

# **Morasses, Moors and Marshes**

## **Lost corners of Cornwall's Historic Environment**



**Historic Environment Service (Projects)**

Cornwall County Council



A Report for the Environment Agency

**Morasses, Moors and Marshes**  
**Lost corners of Cornwall's Historic**  
**Environment**



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*Woodcock*

## **Cover illustration**

*Scything rushes at Wimalford, St Cleer, 1995*

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## Abbreviations

CAU	Cornwall Archaeological Unit
CCC	Cornwall County Council
CRO	Cornwall County Record Office
CSS	Countryside Stewardship Scheme
CWT	Cornwall Wildlife Trust
Defra	Department of Environment, Food and Rural Affairs
EA	The Environment Agency
EH	English Heritage

ELS	Entry Level Scheme (of ES)
ES	Environmental Stewardship
FWAG	Farming and Wildlife Advisory Group
GIS	Geographical Information System
HES	Historic Environment Service of Cornwall County Council (formerly CAU)
HLC	Historic Landscape Characterisation
HLS	Higher Level Scheme (of ES)
NGR	National Grid Reference
OED	Oxford English Dictionary
OS	Ordnance Survey
PRN	Primary Record Number in Cornwall SMR
RCM	Royal Cornwall Museum
RDS	Rural Development Service (Defra)
SMR	Cornwall and the Isles of Scilly Sites and Monuments Record

# 1 Summary

The loss of Cornwall's heathy uplands over the last few centuries has been fairly well documented. Less well understood and appreciated has been the loss of lowland marshes, mainly to agricultural improvement (draining etc) in the 18th, 19th and 20th centuries. Indeed, as Oliver Rackham has noted, the 'history of wetland is very largely the history of its destruction' or 'reclamation' as part of agricultural attempts to convert it to 'more productive' land (Rackham 1986, 375). Their loss has perhaps been most keenly felt by those concerned with ecology and the natural environment, but marshes were also key features of a much more diversified historic agricultural environment. They were places with economic value – summer grazing, fuel, reeds and sedge for thatching, withies for baskets, wildfowl shooting, etc – and also relatively wild places which attracted stories and other cultural associations. The negative connotations they currently possess can be related directly to pamphleteering by Georgian and Victorian agricultural improvers who universally urged their drainage and conversion to productive arable or pasture land.

This project documents marshland loss since c1840 in two sample catchments, the Strat/Neet in the Culm Measures of north-east Cornwall, and the Ruthen River in central Cornwall, the tributary of the Camel that runs through Withiel and has Ruthen Bridge on it. In c1840 both catchments still had extensive lowland wet ground, but just forty years later, in c1880, both had seen almost all this lost through agricultural improvements, notably drainage. In the later 20th century, small parts of both catchments have seen some reversion to wetlands of the more marginal stretches of streams, especially at their heads where flat ground makes maintaining drainage systems difficult.

This reversion offers hope that further reversion can be deliberately planned as European (and thus Cornish) agriculture moves into an era where environmental gains are rewarded as much as production. Fairly easily won ecological, environmental and landscape gains can be made from encouraging improved wetland to return to its former state.

In what amounts to an Historic Environment Action Plan for lowland marshes in Cornwall, three broad recommendations are made:

1. **Cessation of marshland drainage and improvement.**
  - a. Work towards changing perceptions of marshland as neglected or wasted farmland
  - b. Extend protection of surviving wetlands
2. **Re-creation of marshland**
  - a. Tie in re-creation of marshland (relatively easy to achieve) with moves towards more extensive and environmentally aware agricultural practice
  - b. Encourage RDS to adopt marshland re-creation as a Cornish target in Environmental Stewardship
3. **Encourage sustainable uses of marshland, especially those that do not act as a drain on a farmer's time and resources**
  - a. Make productive use of willows, alder, reeds, etc; tie in with local crafts networks; work with co-operatives
  - b. Extend use of marshes for wildfowling, either through organised sporting syndicates or through farmers fowling on their own marshes

## **2 Introduction**

### **2.1 Project background and aims**

In the autumn of 2001 the Environment Agency (Bodmin) awarded Cornwall Archaeological Unit a Postgraduate Studentship to facilitate research on an issue of mutual interest and value to both organisations. It was agreed that a brief survey of the rate of loss of lowland marshes in two sample areas would achieve this.

