Institute of Freshwater Ecology

Draft

BIOLOGICAL ASSESSMENT OF MELLS RIVER SPRINGS: Baseline Botanical and Habitat Surveys

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2. Method

2.1 It was agreed that:

1. the standard IFE Biomporphic Survey for plant, animal, stream morphology & water chemistry, would be used in order to give a context to the data as over 500 standardised surveys have now been undertaken using the method below 2.2; and that
2. the newer NRA River Habitat Survey should also be undertaken as this will become a national standard for river habitat quality assessment.

2.2 Standard IFE Biomorphopac reconnaissance survey methodology for environmental quality assessment of watercourses.

2.2.1 Site reconnaissance, of the agreed/approved/requested list of watercourse sites, will be undertaken to determine the relevant ecological or conservation characteristics of the watercourse by an on-site assessment of the following:

— Flora and fauna
— Bank, sediment and bed characteristics
— Watercourse size
— Adjacent land use
— On-site evidence of recreational use
— Proximity to designated sites of conservation importance
— Other potential problems including reinstatement and long-term morphological changes

At each site a water sample will be filtered for on-site characterisation or further specific laboratory analysis. Assessments will be made of the need or value of undertaking full biomorphic surveys. In addition, sites observed which may be of particular value will be noted but only a location map and outline data recorded together with a subjective assessment of value, will be reported.

Aquatic and riparian flora, including major mosses, liverworts or macroscopic algae, will be recorded within the section of watercourse (typically 200 m or as specified) to a width of typically 100 m either side, and limited to flora readily visible and preferably in flower; notes will made to assist in the assignment of a value for the relative quality of the defined site. Separate assessments on a scale of 0 - 5 for bad to excellent, will be made for submerged aquatic plants and also for bank or emergent species; expected rare species will be specifically sought. These two scores will be added together to produce a score from 0 - 10 for flora for each site after correcting for bankside shade. Scores are based upon the occurrence of species to be expected in natural unmanaged watercourses of the area after considering the water flow and geology of the catchment.

It is normal for onsite assessment of aquatic fauna to be undertaken as below, however sampling and **more extensive identification** was undertaken. The following section is only retained for completeness.

Aquatic fauna, as macro-invertebrates, will normally be sampled within each section or centred upon the specified point (eg. potential impact or crossing point) of the watercourse. All habitats will be sampled where possible. Standard kick samples of three minute duration will taken when the water depth is less than 0.6 m at some point; small streams will be sampled for shorter periods. Where the water is too deep to wade, a dredge will be used to collect the sample. In some situations where the substratum is unsuitable for the dredge, a pond

net sample will need to be taken from the bank. The samples will be sorted on the bank by spreading them out in a tray and picking out individuals of each family present and different species of each family where possible. A score (0-10), broadly based upon the BMWP score system, will be assigned to each site in the field. In the laboratory, identifications will be checked and scores amended where necessary. This data will allow BMWP scores to be produced and used in the RIVPAC predictive system from which comparisons can be made between the actual or observed macro-invertebrate communities and the predicted one.

Observations, or traces, of other fauna, will be noted together with an assessment of the need for special surveys, eg birds mammals, etc.

Bank, sediment and bed characteristics will be assessed in two ways, by their
a) percentage cover of the stream bed in the macro-invertebrate sample area, and by the
b) relative proportions of various materials in the banks and adjacent areas in the general sample area; specific searches will be made for materials of special relevance eg to construction such as peat, rock as bed rock or outcrops.

Reconnaissance survey data sheets will contain information, as appropriate, on the following: [see Table 2 in Macro-invertebrate report for parameters used in RIVPACS(HW) predictions.]

1. watercourse name with nearest village etc., as necessary;
2. reconnaissance survey number - numeric order, survey date, etc;
3. numeric National Grid Reference number (NGR);
4. distance from source of watercourse (also for RIVPACS);
5. altitude of survey section to *c* 5 m (also for RIVPACS);
6. latitude and longitude (also for RIVPACS).

Physical characteristics (estimated) :

7. size as mean width and mean depth of water at time of survey (also for RIVPACS) and at the bankfull condition of the watercourse, the mean depth of pools will be recorded if appropriate, additional comments relating to obvious recent events as seen from debris stranded on the banks or adjacent vegetation and recorded as the additional height above that at survey; mean width is the unobstructed width without allowance for dense fringing vegetation eg. reedstands and which would be accounted for in bank-full widths;
8. flow of water in watercourse at survey in cubic metres per second (RIVPACS requires discharge category from the watercourses map)
9. velocity of water (estimated mean);
10. slope of channel bed over survey length (estimated to the nearest 1°, RIVPACS uses general slope from contours over a distance of *c* 1 km);
11. type of bed or water flow - waterfall, stepped, long riffle, riffle-pool with sequence distance, glide or run, smooth, static or ponded;
12. relative stream power - estimated on scale of 0 to 10 based to cover the range of British rivers, broadly,
    0-3 indicate bed and bank stable rivers and streams,
    4-5 rivers or large streams with some bed scour or bank erosion or lateral migration,
    6-8 active rivers with rock or worked gravels and erosion or migration or both; and a comment;
13. channel form in plan - straight, meandering, braided;

14. channel sinuosity, current and previous, where the situation may have naturally changed - slight, moderate, extreme, or the channel straightened; the actual and previous amplitude is recorded in meters - this relates to the potential lateral migration over future decades which may expose reinstatement work or construction eg buried pipework, or promote consequential downstream adjustment or erosion;
15. channel section - slope, steep, vertical, or trapezoid if managed, dredged or resectioned;
16. erosion of stream banks as percentage of stream bank of section - incising, flake or slab, slump or slide, undercut or block fall, or depositions with type of material and position;
17. substratum as percentage to within 10% for major components, or subjectively as proportions indicated by asterisks (* = *c* 20%), of watercourse bed (RIVPACs requires mean grain size or phi value) for:
    bedrock or outcrops, boulders (>256 mm),
    cobbles (65 - 255 mm),
    pebbles and gravel (2.1-64 mm),
    sand (.06-2 mm),
    silt & clays (.06-.004 mm), and
    organic or peat;
    occasionally in addition the adjacent soils of stream banks and appropriate adjacent areas will be considered if relevant or particularly different.
18. the colour and nature of the water eg presence of particles etc.

Adjacent features:

19. land use on watercourse banks together with visual features within 0.5 km;
20. upstream features eg large farms, inflows, lakes;
21. downstream features, eg as 20;
22. maintenance, its frequency or extent;
23. fishery interest

and other data may be used or referred to, if it is readily available.

Environmental data on physical parameters, flora and fauna was summarised together with a score for environmental quality based on scales of 0-10 for flora and 0-10 for invertebrates together with a correction for maintenance. Maintenance effects will be scored on a -2 to +2 scale broadly based on:

-2 for channel resectioning and realignment
-1 for either channel realignment / channel resectioning of both banks
-0.5 one bank
0 a neutral score, for possible or historical management
+1 for unmanaged but agricultural banks especially rough grazing etc.
+2 near natural conditions for the area ie considering flow and geology
(Combinations of these scores may also used.)

The overall environmental biomorphic score was calculated by adding the floral (from 0-10) to the macro-invertebrate (from 0-10) scores and dividing by two. This value was then corrected by adding the maintenance score (from the range -2.5 to +2). Where scores were

not available through difficulty in sampling or inappropriateness, eg dry ditches, an estimate (in brackets) was made for the overall score. For clarity of the overall assessment made of water courses, a clearer, basic and less-defined 5 point score was requested, and thus the following words are also incorporated for the following scores:

<2 = very poor; 2-3.9 = poor; 4-5.9 = moderate; 6-7.9 = good 8-10 = excellent

When a site has been visited and only an assessment of flora & management has been made but a faunal sample was not taken, then a similar 5 point score was given:

very poor - poor - moderate - good - excellent.

Some sections of watercourses and also artificial water courses especially canals, present difficulties, for example a score range may br given for an open site but which has densely shaded sections or alternatively two scores for artificial or resectioned and realigned sections eg one incorporating the management value (-2) and the other a null score (0) ignoring the effect. Scores were recorded for example a artificial channel with poor quality biota can be recorded as '1.5/3.5' incorporating a -2 score the extreme extent of its management or unnaturalness. This method of assessment is still being developed but can in theory be seen to give values less than zero, for low biotic score (polluted) and highly managed sites, or higher than 10; this has not yet been revised as it allows better discrimination among the middle range of sites. The ultimate score for pristine sites or indeed values over 10 have not yet been achieved in over 500 sites within Britain.

A summary at the bottom of each site data sheet will comment on environmental matters and may suggest aspects on which further advice should be sought on aspects, methods of construction, key points and further survey recommendations together with the overall biomorphic quality score from this reconnaissance survey. Uncertainty about a value eg water depth where the river was to deep to measure without a boat or a statement will be indicated by the use of question mark.

2.2.2 **Chemical analysis** will be carried out to determine the character of the water in order to indicate biotic potential. Water characterisation at survey sites will include:

— pH (Hydrogen ion)
— Total salts as conductivity

and later on return to the laboratory, may also include:

— Anion to Cation balance for common ions (in milli equivalents per litre)
— The nutrients nitrate and phosphorus

on the filtered water sample.

Anions include Alkalinity as bicarbonate (in milli-equivalents per litre, also for RIVPACS), chloride (also for RIVPACS), sulphate, nitrate-nitrogen, phosphate-phosphorus (soluble or orthophosphate), silicate-silicon; cations include calcium, magnesium, sodium, and potassium, and would be reported as milligrams per litre.

3. Results

3.1 Survey data is presented in survey sheets (pages 6-14) together with an overall assessment for the stream and its immediate environs; this is summarised for the sites and includes:

site number	site name	Overall score
1.	Hurdlestone Stream, Stoke St.Michael	moderate
2a.	Bector Wood Stream, Stoke St. Michael	mod/good
2b.	Bector Wood Stream, Stoke St. Michael	mod/good
3.	Whitehole spring, Stoke St. Michael	poor/moderate
4a.	Leigh Wood West Stream, Leigh upon Mendip	poor
4b.	Leigh Wood East Stream, Leigh upon Mendip	poor
5.	Upper Soho Stream, Leigh upon Mendip	poor
6.	Finger Stream West, Mells Park	(poor)
7.	Chantry springs & Whately Brook, Whatley	poor/~~moderate~~

The genera of flora noted during the surveys on springs, streams and wet areas of the Mells River are given in Table 1.

Further explanatory comment must be given especially for the Hurdlestone Wood area for although the area is of particular interest, the streams with the exception of the upper part of Bector Wood stream are not exceptional as streams. The main interest is the whole complex of which the stream is only part but for which it absence would make the whole area poorer. The significance of the tufa in the bed of Bector wood and the cascades of White Hole stream is often consided to be of great interest and is discuss in the chemical report.

Vegetation

1. Hurdlestone Stream, Stoke St.Michael
Date: 18.4.95 NGR:31 677480
0-.2 km from source Altitude 170 m
Approx. Lat 51° 14', Log 2° 27' W

PHYSICAL CHARACTERISTICS
Size @ survey: width .3 m; depth (0.1) m
Height Board: none; Water depth .02 m
bank full: width no banks; depth -
Flow at survey - discharge .005 $m^3 s^{-1}$
- velocity .2 m s^{-1}
Bed slope 0-10°, type: N/A
Relative Stream Power: 1
Channel- plan form: see below
- sinuosity now: N/A, (2?) m
previous: see below, (2)m
- section: open, road
Erosion N/A, type: access

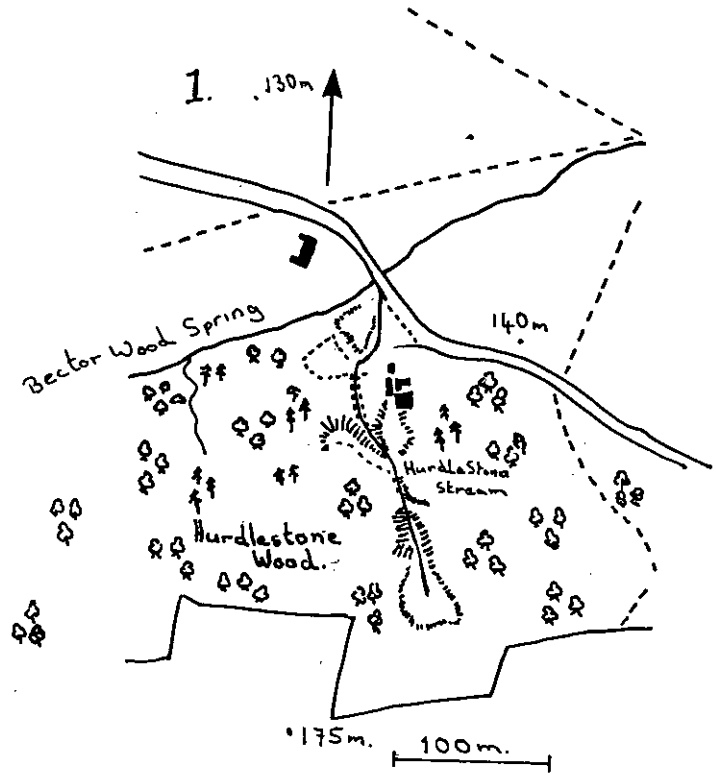
Substratum (cover)	bed	banks	adjacent
bed rock	**	**	**
boulder/cobble	*	**	**
pebbles/gravel	**	*	**
sand	*	*	
silt/clay/(peat)		*	

stream bed with light concretions; track

WATER CHARACTERISTICS Colour: clear
Kept at 3-5°C for analysis on 19.4.95
pH 7.2 (6.7), Conduct. 723μS cm^{-1}, Temp 9°C
Alkalinity 5.52 mmol

Anions, mg l^{-1}		**Cations, mg l^{-1}**	
Alkalinity	276	Calcium	121
Chloride	-	Magnesium	4.0
Sulphate	-	Sodium	5.9
Nitrate N	5.0	Potassium	1.1
Phosphate P	0.035	(Iron)	-
Silicate Si	2.8		
Ion balance	6.70 : 6.66 mmol		

Assessment: nutrient-rich calcareous
calcite precipitation probable (.47)



ADJACENT FEATURES etc.
Land use: SSSI, quarry, access road
Upstream: Quarry
Downstream: track, road
Maintenance: none
Fishery interest: nil

Maintenance Factor -2

PHYSICAL Water springs from the floor of the disused quarry flowing on gravels with rich-organic areas along and down a steep quarry-access, and now, field access, with some large boulders and scattered sections of old walling to E, before reaching a wet area near a disused loading platform and probable settlement tank; the water then joins a small stream after passing under a road.

