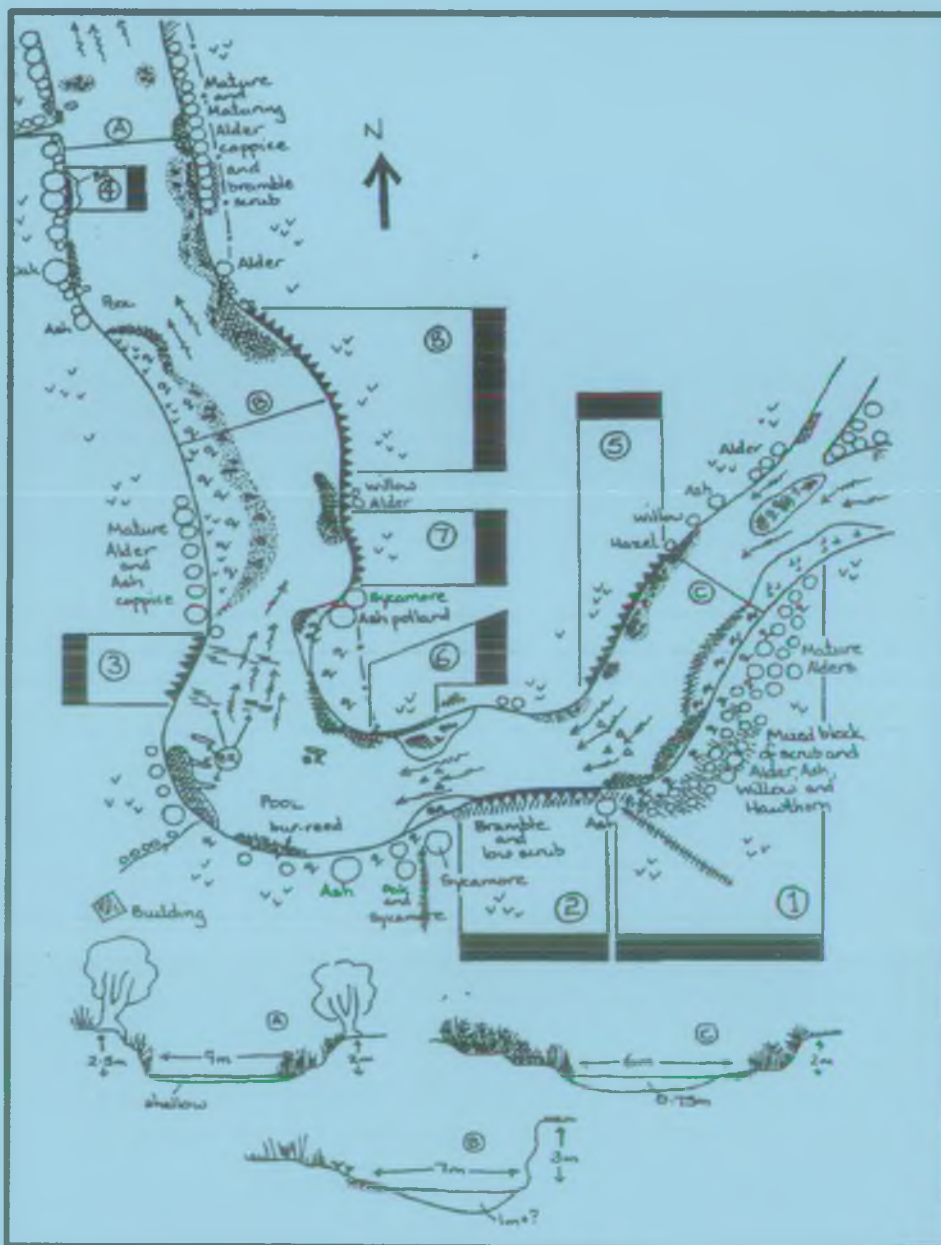




National Rivers Authority  
South West Region

# CORRIDOR SURVEY : RIVER TEIGN



RIVER TEIGN CORRIDOR SURVEY

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# 1. INTRODUCTION - a brief description of the river and its surrounding area

The river Teign is a small fast flowing river that rises as the North Teign on north-east Dartmoor at a height of 520 metres. It flows north-east over granite into the Chagford basin, then east and south over the Culm measures until near Chudleigh Knighton where it reaches the Bovey deposits, comprising clays, sands and gravels. At Newton Abbot it turns east and enters a long narrow estuary.

Between leaving the moor at Gidleigh and Steps Bridge (SX 8082 8841) the river runs through a narrow, steep sided and for the most part densely wooded valley. Below Steps Bridge the valley widens a little, the area of woodland in the catchment decreases to be replaced by primarily agricultural grassland. After Chudleigh Knighton the river enters a wide gentle valley.

For most of its length the flow pattern and form of the river remain remarkably constant. The only tributaries of any size to enter the river are the rivers Bovey, 13 kms from the sea and the Lemon, in the tidal reaches. Due to it's rapid decent to the sea the river is characterised by a fast flow and a consistent pattern of riffles, rapids and pools. There are few large areas of slack water. Substrates in the upper reaches are bedrock, boulders and cobbles, in the lower reaches it is cobbles and pebbles.

There is an almost continuous bankside tree cover upstream of Newton Abbot, this combined with the predominance of surrounding woodland in the upper reaches result in the major nutrient input to the river being leaf litter. There is very little aquatic vegetation in the channel. Where it is present it comprises almost exclusively willow moss (Fontinalis antipyretica), the river should therefore be considered oligotrophic.

Between Steps Bridge and Chudleigh Knighton, apart from seasonal game fishing, the river is little disturbed by human activities ; down-stream however the proximity of large urban populations and adjacent footpaths combine to create considerable human disturbance to much of the lower reaches of the river.

The river was surveyed from the main river limit at Steps Bridge to the head of the estuary just below the A380 road bridge (SX 8785 7201), totalling 24.5 km of river channel.

## 2. METHODOLOGY - an explanation of surveying techniques

### 2.1 Introduction

The term 'river corridor' identifies the fact that rivers and their adjacent land are not only distinct environmental and wildlife resources in their own right, but that they form an important corridor along which all manner of species can disperse.

Corridor surveys aim to provide: (a) precise data on individual sites which can be used to develop a management strategy sympathetic to wildlife for a stretch of river; (b) comparable information from many sites which collectively may form a national data base.

### 2.2 Method of survey

The survey technique is closely based on that set out in the Nature Conservancy Council (NCC) publication 'Surveys of Wildlife in River Corridors - Draft Methodology' (1985). The river is divided up into 500-metre sections with a corridor of adjacent land 50-metres on either side. The limits of each section correspond to the chainage figures used by the National Rivers Authority. The river was surveyed by one person working downstream (note in the report the downstream end of the river is taken as the first section and the report progresses upstream).

Where possible the channel, margins, both banksides and the adjacent habitat were examined and the features recorded on a map produced in the field. The map for each section shows:

- a. Physical features of the channel, substrates, flow patterns and bank formations.
- b. Biological features such as tree cover, channel and bankside vegetation and adjacent habitats.
- c. Features of interest that may be relevant to the survey, such as buildings, roads and power lines.
- d. Key sites and other features of particular importance to wildlife.

These features are represented on the final maps by a series of symbols which are explained in section 2.4. These symbols are based on the NCC Draft Methodology (1985). The linear scale of the maps is approximately 1cm = 17.5m, however to enable channel details to be clearly represented the width of the river is not to scale and is usually slightly exaggerated. For each section three cross-sections were drawn and are found adjacent to the map. They are not necessarily drawn to scale, however the

approximate measurements are given in metres; each cross section is identified by a symbol ( ) and can be located on the maps by finding the line crossing the river bearing the appropriate symbol at either end. Those areas considered to be of particular importance are highlighted by a bold black line and a number, which relates to the section marked 'Key sites' in the text opposite the map.

Facing each map is a set of notes describing the characteristics of the river, under the headings: banksides, channel and adjacent habitat. In addition to this the key sites marked on the map are identified, and a summary and specific management recommendations are made. Special note should be taken of any areas marked on the map or in the text as SSSIs (Sites of Special Scientific Interest). These sites may have special management requirements and the Nature Conservancy Council should be consulted before any work is carried out.

This survey was essentially a habitat survey, concentrating on broad areas of importance and localised points of interest. It does not deal comprehensively or definitively with the flora and fauna of the river corridor, but identifies areas that are considered to be of value in the hope that they can be protected or improved, special note has been made of sites which are of value to species closely associated with riverine habitats. For the Teign these are primarily, dipper, grey wagtail, kingfisher, and sand martin. Reference should be made to the special management requirements of these species given in sections 4 & 5. Species lists are given in appendices 1 & 2 for flora and birds. These are merely lists of species encountered in a thorough but rapid survey of the river, and in no way should they be taken to represent the entire wildlife community of the river.

### 2.3 Constraints

The survey was carried out between the 6th September and the 2nd November 1990 ; this followed a long dry summer and at the start of the survey (map 49) water levels were unusually low, it was not until chainage 22 (Map 31), that there was moderate rainfall and the river level rose to a more normal level. Working down from this point there were a number of rainy spells which caused minor spates, the river was not surveyed when in spate, however it should be noted that evidence of otter may well have been washed away.

Working down the river, the increase in depth due to reduced slope and increased flow made it increasingly more difficult to investigate the margins from the channel, making it less likely that otter hovers and spraints would be found. Below chainage 13.5 the turbidity of the water due to discharges from clay pits made it impossible to wade in the channel or to ascertain substrate and depth.

Downstream of chainage 10.5 (Map 7) the river is tidal. Most of the sections below this were surveyed at high tide and all the maps were produced as if the river was at high water. Due to water depth, muddy banks and margins the channel was not entered for these sections. Between chainages 10.5 and 9.5 the nature of the dense bankside undergrowth and that of the adjacent land made it impossible to approach the river bank in most places. Precise detail for these stretches is not as accurate as that for the rest of the river.

#### 2.4 Glossary of terms used in text and symbols

The descriptions in inverted commas are adapted from 'Surveys of Wildlife in River Corridors - Draft Methodology' NCC 1985.

Bedrock is 'solid rock which is firmly positioned on the river bed and larger than a boulder'.

Boulders are 'rocks > 25cm in diameter and up to 4m in diameter'.

Cobbles are 'rocks > 6.5cm but < 25cm in diameter'.

Pebbles are '> 1.6cm but < 6.5cm in diameter'.

Gravel is '> 0.2cm but < 1.6cm in diameter'.

Sand is 'Smaller than gravel but larger than silt'.

Mud/silt is 'of soft texture and not abrasive'.

A riffle is 'shallow water flowing fast over coarse substrates; often the surface will be broken and cobbles and boulders may be exposed'.

Rapids are 'regions of rapid water velocity resulting in coarse substrates, water may be deep or shallow'.

A pool is 'a distinct, deeper area of water, often resulting in slower velocity or a swirling of the water around a deep depression'.

A slack is 'an area of deep or shallow water where the velocity is slow due to a very shallow slope in the river'.

Earth cliffs are 'at least 1m high and have a slope ranging from 80 to greater than 90 degrees'.

Artificial banks 'may be of any substance - rock, concrete, wood, metal, gabions etc. They are usually vertical or steeply sloping'.

Reed beds are composed of reeds and reed-like grasses forming distinct blocks on the banksides, channel or in adjacent land.

Dense open vegetation comprises a solid cover of ruderal or tall herbaceous species, such as nettles, willow herb and Indian balsam.

Sparse open vegetation comprises an incomplete cover of the above species often interspersed with short grass or bare ground.

Short grass may be either grazed or mown.

Standard trees are those which have grown naturally without periodic coppicing or pollarding.

Coppiced and pollarded trees are multi-stemmed, regrowing after periodic cutting.

Scrub habitats are usually blocks of hawthorn, blackthorn or bramble of varying density.

Hedgerows are shown where they are continuous and a significant feature, they are often on banks.

Semi-improved grass is usually partly affected by the use of artificial fertilizer, and may be intensively grazed, such that species diversity may be much lower than that expected from wholly un-improved grassland.

Improved grass is regularly grazed and treated with artificial fertilizer, it will often have recently been resown with

agricultural grass species and is very poor in other plant species.

Unimproved grass is unaffected by artificial fertilizer, and supports a varied community of grasses, herbs, sedges and rushes, it may be grazed.

## 2.5 Glossary of terms relating to otters

Considerable evidence of otter activity was found on the river Teign. This glossary explains those terms used in the text that refer to otter signs and habitats.

Holt A holt is an actively burrowed out chamber, usually beneath a mature oak, ash, or sycamore in the bankside, showing signs of recent habitation (eg. tracks, spraints or claw marks around or close to the entrance). A holt is not necessarily a breeding site.

Hover A hover is an eroded hollow in the bankside, usually among the root system of an ash, oak or sycamore, used as a temporary resting point and often marked with spraints.

Lying up cover This is dense ground cover close to the river or on an island, usually composed of scrub, low coppice regrowth, immature woodland, tall ruderal plants or coarse wetland habitats. Bramble, blackthorn or willow scrub is most commonly used.

Spraint These are otter droppings used as territorial markers. They have a dark, tar-like appearance when fresh, and a rich, musky scent; fish bones and scales are usually discernable within the spraint. They are usually deposited at conspicuous points along the river, on large boulders or logs, on projecting tree limbs, at the base of bridges and at the confluence of rivers and streams.

Sign heap This is a small pile of sand or mud scraped up by the otter and usually marked with a spraint.

## 2.6 Symbols used in maps

### RIVER HABITATS

#### Substrates (submerged)

BR	.....	Bedrock
b	.....	Boulders
c	.....	Cobbles
p	.....	Pebbles
g	.....	Gravel
s s	.....	Sand
+++	.....	Silt/mud

#### Habitats and flow

	.....	Bridge
	.....	Weir
	.....	Pool
	.....	Slack
	.....	Riffle
	.....	Rapids
	.....	Waterfall
	.....	Protruding rocks
	.....	Trash
	.....	Fallen log/tree










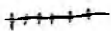


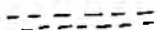
#### Margins/exposed substrates

+++	.....	Mud
s s	.....	Sand
	.....	Bare
	.....	Vegetated
	.....	Cobbles
	.....	Boulders

### BANK FEATURES

	.....	Earth cliff
	.....	Rock cliff
	.....	Artificial
+++	.....	Mud
s s	.....	Sand
+ +	.....	Mud
q q	.....	Vegetated
o o	.....	Cobbles
Δ Δ	.....	Boulders

#### Bank and adjacent vegetation

	+/- name	.....	Trees
		.....	Alder
		.....	Willow
		.....	Scrub
		.....	Reed/sedge
		.....	Dense open
cks 		.....	Sparse open
		.....	Short grass
ree 		.....	Exposed tree roots
		.....	Hedge
		.....	Fence
		.....	Footpath
		.....	Track



### 3. SUMMARY, including notes on areas of interest.

Due to the high precipitation on Dartmoor, the Teign is a river of rapidly changing flow rates. Chainages 22.0-31.5 were surveyed after a period of prolonged drought. The irregular rocky margins shown on the maps for these sections must be interpreted in the context of the very low water levels at the time of the survey. For an engineer returning to the river when the flow rates are more normal the picture would be quite different; many of the marginal features would not be apparent. The other extreme would be to see the river in full flood. It is obvious from the position of debris along the banksides that at times the level of the river may be 2-3 metres above the summer levels. It is perhaps these enormously changing flow rates that maintain the bankside characteristics of the river, which include many eroded and exposed roots.

The river is remarkably uniform over the entire length of the survey, the exceptions being the first four tidal sections (chainages 7.0-9.0). The rest of the river can be described as being of generally rapid flow, with steep banks averaging 2m, but in some cases up to 5m. The banks have for the most part a heavy tree cover, consisting primarily of alder but with a good mix of other deciduous species. Due to the lack of tributaries this uniformity is also apparent in the width of the river and in the flow rate at any given time.

The river can however be divided in three main sections. Firstly there are the tidal reaches from chainage 7.0-10.5. Following on from this are the sections from chainage 10.5-18.0, most of which are in the Bovey basin, where there are several stretches with little or no bankside tree cover on one and occasionally both banks. Finally there is the rest of the river from chainage 18.0-31.5, here the tree cover is dense and for the most part continuous on both sides of the river.

#### 3.1 Head of the estuary to Teign Bridge

Chainages 7.0-10.5    SX 8785 7201-8585 7351

The tidal limit of the river is a low weir at Teign Bridge (Map 7). Below this point the river is flanked on the left by disused clay workings with limited public access and on the right by a working clay pit and associated industry. This side although noisy is little disturbed by the public. From here down to Kingsteignton Bridge (Map 4) the river changes little in width.

The tidal range however, rapidly increases, the river having steep, muddy banks with continuous dense tree cover to the right and upstream to the left. Downstream to the left tree cover becomes discontinuous and it forms the boundary of suburban Kingsteignton (Tesco's).

Below Kingsteignton Bridge the river slowly begins to widen. To the right it acts as a barrier to the further expansion of Newton Abbot. To the left is Newton Abbot racecourse and the mainline railway, both of which act as a barrier to public access to the reed beds and high saltmarsh below. This entire area is however highly disturbed. Kingfishers were however very active in all the tidal reaches.

It is difficult to assess the wildlife value of much of this area, due to the time of year that the survey was conducted. However chainages 9.5-10.5 (Maps 6-7), due to the exceptionally rich and undisturbed adjacent habitats and the impenetrable banksides cover are of extremely high wildlife value, not only to riverine species of bird but also to those associated with scrub, wood and wetland habitats. The other area of note is the adjacent habitat below the mainline railway to the left, this comprises high saltmarsh, extensive reed beds and scrub along the rail embankment. It undoubtedly holds breeding populations of birds associated with these habitats. Every effort should be made to preserve this area and if possible to develop its wildlife potential.

### 3.2 Teign Bridge to Chudleigh

Chainages 10.5-18.0    SX 8585 7351-8559 7943

These sections have been grouped together because they are all characterised by some form of human disturbance, the river loses its wild feel below chainage 18.0 (Map 22). The whole section has stretches of very dense continuous tree cover contrasting with open areas often with degraded banks.

Working downstream to Chudleigh Knighton there are a number of stretches where a combination of the proximity of the A38 dual carriageway and fishing interests have combined to remove long stretches of the banksides tree cover. This more open aspect and eroding banks provide a number of potential and actual kingfisher nest sites. A small sand martin colony was reported between chainages 15.0-15.5 in 1988, however no evidence that it was still in use could be found during this survey.

After the river passes under the A38 it enters the Bovey basin and the associated clay workings. These are present on one side of the river or the other for much of the way down as far as Teign Bridge. In places the spoil heaps run to within metres of the river bank. They influence the wildlife of the river in both positive and negative ways. They have a negative influence by creating enormous areas of barren landscape, at times highly disturbed by heavy machinery. The water that collects in the pits is usually pumped into the river and whilst probably not being toxic it does make the river very turbid. This was especially noticeable below chainage 12.5. On the positive side, when they fall into disuse or where the overburden has been planted with trees they slowly become excellent scrubland habitats, with little or no public disturbance. The companies involved should be encouraged to create useful wildlife habitats on any areas of spare land that adjoins the river. In addition, mitigating steps should be insisted upon to cut-down on the level of clay sediment discharged into the river.

From Chudleigh Knighton to Teign Bridge a public footpath runs adjacent to the river on one or both sides. It is well used especially by people walking dogs. In some areas there is a very high level of disturbance.

Dipper were present as far down as chainage 13.0-13.5 (Map 13). Grey wagtail were present in almost every section. The only otter signs were two spraints at the confluence with the river Bovey (Map 13) and another further down (Map 12). From just below the Bovey tributary down to chainage 12 (Maps 11-13) there are a number of extensive earth cliffs that are actively eroding. One of these holds what appears to be quite a large sand martin colony (Map 12), this being the only one found on this survey.

### 3.3 Chudleigh to Steps Bridge

Chainage 18.0-31.5    SX 8559 7943-8082 8841

This stretch running down from Steps Bridge is characterised by almost continuous bankside tree cover on both banks. There are a number of stretches devoid of tree but these are few and far between. Certain areas of the river are managed carefully for fishing, these being the deeper pools and slacks that are large enough to hold sea trout and salmon.

The river runs down a narrow steep sided valley. The B3212 and then the B3193 run parallel, never far away. A number of small side roads cross the river via old stone bridges. A disused rail line joins the river below Bridiford Bridge (Map 41) and from then on it often runs adjacent to the river, crossing and re-crossing the channel via sometimes delapidated bridges. Most of these bridges have become overgrown and cluttered with trash from spates. They provide excellent feeding and nesting potential for dippers and grey wagtails, which were present in most of the sections. The line itself is largely overgrown with scrub or mixed deciduous woodland. In places where its course diverges from that of the river it has at times been grubbed out and incorporated into the farmland.

In many places deciduous woodland adjoins the river. At the upper end some of the woodland (namely Bridiford Wood), and also the river channel to Steps Bridge, forms part of the Teign Valley Woods Site of Special Scientific Interest (SSSI). This adjacent woodland combined with the wooded banksides results in a large number of woodland bird species being found by the river.

There was considerable evidence of otter activity noted, particularly at the upstream end. The sections of importance to otters are summarised in Appendix 4. The quiet, shaded channel with large numbers of ancient coppice stools and exposed roots, largely inaccessible to humans, make for ideal otter habitat. The majority of otter spraints were found on boulders in the middle of the channel, undoubtedly due to the low river level.

There is much exposed bedrock, especially when the river is low. The channel is full of boulders and cobbles, sometimes with a covering of willow moss. Only one patch of water crow-foot was found in the main channel (Map 31).

Apart from the fishing interests, public access to the river in this section is very limited. Few public footpaths adjoin the river. As a result the river is extremely quiet and secluded, a distinct advantage for all the wildlife interests. This should be taken into account when considering any changes that might alter public access to the river.

#### 4. GENERAL MANAGEMENT - recommendations to protect wildlife.

The guidelines set out here are applicable to all parts of the river, but it should be emphasised that they are generalised recommendations; the recommendations made in individual sections should be given priority.

##### 4.1 Channel

1. Submerged and emergent plant communities should be left intact wherever possible; where grazing of marginal plants has taken place, fencing of the banks to exclude livestock would greatly improve the plant community. If removal of the submerged vegetation is essential, the cut material should be left at the side of the river for 24 hours to allow invertebrate species to return to the water. No herbicides should be used in the channel.
2. The naturally occurring variations in flow and substrate should be maintained; if any damage to this pattern occurs during management work, attempts should be made to reinstate the pattern.
3. The removal of shoals should be carried out only if essential: spreading is preferable to removal.
4. Islands, particularly those with vegetation cover, should be left intact and undisturbed.
5. Logs, flood debris and trash dams, and fallen trees should be left intact wherever possible. Not only do they act as potential otter habitats but they provide useful breeding, feeding and bathing areas for many species of bird.

##### 4.2 Bankside

1. Mature bankside trees that are being re-cut as part of a management program, should be carefully cut, working on short stretches (50m or less) in rotation, in order to minimise disturbance. At no time should both banksides be cut at the same time, ideally a mosaic of different aged tree cover should be maintained along the river. Stumps should be cut at an angle to encourage water run-off. No cutting should take place between March and July.
2. Mature standard trees should be left intact; if management work is essential pollarding is preferable to felling.

Removal of dead wood should be avoided unless it is likely to be a danger, it provides a valuable habitat for a number of species.

3. Root systems, saddles and stumps should be left intact, any bankside hollows associated with them should be left undisturbed.
4. Cut material from bankside trees should be made into stick and log piles at the side of the river, where possible. These provide lying-up cover for otters and habitats for all manner of other wildlife. Stick piles should be at least 5 metres long, 5 metres wide and 2 metres high.
5. Cut material should not be burnt within the channel, on banksides or in important habitats such as woodland, herb-rich grassland or wetland. Improved grassland and arable are the only suitable sites for burning. Dead wood removed from the channel should be left at the bankside to rot.
6. Scrub understorey and adjacent scrub should not be removed when working on bankside trees.
7. Banksides which are rich in herb, fern or bryophyte species should be avoided. Management work should always be carried out from the least richly-vegetated bankside.
8. Open cliff sites should always be left undisturbed during management work, see section 5 regarding these sites.
9. If it is essential to cut herbaceous bankside vegetation, ideally this should be carried out in late summer or autumn. Invasive alien species such as Indian balsam and Japanese knotweed should be eradicated where possible; it is recognised that these particular species require herbicide treatment for there to be any degree of success. On balance it is preferential to use herbicide rather than to allow these alien species to strangle a particular area.
10. Extensive stands of common reed (Phragmites australis) should be left undisturbed.
11. Extensive areas of sparse bank top cover should be considered as sites for planting broadleaved tree species and native shrubs, as described in section 6.1.

12. The dumping of waste stones and roots from field clearance on banksides should be avoided.

#### 4.3 Adjacent land

1. When carrying out management work, machinery and vehicles should avoid entering sensitive areas such as semi-natural woodland, marshy grassland, bog flushes or saltmarsh.
2. Features such as oxbows and ponds should not be disturbed. Drainage ditches and feeder streams should only be cleared of vegetation if essential.
3. Farmers should be discouraged from removing hedges running up to the river in order to enlarge fields, these represent valuable connections between the river corridor and the adjacent habitats.
4. The practice of ploughing as close to the bankside as possible should be avoided, not only does it destroy the bankside but also it is likely to result in severe erosion during spates. Ideally farmers should be encouraged to view the river as a valuable resource, and to leave as large a margin as possible between the river and arable land.

## 5. IDENTIFICATION AND MANAGEMENT OF CLIFF NEST SITES

Both sand martins and kingfishers require actively eroding earth or sand cliffs for their nest sites. However the two species have quite different requirements.

### 5.1 Sand martins

Sand martins nest in colonies and require extensive open cliffs usually in excess of 1 metre high. They do not like overhanging vegetation or trees, therefore the ground above the site should ideally be grazed at sometime during the year. When the birds are in residence from early March to July it is easy to locate a colony. At other times of the year any open earth cliff more than a few metres long should be inspected very carefully for clusters of holes; if in doubt the document 'Sand martins in Devon and Cornwall, status and distribution' a report to South West Water by RSPB SW Regional Office (1988) should be consulted, although it should be noted that colonies can move from year to year. If the colony is in a place where there is considerable public disturbance, the erection of temporary fencing to reduce disturbance in the immediate area of the colony should be considered. This should include the opposite bank on narrow rivers.

No attempt should be made to try to protect cliffs from erosion. The face of the cliff hardens after a few seasons exposure to the atmosphere and burrowing becomes impossible.

### 5.2 Kingfishers

Kingfishers by comparison are solitary nesters and do not require such extensive areas of cliff, they also require to have roots or other suitable perches normally within 50 cm of the top of the cliff. Their nest sites are likely to be much more difficult for the untrained observer to locate and recognise. Any small area of exposed cliff, usually in excess of 1 metre high, even if heavily overgrown, should be checked for solitary holes, normally with excreta running down the cliff from the hole, or from nearby roots used as perches. Such areas should be avoided in the period March to April.



## 6. SUGGESTIONS FOR THE CREATION OF NEW WILDLIFE HABITATS

### 6.1 Tree and shrub planting

To a large extent the Teign is so well endowed with trees that further planting is not really necessary. However tree planting has been recommended for a few sites and it is important that suitable tree species are planted. Care must be taken that areas chosen for planting have no existing botanical or other wildlife value. Cliff sites, large areas of marginal plant communities and marshy areas are not suitable. Planting on adjacent land to provide a connection between the river and nearby woodland is most appropriate.

Suitable species are considered to be those species that are commonly found on river banks, these being: alder, oak, ash, birch and the various willow species ; sycamore is not recommended, contrary to popular belief it is not a true native and can be very invasive, to the detriment of other species.

Lower growing trees and shrubs are very suitable, not only planted alone but also as an understorey to taller growing species. Hawthorn and blackthorn planted in large blocks (10m by 5m minimum) provides excellent breeding habitat for birds and lying up cover for otters.

### 6.2 Fencing of banktops

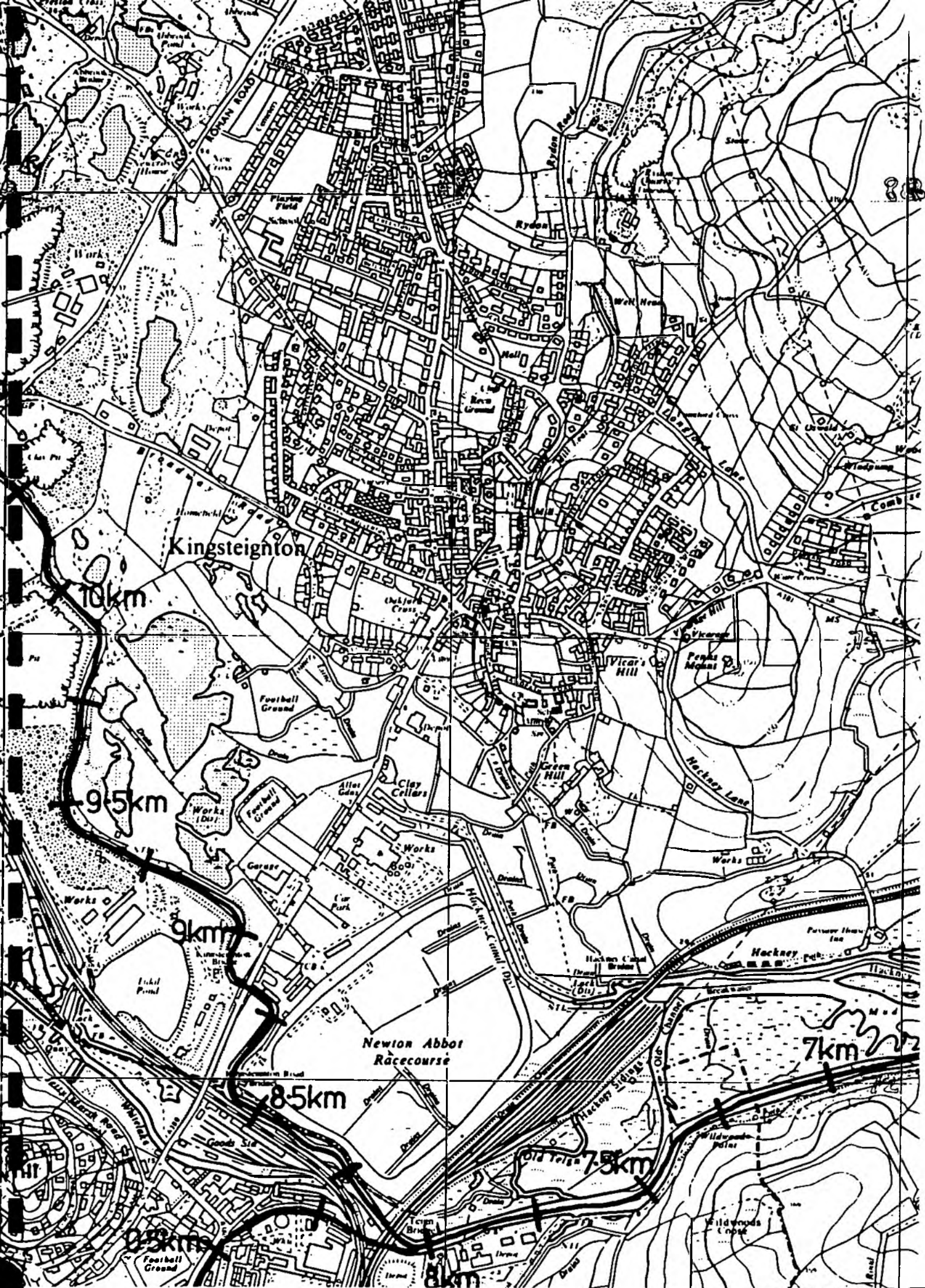
For many sections of the Teign, fencing of the bankside has been recommended; often bankside tree or herbaceous cover is ruined by over-grazing and by their use as animal shelters. In severe examples, where cover is entirely removed, the structure of the bank rapidly collapses.

Stock fences where present are often inadequate, consisting of single strands of barbed wire nailed to trees, too close to the river edge to be of any use in protecting the wildlife value. Ideally fences should be pig/sheep type fencing fixed to stakes set some distance back from the river (the further the better). In fields where stock are not regularly present an electric fence would provide a cheap alternative to permanent fencing. Areas of cliff should not be permanently fenced (see section 5.1). Often where hedges run up to the river, or where roads run adjacent, there are corners that if fenced would provide excellent wildlife cover at little or no loss to the landowner.

### 6.3 Stick piles

When management work is carried out on bankside trees, the cut material can usefully be made into stick piles and log piles, rather than burnt, to provide lying up cover for otters, as well as habitats for invertebrates, bryophytes and fungi. They should be sited close to the waters' edge (within 1m or so) and should be at least 5m long by 5m wide and 2m high. The larger logs and branches should be piled at the bottom, and the smaller material on the top. In areas where there is little natural cover for otters, stick piles are particularly valuable features.

7. MAPS - showing the location of chainage lengths.





6000

XXXX

NEWTON ABBOT RD  
TEIGNGRACE CP

TEIGNGRACE CP

075000

285000

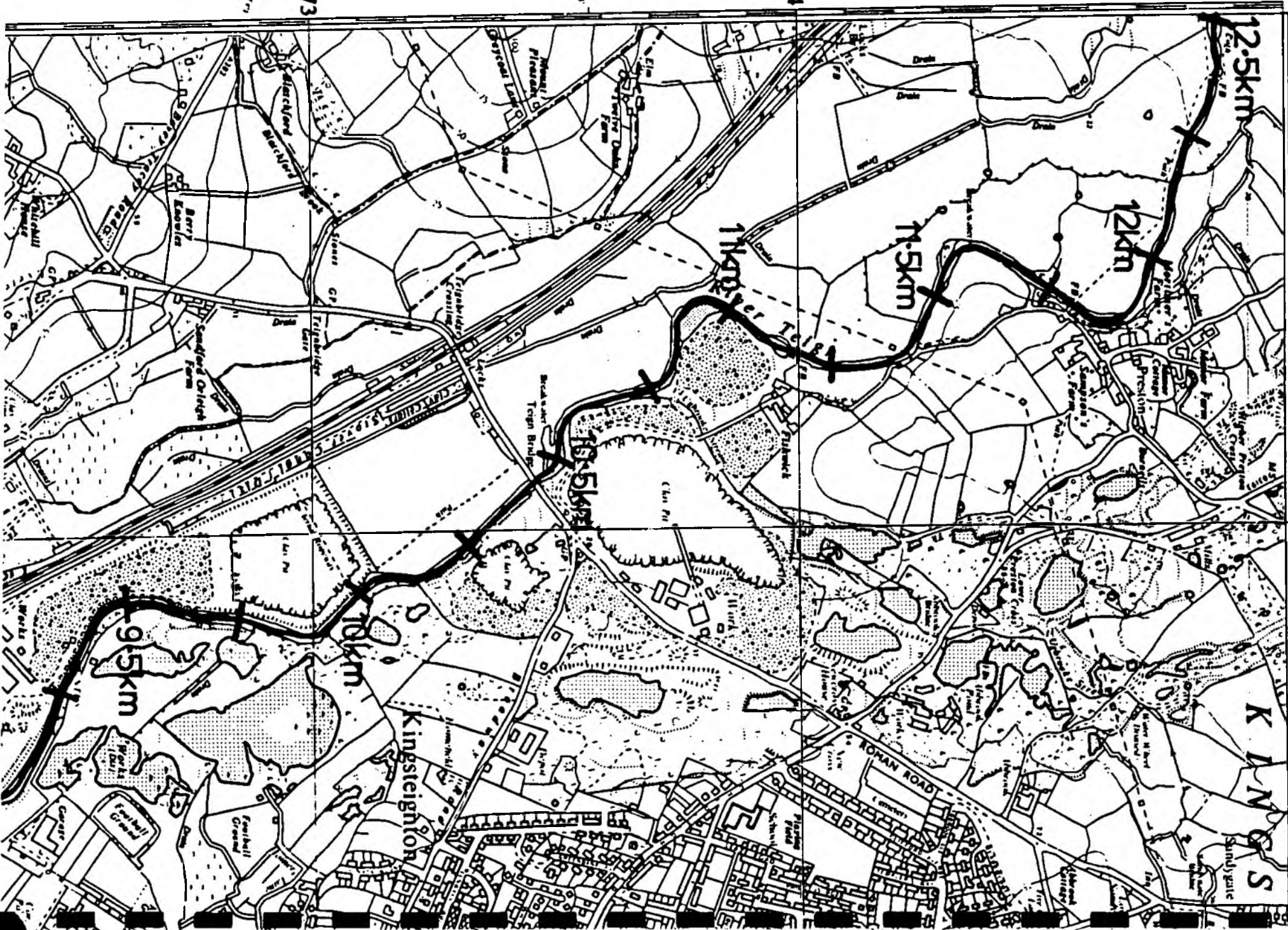
Links 100M 500M 0

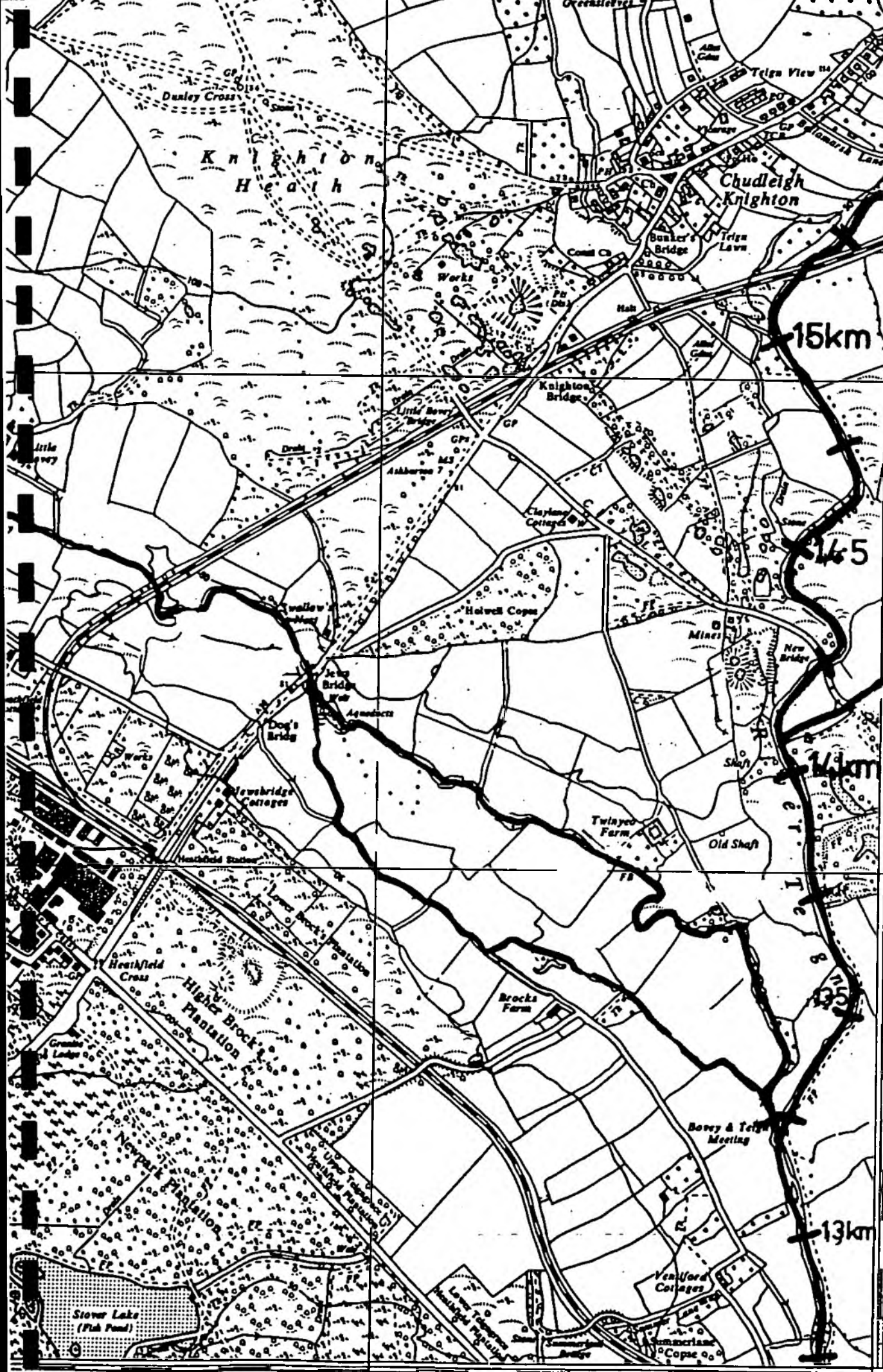
10 Metres

1 CMG  
1:17M

86

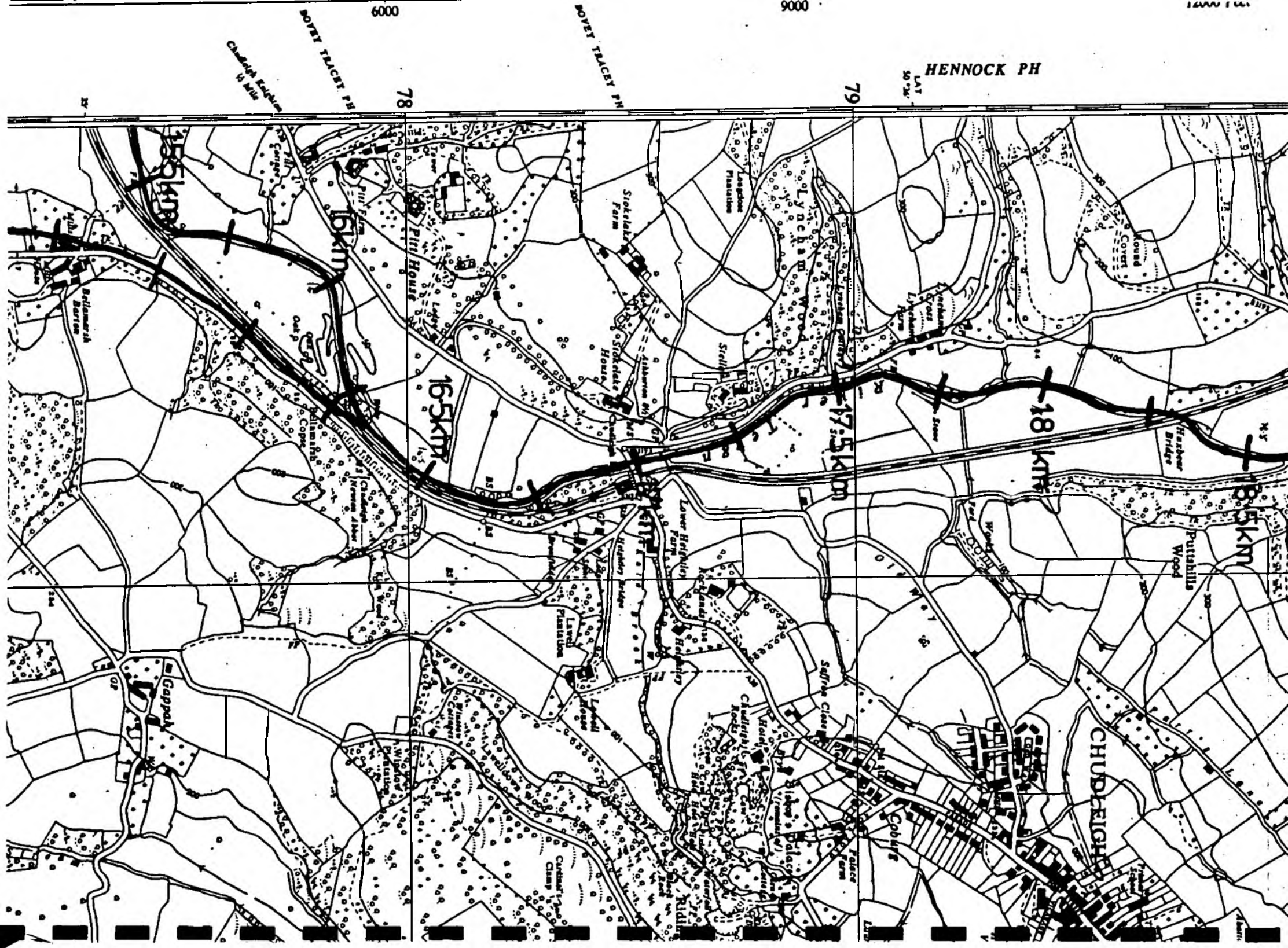
84





HENNOCK PH  
KINGSTEINGTON PH  
77  
15km  
14.5  
14km  
13.5  
13km  
KINGSTEINGTON PH  
76  
75  
10 Metres  
75000