Such a survey would allow the Environment Agency and the Historic Environment Service of Cornwall County Council (formerly the Cornwall Archaeological Unit and part funded by County and District Councils) to better understand an aspect of the rural historic environment which has long been considered important but which has not been subjected to detailed study. Marshes were elements in the much more varied farming landscapes of pre-modern and even pre-War Cornwall and they have distinctive archaeological remains and semi-natural/semi-cultural communities.

The Environment Agency (EA) would benefit from a clearer understanding of the former extent of marshes as their loss can be expected to have had a significant impact on Cornwall's drainage pattern. Put crudely, valley-bottom marshes would have acted as sponges, not only slowing up the run-off into streams and rivers of water from surrounding slopes (and thus reducing both soil loss and flooding), but also absorbing nutrients and chemicals applied by farmers and others (and thus improving water quality in the watercourses). In addition, the marshes have considerable biodiversity value (complex habitats with communities of wetland plants, insects, amphibia, mammals and birds) and landscape value (providing variety and interest in valley views).

A broader aim of the project, then, was to provide some historical focus to initiatives to reinstate marshland by reversing drainage and allowing wetlands to re-establish themselves. It will be clear from the above that such marshland re-creation schemes would produce considerable environmental benefits. It is hoped that farmers might be encouraged to reinstate marshes by careful targeting in Agri-Environment schemes such as Environmental Stewardship.

James Burke, with help from Sonia Thurley, oversaw The Environment Agency's involvement in the project. The Studentship was taken up initially by Kaylie Dowling and when she was obliged to withdraw, by Neil Craze. Management was by Peter Herring, who has also drawn together this report, based on Kaylie and Neil's work. Bryn Tapper and Megan Val Baker facilitated the use of GIS mapping.

### **2.2 Method**

In consultation with EA, two river systems were selected for study: the Strat/Neet in north Cornwall (entering the sea at Bude) and the Ruthen in central Cornwall (a tributary of the Camel). Both are relatively small scale and run largely through enclosed farmland. Their study would therefore be manageable and would also relate directly to modern agricultural improvements. cursory inspection of the first two editions of the OS mapping also suggested that both rivers had also still possessed extensive areas of wet or rough ground at the turn of the 20th century.

For each river four layers of mapping were prepared, one for each of four key points in time over the past 160 years (when much drainage and other agricultural improvement likely to affect marshes has been undertaken in Cornwall). For each layer the extents of marshes were transferred as unique polygons to the County Council's GIS and additional

information was attached in the form of tables behind these polygons. The following are the layers mapped.

**c1840 Tithe Apportionment Maps**, using the land use and field name columns of the accompanying apportionment schedules to identify then existing and former marshes. It should be noted that there is variability between Tithe Maps as each parish commissioned its own survey and the detail of the mapping and the apportionment can differ markedly. Some parishes did not record land use at all while others record quite precise differences (eg Morass, Moor, Coarse Pasture, Meadow, Waste) while still others appear to have combined and obscured such a variety of land uses by placing them all within one type, such as Pasture. This has inevitably led to unevenness in the mapping for this project and thus to some imprecision both in comparing parishes in c1840 and also in documenting change from c1840 to c1880 (see Section 4).

**c1880 OS 1:2500 maps**, using marshy and other rough ground conventions to identify lowland marshes (on CCC GIS). The OS conventions distinguished marsh, reeds, osiers, rough pasture, furze and brushwood.

**c1907 OS 1:2500 maps**, using marshy and other rough ground conventions to identify lowland marshes (on CCC GIS). Conventions as for c1880. Because their conventions and quality of mapping are the same, we can have greatest confidence that we are recording a coherent picture of change when studying the differences between the c1880 and c1907 representations.

**1995 CWT habitat mapping**, based on LIFE mapping generated mainly from the examination of aerial photographs, and using marshland categories of vegetation communities (on CCC GIS). These categories do not match perfectly the c1880 and c1907 OS maps as they draw lines more tightly around actual vegetation communities (rather than recording all of a parcel of land as marsh, as the OS did).

In addition, the study included literature searches documenting traditional Cornish uses and management of marshland, and contemporary 19th and 20th century accounts of its improvement.