PLANT (shade 90%: cover; algae 1%, moss 1%, aq. macrophytes 5%) .5 + (3.5) = Score (4)
A trickle of water flowing from disused quarry with a good variety of typical wet area plants flowing down along a track through good mixed probably-coppiced deciduous woodland of alder, ash, beech, birch, sycamore, hazel, willow and holly with a good understorey including areas with wood anemone, primrose, bluebell, etc or wood rush and numerous smaller & larger mosses eg *Thuidium, Aitrichum* & liverworts. Few weedy species present. [Recheck for *Apium inundatum*]

ANIMAL Deer tracks Score

ADJACENT disused worked steep rockface either with a series of rock chip debris piles with steep sides, washed soil heaps, pools, seepages or wet-flushes at its base and with beech-shaded dense understorey varying from large stands of wood rush, rushes, a good variety of shade-tolerant herbaceous plants, several ferns, and moss- & liverwort-covered fallen trunks (20-30 cm). Probable clay strata noted towards west end near hut and extensive area of ransoms. Oak with epiphytic fern and honeysuckle and with a mature understorey of anemone, bluebell but a little bramble.

SUMMARY Spring and water flow within a high conservation interest area with variety increased by quarrying in past but the water flows on an erratic course along a gravel access road through woodland of reserve status.

ADVICE requires full seasonal floral surveys including bryophytes before modification. Increased interaction with water flow studies

OVERALL SCORE (FOR WATERCOURSE) Moderate

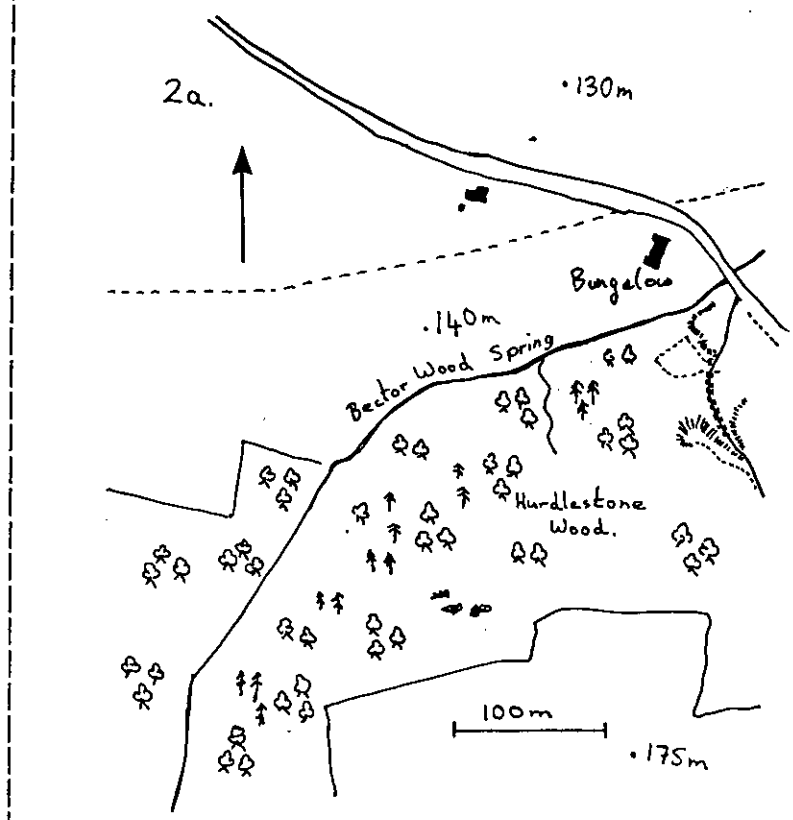
2a. Bector Wood Stream, Stoke St. Michael
Date: 18.4.95 NGR:31 675479
0.5-.9? km from source Altitude 170 m
Approx. Lat 51° 14', Log 2° 27' W

PHYSICAL CHARACTERISTICS
Size @ survey: width .4 m; depth 0.1 m
Height recorder downstream; Water depth .1 m
bank full: width 1-2 m; depth .4 m
Flow at survey - discharge .01 $m^3 s^{-1}$
- velocity .15 m s^{-1}
Bed slope 2^0, type: gentle
Relative Stream Power: 1-2
Channel- plan form: slightly sinuous, braided
- sinuosity now: 2 m
previous: see below, 2m
- section: trapezoidal, wetland
Erosion none, type: -

Substratum (cover) bed banks adjacent

bed rock	*		
boulder/cobble	*	*	*
pebbles/gravel	**	**	**
sand	*		
silt/clay/(peat)	**//*	*//*	//**

all overlain with tufa



WATER CHARACTERISTICS Colour:
Kept at 3-5°C for analysis on 19.4.95
pH 8.1 (8.0), Conduct. 643 $\mu S\ cm^{-1}$, Temp 8°C
Alkalinity 5.18 mmol

Anions, mg l^{-1}		**Cations, mg l^{-1}**	
Alkalinity	259	Calcium	124
Chloride	-	Magnesium	7.9
Sulphate	-	Sodium	7.8
Nitrate N	2.3	Potassium	0.83
Phosphate P	0.012	(Iron)	
Silicate Si	2.8		
Ion balance	6.75 : 7.19 mmol		

Assessment: calcareous water, calcite precipitation expected (1.3) and much tufa was deposited

ADJACENT FEATURES etc.
Land use: SSSI nature reserve, path, disused quarry, grazing
Upstream: path, screen, quarry
Downstream: house, road, river
Maintenance: nil upstream, some dredging by bungalow/farm
Fishery interest: low-nil Maintenance Factor +2

PHYSICAL A small slightly-sinuous, tree-shaded, fine gravel-bed stream with banks varying from stable cobbles and boulders and much woody debris, tree-root, to soft deep semi-stable bed and marginal wet areas upstream. The stream seems to arise upstream of a 25 m high embanked earth-covered tree-planted artificial barrier, probably of stone chippings, traversing the valley and screening from general view an adjacent deep 50 ha stone-extraction quarry partially full with water. Old extraction face of quarry extensive to southwest and south. Further downstream, narrower slightly steeper valley with less sinuous channel possibly constrained by disused walling, before reaching a lightly dredged section with fenced improved grazing to the north west. In addition, 100 m of glass debris and abandoned pig huts near bridge.

PLANT (shade 90%:cover; algae 0%, moss 1%, macrophytes 0%) 2 + 3 = Score 5
A small shaded stream with liverworts on both firmer areas of the stream bed and in mats on silty margins, shaded banks of predominantly beech with sycamore with more stable moss covered banks supported by tree roots. A variety of shade tolerant understorey plants on banks including ransoms, dogs mercury, meadowsweet, celandine and ferns with bluebell to north; nettle occasional. Wet flushes with ferns, mosses and thallose liverworts. Royal fern on the slopes to the southwest & south ie not quarry face. Further downstream, less dense shade, probably once coppiced hazel with similar good variety of understorey plants bushes including wild rose and bramble were seen on the poached grazed banks and fenced-banks which separated the stream from the coppiced hazel with hawthorn, holly.

ANIMAL deer tracks, possibly fox, several bird. No fish or fry were seen. Score

SUMMARY Stream of high conservation interest within woodland area of high conservation interest with variety increased by quarrying in past and with tufa deposits in the channel through woodland of reserve status.

ADVICE requires full seasonal floral surveys including Bryophytes before modification; note tufa deposits

OVERALL SCORE Moderate/good

2b. Bector Wood Stream, Stoke St. Michael
Date: 18.4.95 NGR:31 677482
0.9-1.3?km from source Altitude 140 m
Approx. Lat 51° 14', Log 2° 27' W

PHYSICAL CHARACTERISTICS
Size @ survey: width .4 m; depth 0.15 m
Height recorder present; Water depth .15
bank full: width 2 m; depth .5 m

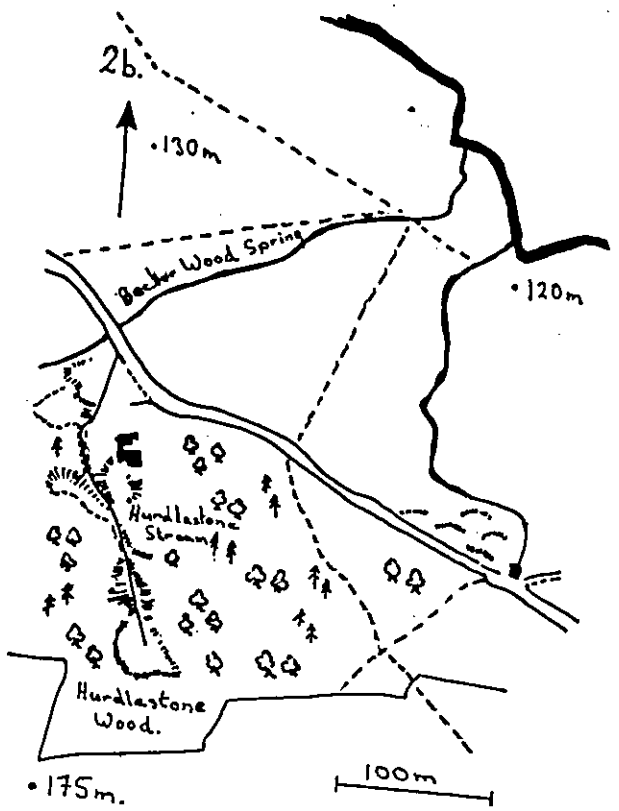
Flow at survey - discharge .02 $m^3 s^{-1}$
- velocity .2 m s^{-1}
Bed slope 1-2^0, type: gentle
Relative Stream Power: 1-2
Channel- plan form: sl sinuous
- sinuosity now: 3 m
previous: realigned
- section: trapezoidal, wetland
Erosion none, type: some poached cattle drinks

Substratum (cover) bed banks adjacent

bed rock		*	
boulder/cobble	*	*	*
pebbles/gravel	**	**	**
sand	*	*	*
silt/clay/(peat)	**//	*//(*)	//(**)

little tufa

WATER CHARACTERISTICS
no sample see 2a above
ADJACENT FEATURES etc.
Land use: improved grazing, marginal wet area
Upstream: road, reserve, quarry
Downstream: river
Maintenance: low, occasional dredging
Fishery interest: low, possible spawning area



PHYSICAL Maintenance Factor 0
From below road bridge, a small almost straight stream, with a bed of cobbles, sands and some tufa in long riffles with several silty pools all within planted tree-line and barbed-wire fence, downstream to river with small adjacent wetland area. Water level in wetland mainly controlled by level of the river which seems to have been overdeepened in past despite some recovery. Grazed on both sides and poached to east, bridge & field gate midway downstream, watermain pipeline marker at 1.1 km?.

PLANT (shade 90%:cover; algae 0%, moss 1%, macrophytes 0%) .5 + 2.5 = Score 3
A small stream shaded by planted tree-line (25 years?) with beech, hazel, and oak with an understorey bush layer of hawthorn, holly, thorn, rose and large bramble and a sparse herb layer including ransoms, dogs mercury, bluebell, wood anemone and some umbellifers. Broadening treeline and deeper silty downstream in wetland area to south and south east with Rush and other herbs with occasional nettle & bramble and stands of thorn to field side. Several species typical of an alkaline wetland and its surroundings were also present including iris, meadowsweet, dropwort with bushes of willow, alder. Orchid habitat but none were seen; resurvey.

ANIMAL No fish or fry were seen. Score

MAIN RIVER MELLS The main river at this point has a mean width of 4 m and depth of 0.6 m , with a water velocity of *c* 0.5 m s^{-1}. The main channel with 1-1.5 m high sandy earth banks, has small debris dams, side bars deposition and overbank deposition of both natural woody but also rubbish eg plastic barrels but shows signs of recent changes in course - 30-50 year old hawthorn on new island but also established anemone and bluebell stands to the north. No fish were seen but there is likely to be a fisheries interest albeit low. The vegetation was bushes of alder, hawthorn, willow but particularly in the wetland corner to the east between this and site 3, cattle had moderately trampled the sedge, spurge and iris in parts of the wet area.

SUMMARY A conservation interest only in the downstream are being part of a marginal wetland area of the Mells River linked to the lower end of White Hole spring stream.

