interpretation. Annette Mills (EASL) focused the study and provided the project management.

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Appendix I

Tables

Table 1

Kent Streams - Stream 1 (Upstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

BMWP Score Invertebrate Family scale of abundance

Jan Apr

Note: site change, April samples taken below STW discharge point.

_	Planariidae (flatworms)		2	_
5	planariluae (liacwolms)		-	1
3	Lymnaeidae (snails)		2	1
3	Sphaeriidae (pea mussels)	-	3	3
1	Oligochaeta (worms)	•	1	1
3	Glossiphoniidae (leech)		_	
3	Erpobdellidae (leech)	•	1	_
3	Hydracarina (mites)		1	1
-	Hydracarina (mrccs)		1	-
3	Asellidae (slaters)		3	3
6	Gammaridae (shrimps)		- 3	ī
4	Baetidae (mayflies)	•	<u>.</u>	_
7	Nemouridae (stonelles)	•	_	-
Ŕ	Psychomyiidae (caddis)		1	_
0	Limnephilidae (caddis)	•	1	1
7	Limiephilidae (oddu-)		1	-
5	Tipulidae (cranefly)		1	3
2	Chironomidae (non-biting midge)		1	_
_	Muscidae (fly)		2	_
5	Simuliidae (blackfly)		4	_

Table 2

Kent Streams - Stream 1 (Downstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

BMWP Score Invertebrate Family scale of abundance

Note: site was not sampled in January, as extensive dredging had just been completed.

	Apr
Sphaeriidae(pea mussels) Oligochaeta (worms) Erpobdellidae (leech) Gammaridae (shrimps) Baetidae (mayflies) Chironomidae (non-biting midge)	1 3 2 3 3 2
	Oligochaeta (worms) Erpobdellidae (leech) Gammaridae (shrimps) Baetidae (mayflies)

Table 3

Kent Streams - Stream 2 (Upstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

		Jan	Ąx
E	Planariidae (flatworms)	2	2
2	Hydrobiidae (snails)	1	-
ີ .	Lymnaeidae (snails)	2	2
3.	Sphaeriidae (pea mussels)	-	2
3	Oligochaeta (worms)	2	3
T	Glossiphoniidae (leech)	1	-
3	Erpobdellidae (leech)	2	2
3	Hydracarina (mites)	1	1
-	Gammaridae (shrimps)	2	1
ь	Ostracoda (ostracods)	2	-
-	Ceratopogonidae (midge)	2	2
2	Chironomidae (non-biting midge)	2	2

Table 4

Kent Streams - Stream 2 (Downstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

		Jan	Apr
_	Planariidae (Flatworms)	-	1
5	Lymnaeidae (snails)	3	2
3	Succinidae (shail)	1	-
-	Sphaeriidae (pea mussels)	1	-
3	Oligochaeta (worms)	2	3
1	Glossiphoniidae (leech)	1	-
3	Erpobdellidae (leech)	1	_
3	Erpondellidae (leech)	1	1
-	Hydracarina (mites)	1	_
3	Asellidae (slaters)	2	2
6	Gammaridae (shrimps)	2	1
4	Baetidae (mayflies)	_ 1	_
5	Elmidae (Beetles)	<u>-</u>	1
5	Dytiscidae (Beetles)	1	-
7	Limnephilidae (caddis)	1	
5	Tipulidae (cranefly)	1	1
-	Ceratopogonidae (midge)	2	3
2	Chironomidae (non-biting midge)		. .
5	Simuliidae (blackfly)	±	_

Table 5

Kent Streams - Stream 3 (Upstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

		Jan	Apr
5	Planariidae (flatworms)	2	2
2	Lymnaeidae (snails)	1	2
3	Oligochaeta (worms)	2	2
Ţ	Glossiphoniidae (leech)	1	-
3	Erpobdellidae (leech)	1	-
3	Erpondelildae (leech)	1	2
-	Hydracarina (mites)	2	3
6	Gammaridae (shrimps)	2	3
4	Baetidae (mayflies)	2	2
7	Nemouridae (stoneflies)	1	2
5	Scirtidae (beetles)	1	2
5	Elmidae (beetles)	+	1
5	Hydropsychidae (caddis)	•	7
7	Limnephilidae (caddis)	. 1	2
8	Psychomyiidae (caddis)	•	1
10	Sericostomatidae(caddis)	1	1
5	Tipulidae (cranefly)	1	-
5	Ceratopogonidae (midge)	1	2
~	Chironomidae (non-biting midge)	3	2
2	Stratiomyidae (midge)	1	2
_	Simuliidae (blackfly)	2	-
5	Simulifuae (Diackity)		

Table 6

Kent Streams - Stream 3 (Downstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

BMWP	Score	Invertebrate Fa	mily	scale of a	abunda	nce
					Jan	Apr
3 3 1433-6-4557857152-	Lymnaeida Oligochae Piscicoli Glossipho Erpobdell Hydracari Gammarida Ostracoda Baetidae Scirtidae Elmidae Rhyacophi Psychomy: Hydropsyc Limnephi Sericosto Tipulidae Chironom	dae (snails) de (snails) de (snails) dae (leech) didae (leech) didae (leech) de (shrimps) de (shrimps) de (stracods) de (beetles) de (beetles) didae (caddis) didae (caddis) didae (caddis) didae (caddis) didae (caddis) didae (caddis) de (cranefly) didae (non-biting gonidae (midges)	midge)		2 - 2 1 2 1 2 3 1 3 1 2 2 2 2 2 2 2 2	1 1 3 - 2 - 2 3 - 3 1 2 2 2 1

Table 7

Kent Streams - Stream 4 (Upstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

		Jan	Apr
5363133-6-4575710 52	Planariidae (flatworms) Hydrobiidae (snails) Ancylidae (limpets) Sphaeriidae (pea mussels) Oligochaeta (worms) Glossiphoniidae (leech) Erpobdellidae (leech) Hydracarina (mites) Gammaridae (shrimps) Niphargidae (shrimps) Baetidae (mayflies) Elmidae (beetles) Rhyacophilidae (caddis) Hydropsychidae (caddis) Limnephilidae (caddis) Sericostomatidae(caddis) Tipulidae (cranefly) Chironomidae (non-biting midge)	Jan 1 1 1 1 1 1 3 2 3 1 1 1 1 1	Apr - 1 1 2 - 1 2 3 - 3 1 - 1 3 - 1
- 5	Psychodidae (midge) Simuliidae (blackfly)	2	1

Table 8

Kent Streams - Stream 4 (Downstream)

Freshwater invertebrate fauna: 1995

Abundance scale: 1=1-9, 2=10-99, 3=100-999, 4=>1000

BMWP	Score	Invertebrate Family	scale of abunda	ance
	•		Jan	Apr
3 3 3 6 3 1 3 3 - 3 6 - 4 10 0 5 7 5 7 10 0 5 2 - 5	Lymnaeid Planorbi Ancylida Sphaerii Oligocha Glossiph Erpobdel Hydracar Asellida Gammarid Ostracod Baetidae Leptophl Ephemeri Elmidae Rhyocoph Hydropsy Limnephi Leptocer Sericost Tipulida Chironom Psychodi Muscidae	dae (snails) ae (snails) dae (snails) e (limpets) dae(pea mussels) eta (worms) oniidae (leech) lidae (leech) ina (mites) ae (slaters) ae (shrimps) a (ostracods) e (mayflies) ebiidae (mayflies) dae (mayflies) didae (caddis) rchidae (caddis) rchidae (caddis) ridae (fonn-biting midge) dae (midge) e (fly) lae (blackfly)	2 2 1 1 2 2 1 2 1 3 1 2 - 1 3 2 3 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	1 1 1 2 3 3 1 1 2 1 3 3 1 2 1 2 1 2 -
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Appendix II

NRA data, Freshwater invertebrates and water chemistry

(* month Scoring Taxa)

LIST OF INVESTEBRATE	TAXA									120098	120098
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DATE	220390	260790	101090	210391	100691	050991	110392	180892	200493	271093	091194
TAKA											
Leptophlebiidae*			1								
Ephemerellidse*		2			3						
Leptoceridae	1		3	3					1	_	_
Sericostamatidas.			2	1			2	1	3	3	2
Psychosylidas				1		1	_	3	1	3	
Rhyscophilidae*	*		1	3		1	2		3	,	. 3
Limmophilidae*	2 ,			4	2	_	3		3	3	2
Ancylide*	3	2	2	3	3	3	1	1	3	2	4
Bydroptilides*	1	2	2 ,		_	_	_	2	4	,	4
Gameridae*	4	4	3	4	5	5	. 6	1	•	•	•
Repides*				•		_		2			
Corimidae*		2	2			1		4			
Enliplideo.	1					3					
Dytiocida**	2	1	2							2	
Scirtidas*				_	_		2	,	3	,	,
Elimidee*	3	3	2	3	3	3 2	2	,	3	3	3
Sydropeychides*	3	3	3	5	-	•	2	1	2	2	2
Tipelidae*	2				1 2		3	2	-	2	-
Similidas*				1	1		•	•	3	2	2
Planariidae*					•				•		1
Dendroccelidas*			•	4	3	3	,	. 2	3	2	1
Sections.	3	_	2	•	•	•	•	-	-	_	
Sialidae*		1								,	
Valvetidas*	_		j.	5	5	5	2	3	4	5	4
Bydrobiidae*	5	5	,	3	4	•					
Lymnasides.	1	2	2	•		2					2
Planorbida**	3	5	3	5	5	5	,	3	3	3	3
Sphaerlides*	2	2	2	1	2	2		2	2		2
Glossiphoniidae* Birodidae*	•	•	-	_	_					3	
Erpobdellidae*		2	. 2			2		1			
Asellidae*	1	1	1	2	3						
Chironomidiae*	4	4	3	3	4	3	3	3		2	2
Oligochaeta*	5	3	3	3	3	3	3	3	3	3	3
Bydracarina	2	1	1	2	1	2	2		2		, 1
Voliidae	_							2			
Ostracoda	1		1			1					
Psychodidae	2	2		2	1					1	
Ceratopogonidae	2			3	3				. 2	2	
Strationyidae						2					1
Empididae				2						1	
Tabasidas					1						
Muscidas				1							
No of SCORING TAXA	19	17	20	10	.17	16	14	10	17	19	17
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ASPT SCORE	4.47				4.47	4.31	4.93	4.72	5.29	4.67	4.71
Wat t broke	4.3.										