The study also included the plotting of all places in Cornwall with names indicative of former (or extant) marshes, moors and morasses, together with the dates of their first appearance in documents. Names would include not only those in English (eg Marshgate) but also the important medieval Cornish place-name element, **hal**, meaning ‘moor’ (as found in Halvasso etc)

This brief report presents maps and discussions for each phase for both study areas; summaries of traditional land use; and maps and discussion of the county-wide place-name search. It also makes a number of recommendations that could be of value to the Environment Agency and other agencies working in the Cornish countryside.

## **2.3 The Strat/Neet and the Ruthen (Fig 1)**

### **2.3.1 The Strat/Neet**

This complex river system is now called either the River Strat (from Cornish **stras**, ‘valley’), or the River Neet, the earliest place-name form being the Straetneat (cAD 880), ie the valley of the Neet, indicating that the river was originally called the Neet (Padel 1988, 160). The river Strat/Neet runs south from Kilkhampton to meet, at Helebridge, a major branch that originates in the southern hills of Whitstone, Week St Mary and Poundstock. This watershed was once a cultural boundary with English names predominant within it and to its east and north, and Cornish ones to its south and west. Both main branches are around 9km long and run through steep-sided valleys in their upper and middle reaches, but both

also have stretches with relatively broad valley bottoms, at least compared with other Cornish rivers. The river was formerly tidal below Helebridge.

Geology is Upper Carboniferous Bude and Crackington Formations of sandstones, shales and siltstones, part of the Culm Measures. Soils in the valley bottoms are of the Manod and Neath series of fine loamy or fine silty soils over rock, and the Halstow and Hallsworth 1 series of poorly drained clayey soils, the latter typically at the upper reaches of the river systems.

### **2.3.2 The Ruthen**

Possibly named from Cornish *ruth*, 'red' (Henderson and Coates 1928, 114), this tributary of the Camel branches three ways above Ruthernbridge, the southern rising in the marshes of Retire Common, just north of the A30, the western from Hustyn Downs and the main south-western stream from the south side of Rosenannon Downs, part of the St Breock Downs range. A significant tributary of this branch rises just north of Victoria on the A30. In total the longest part of the river is 10km long. Valleysides are steep in places (eg Treliver, Rosenannon, Trewollack, Tregolls), but generally slope fairly evenly. There are fairly narrow valley bottoms, although the streams have broad spreads at their heads. Ruthern Bridge is a fine 15th century structure, probably built c1450.

Geology is Lower Devonian Meadfoot slates, and soils are mainly the Denbigh 2 series of fine loamy soils variably affected by groundwater.

## 3 Morasses, moors and marshes in Cornwall

### 3.1 Place-names

Many lowland marshes were of sufficient importance in terms of local topography that they helped determine the names of settlements. Some of the most significant forms have been mapped (Fig 8). By far the most common Cornish place-name is Penhale (pen-hal), ‘head of the marsh’ (of which there are at least 26 examples in the plain Penhale form, nearly twice the number (14) of the second most common Cornish place-name, Penquite, ‘head of the wood’; see Padel 1985).

The following are the main place-name elements, Cornish and English, relating to marshes found in Cornwall. The Cornish list is largely derived from the meticulous work of Oliver Padel, former Research Fellow at the Institute of Cornish Studies.

#### 3.1.1 Cornish

**budin**, Old Cornish for ‘meadow’. Examples used in names of settlements (west to east) in St Levan, Breage, Constantine, Crowan, Gwennap, Truro, Probus, St Veep, all except the latter in the western half of Cornwall (Padel 1985, 33). See Fig 8 for distribution.

**\*keun**, Cornish for ‘reeds’. Examples in Madron, Gulval, Phillack, Breage, Budock, Grade, Creed, Goran, St Breock, St Winnow, Minster (*ibid*, 55-6). See Fig 8 for distribution.

**\*clun**, Cornish for ‘meadow, moor, brake’. Adjective is \*clunyek, ‘marshy place’. Examples in Kea and St Minver (*ibid*, 61).

**\*cors**, Cornish for ‘reeds, fen’. Examples include Goss Moor. Others in Paul, Breage, Mullion, St Keverne, Crowan, St Enoder, all in the western half of Cornwall (*ibid*, 66).