ADVICE Water levels need to be maintained at present levels to maintain this small wetland area. The current level of use maintains the diversity. Orchid survey required. **OVERALL SCORE** moderate/good

3. Whitehole spring, Stoke St. Michael
Date: 18.4.95 NGR:31 680482
0-1km from source Altitude 160 m
Approx. Lat 51° 14', Log 2° 27' W

PHYSICAL CHARACTERISTICS
Size @ survey: width .6 m; depth 0.2 m
Height Board: none; Water depth .1 m
bank full: width .4; depth 0.07 m

Flow at survey - discharge .01 $m^3 s^{-1}$
- velocity .2 m s^{-1}
Bed slope 20-45°, type: riffle cascade
Relative Stream Power: 1-2
Channel- plan form: slightly sinuous
- sinuosity now: 2-7 m
previous: probably not changed
- section: bowl, trapezoid
Erosion - slight, type: poached

Substratum (cover) bed banks adjacent

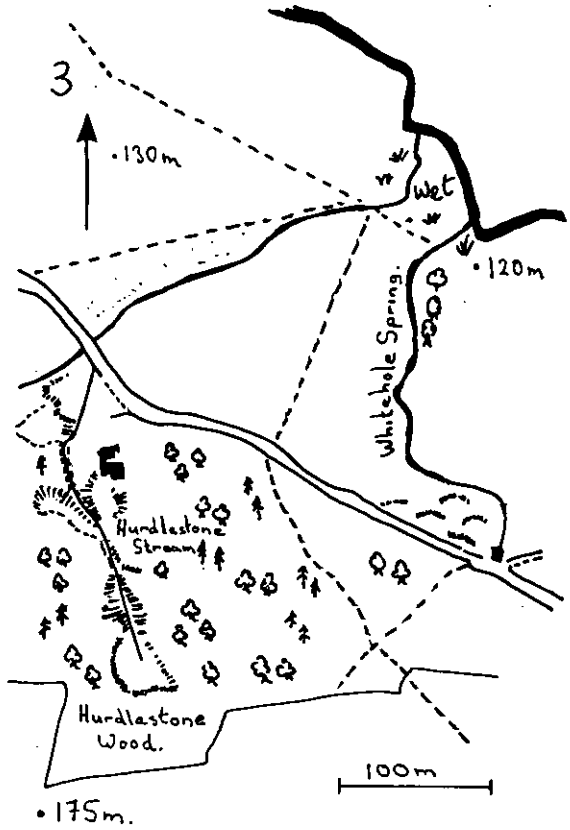
bed rock	*?	*	*?
boulder/cobble	*	**	*
pebbles/gravel	**	*	**
sand	*	*	*
silt/clay/(peat)	*//*	*//*	*//*

Tufa accretions & overfalls

WATER CHARACTERISTICS Colour: clear
Kept at 3-5°C for analysis on 19.4.95
pH 8.2 (7.9), Conduct. 523μS cm^{-1}, Temp 10°C
Alkalinity 4.6 mmol

Anions, mg l^{-1}		**Cations, mg l^{-1}**	
Alkalinity	229	Calcium	98
Chloride	-	Magnesium	5.3
Sulphate	-	Sodium	5.4
Nitrate N	4.8	Potassium	2.5
Phosphate P	0.011	(Iron)	
Silicate Si	2.7		
Ion balance	5.65 : 5.59 mmol		

Assessment: calcareous water nitrate-rich calcite precipitation expected (1)



ADJACENT FEATURES etc.
Land use: grazing
Upstream: waste & road debris, road, dis. quarry workings
Downstream: wetland, river
Maintenance: probably slight
Fishery interest: slight downstream

PHYSICAL Maintenance Factor +1
A very interesting set of tufa cascades flowing from seepage amongst old quarry waste pile under a road overflowing from the tufa-encrusted outlet water storage tank by a road. The steep (8°) upper channel is a poorly-defined partly-braided and poached channel of small cobbles and pebbles and flows to the measuring flume and then over a series of interesting steep cascades within a treeline, before flowing through the flatter more open wet area and entering the main river.

PLANT (shade 80%:cover; algae -%, moss 2%, macrophytes 2%) 1 + 3.5 = Score 4.5
In the upper channel section which is initially much trampled, is shaded by hazel etc with a sparse understorey of meadowsweet and other herbs together with many wall bryophytes, the water flows near a field margin of willow, thorn and bramble before entering a section of similar more mature bushes and trees. Although the wetland section is essentially similar to 2b, there is some rush and thistle to the more open west. However native butterbur, *Petasites*, is unusually common in an open area with thick wet organic soil.

ANIMAL Score
No fish or fry were seen

SUMMARY The presence of the tufa cascades and small wetland area make a fairly ordinary field margin stream into a most interesting site.

ADVICE monitor and maintain water flows, avoid changes in level of land use

OVERALL SCORE poor/moderate

4a. Leigh Wood West Stream, Leigh upon Mendip
Date: 18.4.95 NGR:31 684482
0-.25 km from source Altitude 150 m
Approx. Lat 51° 14', Log 2° 27' W

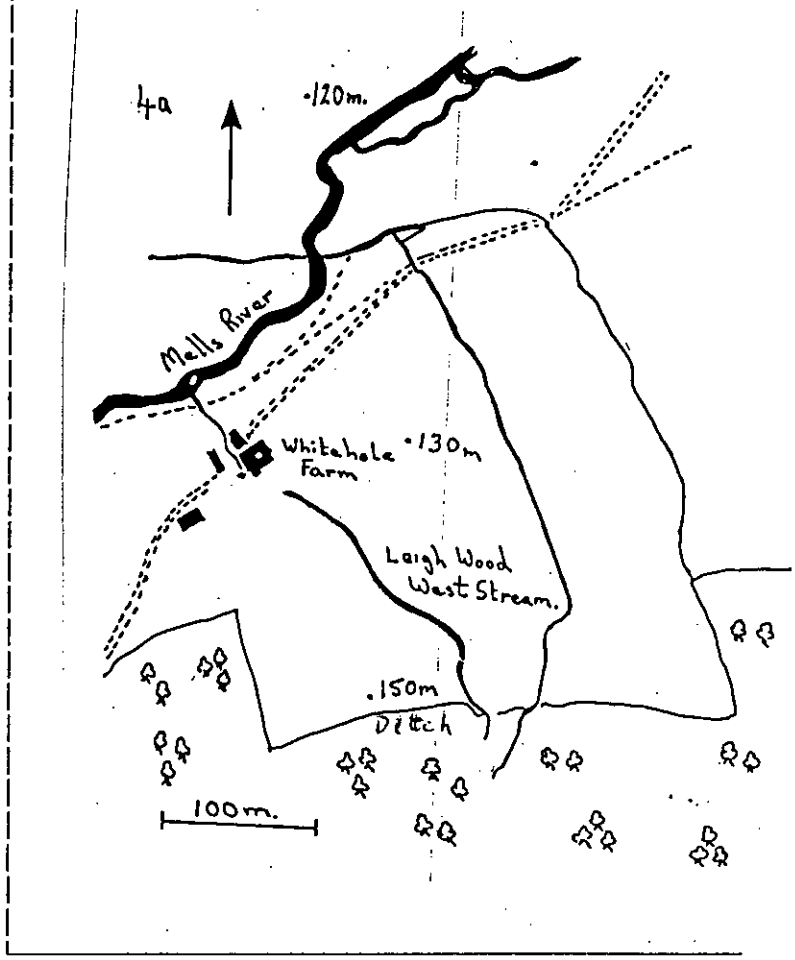
PHYSICAL CHARACTERISTICS (ditch)
Size @ survey: width .3 m; depth 0.1 m (.5/0.01)
Height Board: none; Water depth .03 m
bank full: width .7; depth .4 m

Flow at survey - discharge .01 $m^3 s^{-1}$ (0.001)
- velocity .1 m s^{-1} (0.05)
Bed slope 4^0, type: run
Relative Stream Power: 1
Channel- plan form: sl sinuous, part ditched
- sinuosity now: sl sinuous, straightened
previous: see below
- section: trapezoid
Erosion 10% poached, type: poached

Substratum (cover) bed banks adjacent

bed rock			
boulder/cobble	*	*	*
pebbles/gravel	**	**	*
sand	**	**	**
silt/clay/(peat)	*/*/*	*/*/	*/*/

WATER CHARACTERISTICS
no sample (see 4b)



ADJACENT FEATURES etc.
Land use: improved grazing, woodland
Upstream: SSSI woodland
Downstream: farm, tracks, river
Maintenance: rare
Fishery interest: nil

PHYSICAL Maintenance Factor 0
A very small stream arising near the downhill north edge of steep woodland, joined by small over-wide ditch from west and then flows downhill to the farm (80 m); there was a small weir with only 20 mm of water flowing over it.

PLANT (shade 60%:cover; algae 0%, moss 1 %, macrophytes 0 %) 0.5 + 1.5 = Score 2
Arising in beech woodland with some holly and dense understorey of bluebell, ransoms, celandine, wild daffodil(recheck). The ditch on the edge of the woodland contained large quantities of dead leaves and its banks were vegetated by several smaller herbs including wood sorrel, wood anemone, meadow sweet and some tussocks of grass including moor grass, with hawthorn and willow on field edge. The wet corner of this field separated by iron fence, had rush, buttercup but also bluebell, spurge, and kingcup. The stream bank downhill to the farm was an intermittent line of oaks about 15 m apart with a very dense 'inpenetrable' thicket of thorn and hawthorn and occasional stands of wild rose particularly at the poached cattle drink (150 m) and also willow. There were more weedy species further downstream alongside the main pasture including daisy, thistle, buttercup, nettle.

ANIMAL Pheasants and moles Score

SUMMARY A small stream arising in woodland and flowing across moderately used farmland close to farm buildings (unviewed) and then into the Mells River

ADVICE - **OVERALL SCORE** poor

4b. Leigh Wood East Stream, Leigh upon Mendip
Date: 18.4.95 NGR:31 685483
0-.4 km from source Altitude 150 m
Approx. Lat 51° 14', Log 2° 27' W

PHYSICAL CHARACTERISTICS
Size @ survey: width .3 m; depth 0.1 m
Height Board: none; Water depth .03 m
bank full: width .6; depth .3 m

Flow at survey - discharge .01 $m^3 s^{-1}$
- velocity .1 m s^{-1}
Bed slope 4^0, type: run
Relative Stream Power: 1
Channel- plan form: sl sinuous
- sinuosity now: sl sinuous, straightened
previous: see below
- section: trapezoid
Erosion 10% poached, type: poached

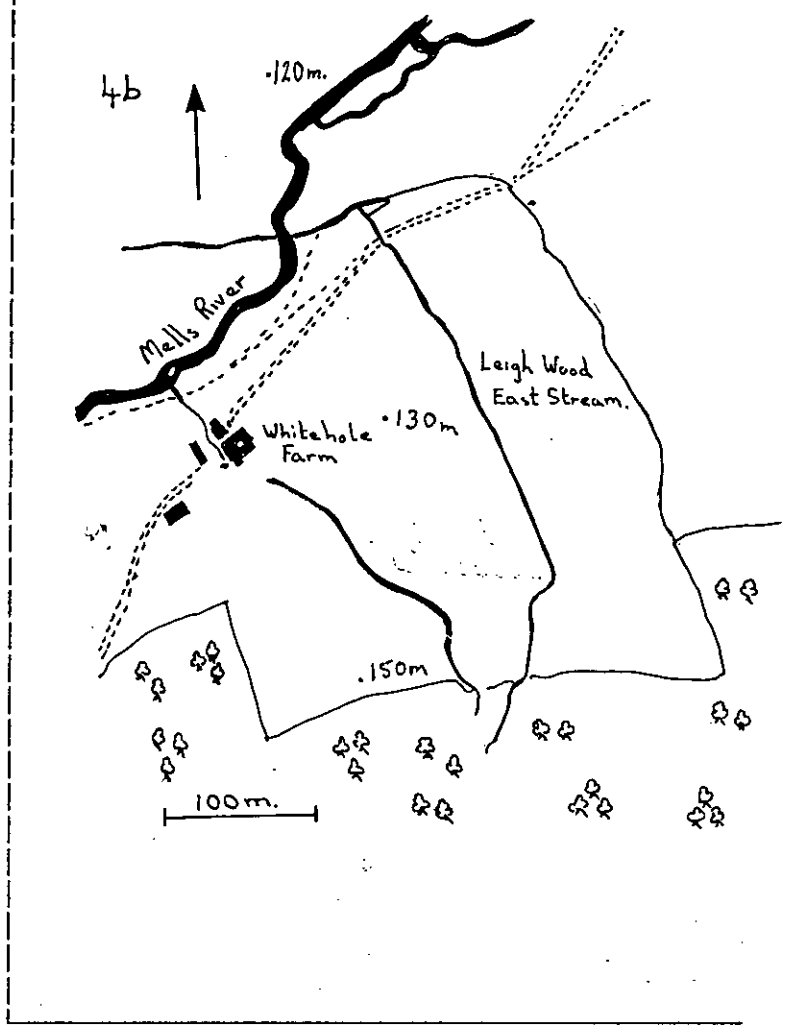
Substratum (cover) bed banks adjacent

bed rock			
boulder/cobble	*	*	*
pebbles/gravel	**	**	*
sand	**	**	**
silt/clay/(peat)	*/*/*	*/*/*	*/*/*

WATER CHARACTERISTICS Colour:
Kept at 3-5°C for analysis on 19.4.95
pH 7.5, Conduct. 596 μS cm^{-1}, Temp 11 °C
Alkalinity 5.4 mmol

Anions, mg l^{-1}		**Cations, mg l^{-1}**	
Alkalinity	270	Calcium	123
Chloride	-	Magnesium	2.8
Sulphate	-	Sodium	4.8
Nitrate N	4.8	Potassium	.89
Phosphate P	.007	(Iron)	
Silicate Si	2.7		
Ion balance	6.46 : 6.58 mmol		

Assessment: nitrate-rich calcareous water
calcite precipitation expected (.3) but surprisingly tufa not seen



ADJACENT FEATURES etc.
Land use: agricultural, improved grassland
Upstream: SSSI steep deciduous woodland
Downstream: track, main Mells River
Maintenance: occasional
Fishery interest: nil

PHYSICAL Maintenance Factor 0.5
A small stream (similar to 4a) arising on the lower slope of a steep woodland flowing in the upstream part as a distinct banked channel within tree line, but downstream it is crossed by farm track and becomes diffuse, wetter and muddy before entering the R. Mells.