BIOLOGICAL SAMPLE REPORT

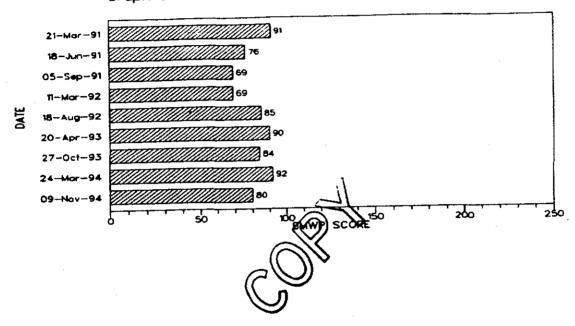
Watercourse : CHARING STREAM

: LEACON FARM Location TO 9515 4732 09/11/1994 NGR

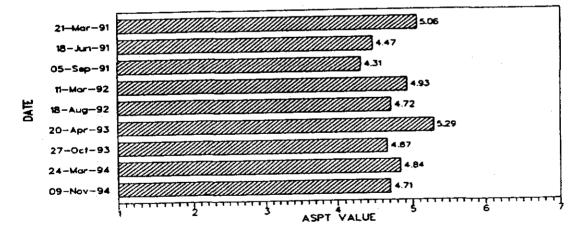
Date : 80 BMWP Score

Site Code: 1E0098 Sample Code: 941E0363 ASPT Score: 4.71





Graph of the most recent ASPT values.



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# Appendix III Field data sheets

WA/RPB:					
WA/RPB:- STREAM I RIVER:- UPSTREAM SITE:-	SITE				
SITE:- TQ 9045					
HCR:- TRASS	/ N 🗢				
DATE:- 25 1.9	5	*********			
DATE:-	· · · · · · · · · · · · · · · · · · ·				
SAMPLE TIME (HINS):	DARD PO	ND NET	(HEK-SAHPLING)		
SAMPLING HETHOD:	;				
DIMENSIONS OF SAMPLING DEVICE:  MESH SIZE OF NET:					
WA/RPB SAMPLE NUMBER (IF ANT): IS SAMPLING IN PROPORTION TO OCCUR	RENCE OF HA	BITATS:-	YES V HO		
IF NO CIVE DETAILS:-					
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	<b>A</b>		n.		
ROCK PAYEHEIT	<b> </b>		·	BOULDERS	,
>256 ma Boulders				COBBLES	130
>64-256 mm COBBLES	1	30		<b> </b>	
>16-64 mm PEBBLES	1	40		PEBBLES	1,
		20		GRAVEL	60
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HACROPHYTES (INCLUDING HOSSES AND LARGE ALO	le) in Sample/Survey Area.
IDENTIFY TO SPECIES IF POSSIBLE, LIST IN OR	DER OF ABUNDANCE, TICK SPECIES
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\$10 >10-25 >25-50 V >50-100 >100	CATEGORY
THE PLANT OF THE PARTY OF THE P	]
SUBSTRATUM IN SAMPLE AREA  OLVE DETAILS FOR THE FULL WIDTH OF RIVER AT THE SAMPLING AREA  OLVE DETAILS FOR THE FULL WIDTH OF RIVER AT THE SAMPLING AREA  OLVE DETAILS FOR THE FULL WIDTH OF RIVER AT THE SAMPLING AREA	
IN COLUMN A INDICATE THE DOMINANT PARTICULAR ESTIMATES OF % COVER FOR THE OF OTHERS BY +. IN COLUMN B ATTEMPT ROUGH ESTIMATES OF % COVER FOR THE FOUR CATEGORIES LISTED. IF WENTWORTH ANALYSIS IS UNDERTAKEN ACTUAL FOUR CATEGORIES LISTED. ATTEMPT ANALYSIS IS UNDER MACROPHYTES	1
PROPORTIONS MAY BE SUBSTITUTED. (INCLUDE CONTINUED)	
IN ESTIMATES OF % COVER)	
ROCK PAVEMENT	BOULDERS
>256 am BOULDERS	11 + 1
>64-256 pm COBBLES	COBBLES
	PEBBLES
>16-64 mm PEBBLES	CRAVEL
>2-16 mm GRAYEL	SAND 90
>0.0625-2 mm SAND \ \ \ 90	
>0.004-0.0625 ms SILT + 5	SILT /o
1 ~V, UV (-V, UV C) IN UALL	CLAY
	11 -
\$0.004 PM CLAY + 5	TOTAL 100
\$0.004 mm CLAY + 5	TOTAL 100

SKETCH OF SAMPLE AREA
ROAD BRIDGE
unstable sand/sitt (30 en below 20 en of water ) Grazed hold.
Grazed field.
spring doedged sport
A READ BRIDGE
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID
water colour:- Brown
MACROPHYTES (INCLUDING MOSSES AND LARGE ALOAE) IN SAMPLE/SURVEY AREA.  IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, TICK SPECIES
SAMPLED FOR INVERTEBRATES.
SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA
t event coccing the circular land
MACROPHYTES IN SAMPLE AREA
MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA  EXTRA SPECIES IN SURVEY AREA  COVER X:-  ALGAE  HOSS  PLANTS  TOTAL
MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA  EXTRA SPECIES IN SURVEY AREA  COVER X:-  ALGAE  MOSS  HIGHER PLANTS  TOTAL
MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA  EXTRA SPECIES IN SURVEY AREA  COVER X:-  ALGAE  HOSS  PLANTS  TOTAL

ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)

THIS SITE HAD BEEN DREDGE SINCE A VISIT 7 DAYS PREVIOUSLY,

IT WAS NOT LONGIDERED USEFUL TO ASSESS INVERTEBRATES USING

THE SITE

	A/APB:- STREAM 2 UPSCREAM TG 926 50 CR:- TRASC					
1	IVER:-	STE				
•	T& 926 50	٠				
1	NECORDER(3):-	(FE)				
	93.1.93					
			••••			
	SAMPLE TIME (HINS): KICK SAMPLING METHOD:	SAMPLI	NG.			
,	SAMPLING METHOD:	candard	POND	NET		
	MESH SIZE OF NET:	• • • • • • • • • •				
	wa/RPB Sahple Nomber (IP Any):			753[V] WO		
ļ	IS SAMPLING IN PROPORTION TO OCCURR	ENCE OF HAE	STATS:-	"" " "		
	IF NO GIVE DETAILS:-				SUPPLAR	Y
					WIDTH	1.2
	WATER WIDTH IN SAMPLE AREA	20	1 25	MIDIN (O)		
•	DEPTH IN SAMPLE AREA (cm) AT ESTIMATED SURFACE VELOCITY IN MAIN	FLOW CHANN		J ' <del>}</del>	DEPTH	18
		ATEGORY 3	CATEGOR	CATEGORY 5		
	CATEGORI II CATEGORI I				CATEGORY	3
	\$10 >10-25	25-50	>50-100	<b>&gt;100</b>		]
					`	
	SUBSTRATUM IN SAMPLE AREA		<del>-</del>			
	· · · · · · · · · · · · · · · · · · ·	RIVER AT T	he sakflin Izr by / An	G AREA D THE PRESENCE.		
	IN COLUMN A INDICATE THE DOMENTA	+ BOUGH EST	THATES OF	s cover for the		
	FOUR CATEGORIES LISTED, IF WENTWOR PROPORTIONS MAY BE SUBSTITUTED. (I	th analysis nclude subs	STRATA UNDE	R HACROPHYTES		
	IN ESTIMATES OF & COVER)					
	ſ	A				
	NOCK PAVEHENT					<del></del>
	ľ				BOULDERS	) 
	>256 ms BOULDEAS		·	·	COBBLES	• • •
	>64-256 mm COBBLES				PEBBLES	! !
	>16-64 mm PEBBLES			·	GRAVEL	5
	>2-16 mg GREVEL	+			SAND	5
1	>0.0625-2 ms SAND	+	. 5		11	<del>•</del>
	>0.004-0.0625 mm STLT	1	80		SILT +	85
1	50.004 mm CLAY	+	. 5		CLAY	<u> </u>
l	SA'nna ber ceut	TOTAL	100%		TOTAL	100
Į		1414	L	<u> </u>	ل	
-						

SKETCH OF SAMPLE AREA  SKETCH OF SAMPLE AREA  FROM GANZED  FIELD  FROM GUYCENA  FROM G	<b>TAY</b>
F.P. 80%  APONY  LOW HEAR  FLUCTORY  Y Cress  RANCE  RANCE	<b>TAY</b>
F.P. 80%  APONY  LOW HEAR  FUNCTIONS  Y Cress  RANCE  RANC	<b>TAY</b>
F.P. 80%, ARUM LOW HEARE  * Some GLYCEPM FULLANS  * Cress	TAY
F.P. 80%, ARUN LOW HEAR  FORME GLYCERM  FLOUTANS  Y Cress  RAILLE  B.	TAY
APON LOW HEAR  FORME GLYCERM  FUNCTIONS  * Cress	TAY
ARUN LOW MEDAE  * Some GLYCERM FLUCTANS  * Cress	TAY
Y Gress RAIL	h <b>a</b> Y
r Cress	MY
	MY
	1 100
	o M
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID	
HAIBA CLANIII:	
WATER COLOUR:- NONE	<del></del>
APIUM NODIFLORUM  NASTORTIUM (Water Cross)	
COVER X:- ALGAE HOSS PLANTS 90 TOTAL	90