**\*gothel**, Cornish for ‘watery ground’. Examples, all in the western half of Cornwall, in Scilly, St Levan, St Hilary, Redruth. Philleigh, Crantock (*ibid*, 111-112).

**guern**, Cornish for ‘alders, alder swmp’. Examples in St Buryan, Madron, Camborne, Crowan, Mawnan, St Allen, Cuby, Mevagissey, Roche, St Neot, South Hill (*ibid*, 118).

**hal**, Old Cornish for ‘marsh’. The most common Cornish name for marshland. Examples throughout Cornwall (*ibid*, 125-6). See Fig 8 for distribution.

**heligen**, Cornish for ‘willow-tree, sallow’. Examples in St Just in Penwith, Germoe, Crowan, Constantine, St Martin in Meneage, Redruth, Illogan, Kea, St Clement, Creed, St Columb Major, St Ewe, St Wenn, Roche, Tywardreath, Bodmin, St Mabyn, St Pinnock, Warleggan (*ibid*, 128).

**\*morva**, Cornish for ‘sea-marsh, or marsh’. Examples in Constantine, St Breock, Landrake, but not Morvah (*ibid*, 169). See Fig 8 for distribution.

**\*pen-hal**, Cornish for ‘marsh’s head, or moor’s head’. Most of the 41 examples known (15 as elements of more complex names) are at the head of marshy valleys (*ibid*, 181-2). See Fig 8 for distribution.

In addition to these place-name elements, the pioneering, but less reliable Cornish scholar Morton Nance identified a few more Cornish names that refer to marshes or related features:

**bronyn**, ‘rush-grown marsh’ (Nance 1978, 216).

**hesken**, ‘marsh, sedges’ (*ibid*, 256).

**pol-porf**, ‘rush-pond’ (*ibid*, 282).

### 3.1.2 English

**Fen**, from Old English *fen*. ‘Low land covered wholly or partially with shallow water, or subject to frequent inundations’ (OED 1971, Vol IV, 153) (eg Venland). See Fig 8 for distribution.

**Ham**, from Old English *hamm*. River meadow, often wet. (egs Otterham, Gooseham). See Fig 8 for distribution.

**Lake**, from Old English *laec*. Marsh (eg Latchley).

**Morass**, from Dutch *moeras*. ‘A wet swampy swampy tract, a bog, marsh; occasionally in general sense, boggy land’ (OED 1971, Vol VI, 656). Largely archaic but often used in the Tithe Map Apportionment for field names (and to describe land use).

**Moor**, from Old English *mór*. 1 ‘A tract of unenclosed waste ground; now usually, uncultivated ground covered with heather.’ 2 ‘A marsh’ (OED 1971, Vol VI, 644). Both forms are widely used in Cornwall, with Bodmin Moor, Davidstow Moor, Whitemoor etc referring to downlands, and more precise, local usage often referring to low-lying marshes. In Cornwall the Moor seems at certain times to have had a particular usage in relation to tin-bearing ground, alluvium such as was worked by streaming (Oliver Padel, pers. comm.). See Fig 8 for distribution.

**Marsh**, from Old English *mersc*. ‘A tract of low-lying land, flooded in winter and usually more or less watery throughout the year’ (OED 1971, Vol VI, 185) (eg Marshgate). Often used in Tithe Map Apportionment for field names and land use. See Fig 8 for distribution.

## 3.2 Traditional uses of lowland marshes

### 3.2.1 The agricultural value of lowland marshes

That Cornwall’s lowland wetlands had substantial agricultural value should not be a surprise when it is considered that the great medieval abbeys of Ely, Crowland and Peterborough were supported by the produce of the Fens of East Anglia. This wealth came not from eels and wildfowl (though these contributed their small part), but from the proceeds of summer grazing - meat, butter, wool, and livestock – and from the grass itself as hay and as grass-keep hired for grazing to distant farmers (Rackham 1986, 387). There are not extensive marshes like the Fens in Cornwall although there are some significant patches (eg Goss Moor and Red Moor) where there would have been grazing of a moor by several farms in common. For instance in 1563 the tenants of Domellick in St Dennis had on Goss Moor, ‘common without stint [ie without limit to numbers] together with tenants of diverse other lords who common there also, by what title they know not’ (Fox and Padel 2000, 171). (And see Penhale Moor in Gwinear, below).