HENNOCK PH

LAT  
56° 37' N  
LONG  
3° 37' W  
28 Miles

82

080000  
10 Metres  
00058  
10 Metres

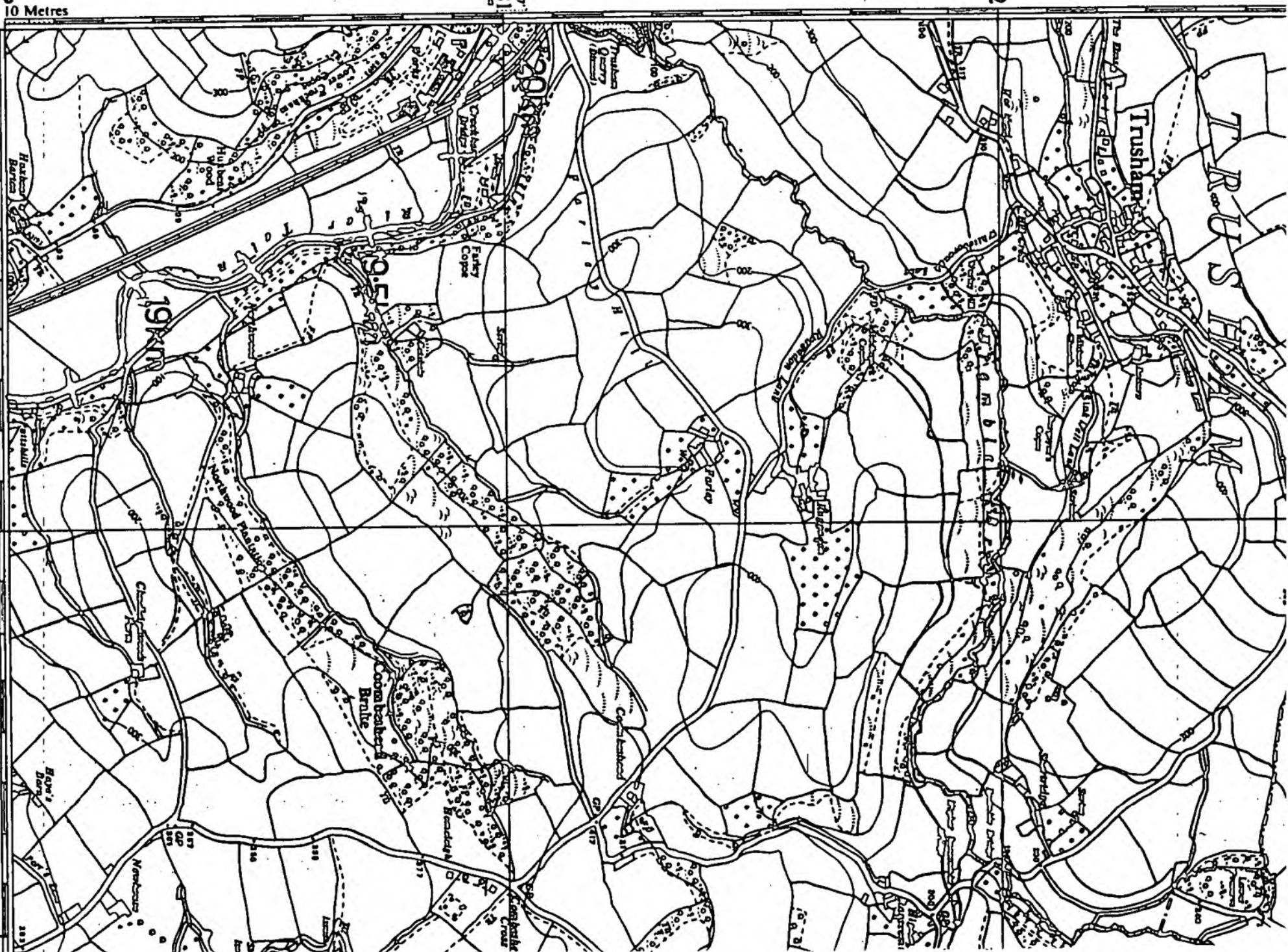
Yards 1000

500

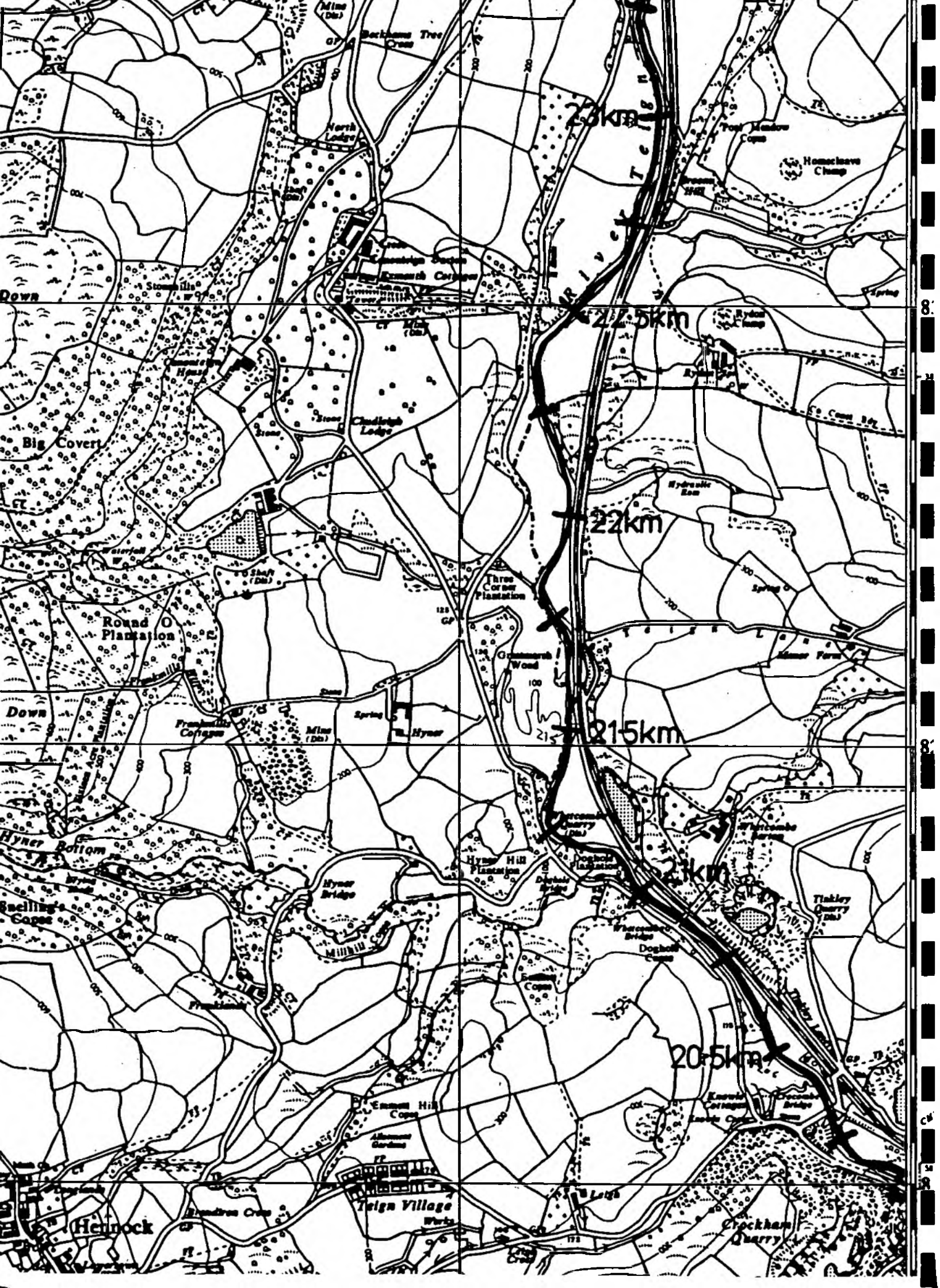
0

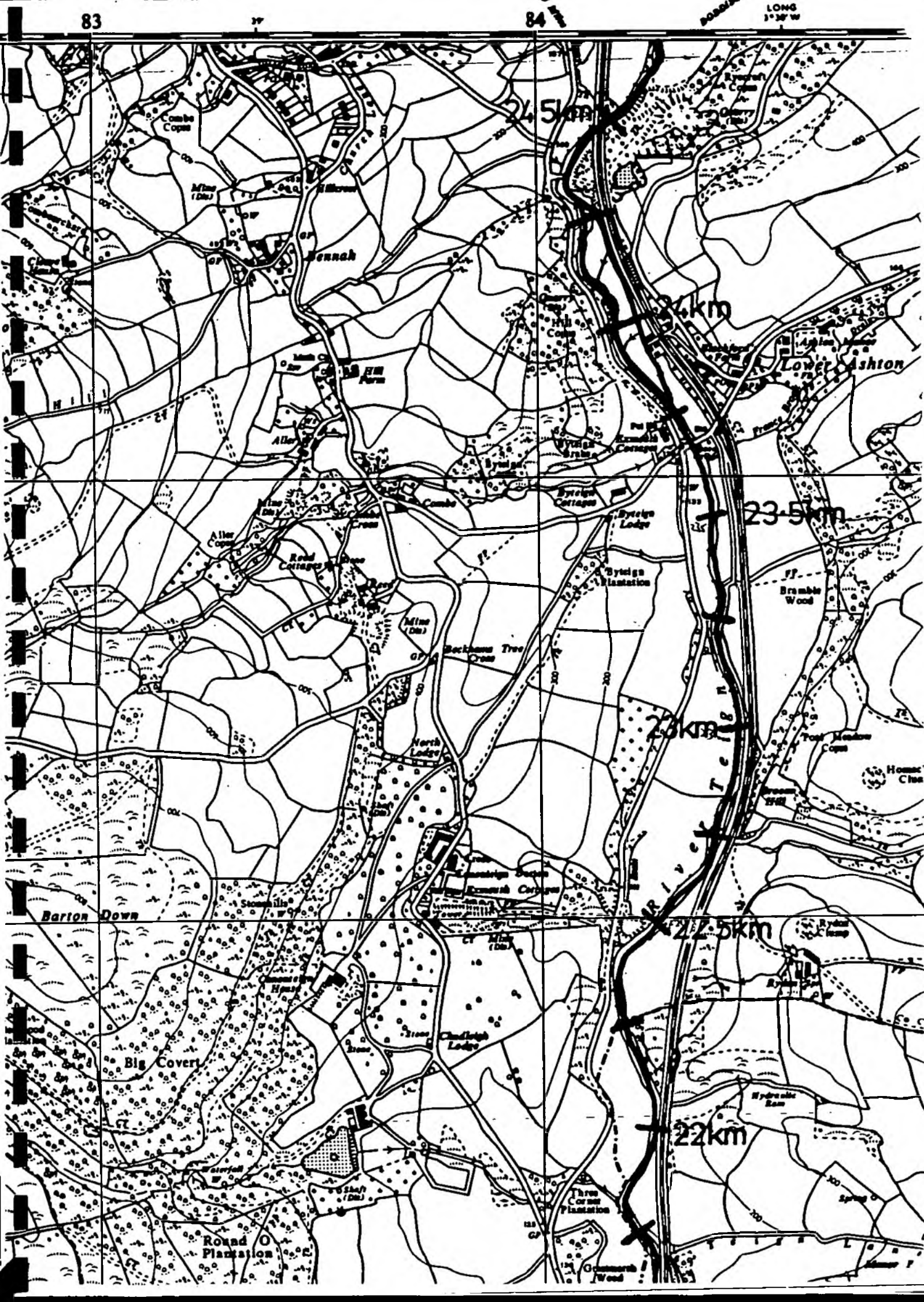
LONG  
3° 37' W

86

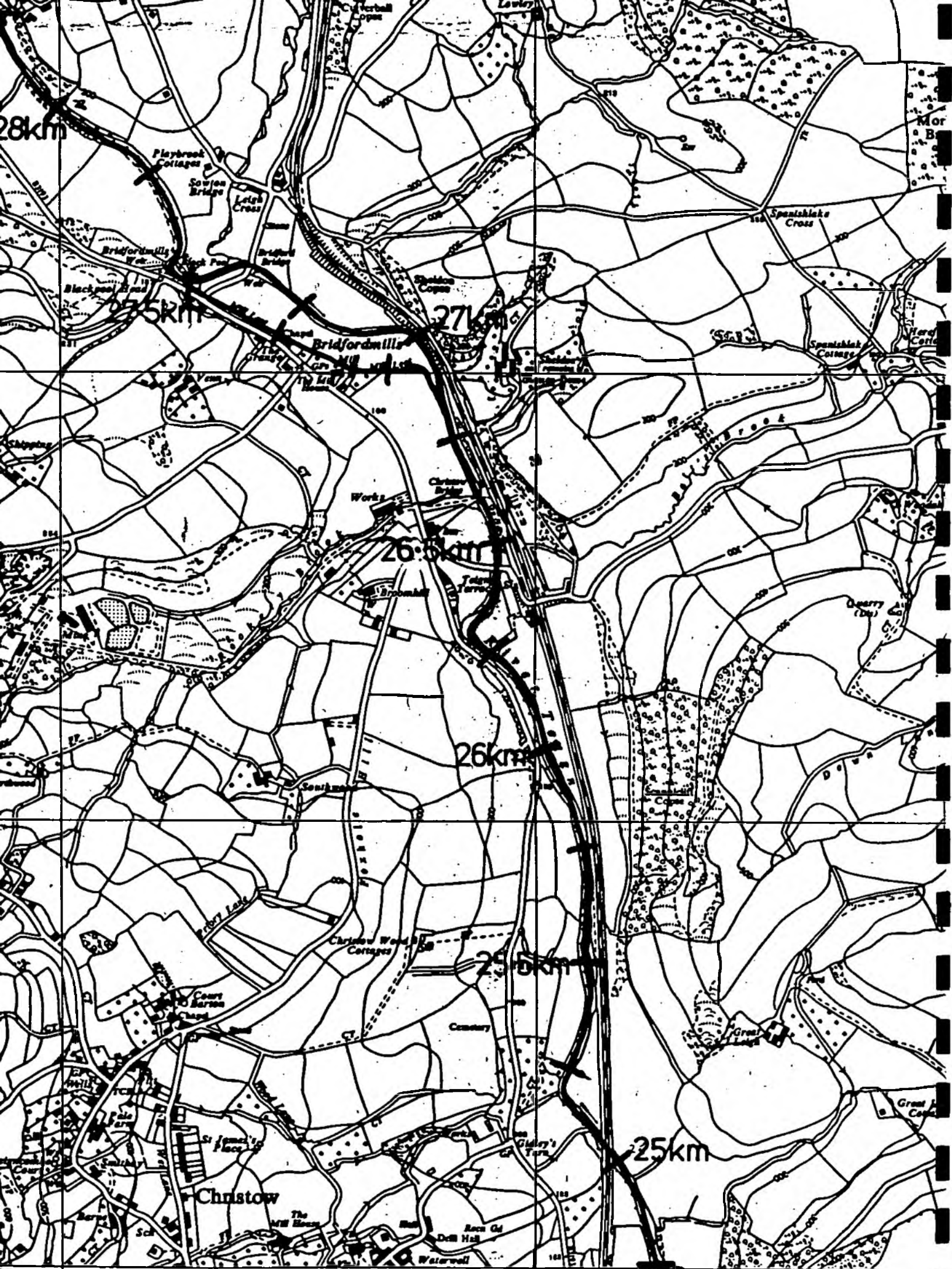


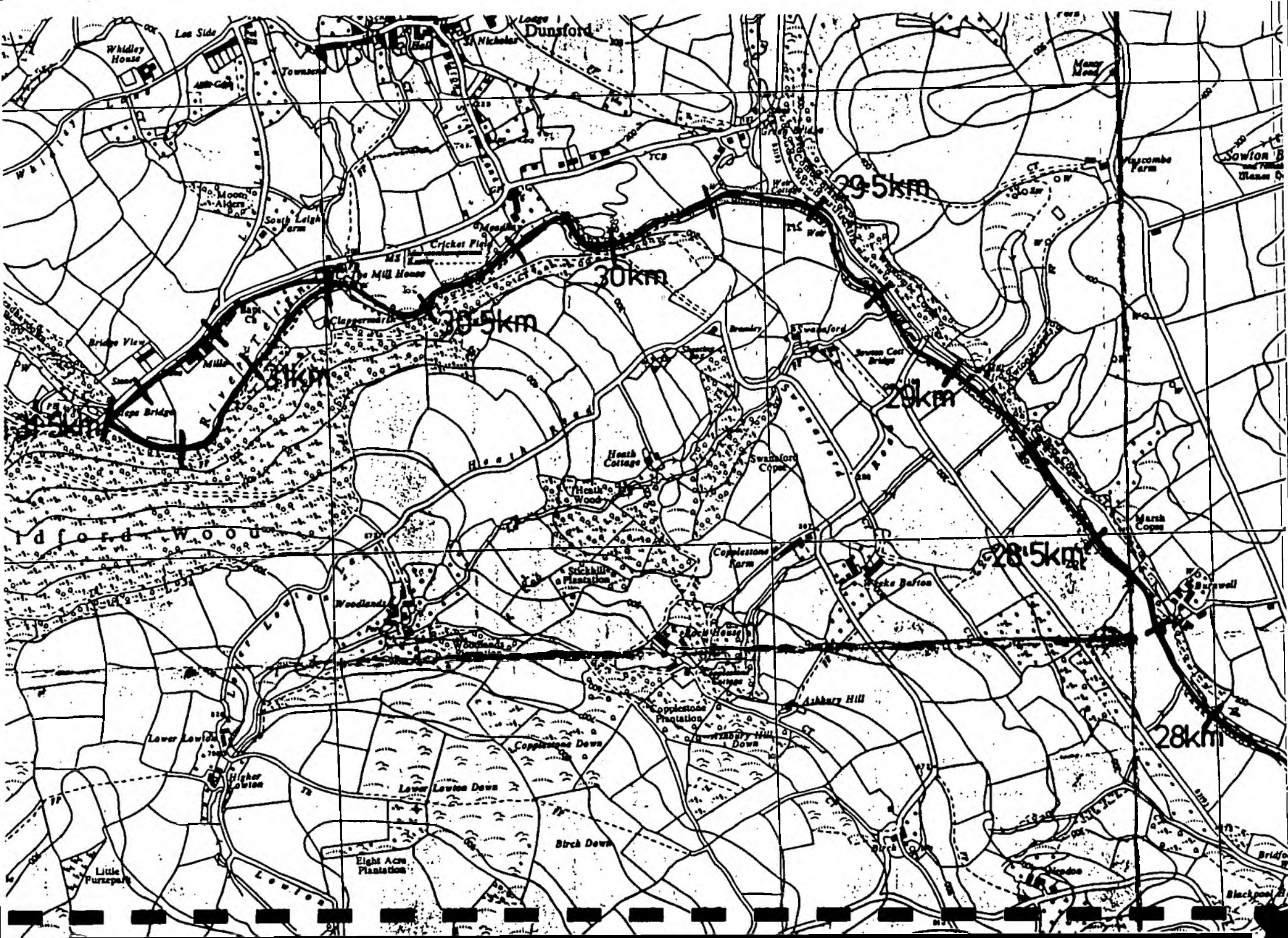












8. SURVEY - section maps and notes.



Map 1 Chainage 7.0-7.5 Grid ref: SX 8785 7201-8745 7175

First section of the survey, starting at the head of the estuary just below the A380 bridge.

#### Banksides

Generally low and muddy. To the left the bank runs off the saltmarsh, being supported by gabions where the old channel departs. To the right, above the road bridge the bank is supported by stonework, delapidated in places. Below the bridge this gradually disappears, here it is covered in grass or scrub.

#### Channel

Approximately 24m wide, tidal, muddy and deep. To the left the old course of the river departs as a muddy creek. Kingfishers were active on this stretch.

#### Adjacent habitats

To the left is saltmarsh with red fescue, cord-grass, sea purslane and sea aster, there are extensive patches of common reed. To the right upstream of the bridge there is a line of oak standards with an understorey of scrub and bracken, running up to the A380. Below the bridge there are more oaks and scrub, followed by an area of reeds, where the sea has broken through the bank. Below this there is a mixed deciduous wood on a steep bank with a scrubby understorey. A footpath runs along the right bank.

#### Key sites

1: Both banksides. 2: The channel. 3: the adjacent habitat on both sides.

#### Summary

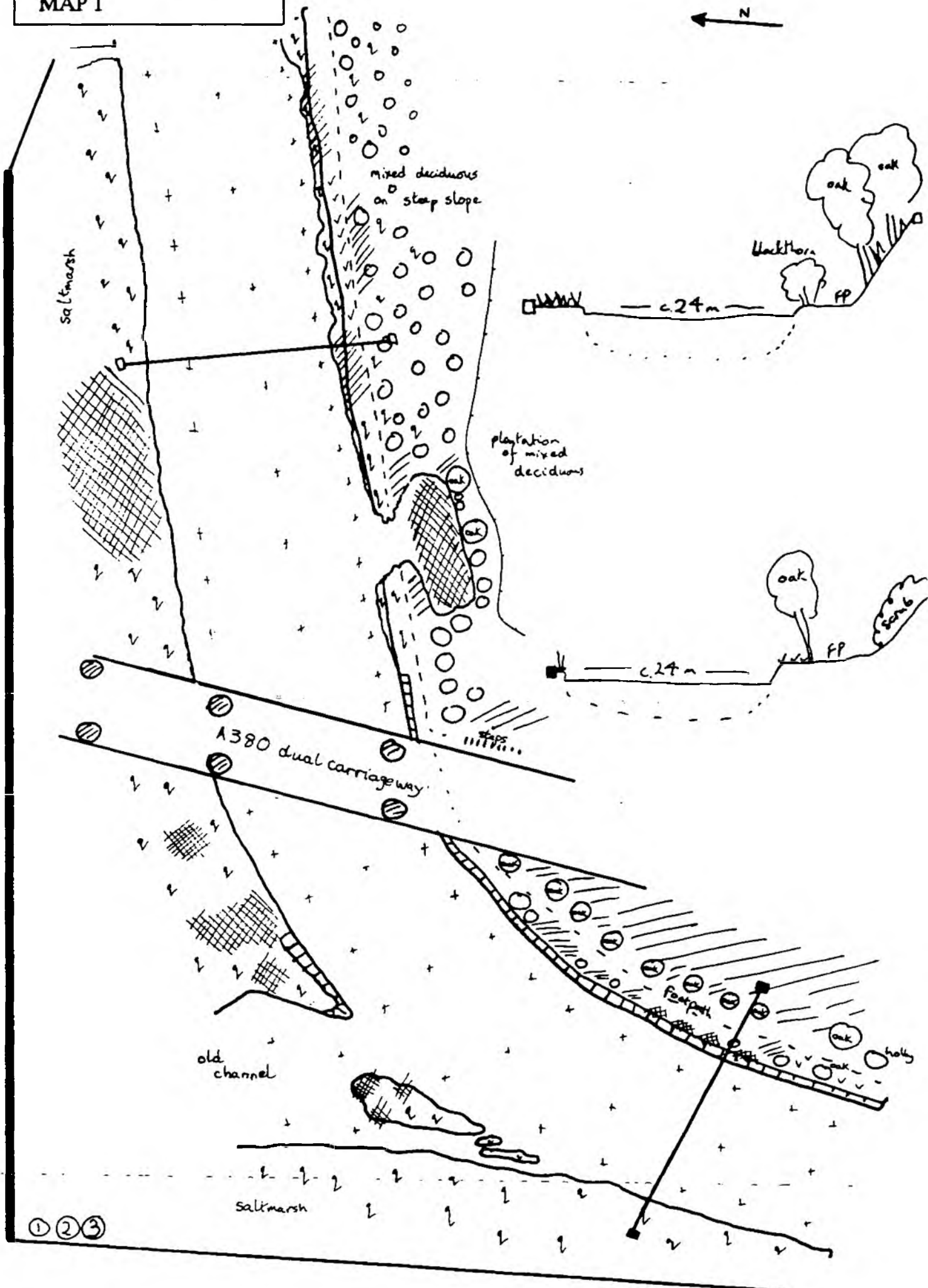
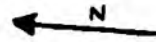
A tidal section with a high wildlife value due to the great variety of habitats represented.

#### Management

The saltmarsh to the left should be preserved and access restricted where necessary. To the right the adjacent habitat should be left undisturbed.

Chainage 7.0-7.5

MAP 1



Map 2 Chainage 7.5-8.0 Grid ref: SX 8745 7175-8696 7163

Wide section with adjacent saltmarsh, reedbed and industrial yards.

#### Banksides

To the right the bank comprises a stone retaining wall for the entire length, the top half is capped with low bramble scrub, common reed and a few low scrub trees (sycamore and hawthorn), further down this changes to amenity grass and finally low blackthorn and reed. To the left the bank is low mud with common reed at the top end and saltmarsh downstream.

#### Channel

Approximately 20m wide, tidal, muddy and deep. To the left a creek runs back into the saltmarsh. To the right two drains discharge into the channel and at the lower end Aller Brook, which has been canalised, joins the river. Kingfishers were very active on this stretch.

#### Adjacent habitats

To the left upstream there is a large bed of common reed, below this is saltmarsh. To the right much of the stretch is bounded by light industrial units, with a narrow margins of bramble and hawthorn scrub. At the bottom end there is amenity grass, a floodbank with trees planted behind it and a storage yard. Finally there are four standard oaks with scrub and dense vegetation below, running up to the A380. A footpath runs along the bottom end of the section to the right.

#### Key sites

1: The channel. 2: Both banksides. 3: Adjacent habitat on both sides.

#### Summary

A tidal section of moderate wildlife value, with considerate management the wildlife status could be much improved.

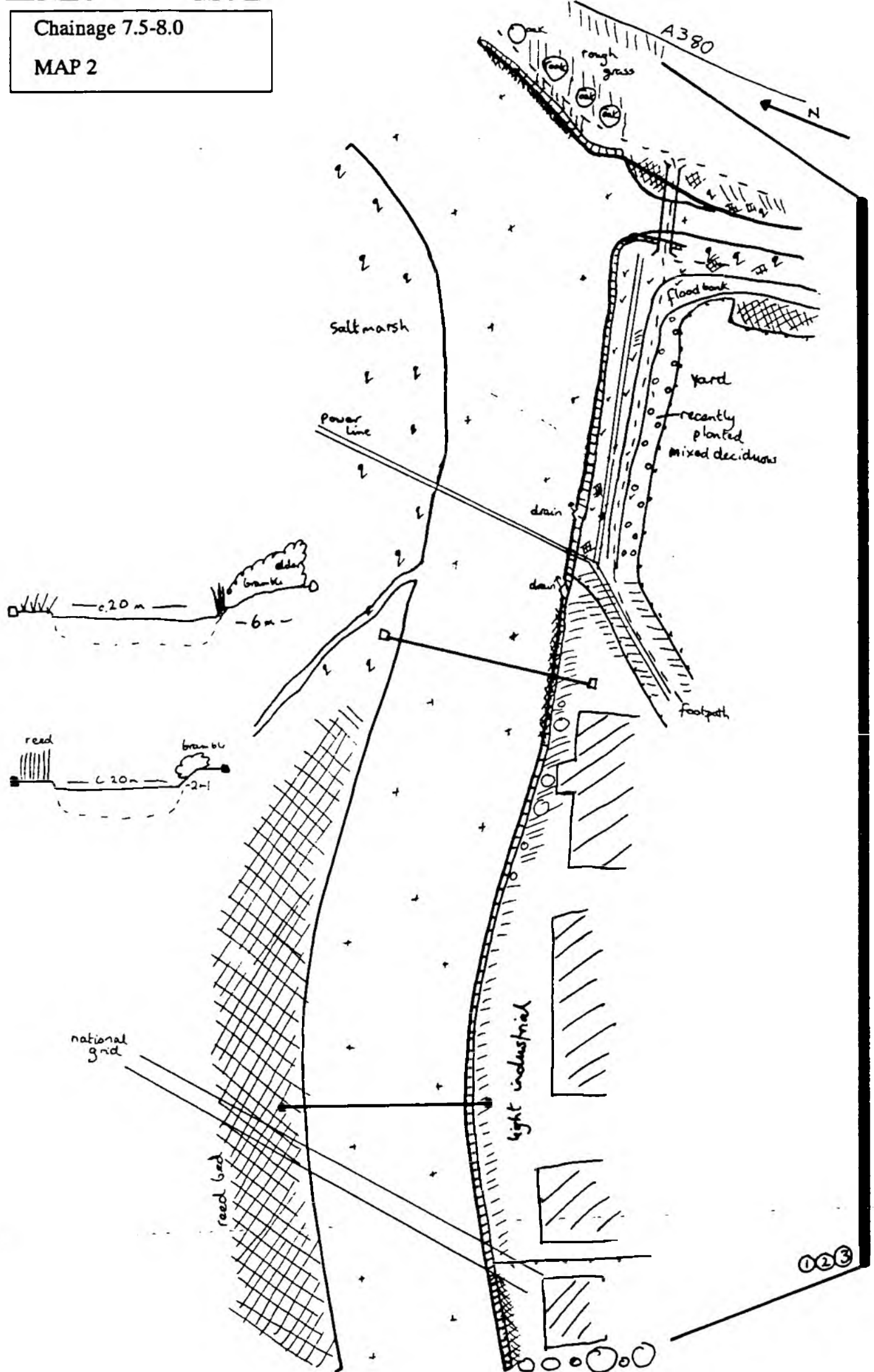
#### Management

To the east the adjacent habitat should be left undisturbed, if necessary public access to this region should be restricted, particularly during the breeding season. To the right there is room between the various industrial units and the river to create a strip of trees and scrub, this would be very useful in trying to maintain a 'corridor' along this stretch of the river. The same advice applies to the section of amenity land at the lower end.



Chainage 7.5-8.0

MAP 2



Map 3 Chainage 8.0-8.5 Grid ref: SX 8696 7163-8657 7193

A wide tidal section with light tree cover.

#### Banksides

Bank height difficult to assess due to tidal range. To the left upstream, there is a row of old oak standards with an understorey of blackthorn, below this the flood bank slopes into the channel, it is covered with mown grass with a fringe of ruderal species. At the lower end there is a narrow strip of common reed and a small patch of high saltmarsh. To the right upstream the bank is supported by a rock wall, capped with scrub and common reed. Sandwiched between the Stover canal and the river Lemon is a small patch of salting. Downstream to the right there is a road and pedestrian area.

#### Channel

15-20m tidal. To the right the Stover canal and river Lemon join the channel, below this the channel is traversed by the main line railway. Margins are narrow, muddy and in many places fringed with common reed. Kingfishers were very active on this stretch.

#### Adjacent habitats

To the left is mostly improved grass (Newton Abbot Race Course), at the downstream end by and below the railway, is rough grass, reed bed and high saltmarsh. To the right upstream is a narrow margin of reed and scrub with a rail siding and light industrial yard, this widens to a small reed bed. There is a small patch of salting and scrub, bounded by water on three sides and railway on the other. Downstream there is railway line and light industrial units.

#### Key sites

1: Both banksides. 2: Channel. 3,4: Adjacent habitat.

#### Summary

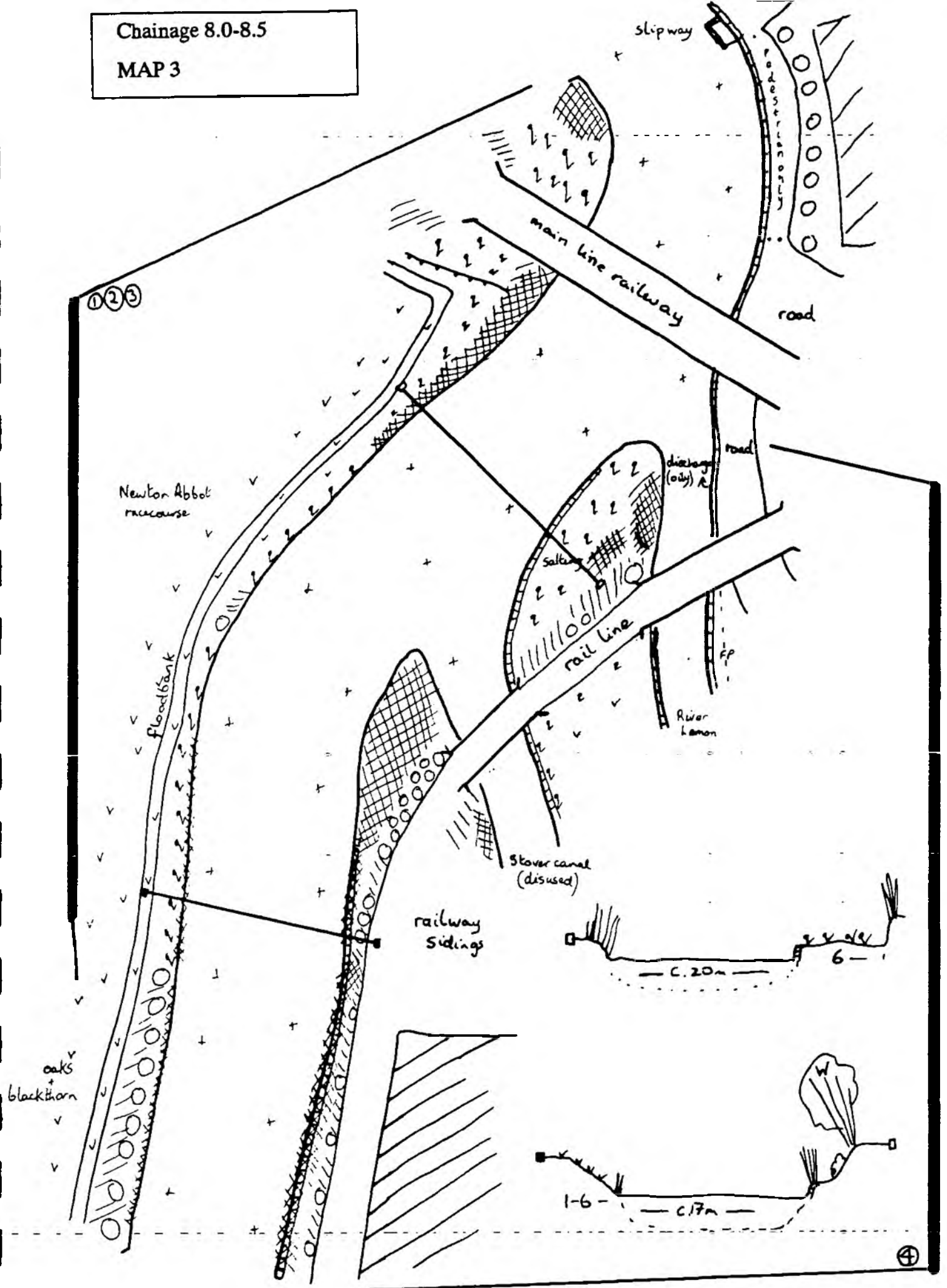
A highly disturbed area, the wildlife value of which could be much enhanced if managed correctly.

#### Management

To the left, if it does not conflict with flood prevention policy, the floodbank and land down to the river should be planted with tree cover. Public access under the rail bridge to the saltmarsh and reed bed, from the race course, should be stopped. To the right, the bank and adjacent habitat above the Stover canal should remain undisturbed. Public access to the land between the Stover canal and the river Lemon should cease.

Chainage 8.0-8.5

MAP 3



Map 4 Chainage 8.5-9.0 Grid ref: SX 8657 7193-8653 7233

A winding section running adjacent to Newton Abbot race course.

#### Banksides

1-5m earth banks. Above the bridge to the right the bank is up to 5m high, starting with dense tree cover that gradually peters out towards the road. To the left above the bridge there is a dense cover of brambles with some low willow and elm. Below the bridge to the right the bank is low and covered with rough grass, downstream the bank is supported with a stone wall and capped with scrub. To the left, below the bridge, the bank is constructed of rocks, steel and concrete, ground cover is rank herbaceous and grass. Further down it becomes low mud with a scrubby/ reedy ground cover.

#### Channel

10-15m, tidal. Margins muddy with in many places a fringe of reed canary-grass, which gives way to common reed at the downstream end. Kingfisher were active on this section.

#### Adjacent habitats

To the right upstream of the bridge is a margin of waste ground bordering an industrial complex that continues into the next section, to the left there is a margin of dense brambles and a car park. Below the bridge, to the right there is a field of rough grass, with a patch of reed and scrub at the lower end, this is followed by a fringe of thorn and bramble scrub bordering a light industrial yard (railway). To the left is Newton Abbot Race Course, there is a flood bank with mown grass; between the river and the flood bank is a strip of variable width rough ground, the lower end of which is covered with tall Scots pine and oak, with an understorey of blackthorn, elm, and buddleja.

#### Key sites

1: Both banksides. 2: The channel. 3: Adjacent habitat on both sides, where it consists of scrub or waste ground.

#### Summary

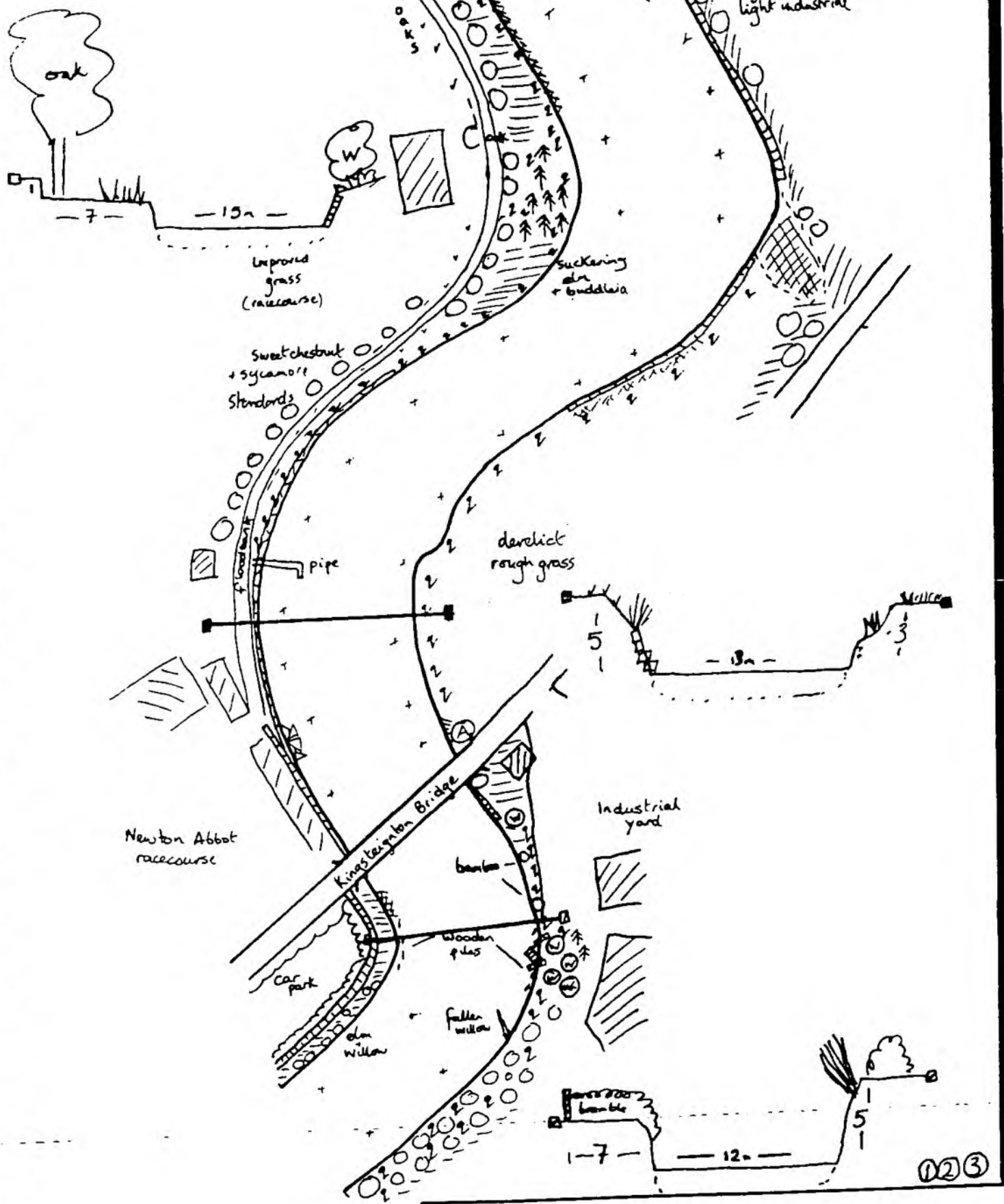
A highly disturbed section of poor wildlife value, this could be considerably improved with imaginative management.

#### Management

The wildlife value of this section could be improved by attention to the adjacent habitat. Downstream of the bridge, to the right the field of rough grass should be partially planted with trees, to create wood and scrub. On the other side of the river, if it is not contrary to flood control policy, the flood bank and land between it and the river should be planted with trees, which in future should be coppiced to create low cover. In this way a valuable refuge area could be created in what is in most aspects highly disturbed industrial land.

Chainage 8.5-9.0

MAP 4



Map 5 Chainage 9.0-9.5 Grid ref: SX 8653 7233-8614 7263

Tidal section with moderate to heavy tree cover.

#### Banksides

2-5m earth, steep to vertical. To the right tree cover is continuous comprising tall overgrown scrub and coppice alder (50%), with willow, sycamore, ash, oak and birch; the bank is steep and tall (5m), with a dense understorey of bracken and bramble. To the left there is discontinuous tree cover, mostly of alder, oak, sycamore and ash, interspersed with suckering elm and bramble scrub.

#### Channel

10-14m, substrate and depth not visible. Margins narrow, muddy, with sporadic reed canary-grass and water-starwort. Kingfisher and grey wagtail were present. A storm drain enters from the left downstream.

#### Adjacent habitats

To the right the entire length is bounded by an industrial yard, comprising bare ground, tracks and buildings, it is noisy and busy. To the left there is a flood bank adjacent to the river, covered with semi-improved grass, on the other side of this are two lakes and pasture. Downstream to the left is a supermarket and car park.

#### Key sites

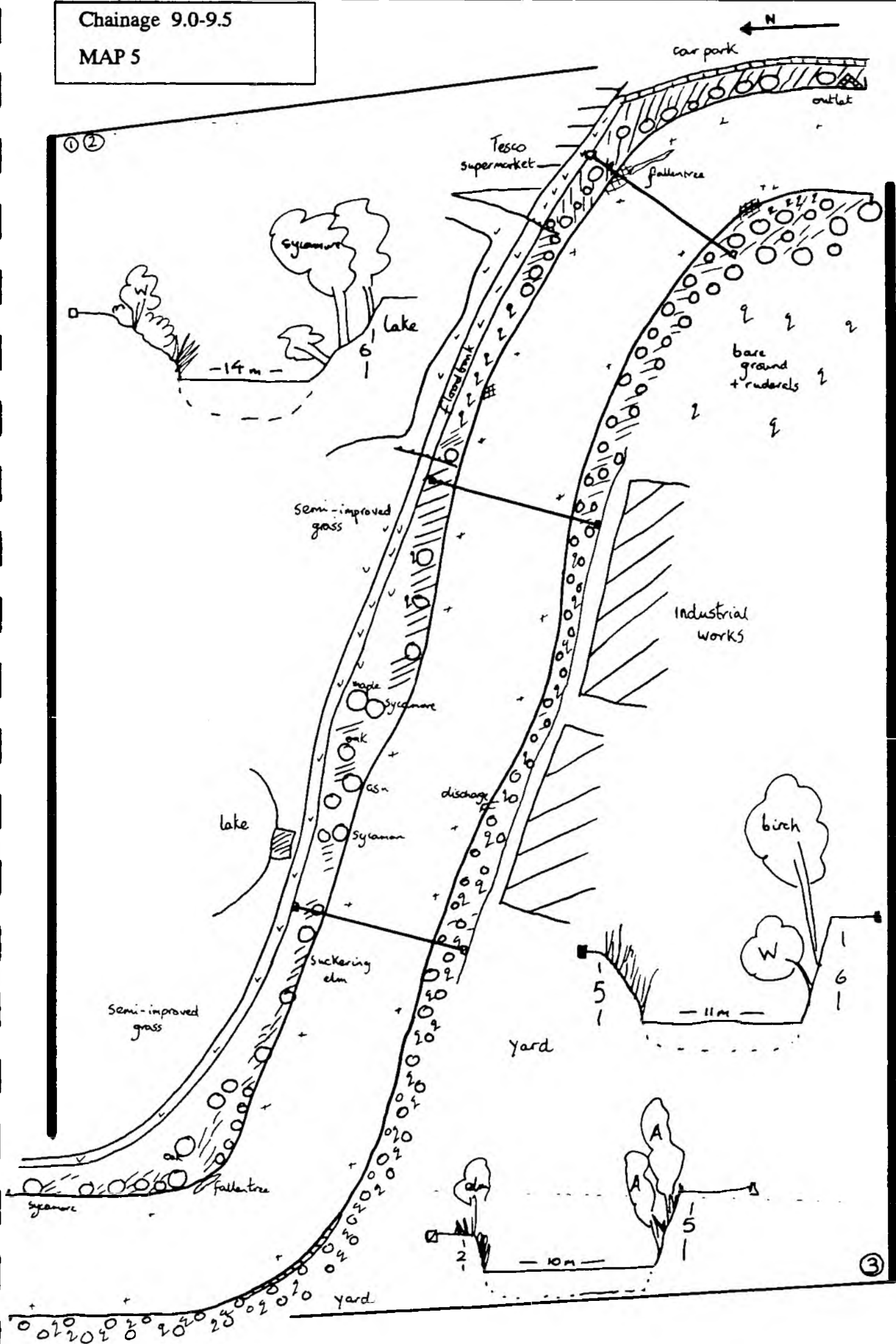
1: The channel. 2: Both banksides. 3: Adjacent habitat to left.

#### Summary

A section of moderate wildlife value, despite the proximity of industry and suburban development.

#### Management

Selective coppicing of bankside tree cover. Fencing of sections of the left bank as far out as the flood bank, to create 'islands' of cover.



Map 6 Chainage 9.5-10.0 Grid ref: SX 8614 7263-8612 7310

Section of tidal water, with dense tree cover, adjacent clay pits and lakes.

#### Banksides

1-4m earth bank, steep to vertical. Tree cover is dense and continuous for the entire section, with for the most part an impenetrable understorey of bramble and tall herbaceous species. Upstream the trees comprise almost exclusively alder and willow, downstream, ash, sycamore, birch, oak and elm suckers appear. To the right there is no public or stock access and the bank is largely inaccessible. To the left there is some public and stock access, there has been some grazing of the banks.

#### Channel

9-11m tidal, substrate not visible, depth variable according to tide. Margins muddy and narrow. Upstream there is a small island covered in reed canary-grass. Kingfisher and grey wagtail were present.

#### Adjacent habitats

To the left the scrub extends out from the bank for up to 6m. Running parallel to the river is a flood bank with a track on top, it is kept mown. Upstream to the left on the outside of the flood bank, there is dense willow scrub on old clay workings, below this are two tree fringed lakes and semi-improved grass. To the right the scrub and trees extend to a track, which at the upstream end is on a raised flood bank, on the other side of the track there is continuing scrub and a deep operational clay pit. There is public access to the left, whilst to the right there is no public access. On both sides the dense scrubby nature of the habitat are of excellent wildlife value.

#### Key sites

1: Both banksides. 2: Adjacent habitat on both sides. 3: Channel.