*

WA/RPB:		•••••	,		
WA/RPB:-  RIVER:-  SITE:-  NGR:-	~ ~;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;				
SITE:	26492				
NGR:	C IFE	• • • • • • • • • • • • • • • • • • • •			٠
NGR:	<u> </u>	• • • • • • • • • • •			
DATE					
SAMPLE TIME (HINS):	DARD	PONDNET	(KICK-SWEED)		
SAMPLING METHOD:			.(		
DIMENSIONS OF SAMPLING DEVICE:					
WA/RPB SAMPLE NUMBER (IF ANY):					•
IS SAMPLING IN PROPORTION TO OCCUP IF NO GIVE DETAILS:-	RRENCE OF H	ABITATS:-	YES NO		
		· · · · · · · · · · · · · · · · · · ·		SUMMA	RY
WATER WIDTH IN SAMPLE AREA	8 -			WIDTH	18
DEPTH IN SAMPLE AREA (cm) AT	20	1 25	1 (5 WIDTH	<b> </b>	10
ESTIMATED SURPACE VELOCITY IN MAIN	,	*		MEAN DEPTH	20
	CATEGORY 3	<u> </u>			
CATEGORY 1 CATEGORY 2	<del></del>	l		VELOCITY	
≥10 >10-25	>25-50	>50-100	>100	CATEGORY	ا د
SUBSTRATUM IN SAMPLE AREA					
GIVE DETAILS FOR THE FULL WIDTH O	F RIVER AT	THE SAMPLIN	IG AREA		
IN COLUMN A INDICATE THE DOMINANT OF OTHERS BY +. IN COLUMN B ATTEM	PARTICLE S PT ROUGH ES	SIZE BY / AN Stimates of	ID THE PRESENCE :		٠.
FOUR CATEGORIES LISTED, IF WENTWO	RTH ANALYSI	IS IS UNDERT	TAKEN ACTUAL		
PROPORTIONS MAY BE SUBSTITUTED. ( IN ESTIMATES OF % COVER)	INCLUDE SUE	STRATA UNDE	ER MACKUPHITES		
<b>I</b>					
		В			
ROCK PAVEMENT			•	60/11 0000	•
>256 mm BOULDERS	+	10		BOULDERS +	1
>64-256 mm COBBLES	¥	40		COBBLES	Se
>16-64 mm PEBBLES	1/	20		PEBBLES	
	} <del>-</del>			GRAVEL	30
>2-16 mm GRAVEL	+	10		SAND	• • •
>0.0625-2 mm SAND	+	lc			10
>0.004-0.0625 mm SILT	+	10		SILT	lic
≤0.004 mm CLAY				CLAY	!
	TOTAL	100%		TOTAL	: 100
	TOTAP	100%	<b> </b>	<u> </u>	٠
				=	

SKETCH OF SAMPLE AREA	
RECREATION  Recreation  Field  ARIDA LABORE  APIDA LABORICA	
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID WATER COLOUR:- NOWE  MACROPHYTES (INCLUDING HOSSES AND LARGE ALGAE) IN SAMPLE/SURVEY AREA.  IDENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OP ABUNDANCE, TICK SPECIES	<del></del>
SAMPLED FOR INVERTEBRATES.	<b>1</b> 01
HACROPHYTES IN SAMPLE AREA EXTRA SPECIES IN SURVEY A	1EA
APINY NODIFICRUM  VERONEA BECLABONGA  SPARGANIUM?SP	
FUNCUS SP	
COVER X:- ALGAE HOSS HIGHER 40 TOTAL 40  DETRITUS (ROTTING VEGETABLE HATTER, LEAVES):- PRESENT V ABSENT	

ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)

MORE VARIED HABITAT STRUCTURE THAN SEEN ON OTHER DISTOR. STEES

ON ADTACENT STREAMS.

WA/RPB:- YIOLET WO RIVER:- UPSCREA SITE:- TO 94	OD SCREAN	٦. (\$=	2EAH 3)		
SITE:	H STTE				
NCR:-  RECORDER(S):-  TQ 94	3488	* * * * * * * * * * * * *			
DECORDER/ELL	ارج در ایاری حج		••••••		
DATE:- 25.1.9				•	
SAMPLE TIME (MINS):	K 8AMPU	1.e			•
DIMENSIONS OF SAMPLING DEVICE:-	8-CANDA	ed bend	NET		
MESH SIZE OF NET:					
WA/RPB SAMPLE NUMBER (IF ANY):- IS SAMPLING IN PROPORTION TO OC			····		
IS SAMPLING IN PROPORTION TO OC IF NO GIVE DETAILS:-	Currence of Hi	BITATS:-	IES [V] NO []		
IF NO UITE DEIXIOS.				SUMMAI	RY
400	8.0			WIDTH	0.8
WATER WIDTH IN SAMPLE AREA DEPTH IN SAMPLE AREA (cm) AT	1 [10]	1 [10	1 10 WIDTH		
ESTIMATED SURFACE VELOCITY IN H	IAIN FLOW CHAN	NEL cm sec	i	DEPTH	10
CATEGORY 1 CATEGORY 2	CATEGORY 3				
\$10 >10-25	>25-50	>50-100	√ >100	VELOCITY CATEGORY	4
<u> </u>		) <u>L</u>		<u> </u>	
SUBSTRATUM IN SAMPLE AREA CIVE DETAILS FOR THE FULL WIDTH	H OP RIVER AT	THE SAMPLIN	O AREA		
IN COLUMN A INDICATE THE DOMINIOF OTHERS BY +. IN COLUMN B AT	ANT PAXILULE 3	ILLE DI F AF	IN THE THENEWOR!		•
FOUR CATEGORIES LISTED, IF WENT PROPORTIONS MAY BE SUBSTITUTED	TWORTH ANALISI	3 13 URDENI	AKER RUIUNG		
IN ESTIMATES OF % COVER)	, (Incress es				
·. •	<b>A</b>	В			
NOCK PAYEMENT				<u> </u>	<del></del>
>256 mm BOULDERS				BOULDERS	
>64-256 mg COBBLES				COBBLES	<u> </u>
>16-64 m PEBBLES	J	40		PEBBLES	-
>2-16 mm GRAYEL	+	10		GRAVEL	150
>0.0625-2 mm SAND	+	20		SAND	;2c
>0.004-0.0625 mm SILT	+	2		SILT	30
≤0.004 mm CLAY	+	30		CLAY	
	TOTAL	100%		TOTAL	100
1		£	3	3	

SCREAM 3 - UPSTREAM	
SKETCH OF SAMPLE AREA	
Cannalised channel  SAND QUARRY  (porallel with quarry)  FB APIUM &  NYOSECTIS Sp.  Overland flow from  Quarry discharge  Allos Frees  FOOTPATH  GRAZED  FIELD  FROAD BRIDGE	
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID	
Water Colour:- gangy/Yenew	<del></del>
MACROPHYTES (INCLUDING HOSSES AND LARGE ALOAE) IN SAMPLE/SURVEY AREA.	
IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, TICK SPECIES SAMPLED FOR INVERTEBRATES.	
MACROPHYTES IN SAMPLE AREA EXTRA SPECIES IN SUR	VEY AREA
HYOSOUS Sp.	
COVER X:- ALGAE HOSS HIGHER 5 TOTAL DETRITUS (ROTTING VEGETABLE HATTER, LEAVES):- PRESENT ABSENT	
DETRITUS (ROTTING VECETABLE HATTER, LEAVES):- PRESENT	
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  INTERMITENT BISCHARGE OF BEDIMENT FROM THE QUARRY ( TAKING PLACE AS THE SITE WAS SAMPLE) GRAZED FIELDS  SILT & SAND OVERLYING GRAVEL . SUBSIDIARY SIMPLE TAK  UISTCHAM FROM QUARRY DISCHARGE TO CHECK FOR ADDITIONAL	ÆÅ

المانية والمنظمية وا		<del></del>	ľ		
WA/RPB:-  RIVER:-  SITE:-  DOWNSCREAM  TO 937477  HGR:-  RECORDER(3):-  SBASS	crean	(SCRE	w 3)		
SITE: DOWNSCREAM	SITE				
NCR:- TO 937477					
RECORDER(3):BASS	(c) <del>.5€</del> )				
DATE:		• • • • • • • • • •	**********		
SAMPLE TIME (MINS):					
SAMPLING METHOD:	- 57mm	IRD Anul	NET.		
DIMENSIONS OF SAMPLING DEVICE:		1000	7		
MESH SIZE OF NET:					
WA/RPB SAMPLE NUMBER (IF ANY): IS SAMPLING IN PROPORTION TO OCCURR	ENCE OF HA	BITATS:-	153¥ NO		
IF NO GIVE DETAILS:-					
				SUMMAR	RY
WATER WIDTH IN SAMPLE AREA	:4			WIDTH :	1.4
DEPTH IN SAMPLE AREA (cm) AT	[10]	1 15			10
ESTIMATED SURFACE VELOCITY IN HAIN	FLOW CHANN	EL cm sec		DEPTH	12
	ATEGORY 3	CATEGOR		UEI OCITY	
	25-50	>50-100	2 2100	VELOCITY CATEGORY	4
\$10 >10-25					
		·····		1	
SUBSTRATUM IN SAMPLE AREA		eúp Blufi TV	M 4964		
GIVE DETAILS FOR THE FULL WIDTH OF IN COLUMN A INDICATE THE DOMINANT	PARTICLE 3.	ILL DI 7 AM	IN THE INCOCUCE.		
OF OTHERS BY +. IN COLUMN B ATTEMP FOUR CATEGORIES LISTED, IF WENTWOR	t rough es	TIMATES UT	T COASE LOW THE		
PROPORTIONS MAY BE SUBSTITUTED. (1	NCLUDE SUB	STRATA UNDE	R MACROPHYTES		
IN ESTIMATES OF % COVER)		<del></del>			
l l	<u> </u>	В		į	
ROCK PAVEHENT					
>256 mm Bouldeas		•		BOULDERS	i .
>64-256 mm COBBLES		60		COBBLES	60
>16-64 mm PEBBLES	/	20		PEBBLES +	3.
>2-16 mm GRAVEL	+	10		GRAVEL	30
>0.0625-2 mm SAND	+	5		SAND	5
>0.004-0.0625 mm SILT	+	5		SILT	5
≤0.004 mm CLAY				CLAY	1
'	TOTAL	100%		TOTAL	100
· L	·		- 	_	