Most Cornish marshes, however, were held privately by single farms, and their use for grazing was incorporated into their annual farming round. A number of marshes in Luxulyan parish were divided between several adjoining farming settlements (c1840 Tithe Map; Cathy Parkes, pers. comm.), the boundaries either built or fenced. It may be assumed, however, that such marshes attached to hamlets were shared between the various tenants occupying land in the hamlet’s townland.

That ‘moors’ had agricultural value is confirmed by the payments made for them by the tenants of Cornish estates. One of the best-documented late medieval and early post-medieval Cornish estates is that of the Arundells of Lanherne (see Fox and Padel 2000 for selected accounts). In the extent of 1451-64, Henry Huwet of Mellanvrane in St Columb Minor paid 20s pa for a holding including a ‘moor below the mill’ (*ibid*, 31); Martin Daune paid 8d pa for ‘1 parcel of moor called Hallas’ at Tolzethan in Gwitherian (*ibid*, 46); and

Humphrey Sylvester paid 8d pa for the ‘Moor of Nanterrow’, also in Gwithian, on the Red River (*ibid*, 49).

In 1549 Geoffrey Browne and James his son held a tenement with various pieces ‘of pasture, land and marsh’ in Riviere, in Phillack, presumably the marsh below the church (*ibid*, 159); Martin Baowchampe held ‘1 moor called Hallgose More’, in Roseworthy, in Gwinear for 4s (*ibid*, 160).

In 1563, ‘The moor called Penhale Moore [in Gwinear, at the head of the Roseworthy tributary of the Red River], where the inhabitants of the tenements of Carnehell (now Richard Crane and John Snowden) and the tenants of the tenements in Penhale (now John Drewe and John Hoskys) claim common without stint, contains 40 acres of **very good pasture ground**’ (*ibid*, 170). In the same year three young girls were heir to a holding at Trevededar in St Eval which consisted of ‘part of a wasterly moor, **not yet divided**, contains in the whole, 7½ acres’. There is at least a hint here that such a moor would by 1563 be expected to have been divided, separated into privately held blocks, and then perhaps improved.

In 1575, in Kestle, St Columb Minor, there was among many other parcels of land, ‘a certain moory or meadow ground of 2½ acres at 4s the acre’ (*ibid*, 219); at Trelaske in Cubert, ‘in a little piece of moory ground, 1 acre of pasture, value 4s’ (*ibid*, 224); at Tubbs in St Ewe, ‘a several [probably meaning enclosed] meadow called the Moore, 2 acres at 10s the acre’ (*ibid*, 225); and at Tresithney in St Columb Minor, ‘a several close of moory or meadow ground now in 2 parts divided, 6 acres at 6s the acre’ (*ibid*, 233). It should be noted that arable in the same year was worth 4s to 5s per acre, indicating that the **grazed moors or meadows had a value at least as high as any farm land in Cornwall at that time** and often significantly higher than arable land. Such monetary value in areas away from the mining country must reflect agricultural importance.

### 3.2.2 Uses of willow and alder

Cornish records for the particular uses made of trees is very limited and we look elsewhere for guides to the possibilities. It should be noted that modern farming has increasingly limited the forms of exploitation of most pieces of land and the vegetation they supported, and that medieval and early post-medieval uses are almost certain to have been much more varied – see Carew 1602 for an inkling into the variety of late medieval and early post-medieval Cornish rural practices, and thus the richness of the semi-natural habitats that supported them. When we consider early Cornish uses of the most important trees of marshes, we should be informed by the better-preserved literary and documentary evidence from other parts of Britain.

Willow was often used for house-building in medieval Ireland (Kelly 1998, 384), presumably especially in those parts of the country where more substantial timber was unavailable. There would have been parts of Cornwall where similar considerations might have led to similar usage. White willow was traditionally used for artificial legs and arms, as well as for cricket bats (Grigson 1958, 257). Withies (mainly from osier willow) were used to make hurdles, and when twisted and knotted and threaded through by a stick withies were also used to secure the hurdles in place to restrain animals. Sometimes animals were individually tied by a twisted withy (Kelly 1998, 378, 384). In early medieval Ireland alder was used for making shields, masts and tent-poles (*ibid*, 384). In medieval Ireland, both willows and alders were deemed to be class 2 trees (out of four classes in descending order); as such they were deemed ‘commoners of the wood’, rather than ‘nobles’, but it meant that they were valued on a par with elm, birch, rowan, whitethorn and wild cherry (*ibid*, 380).