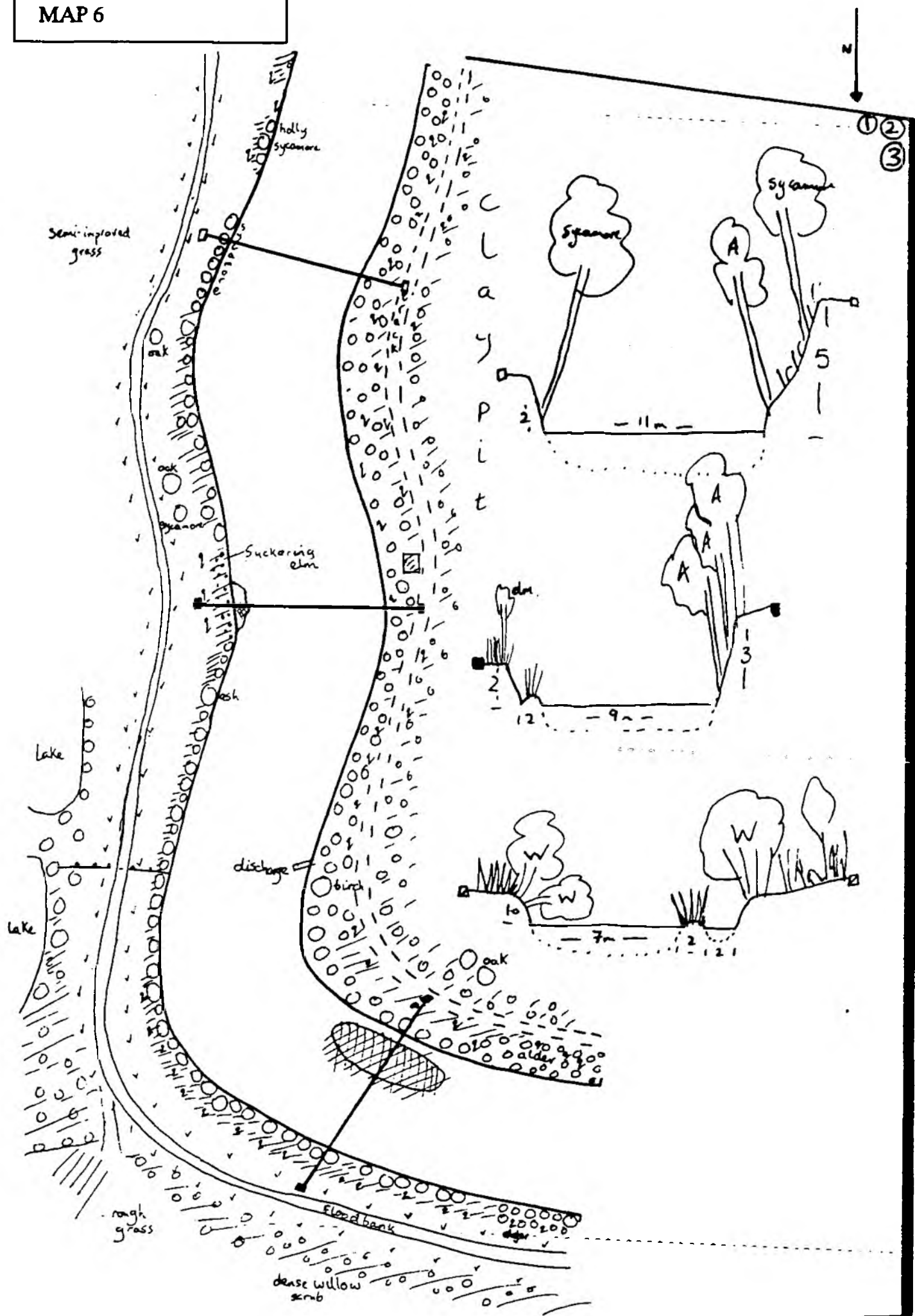
#### Summary

A quiet section of dense tree cover and high wildlife value.

#### Management

Selective re-coppicing of the bankside tree cover as and when necessary. The channel and adjacent habitats should be left undisturbed. If the Templar Way footpath is to be extended along this section of the river, care should be taken to avoid clearing bankside tree cover and adjacent habitats; ideally the path should be fenced to prevent the public spreading out into and disturbing these areas.





Map 7 Chainage 10.0-10.5 Grid ref: SX 8612 7310-8585 7351

Section of dense scrubby tree cover, end of tidal waters.

Note: Due to dense scrub, lack of landmarks, and probable changes in the channel topography as a result of flood prevention works, precise identification of the 10.0 km position was not possible.

#### Banksides

2-3m steep, with almost continuous tree cover for the entire section, apart from the stretch above the bridge to the right, which is devoid of tree cover. Above and around the bridge there are a number of large standards of oak, ash, sycamore and sweet chestnut; for the rest of the section the tree cover comprises almost exclusively alder and willow of medium (5-8m) height. Downstream on both banks is continuous alder, relatively recently planted, and as yet un-coppiced. Both banks downstream of the bridge have a dense undergrowth of brambles, nettles and other tall herbaceous species, such that it is practically impossible to approach the river edge.

#### Channel

6-12m. Traversed by a road bridge upstream, under which there is a low weir. Below the bridge the river is tidal, the margins being narrow and muddy, with reed canary-grass to the right. Tide was high and river full when surveyed, substrate and depth not visible. Kingfisher and grey wagtail were present.

#### Adjacent habitats

Upstream of the bridge to the right is improved grass, to the left scrub and trees fringing an old clay pit. Downstream of the bridge to the left there is a fringe of brambles and tall herbaceous species coming out from the bank. A raised floodbank with mown grass and a track on top runs parallel to the river, to the left of this are disused clay pits, mostly covered with impenetrable scrub. To the right there is also a floodbank with a track, between this and the river is overgrown brambles and scrub, on the other side is a deep clay pit.

#### Key sites

1: Both banksides. 2: Adjacent habitat on both sides.

#### Summary

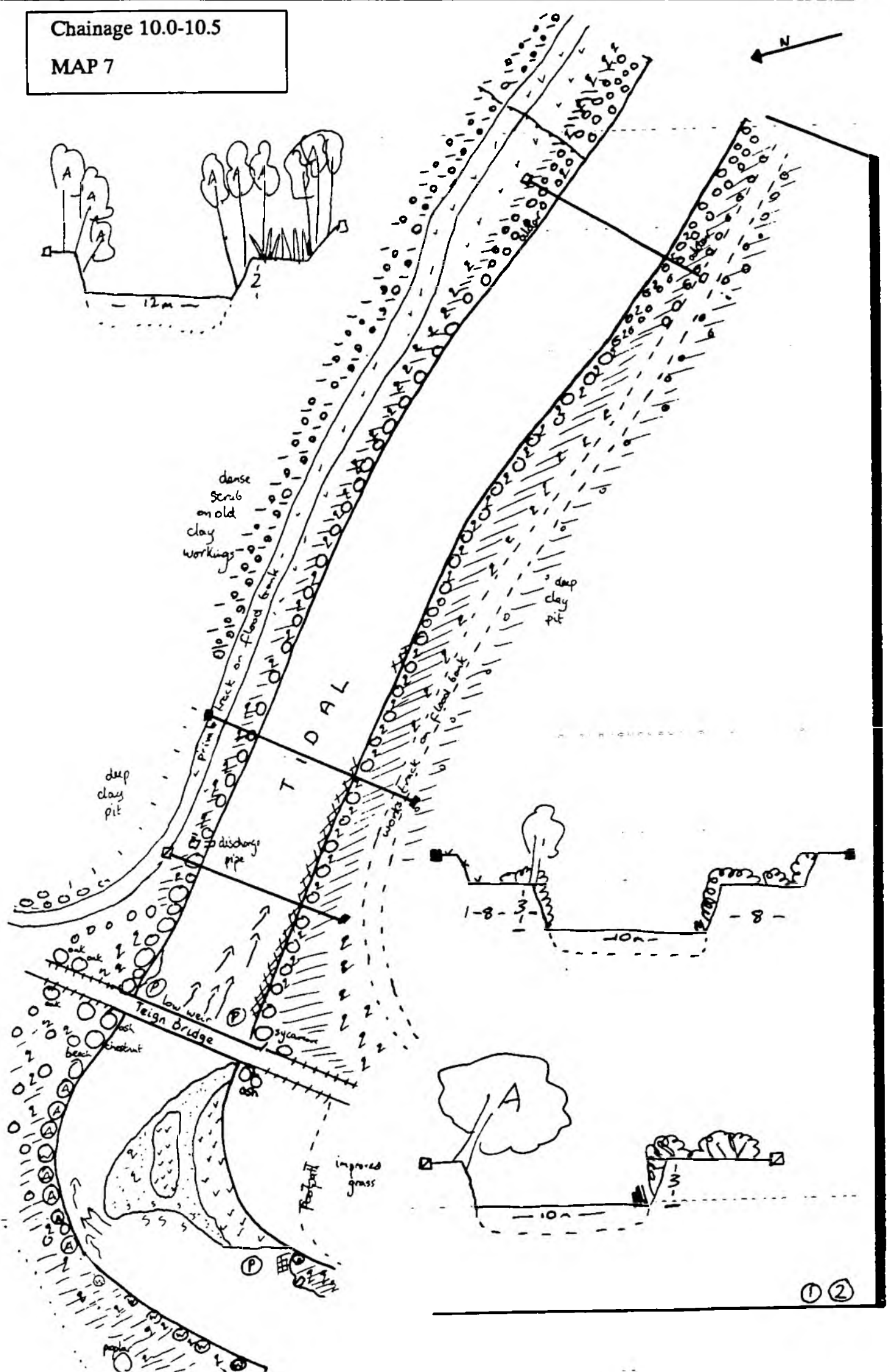
A quiet section with little public access. Due to the dense tree and undergrowth cover it has a high wildlife value.

#### Management

Selective rotational coppicing of the bankside tree cover will be required in the future; as much of it has yet to be coppiced care should be taken to leave a number of trees to grow on as standards. The entire area, including the adjacent habitats should remain as undisturbed as possible.

Chainage 10.0-10.5

MAP 7



Map 8 Chainage 10.5-11.0 Grid ref: SX 8585 7351-8556 7386

A winding section with heavy tree cover on one bank.

#### Banksides

1-2.5m mostly steep sandy loam. This section contains two sharp bends, the banks of which have been protected from further erosion with boulders. Tree cover to the right is sporadic, comprising a few patches of low to medium height alder coppice; the bankside is generally covered with a dense herbaceous and bramble growth, in places overgrazed. To the left there is almost continuous tree cover, comprising approximately 75% alder and 20% willow, the trees are mostly tall overgrown coppice. There is in places a dense ground cover of tall herbs and brambles.

#### Channel

5-11m wide of riffles and deeper water. Water cloudy from the Ball Clay discharges, making it impossible to determine substrate or depth. Margins variable with considerable deposition of gravel, pebbles and sand, some of which have lush vegetative growth on them. At the midpoint a pipe discharges into the channel from the left.

#### Adjacent habitats

To the right is improved grass, with a well used footpath. To the left upstream there is a dense scrubby fringe to a wood, that continues into the following section; below this there is a strip of variable width deciduous wood and scrub between the river and a clay pit.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Adjacent habitat to the left.

#### Summary

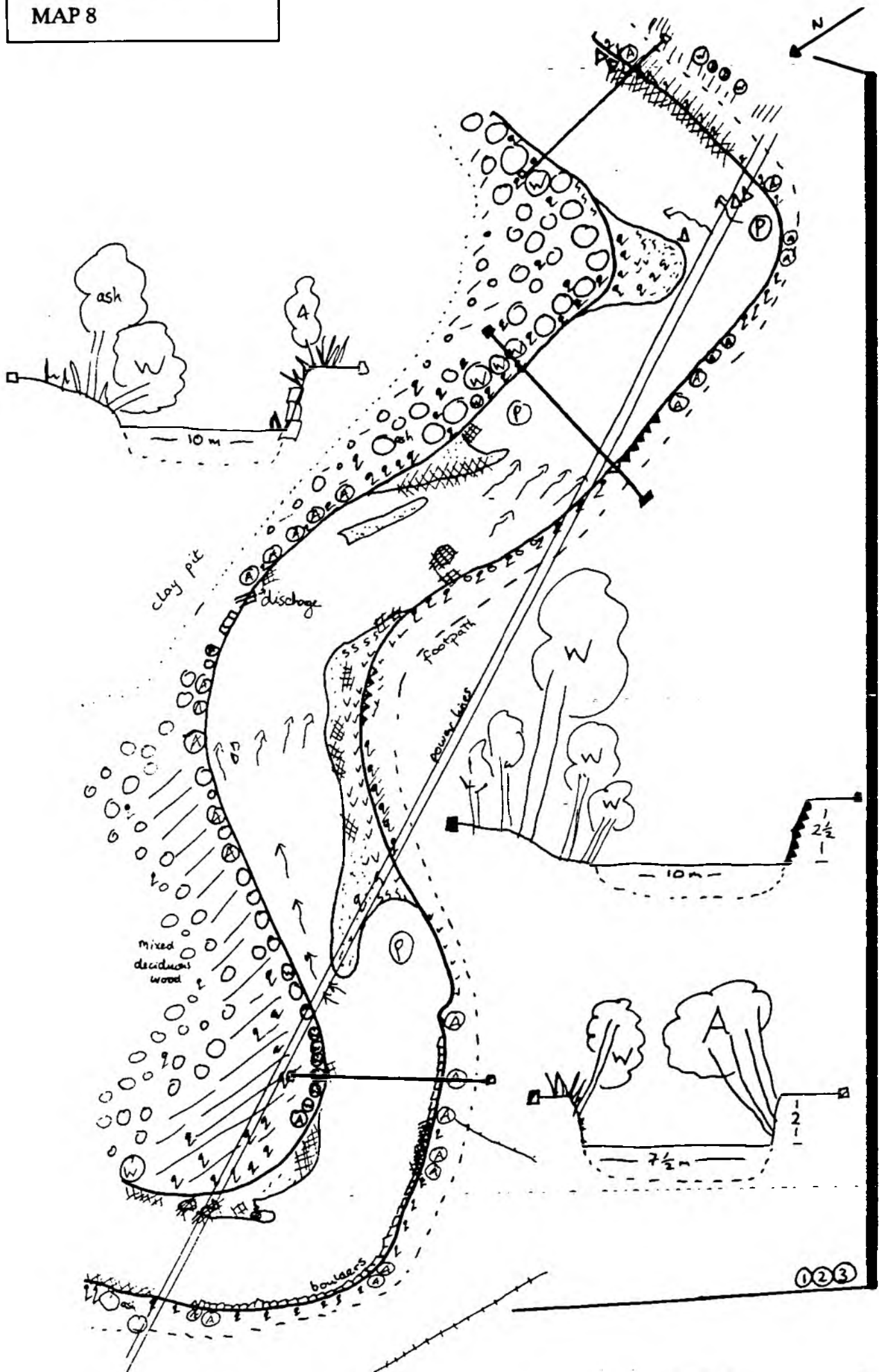
A section of moderate wildlife value that suffers from a high level of human disturbance, especially from dogs.

#### Management

The channel and flow pattern, and the adjacent habitat to the left should remain undisturbed. Selective rotational coppicing of the bankside tree cover to the left. To the right re-planting of trees on the bank with partial fencing to prevent stock and dog access.

Chainage 10.5-11.0

MAP 8



Map 9 Chainage 11.0-11.5 Grid ref: SX 8556 7386-8554 7428

A section with heavy tree cover on one bank.

#### Banksides

2-2.5m mostly steep to vertical sandy loam. To the left there is continuous dense tree cover of overgrown coppice, comprising approximately 75% alder, with willow, ash, sycamore, and oak. To the right there is light tree cover in discrete patches. Where trees are absent there is a dense herbaceous ground cover with bramble; in many places over grazing has resulted in degradation of the banks. At the downstream end there has been heavy erosion, here the banks are approximately 20m apart, and a small island has been created.

#### Channel

8-20m with varied flow pattern of riffles, slacks and pools. It was not possible to determine substrates or depth due to the sediment loading of the water. A small stream enters from the left opposite the island. Downstream of the midpoint, the remains of an old foot bridge restrict the channel, below this there is a massive pool from which the river divides around an island with alder trees. The margins are mostly narrow, with extensive growth of water marginal plants to the right, this includes floating sweet-grass. Grey wagtail was present.

#### Adjacent habitats

To the right is improved grass. To the left upstream is arable, followed by a small bluff with scrub, below this there is improved grass, and finally a mixed deciduous wood with a dense impenetrable understorey of brambles. A well used footpath runs along the entire right bank and for part of the left side.

#### Key sites

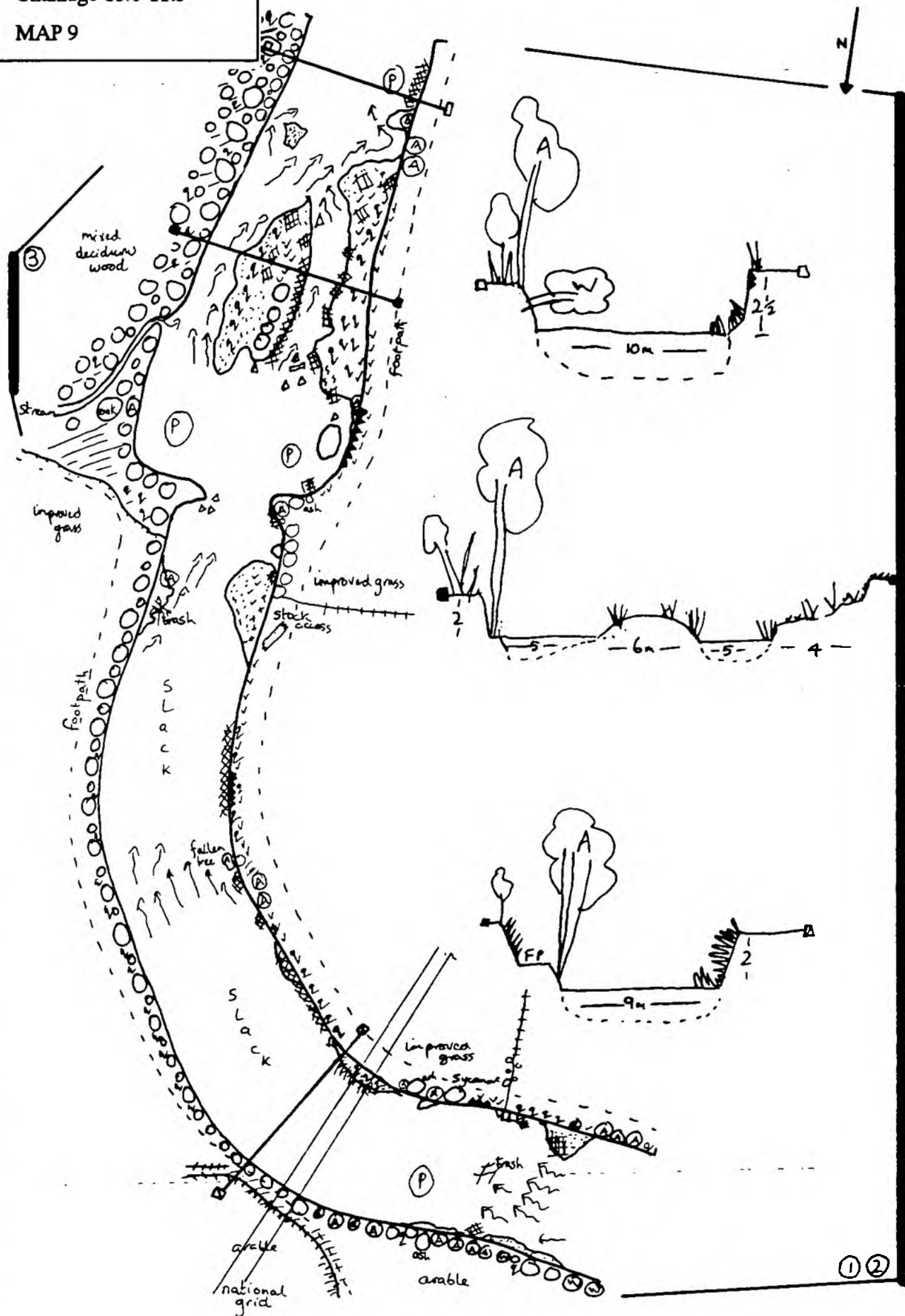
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Adjacent habitat to left.

#### Summary

A section of moderate wildlife value that suffers from a high level of human disturbance, especially from dogs.

#### Management

Selective rotational coppicing of the tree cover to the left. Partial fencing of the right bank, to prevent stock and dog access, especially round the island. There is scope for tree planting to the right. The channel and flow pattern should remain undisturbed, as should the adjacent wood to the left, which represents a valuable refuge area.





Map 10 Chainage 11.5-12.0 Grid ref: SX 8554 7428-8547 7473

A winding section with moderate tree cover.

#### Banksides

2-2.5m sandy loam, generally steep. Upstream to the right there are patches of degraded earth cliff, at the downstream end on the bend the bank has been re-inforced with dredgings. Tree cover to the left is almost continuous medium height coppice, comprising alder and willow, with some sycamore, ash, and oak. To the right tree cover is approximately 50%, mainly of alder, some of it is low coppice. Where tree cover is absent or low, there is dense cover of tall herbaceous, bracken and brambles.

#### Channel

6-16m, comprising riffles and slack. Water turbid, substrate and depth not visible. In places there are extensive margins of pebbles and gravel, at the downstream end a large bar covered in light vegetation has formed. A footbridge crosses the river at the midpoint, below this a farm track fords the river. Grey wagtail was present.

#### Adjacent habitats

To the right is improved grass with a well used footpath. To the left upstream is a paddock of improved grass, followed by dense scrub and trees on a steep slope, running up to gardens; at the bottom end is arable.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern.  
3: Adjacent habitat.

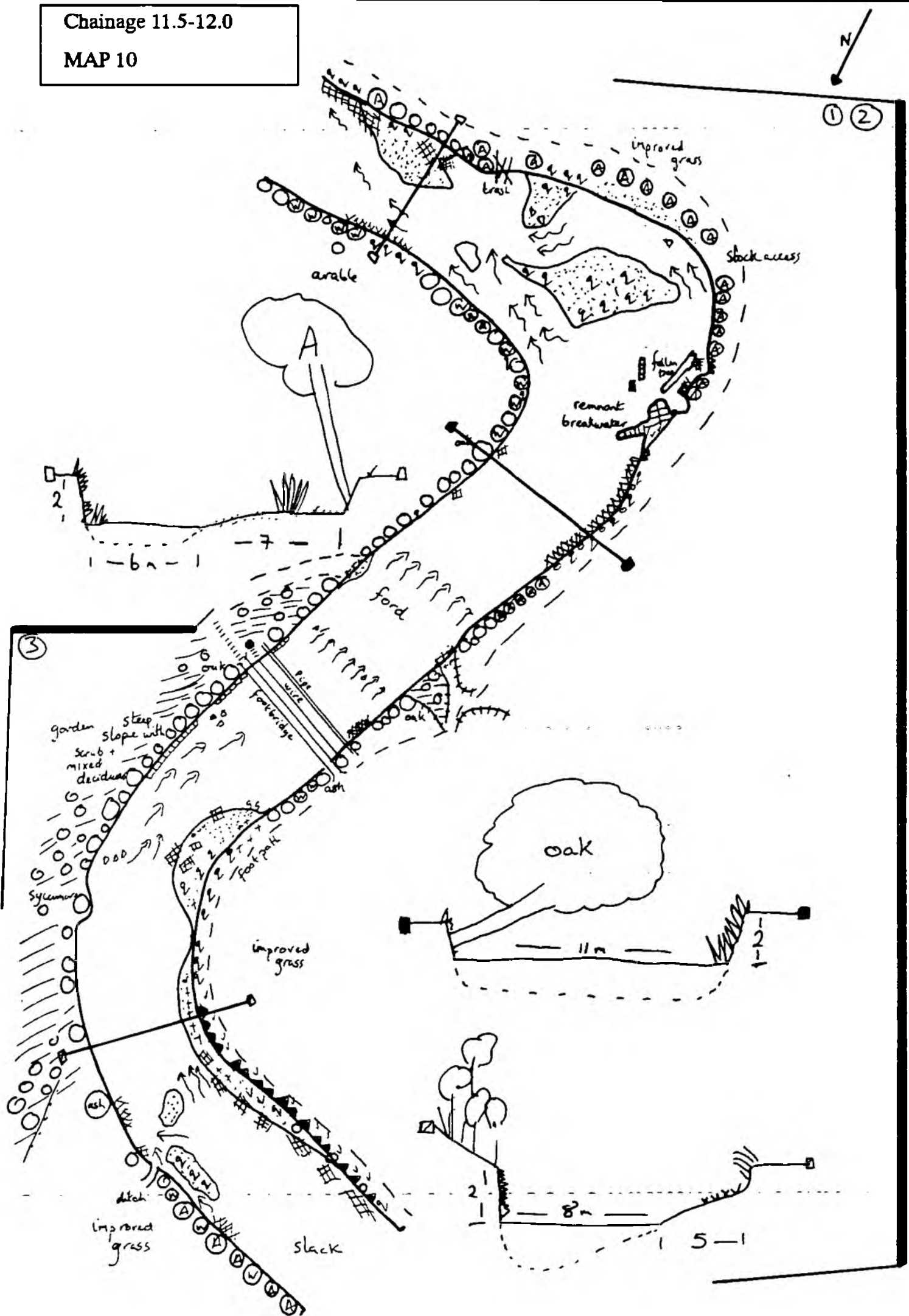
#### Summary

A section of moderate tree cover, which suffers from heavy human disturbance, it has reasonable wildlife value.

#### Management

Selective rotational coppicing of the bankside tree cover. Planting of trees on the right bank of the upstream bend, combined with fencing of the banks on both bends.





Map 11 Chainage 12.0-12.5 Grid ref: SX 8547 7473-8501 7486

Section with localised heavy tree cover and extensive earth cliffs.

#### Banksides

2-2.5m sandy loam on clay, mostly steep to vertical. Tree cover is restricted mainly to the downstream half of the section and consists of overgrown coppice alder and sycamore, with some ash and oak. Upstream there are extensive earth cliffs, in places they are formed from dredgings and boulders; there is considerable erosion occurring.

#### Channel

10-16m, flow pattern comprising riffles and slack. Substrate where visible at the top end is gravel, sand and pebbles. Upstream to the left, sediment and colloidal clay laden water is discharged into the river in sufficient quantity that downstream of the discharge the water becomes completely opaque. Upstream the course of the river has altered considerably in recent years creating a small pond on the bend to the left, this is a valuable habitat resource. Margins, upstream tend to be variable, often bare ; downstream narrow with lush growth of water marginals in places. Grey wagtail was present.

#### Adjacent habitats

To the left upstream there is improved grass, followed by disturbed ground where settling pools are being created, this continues as overburden, covered in ruderals. Further down the overburden has been graded into a tall steep slope, recently planted with grass. Finally there is a paddock of improved grass. To the right is entirely improved grass. Well used footpaths run along the entire right bank and the top half of the left bank.

#### Key sites

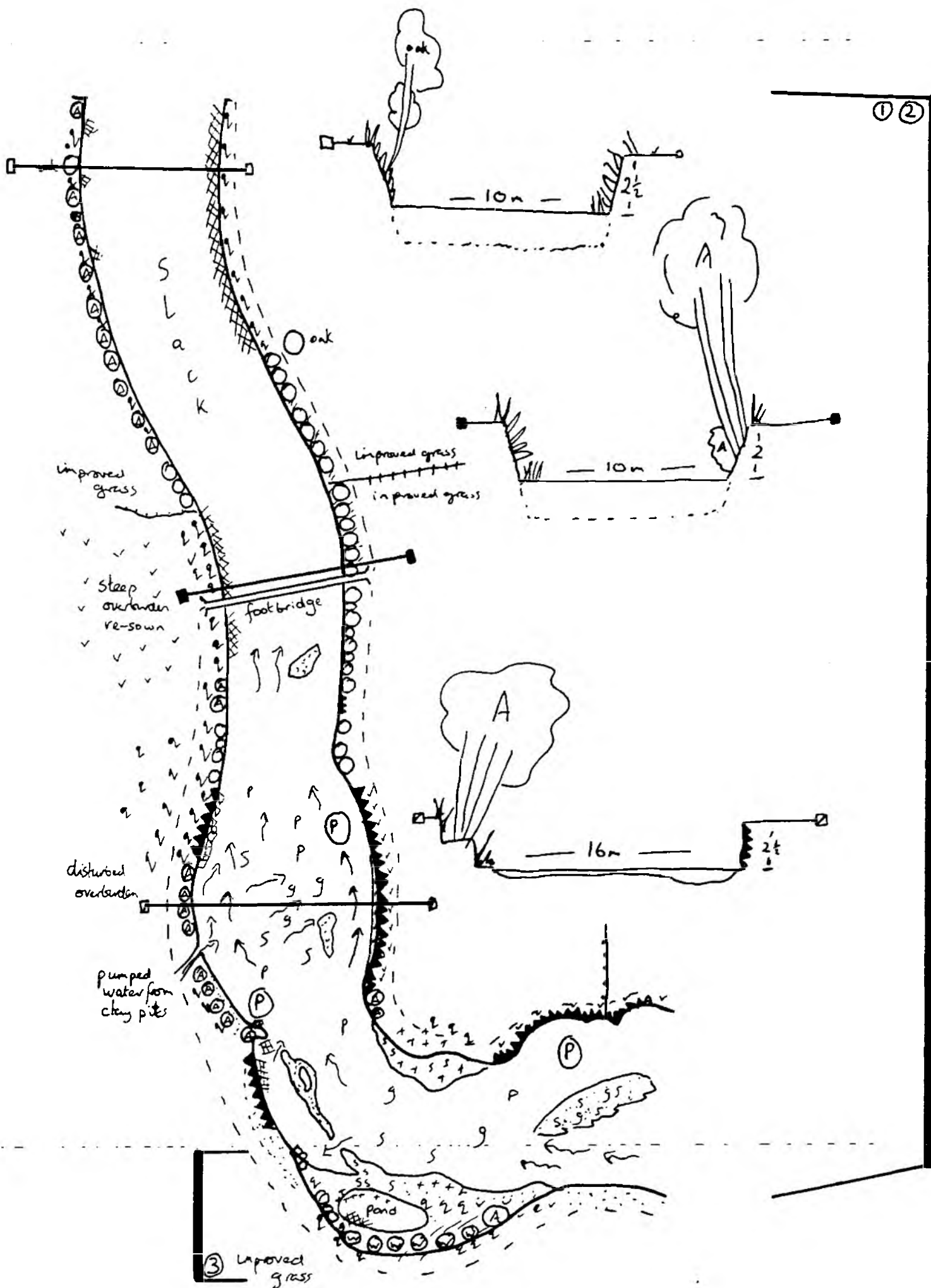
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: The pond and surrounds.

#### Summary

A varied section which suffers from a high level of human disturbance, it requires careful management to enhance its wildlife status. The extensive earth cliffs form a potential sand martin nesting site.

#### Management

Upstream to the left the adjacent land belonging to the clay workings should if possible be planted with trees, this should also apply to the bank where necessary. The banks on both sides at the top should be fenced to prevent stock and dog access. Downstream the trees require selective re-coppicing. The cliffs should not be disturbed.



Map 12 Chainage 12.5-13.0 Grid ref: SX 8501 7486-8488 7527

A section of light tree cover, with extensive earth cliffs.

#### Banksides

2-2.5m sandy loam on clay, mostly steep to vertical. Downstream to the left the bank consists of gravel dredged from the channel. Tree cover is patchy and discontinuous, comprising almost exclusively alder with some willow ; ranging from low to tall overgrown coppice. To the right long stretches of the bank comprise earth cliff, one of these holds a sand martin colony containing approximately 150 nest holes; this is the only sand martin colony located during the survey on the river Teign. It is important that this area remains as undisturbed as possible. To the left where there is no tree cover, ground cover comprises bracken, brambles and tall ruderal species.

#### Channel

4-15m, of varied flow pattern from riffles through to deep pools. Recent dredging of the channel at the downstream end has created a large disturbed shallow expanse, which has yet to re-form a natural flow pattern. Substrates consist primarily of pebbles and gravel with silt and sand. A small stream enters from the right at the downstream end. Margins variable from narrow to extensive banks of gravel and shingle, notably at the top of the section; in places there is lush growth of water marginals. Recent evidence of otter was found. Grey wagtail was present.

#### Adjacent habitats

Upstream to the left there is a strip of bracken backed by a screen of alder, in part planted on overburden this gives way to improved grass, fringing the clay pits. A well used footpath runs parallel to the river to the left. To the right is entirely improved grass, with public access to the downstream end.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3,4: Earth cliffs. 5: Adjacent habitat to left. 6: Willow scrub.

#### Summary

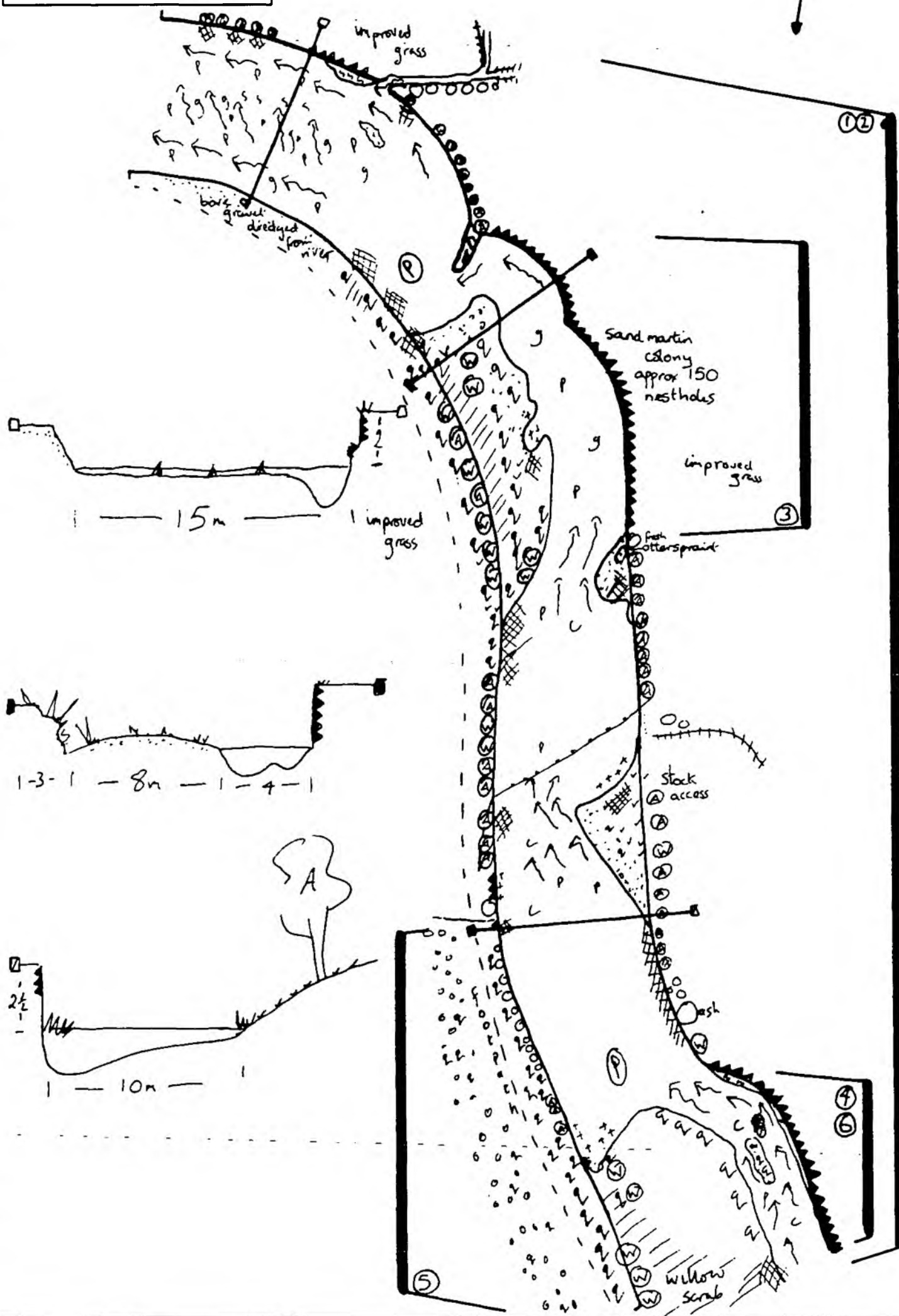
A section of high wildlife value, due to the presence of a sand martin colony, careful monitoring and management is required to preserve this status.

#### Management

The channel and flow pattern should be left undisturbed, great care should be taken to avoid any activity that might alter the formation of earth cliffs on this section. The area of willow scrub at key site 6 should be fenced to prevent public access, as should the bank opposite the sand martin colony. The clay pit operators should be encouraged to re-plant the bank and adjacent habitat downstream to the left with mixed deciduous tree cover.

Chainage 12.5-13.0

MAP 12





Map 13 Chainage 13.0-13.5 Grid ref: SX 8488 7527-8495 7572

A section with heavy tree cover and eroded banks downstream.

### Banksides

2-2.5m sandy loam/sand on clay, steep to vertical. There is for most of the section continuous bankside tree cover, comprising overgrown coppice of alder and sycamore, with some ash, oak and willow. To the left upstream there is a section of light tree cover which includes an earth cliff; further down there is another stretch devoid of tree cover. These areas have a dense, tall ground cover of bracken, bramble and tall herbaceous species. To the right below the river Bovey, tree cover is in places patchy, ending with a stretch of grass topped earth cliff. Downstream the banks have been progressively eroded such that they are now approximately 25m apart. Many of the earth cliffs and banks on this section offer excellent potential kingfisher nesting sites.

### Channel

4-12m, of varied flow pattern, with a long stretch of deep slack in the middle. Substrate, some cobbles with pebbles, gravel, sand and silt. The river Bovey joins from the right at the mid-point, upstream of this the channel is heavily shaded, below this point the channel is open and light. At the downstream end where the banks have widened, the channel narrows; on what was originally a shingle bank a dense thicket of willow scrub has grown up. This provides excellent habitat for wildlife and has potential as lying up cover for otters. Dipper, grey wagtail and kingfisher were present. There was evidence of recent otter activity.

### Adjacent habitats

To the left a footpath runs along the entire length of the river, for most of the section there is a strip of bracken and undergrowth 5-10m wide, on the other side of which there is a screen of densely planted alder. To the right upstream is improved grassland, followed by arable and finally returning to improved grassland.

### Key sites

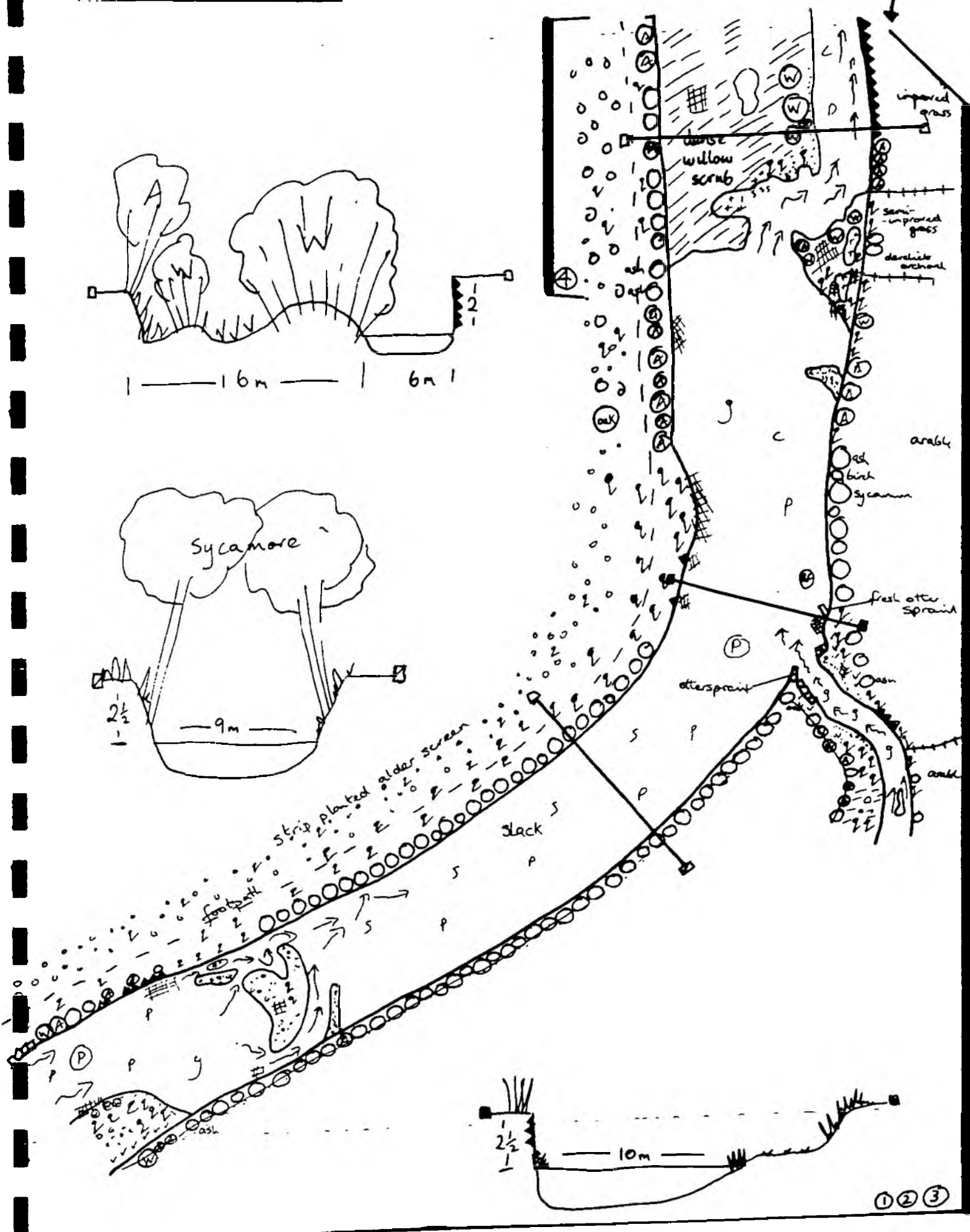
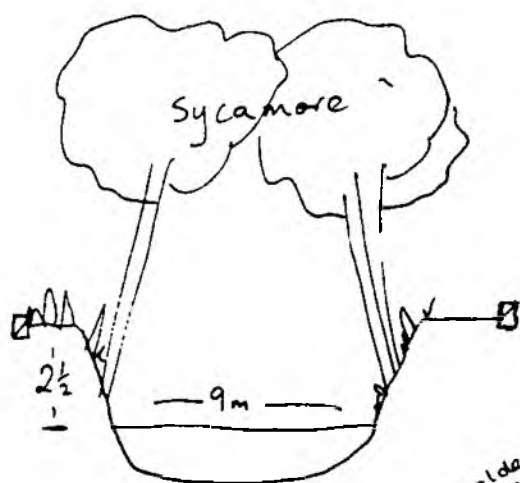
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Adjacent habitat to left. 4: Willow scrub.

### Summary

A well treed section which combines high public access and high wildlife value.

### Management

Selective rotational coppicing of bankside tree cover. Leave channel and flow pattern alone, especially at the downstream end. Fence off the willow scrub at key site 4 to prevent public disturbance. Leave all earth cliffs undisturbed.



Map 14 Chainage 13.5-14.0 Grid ref: SX 8495 7572-8484 7620

Section of heavy tree cover with adjacent clay pits.

#### Banksides

2-3m earth, steep. For most of the section there is continuous tree cover, comprising largely medium height alder coppice, but including willow, ash, and sycamore. In places the tree cover is profuse and dense. Downstream to the left boulders have been placed to prevent erosion. There are several short stretches to the left with no tree cover, here ground cover consists of tall dense, nettles, brambles, bracken and other herbaceous species. To the right, in places the banks are poorly fenced, allowing sheep access, this has caused some degradation of the banks.

#### Channel

2-10m of riffles and slack. Substrate where visible consists of pebbles, small cobbles and sand. A ditch entering from the left at the mid-point, discharges sediment laden water from the clay workings. Margins are mostly narrow. Where light is good there is lush growth of water marginal vegetation. A long spit of pebbles and cobbles reduces the channel to 2m at one point. Kingfisher, dipper and grey wagtail were present.

#### Adjacent habitats

To the right is entirely improved grassland. To the left there is a steep bank of overburden from the clay workings, this has become overgrown with a mixture of sapling growth and bramble scrub, in many places it is impenetrable. There is a strip of flat ground between the river and the overburden, at the top end there are a number of mature trees, at the downstream end, cover is mainly dense ruderal vegetation with a patch of bare ground where recent work has been carried out. This entire area represents an important wildlife habitat. A footpath runs along the left side of the river.