PLANT (shade 60 %:cover; algae 1%, moss 1 %, macrophytes 0 %) .5 + 1.5 = Score 2
The vegetation is similar to the adjacent stream (4a) when arising from the wood. The stream then flows initially as a mature channel with holly for 100 m before changing to include oak, alder, hawthorn with some bramble. Below the road there are signs of enrichment and weedy species are also present including dock and nettle.

ANIMAL - Score

SUMMARY a small stream arising in woodland and flowing across moderately used farmland with an enriched area near the banks of Mells River into which the stream flows.

ADVICE -

OVERALL SCORE poor

5. Upper Soho Stream, Leigh upon Mendip
Date: 18.4.95 NGR:31 696485
0-.6 km from source Altitude 130 m
Approx. Lat 51° 14', Log 2° 26' W

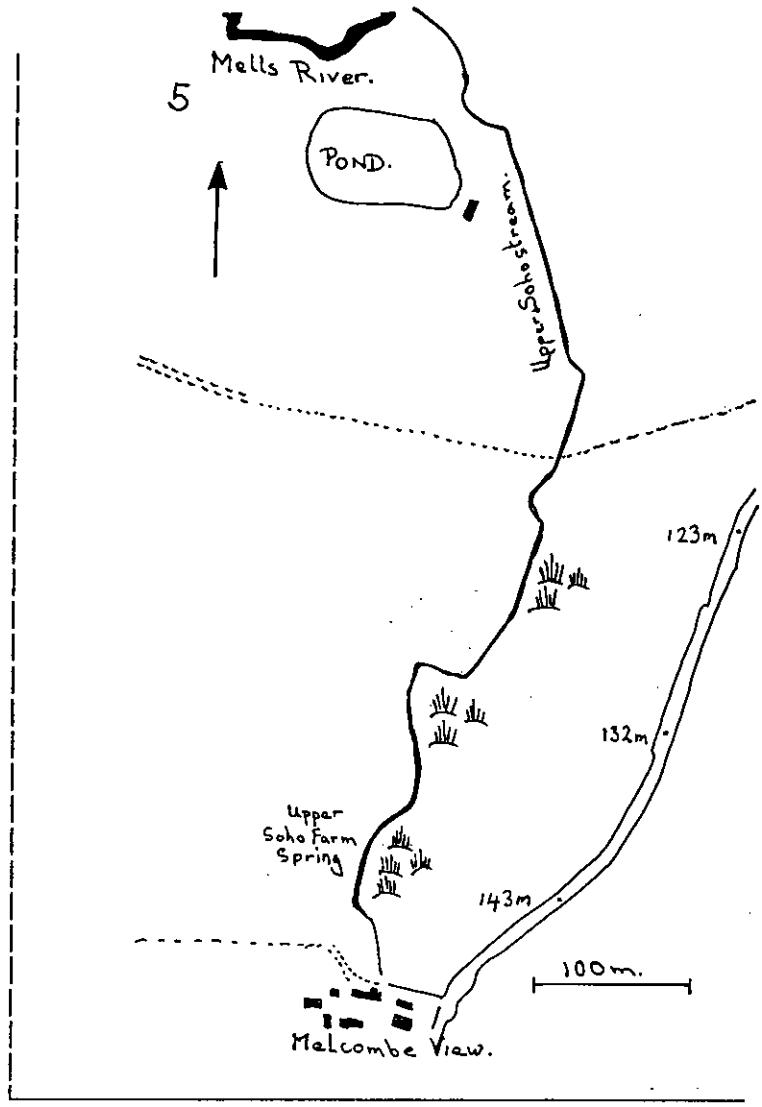
PHYSICAL CHARACTERISTICS

Size @ survey: width .2 m; depth 0.01 m
Height Board: none; Water depth .01 m
bank full: width .6 m ; depth .2 m

Flow at survey - discharge .005 $m^3 s^{-1}$
- velocity .05 $m s^{-1}$
Bed slope 0.5°, type: -
Relative Stream Power: 0-1
Channel- plan form: straightened
- sinuosity now: -
previous: not available
- section: trapezoid
Erosion 5%, type: poached

Substratum (cover)	bed	banks	adjacent
bed rock			
boulder/cobble			
pebbles/gravel	**	*	*
sand	**	**	**
silt/clay/(peat)	*/*/	*/*/	*/*/

WATER CHARACTERISTICS no sample



ADJACENT FEATURES etc.
Land use: improved grazing, fishing lake
Upstream: farm, grazing, roads, extraction
Downstream: grazing, fishing access, woodland, river
Maintenance: rare
Fishery interest: nil

PHYSICAL Maintenance Factor -1

A small pebble and silty farm stream arising in spring by farm flows along the hedge line and is supplemented by drainage, including land drains (eg @ 170 m), of sandy agricultural land and downstream made deeper except for the bends and then passes a fishing lake almost on the bank of the main Mells River . There are small wet areas in pasture, occasional land drains. There is a drinking trough upstream and a small weir at 300 m.

PLANT (shade 15 %:cover; algae -%, moss 2 %, macrophytes 5 %) .5 + 2 = Score 2.5

Small managed hedges are alongside the stream for most of its length. Upstream a treeline of mature and young alder with ash were seen together with an understorey of hawthorn, thorn, wildrose, honeysuckle, ivy and bramble with rush, cress, wood anemone, and some bank mosses but also weedy species such as nettle, dandelion, buttercup, dock, thistle, behind barbed-wire fences mainly to the west. Downstream areas of cleared woodland stream banks with overmaintained hedges and grassy banks but which still had rose, primrose and bluebell as remnant vegetation. The turbid water of the lake made it difficult to see if there was any submerged vegetation of significance.

ANIMAL (fishing lake) Score

WET AREAS The wet area (200-250 m) was small probably only seasonal but it was vegetated with wetland species such as rush and ladys smock, but also thistle and spathulate dock.

SUMMARY A small stream arising near farm (unviewed) and flowing across moderately used farmland and flowing into the Mells River past a fishing lake.

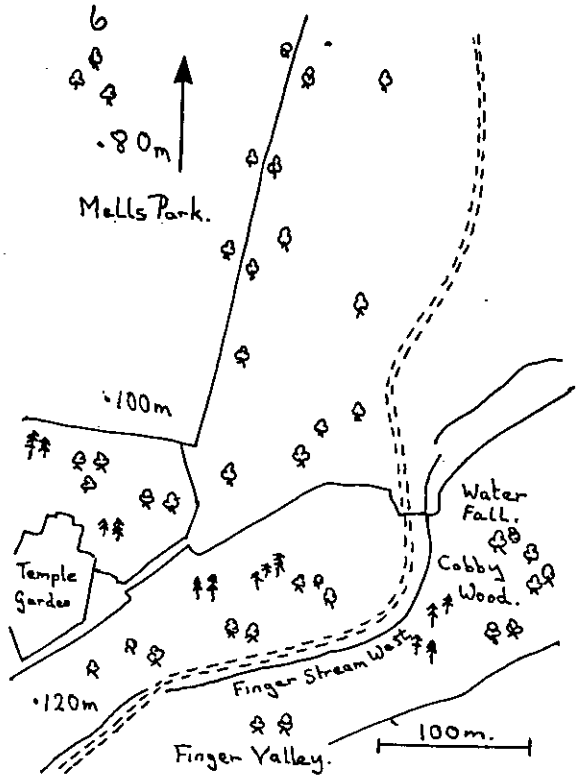
ADVICE -

OVERALL SCORE poor

6. Finger Stream West, Mells Park
Date: 18.4.95 NGR:31 713481
2.8-3.3 km from source Altitude 120 m
Approx. Lat 51° 14', Log 2° 24' W

PHYSICAL CHARACTERISTICS

Size @ survey: width 0.7-1.5 m; depth 0.15 m
Height Board: none; Water depth .15 m
bank full: width 2 m; depth 1 m
resect. re-aligned natural channel then artificial
Flow at survey - discharge .1 $m^3 s^{-1}$
- velocity .5 m s^{-1}
Bed slope 1° then 3m cascade, type: artificial
Relative Stream Power: 1
Channel- plan form: straightened
- sinuosity now: straightened
previous: see below
- section: bowl, trapezoid, rectangular
Erosion N/A, type: -



Substratum (cover) bed banks

bed rock		
boulder/cobble	**	***
pebbles/gravel	***	**
sand	*	*
silt/clay/(peat)		
(concrete channel liner)		

WATER CHARACTERISTICS Colour: clear
Kept at 3-5°C for analysis on 19.4.95
pH 7.9, Conduct. 612μS cm^{-1}, Temp 10°C
Alkalinity 4.66 mmol

Anions, mg l^{-1}		**Cations, mg l^{-1}**	
Alkalinity	233	Calcium	102
Chloride	-	Magnesium	9.4
Sulphate	-	Sodium	10
Nitrate N	6.6	Potassium	3.6
Phosphate P	.088	(Iron)	
Silicate Si	3.2		
Ion balance	6.40 : 6.40 mmol		

Assessment: nutrient-rich calcareous water
calcite precipitation probable (.9)

ADJACENT FEATURES etc.
Land use: road, park, plantation
Upstream: plantation, road, farm buildings
Downstream: grazing , parkland, road
Maintenance: minimal
Fishery interest: low

PHYSICAL Maintenance Factor -2.5
A small realigned fine-gravel stream flowing as a long riffle alongside a gravel track as a Victorian ride and then feeds a 0.7 m wide & deep channel ending in a 3-4 m high artificial waterfall and cascade as a Victorian feature before continuing downstream with an adjacent path, to the Mells River.

PLANT (shade 15%:cover; algae 40%, moss 10%, macrophytes 5%) 3 + 3 = Score 6
The upstream resectioned channel contained several aquatic and marginal plants including Fools cress, dropwort, meadow sweet, meadow-rue, lichen, some algae (*Cladophora*); the valley sides, banks and the road side were grassy and vegetated with primrose, spurge, etc., under lines of planted beech, and backed with a variety of deciduous trees. The main artificial channel was dominated by immense stands of the underwater red algae *Lemanea*. [Whether or not this should be considered rare or just interesting, is uncertain and needs further investigation.] Furhter downstream the banks were a mono-specific stand of ransoms and backed by spruce plantation.

ANIMAL (Squirrel) Score -

SUMMARY A modified and artificial section feeding a waterfall but whose conditions have selected for the dominance of unusual or uncommon flora

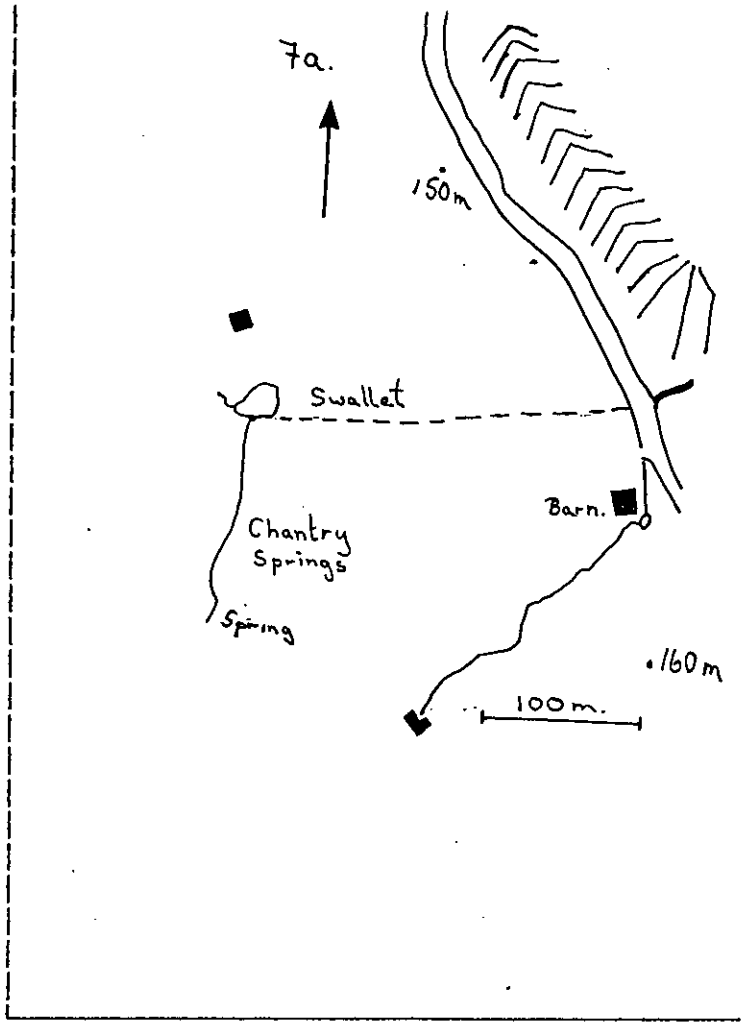
ADVICE Establish significance of site before further investigation. **OVERALL SCORE** (poor)

7. Chantry springs & Whately Brook, Whatley
Date: 18.4.95 NGR:31 718472
0-.2 /0-0.5 km from source Altitude 150 /130 m
Approx. Lat 51° 13', Log 2° 24' W
PHYSICAL CHARACTERISTICS spring/brook
Size @ survey:width .5 m;depth 0.03 m /0.5, .02
Height Board: none; Water depth .03 m/ 0.02
bank full: width 1.5 m; depth .6 m / 3, 1.1.5

Flow at survey - discharge .01 $m^3 s^{-1}$
- velocity .1 m s^{-1}
Bed slope $0/2^0$, type: N/A/long riffle
Relative Stream Power: 0/1-2
Channel- plan form: straightened
- sinuosity now: N/A / slight
previous: N/A / N/A
- section: trapezoid / trapezoid
Erosion 0%, type:

Substratum (cover)	bed	banks
bed rock		
boulder/cobble	*	*
pebbles/gravel	**	**
sand	*	*
silt/clay/(peat)	*/*/	*/*/

WATER CHARACTERISTICS Colour: brown



ADJACENT FEATURES spring/ stream
Land use: agricultural (crucifers) grazing /grazing, farm buildings,
Upstream: tilled land \bridge, embanked road, footpath & gate
Downstream: pond, hedge, improved grazing, farm buildings /gardens
Maintenance: straightened, occasional /occasional /
Fishery interest: nil/low

Maintenance Factor -1 /1

PHYSICAL Chantry spring - a small source arising inside small well house containing water pipes, cisterns etc., filling a water trough between two fields and then flowing 150 m down a small sandy stream with woody debris alongside a hedge to the west before passing a pond with weir board and then disappearing underground down a 'swallet'.
Whatley brook - a small stream arising near agricultural building flowing under road and in a narrow valley between new house gardens and an extensive high earth screening embankment (20 m) planted with whips and surrounded by a large-mesh and barbed wire fence.
PLANT (shade 30%:cover; algae 2%, moss - %, macrophytes 5 %) .5 /.5 + 2.5 /2+ = Score 3 /2.5+
Chantry spring - a partially tree shaded building submerged in vegetation with trees of oak, ash, thorn and under a tangle of weedy species dominated by bramble with also dock, nettle, densely shading the stream bed itself upstream but with burdock, deadnettle, chamomile, hairy willowherb, dogs mercury, bluebell, etc. downstream in less densely shaded areas. Many unknown seedling on wet stream margins.
Whatley brook - the steep margins of the stream in the sandy valley was vegetated by a line of maturing sycamore with holly, ash, hawthorn and elder with bramble, nettle and buttercup underneath together with primrose, lords & ladies, and surprising growing out of an area in which much domestic debris incl a TV, had been dumped a nice colony of **broomrape**. This is uncommon and an unusual bankside plant and is a species saprophytically associated with ivy which was present at the site and could have been the host. **ANIMAL** grouse Score
SUMMARY spring in agricultural land / small agricultural stream alongside a sand extraction pit
ADVICE more sympathetic planting of suitable native trees, determine status of broomrape
OVERALL SCORE poor/moderate

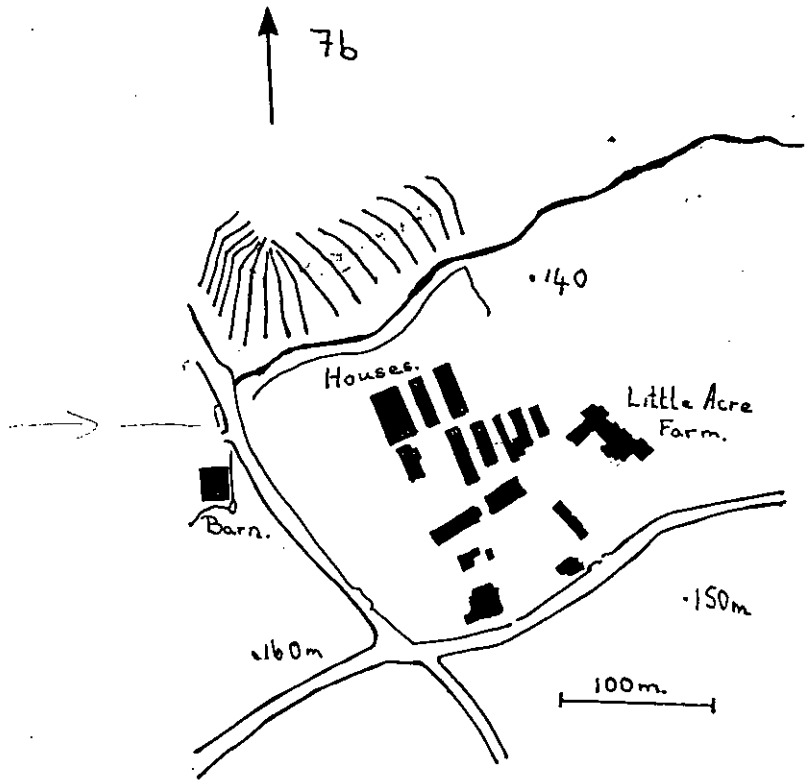

7b
·140
Houses.
Little Acre
Farm.
Barn.
·150m
·160m
100m.

Table 1. Genera of flora noted during surveys on springs, streams and wet areas, Mells River

(key: + = present; number = number of species in genera found; letters = short form of particular species; tr = trace; ? = not seen at vegetation survey but reported at another time by another surveyor; * = introduced alien species)

Site	1	2a	2b	3	4a	4b	5	6	7
TREES/BUSHES									
Acer p/c		+							+
Aesculus		+							
Alnus	+	+	+	+		+	+	+	
Betula	+								
Buddleia									
Cornus									
Corylus	+	+	+	+					
Crataegus			+		+	+	+		
Fagus	++	++	+	+				+	
Fraxinus							+	+	+
Ilex	+	+	+		+	+			+
Kerria*									
Larix								+	
Ligustrum									
Prunus			+		+		+		
Pinus									
Populus									
Quercus	+	+	+		+	+		+	
Rosa			+		+		+		
Salix	c		+	+	+			+	
Sambucus			+					+	+
Sorbus		+							
Taxus									
Tilea									
Ulex									
Ulmus									
Viburnum									
AQUATICS									
Batrachospermum									
Callitriche									
Ceratophyllum									
Elodea c/n									
Fontinalis									
Lemna									
Myriophyllum									
Nuphar									
Oenanthe fl									
Polygonum									
Potamogeton c									
Ranunculus									
Sparganium em/er									
Zanichellia									
Filamentous algae									+
Site	1	2a	2b	3	4a	4b	5	6	7

Site	1	2a	2b	3	4a	4b	5	6	7
MARGINALS, BANK & OTHER HABITAT SPECIFIC FLORA									
Alisma									
Allium	+	++	+	+			+		
Agrimonia			+						
Ajuga	+								
Anemone	+	+	+	+	+		+	+	
Angelica									
Apium								+	
Arctium								+	
Arum	+	+	+				+	+	+
Bryophytes (bank)		+	++				+	+	
Caltha		+			+				
Cardamine			+				+		
Carex p/r			+						
Catabrosa									
Cerastium									
Chelidonium									
Fam. Cruciferae									
Dipsacus									
Epilobium h/ang			h					h	
Equisetum									
Eupatorium					+				
Euphorbia	2		+					+	
Fallopia*									
Fragaria	+								
Galeopsis									
Galium									
Geum									
Glyceria									
Fam. Graminae									
Glechoma									
Hedera		+	+		+		+	+	+
Heracleum sp/mo									
Holcus									
Humulus									
Hyacinthoides	+	++	+	+		+	+		
Hypericum									
Iris									
Impatiens*									
Juncus	2		++	+	+		+		
F. Labiatae									
Linum									
Lycopus									
Lamium a/p									
Lonicera	+						+	+	
Luzula	+								
Lysichiton									
Lythrum									
Mentha	+	+							
Meliotus									
Mercurialis	+	++	+	+		+		+	
Mimulus*									
Molinia					+				
Myosotis									
Site	1	2a	2b	3	4a	4b	5	6	7

Site	1	2a	2b	3	4a	4b	5	6	7
Oenanthe cr			+					+	
Osmunda	+								
Oxalis	+	+			+				
Nasturtium							+		
Petasites				+					
Potentilla	+								
Phalaris									
Phragmites									
Primula	+						+	+	+
Prunella									
Pteridophytes	p/d	p						+	
Ranunculus f	f	f	f	f	f				
Ribes									
Rosa									
Sagittaria									
Scabious									
Scirpus									
Silene									
Scrophularia	+								
Solanum									
Stachys	+								
Symphoriocarpus									
Symphytum									
Teucrium		+							
Typha									
Ulmeria	+	+	+	+				+	
F. Umbelliferae		+	3						
Veronica a/b	b								
Viola	+								

Site	1	2a	2b	3	4a	4b	5	6	7

Site	1	2a	2b	3	4a	4b	5	6	7
WIDESPREAD RUDERALS, AGRICULTURAL & WEED SPECIES									
Achillea									
Aster*									
Bellis					+				
Calystegia									
Cocosmia									
Cirsium				+	+		+		
Convolvulus									
Fam. Graminae									
Geranium									
Lactuca									
Lathrys									
Lepidium	+								
Lolium									
Lotus									
Malva									
Matricaria								+	
Medicago									
Meliotus									
Phleum									
Picris									
Plantago									
Polygonum pers									
Pulicaria/Inula?									
Rubus fr/id	f	f	2	f		f	f	f	f
Rumex a/?						+	+	+	
Ranunculus	+		+		+		+		
Solidago									
Senecio									
Urtica			+		+	+	+	+	
Taraxacum							+		
Trifolium									
unid. seedlings									+
Vicia			+						
Site	1	2a	2b	3	4a	4b	5	6	7

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 170	Slope (m/km) (7°)	Flow category (1-10) 0
Solid geology code	Drift geology code 8	Planform category Sinuous.
Distance from source(km) 0.7	Significant tributary ? no	Navigation ? No.

B FIELD SURVEY DETAILS

Reference network site number: Wells River Tab. Beeton Wood Stream 2a

Mid-section grid reference of network site if different from designated location: ARC 1

COMPLETE THE FOLLOWING FOR ALL SITES Beeton Wood St.

Grid Reference: 31 675479 ~~677490~~ River: Wells River -

Date 16/4/1995 Time: 11.00 Surveyor name ARC 1 FE - FND

Adverse conditions affecting survey? No ☒ Yes ☐ *If yes, state* .....

Bed of river visible? No ☐ partially ☐ entirely ☒ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☒ *(tick one box)*

Site surveyed from: left bank ☒ right bank ☒ channel ☐ *(tick as appropriate)*

C PREDOMINANT VALLEY FORM *(tick one box only)*

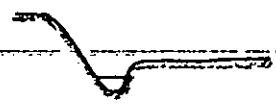

☐ shallow vee


☐ terraced valley floor


☐ deep vee


☐ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☒ concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use ||| then indicate total number)*

Riffles	14	Unvegetated point bars	3
Pools	20	Vegetated point bars	2

ARC1 NRA RIVER HABITAT SURVEY 1995: TEN SPOT CHECKS

Spot check 1 is at: upstream end ☒ downstream end ☐ of site *(Tick one box)*

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)*

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										↓ Bridge
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	CO	PE	PE	EA	CO	CO	CO	EA	EA	EA
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	NO	NO	PC	PC	NO	NO	PC	NO	EM
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	VS	TR	NO	NO	NO	VS	NO	NO	NO	NO
CHANNEL Stream bed										
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	GP	GP	SI	GP	CO	SA	GP	GP	GP	GP
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	RP	RP	SM	RP	RP	CH	RP	SM	SM	RP
Channel modification(s) NK,NO,RS,RI,DA,FO	NO	NO	NO	NO	NO	NO	NO	NO	RS	RI
Channel feature(s) NO,RO,MB,VB,MI,TR	NO	MI	NO	SB	NO	MI	VB	NO	NO	NO
RIGHT BANK										
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	CO	PE	EA	EA	EA	EA	EA	EA	EA	EA
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bank feature(s) tree roots NK,NO,EC,SC,PB,VP,SB,VS	VS	NO	NO	NO	NO	NO	ST	NO	NO	NO

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

LAND USE WITHIN 5m OF BANKTOP (L)	BL	BL	BL	IG	IG	IG	IG	IG	SU	SU
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	S	S	C	U	B	S	U	B	U	B
LEFT BANK FACE *(structure)* B/U/S/C	S	S	S	BA	S	S	S	U	B	B
RIGHT BANK FACE *(structure)* B/U/S/C	S	S	C	U	U	U	S	B	U	B
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	S	C	C	C	C	C	C	U	C	B
LAND USE WITHIN 5m OF BANK TOP (R)	BL	BL	BL	BL	BL	BL	BL	BL	BL	SU

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present)*

NONE *(tick as appropriate)*							X		X		
Liverworts/mosses/lichens	✓	✓	E	✓	✓	E		✓		✓	E
Emergent broad-leaved herbs (+ferns)	✓	✓	✓		✓						
Emergent reeds/sedges/rushes											
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved											
Submerged fine/linear-leaved											
Filamentous algae											

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*	E	E	Wetland (eg bog, marsh, fen) *(WL)*	✓	✓
Coniferous plantation *(CP)*			Open water *(OW)*		
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*		
Scrub *(SC)*			Tilled land *(TL)*		
Rough pasture *(RP)*	E		Suburban/urban development *(SU)*		

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite	E	E	Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached	P	
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☐	☐
Regularly spaced, single	☐	☐
Occasional clumps	☐	☐
Semi-continuous	☒	☐
Continuous	☐	☒

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥33%	None	Present	E
Shading of channel	☐	☐	☒
Overhanging boughs	☐	☐	☒
Exposed bankside roots	☐	☐	☒
Underwater tree roots	☐	☐	☒
Fallen trees	☐	☐	☒
Coarse woody debris	☐	☐	☒

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E
Waterfall(s) *~free-fall*	☐	☐	☐
Cascades(s) *~chute*	☐	☐	☐
Step/pool sequence	☐	☐	☒
Rapid(s) *~whitewater*	☐	☐	☐
Riffle-pool sequence	☐	☐	☒
Run(s) *~disturbed, rippled*	☐	☐	☒
Boil(s) *~upwellings*	☐	☐	☐
Glide(s) *~smooth, no eddies*	☐	☐	☐

	None	Present	E
Marginal deadwater *~slack*	☐	☒	☐
Exposed bedrock	☐	☒	☐
Exposed boulders	☐	☒	☐
Unvegetated mid-channel bars	☐	☐	☐
Vegetated mid-channel bars	☐	☒	☐
Mature island(s)	☐	☒	☐
Unvegetated side bars	☐	☐	☐
Vegetated side bars	☐	☒	☐