The use of wickerwork and basketry (made mainly from withies) in medieval Ireland extended beyond the usual workaday functions to include the creation of baskets to be set in the gaps of weirs to catch fish (Kelly 1998, 288); beehives (from the 11th to the 17th centuries) (*ibid*, 110-1); reaping baskets into which ears of corn were thrown on cutting (*ibid*, 238); tightly woven baskets for transporting grain (*ibid*, 244); trays on which grain was laid when placed in corn-drying kilns (*ibid*, 241); trays on which cheese was dried (*ibid*, 329); and the frameworks of coracles (*ibid*, 290). Osiers, the name taken from the French, were cultivated for use in basketry, and are often distinguished in the Tithe Map land use and on the 1st and 2nd edition OS maps (c1880 and c1907 in Cornwall).

Former small willow gardens in which osiers could be grown without being nibbled and distorted by grazing stock are found in most Cornish parishes, from West Penwith to the Tamar. Many are recorded on the parish Tithe Maps, and others appear in earlier documents such as the 17th and 18th century glebe terriers (accounts of the church's properties in parishes). So, the parish churches held a 'willow garden' in Crowan in 1679 (Potts 1974, 25); two 'willow plots' in St John (near Antony) in 1728 (*ibid*, 60); an 'enclosed willow plot...with trees and bushments' in Morval (near Looe) in 1679 (*ibid*, 112); and a 'willow garden' at Whitstone (north Cornwall) in 1727 (*ibid*, 175).

In the 16th century the green boughs of willows, with their leaves, were brought into the chambers of those sick with the ague, and bitter infusions of willow bark were used to keep the ague off. In the 19th century this quality was investigated and salicin was identified; its acid is now a component of aspirin (Grigson 1958, 257).

'An alder swamp along a Cornish stream...remains perennially and primevally enchanting – the trees alive and dead, moss-bearded and lichen-bearded, the soil and the water like coal slack and blacksmith's water, in between the tussocks of sedge' (Grigson 1958, 246). Alder wood, resistant to water, was used for water pipes, and wooden pumps, and for long-lasting piles under bridges and houses. The catkins, twigs and bark of alder give a black dye, and its slow-burning properties produce fine charcoal and as such it was used in the preparation of gunpowder. It conducts heat poorly and so was much used for making clogs, keeping the feet nice and warm (*ibid*).

### **3.2.3 Thatching**

Reeds and sedge were both sold for thatching. In 1872, as a result of several dry summers, some farmers in St Minver had difficulty finding sufficient reeds for thatching their arrish mows (ricks of corn left in the fields until saving was more convenient) and they turned to 'water flags' (flag iris) as a substitute (Barton 1972, 227). Thatching of houses and farm buildings in Cornwall was traditionally done with either reeds or straw, though rushes served for some farm buildings, ricks of corn, hay and fuel (turf especially), and turf itself was sometimes used for thatching small buildings (Herring and Giles, forthcoming). Sedge is sharp edged and although superior to reeds for thatching was used less often because it so easily drew blood from its user (Rackham 1986, 381-2).

### **3.2.4 Fuel**

The use in Cornish homes of peat or turf cut from valley bogs is well-known (see Herring forthcoming for a detailed account of the cutting, drying and saving of turf on Bodmin Moor and its use on the domestic hearth). It seems that reeds and sedge were also used for fuel in the fens of eastern England (Rackham 1986, 381); being rather rarer in Cornwall, such uses may not have been so important although in the treeless parts they may have been so employed.

### 3.2.5 Uses for rushes

Up to the 19th century rush candles were made by peeling them and then drawing them through a vessel of heated fat until every bit was covered. When dry this was repeated as many times as necessary to produce a thick candle-like thing. Rushes were often strewn on floors as a cheap clean and warm covering, and were sometimes used for bedding. They were widely used by children who wove them into boats, chains and other playthings. Such uses were either recorded or remembered in many parts of Britain well into the 20th century (Vickery 1995, 323-7), but the 7th and 8th century law-texts of Ireland record ‘knives for cutting rushes’, the strewing of rushes on floors and beneath animals in pens, and the use of the rush’s pith in candle making (Kelly 1998, 384; 450).