SCREAM 3 - DOWNSTREAM
SKETCH OF SAMPLE AREA
ONK AGHT ALDER  CHIMMED harbs/grasses  Gravel  high hedge (every nee in)  SPARREMINITY SPARREMINITY SP(?)  WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID
WATER COLOUR:- NONE
MACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SAMPLE/SURVEY AREA.  IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, TICK SPECIES  SAMPLED FOR INVERTEBRATES.  EXTRA SPECIES IN SURVEY AREA  EXTRA SPECIES IN SURVEY AREA
APIUM MODIFIORUM SP?
COVER X:- ALGAE HOSS HIGHER 7 TOTAL  DETRITUS (ROTTING VEGETABLE HATTER, LEAVES):- PRESENT ABSENT
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  SCHE WOODY DEBUS WITH LIME FURNA DEPOSITS, ASO ON STONES  RAPID FLOW AND LITTLE SCOPE FOR PLANTS TO BECOME  ESTABLISHED.

## SMITLE AREA HOME

	**** • • • • • • • • • • • • • • • • •	ZKENK . T	-)		
RIVER: - CHARING SCRE SITE: - HACON FARM TQ 952470 HCR: - FBASS	UPS-CREAM	,)			
NCR:- 7Q732410 RECORDER(3):- BASS	( IFE)	•••••		•	
RECORDER(3):- 25.1.95	A				
GANDI B BENE ANTHON					
SAMPLING METHOD: KICK S DIMENSIONS OF SAMPLING DEVICE:-	BAHPUNG.				
DIMENSIONS OF SAMPLING DEVICE:-	STANDAR	P WID I	NET	ı	
MESH SIZE OF NET:			4		
WA/RPB SAMPLE NUMBER (IF ANY):- IS SAMPLING IN PROPORTION TO OC	CURRENCE OF 1	HABITATS:-	YES W		
IP NO GIVE DETAILS:-				SUMPLA	<b>.</b> .
WATER WIDTH IN SAMPLE AREA		1 25	I TO WIDTH	<b> </b>	1.2
DEPTH IN SAMPLE AREA (cm) AT ESTIMATED SURFACE VELOCITY IN F	HAIN FLOW CHA			1 PT-2.A.F	18
CATEGORY 1 CATEGORY 2		<del></del>			
\$10 >10-25	>25-50	>50-100	>100	VELOCITY CATEGORY	4
				·	
SUBSTRATUM IN SAMPLE AREA				)	
GIVE DETAILS FOR THE FULL WIDTH					
THE PURITUE FOR THE FOUR WAVE	H OF RIVER AT	THE SAMPLII	NO AREA NO THE PRESENCE		
IN COLUMN A INDICATE THE DOMING	ANT PARTICLE TEMPT ROUGH E	size by / al Stimates of	ND THE PRESENCE.  S COVER FOR THE		
OF OTHERS BY +. IN COLUMN B AT	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL		
IN COLUMN A INDICATE THE DOMING	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL		
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN' PROPORTIONS HAY BE SUBSTITUTED	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL		
IN COLUMN A INDICATE THE DOMING OF OTHERS BY IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN' PROPORTIONS HAY BE SUBSTITUTED	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL		,
IN COLUMN A INDICATE THE DOMING OF OTHERS BY IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	BOULDERS +	
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEHENT	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS	size bi / a! Stimates of Is is under	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES	
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +, IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS (INCLUDE SU	SIZE BY A A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	1 1 •	20
IN COLUMN A INDICATE THE DOMING OF OTHERS BY IN COLUMN B AT FOUR CATEGORIES LISTED. IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS >64-256 mm COBBLES >16-64 mm PEBBLES	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS (INCLUDE SU  A  20  70	SIZE BY A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES	
IN COLUMN A INDICATE THE DOMING OF OTHERS BY IN COLUMN B AT FOUR CATEGORIES LISTED. IF VEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEHENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAYEL	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS . (INCLUDE SU  20  70  5	SIZE BY A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES PEBBLES	20
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEHENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS (INCLUDE SU  A  20  70	SIZE BY A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES PEBBLES GRAVEL	20 75
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEHENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND  >0.004-0.0625 mm SILT	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS . (INCLUDE SU  20  70  5	SIZE BY A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES PEBBLES GRAVEL SAND	20 75
IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF VEN PROPORTIONS HAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEHENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND	ANT PARTICLE TEMPT ROUGH E TWORTH ANALYS . (INCLUDE SU  20  70  5	SIZE BY A STIMATES OF IS IS UNDER BSTRATA UND	ND THE PRESENCE, S COVER FOR THE TAKEN ACTUAL	COBBLES PEBBLES GRAVEL SAND SILT	20 75

ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)

THIS SITE 18 UISTREAM FROM THE ROAD BRIDGE, WITHICH IS A

REGULAR NRA MENITORING SITE. THE CHARACTERISTICS AND

AUNA ARE LIKELY TO BE SIMILAR.

WA/APB:- CHARING STREAM		TREAM 4	<b>5</b>		
DOWN STREAM	SITE		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
-15 9 H9 46 T					
RECORDER(3): F. BASS	15E				
DATE:- 24.1.95					
CAMPLE TIME INTHEST. 3HINS					
Commence Kick St	mrawa .	and as	4E.7		
DIMENSIONS OF SAMPLING DEVICE:	2CHM Dan				
HESH SIZE OF NET:					
WA/RPB SAMPLE NUMBER (IF ANY): IS SAMPLING IN PROPORTION TO OCCUR	RENCE OF H	ABITATS:-	YES V NO		
IF NO GIVE DETAILS:-					
				SUPPLAT	RY
WATER WIDTH IN SAMPLE AREA	1.8				1.8
DEPTH IN SAMPLE AREA (cm) AT	10	1 15		PUCKU ,	12_
ESTIMATED SURFACE VELOCITY IN HAIR	FLOW CHAN	NEL cm sec	,	DEPTH	12
CATEGORY 1 CATEGORY 2	CATEGORY 3	CATEGOR	T 4 CATEGORY 5	VELOCITY	
\$10 >10-25	>25-50	>50-100	>100	CATEGORY	4
				<u> </u>	<del></del> -
SUBSTRATUM IN SAMPLE AREA				ı	
ATHE RESERVE BAR BUR MILL WINTH O	P RIVER AT	THE SAMPLED	O AREA	·	
IN COLUMN A INDICATE THE DOMINANT	PARTICLE S PT ROUGH ES	size by a ai Stimates of	S COVER FOR THE		
FOUR CATEGORIES LISTED. IF WENTWO PROPORTIONS MAY BE SUBSTITUTED. (	RTH ANALYSI	12 12 AMDER	SKNEK WOLUND		
IN ESTIMATES OF % COVER)	1400002 00.	_			
	A	В			
ROCK PAVEHENT		_			
>256 ms Boulders				BOULDERS	
		40		COBBLES	40
>64-256 ma COBBLES	\		•	PEBBLES	
>16-64 mm PEBBLES	<b>/</b>	40		GRAVEL	50
>2-16 ma GRAVEL	+	10		SAND	
>0.0625-2 mm SAND	+	10		}	10
>0.004-0.0625 mm SILT		]	Į	SILT	!
\$0.004 mm CLAY				CLAY	·
		****	1	TOTAL	100
· ·	total	100%		L	J

CHORING SCREAM DOWNS	CLEAM - 4)
SKETCH OF SAMPLE AREA	
Comised Lauri Hedge.	Lent stands)  HOVE  HOVE  CLOUDY TURBID
MACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER SAMPLED FOR INVERTEBRATES.	IN SAMPLE/SURVEY AREA. OF ABUNDANCE, TICK SPECIES
MACROPHYTES IN SAMPLE AREA	EXTRA SPECIES IN SURVEY AREA
Anora	•• •
COVER X:- ALGAB HOSS HOSS DETRITUS (ROTTING VEGETABLE HATTER, LEAVES):-	PRESENT ABSENT 1
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SA	MPLE AREA SINCE LAST VISIT)

ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)

SAND TO BE A STW INPUT UPSTREAM. NO INDICATIONS OF POLLUTION,

EXCEPT FROM A DRAIN BESIDE THE ROAD WHICH WAS DISCHARGING.

SOME OIL AFTER HEAVY RAIN.