ARC 1 **NRA RIVER HABITAT SURVEY 1995: DIMENSIONS AND INFLUENCES**

L CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		Banktop width (m)		RIGHT BANK	
Banktop height (m)	·4	Water width (m)	·9	Banktop height (m)	·4
Embanked height (m)		Water depth (m)	·1	*Embanked height (m)*	

If trashline lower than banktop break in slope, indicate: height (m) width(m)

* Bed material at site is: consolidated (compact) Tufa [x] unconsolidated (loose) [ ] unknown [ ]

Location of measurement is: riffle [x] run or glide [ ] other [ ] *(tick one box) Slope (IFE only)*

M ARTIFICIAL FEATURES *(Use |||| Indicate total number, tick "none" where appropriate)*

None [ ] Number of Culverts= Weirs= 1 Outfalls= Fords =
Footbridges = Roadbridges = Other= 2 Fences

Is water level controlled by weir/dam downstream? No [ ] Part of site [x] Most/whole of site [ ]

N EVIDENCE OF RECENT MANAGEMENT *(Tick appropriate box)*

dredging [ ] mowing [ ] Other ? State ....
weed-cutting [ ] enhancement [ ]

O FEATURES OF SPECIAL INTEREST *(Tick appropriate box(es))*

CHANNEL		FLOODPLAIN (50m corridor)				
Waterfalls > 5m high	[ ]	Artificial open water	[ ]	Bog	[x]	Other (state) ......
Braided/side channels	[x]	Natural open water	[ ]	Carr	[ ]	
Debris dams	[x]	Water meadow	[ ]	Marsh	[ ]	
Leafy debris	[x]	Fen	[ ]	Flush	[x]	Several E

P CHOKED CHANNEL *(Tick one box)*

Is 33% or more of the channel choked with vegetation? NO [x] YES [ ]

Q NOTABLE NUISANCE PLANT SPECIES *Use ✓ or E*

Giant Hogweed [ ] Himalayan Balsam [ ] Japanese Knotweed [ ] Other ? State ....

R BRIEF DESCRIPTION *(Use prompts and key words as appropriate)*

Descriptive sentence: Gentle small spring fed stream SSSI edging extensive

Plants of note: Plant list - grazing See ~~Ea~~ 2a

Major conservation features:

Major impacts: (dis.) grazing

Incidental observations (animals etc):
deer fox

S DISEASED ALDERS *(Tick one box)*

None [x] Present [ ] Extensive [ ] Other diseased trees? State ....

SEND COMPLETED FORM TO HUGH DAWSON, IFE, RIVER LABORATORY, EAST STOKE, WAREHAM, BH20 6BB

49428.TL

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 150	Slope (m/km) 2°	Flow category (1-10) D
Solid geology code	Drift geology code	Planform category Straight
Distance from source(km) 1	Significant tributary ? No	Navigation ? No.

B FIELD SURVEY DETAILS

Reference network site number: ARC 2 Mells River

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES

Grid Reference: 31 677482 River: Bectorwood St 2b

Date 15/4../1995 Time: 1255 Surveyor name ARC1FE FND Mells River

Adverse conditions affecting survey? No ☒ Yes ☐ *If yes, state* .....

Bed of river visible? No ☐ partially ☐ entirely ☒ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☒ *(tick one box)*

Site surveyed from: left bank ☒ right bank ☐ channel ☐ *(tick as appropriate)*

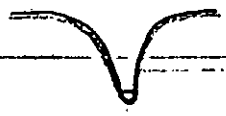
C PREDOMINANT VALLEY FORM *(tick one box only)*


☐ shallow vee


☐ terraced valley floor


☐ deep vee


☐ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☒ concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use 1/1 then indicate total number)*

Riffles	Unvegetated point bars
Pools (step pools 11)	Vegetated point bars

ARC 2

NRA RIVER HABITAT SURVEY 1995: TEN SPOT CHECKS

Spot check 1 is at: upstream end ☒ downstream end ☐ of site *(Tick one box)*

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)*

	1	2	3	4	5	6	7	8	9	10	
LEFT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	FA	EA	EA	EA	EA	EA					
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	NO	NO	NO	NO	NO					
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	No	No	SB	SB	No	NO					
CHANNEL											
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	SA	BR	SA	SA	SA	SA					
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	RP	CH	RP	RP	RP	RP					
Channel modification(s) NK,NO,RS,RI,DA,FO	NO	No	NO	NO	NO	NO					
Channel feature(s) NO,RO,MB,VB,MI,TR	No	No	NO	NO	No	NO					
RIGHT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	EA	EA	PE	EA	EA	PE					
Bank modification(s) NO,RS,RI,PC,BM,EM	PC	PC	NO	PC	No	NO					
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	No	No	No	No	No	NO					

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

LAND USE WITHIN 5m OF BANKTOP (L)	IG	IG	IG	IG	IG	IG					
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	C	C	S	S	S	U					
LEFT BANK FACE *(structure)* B/U/S/C	U	U	B	U	U	S					
RIGHT BANK FACE *(structure)* B/U/S/C	U	U	B	B	U	C					
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	U	B	S	U	S	C					
LAND USE WITHIN 5m OF BANK TOP (R)	IG	IG	IG	IG	IG	WT					

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present)*

NONE *(tick as appropriate)*	X		X	X	X	X					
Liverworts/mosses/lichens		X									
Emergent broad-leaved herbs											
Emergent reeds/sedges/rushes											
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved											
Submerged fine/linear-leaved											
Filamentous algae											

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

SITE NO. ARC2 | NRA RIVER HABITAT SURVEY 1995: 500m SWEEP-UP |

H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*			Wetland (eg bog, marsh, fen) *(WL)*		
Coniferous plantation *(CP)*			Open water *(OW)*		
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*	E	E
Scrub *(SC)*			Tilled land *(TL)*		
Rough pasture *(RP)*			Suburban/urban development *(SU)*		

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	✓	✓	Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle	E	E	Reinforced - toe only		
Composite			Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached		
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☐	☐
Regularly spaced, single	☐	☐
Occasional clumps	☐	☐
Semi-continuous	☐	☒
Continuous	☒	☐

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥ 33%	None	Present	E
Shading of channel	☐	☐	☒
Overhanging boughs	☐	☐	☒
Exposed bankside roots	☐	☐	☒
Underwater tree roots	☐	☐	☒
Fallen trees	☐	☒	☐
Coarse woody debris	☐	☒	☐

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E
Waterfall(s) *~free-fall*	☐	☐	☐
Cascades(s) *~chute*	☐	☐	☐
Step/pool sequence	☐	☐	☐
Rapid(s) *~whitewater*	☐	☐	☐
Riffle-pool sequence	☐	☐	☒
Run(s) *~disturbed, rippled*	☐	☐	☒
Boil(s) *~upwellings*	☐	☐	☐
Glide(s) *~smooth, no eddies*	☐	☐	☐

	None	Present	E
Marginal deadwater *~slack*	☐	☒	☐
Exposed bedrock	☐	☒	☐
Exposed boulders	☐	☒	☐
Unvegetated mid-channel bars	☐	☐	☐
Vegetated mid-channel bars	☐	☐	☐
Mature island(s)	☐	☐	☐
Unvegetated side bars	☐	☐	☐
Vegetated side bars	☐	☐	☐

L CHANNEL DIMENSIONS to be measured at one site on a straight uniform section; preferably across a riffle

LEFT BANK		Banktop width (m)	2	RIGHT BANK	
Banktop height (m)	.7	Water width (m)	.5	Banktop height (m)	.7
Embanked height (m)		Water depth (m)	.1	*Embanked height (m)*	—

If trashline lower than banktop break in slope, indicate: height (m) width(m)

Bed material at site is: consolidated (compact) ☐ unconsolidated (loose) ☒ unknown ☐

Location of measurement is: riffle ☐ run or glide ☒ other ☐ *(tick one box)* *Slope (IFE only)*

M ARTIFICIAL FEATURES *(Use 1/11 Indicate total number, tick "none" where appropriate)*

None ☐ Number of Culverts= Weirs= 1 Outfalls= Fords = 1

Footbridges = Roadbridges = 1 Other=

Is water level controlled by weir/dam downstream? No ☒ Part of site ☐ Most/whole of site ☐

N EVIDENCE OF RECENT MANAGEMENT *(Tick appropriate box)*

dredging ☐ mowing ☐ Other ? State .....

weed-cutting ☐ enhancement ☒ (tree line)

O FEATURES OF SPECIAL INTEREST *(Tick appropriate box(es))*

CHANNEL		FLOODPLAIN (50m corridor)				
Waterfalls > 5m high	☐	Artificial open water	☐	Bog	☐	Other (state) .....
Braided/side channels	☐	Natural open water	☐	Carr	☒	
Debris dams	☐	Water meadow	☐	Marsh	☒	
Leafy debris	☐	Fen	☐	Flush	☐	

P CHOKED CHANNEL *(Tick one box)*

Is 33% or more of the channel choked with vegetation? NO ☐ YES ☐

Q NOTABLE NUISANCE PLANT SPECIES *Use ✓ or E*

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐ Other ? State ND.....

R BRIEF DESCRIPTION *(Use prompts and key words as appropriate)*

Descriptive sentence: See 2 b Report

Plants of note: See list

Major conservation features:

Major impacts:

Incidental observations (animals etc):

S DISEASED ALDERS *(Tick one box)*

None ☐ Present ☐ Extensive ☐ Other diseased trees? State .....

SEND COMPLETED FORM TO HUGH DAWSON, IFE, RIVER LABORATORY, EAST STOKE, WAREHAM, BH20 6BB

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 160	Slope (m/km) 10°	Flow category (1-10) 0
Solid geology code	Drift geology code	Planform category sl meander
Distance from source(km) 0.3	Significant tributary ? no	Navigation ? no

B FIELD SURVEY DETAILS

Reference network site number: ARC 3 Mells Rwa 3

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES Whitehole Stream 3

Grid Reference: ST 31 680482 River: h

Date 18./14./1995 Time: 14.13..... Surveyor name ARC-IFE-FnD.....

Adverse conditions affecting survey? No ☒ Yes ☐ *If yes, state* .....

Bed of river visible? No ☐ partially ☐ entirely ☒ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☒ *(tick one box)*

Site surveyed from: left bank ☒ right bank ☐ channel ☐ *(tick as appropriate)*

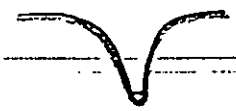
C PREDOMINANT VALLEY FORM *(tick one box only)*

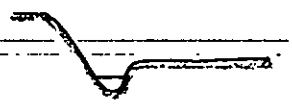

☐ shallow vee


☐ terraced valley floor


☐ deep vee


☐ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☒ concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use ||| then indicate total number)*

Riffles 8	Unvegetated point bars
Pools 5	Vegetated point bars

Spot check 1 is at: upstream end ☐ downstream end ☒ of site *(Tick one box)*

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)*

	1	2	3	4	5	6	7	8	9	10	
LEFT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	PE	EA	EA	EA	EA	GP	GP				
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	NO	NO	NO	NO	NO	NO				
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO				
CHANNEL											
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	CO	CO	GP	GP	GP	GP	GP				
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	RP	CH	CH	CH	CH	RP	RP				
Channel modification(s) NK,NO,RS,RI,DA,FO	NO	NO	NO	NO	NO	NO	NO				
Channel feature(s) NO,RO,MB,VB,MI,TR	BR	NO	NO	NO	NO	NO	NO				
RIGHT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	PE	EA	EA	EA	EA	GP	GP				
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	NO	NO	NO	NO	NO	NO				
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO				

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

LAND USE WITHIN 5m OF BANKTOP (L)	RP	WL	WL	WL	WL	IG	IG				
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	U	S	S	S	S	S	S				
LEFT BANK FACE *(structure)* B/U/S/C	U	U	U	U	U	U	U				
RIGHT BANK FACE *(structure)* B/U/S/C	U	U	U	U	C	C	U				
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	U	C	C	C	C	C	U				
LAND USE WITHIN 5m OF BANK TOP (R)	RP	IG	IG	IG	IG	IG	IG				

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present))*

NONE *(tick as appropriate)*							NO				
Liverworts/mosses/lichens	E	✓		✓	✓	✓					
Emergent broad-leaved herbs											
Emergent reeds/sedges/rushes			✓			✓					
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved											
Submerged fine/linear-leaved											
Filamentous algae						✓					

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

SITE NO.	NRA RIVER HABITAT SURVEY 1995: 500m SWEEP-UP	Page 3 of 4

H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*		✓	Wetland (eg bog, marsh, fen) *(WL)*	✓	✓
Coniferous plantation *(CP)*			Open water *(OW)*		
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*	✓	✓
Scrub *(SC)*		✓	Tilled land *(TL)*		
Rough pasture *(RP)*	✓	✓	Suburban/urban development *(SU)*		

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned	✓	✓
Vertical + toe			Reinforced - whole bank		
Steep (>45°)	✓	✓	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached	✓	✓
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☐	☐
Regularly spaced, single	☐	☐
Occasional clumps	☐	☐
Semi-continuous	☑	☐
Continuous	☐	☑

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥ 33%	None	Present	E
Shading of channel	☐	☐	☑
Overhanging boughs	☐	☐	☑
Exposed bankside roots	☐	☐	☑
Underwater tree roots	☐	☐	☑
Fallen trees	☐	☑	☐
Coarse woody debris	☐	☐	☑

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E
Waterfall(s) *~free-fall*	☐	☐	☐
Cascades(s) *~chute*	☐	☐	☑
Step/pool sequence	☐	☐	☑
Rapid(s) *~whitewater*	☐	☑	☐
Riffle-pool sequence	☐	☑	☐
Run(s) *~disturbed, rippled*	☐	☐	☐
Boil(s) *~upwellings*	☐	☐	☐
Glide(s) *~smooth, no eddies*	☐	☐	☐