### 3.2.6 Fowling

In 1602 Richard Carew, the man who has observed Cornwall most closely and described it most poetically, eventually turned his attention to the birds of the air.

‘Of tame birds, Cornwall hath doves, geese, ducks, peacocks, Guinea ducks, China geese, Barbary hens, and such like. Of wild, quail, rail, partridge, pheasant, plover, snipe, wood-dove, heathcock, powte [grouse], etc. But, amongst all the rest, the inhabitants are most beholden to the **woodcocks** who (when the season of the year affordeth) flock to them in great abundance. They arrive first on the north coast, where almost every hedge serveth for a road, **and every plashshoot [small marshy pool] for springles [sprung traps] to take them**; from whence, as the moist places which supply them with food begin to freeze up, they draw towards those in the south coast, which are kept more open by the summer’s nearer neighbourhood; and when the summer’s heat (with the same effect from a contrary cause) drieth up those plashes, nature and necessity guide their return to the northern wetter soil again (Carew 1953, 108).’

So important was this springling and then later on the shooting of woodcocks (and other waterfowl) that many farmers established their own pools to attract and then kill the plump birds, to supplement their families’ already varied and rich diet, and to provide a form of sporting pleasure. Trapping of birds can be traced back into the early 14th century when the Duchy of Cornwall manor of Liskeard included a payment from the manor to the duke ‘for the places for fowling’ (Hull 1971, 72). Examples of early wildfowl pools appear to survive best in West Penwith, as on the cliffs of Trevescan and Maen in Sennen where pools shown on the 1840 Tithe Map were provided with small buildings on their edges, the hides in which the farmers lurked (Herring 1986; and Fig 7). A possible 19th century hide was recorded on the edge of marshes at Redlake in St Winnow (Herring 2000, 170) and there can be no doubt that many others lie ruined by other marshes in Cornwall. Many people still shoot Cornish wild birds (snipe etc), but this is now almost entirely for sport.

## 3.3 Improvement and drainage

In the 18th and 19th centuries British farming was transformed from the relatively static and undynamic yet sustainable system, capable of supporting relatively local markets, which had developed from at least as early as the later medieval period, into one that could feed the growing industrial cities. This was largely achieved by the efforts of people like the men from the Georgian and Victorian Boards of Agriculture. These seized upon marshes as one of the most despicable and improvable elements of the traditional landscape. The improving mindset they encouraged in farmers persists today as marshy areas are still regarded as unsightly wastelands capable of improvement. But the drainage of marshes goes back well beyond the early modern period. WG Hoskins has documented the digging of ditches and installation of drains to ‘reclaim’ dozens of acres of land for cultivation at

Marsh Barton near Exeter in Devon in the early 13th century (Hoskins and Finberg 1952, 118-9) and there seems no reason to suppose that similar or smaller scale works were not undertaken in Cornwall. Anyone who has dug or witnessed the digging of a trench through Cornwall's farmland is amazed at the number of old drains created by former farmers. Many are simple stone 'bolts' (upright slabs topped with slab capstones) or pipe drains, but others are trenches part filled with stones or the branches of furze or thorn bushes.

Many Cornish marshes were drained and subdivided in the late 18th and especially the mid 19th centuries. (Agricultural depression in Britain generally inhibited such work in the early 19th century.) GB Worgan, writing in the first decade of the 19th century, emphasised how much drainage had already taken place in Cornwall; he was writing in the enthusiastic mode typical of contemporary agricultural improvers, who mixed praise for the new with exaggerated criticism of the old. 'This excellent mode of improving and making of land is well understood, and has long been practised in Cornwall. Many hundreds of acres of land which, before they were drained, were not worth one shilling per acre to the owners or occupiers [cf 3.2.1], and were even dangerous to cattle, have been, by this operation, improved to the value of £3 to £5 per acre. The advantages immediately resulting from the practice, are so striking to the meanest capacity, that the tenantry who have any permanency in their holding, are excited to undertake the improvement at their own expense' (Worgan 1811, 108). 'The drains are generally stone gutters, upon which are sometimes thrown small leased stones [ie those collected from the fields]; the whole covered with earth, sufficiently deep to admit the operations of the plough. In some instances, reed or brushwood is placed on the covered stone gutters, to prevent their being choked with earth' (*ibid*, 108-9). Worgan gave as an example of the benefits derived from drainage the efforts of William Pearce of Turf-house in Landewednack parish, 'a day-labourer earning only one shilling a day, and supporting a family of seven children, when he was fifty years of age, began, after his daily labour was finished, to drain and cultivate twelve acres of swampy ground, which after eighteen years labour, produced in 1803 ten bushels of wheat, ninety bushels of barley, besides six bushels of oats, Cornish measure, and nine trusses of hay, besides pasture for cattle' (*ibid*, 116).