HA/RPB:- (STREAM FROM LE	:N F/M//				
110000CALILI					
RIVER:- (STREAM(!) SITE:- UPS TREAM(!) TQ 904508					
NCR:-			*****		
RECORDER(S): ANTINIO					
24.49					
LAND CAMETA	<b>ツァーイかいり</b>				
	2 min		****************		
			******		
THE TAX STATE OF THE PARTY OF T					
IS SAMPLING IN PROPORTION TO OCCU	JRRENCE OF HAI	BITATS:-	YES / HO		
IF NO GIVE DETAILS:-				SUMMAR	Υ
				<b>-</b>	
WATER WIDTH IN SAMPLE AREA	2:0.		] [ [5] WIDT		2.0
ALLE ADCA (am) AT	1101	10		HEAN '	12
ESTIMATED SURFACE VELOCITY IN MA	IN FLOW CHANN	EL CM 3ec			
CATEGORY 1 CATEGORY 2	CATEGORY 3	CATEGOR	Y 4 CATEGORY 5	VELOCITY	
>10-25	>25-50	>50-100	>100	CATEGORY	4-
	1747-74	, , , , , ,	1 <b>v</b>   1   1	- 1 1 [	
CURCIDATION IN CAMPLE AREA				] ]	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)	OF RIVER AT THE PARTICLE STEMPT ROUGH EST	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERT	NO AREA ND THE PRESENCE SCOVER FOR THE		
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED.	OF RIVER AT THE PARTICLE STEMPT ROUGH EST	THE SAMPLIX IZE BY / AN ITHATES OF	NO AREA ND THE PRESENCE SCOVER FOR THE		
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED.	OF RIVER AT THE PARTICLE STEMPT ROUGH EST	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERT	NO AREA ND THE PRESENCE SCOVER FOR THE	BOULDERS	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)	OF RIVER AT THE PARTICLE STEMPT ROUGH EST	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERT	NO AREA ND THE PRESENCE SCOVER FOR THE	11 +	<b>↓</b>
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BES BOULDERS	OF RIVER AT THE PARTICLE STEMPT ROUGH EST	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERT	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES	<b>i</b> •
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEHENT  >256 ms BOULDERS  >64-256 ms COBBLES	OF RIVER AT THE PARTICLE STEMPT ROUGH EST WORTH ANALYSIS (INCLUDE SUBS	THE SAMPLINIZE BY / ANTIMATES OF STRATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	11 +	ic
SUBSTRATUM IN SAMPLE AREA  CIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS >64-256 mm COBBLES >16-64 mm PEBBLES	OF RIVER AT THE PARTICLE STEPPED ROUGH EST WORTH ANALYSIS (INCLUDE SUBS	THE SAMPLINIZE BY / ANTIMATES OF SIS UNDERTATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES	ic
SUBSTRATUH IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS >64-256 mm COBBLES	OF RIVER AT THE PARTICLE STEMPT ROUGH EST WORTH ANALYSIS (INCLUDE SUBS	THE SAMPLINIZE BY / ANTIMATES OF B IS UNDERTO STRATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES PEBBLES	10 30
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS >64-256 mm COBBLES >16-64 mm PEBBLES	OF RIVER AT THE PARTICLE STEPPED ROUGH EST WORTH ANALYSIS (INCLUDE SUBS	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERTATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES PEBBLES GRAVEL	80
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL	OF RIVER AT THE STATE OF PARTICLE STATE OF THE STATE OF T	THE SAMPLINIZE BY / ANTIMATES OF B IS UNDERTO STRATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES PEBBLES GRAVEL SAHD SILT	80
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINAN OF OTHERS BY +. IN COLUMN B ATTE FOUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND	OF RIVER AT THE STATE OF PARTICLE STATE OF THE STATE OF T	THE SAMPLINIZE BY / ANTIHATES OF SIS UNDERTATA UNDI	NO AREA ND THE PRESENCE SCOVER FOR THE	COBBLES PEBBLES GRAVEL SAND	ic 3c 5

	STREAM () - UPSTREAM (18.4.95)
	SKETCH OF SAMPLE AREA
	DITCH SAMPLE AREA  FOOTBANGE
	Take To seamer
1	
	WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID
	WATER COLOUR:- LIGHT GROWN
L	LIGHT SCOME
	MACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SAMPLE/SURVEY AREA. IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, TICK SPECIES SAMPLED FOR INVERTEBRATES.
1	HACROPHYTES IN SAMPLE AREA
	NO IN-SCREAM PLANTS
-	MIRGINALS INQUISE
	Catabrosa
1	Himalus
-	Apun
ł	Hentha
	COVER X:- ALGAE SO HOSS - HIGHER TOTAL SO
	DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):- PRESENT ABSENT
	ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  THIS SITE IS C. DOOM A/S OF THE SITE VISITED IN JANUARY - THERE IS CONSIDER - BUT
i	MORE DISCHANGE HERE, AS IT INCLUDED THE STW CUTPUT (ESTIMATED AS & 80 AD THE TIME OF SAMPUNG). THE TRUCKED SEWAGE MAY HAVE MORE IMPACT
	DIS AWAY FROM THE INFLUENCE OF BRITTING COLLOWISERS ( FROM OTS MEATIN).
	THIS SITE WAS DREDGED IN JANUARY 1995
	· · · · · · · · · · · · · · · · · · ·

CIVE DETAILS FOR THE FULL WIDTH OF IN COLUMN A INDICATE THE DOMINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWOOD PROPORTIONS HAY BE SUBSTITUTED. (STEED OF STORY)  NOCK PAVEMENT  >256 EXE BOULDERS  >64-256 EXE COBBLES  >16-64 EXE PEBBLES  >2-16 EXE GRAVEL  >0.0625-2 EXE SAND  >0.004-0.0625 EXE SILT  ≤0.004 EXE CLAY	T ROUGH ES	TIMATES OF	& COVER FOR THE	BOULDERS COBBLES PEBBLES GRAVEL SAND SILT CLAY TOTAL	50 30 20
IN COLUMN A INDICATE THE DUNINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWO PROPORTIONS MAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)  NOCK PAVEMENT  >256 EM BOULDERS  >64-256 EM COBBLES  >16-64 EM PEBBLES  >2-16 EM GRAVEL  >0.0625-2 EM SAND	T ROUGH ES RTH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE B	& COVER FOR THE	COBBLES PEBBLES GRAVEL SAND SILT	50 30
IN COLUMN A INDICATE THE DURINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWO PROPORTIONS MAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)  NOCK PAVEMENT  >256 BM BOULDERS  >64-256 BM COBBLES  >16-64 BM PEBBLES  >2-16 BM GRAVEL	T ROUGH ES RTH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE B	& COVER FOR THE	COBBLES PEBBLES GRAVEL SAND	50 30
IN COLUMN A INDICATE THE DUNINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTVOI PROPORTIONS MAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 EXE BOULDERS >64-256 EXE COBBLES >16-64 EXE PEBBLES	T ROUGH ES RTH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE B	& COVER FOR THE	COBBLES PEBBLES GRAVEL	50
IN COLUMN A INDICATE THE DURINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWOI PROPORTIONS MAY BE SUBSTITUTED. () IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BES BOULDERS >64-256 BES COBBLES	T ROUGH ES ATH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE	& COVER FOR THE	COBBLES PEBBLES	: 
IN COLUMN A INDICATE THE DUNINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWOI PROPORTIONS MAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BES BOULDERS	T ROUGH ES ATH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE	& COVER FOR THE	COBBLES	
IN COLUMN A INDICATE THE DUNINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTWO PROPORTIONS MAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)  ROCK PAVEMENT	T ROUGH ES ATH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE	& COVER FOR THE	•	
IN COLUMN A INDICATE THE DURINANT OF OTHERS BY +. IN COLUMN B ATTEM FOUR CATEGORIES LISTED. IF VENTUO PROPORTIONS HAY BE SUBSTITUTED. (S IN ESTIMATES OF % COVER)	T ROUGH ES ATH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE	& COVER FOR THE	BOULDERS.	
OF OTHERS BY +. IN COLUMN B ATTEMS FOUR CATEGORIES LISTED. IF VENTWOS PROPORTIONS MAY BE SUBSTITUTED. (	T ROUGH ES ATH ANALYSI INCLUDE SUB	TIMATES OF S IS UNDERT STRATA UNDE	& COVER FOR THE		
OF OTHERS BY +. IN COLUMN B ATTEMS FOUR CATEGORIES LISTED. IF VENTWOS PROPORTIONS MAY BE SUBSTITUTED. (	T ROUGH ES	TIMATES OF	& COVER FOR THE		
SUBSTRATUM IN SAMPLE AREA					•
CATEGORY	CATEGORY 3 >25-50 ✓	CATEGOR >50-100		VELOCITY	3
ESTIMATED SURFACE VELOCITY IN MAIN		EL cm sec		DEPTH	1.7
WATER WIDTH IN SAMPLE AREA	10_	1 15	TO WIDTH	MEAN	
	2.1	<del></del>		HTDIW	2.1
IS SAMPLING IN PROPORTION TO OCCUR!  IF NO GIVE DETAILS:-	RENCE OF HA	BITATS:-	YES NO	SU1194AR	Y
MESH SIZE OF NET:			• • • • • • • • • • • • • • • • • • •	·	
BELEVETONS OF SAMPLING DEVICE: 77		THE TOWN IN	Fil. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
TICK 144	ung - fo	NA NET	······		
3-MINIS					
RECORDER(3):					•
TO 901502					
SITE:- DOWNS REAM!	!)				