#### Key sites

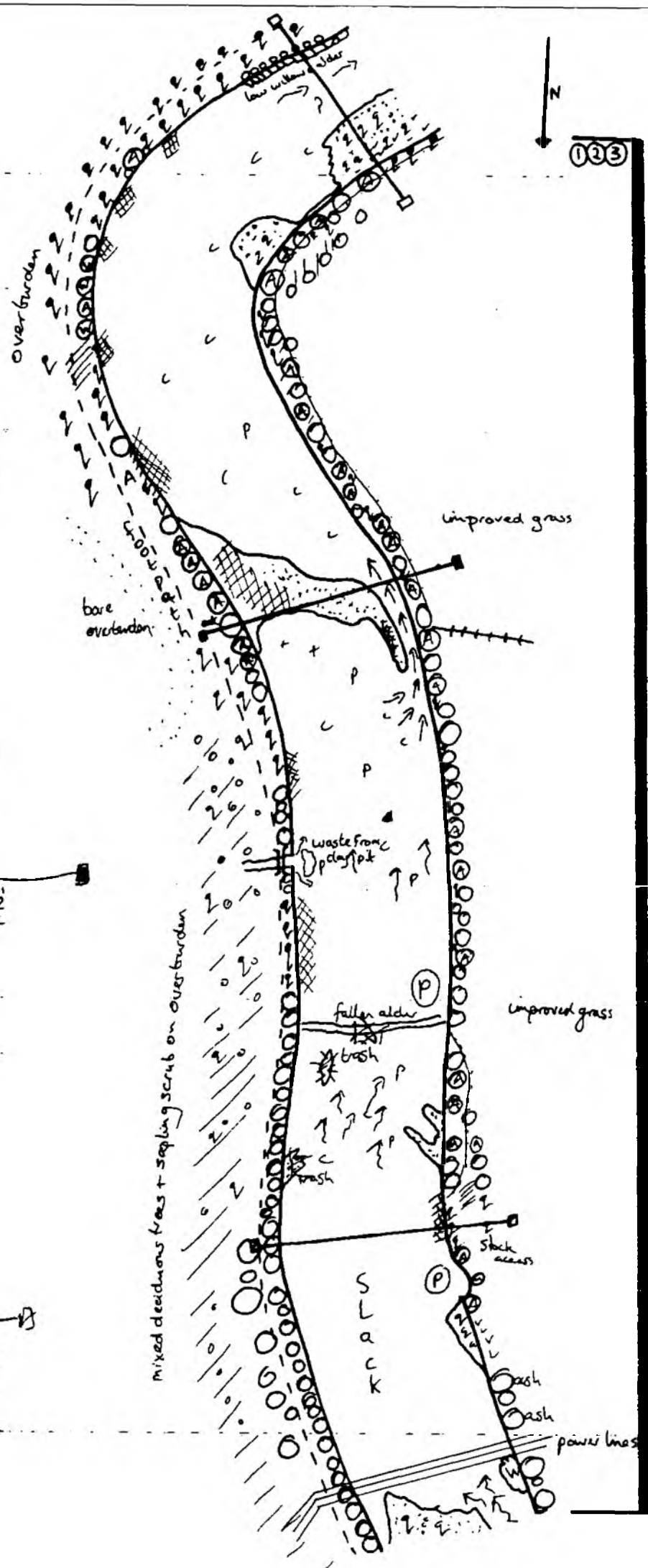
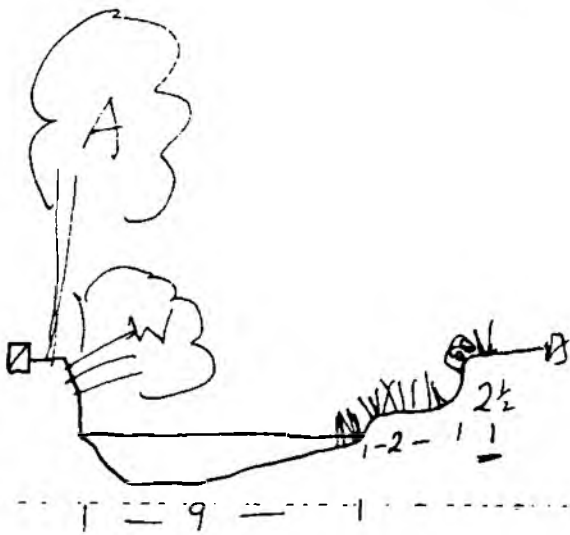
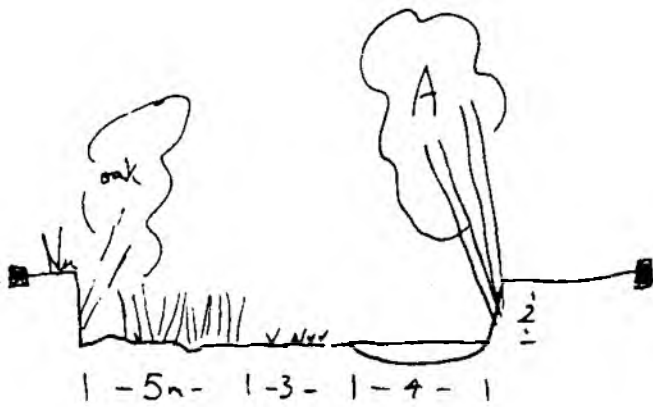
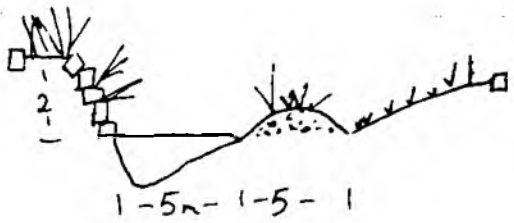
1: Both banksides. 2: The channel, its substrates and flow pattern.  
3: Adjacent habitat to the left.

#### Summary

A wooded section of high wildlife value.

#### Management

Selective rotational coppicing of the bankside tree cover. Leave the channel and flow pattern alone. Re-fence the right bank to exclude sheep. Continue replanting the overburden on the left side with suitable tree cover.



Map 15 Chainage 14.0-14.5 Grid ref: SX 8484 7620-8484 7667

A winding section with moderate to heavy tree cover.

#### Banksides

2-4m sandy loam, for the most part steep to vertical, in places there are exposed earth cliffs. Upstream to the left of the bridge there is little tree cover, that which there is comprises low coppice alder; much of the bank here has been degraded by stock access and eroded by water action. Cover comprises dense herbaceous species and grasses, in places grazed. To the right above the bridge there is heavy, continuous tree cover, the bulk of which is overgrown alder coppice, including ash, sycamore, willow and oak. There is deposition occurring on the bend near the bridge, this is being colonised by willow. Immediately below the bridge the banks have eroded to create a wide pool, below this to the right is continuous old coppice with many exposed roots. To the left tree cover is broken at the downstream end. Where tree cover is light there is often dense bracken.

#### Channel

4-15m of varied flow pattern and depth, ranging from rapids to very deep pools. The channel is winding and traversed by a road bridge and weir at the mid-point. Substrate where visible comprises cobbles, pebbles and sand. The margins are complex, in places deposition is occurring and in others erosion. There is often a lush growth of water marginals. Downstream of the weir there is a stretch of heavily shaded riffle. A discharge pipe enters from the right upstream and the left downstream, as does a stream carrying cloudy waste water. Dipper and grey wagtail were present.

#### Adjacent habitats

Upstream to the left is semi-improved grass and arable, below the bridge is improved grass and a patch of scrub and trees. To the right above the bridge is mixed deciduous wood with dense scrub, and settling pools for quarry discharge. Below the bridge is improved grass running into mixed deciduous wood and scrub on a slope.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3,4,5: Adjacent habitat.

#### Summary

A complex section with varied tree cover and flow pattern, of good wildlife value.

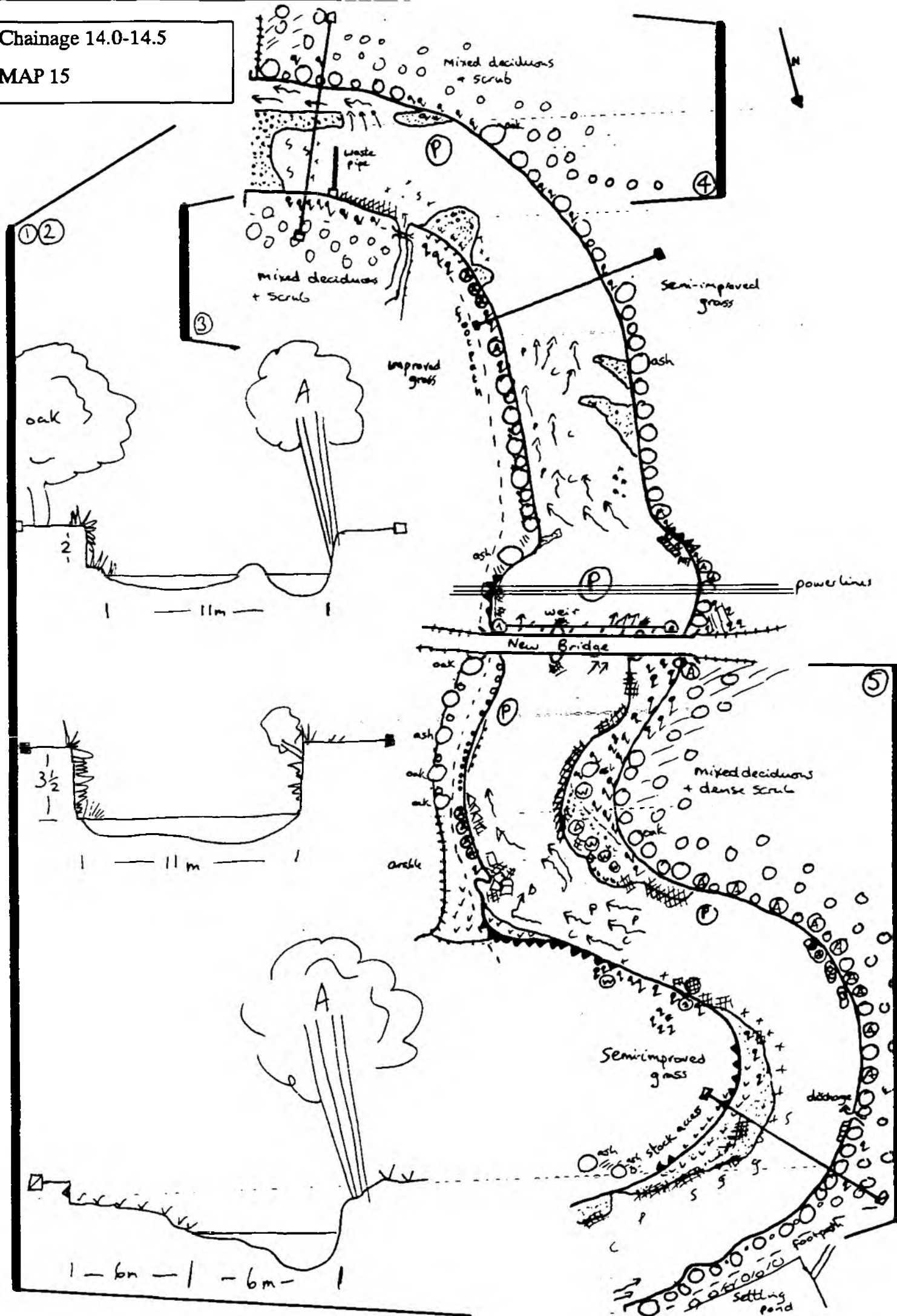
#### Management

Fencing and re-planting of banksides upstream to the left. Selective re-coppicing of bankside tree cover. Flow pattern should be left undisturbed, as should the adjacent habitats marked as key sites.



Chainage 14.0-14.5

MAP 15



Map 16 Chainage 14.5-15.0 Grid ref: SX 8484 7667-8480 7708

Section comprising mostly of deep slack water, with moderate to heavy tree cover.

#### Banksides

1-2m sandy loam. Tree cover almost continuous to the right, and partial (c.50%) to the left. Upstream the banks are steep. Downstream to the left on the bend rocks have been placed to protect the bank. Massive erosion and deposition has and is occurring at the downstream end. Most of the tree cover comprises overgrown alder coppice (>10m), sycamore, ash, willow, and oak are also present. Ground cover is mostly tall herbaceous, which in places has been heavily grazed, often exposing the bare soil.

#### Channel

5-11m, mostly deep slack. Channel shaded at the upstream end. Downstream flow pattern diverted by deposition of light substrates, here the bank to bank distance is increased without any increase in channel width. There is continuing erosion of a short earth cliff, if possible this should be allowed to continue. For the rest of the section margins are mostly narrow, and where not over-shaded, there is lush growth of water marginal species. Kingfisher was noted.

#### Adjacent habitats

To the right upstream there is a derelict field, slowly reverting to rough scrub with bracken and bramble; below this is a field of semi-improved grass. To the left there is improved grass for the entire section, apart from a narrow strip of trees and scrub on a low bank in the middle; this has been overgrazed. A well used footpath runs along the right bank, public also have access to the left bank downstream.

#### Key sites

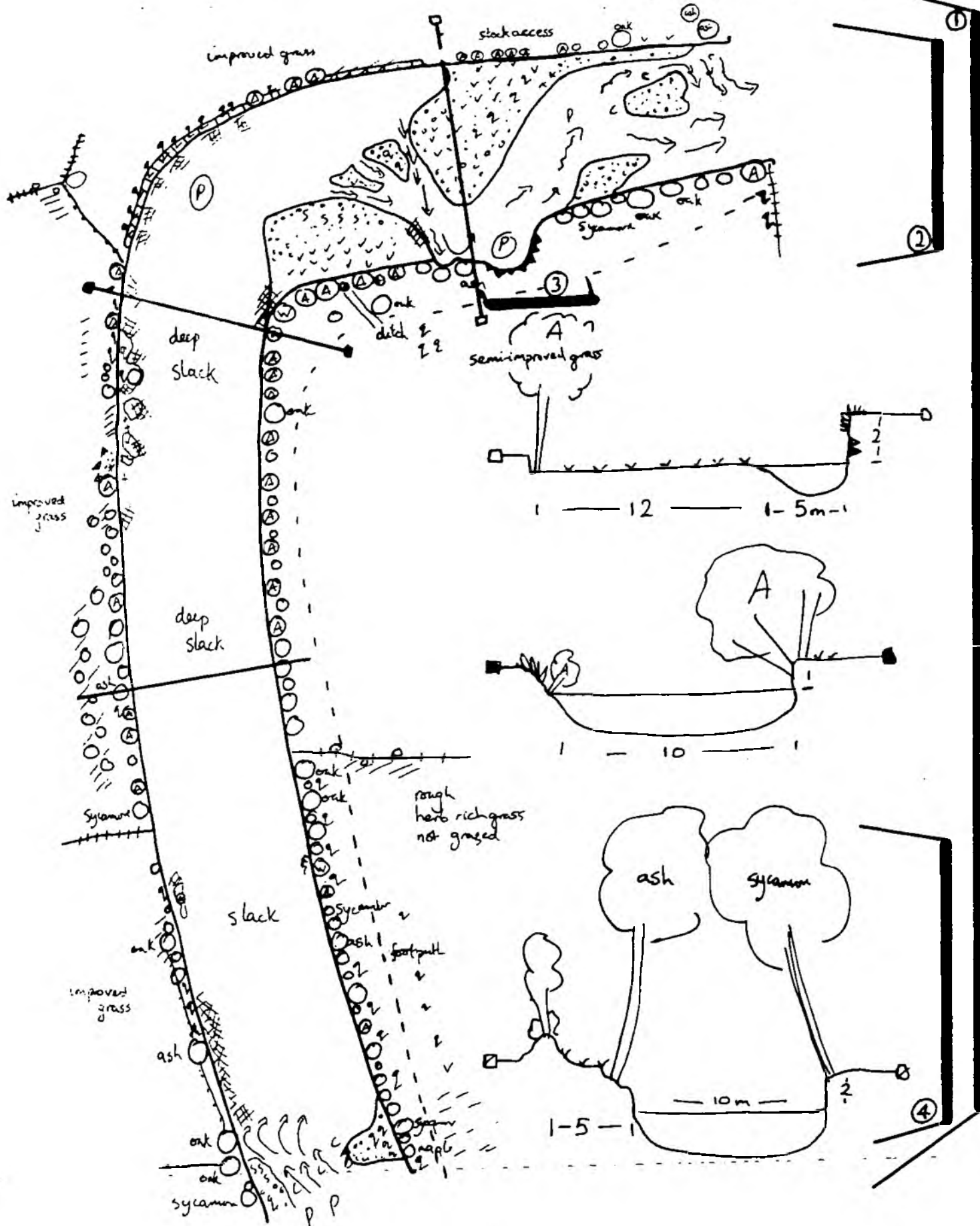
1: Both banksides. 2: Channel and flow pattern. 3: Earth cliff.  
4: Adjacent land to right.

#### Summary

A section of generally slack water and moderate tree cover, with good wildlife value and potential for improvement.

#### Management

Both sides should be fenced to prevent stock access where necessary, the adjacent trees and scrub to the left should be included within this fence. The downstream flow pattern should be left to continue its natural evolution. Selective rotational coppicing of the bankside tree cover. The adjacent habitat upstream to the right should be allowed to continue the successional change that is in progress.



Map 17 Chainage 15.0-15.5 Grid ref: SX 8480 7708-8512 7740

Section of moderate tree cover, running under the A38.

#### Banksides

2-3m sandy loam. To the left tree cover is light comprising alder and willow, mostly low to medium height coppice. Where the A38 crosses the river there is a long section of bank reinforced with steel and concrete upstream of the bridge. There are numerous low earth cliffs, and there has been considerable stock degradation in places. Ground cover, where not treed, consists of tall herbaceous species and bramble. To the right tree cover is almost continuous, the exception being where the road crosses, once it is reinforced with concrete. Trees are medium to tall coppice, largely of alder and willow, but including sycamore, ash and oak. At the downstream end there has been considerable erosion of the bank due to the action of water and tree fall.

#### Channel

7-10m mostly deep slack and pools, with some riffles. Substrate where visible, cobbles and pebbles, with some bedrock. The A38 dual carriageway crosses at the downstream end, here the channel has been artificially modified and constrained, below this a small stream enters from the right. Margins are mostly narrow, being overhung by trees upstream to the right. In places there is lush growth of water marginals. Grey wagtail and kingfisher were active on this section.

#### Adjacent habitats

To the left comprises improved grassland and dual carriageway. To the right upstream there is a derelict field of rough grasses and tall herbs, this changes to a small patch of wood and scrub, backing onto gardens. Below this there is a small area of amenity grass from which a footpath departs south, the land here consists of rough scrub and bracken, in places burnt away by a recent fire. Below the A38 the footpath continues through low scrub.

#### Key sites

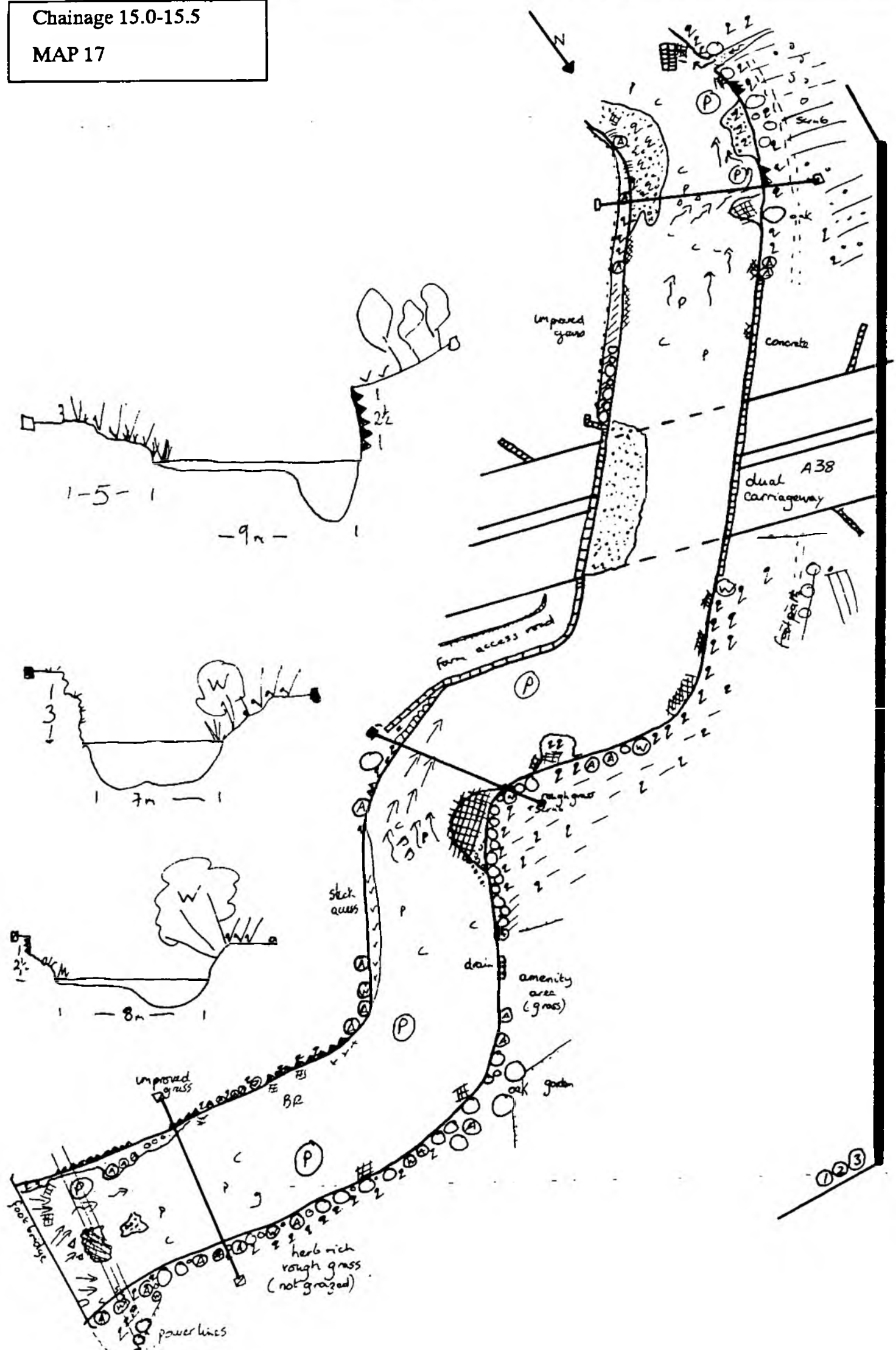
1: Both banksides, especially those earth cliffs that might act as kingfisher nest sites. 2: The channel, its substrates and flow pattern. 3: Adjacent habitat to right.

#### Summary

A section of moderate tree cover with useful adjacent habitat, it has good wildlife value and excellent potential.

#### Management

Fencing of left bank to prevent stock and dog access. The channel and flow patterns should remain undisturbed. The adjacent habitat to the right should be allowed to remain undeveloped apart from limited tree planting on the rough field upstream. Selective rotational coppicing of bankside tree cover where necessary.



Map 18 Chainage 15.5-16.0 Grid ref: 8512 7740-8534 7783

Section of moderate to low tree cover.

#### Banksides

1-3m sandy loam, mostly steep. Tree cover is generally sporadic with localised patches. To the left it is entirely low alder coppice, in places there is extensive degradation of the bank by stock; where trees are absent ground cover is dense herbaceous with some bramble. Downstream to the left there is a long stretch of steel reinforced bank, adjacent to the A38, this continues with three tiers of gabions up to the footbridge. To the right there is rather heavier tree cover, mostly of alder and sycamore, with willow appearing at the downstream end. Downstream to the right there is a dense bankside cover of Japanese knotweed, Himalayan balsam and tall herbaceous species. Much of the bank to the right is vertical and overhung with brambles and ferns. A kingfisher nest site is located at key site 3.

#### Channel

6-10m, mostly deep slack with riffles at either end. Substrate, where visible cobbles and pebbles. A small stream enters upstream from the right, at the downstream end the channel is crossed by a high road bridge (B3193) and further down a footbridge. Where the bank is re-inforced, adjacent to the A38, the channel is very deep. Margins are mostly narrow, with extensive growth of water marginals at the downstream end.

#### Adjacent habitats

This comprises almost entirely improved grassland on both sides of the river. The exception being an area of dense scrub and taller alder and willow downstream to the right, which represents a valuable refuge for many forms of wildlife.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Kingfisher nest site. 4: Adjacent habitat.

#### Summary

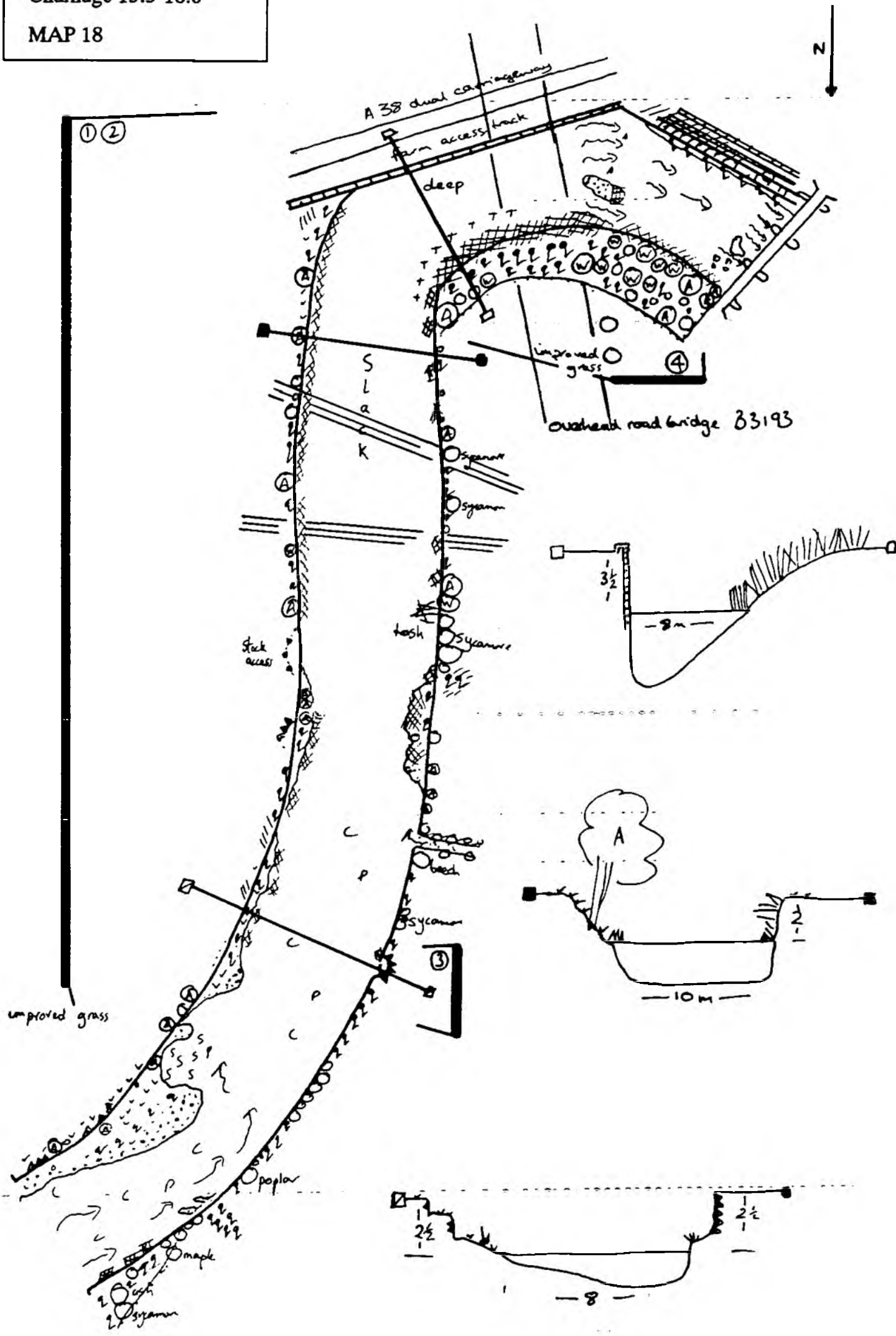
A section of generally low tree cover, and resultant poor wildlife, however with suitable management this situation could easily be improved.

#### Management

The left bank should be fenced to restrict stock access. Stretches of tree cover should be encouraged to develop on both banksides. Key site 3 should be fenced to prevent disturbance.



N



Map 19 Chainage 16.0-16.5 Grid ref: SX 8534 7783-8577 7804

Section with light tree cover, bisected by large weir.

### Banksides

1-3m sandy loam, with localised heavy but generally light tree cover (due to management for fishing). Above the weir on both sides there is annually cut coppice of alder, sycamore and willow, ground cover consists of dense herbaceous and ruderal vegetation. On both banks around the weir there is continuous tree cover, consisting overgrown coppice of alder, ash and sycamore. Below the weir to the left the bank is up to 3m high and extensive slippage has occurred creating a number of small earth cliffs, at the downstream end there is a stretch of low alder coppice. On the right bank there is some low alder coppice, but in general it is covered in a lush growth of tall herbaceous species and water marginals. At the downstream end there is a stretch of mixed coppice increasing in height to 10+m.

### Channel

8-12m of varied flow pattern. At the mid point, the river is traversed by a weir, above this is deep slack with extensive growth of water marginals to the right. Below the weir there is a low artificial waterfall followed by rapids, this gives way to shallow slack (<0.75m), and finally rapids with a small pebble island. There is extensive growth of water marginal plants lining the slack below the weir. Grey wagtail, kingfisher and dipper were present.

### Adjacent habitats

To the left upstream there is a narrow margin of rough grass and gorse scrub between the river and the dual carriageway. On both sides of the weir there is a narrow band of mixed deciduous trees and scrub. Downstream to the right there is a small narrow strip of wood. The rest of the land on both sides is improved grassland.

### Key sites

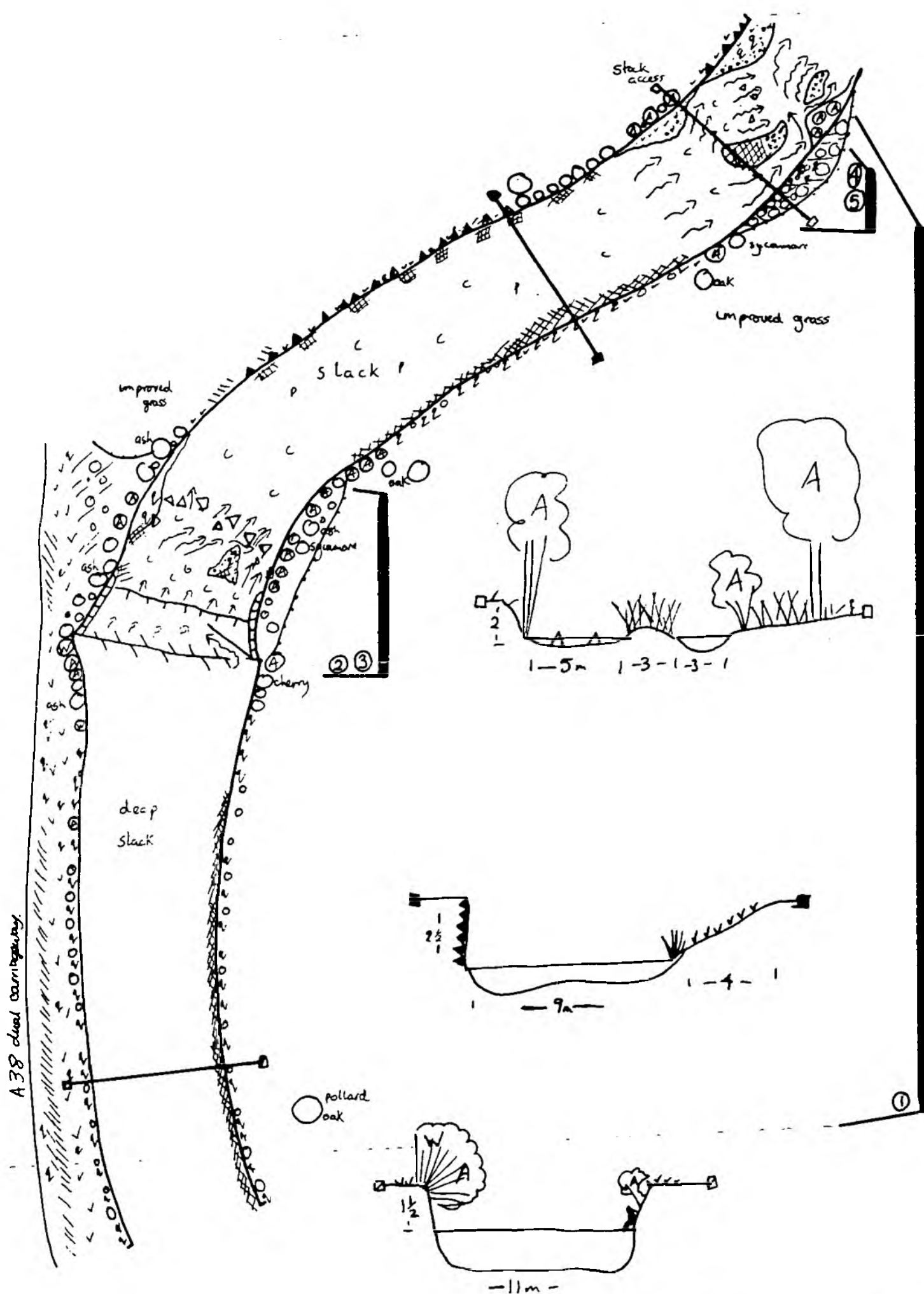
1: Both banksides. 2: The weir and channel below. 3,5: Adjacent land. 4: The channel and flow pattern.

### Summary

A section of moderate wildlife value, that requires sensitive management to enhance this status.

### Management

The adjacent land between the river and the road should be planted with tree cover to provide habitat continuation along the river corridor. The same applies to the bank down stream to the left of the weir, which should also be fenced ; this should not interfere with the fishing interests. Key sites 2,3,4,5 should be left undisturbed, management being limited to selective rotational coppicing.



Map 20 Chainage 16.5-17.0 Grid ref: SX 8577 7804-8574 7852

A section of slack water, managed for fishing.

#### Banksides

0.5-2.0m sandy loam. To the right there are very few trees, some existing only as low coppice. Ground cover is a mixture of grass and dense herbaceous species, the vegetation is kept grazed or cut low. Downstream, bank height reduces to approximately 1m and the dense water marginal growth spreads over the bank. To the left upstream there is tall dense tree cover consisting of alder, sycamore and oak, coppice and standard. Downstream of this the coppice is cut annually for fishing purposes and has in places formed a 'hedge' 2-3m back from the water edge. In parts it is covered in a carpet of hops. Ground cover consists of ruderal species, which have been regularly cut, or possibly treated with weedkiller.

#### Channel

10-13m mostly slack water, shallow (<1m) at the upstream end, and deep at the downstream end. Substrate where visible is cobbles and pebbles. Kate Brook enters from the left via a culvert, below the bridge; it is clogged with silt and supports a lush carpet of water marginals, particularly water-cress. Margins are mostly narrow, to the right downstream there is extensive growth of water marginals, including water forget-me-not, amphibious bistort and reed canary-grass.

#### Adjacent habitats

To the right is improved grassland, apart from a short patch of semi-improved grassland in the middle of the section. To the left downstream the A 38 dual carriageway runs adjacent to the river, between the two is a strip of rough grass and gorse scrub. Above this is an area of tall sapling growth mostly alder and willow.

#### Key sites

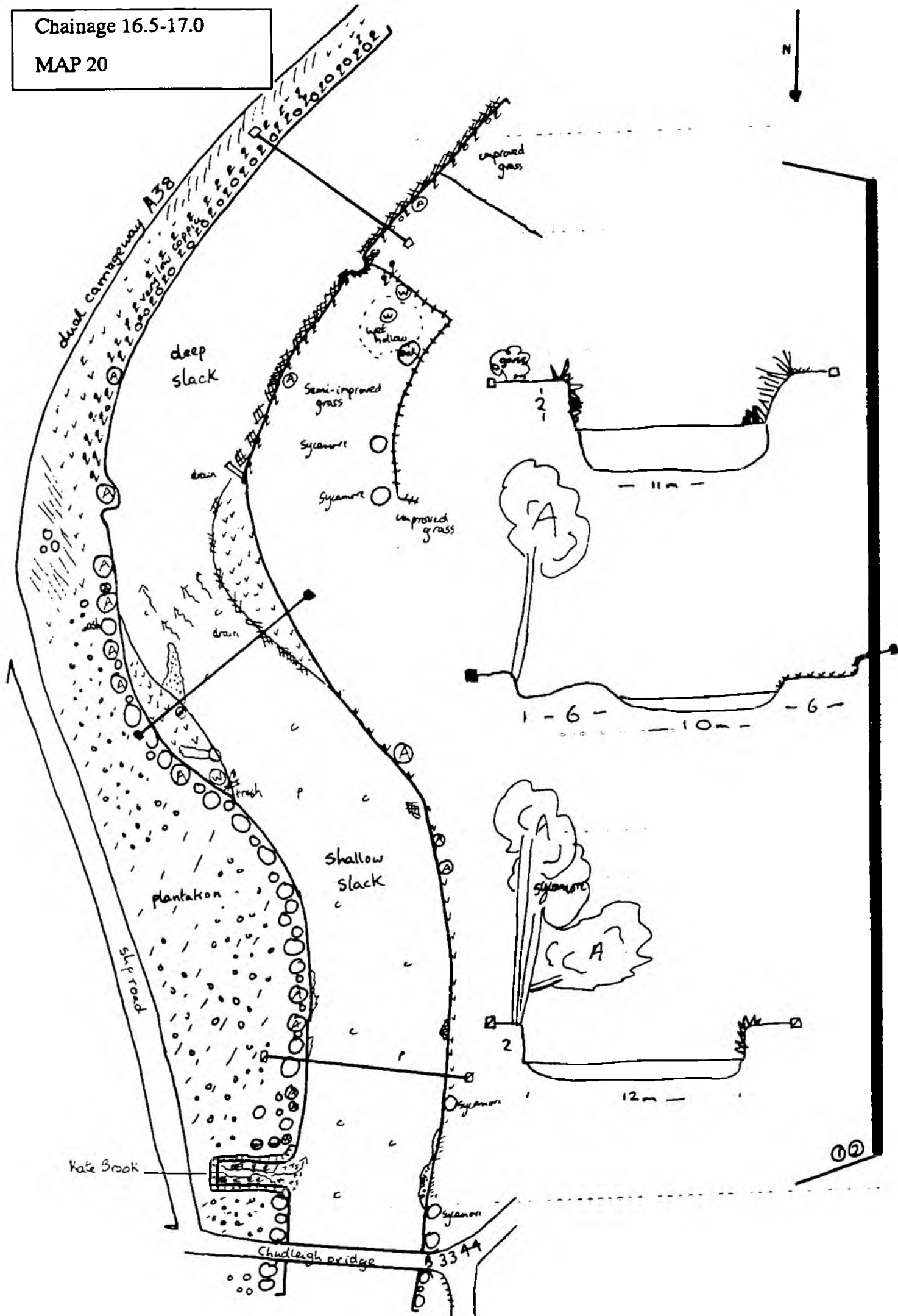
1: Both banksides. 2: Adjacent habitat to the left.

#### Summary

A section of generally poor wildlife value due to the proximity of the road and excessive management for fishing. With careful management this status could be much enhanced.

#### Management

To the left upstream selective re-coppicing of the tall bankside trees. The strip of land between the road and the river should be planted with trees, those trees that are already coppiced in this stretch, should in places be coppiced less frequently. To the right replanting of bankside tree cover where it would not interfere with the fishing interests and fencing to restrict stock access. The small patch of semi-improved grassland to the right would make an excellent refuge area if it were fenced and planted with trees.



Map 21 Chainage 17.0-17.5 Grid ref: SX 8574 7852-8559 7897

Section with moderate to heavy tree cover running adjacent to B3193.

#### Banksides

2-3m sandy loam on cobble. Upstream to the right there are well spaced alder and oak standards with a ground cover of grass, this gives way to an almost continuous dense tall tree cover of oak, alder, sycamore, and ash, lime and horse chestnut are also present. In the middle of the section the bank comprises a retaining wall for the road, covered in a mat of traveller's joy. At the downstream end the coppice is dense and lower (7m). To the left the trees are well spaced tall standard and coppice, there are a number of stretches devoid of tree cover, the bank has been over-grazed, leaving bare earth in places. Downstream there is dense medium height coppice mostly of alder.

#### Channel

10-12m mostly of slack moderately deep water (1m) with some riffle. Margins are generally narrow with some bedrock, cobbles and boulders. Substrate variable from bedrock to silt.

#### Adjacent habitats

To the left improved grassland, at the downstream end there is a small plantation of mixed deciduous and conifer, between the river and the dual carriageway slip road. To the right the B3193 runs adjacent for the entire length, at a distance of 2-10m. On the other side of the road is a conifer plantation (>10m tall) with a fringe of mixed deciduous.

#### Key sites

1: Both banksides. 2: Adjacent habitat downstream to left.

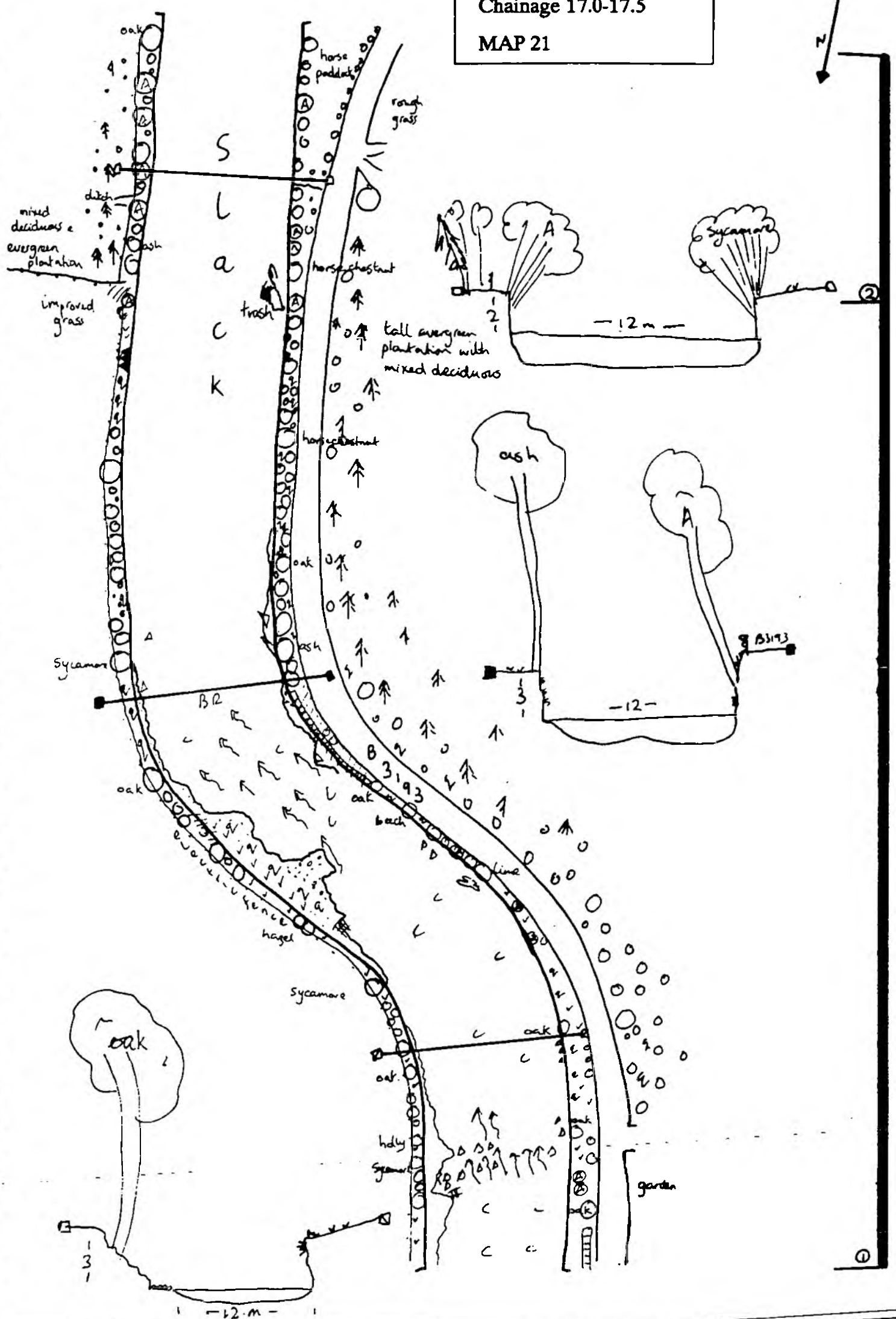
#### Summary

A section of generally low wildlife value due to the degraded banksides, over-tall tree cover and adjacent road. With careful management this could be improved.

#### Management

Fencing of the left bank, together with re-coppicing and re-planting of trees. To the right, selective rotational coppicing.





Map 22 Chainage 17.5-18.0 Grid ref: SX 8559 7897-8559 7943

A winding section of medium to light tree cover.

#### Banksides

1-3m, in places steep to vertical, in others, grassy and often degraded by stock. To the left tree cover is restricted mainly to the middle of the section between the two bends, it comprises mostly medium height alder coppice with some sycamore. To the right there is heavy tree cover at the upstream end comprising a number of large oaks with tall alder, willow and sycamore. Where stock have or have had access, the banks are seriously degraded, where they are fenced there is dense growth of herbaceous species, by deep water this is kept mown for fishing. There is an earth cliff to the left that holds a kingfisher nesting site.

#### Channel

6-12m wide of varied flow pattern from shallow riffles through to very deep pools. Margins are largely narrow with some bedrock at the downstream end, with gravel and pebbles on the top bend. Where there is no grazing there is in places extensive growth of water marginals including reed canary-grass and hemlock water-dropwort. Chudleigh sewage treatment plant discharges 'foul' water via a culvert from the left.

#### Adjacent habitats

This consists of improved grassland and arable; apart from a short stretch downstream to the right where the B3193 runs close to the river, here there is a narrow margin of retaining wall, a few trees, some scrub and grass. On the other side of the road there is woodland and a private garden.