	None	Present	E
Marginal deadwater *~slack*	☐	☑	☐
Exposed bedrock	☐	☐	☐
Exposed boulders	☐	☐	☐
Unvegetated mid-channel bars	☐	☐	☐
Vegetated mid-channel bars	☐	☐	☐
Mature island(s)	☐	☑	☐
Unvegetated side bars	☐	☑	☐
Vegetated side bars	☐	☑	☐

Tuja

NRA RIVER HABITAT SURVEY 1995: DIMENSIONS AND INFLUENCES Page 4 of 4

L CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		Banktop width (m)	6	RIGHT BANK	
Banktop height (m)	6	Water width (m)	4	Banktop height (m)	
Embanked height (m)		Water depth (m)	07	*Embanked height (m)*	

If trashline lower than banktop break in slope, indicate: height (m) width(m)

Bed material at site is: consolidated (compact) ☒ unconsolidated (loose) ☐ unknown ☐ Tufa

Location of measurement is: riffle ☐ run or glide ☒ other ☐ *(tick one box)* *Slope (IFE only)*

M ARTIFICIAL FEATURES *(Use ⊬ Indicate total number, tick "none" where appropriate)*

None ☐ Number of Culverts= Weirs= Outfalls= Fords =

Footbridges = Roadbridges = Other=

Is water level controlled by weir/dam downstream? No ☐ Part of site ☐ Most/whole of site ☐

N EVIDENCE OF RECENT MANAGEMENT *(Tick appropriate box)*

dredging ☐ mowing ☐ Other ? State .....

weed-cutting ☐ enhancement ☐

O FEATURES OF SPECIAL INTEREST *(Tick appropriate box(es))*

CHANNEL		FLOODPLAIN (50m corridor)				
Waterfalls > 5m high	☐	Artificial open water	☐	Bog	☐	Other (state) .....
Braided/side channels	☑	Natural open water	☐	Carr	☐	
Debris dams	☑	Water meadow	☐	Marsh	☐	
Leafy debris	☑	Fen	☑	Flush	☐	

P CHOKED CHANNEL *(Tick one box)*

Is 33% or more of the channel choked with vegetation? NO ☑ YES ☐

Q NOTABLE NUISANCE PLANT SPECIES *Use ✓ or E*

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐ Other ? State .....

R BRIEF DESCRIPTION *(Use prompts and key words as appropriate)*

Descriptive sentence: Cascades formed by deposited calcite tufa.

Plants of note: see list.

Major conservation features:

Major impacts:

Incidental observations (animals etc):

S DISEASED ALDERS *(Tick one box)*

None ☐ Present ☐ Extensive ☐ Other diseased trees? State .....

SEND COMPLETED FORM TO HUGH DAWSON, IFE, RIVER LABORATORY, EAST STOKE, WAREHAM, BH20 6BB

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 150	Slope (m/km) 40	Flow category (1-10) 0
Solid geology code	Drift geology code	Planform category straight
Distance from source(km) .2	Significant tributary ? NO	Navigation ? NO

B FIELD SURVEY DETAILS

Reference network site number: ARC 4 Wells River

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES

Grid Reference: River: Leighwood West Stream 4a

Date 18./.4./1995 Time: 15.00 Surveyor name ARC-IFE-FHD

Adverse conditions affecting survey? No ☒ Yes ☒ *If yes, state* difficult to see bottom

Bed of river visible? No ☐ partially ☐ entirely ☒ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☒ *(tick one box)*

Site surveyed from: left bank ☒ right bank ☐ channel ☐ *(tick as appropriate)*

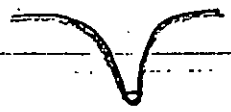
C PREDOMINANT VALLEY FORM *(tick one box only)*

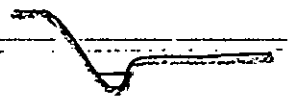

☐ shallow vee


☐ terraced valley floor


☐ deep vee


☒ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☐ concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use |/| then indicate total number)*

Riffles	10	Unvegetated point bars	
Pools	10	Vegetated point bars	

Spot check 1 is at: upstream end ☒ downstream end ☐ of site *(Tick one box)*

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)*

	1	2	3	4	5	6	7	8	9	10	
LEFT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	EA	EA	EA	EA	EA						
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	RS	RS	RS	RE						
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO						
CHANNEL											
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	SI	SI	SI	SI	SA						
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	SM	SM	NP	SM	SM						
Channel modification(s) NK,NO,RS,RI,DA,FO	RS	RS	RS	NO	NO						
Channel feature(s) NO,RO,MB,VB,MI,TR	NO	NO	NO	NO	NO						
RIGHT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	EA	EA	EA	EA	EA						
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	RS	RS	PC	NO						
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO						

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

LAND USE WITHIN 5m OF BANKTOP (L)	RP	RP	RP	RP	RP						
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	S	S	S	S	S						
LEFT BANK FACE *(structure)* B/U/S/C	S	S	S	S	S						
RIGHT BANK FACE *(structure)* B/U/S/C	S	S	S	S	S						
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	S	S	S	S	S						
LAND USE WITHIN 5m OF BANK TOP (R)	IG	IG	IG	IG	IG						

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present))*

NONE *(tick as appropriate)*		X	X		X							
Liverworts/mosses/lichens	E			✓								
Emergent broad-leaved herbs	✓			✓								
Emergent reeds/sedges/rushes	✓											
Floating-leaved (rooted)												
Free-floating												
Amphibious												
Submerged broad-leaved												
Submerged fine/linear-leaved												
Filamentous algae												

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 150	Slope (m/km) 4°	Flow category (1-10) 0
Solid geology code	Drift geology code	Planform category Straight
Distance from source(km) 0.4	Significant tributary ? No	Navigation ? NO

B FIELD SURVEY DETAILS

Reference network site number: ARC5 Wells River Tributaries.

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES

Grid Reference: 31 685483 River: Leigh Wood East Stream 4b

Date 14/4/1995 Time: 1530 Surveyor name ARC-IFE-FHD

Adverse conditions affecting survey? No ☒ Yes ☐ *If yes, state* .....

Bed of river visible? No ☐ partially ☐ entirely ☑ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☑ *(tick one box)*

Site surveyed from: left bank ☐ right bank ☒ channel ☐ *(tick as appropriate)*

C PREDOMINANT VALLEY FORM *(tick one box only)*


☒ shallow vee


☐ terraced valley floor


☐ deep vee


☐ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☐ concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use 1/1 then indicate total number)*

Riffles	18	Unvegetated point bars	
Pools	16	Vegetated point bars	

Spot check 1 is at: upstream end ☐ downstream end ☒ of site *(Tick one box)* @ Mill Race

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)*

	1	2	3	4	5	6	7	8	9	10	
LEFT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	EA	EA	EA	EA	EA	EA	EA	EA			
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	RS	PC	RS	NO	NO	PC	PC			
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO	NO			
CHANNEL											
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	SI	SI	SI	SA	SA	SA	CO	GP			
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	Sm	Sm	Sm	Sm	RP	RP	Sm	SM			
Channel modification(s) NK,NO,RS,RI,DA,FO	RS	RS	RS	RS	RS	NO	NO	NO			
Channel feature(s) NO,RO,MB,VB,MI,TR	NO	NO	NO	NO	NO	NO	NO	NO			
RIGHT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	EA	EA	EA	EA	EA	EA	EA	EA			
Bank modification(s) NO,RS,RI,PC,BM,EM	RS	RS	RS	NO	NO	NO	PC	PC			
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO	NO			

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU Bare

LAND USE WITHIN 5m OF BANKTOP (L)	RG	BA	IG	IG	IG	IG	IG	BL			
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	S	B	S	S	S	U	U	S			
LEFT BANK FACE *(structure)* B/U/S/C	B	B	U	U	U	U	B	U			
RIGHT BANK FACE *(structure)* B/U/S/C	U	U	S	U	U	U	B	U			
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	S	S	C	S	S	S	U	U			
LAND USE WITHIN 5m OF BANK TOP (R)	IG	IG	IG	IG	IG	IG	IG	BL			

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present)*

NONE *(tick as appropriate)*	X	X	X	X			X				
Liverworts/mosses/lichens								E			
Emergent broad-leaved herbs											
Emergent reeds/sedges/rushes											
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved			X		X	X					
Submerged fine/linear-leaved											
Filamentous algae											

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*	✓	✓	Wetland (eg bog, marsh, fen) *(WL)*	✓	
Coniferous plantation *(CP)*			Open water *(OW)*		
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*	E	E
Scrub *(SC)*			Tilled land *(TL)*		
Rough pasture *(RP)*			Suburban/urban development *(SU)*		

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	✓	✓	Resectioned	E	E
Vertical + toe	✓	✓	Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle	✓	✓	Reinforced - toe only		
Composite	✓	✓	Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached	E	E
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☐	☐
Regularly spaced, single	☐	☐
Occasional clumps	☐	☐
Semi-continuous	☐	☐
Continuous	☒	☒

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥ 33%	None	Present	E
Shading of channel	☐	☐	☒
Overhanging boughs	☐	☐	☒
Exposed bankside roots	☐	☐	☒
Underwater tree roots	☐	☐	☒
Fallen trees	☐	☒	☐
Coarse woody debris	☐	☐	☒

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E		None	Present	E
Waterfall(s) *~free-fall*	☐	☐	☐	Marginal deadwater *~slack*	☐	☐	☐
Cascades(s) *~chute*	☐	☐	☐	Exposed bedrock	☐	☒	☐
Step/pool sequence	☐	☐	☐	Exposed boulders	☐	☒	☐
Rapid(s) *~whitewater*	☐	☐	☐	Unvegetated mid-channel bars	☐	☐	☐
Riffle-pool sequence	☐	☐	☐	Vegetated mid-channel bars	☐	☐	☐
Run(s) *~disturbed, rippled*	☐	☐	☒	Mature island(s)	☐	☐	☐
Boil(s) *~upwellings*	☐	☐	☐	Unvegetated side bars	☐	☐	☒
Glide(s) *~smooth, no eddies*	☐	☐	☒	Vegetated side bars	☐	☐	☐

L CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		Banktop width (m)	1	RIGHT BANK	
Banktop height (m)	·6	Water width (m)	·4	Banktop height (m)	·6
Embanked height (m)		Water depth (m)	·03	*Embanked height (m)*	

If trashline lower than banktop break in slope, indicate: height (m) width(m)

Bed material at site is: consolidated (compact) ☐ unconsolidated (loose) ☒ unknown ☐

Location of measurement is: riffle ☐ run or glide ☒ other ☐ *(tick one box) Slope (IFE only)*

M ARTIFICIAL FEATURES *(Use |||| Indicate total number, tick "none" where appropriate)*

None ☐ Number of Culverts= Weirs= 1 Outfalls= Fords = 1
Footbridges = Roadbridges = Other=

Is water level controlled by weir/dam downstream? No ☐ Part of site ☐ Most/whole of site ☐

N EVIDENCE OF RECENT MANAGEMENT *(Tick appropriate box)*

dredging ☐ mowing ☐ Other ? State ....
weed-cutting ☐ enhancement ☐

O FEATURES OF SPECIAL INTEREST *(Tick appropriate box(es))*

CHANNEL		FLOODPLAIN (50m corridor)				
Waterfalls > 5m high	☐	Artificial open water	☐	Bog	☐	Other (state)......
Braided/side channels	☐	Natural open water	☐	Carr	☐	
Debris dams	☒	Water meadow	☐	Marsh	☐	
Leafy debris	☒	Fen	☐	Flush	☒	

P CHOKED CHANNEL *(Tick one box)*

Is 33% or more of the channel choked with vegetation? NO ☒ YES ☐

Q NOTABLE NUISANCE PLANT SPECIES *Use ✓ or E*

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐ Other ? State ....

R BRIEF DESCRIPTION *(Use prompts and key words as appropriate)*

Descriptive sentence: Rises in spring line in Beech wood with hazel understorey coppice of ~~willd~~ wild garlic, crosses part of agricultural field and flows along ~~hedg f~~ hedge line to river.

Plants of note: See list

Major conservation features:

Major impacts: agricultural

Incidental observations (animals etc): —

S DISEASED ALDERS *(Tick one box)*

None ☒ Present ☐ Extensive ☐ Other diseased trees? State ....

SEND COMPLETED FORM TO HUGH DAWSON, IFE, RIVER LABORATORY, EAST STOKE, WAREHAM, BH20 6BB

A BACKGROUND MAP-BASED INFORMATION

Altitude(m)	Slope (m/km)	Flow category (1-10)
Solid geology code	Drift geology code	Planform category
Distance from source(km)	Significant tributary ?	Navigation ?