	HY 1 DOWNSCREAMY) 18:4	1.3	
PORKTO	SKETCH OF SAMPLE ARE	1	
37W	- ROAD BRIDGE		į
K	Ţ ^r		. !
		•	
7			
YES AGE	SAMPLE AREA		
	1 1		
	11		
	MOTORWAY CULVER		· 
WATER CLARITY:-	CLEAR AND BRIGHT	CLOUDY TUR	SID
WATER COLOUR: - Sue	SHT COLOUR		<del></del>
MACROPHYTES (INCLUD	ING MOSSES AND LARGE ALGAE) IP POSSIBLE, LIST IN ORDER	OF ABUNDANCE, TICK S	PECIES
SAMPLED FOR INVERTE	BRATES.		
MACROPHYTES IN	SAMPLE AREA	EXTRA SPECI	ES IN SURVEY AREA
	The state of the s		
A FEW STEMS OF	SPARGANIUM SP		
A FEW STEMS OF PRESENT IN THE			
PRESENT IN THE	gaean.	<u>-</u>	
1	Gaeam .	<u>.</u>	
PRESENT IN THE MARGINALS INC COTAGE	Gaeam .	<u>-</u>	
PRESENT IN THE MARGINALS INC COTAGE	GCEAM.	•··	
PRESENT IN THE MARGINALS INC COTAGE	ec. osa ca beccabunga	HTCHER (	
PRESENT IN THE MARGINALS INC COTAGE	GCEAM.	HIGHER 5	TOTAL 35
PRESENT IN THE  MARGINALS INC  COTAGE  VERSII  COVER S:-	el. Sa ca beccabunga  ALGAE 36 HOSS	HICHER 5 PLANTS 5	TOTAL 35 ABSENT
PRESENT IN THE  MARGINALS INC  COTAGE  VERSII  COVER S:-	el. osa ca beccabunga	PLANTS 5	المنتسل المناسبة
COVER \$:-	SCHAM .  Ca beccabunga  ALGAE 30 HOSS  VEGETABLE MATTER, LEAVES):-	PLANTS 5  PRESENT SAMPLE AREA SINCE LAST	ABSENT VISIT)
COVER X:-  DETRITUS (ROTTING  ADDITIONAL INFORMA	PEL.  SER  Ca beccabunga  ALGAE 36 HOSS  VEGETABLE HATTER, LEAVES):-  ATION (INCLUDING CHANGES IN DREDGED IN MID-TANVAR	PRESENT PRESENT SAMPLE AREA SINCE LAST	VISIT)
COVER S:-  DETRITUS (ROTTING  ADDITIONAL INFORMA THIS LOCATION WAS	POREAM.  CL.  OSA  CA Beccabunga  ALGAE 30 HOSS  VEGETABLE HATTER, LEAVES):-  ATION (INCLUDING CHANGES IN DREDGED IN MID-JANVAR  OFFICIAL CONTROL OF TO THE PROPERTY OF THE PROPERTY	PRESENT  PRESENT  SAMPLE AREA SINCE LAST  Y, IN APRIL THE SE	VISITI
COVER S:-  DETRITUS (ROTTING  ADDITIONAL INFORMA THS LOCATION WAS  RE-VEGETATED, TH	POREAM.  CL.  OSA  CA Beccabunga  ALGAE 36 HOSS  VEGETABLE HATTER, LEAVES):-  ATION (INCLUDING CHANGES IN DREDGED IN MID-JANVAR  WE CHANNEL RETAINS 10-2  CRAVEL HAS SE	PLANTS 5  PRESENT  SAMPLE AREA SINCE LAST  Y, IN APRIL THE SC  ECLI OF GIVE SESTING  TRED ON THE CO	VISITI
COVER S:-  DETRITUS (ROTTING  ADDITIONAL INFORMA  THIS LOCATION WAS  RE-VEGETATED. TH  WHOLE BED SOME	PEL.  SER  Ca beccabunga  ALGAE 36 HOSS  VEGETABLE HATTER, LEAVES):-  ATION (INCLUDING CHANGES IN DREDGED IN MID-TANVAR	PRESENT  PRESENT  SAMPLE AREA SINCE LAST  Y, IN APRIL THE SC  ECLI OF GIVE SEDIN  THED ON THE CO  TEBRATES.	VISIT) EXAM BANK WAS MENT OVER THE NSOUDATED REDIMENT

WA/RPB:		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1		
SITE: STREAM 2 UPS DEAM					
SITE: - TQ 926504					
RECORDER(3):-					
RECORDER(3):				÷	
SAMPLE TIME (MINS): SAMP SAMPLING METHOD:- KICK SAMP	LING / 8WG	EPS - P	OND NET		
DIMENSIONS OF SAMPLING DEVICE:	CARDARD				
MESH SIZE OF NET:			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
CROS CLUBER WINGER (TR ANY):					
IS SAMPLING IN PROPORTION TO OCCUP	RENCE OF HA	BITATS:-	YES / HO		-
IF NO GIVE DETAILS:-		·		SUMMA R	· •
WATER WIDTH IN SAMPLE AREA	1:3		, , , , , ,	1	1.3
Access to cause a sea (cm) AT	<b>5</b> 1 12 1	1 20	I IS WIDTH	初心表现	17
ESTIMATED SURFACE VELOCITY IN MAI	N FLOW CHANN	EL cm sec		- in	
CATEGORY 1 CATEGORY 2	CATEGORY 3	CATEGORY	CATEGORY 5	VELOCITY	
	>25-50	>50-100	>100	CATEGORY	2
\$10 >10-25 🗸	ليلتنا	<u> </u>		<u> </u>	
SUBSTRATUM IN SAMPLE AREA		rup elvát TW	C AREA	·	
GIVE DETAILS FOR THE FULL WIDTH OF IN COLUMN A INDICATE THE DOMINANT	PARTICLE S	ISE BY Y AN	D THE PRESENCE		
OF OTHERS BY +. IN COLUMN B ATTER	TEL NOVOM BO	R TS UNDERT	AKEN ACTUAL		
PROPORTIONS MAY BE SUBSTITUTED.	INCLUDE SUB	STRATA UNDE	R HACROPHYTES		
IN ESTIMATES OF % COVER)					
	A	В			
ROCK PAVEHENT				5011 2222	
>256 ma BOULDERS		·		BOULDERS	, ,
		5		COBBLES	5
>64-256 pm COBBLES	+		•	PEBBLES	!
>16-64 mm PEBBLES				GRAVEL	15
>2-16 mm CRAVEL	+	15		SAND	
>0.0625-2 mm SAHD		0			10
>0.004-0.0625 mm SILT	4	80		SILT	, 80
	+			CLAY	1
≤0.004 bm CLAY		100%	1	TOTAL	100
<b>=</b>	TOTAL	: 40AT	Ī	1 E	

ATER COLOUR:- No COLOUR  ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	AREA  LAIL LINE  JOY TURBID  MPLE/SURVEY AREA.
ATER CLARITY:- CLEAR AND BRIGHT CLO ATER COLOUR:- No COLOUR  ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	AREA  AAIL LINE  JOY TURBID  MPLE/SURVEY AREA.
ATER CLARITY:- CLEAR AND BRIGHT CLO ATER COLOUR:- No colour  ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	JAIL LINE  JOY TURBID  MPLE/SURVEY AREA.
ATER CLARITY:- CLEAR AND BRIGHT CLO ATER COLOUR:- No colour  ACROPHYTES (INCLUDING HOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	JDY TURBID TURBID
ATER CLARITY:- CLEAR AND BRIGHT CLO  ATER COLOUR:- No COLOUR  ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	MPLE/SURVEY AREA.
ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SADENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF ABAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	MPLE/SURVEY AREA.
ACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SA DENTIFY TO SPECIES IP POSSIBLE, LIST IN ORDER OF AB AMPLED FOR INVERTEBRATES. MACROPHYTES IN SAMPLE AREA	MPLE/SURVEY AREA.
DENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF AS AMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA	MPLE/SURVEY AREA.
Wille	EXTRA SPECIES IN SURVEY AREA
	iches & figuret present.
JENSE EMEDICENT SCHUDS OF -	
Apion Nasturthum Mentha	
some morginal growth of Catalorosa spreading into the channel	
COVER X:- ALGAE 5 HOSS -	PRESENT ABSENT
DETRITUS (ROTTING VECETABLE HATTER, LEAVES):-	
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE	

WA/RPB:					
SITE: - STREAM 2 (Down	พระสหา				
TA 911 1197					
NCR:- RECORDER(3):- RECORDER(3):-					•
DATE: 18 4 95					
2411					
	PLING - POY	NONET			
	10403-4-1	Marke a desire			
AMON OTTO AS NET-					
I THE STATE OF THE ANTI-			• • • • • • • • • • • • • • • • • • • •		
IS SAMPLING IN PROPORTION TO OCCU	rrence of hai	BITATS:-			
IF NO GIVE DETAILS:-				SUHMAR	ι¥
	7 0			WIDTH	1.8
WATER WIDTH IN SAMPLE AREA		1 20	HTOLW O)		
DEPTH IN SAMPLE AREA (cm) AT	I IS		,	MEAN DEPTH	15
ESTIMATED SURFACE VELOCITY IN MA	IN PLOW CHARM	6.2222	A CATEGORY 5		
CATEGORY 1 CATEGORY 2	CATEGORY 3	CATEGORY	_	VELOCITY	3
\$10 >10-25	>25-50	>50-100	>100	CATEGORY	سد
I See all a local a local	<del></del>	······································			
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH	OF RIVER AT	THE SAMPLIM	G AREA		
IN COLUMN A INDICATE THE POSTANA	TO BOUGH ES	TIMATES OF	K COVER FOR THE		
OF OTHERS BY +. IN COLUMN D ALLE	ANAL VOT	TE HUNERT	AVEN ACTUAL	:	
POUR CATEGORIES LISTED. IF WENTY PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)	(INCLUDE SUB	SINNIN ONDE	it intologies to	! !	•
IN ESTIMATES OF A COLUMN		3			
ROCK PAVEHENT				BOULDERS	<u> </u>
>256 mm BOULDERS			7 .60 + 6	COBBLES	2
>64-256 mm COBBLES	*	30	7 effectively	PEBBLES	<del></del>
>16-64 mm PEBBLES	1		> Swampled by	11 •	•
l 1	+	60	filamentous algai.	CRAVEL	<u>.</u> 60
		5	algai.	SAND	5
>0.0625-2 mm SAND			•	SILT	:5
>0.004-0.0625 ma SILT	+	S		CLAY	1
≤0.004 BER CLAY				TOTAL	100
	TOTAL	100%		1	٠
				ل.	

STREAM 2 (NOWNSTRAM) 18 4 95
SKETCH OF SAMPLE AREA
KOND BRIDGE
RECLEATION GROUND
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID WATER COLOUR:- NO COLOUR
MACROPHYTES (INCLUDING MOSSES AND LARGE ALGAE) IN SAMPLE/SURVEY AREA.  IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA  Frum bankside Tuncus Sp  IN DECEMBRICA ORDER OF REQUENCY:  Apura nodifferum  Mentia aquatica  Catabrosa  Sporganium  1 ris  Caltha  Versnica  HIGHER
COVER X:- ALGAE FO HOSS PLANTS 50 TOTAL 100  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):- PRESENT V ABSENT
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  LUXURIENT FLUMENTEUS ALGAE COMPRED ALL SURFACES CHSCURING THE SHAPES &  812ES OF STREAM SUBSTRATES.