#### Key sites

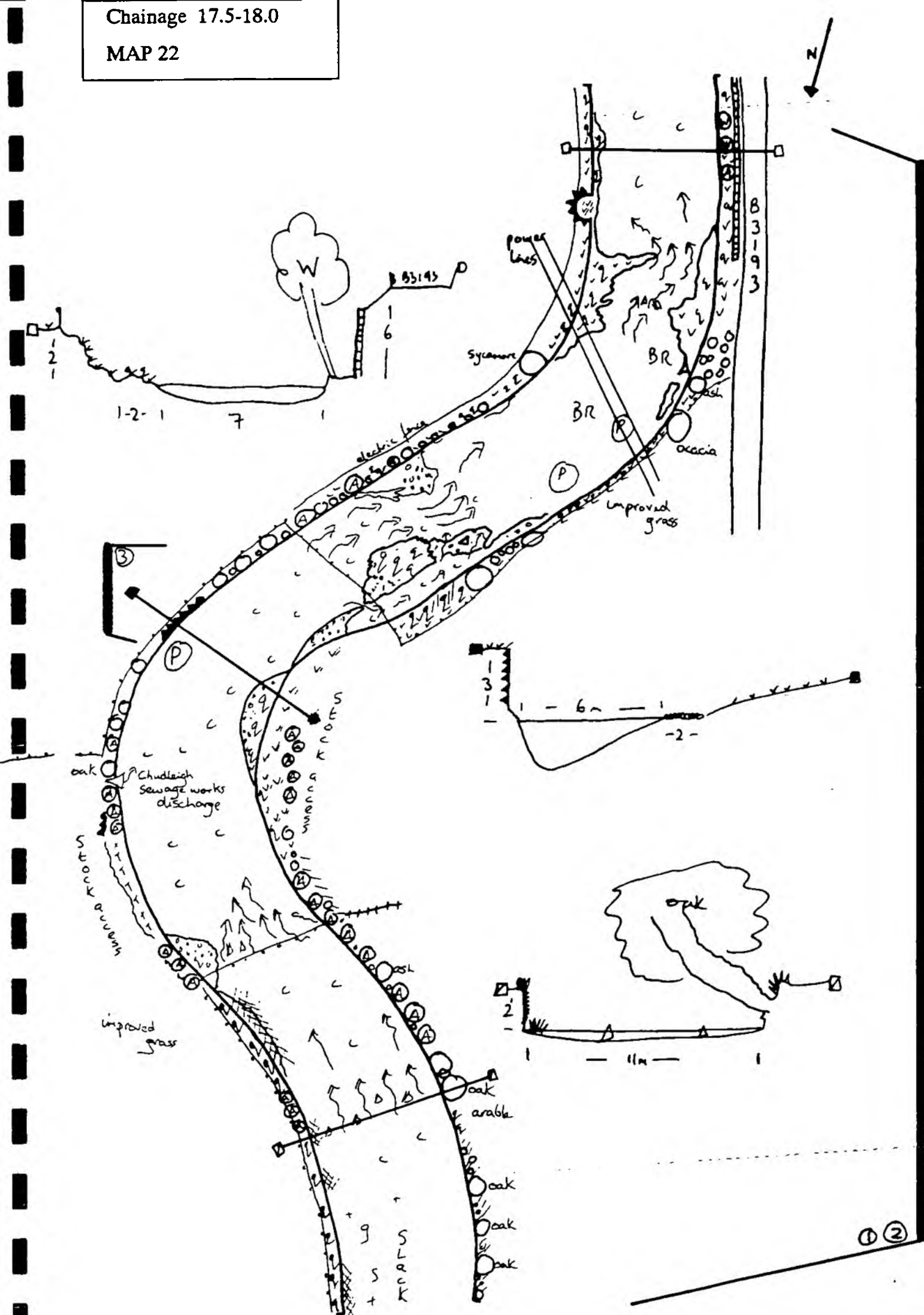
1: Both banksides. 2: The channel, its substrates and flow pattern.  
3: Kingfisher nest site.

#### Summary

Apart from the kingfisher nesting site, this is a section of relatively low wildlife value, however with creative management this situation could be dramatically improved.

#### Management

Fencing to restrict stock access to the banksides. Re-planting of trees in those areas where there is no fishing interest. Avoid interfering with the eroding bank at key site 3.



Map 23 Chainage 18.0-18.5 Grid ref: SX 8559 7943-8574 7989

Section of almost continuous tree cover traversed by disused rail bridge.

#### Banksides

2-3m sandy loam on cobble, mostly steep. For the most part there is continuous tree cover of overgrown coppice with a number of standards. Several trees have fallen, creating gaps. There is an understorey of brambles, hawthorn, blackthorn, hazel, spindle and guelder-rose over much of the section. Tree species consist of an even mix of ash, alder, sycamore, willow, beech and oak. Downstream to the right, in places field debris of stones and roots has been pushed into the bank. The final stretch downstream to the left is devoid of tree cover, here there is a dense growth of tall herbaceous and water-marginal species.

#### Channel

6-10m of varied flow pattern, mostly of riffle with a section of deep slack at the downstream end, otherwise it is generally < 0.5m deep. Substrate variable from bedrock through to gravel and sand. Margins are in places narrow and sandy, in others of bedrock and cobbles. The channel is generally open to light with good growth of willow moss. A spring runs into the river from the right just above the disused rail bridge. Dipper and grey wagtail were very active on this section.

#### Adjacent habitats

Mostly improved grassland with one arable field, the exception being the disused railway track which is covered in a dense thicket of trees and scrub; to the right above the bridge there is a triangular patch of dense bramble, bracken and hazel between the line and the river.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: Adjacent habitat on both sides. 4: Disused bridge.

#### Summary

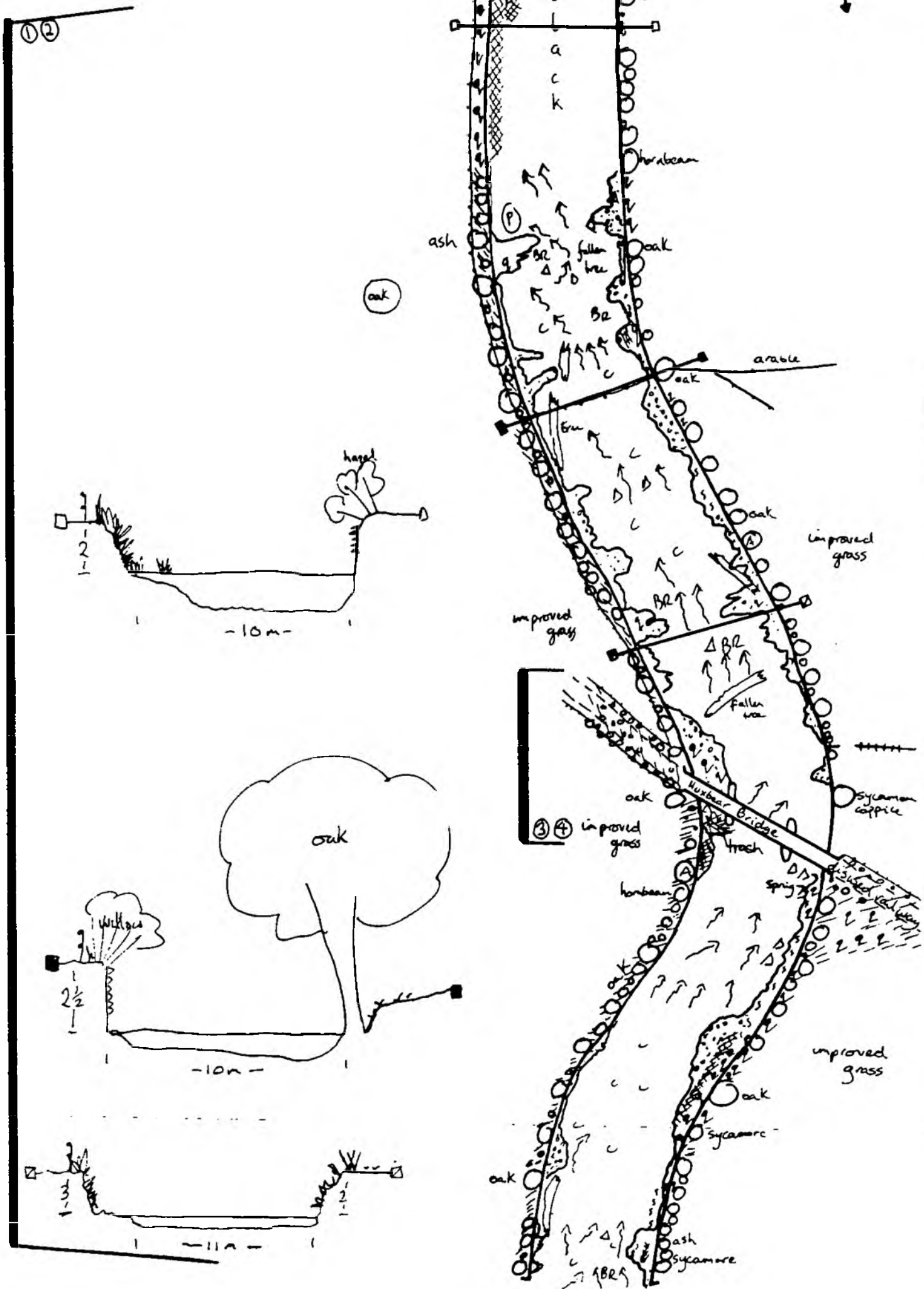
A quiet section of varied tree cover, both in age and species diversity. Of generally high wildlife value with valuable feeding and nesting sites for riverine bird species.

#### Management

Selective rotational coppicing of tree cover. Leave channel and flow pattern undisturbed. Avoid disturbing the bridge.

Chainage 18.0-18.5

MAP 23



Map 24 Chainage 18.5-19.0 Grid ref: SX 8574 7989-8503 8025

Section of generally heavy tree cover with extensive exposed rocky margins.

#### Banksides

2-4m sandy loam on bedrock and cobble. For the most part there is continuous dense tree cover, comprising a large number of tall standards, particularly oak and beech; the remaining tree cover is mostly overgrown coppice, including ash, sycamore and alder, with an understorey of holly, hazel, bramble and guelder-rose. To the left upstream there is a short stretch devoid of tree cover, here the bank is covered with dense herbaceous species and bracken. Downstream to the right tree cover is in places rather more open, allowing good light access to the channel. There are a number of old exposed coppice roots which provide excellent potential nesting sites.

#### Channel

6-10m of varied flow pattern, including a number of deep pools. Margins downstream of the bend tend to be of bedrock with some cobbles; upstream margins are narrow with a stretch of water marginals growing to the left. Substrate, bedrock and cobbles with some gravel and sand upstream. Grey wagtail and dipper were present throughout.

#### Adjacent habitats

To the right is improved grassland. To the left is improved grassland with a long section in the middle, of sloping woodland comprising largely tall beech, with an understorey of hawthorn, blackthorn and hazel in places.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: Adjacent habitat.

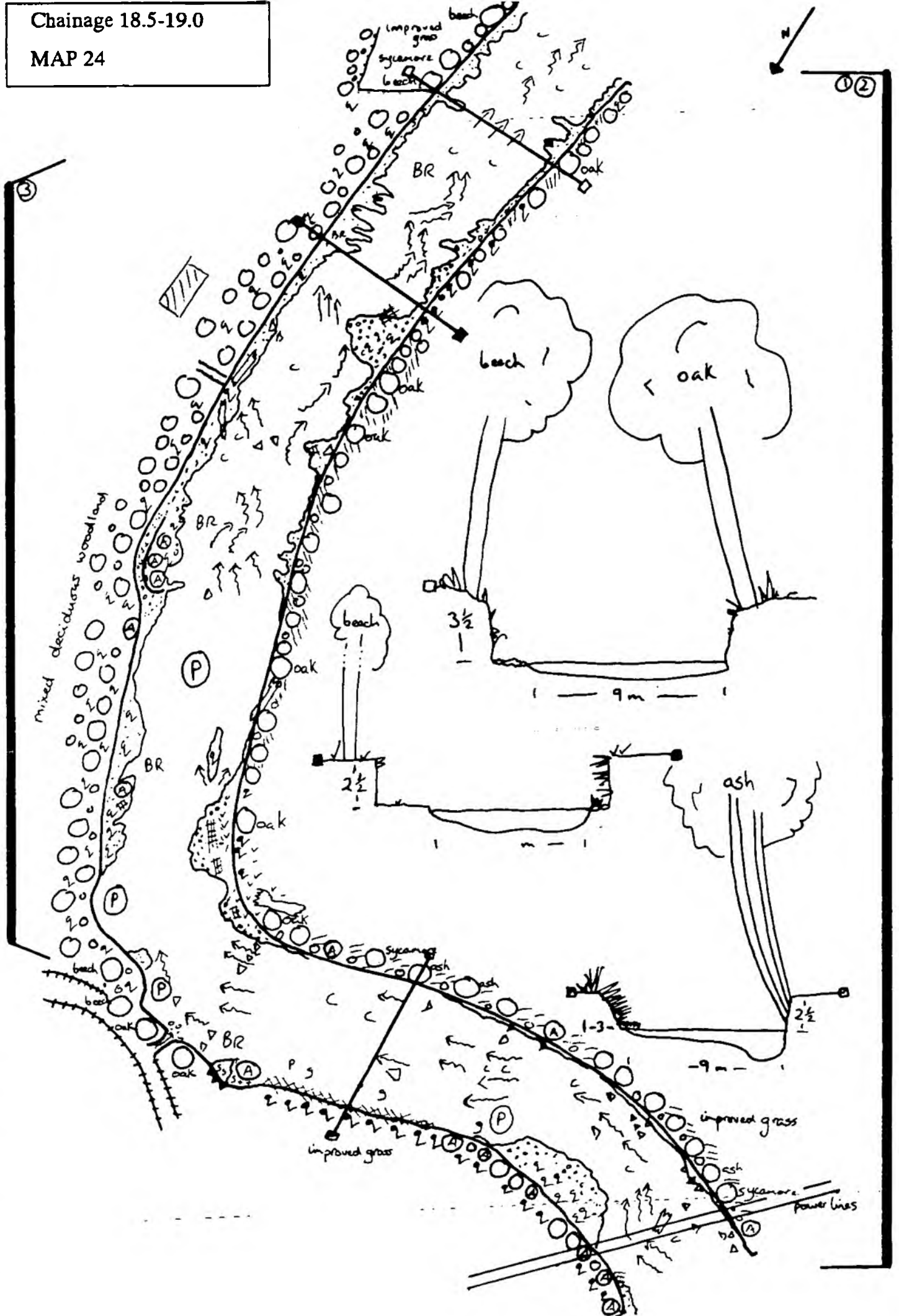
#### Summary

A generally secluded section with an interesting flow pattern and rocky margins. Of high wildlife value, enhanced by the woodland to the left.

#### Management

Selective rotational coppicing of the bankside trees. Channel and flow pattern should remain undisturbed as should the adjacent woodland to the left.





Map 25 Chainage 19.0-19.5 Grid ref: SX 8503 8025-8541 8073

A quiet section with heavy tree cover.

#### Banksides

1-3m, sandy loam on cobble aggregate and bedrock. To the left the river was originally bounded by a cart track, some of this has been washed away by the river when in spate, thus complicating the line of the bank. For the most part there is dense bankside tree cover, consisting of large overgrown coppice and standards. The species are very homogenous in distribution and numerical composition. Ash, sycamore, beech, hornbeam, oak, alder, hazel and willow were noted. The right bank is steep to vertical for the entire section, with dense tree cover. To the left there are a number of stretches without tree cover or with low tree cover. Where the track has been washed away the bank has effectively become the hedge on the outside of the track, this is overgrown. Where tree cover is sparse or absent there is a dense ground cover of grasses, bracken and tall herbaceous species.

#### Channel

6-11m of varied flow pattern from rapids through to numerous very deep pools. Substrate varies from bedrock to cobbles and boulders, with silt in the deeper water. Margins are mostly narrow with extensive growth of water marginal species in places. Grey wagtail was present. The canopy is quite open allowing plentiful light to the river bed.

#### Adjacent habitats

Upstream to the left is a road with mixed deciduous woodland on the other side; down stream of this an old cart track bounded with a hedge runs adjacent to the river. At the downstream end there is improved grassland. To the right there is improved grassland except for a long narrow strip of mixed deciduous standards with an understorey of scrub at the downstream end.

#### Key sites

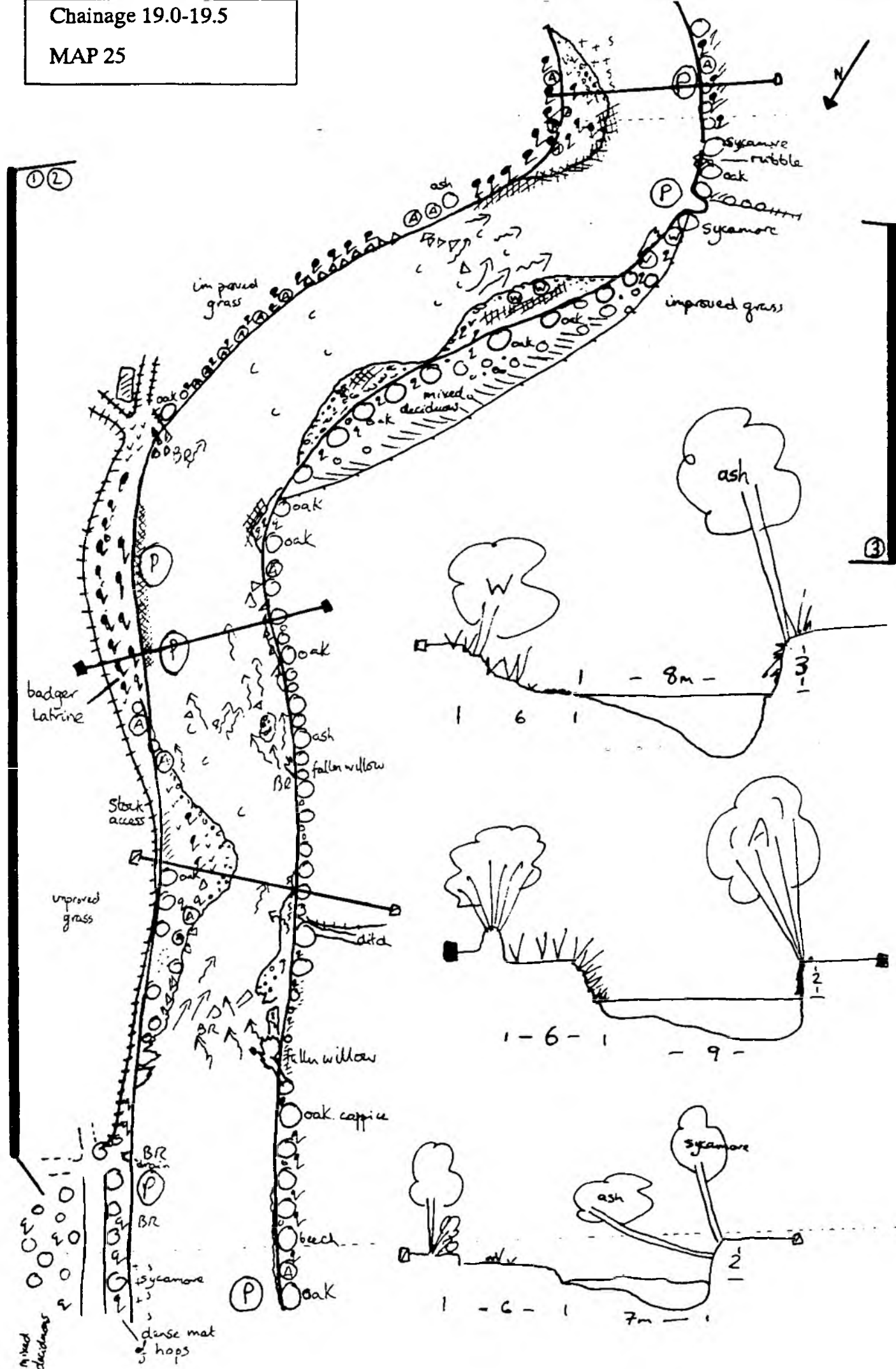
1: Both banksides. 2: The channel, its substrates and flow pattern.  
3: The adjacent habitat.

#### Summary

A quiet section of river with little disturbance from fishing, of generally high wildlife value.

#### Management

The channel and its flow pattern should remain undisturbed. Selective rotational coppicing of bankside trees, to create a more varied age structure in the coppice. The adjacent wood at key site 3 should be left undisturbed.



Map 26 Chainage 19.5-20.0 Grid ref: SX 8541 8073-8503 8100

Winding section with continuous tree cover and adjacent industrial works, (ARC pipeworks).

### Banksides

2-5m sandy loam on bedrock and cobbles. For the most part tree cover is dense and continuous. Above the bridge the banks are high with tree cover to the left of tall mixed standards, near the bridge some trees have fallen and been cleared to give a more open area of coppice. On the opposite bank there are a number of tall trees, but the majority of the cover is dense 5-7m sycamore coppice. The banks are near vertical. Below the bridge to the left stock have access to the bank and it is seriously degraded, trees are mostly alder with a scrub understorey. Further down the bank is fenced, tree cover here is alder with a number of taller mixed standards. At the downstream end the bank has eroded to create a small island with alder. To the right below the bridge the coppice is a little lower with a number of tall standards, particularly of oak, the bank is mostly steep (2m) with a band of scrub on the top under the tree cover.

### Channel

6-11m of varied flow pattern, there are a several pools with very deep water. Substrate varies from silt and sand to cobbles boulders and bedrock. There are a number of pipes entering the river from the yard, some of these were discharging, others were dry. Dipper and grey wagtail were present.

### Adjacent habitats

To the left above the bridge is woodland and disused railway track, lower down is improved grassland, garden and finally a road with mixed deciduous woodland. To the right is the continuation of the industrial yard, this peters out into a region of rough herb rich grassland with bracken and finally to improved grassland. A large number of woodland bird species were noted.

### Key sites

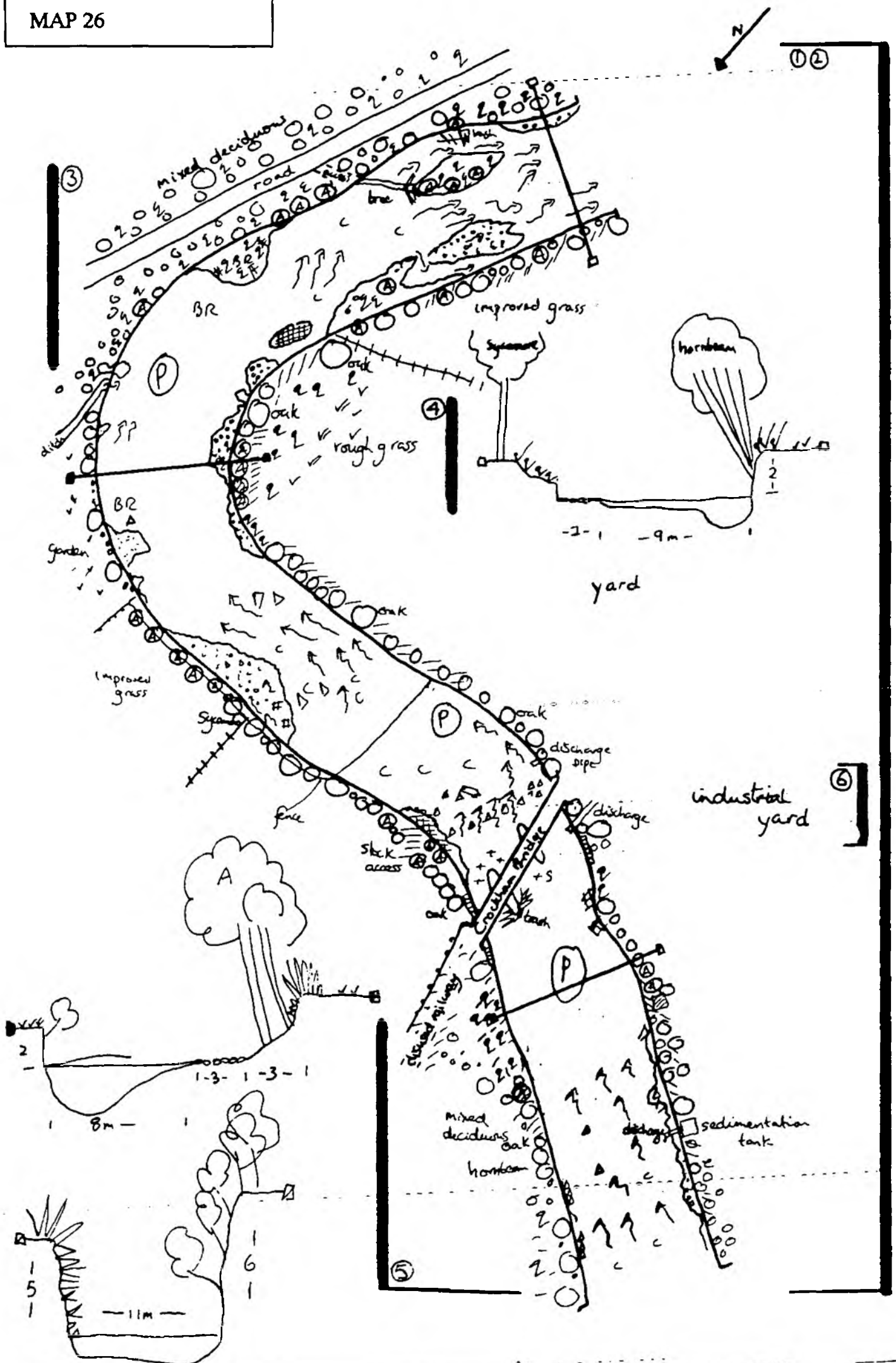
1: The channel, its substrates and flow pattern. 2: Both banksides. 3, 4, 5: Adjacent habitat. 6: Disused railway bridge.

### Summary

A generally undisturbed section, despite the adjacent industrial yard. It has a high wildlife potential especially for birds. Although otter signs were not found the section offers good potential cover.

### Management

Selective rotational coppicing of the bankside trees. Channel and flow pattern should be left undisturbed, as should the adjacent habitat where mentioned as key sites.



Map 27 Chainage 20.0-20.5 Grid ref: SX 8503 8100-8471 8130

Section of generally heavy tree cover, running adjacent to industrial yard.

### Banksides

1-5m sandy loam on cobble aggregate. Upstream of the bridge, tree cover is quite open, consisting mostly of alder, some of which is coppiced very low, bankside ground cover ranges from mown grass to dense herbaceous cover and brambles. Downstream of the bridge to the right, the bank rises steeply from the river, continuing in places as steep adjacent habitat to a height in excess of 10m. Tree cover is dense, consisting primarily of tall sycamore with a light ground cover of ferns and ivy; this gives way at the lower end to rather dense low/medium coppice. To the left downstream of the bridge there is continuous cover of alder, beech, sycamore, hornbeam and oak. At the lower end the bank rises to 5m, trees here being primarily very tall standards. At the top end ground cover is mostly dense bramble and bracken, downstream it is a typical shaded woodland flora.

### Channel

8-12m of varied flow pattern. A small stream enters from the right upstream of the road bridge and another from the left downstream. There is a large boulder weir about half way down the section below which the flow is entirely rapid or riffle. Substrate mostly cobbles and boulders, with some sand and gravel in the slack section. Dipper and grey wagtail were present. A small pipe just upstream of the bridge discharges 'foul' water into the river.

### Adjacent habitats

Upstream to the left is a private garden with grass and trees, the rest is improved grassland. Below the bridge to the right is a steep bank with sycamore and scrub, this gives way to the A.R.C concrete pipe factory yard. On the left bank there is a small paddock of semi-improved grassland followed by the disused railway line which has reverted to a mixture of dense scrub and tall mixed deciduous trees.

### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: The weir. 4: The adjacent habitat where wooded.

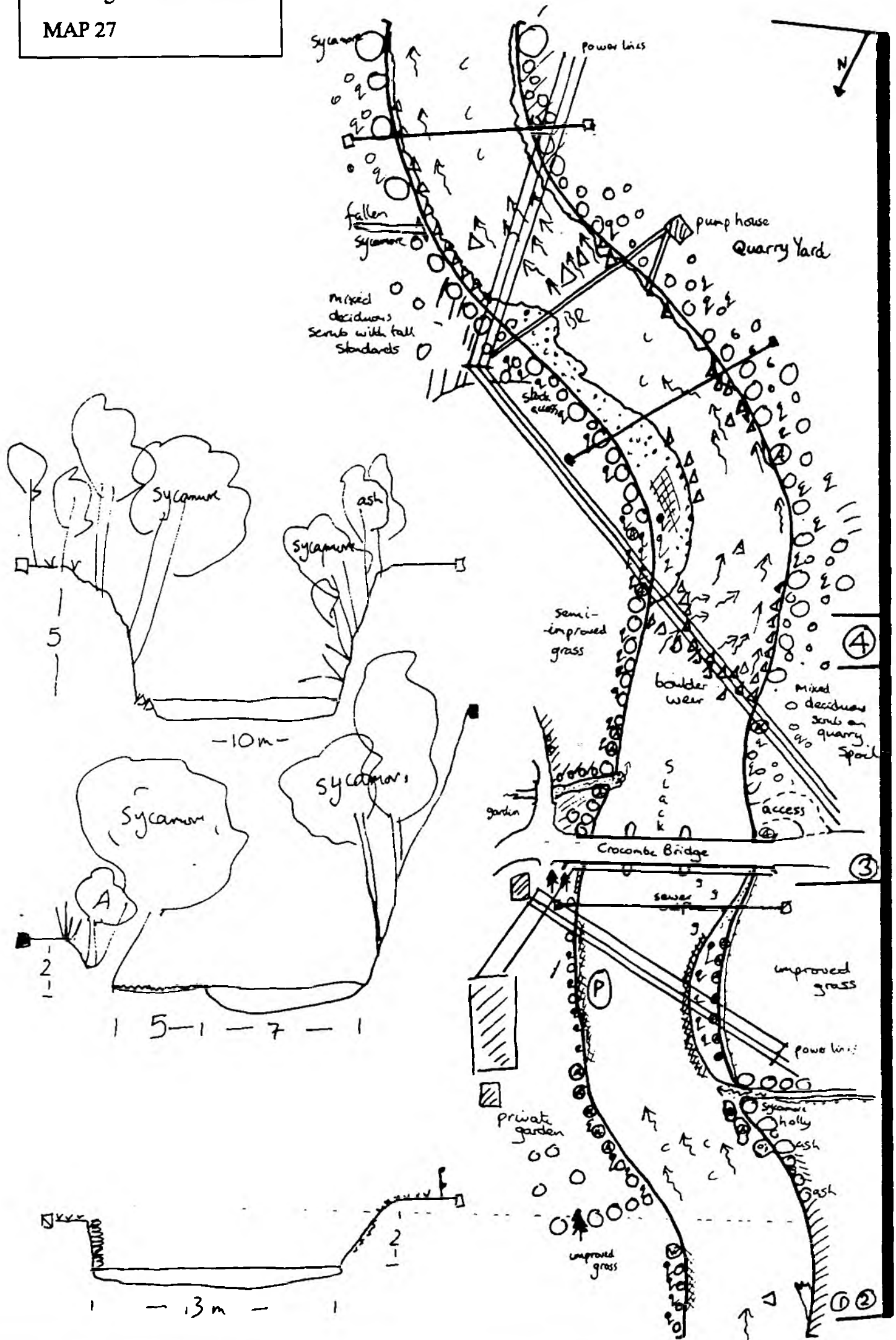
### Summary

A section of generally good wildlife value, due to the proximity and character of the adjacent woodland downstream of the bridge. Active management could enhance this status.

### Management

Selective rotational coppicing of the bankside tree cover. Leave weir, the channel below and the adjacent habitat where wooded undisturbed.





Map 28 Chainage 20.5-21.0 Grid ref: SX 8471 8130-8440 8166

A straight section with continuous tree cover.

#### Banksides

2-3m sandy loam, generally steep. There is a heavy tree cover of medium to tall coppice for most of the section, the majority of trees being alder, but including ash, sycamore, beech, hornbeam, hazel and oak. Below the bridge to the right there is a stretch where the trees have been thinned, here the ground cover consists of dense herbaceous species. To the left by the pool there is a stretch maintained without trees for fishing, here there is lush bankside cover. Elsewhere bankside ground cover tends to be typical shaded woodland flora.

#### Channel

8-10m of varied flow pattern from riffles through to slack. Generally <0.5m, except in the pool and subsequent slack. Substrate mostly cobbles and boulders, margins narrow, with little vegetation, except by the pool. Two small streams enter from the left, a road bridge crosses the channel at the upstream end. Kingfisher and grey wagtail were present, the only evidence of otters were two very old spraints near the bridge.

#### Adjacent habitats

To the right upstream the river is bounded by the B3193, on the other side of which there is a steep bank with heavily shaded deciduous woodland. Downstream of the bridge there is a narrow strip of mown grass used for touring caravans, this opens out into a house and garden and finally a field of improved grassland. To the left above the bridge there is a small rough grass paddock, followed downstream by the disused railway track, with margins of mixed deciduous scrubby trees. On the other side of the track is a slope of quarry spoil with scrub trees and brambles. Downstream to the left is semi-improved grassland.

#### Key sites

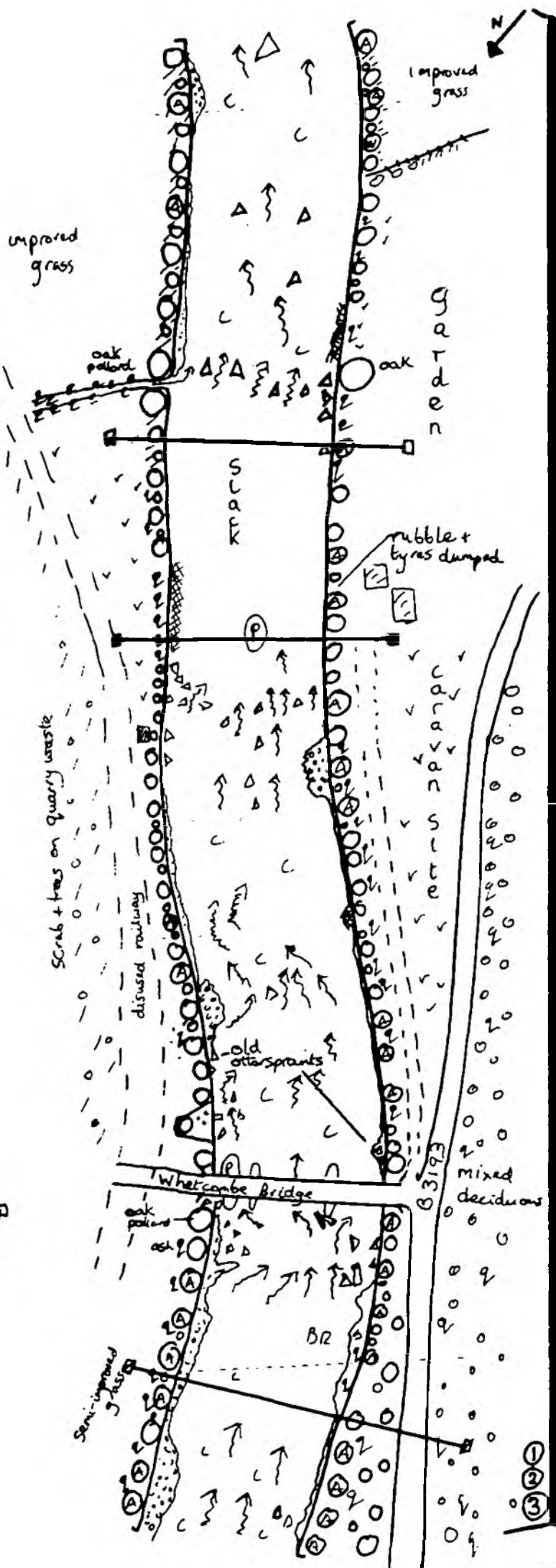
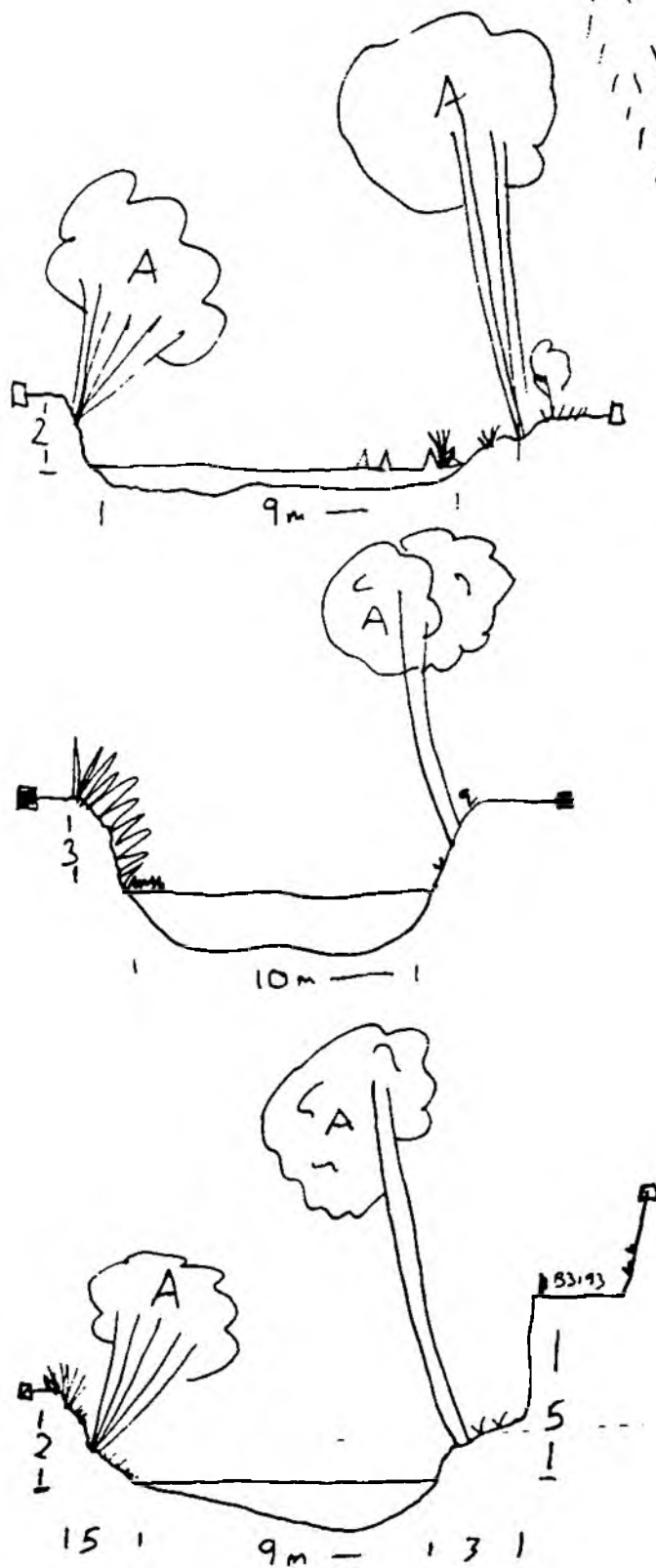
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Adjacent habitat upstream to the right.

#### Summary

A section of dense tree cover, although the channel remains undisturbed, the adjacent lands are to a large extent regularly disturbed, however for birdlife the section is of high value.

#### Management

Rotational coppicing of the bankside tree cover. The flow pattern should remain undisturbed.



A winding section with varied tree cover.

### Banksides

2-3m sandy loam on cobble aggregate. Generally there is dense tree cover; to the left upstream there is a heavily eroded stretch devoid of tree cover which provides an excellent potential kingfisher nesting site. Below this there is a section of low coppice with tall standards, and a dense ground cover of bracken, bramble and tall grasses. To the right for much of the section there are very tall standards, mostly of beech, with some oak, ash and sycamore. Where the road runs adjacent to the river a long stretch of the bankside is protected from erosion by large boulders. To the right the ground cover is of typical woodland species, ferns, greater woodrush and various grasses. To the left ground cover consists of dense herbaceous species.

### Channel

5-11m of varied flow pattern, from a waterfall through to slack, some of the water is quite deep (>1m). Substrate is mostly cobbles, pebbles and boulders, it is generally well lit with considerable growth of willow moss. A small stream enters from the right at the downstream end. Margins are in places wide, upstream by the bend there is considerable erosion to the left and concomitant deposition on the opposite side. Kingfisher and grey wagtail were present. One otter spraint was found.

### Adjacent habitats

To the right there is a section of improved grassland which gives way to a narrow strip of mixed deciduous trees (mostly beech) bounded by the road. Further down this opens out to an old plantation of very tall trees, once again the majority being beech. To the left upstream there is the disused railway with mixed deciduous trees, this gives way to improved grassland fringed with bracken, at the lower end the railway rejoins the river and there is a disused quarry with a lake.

### Key sites

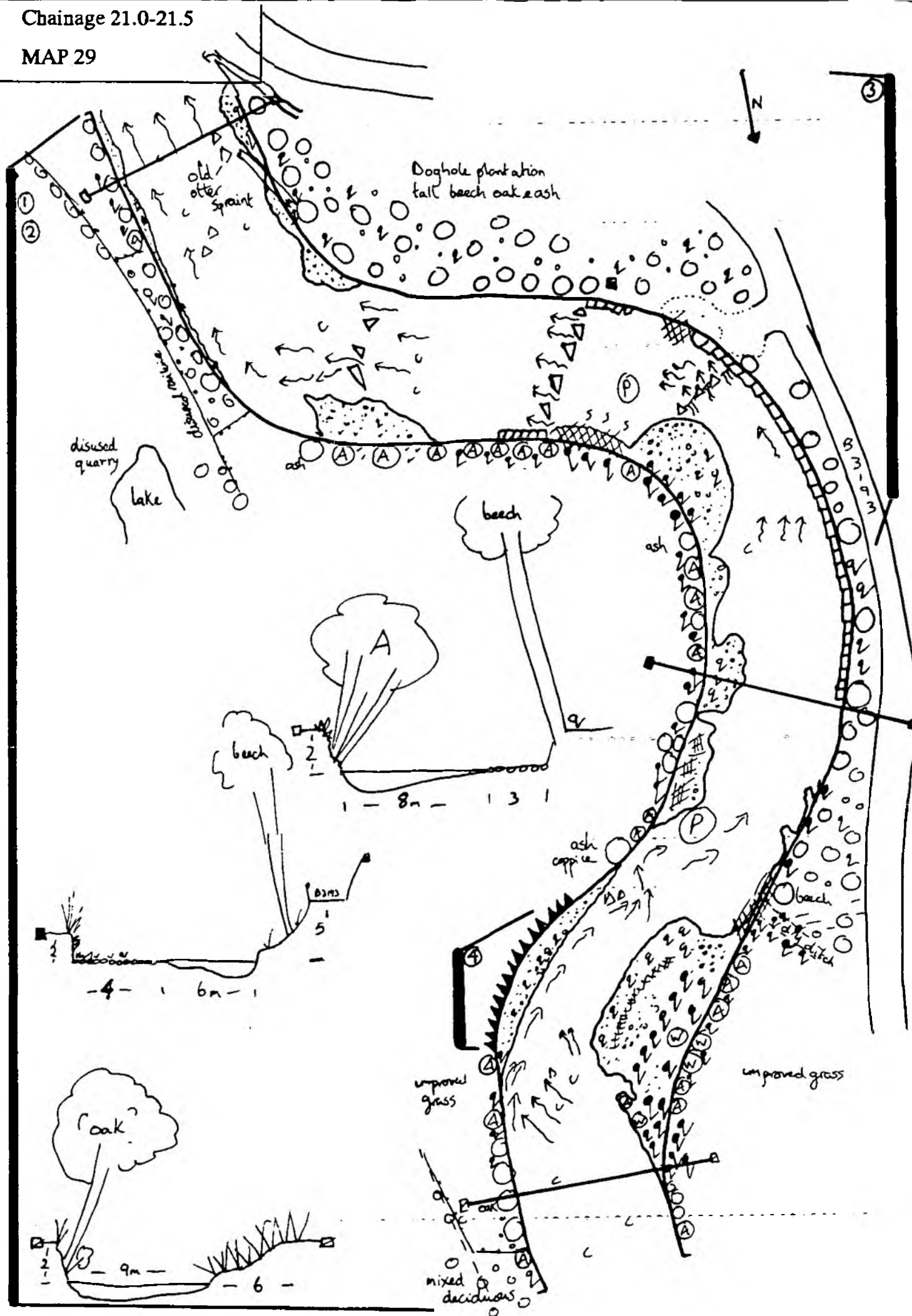
1: The channel, its substrates and flow pattern. 2: Both banksides. 3: Adjacent habitat downstream on both sides. 4: Earth cliff.

### Summary

A winding section with road running adjacent, it is of high wildlife value enhanced by the varied adjacent habitat.

### Management

The adjacent woodland to the right is overaged and should be selectively thinned and replanted on a rotational basis. Selective rotational coppicing of the bankside tree cover, with care being taken not to alter the character of the earth bank at key site 4.



Map 30 Chainage 21.5-22.0 Grid ref: SX 8424 8203-8425 8252

A quiet section running south with disused railway to the left.

#### Banksides

1.5-3m sandy loam, mostly steep. Tree cover generally dense, medium to large coppice with a number of large standards of oak, ash and sycamore, in two places trees are absent or coppiced very low for fishing. Downstream to the right there is a scrubby understorey of alder, bramble, hawthorn, spindle and sycamore. To the left downstream there is a typical woodland ground flora; upstream of the bend on the same side there is for the rest of the section a dense ground cover of bracken, Indian balsam and tall grasses. An otter hover and possible holt is located under an old hornbeam coppice upstream to the left.

#### Channel

9-11m of varied flow pattern, often deep; a small stream enters from the right half way down the section. Substrate mainly of cobbles and boulders. Canopy closure rarely complete, allowing good light to the river bed and thus considerable growth of willow moss. Margins mostly narrow with substantial growth of reed canary-grass in places. Grey wagtail and kingfisher were present.

#### Adjacent habitats

To the right is improved grassland. To the left upstream there is a short stretch of scrubby woodland on the track of the disused railway, this runs into a paddock of semi-improved grassland fringed with bracken, bramble and tall herbaceous species, providing excellent potential otter habitat. Below this for the rest of the section, the railway once again runs adjacent to the river, it has developed into mixed deciduous woodland.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: Adjacent habitat to the left. 4: Otter hover.