B FIELD SURVEY DETAILS

Reference network site number: ARC Rolls River

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES

Grid Reference: River: Upper Soho Stream ~~5~~ 5

Date 18./4./1995 Time: 16 . 30 ? Surveyor name ARC - IFE - FND

Adverse conditions affecting survey? No [X] Yes [ ] *If yes, state* none

Bed of river visible? No [ ] partially [ ] entirely [X] *(tick one box)*

Duplicate photographs: general character? No [ ] Yes [✓] *(tick one box)*

Site surveyed from: left bank [ ] right bank [X] channel [ ] *(tick as appropriate)*

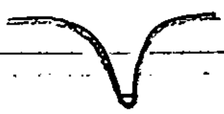
C PREDOMINANT VALLEY FORM *(tick one box only)*

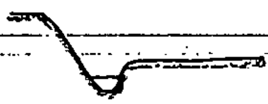
 [ ] ? shallow vee

 [ ] terraced valley floor

 [ ] deep vee

 [X] symmetrical floodplain

 [ ] gorge

 [ ] asymmetrical floodplain

 [ ] concave/bowl

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use ||||| then indicate total number)*

Riffles	3	Unvegetated point bars	
Pools	—	Vegetated point bars	

Spot check 1 is at: upstream end ☒ downstream end ☐ of site *(Tick one box)*

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)* √ WEIR

	1	2	3	4	5	6	7	8	9	10	
LEFT BANK									FORD		
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	FA	EA	GS	EA	EA	EA	EA	EA		EA.	
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	NO	RS	NO	NO	RS	RS	NO		RS	
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	SB	SB	NO	NO	NO	NO		NO	
CHANNEL											
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	SI	SI	GP	GP	GP	SA	SA	SI		SI	
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	NP	NP	RP	NP	SM	SM	SM	SM		SM	
Channel modification(s) NK,NO,RS,RI,DA,FO	NO	NO	NO	NO	RS	RS	RS	RS		RS	
Channel feature(s) NO,RO,MB,VB,MI,TR	NO	NO	NO	NO	NO	NO	NO	NO		NO	
RIGHT BANK											
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	FA	EA	GS	EA	EA	EA	EA	EA		EA	
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	NO	RS	RS	RS	RS	RS	RS		RS	
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO	NO		NO	

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

LAND USE WITHIN 5m OF BANKTOP (L)	IG	IG	IG	IG	IG	IG	IG	IG		IG	
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	S	U	S	C	S	U	U	U			
LEFT BANK FACE *(structure)* B/U/S/C	S	S	S	S	B	S	U	S			
RIGHT BANK FACE *(structure)* B/U/S/C	S	S	B	B	U	U	U	U			
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	S	C	S	S	S	S	S	S			
LAND USE WITHIN 5m OF BANK TOP (R)	IG	IG	IG	IG	IG	IG	IG	IG		IG	

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present)*

NONE *(tick as appropriate)*	X					E	X	X		X	
Liverworts/mosses/lichens			X	X	X	X					
Emergent broad-leaved herbs											
Emergent reeds/sedges/rushes											
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved		X		E	X	X					
Submerged fine/linear-leaved											
Filamentous algae											

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓)

H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*			Wetland (eg bog, marsh, fen) *(WL)*		✓
Coniferous plantation *(CP)*			Open water *(OW)* (edge of lake)	✓	
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*	E	E
Scrub *(SC)*			Tilled land *(TL)*		
Rough pasture *(RP)* 16	~~✓~~	~~✓~~	Suburban/urban development *(SU)*		

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	✓	✓	Resectioned	✓	✓
Vertical + toe			Reinforced - whole bank		
Steep (>45°)	✓	✓	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite	✓	✓	Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached	E	✓
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☑	☑
Regularly spaced, single	☐	☐
Occasional clumps	☐	☐
Semi-continuous	☐	☐
Continuous	☐	☐

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥33%	None	Present	E
Shading of channel	☐	☑	☐
Overhanging boughs	☐	☐	☐
Exposed bankside roots	☐	☐	☐
Underwater tree roots	☐	☐	☐
Fallen trees	☐	☐	☐
Coarse woody debris	☐	☐	☐

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E		None	Present	E
Waterfall(s) *~free-fall*	☐	☐	☐	Marginal deadwater *~slack*	☐	☐	☑
Cascades(s) *~chute*	☐	☐	☐	Exposed bedrock	☐	☐	☐
Step/pool sequence	☐	☐	☐	Exposed boulders	☐	☐	☐
Rapid(s) *~whitewater*	☐	☐	☐	Unvegetated mid-channel bars	☐	☐	☐
Riffle-pool sequence	☐	☐	☐	Vegetated mid-channel bars	☐	☐	☐
Run(s) *~disturbed, rippled*	☐	☐	☐	Mature island(s)	☐	☐	☐
Boil(s) *~upwellings*	☐	☐	☐	Unvegetated side bars	☐	☐	☐
Glide(s) *~smooth, no eddies*	☐	☐	☑	Vegetated side bars	☐	☐	☐

A BACKGROUND MAP-BASED INFORMATION

Altitude(m) 120	Slope (m/km) 10	Flow category (1-10) 0
Solid geology code	Drift geology code	Planform category straightened
Distance from source(km) 3	Significant tributary ? NO	Navigation ? NO

B FIELD SURVEY DETAILS

Reference network site number: ARC Wells River 7

Mid-section grid reference of network site if different from designated location:

COMPLETE THE FOLLOWING FOR ALL SITES

Grid Reference: River: Fuse Stream West

Date 15/4/1995 Time: 12.30 Surveyor name ARC-IFE-FHD

Adverse conditions affecting survey? No ☒ Yes ☐ *If yes, state* .....

Bed of river visible? No ☐ partially ☐ entirely ☒ *(tick one box)*

Duplicate photographs: general character? No ☐ Yes ☒ *(tick one box)*

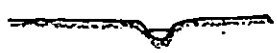
Site surveyed from: left bank ☒ right bank ☒ channel ☐ *(tick as appropriate)*

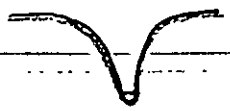
C PREDOMINANT VALLEY FORM *(tick one box only)*

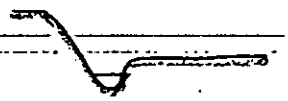

☐ shallow vee


☐ terraced valley floor


☒ deep vee


☐ symmetrical floodplain


☐ gorge


☐ asymmetrical floodplain


☐ concave/bowl

(Levada actually)

D NUMBER OF RIFFLES, POOLS AND POINT BARS *(Use 1/1 then indicate total number)*

Riffles	Unvegetated point bars
Pools	Vegetated point bars

Spot check 1 is at: upstream end ☐ downstream end ☒ of site *(Tick one box)*

artificial / waterfall

E PHYSICAL ATTRIBUTES *(to be assessed across channel within a 1m wide zone)* ↓ FLUME

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	GP	GP	GP	EA	EA	EA	EA	CO	CO	BE
Bank modification(s) (gravel deposit) NO,RS,RI,PC,BM,EM	NO	RS	AR	RS	RS	RS	RS	RS	RS	NO
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO	NO	NO	PB
CHANNEL										
Channel substrate *(one)* NV,BE,BO,CO,GP,SA,SI,CL,AR	GP	GP	GP	CO	CO	CO	CO	CO	CO	BE
Flow type *(one)* FF,CH,BW,UW,CF,RP,UP,SM,NP,NO	RP	RP	RP	SM	RP	RP	RP	RP	RP	RP
Channel modification(s) NK,NO,RS,RI,DA,FO	NO	RS	AR	RS	RS	RS	RS	RS	RS	NO
Channel feature(s) NO,RO,MB,VB,MI,TR	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Bank material *(one)* BE,BO,CO,GS,EA,PE,CL	GP	GP	GP	EA	EA	EA	EA	EA	CO	BE
Bank modification(s) NO,RS,RI,PC,BM,EM	NO	RS	AR	AR	AR	RS	RS	RS	RS	NO
Bank feature(s) NK,NO,EC,SC,PB,VP,SB,VS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

F BANKTOP LAND USE AND VEGETATION STRUCTURE *(to be assessed over a 10m wide transect)*

Land use: choose one from BL, CP, MH, SC, RP, WL, OW, IG, TL, SU

	1	2	3	4	5	6	7	8	9	10
LAND USE WITHIN 5m OF BANKTOP (L)	SU	SU	SU	SU	SU	SU	SU	SU	BL	BL
LEFT BANK-TOP *(structure within 1m)* B/U/S/C	B	U	U	U	U	U	U	U	U	S
LEFT BANK FACE *(structure)* B/U/S/C	B	B	B	U	U	U	U	U	U	B
RIGHT BANK FACE *(structure)* B/U/S/C	B	B	B	U	U	U	U	U	U	B
RIGHT BANK-TOP *(structure within 1m)* B/U/S/C	U	U	U	U	U	S	S	U	U	S
LAND USE WITHIN 5m OF BANK TOP (R)	CP	CP	CP	BL	BL	BL	BL	BL	SU	SU

(ROAD)

G CHANNEL VEGETATION TYPES *(fill in relevant boxes with one entry: use E (≥ 33% area) or ✓ (present))*

	1	2	3	4	5	6	7	8	9	10	
NONE *(tick as appropriate)*											
Liverworts/mosses/lichens ~~Lemanea~~	✓	✓	✓	✓	✓	✓	✓	✓	✓		E
Emergent broad-leaved herbs		✓			✓					✓	
Emergent reeds/sedges/rushes											
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved	✓	✓	✓								
Submerged fine/linear-leaved											
Filamentous algae Lemanea / fil. algae	X	X	E	E	E	E	E	E	E	E	E

Use end 'catch-all' column for types not occurring in spot checks as well as overall assessment over 500m (use E or ✓) ↑

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H LAND USE WITHIN 50m OF BANKTOP *Use E (≥ 33% banklength) or ✓ if present*

	L	R		L	R
Broadleaf/mixed woodland *(BL)*	E	E	Wetland (eg bog, marsh, fen) *(WL)*		
Coniferous plantation *(CP)*		E	Open water *(OW)*		
Moorland/heath *(MH)*			Improved/semi-improved grass *(IG)*		
Scrub *(SC)*			Tilled land *(TL)*		
Rough pasture *(RP)*			Suburban/urban development *(SU)* Rd	E	✓

I BANK PROFILES *Use E (≥ 33% banklength) or ✓ if present*

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned	E	E
Vertical + toe			Reinforced - whole bank		
Steep (>45°)	E	E	Reinforced - top only		
Gentle	E	E	Reinforced - toe only		
Composite			Artificial two-stage		
Use this space to draw profile if different from above, after ticking predetermined box			Poached		
			Embanked		
			Set-back embankments		

J EXTENT OF TREES AND ASSOCIATED FEATURES

TREES *(Tick one box per bank)*

	Left	Right
None	☐	☐
Isolated/scattered	☐	☐
Regularly spaced, single	☐	☐
Occasional clumps	☒	☐
Semi-continuous	☐	☒
Continuous	☐	☐

ASSOCIATED FEATURES *(Tick one box per feature)*

E ≥ 33%	None	Present	E
Shading of channel	☐	☒	☐
Overhanging boughs	☐	☐	☐
Exposed bankside roots	☐	☒	☐
Underwater tree roots	☐	☒	☐
Fallen trees	☐	☐	☐
Coarse woody debris	☐	☒	☐

K EXTENT OF CHANNEL FEATURES *(Tick one box per feature)*

	None	Present	E
Waterfall(s) *~free-fall*	☐	☒	☐
Cascades(s) *~chute*	☐	☐	☐
Step/pool sequence	☐	☐	☐
Rapid(s) *~whitewater*	☐	☐	☐
Riffle-pool sequence	☐	☐	☐
Run(s) *~disturbed, rippled*	☐	☐	☒
Boil(s) *~upwellings*	☐	☐	☐
Glide(s) *~smooth, no eddies*	☐	☐	☐

	None	Present	E
Marginal deadwater *~slack*	☐	☐	☐
Exposed bedrock	☐	☒	☒
Exposed boulders	☐	☒	☐
Unvegetated mid-channel bars	☐	☐	☐
Vegetated mid-channel bars	☐	☐	☐
Mature island(s)	☐	☐	☐
Unvegetated side bars	☐	☐	☐
Vegetated side bars	☐	☐	☐

NRA RIVER HABITAT SURVEY 1995: DIMENSIONS AND INFLUENCES Page 4 of 4

L CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		Banktop width (m)	2	RIGHT BANK	
Banktop height (m)	.6	Water width (m)	1	Banktop height (m)	.8
Embanked height (m)		Water depth (m)	.15	*Embanked height (m)* road	–

If trashline lower than banktop break in slope, indicate: height (m) width(m)

Bed material at site is: consolidated (compact) ☐ unconsolidated (loose) ☒ unknown ☐

Location of measurement is: riffle ☐ run or glide ☐ other ☐ *(tick one box)* *Slope (IFE only)*

M ARTIFICIAL FEATURES *(Use 1+1 Indicate total number, tick "none" where appropriate)*

None ☐ Number of Culverts= Weirs= 1 Outfalls= 1 Fords =
Footbridges = Roadbridges = 2 Other=

Is water level controlled by weir/dam downstream? No ☒ Part of site ☐ Most/whole of site ☐

N EVIDENCE OF RECENT MANAGEMENT *(Tick appropriate box)*

dredging ☐ mowing ☐ Other ? State .....
weed-cutting ☐ enhancement ☐

O FEATURES OF SPECIAL INTEREST *(Tick appropriate box(es))*

CHANNEL artificial		FLOODPLAIN (50m corridor)				
Waterfalls > 5m high	(☒)	Artificial open water	☐	Bog	☐	Other (state) .....
Braided/side channels	☐	Natural open water	☐	Carr	☐	
Debris dams	☐	Water meadow	☐	Marsh	☐	
Leafy debris	☐	Fen	☐	Flush	☐	

P CHOKED CHANNEL *(Tick one box)*

Is 33% or more of the channel choked with vegetation? NO ☐ YES ☐

Q NOTABLE NUISANCE PLANT SPECIES *Use ✓ or E*

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐ Other ? State .....

R BRIEF DESCRIPTION *(Use prompts and key words as appropriate)*

Descriptive sentence: Estate channel with artificial waterfall.

Plants of note: see list

Major conservation features:

Major impacts: road / rainfall

Incidental observations (animals etc):

S DISEASED ALDERS *(Tick one box)*

None ☐ Present ☐ Extensive ☐ Other diseased trees? State .....

SEND COMPLETED FORM TO HUGH DAWSON, IFE, RIVER LABORATORY, EAST STOKE, WAREHAM, BH20 6BB