."

# SAMPLE ANEA PUNA

WA/RPB:- VIOUET WOOD STOO	, , , , , , , , , , , , , , , , , , ,	• • • • • • • •			·
STREAM 3 LUPS	REAM )				
SITE: TQ 443 488			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TAASS					
DATE					
3MIN					
LICLE YAME	1.75c	PEND NE	T AICT		
DIMENSIONS OF SAMPLING DEVICE: - S.C.	がない.	(-13.4 1C)	ND NET		
MESH SIZE OF NET:			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
WA/RPB SAMPLE NUMBER (IF ANY):	AND AN HA		YES NO		
IS SAMPLING IN PROPORTION TO OCCUR!  IF NO GIVE DETAILS:-	(ENCE OF HA	.D11X13:-	ا الله		
II NO OTTO POLITICO				SUMMAR	Υ
	0.6	<del></del>	1	WIDTH (	0.6
WATER WIDTH IN SAMPLE AREA	10	1 15	15 WIDTH		
DEPTH IN SAMPLE AREA (cm) AT ESTIMATED SURFACE VELOCITY IN MAIN		IEL cm sec		DEPTH	13
· /	CATEGORY 3	CATEGORY			
CATEGORY			→ ├─┬──┤ │	CATEGORY	4
>10-25	>25-50	>50-100			
				1	
SUBSTRATUM IN SAMPLE AREA					
GIVE DETAILS FOR THE FULL WIDTH OF IN COLUMN A INDICATE THE DOMINANT	RIVER AT	THE SAMPLIM 12e by √ an	G AREA D THE PRESENCE		
THE THE PARTY OF T	T #UXXJB 63	IIDAICO OF	A COLEM I ON THE		
FOUR CATEGORIES LISTED. IF WENTWOF PROPORTIONS MAY BE SUBSTITUTED. (1)	NCLUDE SUB	STRATA UNDE	R MACROPHYTES		
IN ESTIMATES OF % COVER)					
	A	В			
ROCK PAVEHENT		1		l	<del>,</del>
>256 mm BOULDERS				BOULDERS +	l I
>64-256 mm COBBLES				COBBLES	! !
<u> i</u>				PEBBLES	4 5
>16-64 mm PEBBLES		<b>.</b>		GRAVEL	: 45
>2-16 mms GRAVEL	+	५०		SAND	5 ₀
>0.0625-2 mm SAND	<b>V</b>	50		SILT	T .
>0.004-0.0625 mm SILT	+	10		•	10
≤0.004 mm CLAY				CLAY	<u> </u>
	TOTAL	100%		TOTAL	100
1		<u>L</u>	l	_	
<u> </u>					

STACAM 3 (USIGE	AH)
SKETCH OF SAMPLE A	
SANDPIT //	•
The state of the s	
- Garage	ampunie Area
68	
16 care	
BERAIN STULE	
1 September 1	
	_
WATER CLARITY:- CLEAR AND BRIGHT	CLOUDY TURBID
WATER COLOUR: - GUEHRLY GROWNED	
MACROPHYTES (INCLUDING MOSSES AND LARGE ALGA IDENTIFY TO SPECIES IP POSSIBLE, LIST IN ORD	E) IN SAMPLE/SURVEY AREA. DER OF ABUNDANCE. TICK SPECIES
SAMPLED FOR INVERTEBRATES.	
MACROPHYTES IN SAMPLE AREA	EXTRA SPECIES IN SURVEY AREA
Trailing grasses & willow het.	
Some Trucus.	
Myosotis 3p	
11gares 4	
COVER X:- ALGAE 40 HOSS	PLANTS 5 TOTAL 45
DETRITUS (ROTTING VEGETABLE MATTER, LEAVES)	:- PRESENT ABSENT
	W CAMPLE ADEA SINCE LAST VISITS
ADDITIONAL TUROPHATION (THE HOTHE CHANGES T	
ADDITIONAL INFORMATION (INCLUDING CHANGES I	WELL ) WITH ALGAL MATS AND MOBILE
COMPACTED HARD SAND (ANALOGOUS TO 'ERF	AVEL') WHAT ALGAL MATS AND MEBILE
ADDITIONAL INFORMATION (INCLUDING CHANGES I  COMPAGED HARD SAND (ANALOGOUS TO 'ERF  SAND IN ARTERCIACLY NARROW CHANNELL	AVEL') WHAT ALGAL MATS AND MEBILE
COMPACTED HARD SAND (ANALOGOUS TO 'ERF	AVEL') WHAT ALGAL MATS AND MEBILE

>256 mm BOULDERS

>64-256 mm COBBLES

>16-64 mm PEBBLES

>0.0625-2 mm SAND

>0.004-0.0625 mm SILT

>2-16 mm GRAVEL

\$0.004 mm CLAY

WA/RPB:- YIOUT WOOD &	ŒAM	· · · · · · · · · · · · · · · · · · ·		
STREAM 3 (DO		7		
NCR:- TQ 937477				
RECORDER(S):- 7.5455				
SHINS				
RAMPA THE METHOD:	CING -	PONDNET		
DIMENSIONS OF SAMPLING DEVICE:-	arpard.	tha Band	NET	
MESH SIZE OF NET:				
WA/RPB SAMPLE NUMBER (IF ANY):			VES NO	
IS SAMPLING IN PROPORTION TO OCCUR IF NO GIVE DETAILS:-	RENCE OF H	VDTIVI9:-		
		. <u> </u>	<u></u>	SUMMARY
WATER WIDTH IN SAMPLE AREA	08.			WIDTH 0.8
DEPTH IN SAMPLE AREA (cm) AT	لعلا	1 10	HTGIW OI	MEAN /0
ESTIMATED SURFACE VELOCITY IN HAIR	FLOW CHAN			DEPTH 10
CATEGORY 1 CATEGORY 2	CATEGORY 3	CATEGOR	Y 4 CATEGORY 5	VELOCITY /,
>10-25	>25-50	>50-100	>100	CATEGORY
				1
SUBSTRATUM IN SAMPLE AREA			10 10 P	
GIVE DETAILS FOR THE FULL WIDTH OF IN COLUMN A INDICATE THE DOMINANT	PARTICLE	DIAL DI Y N	AN TUR LUCTRUCE.	
OF OTHERS BY +. IN COLUMN B ATTEM	SYJANA RTR	IS IS UNDER	TAKEN ACTUAL	
PROPORTIONS MAY BE SUBSTITUTED. (	INCLUDE SU	BSTRATA UND	ER MACROPHYTES	
IN ESTIMATES OF % COVER)		_		
		В		
NOCK PAVEMENT	:			

1			
		BOULDERS	t
	40	COBBLES	40
<u> </u>		PEBBLES	1
+	30 20	CRAVEL	50
<u></u>	5	SAND	15
+	5	SILT + CLAY	5
TOTAL	100%	TOTAL	100

	STREAM 3 (DOWNSTORAM)
٢	SKETCH OF SAMPLE AREA
1	
1	
Ī	MITORWAY
1	
١	
١	SAMPLE AREA
-	WOODIAND & GARDEN
1	WEDDIND (S) GARDEN
ı	
l	E3 \ \ = \ \ = \ \ = \ \ = \ \ = \ \ \ = \ \ \ = \ \ \ \ = \ \ \ \ \ = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
1	a laceria
1	ROAD
	WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID
l	
١	WATER COLOUR: - SLIGHTLY COLOURED
	THE CANDID TO A PART OF A PART AND A PART AN
	HACROPHYTES (INCLUDING HOSSES AND LARGE ALGAE) IN SAMPLE/SURVEY AREA.
	TROUBTED AS ABBOTES TO ASSET IN A LIGHT IN ARDER OF ABUNDANCE. TICK SPECIES
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN UNDER OF ABUNDANCE. ITCK SPECIES
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, LICK SPECIES SAMPLED FOR INVERTEBRATES.
	IDENTIFY TO SPECIES IF POSSIBLE. LIST IN UNDER OF ABUNDANCE. TICK SPECIES SAMPLED FOR INVERTEBRATES.
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  EXTRA SPECIES IN SURVEY AREA
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE, LICK SPECIES SAMPLED FOR INVERTEBRATES.
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ORDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ONDER OF ABUNDANCE. TICK SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing ibolated plants of  Apium and Sparganium
	IDENTIFY TO SPECIES IF POSSIBLE. LIST IN ONDER OF ABUNDANCE. THE STEELES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of Aprium and Sparganium  Higher Total F
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ONDER OF ABUNDANCE. THE STEELES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of  Apium and Squaganium  COVER X:-  ALGAE — MOSS — HIGHER 5 TOTAL 5
	IDENTIFY TO SPECIES IF POSSIBLE. LIST IN ONDER OF ABUNDANCE. THE STEELES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of Aprium and Sparganium  Higher Total F
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ONDER OF ABUNDANCE. THE STEELES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of  Apium and Squaganium  COVER X:-  ALGAE — MOSS — HIGHER 5 TOTAL 5
	IDENTIFY TO SPECIES IP POSSIBLE, LIST IN ONDER OF ABUNDANCE. THE STEELES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  Thailing isolated plants of Aprium and Squaganium  COVER X:- ALGAE HOSS HIGHER 5 TOTAL 5  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):- PRESENT ABSENT
	IDENTIFY TO SPECIES IP POSSIBLE. LIST IN ONDER OF ABUNDANCE. THE SPECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  FRAILing isolated plants of  Aprium and Sparganium  COVER X:- ALGAE HOSS HIGHER 5 TOTAL 5  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):- PRESENT ABSENT  ABSENT ABSENT
	IDENTIFY TO SPECIES IF POSSIBLE. LIST IN ONDER OF ABUNDANCE. THE SPECIES  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of  Agricum and Squaganium  COVER X:-  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):-  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  SITE USB DOONS CEAM (C. 2007) FROM THE REAPPRED CATTON, WASSER ACCESS
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ONDER OF ABUNDANCE, THE STECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  TRAILing isolated plants of  Aprium and Spargamium  COVER X:-  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):-  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  THIS SITEUAS DOGNISCREAM (C. 200TH) FROM THE REARRED CATTON, WHERE ACCESS
	IDENTIFY TO SPECIES IF POSSIBLE. LIST IN ONDER OF ABUNDANCE. THE SPECIES  MACROPHYTES IN SAMPLE AREA  Failing isolated plants of  Agricum and Squaganium  COVER X:-  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):-  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  SITE USB DOONS CEAM (C. 2007) FROM THE REAPPRED CATTON, WASSER ACCESS
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ONDER OF ABUNDANCE, THE STECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  TRAILing isolated plants of  Aprium and Spargamium  COVER X:-  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):-  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  THIS SITEUAS DOGNISCREAM (C. 200TH) FROM THE REARRED CATTON, WHERE ACCESS
	IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ONDER OF ABUNDANCE, THE STECIES  SAMPLED FOR INVERTEBRATES.  MACROPHYTES IN SAMPLE AREA  TRAILing isolated plants of  Aprium and Spargamium  COVER X:-  DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):-  ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)  THIS SITEUAS DOGNISCREAM (C. 200TH) FROM THE REARRED CATTON, WHERE ACCESS