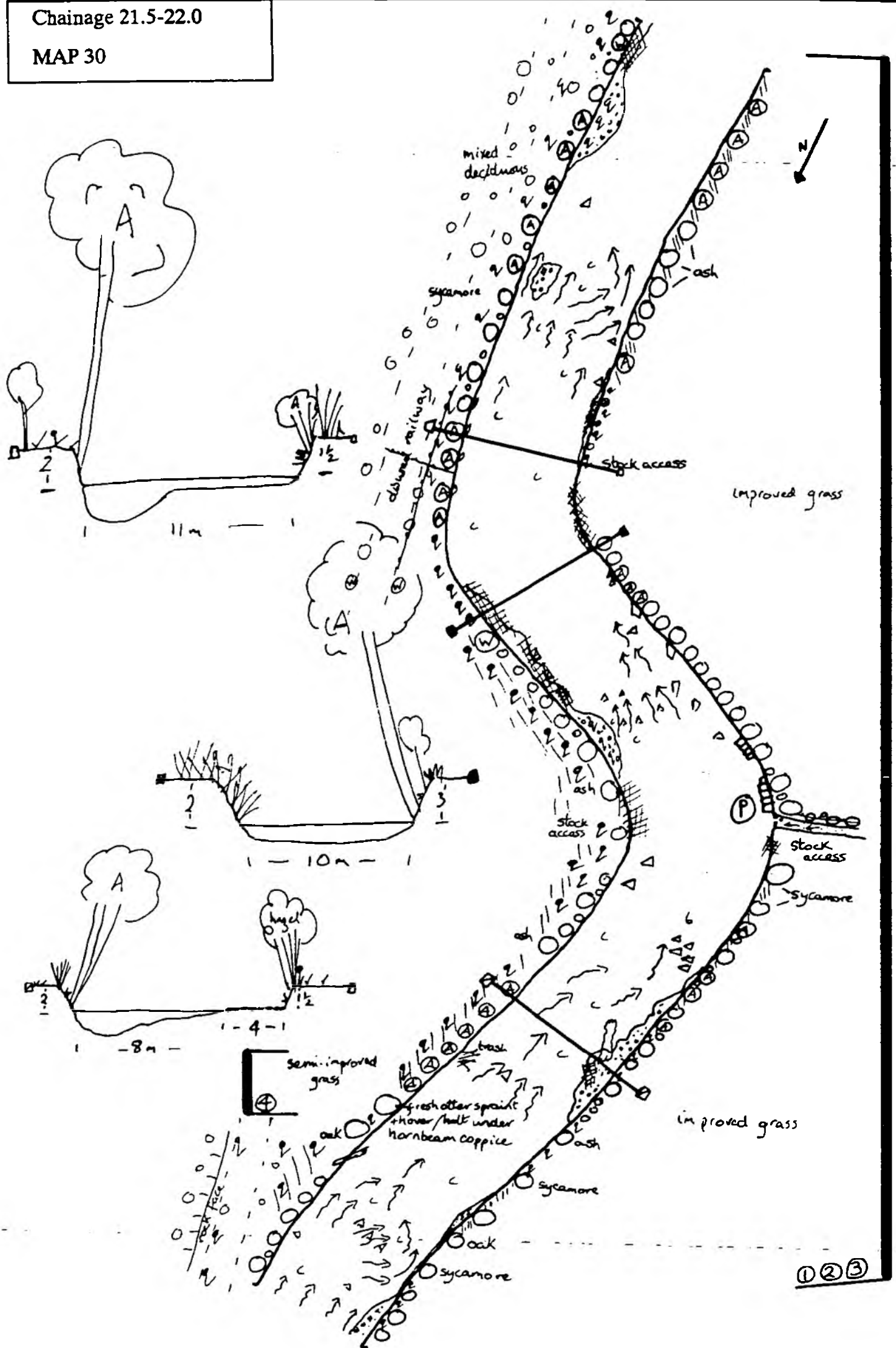
#### Summary

A heavily treed section of high wildlife value which has been lightly managed for fishing.

#### Management

Apart from selective rotational coppicing of the bankside tree cover, the section should be left as undisturbed as possible.





Map 31 Chainage 22.0-22.5 Grid ref: SX 8425 8252-8425 8298

A quiet section with dense bankside tree cover.

#### Banksides

2-4m sandy loam on cobble aggregate or bedrock. In many places steep to vertical. Generally dense tree cover comprising old tall coppice of alder and sycamore with standards of oak and ash. To the right downstream there is an understorey of hazel, bramble and bracken. At the far upstream end there is a stretch devoid of tree cover, with dense ground cover of bracken, bramble and tall herbaceous/ grasses, there are a few other places where tree cover is sparse allowing good light penetration. To the left the ground cover is largely of bracken. There are a number of large standards of oak and sycamore but also ash, beech and birch.

#### Channel

7-11m of varied flow pattern. Substrate mostly cobbles with some silt and sand. A small stream enters from the right upstream. Many trees have their roots in the water. At the upstream end there is a patch of water crowfoot. Canopy closure rarely complete allowing some willow moss to develop. There was much evidence of recent otter activity, grey wagtail, dipper and kingfisher were present.

#### Adjacent habitats

Upstream to the right is an old quarry waste heap with low trees and scrub. This gives way to a small patch of mixed deciduous, bounded by the road and then to arable recently sown with grass. To the left upstream there is arable, this gives way to a large area of semi-improved rough grassland with much bracken round the edges and patches in the centre. Downstream to the left the disused railway runs close to the river, this area is of dense mixed deciduous scrub.

#### Key sites

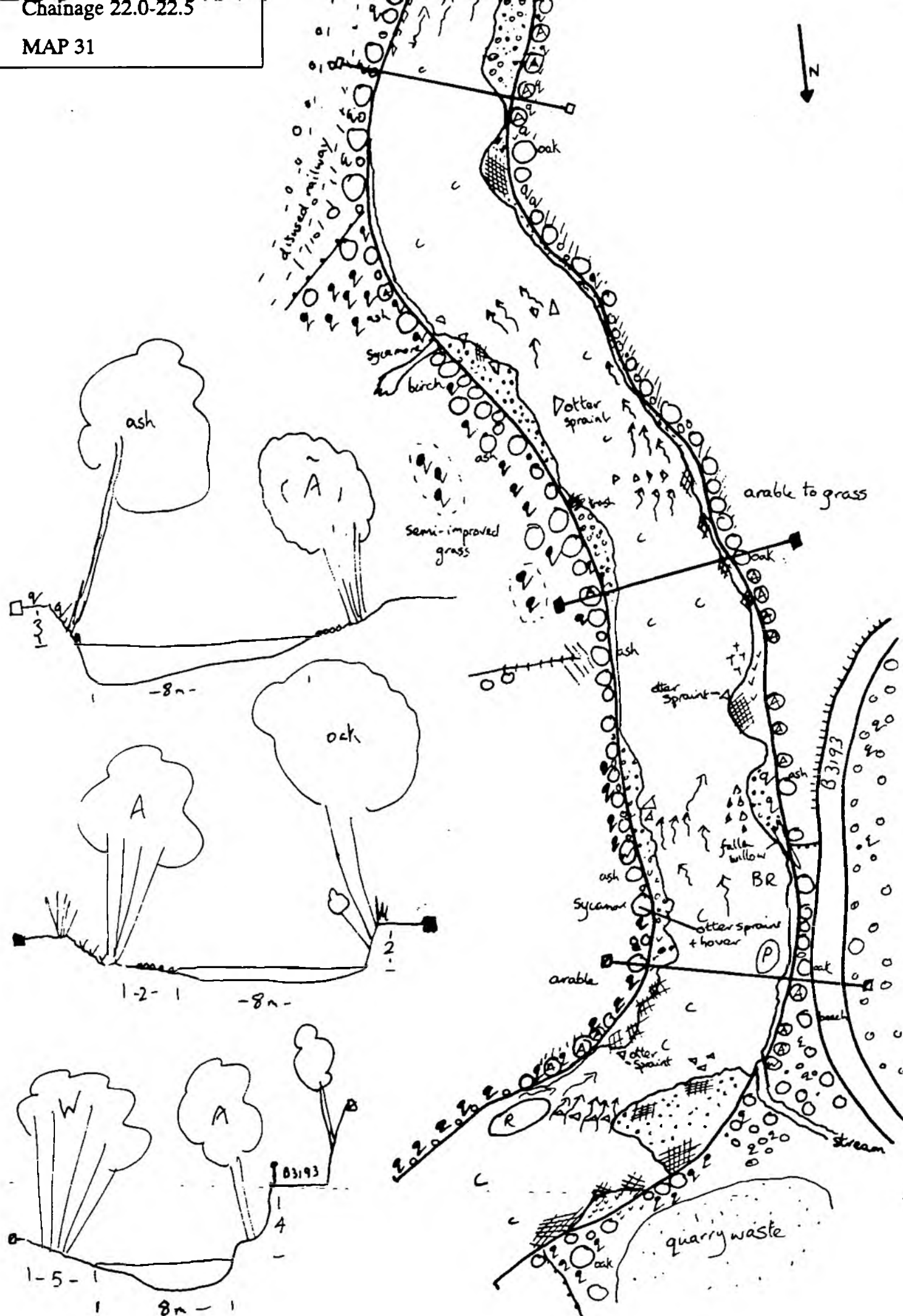
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Otter hover. 4,5: Adjacent habitat.

#### Summary

A quiet section of high wildlife value, with good bankside tree cover and lush growth on the margins, of importance to otters.

#### Management

Selective rotational coppicing of bankside tree cover. Fencing of banks to prevent stock access where necessary. The adjacent habitat downstream to the left should if possible be allowed to revert to bracken and scrub, it is of no agricultural value whilst being of great potential value to otters.



Map 32 Chainage 22.5-23.0 Grid ref: SX 8425 8298-8444 8342

Section with a number of large standards.

### Banksides

1-2m sandy loam on cobble aggregate. Moderate to heavy tree cover on both sides. To the left comprising mainly alder with sycamore and oak and a typical shaded woodland ground flora, except at the downstream end where there is a dense ground cover of tall ruderals, bramble and bracken. To the right the tree cover upstream is dense coppice alder, sycamore, ash, and oak with an understorey of bramble, hawthorn and blackthorn. It is in places heavily overgrazed revealing bare soil. At the midpoint there are four massive oak standards, followed downstream by mixed aged coppice, alder, willow and sycamore with standards. Ground cover mostly bramble and tall herbaceous species.

### Channel

6-12m of varied flow pattern from riffles and pools to deep slack water. Substrate generally cobbles and boulders. In the middle there is an eroded section of bank to the left, which has created a small island, a small stream enters from the left at this point. Canopy closure is rarely complete allowing good light access and growth of willow moss. Although no evidence of otters was found, it should be noted that due to the depth of the water it was not possible to examine much of the bankside. There are numerous old coppice stools and eroded tree roots providing excellent potential otter cover on this section.

### Adjacent habitats

To the right is arable and improved grassland. To the left a disused railway runs adjacent to the river for much of its length, it has reverted to mixed deciduous woodland with a number of large oak standards. At the downstream end there is arable.

### Key sites

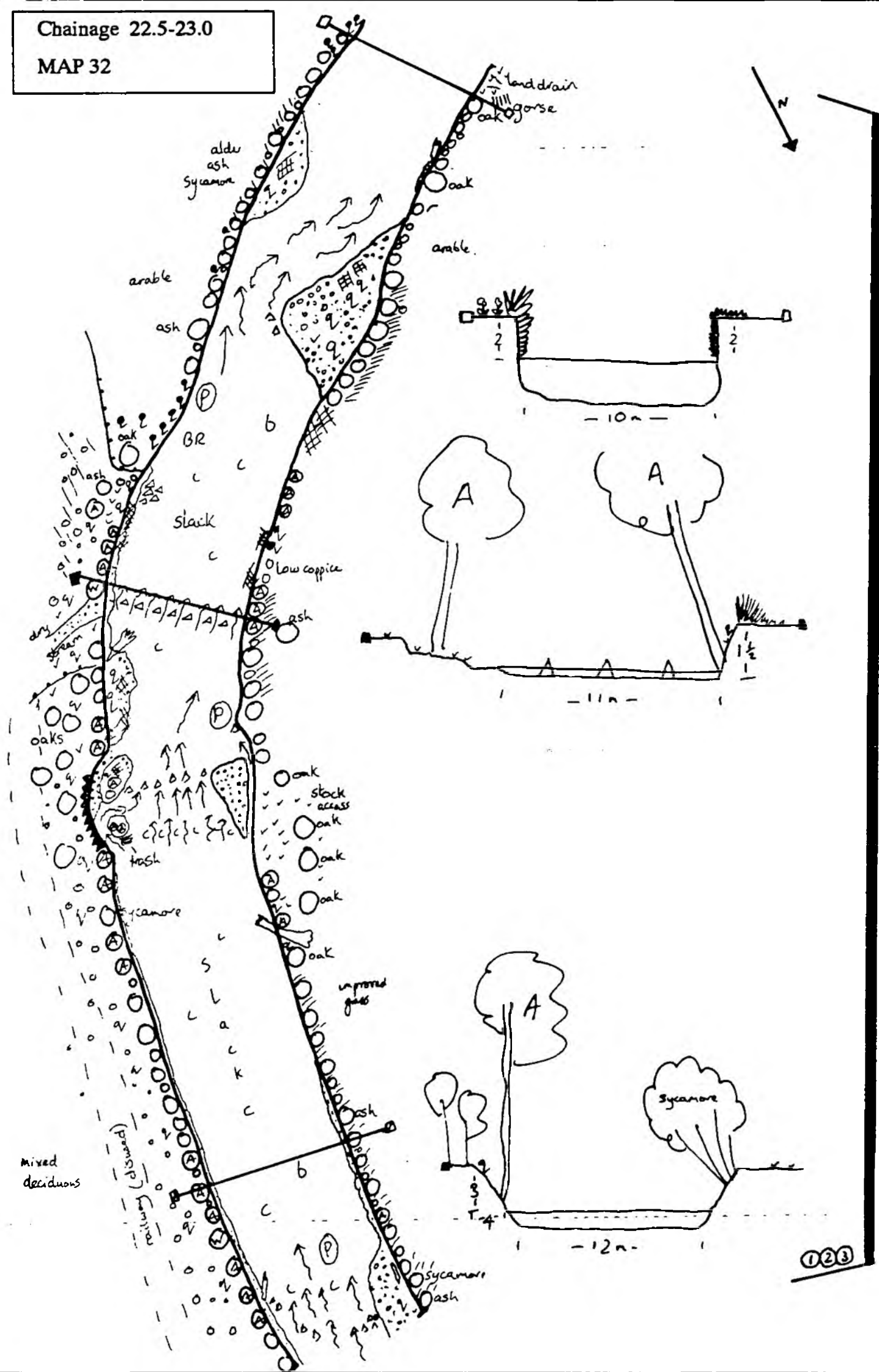
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: Adjacent woodland.

### Summary

A section of generally high wildlife value that could be further improved if managed correctly .

### Management

The channel should be left undisturbed. The age structure of the trees is generally old and uniform, both banksides require selective rotational coppicing. The right bank should be fenced to prevent stock access.



Map 33 Chainage 23.0-23.5 Grid ref: SX 8444 8342-8439 8391

Section of heavy bankside tree cover running south through pasture.

#### Banksides

2-3m sandy loam on cobble aggregate with some bedrock. For the most part tree cover is heavy, the exceptions being two stretches where the coppice is kept low for fishing. Banks are generally steep to vertical. To the right tree cover is complete along the entire section comprising alder, oak, ash and sycamore coppice with a few standards and an understorey of hazel and bramble. To the left the two sections managed for fishing have a dense cover of bracken, bramble and grasses, otherwise the tree cover is similar to that on the right bank. Downstream to the right there has been some grazing by stock.

#### Channel

8-13m with a varied flow pattern, substrate of cobbles and boulders with some bedrock. Margins are narrow, of cobbles with small patches of sand. Canopy closure is rarely complete allowing good light access and subsequent growth of willow moss on the cobbles and rocks. There was evidence of recent otter activity, grey wagtail and dipper were present.

#### Adjacent habitats

For the most part improved grassland. To the left a bridle path runs adjacent to the river for much of the section. The fields to the left are used for touring caravans. Downstream to the left there is a small patch of deciduous woodland. To the right in the middle section the road (B3193) approaches close to the river and there is a short stretch of wood between, the far side of the road is also wooded.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banks.  
3,4: Adjacent habitat.

#### Summary

A well treed section, generally secluded with a good balance between amenity/ fishing and wildlife interests.

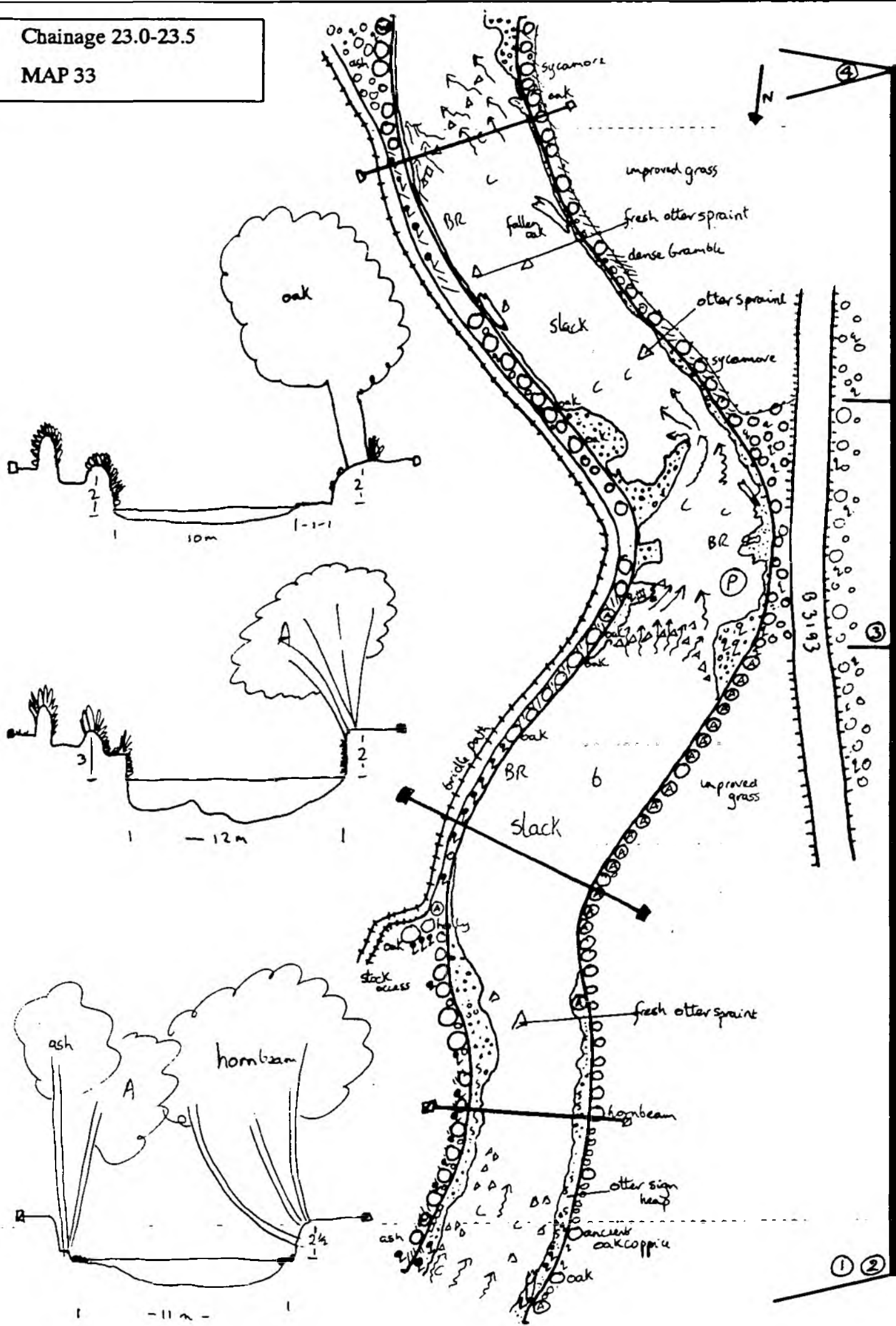
#### Management

Selective rotational coppicing of the bankside trees, care being taken with the ancient coppice stools that remain. Downstream to the right the bankside fencing needs renewing.



Chainage 23.0-23.5

MAP 33



Map 34 Chainage 23.5-24.0 Grid ref: SX 8439 8391-8417 8434

Section running south bisected by Spara Bridge.

#### Banksides

2-3m sandy loam on bedrock or cobble aggregate. For the most part both banks have dense tree cover. To the right upstream of the bridge there is a short stretch of mown grass and dense herbaceous waterside plants, above this are tall overgrown coppice and standards, comprising oak, alder, beech and sycamore. In places the bank becomes a retaining wall for the road. To the left the coppice is generally lower with steep shaded banks, here the field edge has a dense scrubby understorey. Downstream of the bridge both sides have a dense cover of mixed coppice with standards, some of the coppice stools are very old. On the field side there is a 'wall' of bramble, hazel, blackthorn, and bracken, created by the use of flail hedge cutters.

#### Channel

9-12m, primarily slacks and riffle, for the most part shallow (<1m). Substrate cobbles and boulders with some silt and sand. Upstream of the bridge two leats enter from the left and a drain from the right. Downstream a stream (dry) enters from the right. There is a low rock weir just below the bridge. Canopy closure is approximately 40%, the stream bed being generally shaded. Dipper and grey wagtail were present.

#### Adjacent habitats

Upstream of the bridge to the right is the B3193 with a steep tree clad slope on the other side, this forms part of Spara Bridge SSSI (geological). The rest is, with the exception of a small orchard and a strip of mown grass, improved grassland. Downstream to the left the field is used for touring caravans.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: Adjacent habitat (SSSI status).

#### Summary

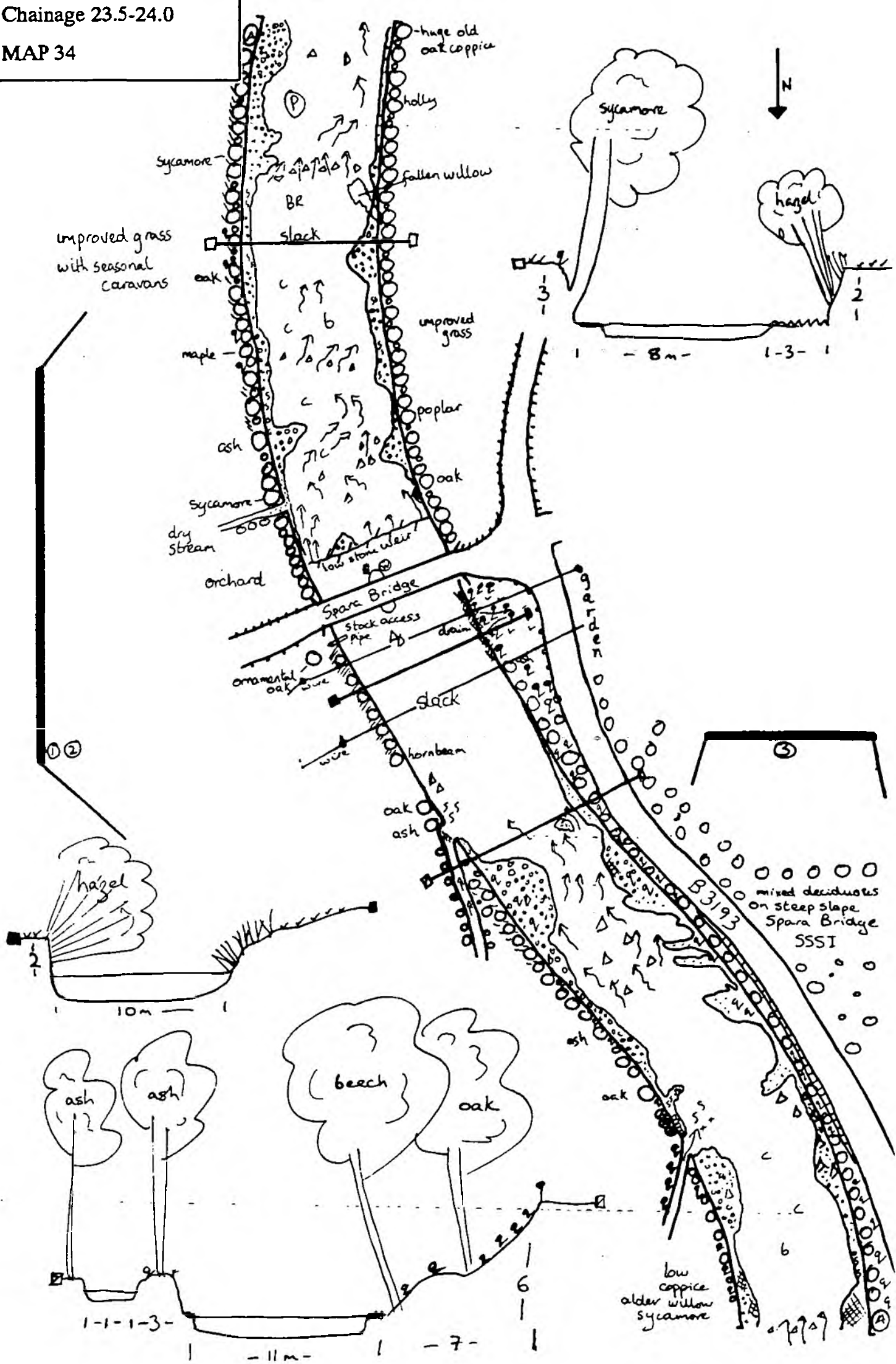
A shaded section of generally good wildlife value, which would benefit from coppicing to create low cover and to open up the stream bed to light.

#### Management

Selective rotational coppicing of the bankside trees, taking care to preserve the ancient coppice stools. Fencing of banksides as necessary to restrict stock access.

Chainage 23.5-24.0

MAP 34



Map 35 Chainage 24.0-24.5 Grid ref: SX 8417 8434-8416 8482

A gently winding section bisected by a weir.

#### Banksides

1-3m sandy loam on cobble aggregate or bedrock, in places vertical and covered in dense herbaceous ground cover. Above the weir to the right tree cover is continuous comprising mainly alder. To the left upstream there is a short stretch of alder followed by a long stretch devoid of trees, here the bankside and margins comprise dense herbaceous waterside species, tall grasses and bracken. Below the weir both banksides are treed, to the left low (up to 6m) mixed coppice of alder, ash, sycamore, willow and hazel; to the right the coppice is much taller with a greater proportion of alder. Downstream to the left there is a short stretch of vertical earth cliff that is a probable kingfisher nesting site.

#### Channel

5-15m wide, above the weir deep (1+m) slack water, below a series of riffles and rapids. Substrate above the weir silt and sand, below cobbles and bedrock with some gravel and sand. A long weir with salmon ladder bisects the section at the midpoint, here a mill leat leaves to the left, further downstream a dry leat rejoins from the left. Above the weir a bridge crosses the river giving access to Ryecroft Quarry. Grey wagtail, dipper and kingfisher were present as were a large number of dragonflies, there was evidence of otter.

#### Adjacent habitats

Upstream of the weir to the right is the B3193 with a narrow margin of trees opening out into improved grassland, to the left is the now disused Ryecroft Quarry comprising disturbed ground and rocky waste, the rest is scrub trees and bracken. The quarry which falls just outside of the survey area has SSSI status. To the left downstream is improved grassland, to the right there is a strip of mixed deciduous trees and the road running parallel. On the far side of the road the ground rises steeply with bare rock and tree cover part of this falls within the Spira Bridge SSSI (geological).

#### Key sites

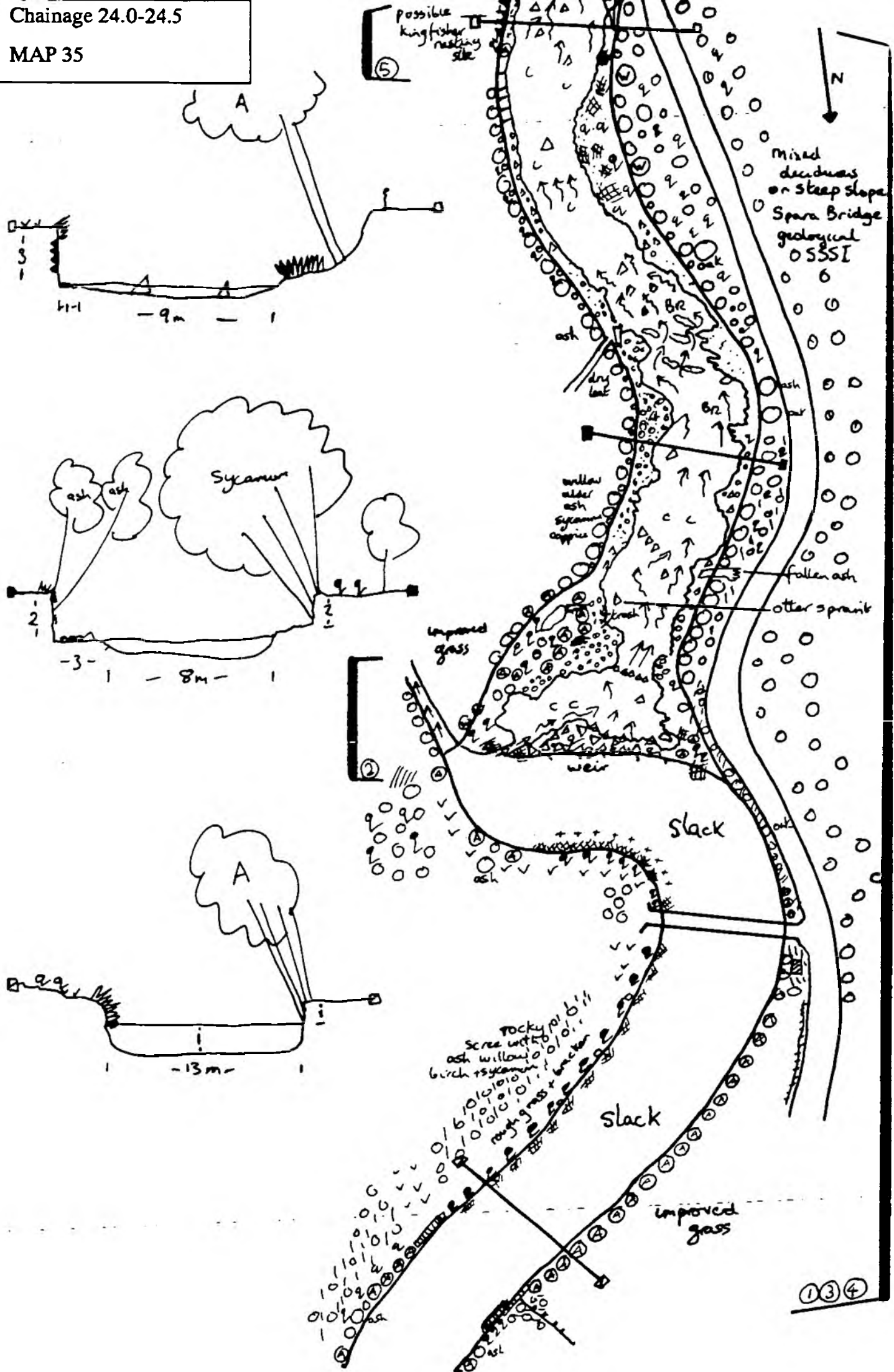
1: The channel, its substrates and flow pattern. 2: The weir. 3: Both banksides. 4: Adjacent habitat to left above and to right below weir. 5: Kingfisher nest site.

#### Summary

A section of reasonable wildlife value, upstream of the weir it is managed for fishing. The proximity of the road causes considerable disturbance.

#### Management

The weir should be left undisturbed as should the adjacent key sites. Selective rotational coppicing of the bankside trees.



Map 36 Chainage 24.5-25.0 Grid ref: SX 8416 8482-8418 8525

Section of slack water and dense bankside tree cover.

#### Banksides

2-3m sandy loam. Both banks have tall dense tree cover comprising largely overgrown coppice. They are in most respects identical, differing only in minor detail. Downstream comprising mostly of alder, moving upstream this gives way to a mixture including sycamore, ash and oak. To the right there is in places an understorey of coppice hazel, hawthorn and spindle. To the left upstream is a stretch of low (5m) alder coppice. The banksides to the right have been heavily grazed, removing most of the herbaceous vegetation. To the left the upstream field has been fenced and the herbaceous cover is dense. Further down the bank is vertical, precluding stock access, here there is lush growth of bramble and other tall herbaceous species. In the next field overgrazing has reduced the ground cover in places to bare earth.

#### Channel

10-13m, substrate mostly of cobbles with silt and sand. Margins, if present, narrow and of cobbles. Most of the water is deep (1m+) and slack, the exception being the stretches of riffle below the two low rock weirs.

#### Adjacent habitats

Improved pasture, apart from a small low bank with scrub in the middle of the section adjacent to the right bank and to the left downstream a steeply sloping area of quarry waste covered in small trees and scrub.

#### Key sites

1: Both banksides. 2,3: Adjacent habitat.

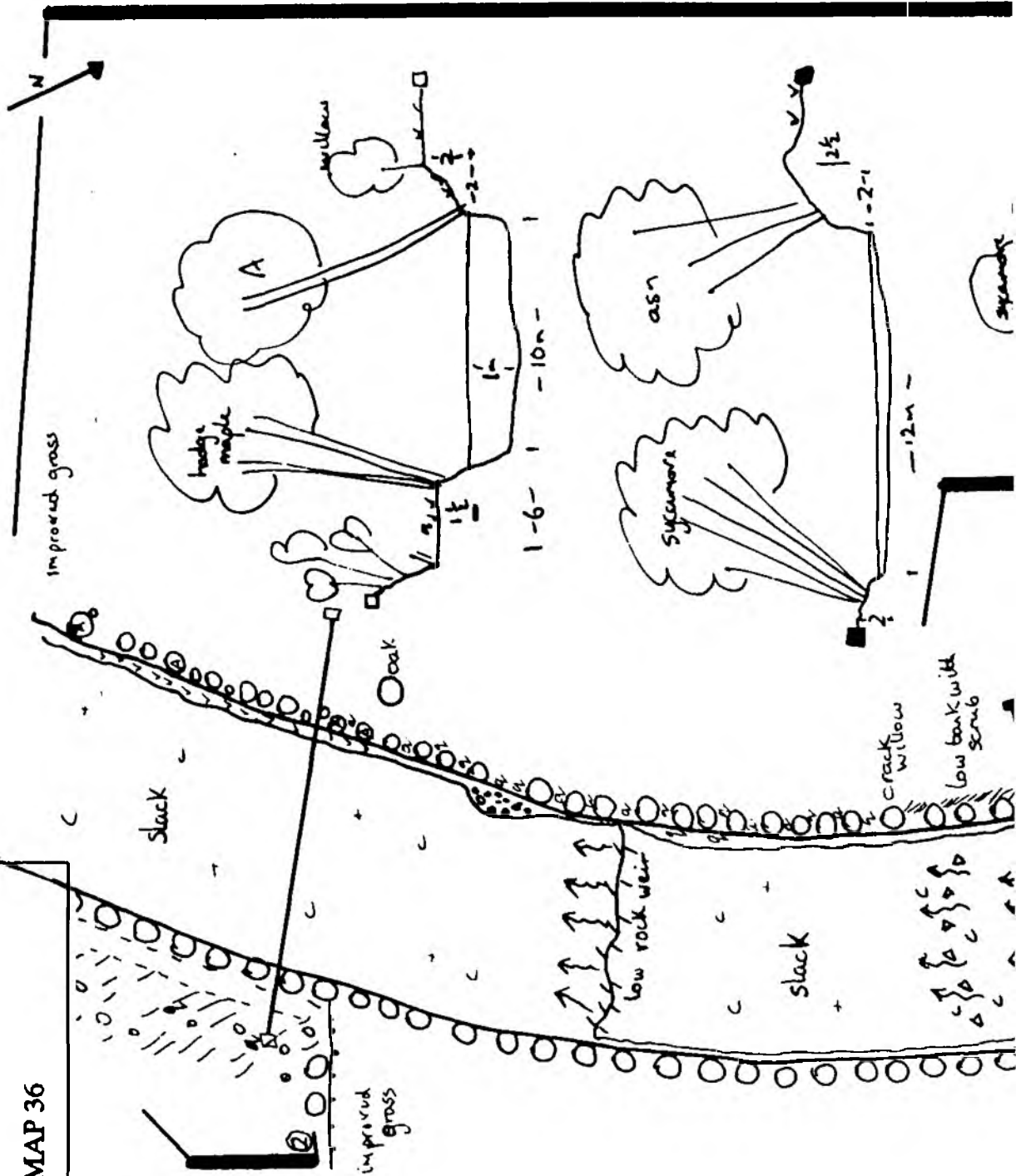
#### Summary

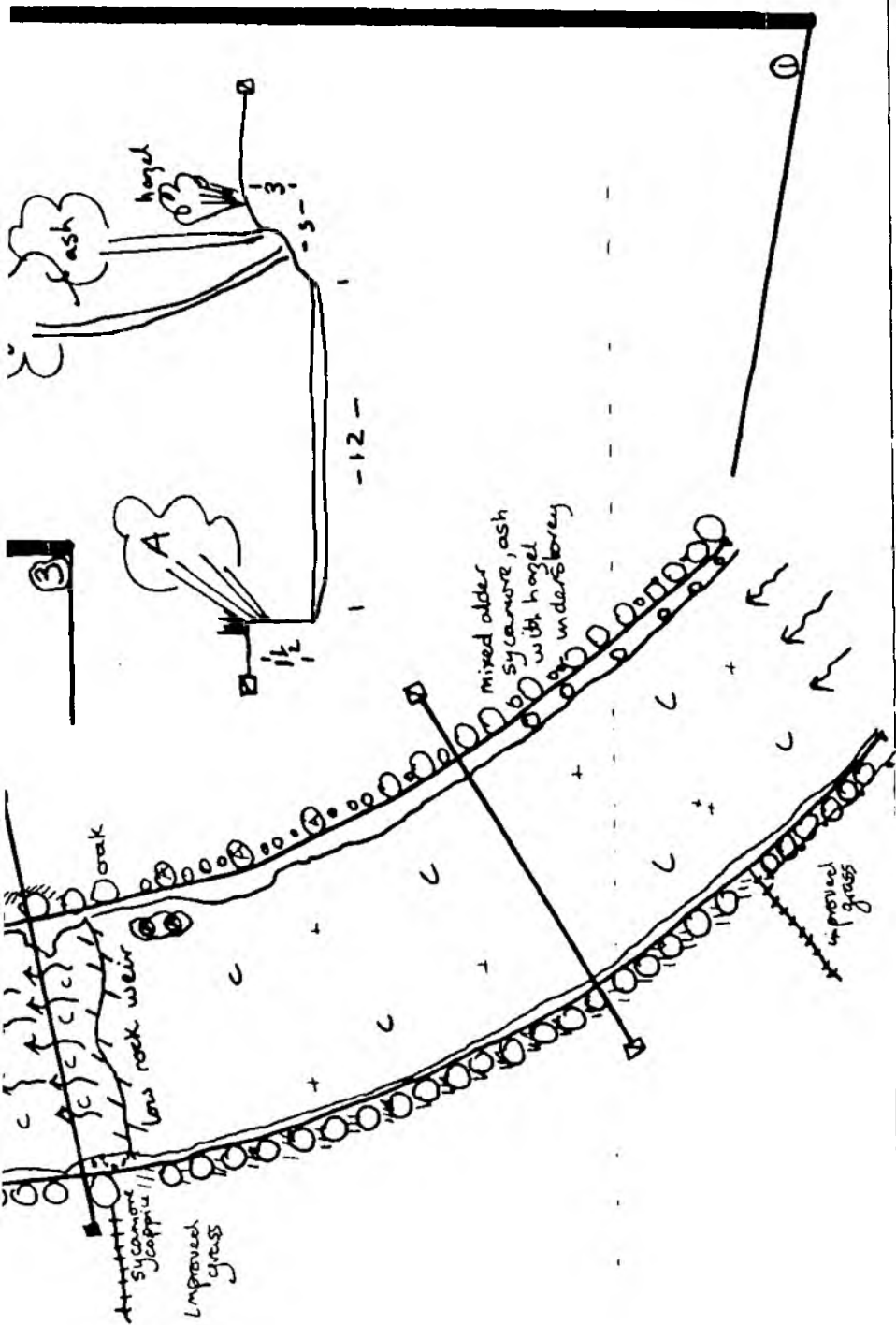
A section of slack water with dense bankside tree cover of overgrown coppice, at present of relatively low wildlife value. Creative management could easily improve the wildlife potential of this stretch.

#### Management

Rotational coppicing of sections of the bankside trees is urgently required to let in more light and to provide waterside feeding and nesting habitat for bird and insect life. The banksides on both sides and the adjacent scrub to the right should be fenced to restrict stock access.



**MAP 36**



Map 37 Chainage 25.0-25.5 Grid ref: SX 8418 8525-8412 8569

Section with densely treed banks and varied flow pattern.

#### Banksides

2m, sandy loam on bedrock or cobble aggregate. The banks have for the most part dense tree cover, varying from low multi-stemmed coppice to tall overgrown coppice with a few standards. Approximately 50% of the trees comprise alder, with willow, oak, ash and sycamore. To the left the majority of the trees are alder and hazel coppice, there are several short sections with little or no tree cover, much of the coppice is less than 6m tall. On the right bank the coppice is generally taller and more varied, there are a few standards. Upstream the banksides are mostly vertical and overhung by vegetation, to the right the majority of the bank is fenced, to the left in places stock have access, here the vegetation is well grazed. Where the small stream enters from the right, the bank becomes sheer and up to 6m tall.

#### Channel

6-13m with a varied flow pattern, substrate mostly of cobbles. A small stream enters from the right on the bend as does a discharge pipe from the sewage treatment plant. An old railway bridge crosses the river at the downstream end and a large amount of trash including whole trees has collected against the piers. There is a small island here. Upstream there are several trees that have fallen into the river, some continuing to grow. Canopy closure is rare, the river bed being generally well lit. Dipper and grey wagtail were present, otter signs were found.

#### Adjacent habitats

This is largely improved grassland, with the exception of the patch of hazel coppice with adjacent scrub upstream to the right of the bridge. To the right on the outside of the fence there is a low bank with a remnant hawthorn hedge that is grazed.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3: The bridge. 4: The adjacent habitat.

#### Summary

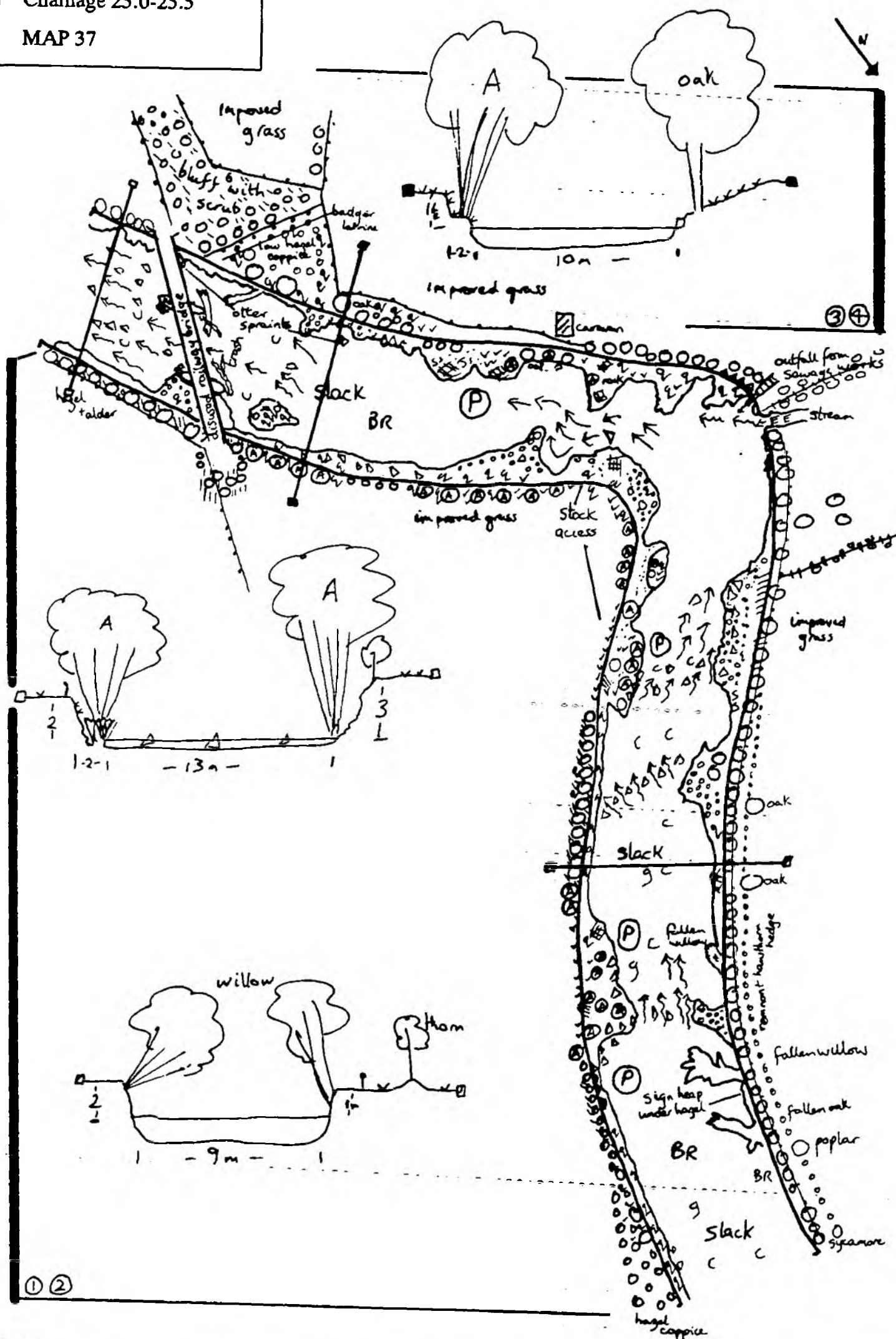
A secluded section with good tree cover, of high wildlife value. It is lightly managed for fishing.

#### Management

Continue with selective rotational coppicing of the bankside trees. Inclusion of the remnant hedge to the right within the bankside fence. The bridge should be left undisturbed, it offers good nesting sites for both dipper and grey wagtail.

Chainage 25.0-25.5

MAP 37



Map 38 Chainage 25.5-26.0 Grid ref: SX 8412 8569-8402 8615

A secluded shaded section with adjacent disused railway.

#### Banksides

2-4m sandy loam on bedrock or cobble aggregate. Both banksides have heavy tree cover, which in places is more than one tree wide, apart from the upstream left bank which is seriously overgrazed, the rest of the banks are fenced, preventing stock access. Trees are alder with sycamore, oak, ash, and beech often with a scrubby understorey of hazel, blackthorn and hawthorn. Ground cover is for the most part typical shaded woodland species. There are a number of huge standard oaks on this section. Upstream to the right there is an otter hover/holt under the roots of an ancient beech coppice.

#### Channel

6-12m with a varied flow pattern of riffles and slacks and a large pool at the upstream end. Substrate is predominantly bedrock with cobbles and some gravel. Margins often bedrock or cobbles, many trees having their roots in the water. Canopy closure is complete for the greater part of this section. Dipper, kingfisher and grey wagtail were present.

#### Adjacent habitats

To the left upstream is improved grassland, downstream of this the disused railway adjoins the river; it has become overgrown with scrub, blackthorn and hawthorn competing with a large number of tall saplings. To the right is entirely improved grassland except for a small patch upstream of light bramble and overgrown field. To the right the margin of trees is in places sufficiently wide to be considered adjacent habitat, there are patches of dense scrub cover here.

#### Key sites

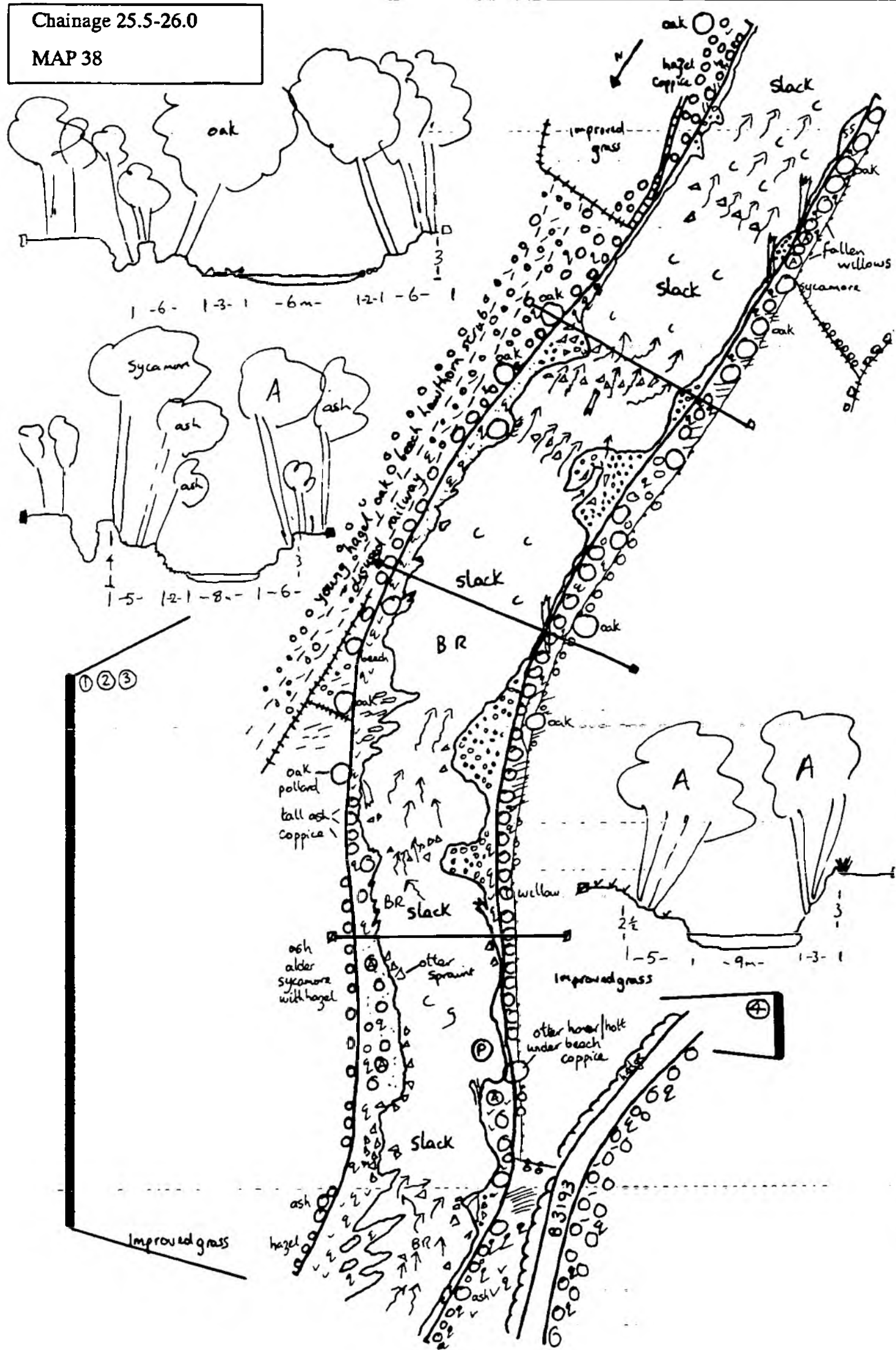
1: Both banksides. 2: The channel, its substrates and flow pattern. 3: The adjacent habitat. 4: Otter hover/holt.

#### Summary

A heavily shaded and secluded section of high wildlife value, requiring careful management to produce patches of young coppice.

#### Management

The right bank requires rotational re-coppicing to improve low cover and light. The left bank should be lightly coppiced and fenced where necessary to exclude stock. At the present time the coppice is mostly overgrown and of a uniform age. The adjacent scrub to the left should be left undisturbed.





Map 39 Chainage 26.0-26.5 Grid ref: SX 8402 8615-8392 8662

Section with continuous tree cover and varied flow pattern.

#### Banksides

2-4m sandy loam on bedrock and cobble aggregate. Above the bridge on both sides there is tall mature coppice sycamore, alder and beech, banks are steep often bare with exposed roots. Below the bridge to the right are a number of very large standards comprising beech, willow, oak and sycamore, this changes to a steep slope covered mostly with oak. Downstream of this are well spaced standards, mostly selected from coppice, with a dense cover of fresh young coppice arising from old stools, competing with bramble, thistle and other tall herbaceous species to create an impenetrable barrier. This area is ideal habitat for otters. To the left downstream of the bridge is well spaced mixed coppice with many exposed roots, this changes below the garden to standards mainly oak and ash with an understorey of hazel coppice. In this section the bank has been severely overgrazed, leaving short cropped grass and ruderals.

#### Channel

5-15m with a varied flow pattern including several deep pools. Substrate varies from thick mud on the bend, to bedrock. Margins in the downstream section are largely bedrock with patches of sand and gravel. Above the road bridge canopy closure is complete, below the bridge due to the extensive management light access is good, allowing willow moss to develop on the rocks. Dipper, grey wagtail and kingfisher were present, as was fresh evidence of otter.

#### Adjacent habitats

These are largely improved grassland with the exception of three gardens, a stretch of steep wooded ground between the river and the road to the right, below this there is a narrow field of semi-improved grassland that is reverting to rushes and marshy herbaceous species due to impeded drainage.

#### Key sites

1: The channel, its substrates and flow pattern. 2: Both banksides. 3: The adjacent habitat.

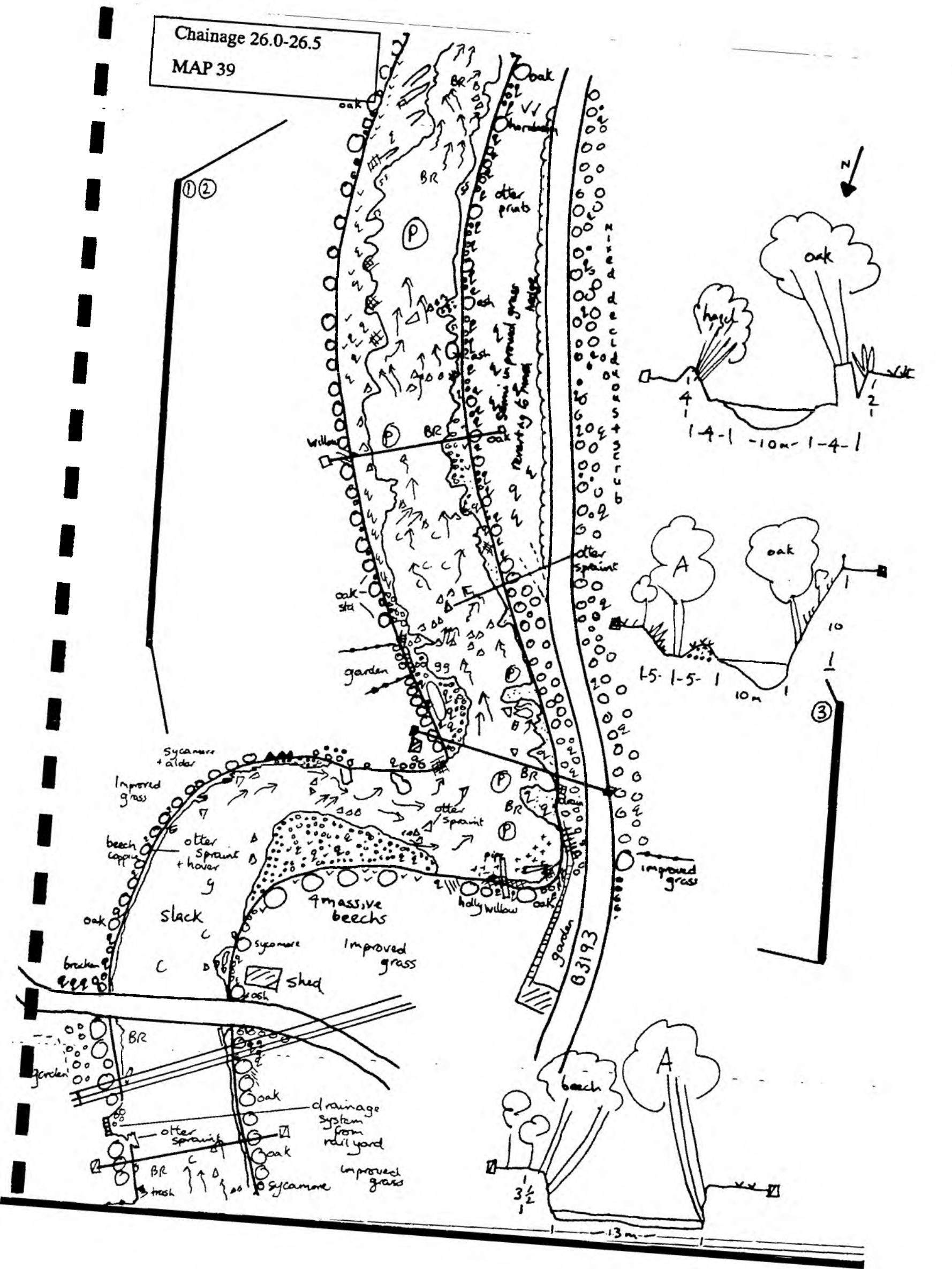
#### Summary

This is a section of high wildlife value due to the varied flow pattern and the age structure of the bankside tree cover. Fishing and wildlife interests are both well served.

#### Management

Upstream of the bridge the trees require re-coppicing. Downstream the management should continue with the rotational coppicing that exists at present. The bankside to the left should be fenced to prevent stock access.

MAP 39



Map 40 Chainage 26.5-27.0 Grid ref: SX 8392 8662-8374 8708

A straight section running parallel and adjacent to a disused railway line.

### Banksides

2-4m sandy loam on bedrock and cobble aggregate. Heavily wooded on both banks with tall overgrown coppice, a large proportion of which is alder, notably upstream. Banks are mostly steep with many exposed roots. There are a few large standards of oak and sycamore. The right bank for much of its length is heavily overgrazed, leaving light scrubby under-growth and much bare soil. To the left the ground flora consists of shaded woodland species such as ivy, greater woodrush and ferns. Continuing remnants of a retaining stone wall are still visible in a few places.

### Channel

9-13m mostly of shallow slack and riffle. Substrate of cobbles with some bedrock. A mill leat enters from the right by the nursery, and further downstream by the footbridge a small brook joins the river. For the entire length there is almost complete canopy closure. Dipper, kingfisher and grey wagtail were present, there was evidence of otter.

### Adjacent habitats

To the right upstream there is a shrub nursery, this ends in a small conifer plantation, below this is improved pasture. To the left upstream the path of a disused railway line runs parallel to the river, this has over-grown to become mixed deciduous woodland. Below this is an aviary complex. Beyond is overgrown scrub and an old railway yard with scrubby trees and ruderal weeds.

### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern. 3: The adjacent woodland.

### Summary

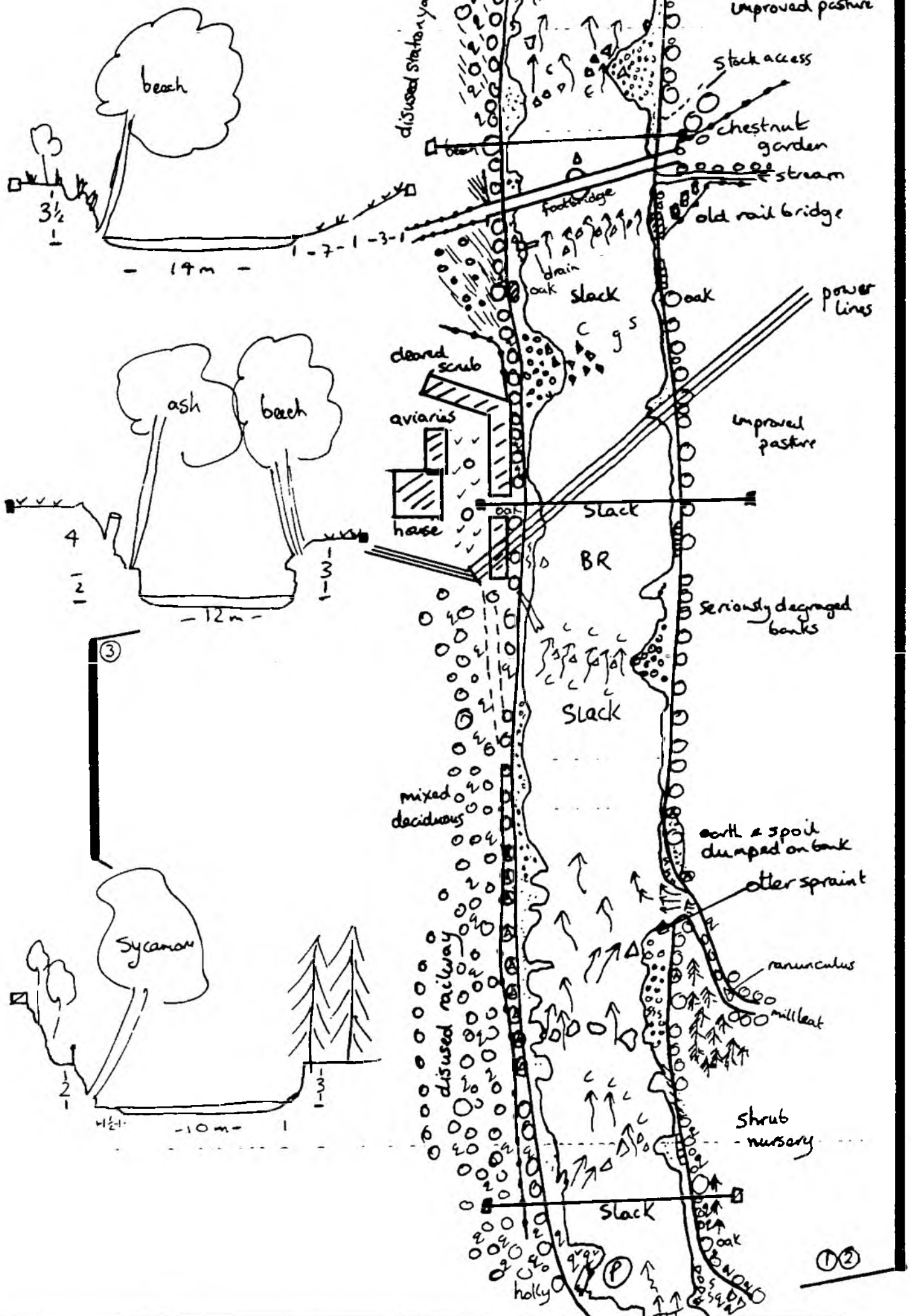
A straight, heavily shaded section of mature trees, with the channel primarily of slacks and riffles.

### Management

The banks, especially to the right require extensive re-coppicing to improve light and provide low cover. The right bank requires fencing to restrict stock to watering points only. The adjacent wood to the left should be left undisturbed.

Chainage 26.5-27.0

MAP 40



Map 41 Chainage 27.0-27.5 Grid ref: SX 8374 8708-8326 8720

A winding shaded section

### Banksides

2-3m sandy loam on bedrock and cobble aggregate. To the right above the road bridge the bank is lined by tall mixed deciduous coppice, below the bridge there is tall coppice overshadowed by a 10+m tall mixed evergreen hedge. In places where the light can penetrate there is dense herbaceous cover. Nursery waste has been dumped at the downstream end. Running along the base of the bank there are remnants of a man-made stone retaining wall, in places this has been washed away in others substantial sections remain. To the left above the road bridge there is a stretch devoid of tree cover, with grass and herbaceous cover. Below the bridge there is a dense cover of tall ancient coppice with extensive re-growth. There are few standards, Downstream to the left a large oak has fallen, opening up a section to the light. Many trees have exposed root systems.

### Channel

4-13m of varied flow pattern, mostly less than 1m deep. At the bridge there is a low weir with a large deep pool below it. Above the bridge a small (dry) stream enters from the left. Downstream of this canopy closure is to a large extent complete, this combined with the conifers to the right contrive to create a heavily shaded environment. Substrate is of bedrock and cobbles with margins often of bedrock, devoid of vegetative growth. Dipper and grey wagtail were present.

### Adjacent habitats

To the right upstream of the bridge there is an area of improved grassland, downstream there is a shrub nursery with a hedge of tall mixed conifers adjacent to the river. To the left above the bridge is improved pasture, whilst below is arable, with a small area of mixed woodland starting at the downstream end.

### Key sites

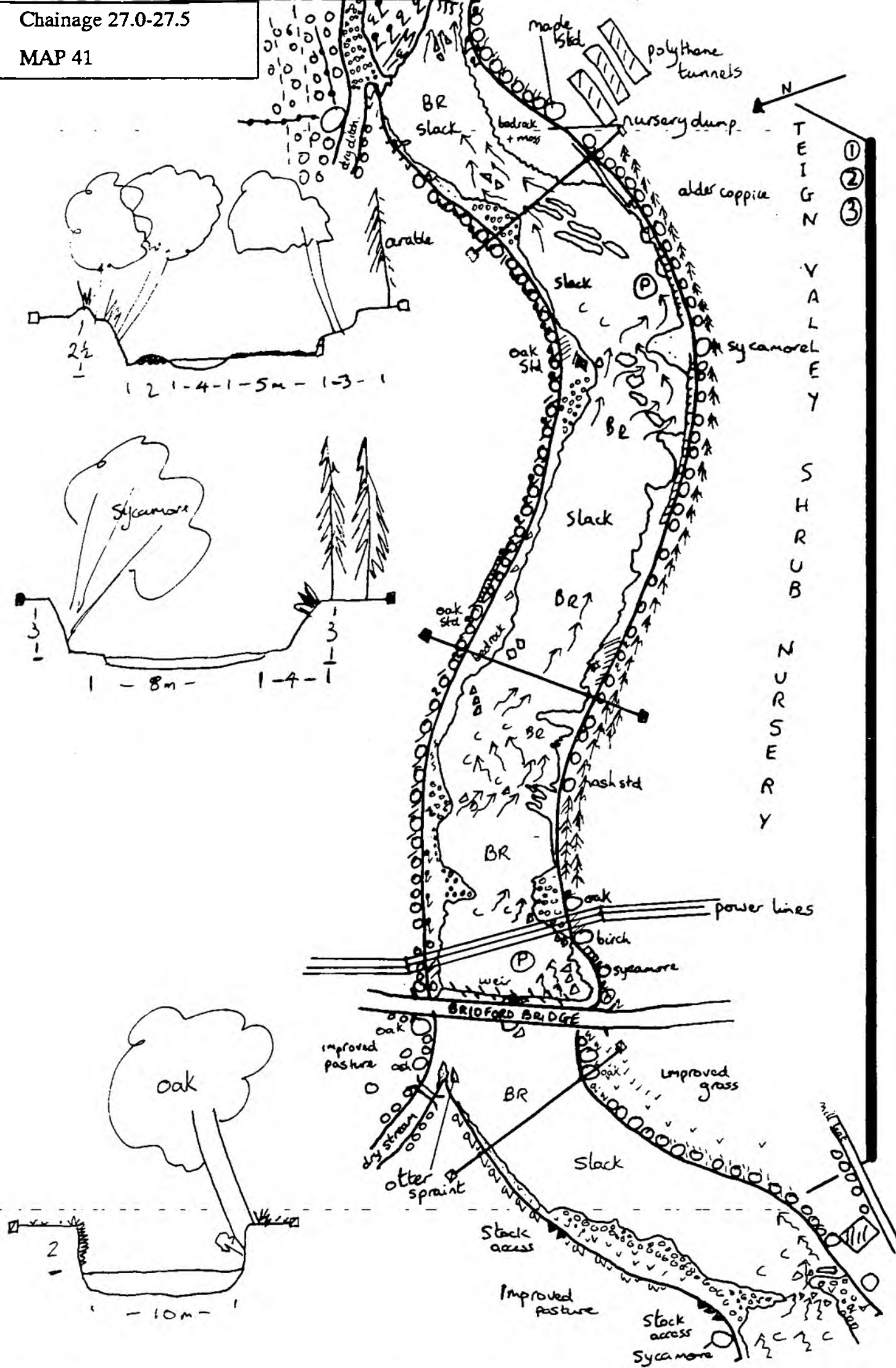
1,2: Both banksides, 3: The channel, its substrates and flow pattern.

### Summary

A largely heavily shaded section of river, which has a high wildlife potential.

### Management

Selective rotational coppicing of bankside tree cover. The nursery should be encouraged to remove the bankside conifers, these are no longer required as a wind brake and are detrimental to the light quality of the river. The dumping of nursery waste (potting compost and shrubs) must cease. Upstream to the left, the bank requires tree planting and fencing.





Map 42 Chainage 27.5-28.0 Grid ref: SX 8326 8720-8299 8759

A section of slack water ending just below Bridford weir

#### Banksides

Upstream 2-3m, reducing in places to 1m downstream. Sandy loam on cobble aggregate. To the left the bank is managed for fishing and is largely devoid of tree cover with a few old coppice oak and alder, and some low alder and older hazel coppice. Below the weir there are several taller alder coppice. Banks are mostly vertical with a dense cover of herbaceous species including willowherb, thistles and rough grasses. To the right there is continuous dense tree cover of old, tall coppice, the majority alder interspersed with a variety of deciduous species and a number of large oak standards. There is for a large part an understorey of scrub blackthorn, hazel and elder. By the weir to the right, the bank rises as a steep slope with old coppice and woodland understorey. Below the weir there is a small island with alder coppice. Two otter hovers were found.

#### Channel

10-12m mostly of slack water. Downstream there is a long diagonal weir with salmon ladder, a mill leat departs to the right, below the weir is a short stretch of riffle. A small stream enters from the right above the weir. In the slack the substrate appears to be silt and sand overlaying bedrock and cobble. Water depth is >1m throughout. The weir has several large patches of herbaceous vegetation on it providing excellent access and cover for small passerine birds. Evidence of otter was found, grey wagtail, dipper and kingfisher were present throughout.

#### Adjacent habitats

To the right is primarily improved grassland and arable with a small section of unimproved marshy land and a steep bank with mixed deciduous wood above the weir. To the left is improved grassland.

#### Key sites

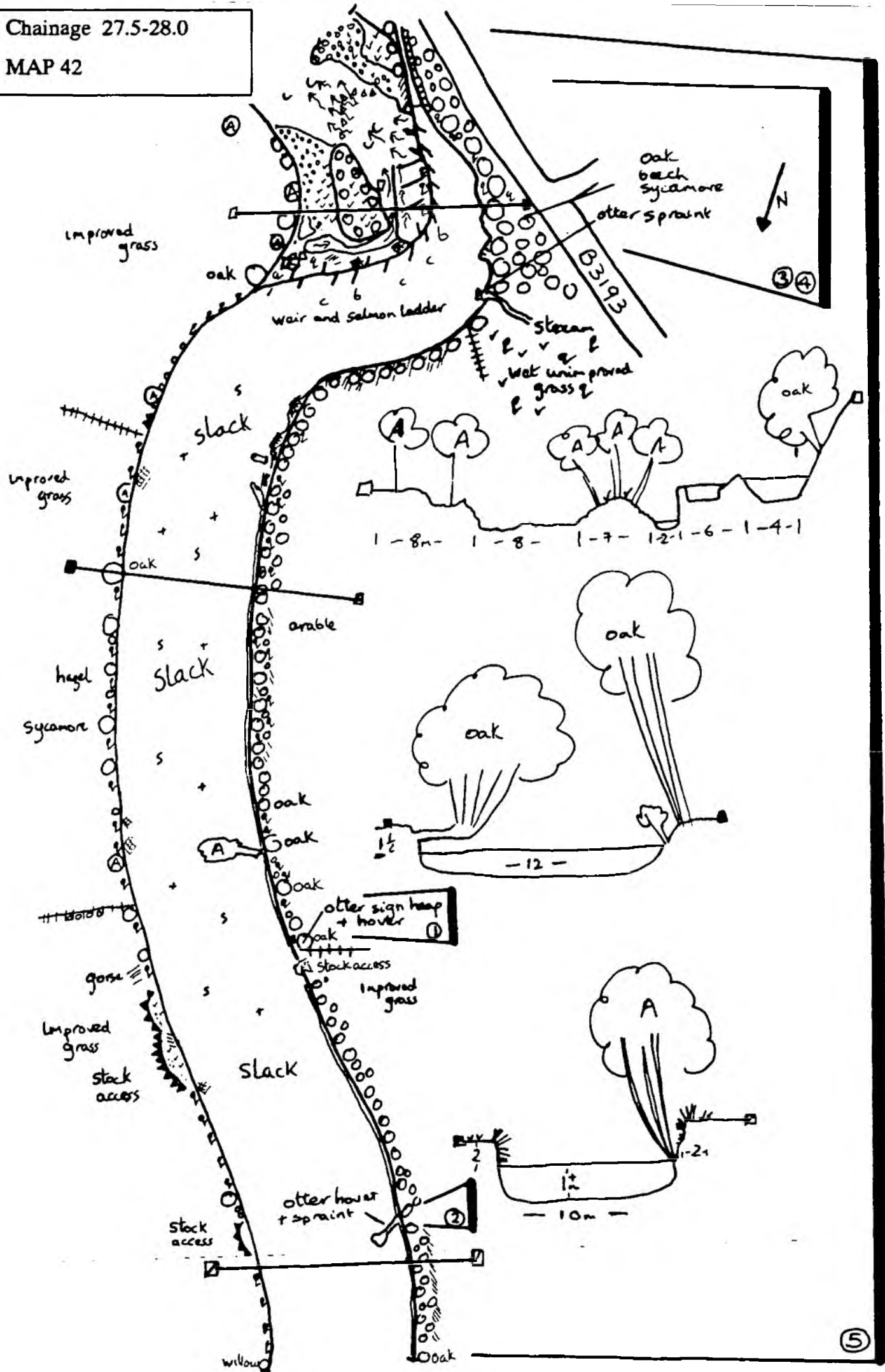
1,2: Otter hovers. 3: Weir and downstream channel. 4: Adjacent habitat. 5: Both banksides.

#### Summary

A section where wildlife and fishing interests are both served to good effect, care needs to be taken to keep human disturbance to a minimum.

#### Management

The weir and channel below it should be left undisturbed, attempts to clear the vegetation from the weir should be avoided if possible. On the left bank short sections of coppice should be encouraged to develop and stock access should be limited. To the right selective rotational coppicing is required, combined with fencing to prevent grazing.

**MAP 42**

Map 43 Chainage 28.0-28.5 Grid ref: SX 8299 8759- 8274 8799

Section with moderate bankside tree cover.

#### Banksides

2-4m sandy loam on bedrock. To the right there is dense tree cover of tall alder, oak & sycamore with some ash and hornbeam; much of it has an understorey of scrub (hazel and blackthorn). In places it has been severely overgrazed. To the right upstream, there is a short stretch devoid of trees with dense cover of tall herbaceous species; this changes to tall alder coppice and then to mixed deciduous, mostly of oak. In places the bank rises as rock out of the river for 1-3m. Downstream of this the vegetation changes to a varied mixture of dense ruderals and herbaceous species, including Indian balsam, Japanese knotweed, bramble and nettle; this in turn gives way to light coppice with oak standard and rough grass.

#### Channel

4-12m with a varied flow pattern of riffles through to deep slack at the downstream end. In places the water appears in excess of 2m deep. Substrate where visible is of bedrock and cobbles. The channel is well open to light and the trees have an open canopy structure. There was evidence of recent otter activity, dipper and grey wagtail were also present.

#### Adjacent habitats

To the right is improved grassland and arable. To the left upstream there is a short stretch of improved grassland, below this is a steep bank with mixed deciduous woodland, mostly of oak with an understorey of hawthorn and spindle. Below this is rough unimproved pasture with a large patch of mixed scrub and dense vegetation near the bank and further down a large area of impenetrable blackthorn scrub on a slope about 15m back from the river. This area contains excellent potential otter lying up cover.

#### Key sites

1: Both banksides. 2: The channel, its substrates and flow pattern.  
3: The adjacent habitat to the left.

#### Summary

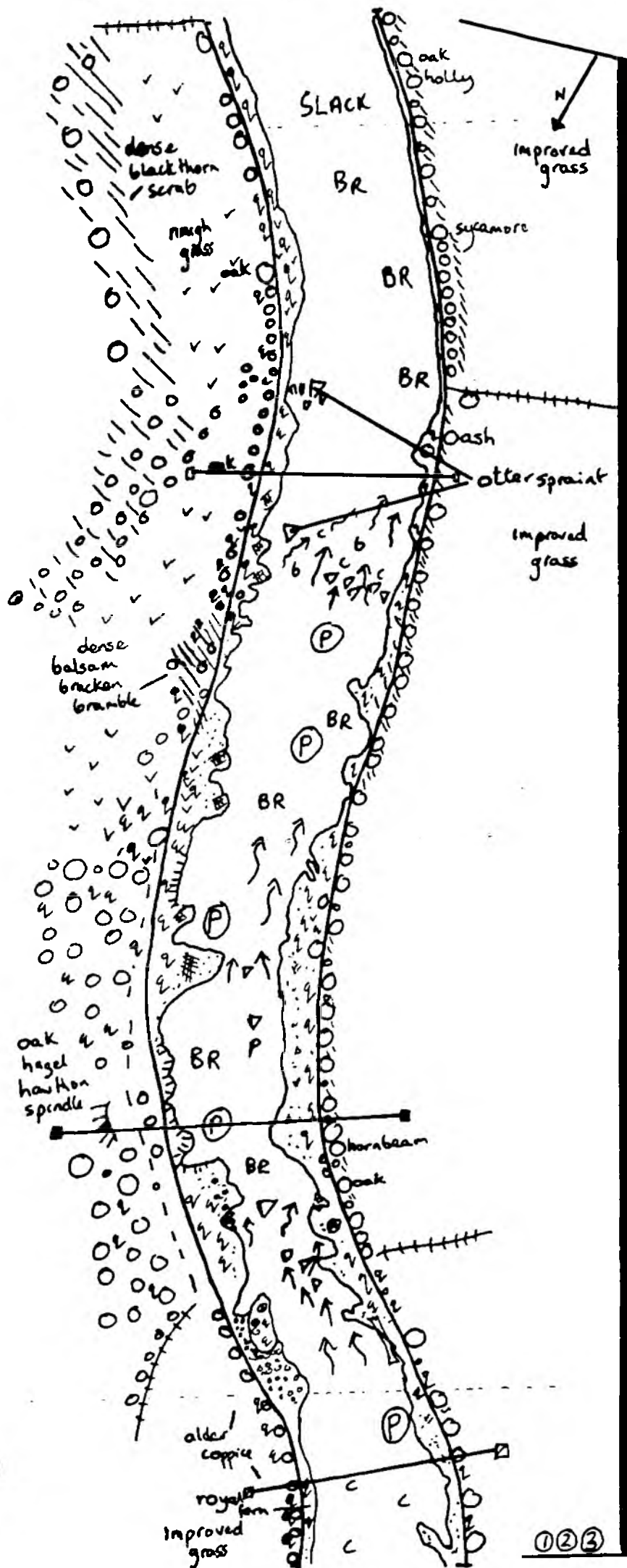
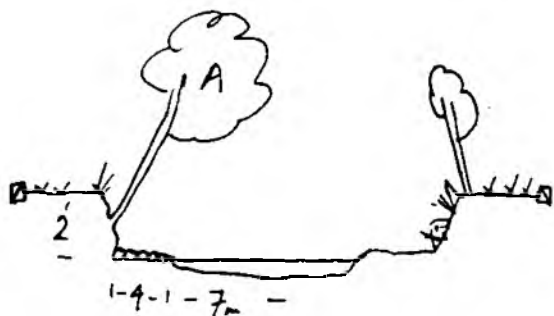
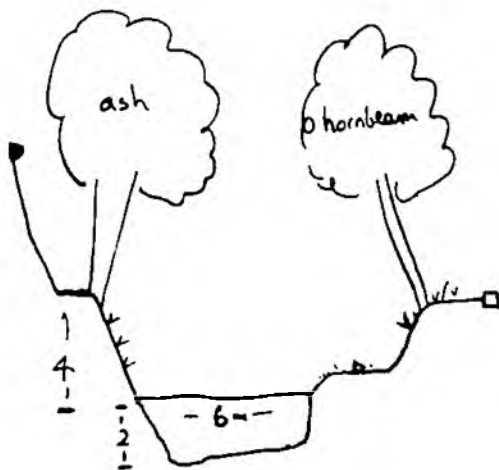
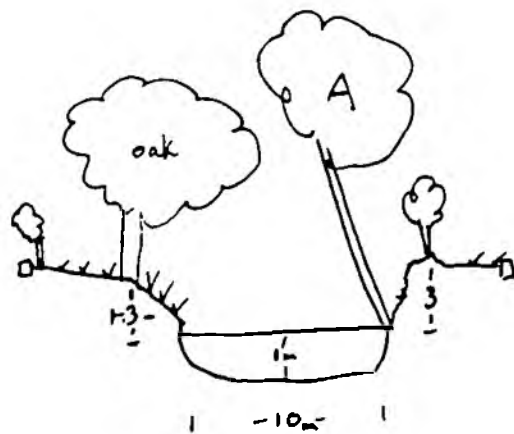
An undisturbed section of high wildlife value with valuable bankside and adjacent tree and scrub cover.

#### Management

Selective re-coppicing of the bankside tree cover and fencing of the right bank to restrict stock access. The adjacent habitat to the left and the channel should be left undisturbed.

Chainage 28.0-28.5

MAP 43



①②③

Map 44 Chainage 28.5-29.0 Grid ref: SX 8274 8799- 8242 8836

Section reasonably straight with moderate bankside tree cover and a varied flow pattern.

#### Banksides

2-3m sandy loam on bedrock. To the right there is moderate to heavy tree cover for the entire length consisting largely of old coppice (hornbeam, alder, ash, sycamore) with well spaced standards, mostly of oak. Upstream to the left, comprises garden with low coppice and dense herbaceous vegetation. Further down deciduous woodland overshadows the river, the bank consisting of coppice (hornbeam and alder) with woodland understorey. Downstream there is low recent coppice and dense herbaceous cover with some scrub. On the left downstream there is a small colony (20 plants) of royal fern.

#### Channel

4-10m wide with a series of deep pools interspersed with riffles rapids and a small waterfall. The substrate is variable with bedrock, boulders, cobbles, pebbles and gravel present. The central portion is well shaded by the bankside tree canopy, whilst at either end the low coppice lets in the light. Kingfisher, dipper and grey wagtail were present. No evidence of otters was found. A mill leat joins the river from the left.

#### Adjacent habitats

To the right is improved pasture and arable, with a short stretch in the middle, of grazed scrub and small standards. To the left upstream is garden most of which is rough mown grass. Downstream of this mixed deciduous wood runs down to the river, this in turn gives way to improved grassland.

#### Key sites

1: Adjacent woodland. 2: Bankside tree cover on both sides. 3: The channel, its substrates and flow pattern. 4: Patch of scrub and standards.

#### Summary

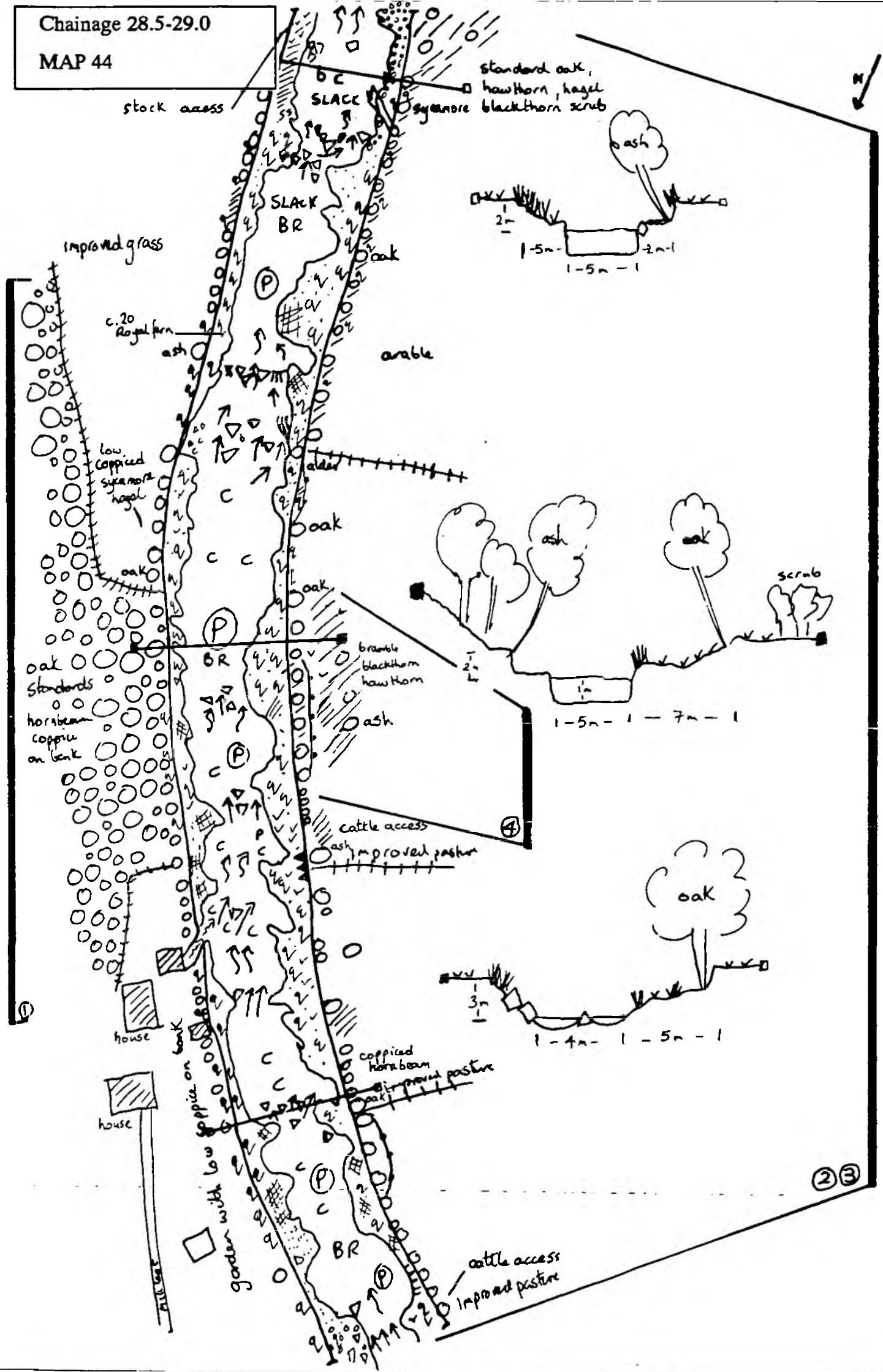
A quiet stretch of river with a varied flow pattern. It has a high wildlife value which could be enhanced with positive management.

#### Management

The channel and flow pattern should remain undisturbed. The bank to the left should be fenced to restrict stock access. Key site 4 should be fenced to include it within the bankside cover.

Chainage 28.5-29.0

MAP 44





Map 45 Chainage 29.0-29.5 Grid ref: SX 8242 8836-8212 8874

Section mostly downstream of a weir with varied bankside cover and flow characteristics. The B3913 crosses the river at the lower end.

### Banksides

The greater part of this section is below the weir, where the banks consist of 2-4m of sandy loam with bedrock at the base. Above the weir they are approximately 1m and of earth. For the most part they are covered with mature standards and coppice of wide age diversity, this includes a large old coppiced hornbeam just below the weir. The trees are a mixture of alder, sycamore, oak, birch, hazel, hornbeam, ash and holly. The understorey is in places lush and comprises typical hedgerow and waterside plants (hemp agrimony, reed canary-grass, hemlock water-dropwort, meadowsweet). For the most part stock are unable to gain access to the banks.

### Channel

4-13m wide with a varied flow pattern from slack through to rapids. Upstream there is a long diagonal weir with a salmon ladder, a mill leat runs off to the left. By the bend in the middle of the section winter spates have left a large area of semi-bare bedrock and a small island with alder coppice. The substrate includes large areas of bedrock with cobbles and boulders. In this area the canopy covers the entire stream; for the rest of the section coppicing has maintained a fairly open canopy. Downstream a road bridge crosses the river. Dipper, grey wagtail and kingfisher were present on this section, there was evidence of otters.

### Adjacent habitats

To the right is improved pasture. To the left is garden/orchard and two small unimproved horse paddocks bounded by the mill leat and the B3193; on the far side of the road is a steep bank covered mostly in oak. The mill leat is fringed as far as the road with young (5-6m) alder coppice. Above the weir the road briefly runs adjacent to the river.

### Key sites

1: Both banksides. 2: The channel and its flow pattern. 3: Rock outcrop, understorey and trees.

### Summary

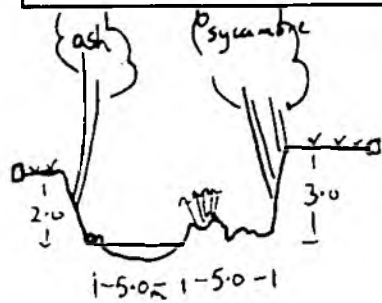
A varied stretch of river with a good selection of wildlife habitats. It has been sensitively managed for fishing.

### Management

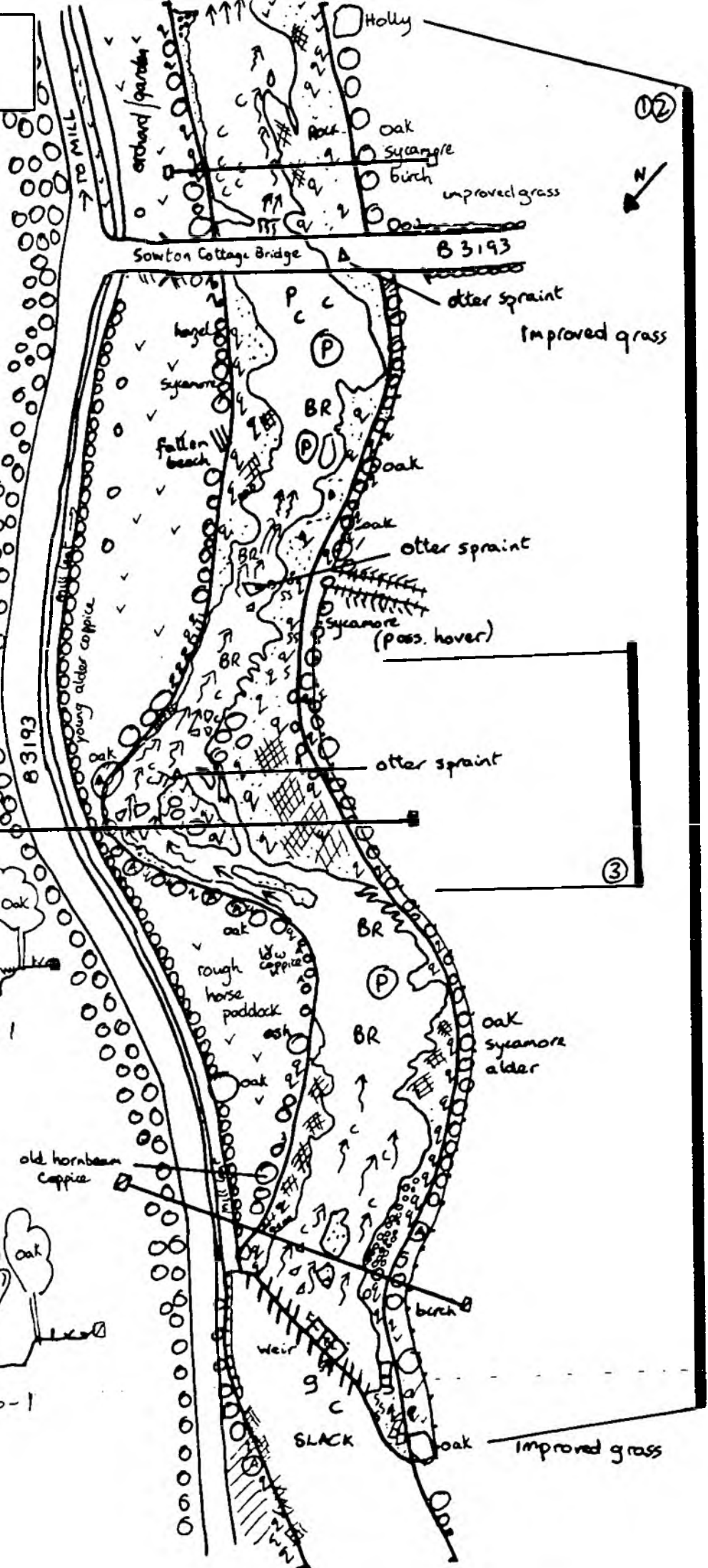
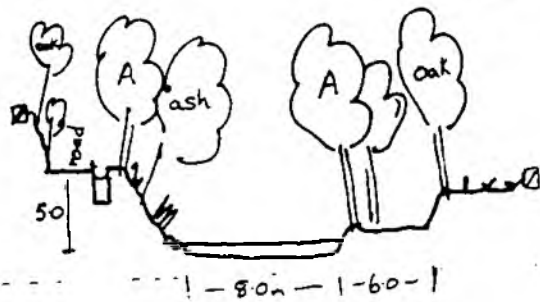
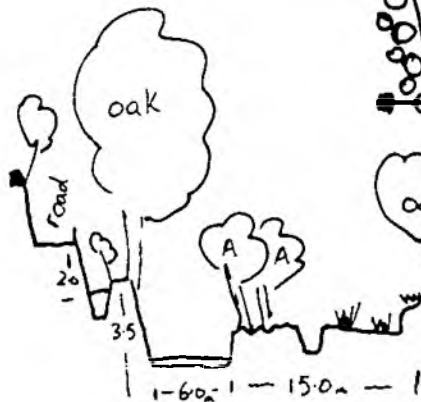
Selective re-coppicing of bankside tree cover. The channel and flow patterns, and key site 3 should remain undisturbed.