•

CHARINTY S						
RIVER:- STREAM (4.						
NGR:					•	
PECORDER (SILL T BASS						
DATE:- 18 4 95						
ALLER STATE CONTRACT SAMEN	7.7	********			•	
Access to the second of the Second Se	rantusta – 1	CND NET		1		
DIMENSIONS OF SAMPLING DEVICE:-	SCANDARD	FBA 1ct	NO HE (	••••••		
HESH SIZE OF NET:						
WA/RPB SAMPLE NUMBER (IF ANY):-	seconds AS V		YES \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
IS SAMPLING IN PROPORTION TO OC IF NO GIVE DETAILS:-	CORRENCE OF IN	relikia:+	. د رس	" [		
					Summa	RY
WATER WIDTH IN SAMPLE AREA	1.2				WIDTH	1
DEPTH IN SAMPLE AREA (cm) AT	10	1 20		O WIDTH	MEAN	<u> </u>
ESTIMATED SURFACE VELOCITY IN H	MAIN FLOW CHAN	HEL cm sec	ī	- <del></del>	DEPTH	12
CATEGORY 1 CATEGORY 2		, , , , , ,		ORY 5		
Cutencut il levipacut el	10		( )		VELOCITY	
	25.50	>50 100	17 5,00			
SUBSTRATUM IN SAMPLE AREA GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINI	AMT PARTICLE 2	SIZE DI 7 AD	IG AREA ID THE PRESEN	CE .	CATEGORY	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMING OF OTHERS BY +. IN COLUMN B AT	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLINGIZE BY / ANSTIMATES OF	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116		
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINIONS OF OTHERS BY A. IN COLUMN B AT	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLINGIZE BY / ANSTIMATES OF	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116		
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED. IF WEN PROPORTIONS MAY BE SUBSTITUTED	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLINGIZE BY / ANSTIMATES OF	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116		
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED. IF WEN PROPORTIONS MAY BE SUBSTITUTED	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTO BETTATA UNDERTO	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	CATEGORY	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINO OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED. IF WEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTO BETTATA UNDERTO	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINO OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF WENT PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BER BOULDERS	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTO BETTATA UNDER BETTATA U	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	CATEGORY	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTE IN COLUMN A INDICATE THE DOMINE OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED. IF WEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BER BOULDERS >64-256 BER COBBLES	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI (INCLUDE SUI	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDIN	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINI OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF WEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BEE BOULDERS >64-256 BEE COBBLES >16-64 BEE PEBBLES	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI (INCLUDE SUI	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDIN	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS COBBLES	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINION OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 BES BOULDERS  >64-256 BES COBBLES  >16-64 BES PEBBLES  >2-16 BES GRAVEL	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI (INCLUDE SUI	THE SAMPLING SIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDER 18 18 18 18 18 18 18 18 18 18 18 18 18	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS COBBLES PEBBLES +	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINI OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF WEN PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 BEE BOULDERS >64-256 BEE COBBLES >16-64 BEE PEBBLES	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI (INCLUDE SUI	THE SAMPLING BIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDIN	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS COBBLES PEBBLES GRAVEL SAND	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINION OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 BES BOULDERS  >64-256 BES COBBLES  >16-64 BES PEBBLES  >2-16 BES GRAVEL	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI . (INCLUDE SUI	THE SAMPLING SIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDER 18 18 18 18 18 18 18 18 18 18 18 18 18	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS COBBLES PEBBLES GRAVEL SAND SILT	
SUBSTRATUM IN SAMPLE AREA  GIVE DETAILS FOR THE FULL WIDTS IN COLUMN A INDICATE THE DOMINIOF OF OTHERS BY +. IN COLUMN B AT FOUR CATEGORIES LISTED, IF WENT PROPORTIONS MAY BE SUBSTITUTED IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND	H OF RIVER AT ANT PARTICLE S TEMPT ROUGH ES TWORTH ANALYSI . (INCLUDE SUI	THE SAMPLING SIZE BY / AN STIMATES OF IS UNDERTOSTRATA UNDER 18 18 18 18 18 18 18 18 18 18 18 18 18	O AREA ID THE PRESEN % COVER FOR TAKEN ACTUAL	1116	BOULDERS COBBLES PEBBLES GRAVEL SAND	

STREAM 4 (UPSTREAM)
SKETCH OF SAMPLE AREA
TREE COLLAPSED BLOGE
NURSERY BROGE
8 AMPLE
AREA
OAKOVER
NURSERY
WATER CLARITY:- CLEAR AND BRIGHT CLOUDY TURBID
WATER COLOUR: - NO COLOUR
MACROPHYTES (INCLUDING MOSSES AND LARGE ALOAE) IN SAMPLE/SURVEY AREA.
IDENTIFY TO SPECIES IF POSSIBLE, LIST IN ORDER OF ABUNDANCE. TICK SPECIES SAMPLED FOR INVERTEBRATES.
MACROPHYTES IN SAMPLE AREA EXTRA SPECIES IN SURVEY AREA
Some bonkonde dock (Rumen)
trailing Denantie and Apium nodiflorum
nod: florum
COVER X:- ALGAE 75 MOSS - HIGHER 5 TOTAL 80
DETRITUS (ROTTING VEGETABLE MATTER, LEAVES):- PRESENT ABSENT
ADDITIONAL INFORMATION (INCLUDING CHANGES IN SAMPLE AREA SINCE LAST VISIT)
LIFTLE CHANGE SINCE PREVIOUS VISIT IN JAN 95 - STALE ASSOCIATIONAL
pleas on stones.

# SAMPLE AREA FUNA

GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND  >0.004-0.0625 mm SILT  \$0.004 mm CLAY	EMPT ROUGH ES	TIMATES OF	% COVER FOR THE	BOULDERS COBBLES PEBBLES GRAVEL SAND SILT CLAY TOTAL	
GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL  >0.0625-2 mm SAND	EMPT ROUGH ES WORTH ANALYSI (INCLUDE SUB	TIMATES OP S IS UNDERT STRATA UNDE B 30 40 20	% COVER FOR THE	COBBLES PEBBLES GRAVEL SAND SILT	
GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES  >2-16 mm GRAVEL	EMPT ROUGH ES WORTH ANALYSI (INCLUDE SUB	TIMATES OP S IS UNDERT STRATA UNDE B	% COVER FOR THE	COBBLES PEBBLES GRAVEL SAND	
GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED, IF WENT PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT  >256 mm BOULDERS  >64-256 mm COBBLES  >16-64 mm PEBBLES	EMPT ROUGH ES WORTH ANALYSI (INCLUDE SUB	TIMATES OP S IS UNDERT STRATA UNDE B	% COVER FOR THE	COBBLES PEBBLES GRAVEL	
GIVE DETAILS FOR THE FULL WIDTH IN COLUMN A INDICATE THE DOMINA OF OTHERS BY +. IN COLUMN B ATT FOUR CATEGORIES LISTED. IF WENT PROPORTIONS MAY BE SUBSTITUTED. IN ESTIMATES OF % COVER)  ROCK PAVEMENT >256 mm BOULDERS >64-256 mm COBBLES	EMPT ROUGH ES WORTH ANALYSI (INCLUDE SUB	TIMATES OP S IS UNDERT STRATA UNDE B	% COVER FOR THE	COBBLES PEBBLES	
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SUBSTRATUM IN SAMPLE AREA					
CATEGORY 1 CATEGORY 2	>25-50 /		Y 4 CATEGORY 5	VELOCITY	-
DEPTH IN SAMPLE AREA (cm) AT ESTIMATED SURFACE VELOCITY IN MA	10	IEL cm sec		1 1716.471	1
WATER WIDTH IN SAMPLE AREA	l:.k	, [:	TO VIDIN	,  <del> </del>	1
21 10 0112 221201	<u> </u>			SUMMAI	RY
WA/RPB SAMPLE NUMBER (IF ANY):- IS SAMPLING IN PROPORTION TO OCC IF NO GIVE DETAILS:-	URRENCE OF HA	BITATS:-	YES NO		
MESH SIZE OF NET:		• • • • • • • • • • •			
SAMPLING METHOD:	3-TANDARD	FBA PON	DNET		
SAMPLE TIME (MINS):	SAMPLING.	- POND1	VET		
18 4.7	<u></u>				
			* * * * * * * * * * * * * * * * * * * *		
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SITE:- STEAM H TO 949467 RECORDER(S):- J. BASS	CPC4W3TP	FAG			

Additional algal growth evident, in other respects similar to Jan 95

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