Chainage 29.0-29.5

MAP 45



steep oak



Map 46 Chainage 29.5-30.0 Grid ref: SX 8212 8874-8166 8868

A section of slack water with low bankside trees, extensively managed for fishing.

### Banksides

1-2m mostly sandy loam with some bedrock visible at the base upstream. The upper half has medium height coppice comprising mainly alder and sycamore. Downstream the tree cover is more sparse and in places recently coppiced. There are very few large standards. In many places the bankside vegetation has been overgrazed and the bare soil exposed; for the rest the vegetation comprises a narrow strip of dense water marginals, brambles and tall herbaceous species.

### Channel

10-12m wide comprising deep slack water, substrate where visible, bedrock with silt. Downstream Reedy Brook enters from the left.

### Adjacent habitats

To the right upstream there is a steep bank covered in oak, this has been overgrazed to such an extent that there is now a serious risk of soil erosion into the river. To the left downstream there are two private gardens and a section of rough grass managed for fishing. For the rest of the section, on both sides there is improved grassland; to the right there is a narrow strip of low trees and scrub to which stock have access.

### Key sites

1,2: Bankside vegetation. 3: Oak wood

### Summary

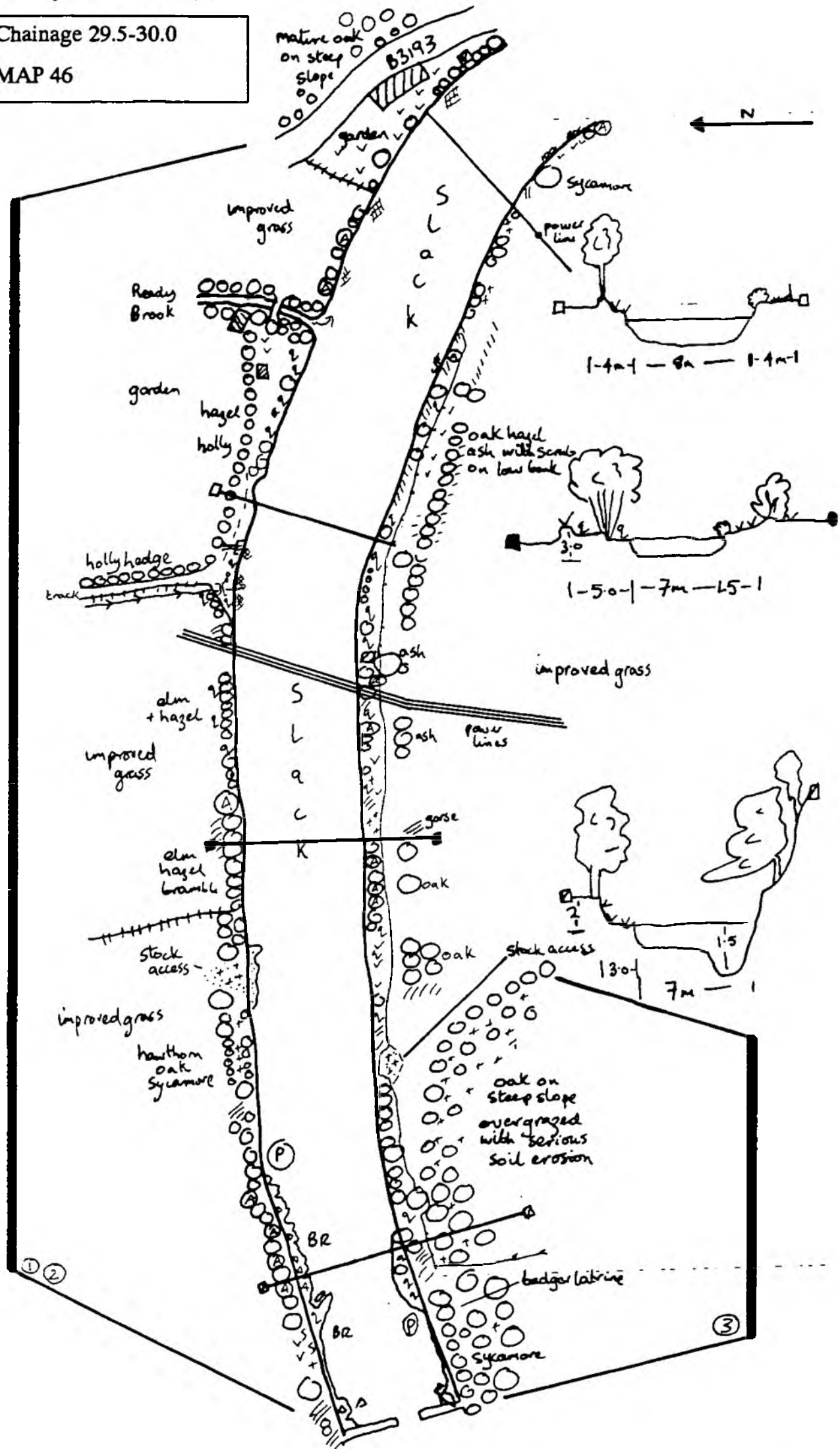
This is a section of relatively poor wildlife value in contrast to those on either side. It requires thoughtful management to satisfy both the fishing and wildlife interests.

### Management

The oak wood at the upstream end to the right should be fenced to allow understorey re-growth and prevent soil erosion. To the right the bankside and the strip of adjacent scrub should be properly fenced to prevent stock access. Standards should be allowed to develop at intervals along the entire section ; coppicing should be carried out so as to allow a continuous corridor of substantial bankside tree cover on one side or the other.

Chainage 29.5-30.0

MAP 46



Map 47 Chainage 30.0-30.5 Grid ref: SX 8166 8868- 8123 8854

Section with continuous bankside tree cover and adjacent dense, secluded woodland, part of which is within the Teign Valley Woods Site of Special Scientific Interest (SSSI).

#### Banksides

2-4m banks of sandy earth with bedrock at the base, upstream to the right the bedrock rises almost vertically from the river for several meters and continues up as a steeply wooded slope, this stretch has SSSI status. To the right the bank is densely covered with tall alder and sycamore coppice with a few large oak standards, ground vegetation being mostly greater woodrush and ferns. To the left where there is pasture the tree cover is in places more open, ground cover being dense ruderals and scrub. The banks adjacent to the house and walled garden comprise dense alder and sycamore coppice, with a scrubby understorey of blackthorn, hazel and bramble. Many trees have exposed roots.

#### Channel

5-10m with a varied flow pattern of riffles, slacks and deep pools. The substrate is largely of cobbles and bedrock, there are in places long narrow margins of sand/gravel. Grey wagtail and dipper were present. There was considerable evidence of recent otter activity. For a large part the tree canopy covers the channel.

#### Adjacent habitats

To the right, steep sided deciduous broadleaved woodland upstream becomes dense oak/hazel coppice which in turn changes to willow thicket with bracken covered clearings; upstream it has SSSI status. Finally it changes to steep sided deciduous woodland. To the left is improved pasture, apart from an extensive overgrown garden round the house.

#### Key Sites

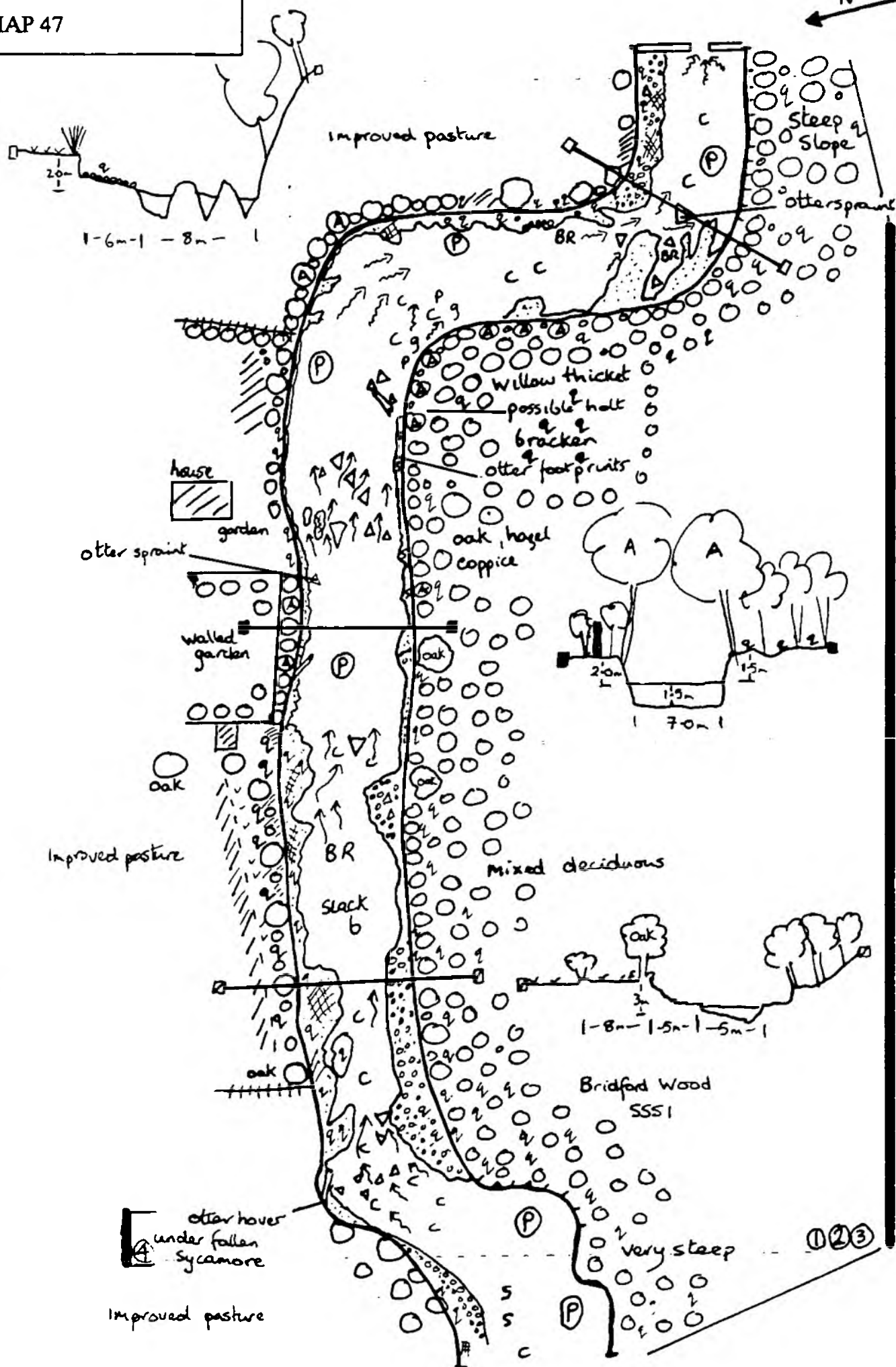
1: The channel, its substrates and flow pattern. 2: Both banksides. 3: The adjacent woodland and scrub to right. 4: Otter hover. 5: Possible otter holt.

#### Summary

A very secluded section of excellent wildlife value providing good cover for otters and other woodland species.

#### Management

The scrubby bank adjacent to the river upstream to the left should be fenced to prevent overgrazing. Selective rotational coppicing of bankside tree cover. Adjacent habitat to right, the channel and flow patterns, should remain undisturbed. Consultation with the Nature Conservancy Council will be necessary prior to any works being carried out within the SSSI.





Map 48 Chainage 30.5-31.0 Grid ref: SX 8123 8854-8082 8841

Section with good bankside tree cover and adjacent woodland. Parts of this stretch fall within the Teign Valley Woods SSSI.

### Banksides

2-4m banks of sandy earth with bedrock at their base. For most of the length there is dense tree cover of standards and mature coppice, comprising mainly alder and sycamore but including oak, ash, hazel and holly. Both banks support, in places, dense cover of tall herbaceous species including hemp agrimony, hemlock water-dropwort and bracken. Of special interest on the downstream end of the left bank are several clumps of royal fern. Downstream to the right, the wooded bank rises steeply away, a landslip has occurred here; this part has SSSI status.

### Channel

5-10m wide with a varied flow pattern of riffles, slacks and pools. The substrate is largely cobbles with boulders plus areas of bedrock overlain by sand and gravel. There are many stretches of exposed bedrock at the margins and a few small shoals. Grey wagtail, dipper and kingfisher were present in this section. At the hotel the river is traversed by a footbridge, a ford and stepping stones; a concrete mill leat joins the river from the left. Upstream a section of the channel has SSSI status.

### Adjacent habitats

To the left is improved grassland with semi-improved grassland in the orchard, surrounding the hotel is a car park and garden. Upstream to the right Bridford Wood (mature broadleaf) runs into an area of young trees and scrub which includes birch, broom and bramble; this gives way to an area of bracken and rough semi-improved grassland and ruderal herbs. This area is rich in butterflies and grasshoppers. Downstream to the right the land rises steeply and is wooded with oak, birch and hazel, it has SSSI status.

### Key Sites

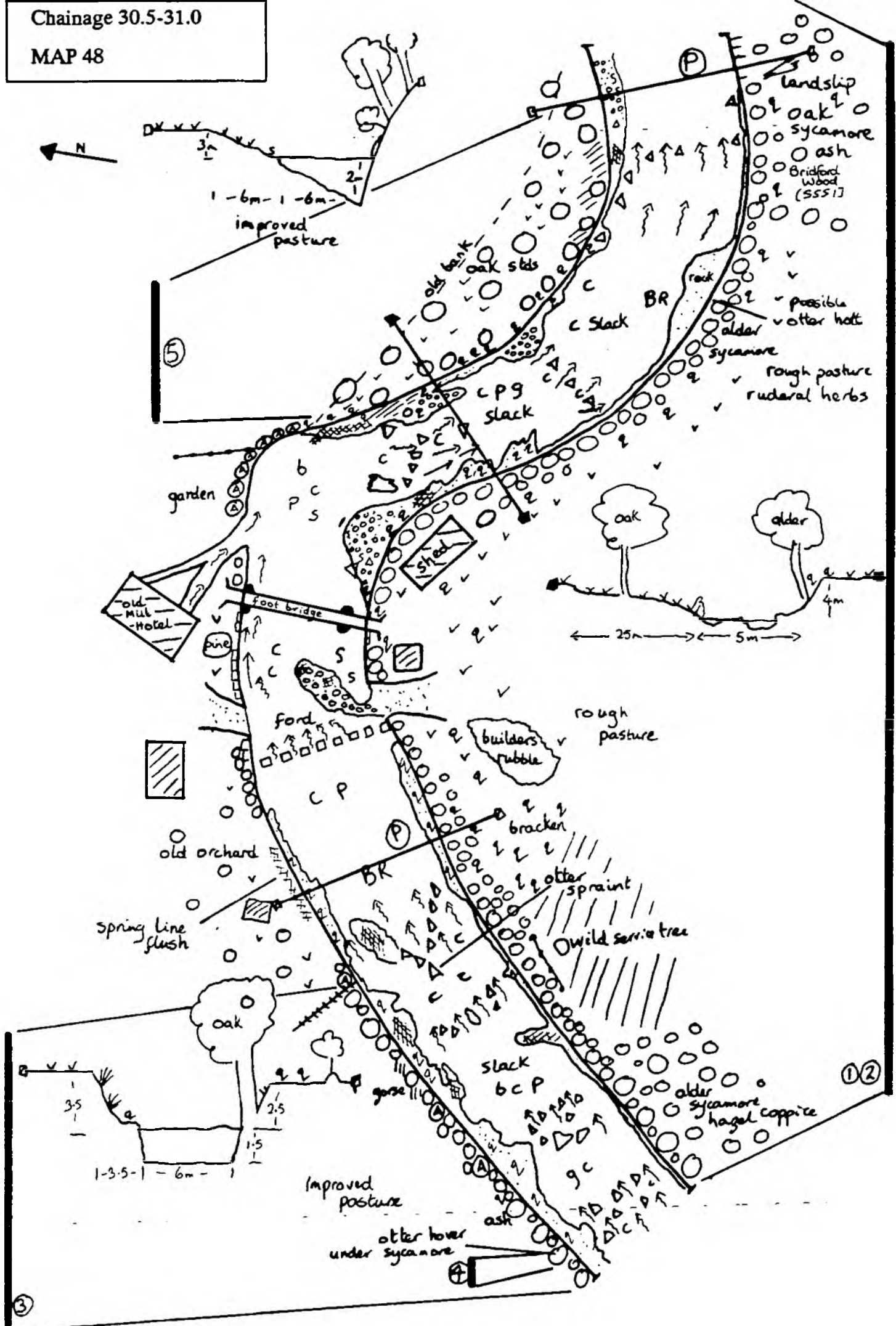
1: Bankside tree cover and adjacent habitats 2: The channel, its substrates and flow pattern. 3,5: Bankside tree cover. 4: Otter hover.

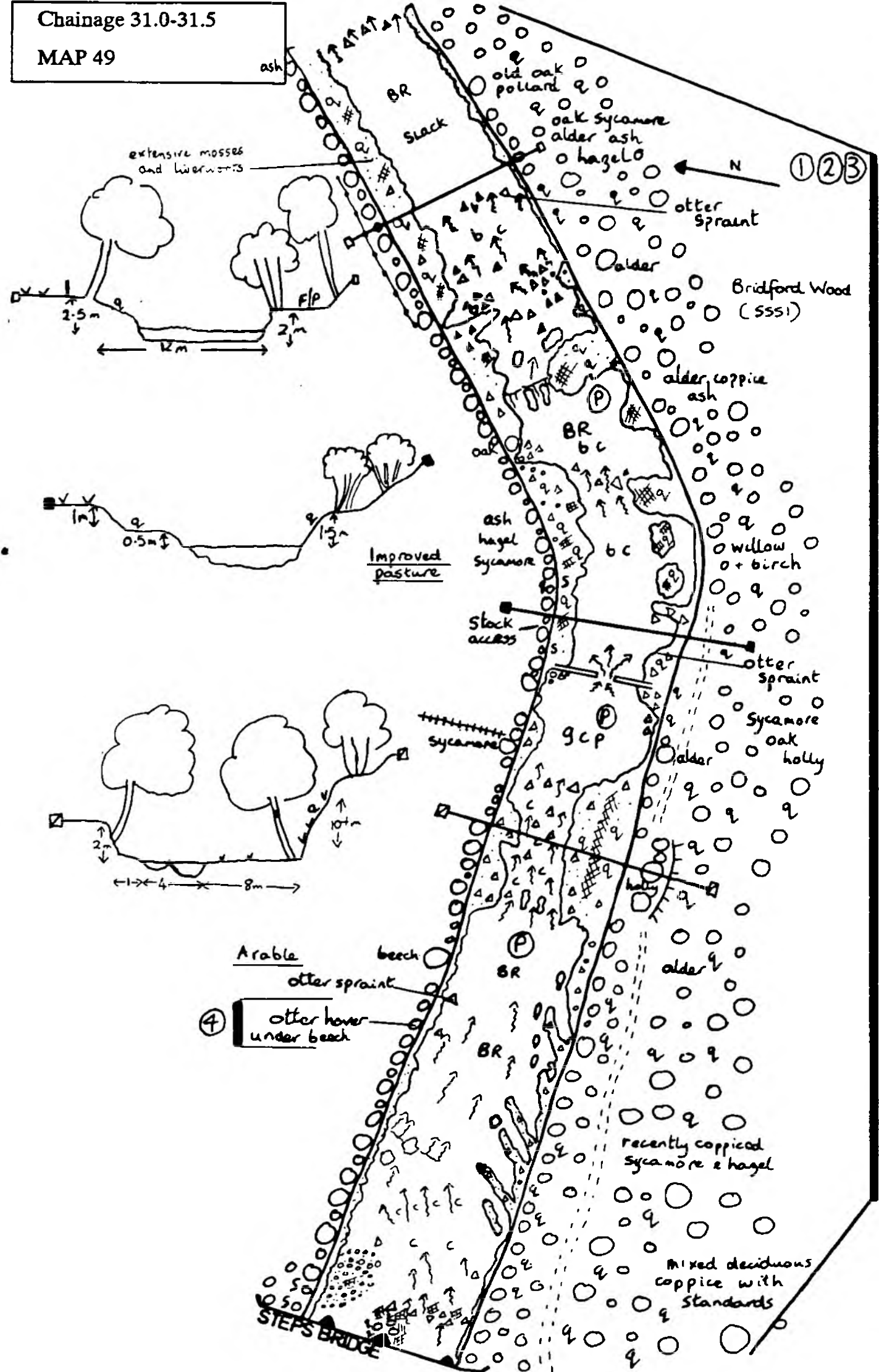
### Summary

The entire section is of high wildlife value especially due to the rich and varied adjacent habitat to the right. Parts have SSSI status.

### Management

Selective rotational coppicing of the bankside tree cover. The channel, flow pattern and adjacent habitat to the right should remain undisturbed. Refer to SSSI schedule in the appendix where necessary.





MAP 49 Chainage 31.0-31.5 Grid ref: SX 8049 8830-8082 8841

Section ending at Steps Bridge (the Main River Limit), with heavy tree cover including adjacent woodland. This stretch falls entirely within the Teign Valley Woods SSSI.

### Banksides

1-2m high, mostly rocky at base, with earth above. There is dense tree cover of large standards and mature coppice throughout the section. The trees are mainly sycamore, alder and hazel with some beech, oak, ash and holly. For the most part the trees form a tunnel over the channel, many having exposed roots which enter the water. The right bank has mature broadleaved woodland with a ground flora of greater woodrush and ferns. The left bank vegetation is more luxuriant comprising a dense cover of typical woodland plants. There is good bryophyte cover on the moist, shaded, rocky areas.

### Channel

The channel varies from 4-12m wide and has a varied flow pattern of riffles, slacks and pools with one small waterfall. Substrates vary from sand through to bedrock, though is mostly of cobbles and bedrock. Most submerged rocks support willow moss. Large areas of bedrock are exposed at the margins supporting terrestrial bryophytes, reed canary-grass and wetland herbs. Grey wagtails and dippers were noted as was considerable evidence of otter activity. The channel itself is included within the SSSI.

### Adjacent habitats

To the left there is arable and improved pasture. To the right mature broadleaf woodland (Bridford Wood) rises away from the river, steeply in places. There is a public footpath running along part of the bank. Tree species are mixed with oak becoming more predominant downstream.

### Key Sites

1: Both banksides. 2: Adjacent habitat to right. 3: The channel, its substrates and flow pattern. 4: Otter hover.

### Summary

A shady stretch of river overhung by dense tree cover on both banks. The entire stretch including the adjacent land to the right is of high wildlife value. The entire stretch has SSSI status.

### Management

The channel structure should remain undisturbed. Selective rotational coppicing of short sections of the banksides would be valuable in maintaining the character of this stretch. Consultation with the Nature Conservancy Council will be necessary prior to any works being carried out within on this stretch.

## APPENDIX 1 - FLORA

### Species list of plants recorded during the survey

#### 1.1 Plants of the channel and margins

<i>Callitriche stagnalis</i> agg.	common water-starwort
<i>Fontinalis antipyretica</i>	willow moss
<i>Glyceria fluitans</i>	floating sweet-grass
<i>Juncus bufonis</i>	toad rush
<i>Lemna minor</i>	common duckweed
<i>Mentha aquatica</i>	water mint
<i>Myosotis scorpioides</i>	water forget-me-not
<i>Nasturtium officinale</i>	watercress
<i>Oenanthe crocata</i>	hemlock water-dropwort
<i>Phalaris arundinacea</i>	reed canary-grass
<i>Phragmites australis</i>	common reed
<i>Polygonum amphibium</i>	amphibious bistort
<i>Polygonum persicaria</i>	redshank
<i>Potamogeton natans</i>	broad-leaved pondweed
<i>Ranunculus fluitans</i>	river water-crowfoot
<i>Scirpus sylvaticus</i>	wood club-rush
<i>Sparganium erectum</i>	branched bur-reed
<i>Spartina maritima</i>	cord-grass
<i>Typha latifolia</i>	bulrush

#### 1.2 Plants of the banksides and adjacent habitat

<i>Achillea millefolium</i>	yarrow
<i>Achillea ptarmica</i>	sneezewort
<i>Alliaria petiolata</i>	garlic mustard
<i>Anthriscus sylvestris</i>	cow parsley
<i>Artemisia vulgaris</i>	mugwort
<i>Arum maculatum</i>	lords-and-ladies
<i>Aster novi-belgii</i>	michaelmas daisy
<i>Asplenium scolopendrium</i>	hart's-tongue fern
<i>Aster tripolium</i>	sea aster
<i>Athyrium filix-femina</i>	lady fern
<i>Beta vulgaris</i> ssp. <i>maritima</i>	sea beet
<i>Bromus ramosus</i>	hairy brome
<i>Calystegia sepium</i>	hedge bindweed
<i>Capsella bursa-pastoris</i>	shepherd's purse
<i>Cardamine hirsuta</i>	hairy bittercress
<i>Carex pendula</i>	pendulous sedge
<i>Centaurea nigra</i>	common knapweed
<i>Chenopodium album</i>	fat hen
<i>Cirsium arvense</i>	creeping thistle
<i>Cynosurus cristatus</i>	crested dog's-tail
<i>Dactylis glomerata</i>	cock's-foot
<i>Digitalis purpurea</i>	foxglove

Dipsacus fullonum  
Dryopteris filix-mas  
Epilobium hirsutum  
Epilobium palustre  
Eupatorium cannabinum  
Festuca rubra  
Filipendula ulmaria  
Fragaria vesca  
Galium aparine  
Geum urbanum  
Glechoma hederacea  
Halimione portulacoides  
Hedera helix  
Holcus lanatus  
Holcus mollis  
Humulus lupulus  
Impatiens glandulifera  
Juncus effusus  
Juncus inflexus  
Linaria vulgaris  
Lolium perenne  
Lonicera periclymenum  
Lotus corniculatus  
Luzula sylvatica  
Lythrum salicaria  
Melica uniflora  
Mercurialis perennis  
Mimulus guttatus  
Montia sibirica  
Osmunda regalis  
Petasites hybridus  
Phleum pratense  
Plantago lanceolata  
Plantago major  
Poa nemoralis  
Polygonatum multiflorum  
Polygonum bistorta  
Polygonum hydropiper  
Polypodium vulgare  
Polystichum setiferum  
Potentilla anserina  
Prunella vulgaris  
Pteridium aquilinum  
Ranunculus acris  
Ranunculus ficaria  
Ranunculus repens  
Rumex acetosa  
Rumex obtusifolius  
Sarrothamnus scoparius  
Scrophularia nodosa  
Senecio jacobaea  
Senecio vulgaris  
Silene dioica  
Sisymbrium officinale

teasel  
male fern  
great willowherb  
marsh willowherb  
hemp-agrimony  
red fescue  
meadowsweet  
wild strawberry  
cleavers  
wood avens  
ground-ivy  
sea purslane  
ivy  
Yorkshire-fog  
creeping soft-grass  
hop  
Indian balsam  
soft-rush  
hard rush  
common toadflax  
perennial rye-grass  
honeysuckle  
bird's-foot-trefoil  
great wood-rush  
purple loosestrife  
wood melick  
dog's mercury  
monkeyflower  
pink purslane  
royal fern  
butterbur  
Timothy grass  
ribwort plantain  
greater plantain  
wood meadow-grass  
Solomon's-seal  
bistort  
water pepper  
common polypody  
soft-shield fern  
silverweed  
selfheal  
bracken  
meadow buttercup  
lesser celandine  
creeping buttercup  
common sorrel  
broad-leaved dock  
broom  
figwort  
common ragwort  
groundsel  
red campion  
hedge mustard



*Solanum dulcamara*  
*Solanum nigrum*  
*Solidago virgaurea*  
*Stachys officinalis*  
*Stachys sylvatica*  
*Stellaria holostea*  
*Stellaria media*  
*Symphytum officinale*  
*Taraxacum officinale* agg.  
*Trifolium pratense*  
*Trifolium repens*  
*Triglochin maritima*  
*Umbilicus rupestris*  
*Verbascum thapsus*  
*Viola arvensis*

bitter-sweet  
 black nightshade  
 goldenrod  
 betony  
 hedge woundwort  
 greater stitchwort  
 common chickweed  
 common comfrey  
 dandelion  
 red clover  
 white clover  
 sea arrow-grass  
 navelwort  
 great mullein  
 field pansy

### 1.3 Trees and shrubs

*Acer campestre*  
*Acer pseudoplatanus*  
*Aesculus hippocastanum*  
*Alnus glutinosa*  
*Betula pendula*  
*Carpinus betulus*  
*Clematis vitalba*  
*Corylus avellana*  
*Crataegus monogyna*  
*Euonymus europaeus*  
*Fagus sylvatica*  
*Fraxinus excelsior*  
*Ilex aquifolium*  
*Larix decidua*  
*Ligustrum vulgare*  
*Malus domestica* agg.  
*Picea abies*  
*Prunus avium*  
*Prunus spinosa*  
*Quercus robur*  
*Robinia pseudacacia*  
*Rosa canina*  
*Rubus fruticosus* agg.  
*Salix caprea*  
*Salix fragilis*  
*Sambucus nigra*  
*Sorbus aucuparia*  
*Tilia x vulgaris*  
*Ulex europaeus*  
*Ulmus procera*  
*Viburnum opulus*

field maple  
 sycamore  
 horse chestnut  
 alder  
 silver birch  
 hornbeam  
 traveller's-joy  
 hazel  
 hawthorn  
 spindle  
 beech  
 ash  
 holly  
 European larch  
 privet  
 domestic apple  
 Norway spruce  
 wild cherry  
 blackthorn  
 pendunculate oak  
 false acacia  
 dog-rose  
 bramble  
 goat willow  
 crack willow  
 elder  
 rowan  
 lime  
 gorse  
 English elm  
 guelder-rose

## APPENDIX 2 - BIRDS

### Species of birds recorded during the survey

cormorant	greenfinch
grey heron	bullfinch
Canada goose	house sparrow
mallard	starling
widgeon	jay
teal	magpie
sparrowhawk	raven
buzzard	rook
peregrine	carrion crow
kestrel	jackdaw
pheasant	
water rail	
moorhen	
lapwing	
redshank	
common sandpiper	
blackheaded gull	
herring gull	
woodpigeon	
kingfisher	
green woodpecker	
great-spotted woodpecker	
skylark	
swallow	
meadow pipit	
pied wagtail	
grey wagtail	
dunnock	
chiffchaff	
goldcrest	
stonechat	
robin	
blackbird	
fieldfare	
redwing	
song thrush	
mistle thrush	
long-tailed tit	
coal tit	
great tit	
blue tit	
marsh tit	
wren	
dipper	
yellowhammer	
chaffinch	
goldfinch	
siskin	

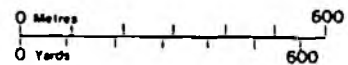
APPENDIX 3

Sites of Special Scientific Interest

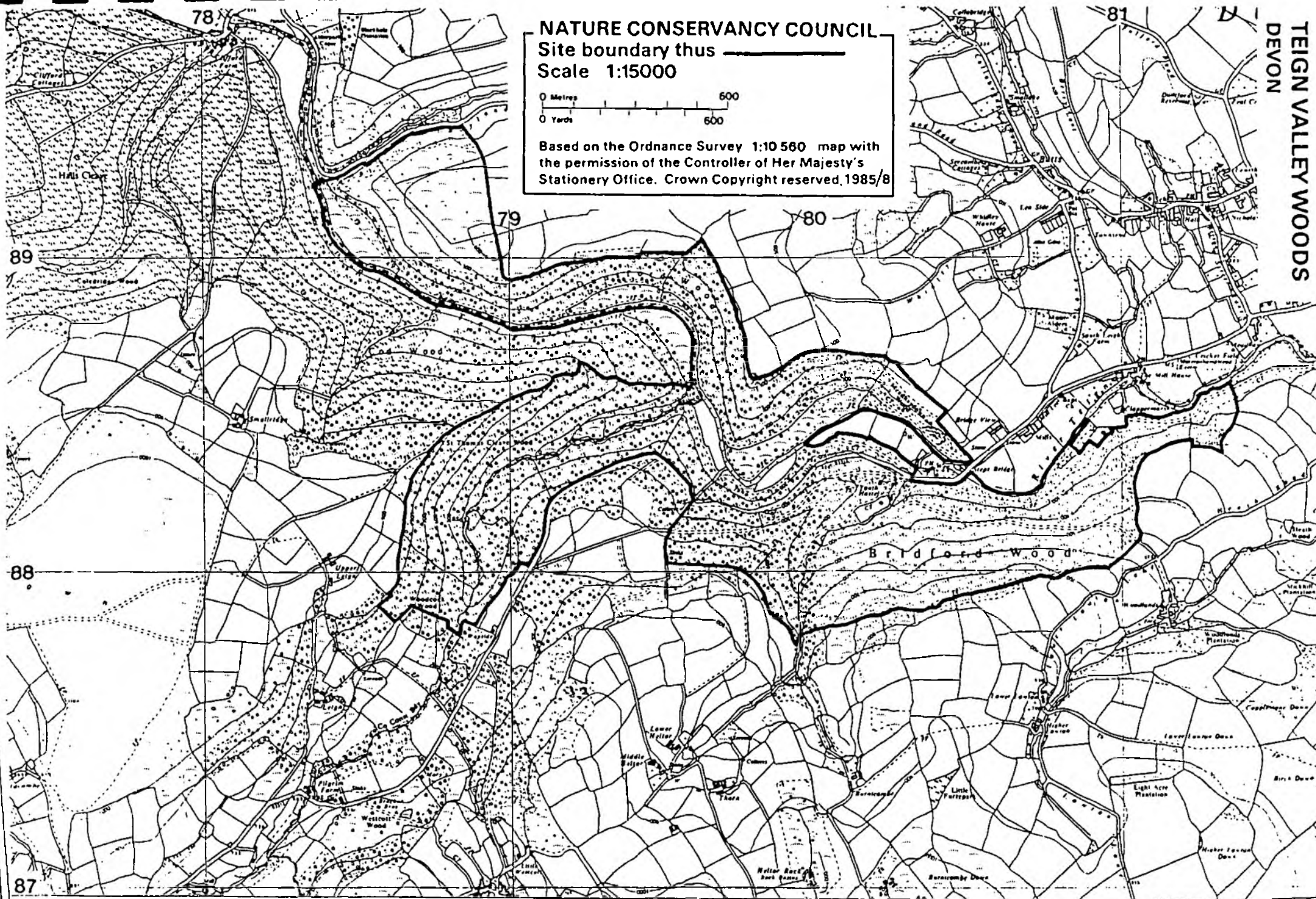
NATURE CONSERVANCY COUNCIL

Site boundary thus —————

Scale 1:15000



Based on the Ordnance Survey 1:10 560 map with  
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COUNTY: DEVON

SITE NAME: TEIGN VALLEY WOODS

DISTRICT: TEIGNBRIDGE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: Devon County Council, Teignbridge District Council  
Dartmoor National Park Authority

National Grid Reference: SX 798883 Area: 172.6 (ha) 425.0 (ac)

Ordnance Survey Sheet 1:50,000: 191

1:10,000: SX 78 NE, SX 88 NW

Date Notified (Under 1949 Act): 1952

Date of Last Revision: 1976

Date Notified (Under 1981 Act): 1985

Date of Last Revision:

#### Other Information:

The site lies within the Dartmoor National Park. Part of the site (Dunsford and Meadhaydown Woods) is managed as a nature reserve by the Devon Trust for Nature Conservation. The site was formerly known as Dunsford and Cod Woods. The boundary has been amended.

#### Description:

The site is a fine example of upland Oak/Hazel woodland lying on the fringes of Dartmoor, and demonstrates features characteristic of such woods in South West England. The flora is diverse and includes both uncommon and rare species.

The Woods clothe the slopes of the River Teign Valley, ranging in altitude from 80 to 260 metres, and are developed on acid soils derived from the Carboniferous Culm Measures, with less acidic alluvial soils on the valley floor.

The woodland character is primarily high forest dominated by Pedunculate Oak (Quercus robur) derived from the singling of former coppice. Such uniform woodland with an even closed canopy inhibits the development of a shrub layer. However, the ground flora is better developed, being dominated variously by Greater Woodrush (Luzula sylvatica), Bracken (Pteridium aquilinum), Bilberry (Vaccinium myrtillus) and Creeping Soft-grass (Holcus mollis), with Common Cow-wheat (Melampyrum pratense) also abundant on the lower slopes.

Open heathy areas, characterised by Heather (Calluna vulgaris) and Common Gorse (Ulex europaeus), occur within the woods, and in Meadhaydown Woods the rare Toadflax-leaved St John's Wort (Hypericum linarifolium) and the uncommon Shepherd's Cress (Teesdalia nudicaulis) are found.

The richer soils along the stream courses and on the valley floor give rise to a more diverse woodland flora including Alder (Alnus glutinosa) and Ash (Fraxinus excelsior), with an understorey of coppiced Hazel (Corylus avellana). Wild Service Tree (Sorbus torminalis), uncommon in Devon, is found here. Along the woodland edge beside the river, a large native colony of Wild Daffodil (Narcissus pseudonarcissus) occurs. These more diverse parts of the woodland support a characteristic breeding community of woodland birds which includes Redstart (Phoenicurus phoenicurus) and Pie Flycatcher (Ficedula hypoleuca).

The woodland floor is characterised by an abundance of nests of Wood Ant (Formica rufa), and the invertebrate fauna is diverse. Over 25 species of butterfly have been recorded including Marsh Fritillary (Euphydryas aurinia) and High Brown Fritillary (Argynnis cydippe). Two other invertebrates of note are the Wood Cricket (Nemobius sylvestris), which is rare outside the New Forest, and Callicera aenea, a rare fly which breeds in dead wood.

The River Teign flows eastwards off Dartmoor and has characteristic riffles and pools. Both Kingfisher (Alcedo atthis) and Dipper (Cinclus cinclus) breed along its banks, while European Otter (Lutra lutra) is known to use the river and its tributary streams.

TEIGN VALLEY WOODS

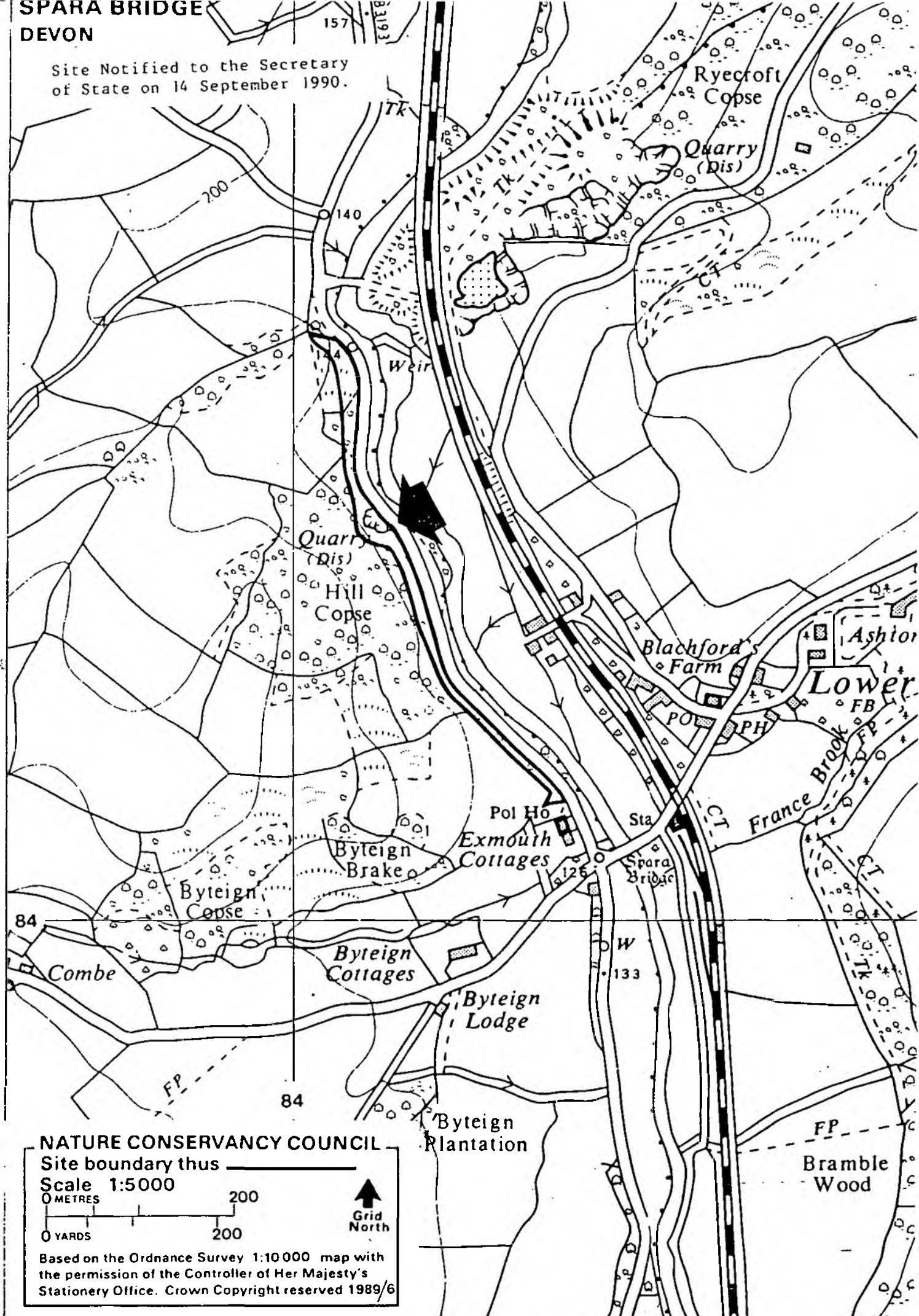
OPERATIONS APPEARING TO THE NATURE CONSERVANCY COUNCIL TO BE LIKELY TO DAMAGE THE SPECIAL INTEREST OF THE SSSI

<u>Standard Ref No</u>	<u>Type of Operation</u>
1	Cultivation, including ploughing, rotovating, harrowing and reseedling.
2	The introduction of or changes in the grazing regime (including type of stock or intensity or seasonal pattern of grazing and cessation of grazing).
3	The introduction of or changes in stock feeding practice.
4	The introduction of or changes in the mowing or cutting regime (including hay making to silage and cessation).
5	Application of manure, fertilisers and lime.
6	Application of pesticides, including herbicides (weedkillers).
7	Dumping, spreading or discharge of any materials.
8	Burning (and) changes in the pattern or frequency of burning.
9	The release into the site of any wild, feral or domestic mammal, reptile, amphibian, bird, fish or invertebrate, or any plant or seed.
10	The killing or removal of any wild mammal, reptile, amphibian, bird, fish or invertebrate, including pest control.
11	The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould, turf.
12	The introduction of or changes in tree or woodland management including afforestation, planting clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.
13a	Drainage (including the use of mole, tile, tunnel or other artificial drains).
13b	Modification of the structure of water courses (eg rivers, streams, springs, ditches, dykes, drains), including their banks and beds, as by re-alignment, regrading and dredging.
13c	Management of aquatic and bank vegetation for drainage purposes.
14	The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes).
15	Infilling of ditches, dykes, drains, ponds, pools.
16a	The introduction of or changes in freshwater fishery production management including sporting fishing and angling.
20	Extraction of minerals, including peat, shingle, sand and gravel, topsoil, sub-soil and spoil.
21	Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
22	Storage of materials.
23	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
26	Use of vehicles or craft likely to damage or disturb features of interest.
27	Recreational or other activities likely to damage features of interest.
28	The introduction of or changes in game and waterfowl management and hunting practices.



# SPARA BRIDGE DEVON

Site Notified to the Secretary  
of State on 14 September 1990.



**NATURE CONSERVANCY COUNCIL**

Site boundary thus ———

Scale 1:5000

0 METRES

200

0 YARDS

200



Grid North

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CITATION SHEET

COUNTY: DEVON

SITE NAME: SPARA BRIDGE

DISTRICT: TEIGNBRIDGE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Devon County Council, Dartmoor National Park.

National Grid Reference: SX 841845      Area: 0.81 (ha)      2.01 (ac)

Ordnance Survey Sheet 1:50,000: 191      1:10,000      SX 88 SW

Date Notified (Under 1949 Act): -      Date of Last Revision: -

Date Notified (Under 1981 Act): 1990      Date of Last Revision: -

Other Information:

A new site

Geological Conservation Review site.

In Dartmoor National Park

Description and Reasons for Notification:

This section exposes a complete succession through the Devonian and Carboniferous rocks of the Teign valley. A wide range of lithologies are represented, fossils are present if not abundant, yielding some information and minor folds reflect the overall structural setting of the southerly-dipping sequences. The marine basin in which the rocks accumulated appears to have deepened during the Dinantian but the source of the sediment remains largely speculative. A site of considerable sedimentary and stratigraphic interest with potential for future research.

SITE NAME: SPARA BRIDGE SSSI, DEVON

OPERATIONS LIKELY TO DAMAGE THE FEATURES OF SPECIAL INTEREST

Standard  
Ref. No.

Type of Operation

- |    |  |
|----|--|
| 7  | Dumping, spreading or discharge of any materials.  |
| 12 | Changes in woodland management.  |
| 20 | Extraction of minerals.  |
| 21 | Construction, removal or destruction of roads, tracks, walls, fences, hard-stands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground. |
| 22 | Storage of materials on or against any rock outcrop.   |
| 23 | Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.  |
| 24 | Battering, buttressing or grading rock-faces or infilling of quarry.   |

## Appendix 4

### Summary of otter activity

This is designed to enable the rapid location of those sections where evidence of otter activity was found. The numbers refer to the map numbers. By looking at the maps it should be easy to locate the exact location of the signs. The text should also be referred to, as comments regarding the suitability of the adjacent habitat for otters is sometimes made.

Otter spraints: 12, 13, 28, 29, 30, 31, 33, 35, 37, 38, 39, 40,  
41, 42, 43, 45, 47, 49

Sign heaps: 37, 42

Hovers: 30, 31, 39, 42, 47, 49

Holt/hover: 38, 47 48

## Appendix 5

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