The newly improved fields were divided by hedges (mainly turf banks with growing hedgerows – often of willow – on their tops) that were usually carefully aligned so that they could have open ditches along their sides, which ran into the local stream. Into these ditches ran the water from the network of field drains, usually patterns of parallel lines, sometimes herringbone patterns (Taylor 1975, 148-50). Tile drains (in which semicircular bricks were placed on top of flat tiles at the base of a trench) and proper pipe drains were not really economic until industrially manufactured in the early 19th century, and they appear not to have been used in a widespread way until the 1840s. Then, as farming economics recovered from the depression that followed the end of the Napoleonic Wars; as all agricultural commentators (the contemporary equivalent of the Farmer's Weekly) urged farmers of all classes to drain all their wetlands; and as the Government offered grants to subsidise the costs of installing drains, the marshes of Cornwall and the rest of Britain were subjected to massive programmes of improvement (Fussell 1952, 15-34; and see Fig 6).

Karkeek in 1845 set out how much work was expected to be achieved in a day's work when draining, and how much could be expected to be charged by the labourer. The day's work, a run 18 feet long dug '4 feet deep, 2 feet wide at the top and 1½ at the bottom, walled with stone and covered with stone' would cost just 1s4d, equivalent to the lowest wages that a labourer might expect to receive for capital works. Thrashing corn, for example, earned a labourer 1s8d per day; turf hedging 2s per day; while stone hedging

earned 3s6d to 5s. This suggests that drainage work was perceived as simple work for the most unskilled (Karkeek 1845, 458-9).

Large areas of heathland and marsh were taken into cultivation in the mid 19th century. 'Lord Falmouth, in particular, had set a fine example in this work, gradually enclosing all his waste land.... In February 1870, the Enclosure Commissioners also recommended the reclamation of 1,100 acres of the Goss Moors' (Barton 1972, 187).

### **3.4 Lowland marshes as an historic landscape characterisation (HLC) type**

The following text has been adapted from that prepared for 'Marshes/wet scrub' a HLC type recently identified during the historic landscape characterisation of the River Lynher (Herring and Tapper 2002). The Lynher project was instigated by the Environment Agency, FWAG and CCC with the aim of establishing the nature and development of historic land use so that traditional management regimes could inform future ones. Maintenance of quality of water in the river and streams was a key aim of the project so particular attention was paid to former land uses, which would have had a positive or negative impact on this. Unfortunately the marshes/wet scrub HLC type has not yet been mapped for the whole of Cornwall.

#### **Introduction : defining/distinguishing attributes**

Areas of poorly drained ground alongside streams and rivers. Often dominated by willow carr or marsh land. Used in the recent past as summer grazing, as a source of withies, and places where wild fowl could be snared or shot.

#### **Principal historical processes**

Areas left unimproved by farmers until the modern period. Some, particularly on poorly capitalised farms have still not been drained, but this Type was much more widespread before the 18th and 19th centuries and the industrial manufacture of drainage pipes. These places were not left unexploited, but would have been subject to some management. Willows would have been coppiced and their withies used for basketry. Hides would have been built for shooting birds and fences erected for containing animals turned onto these rough grazings in the drier summer months for grazing. Marshes, willow gardens, osier beds etc were given values in the c1840 Tithing Apportionment schedules.

Close study of St Ive parish confirmed that as late as 1840 virtually all of the streams and rivers were edged with moors, marshes, morasses, and hams. Most have subsequently been improved. The impact on the drainage system is likely to have been profound.

#### **Typical historical/archaeological components and features**

Coppiced willows, alders and other wet-loving trees as well as reeds and rushes dominate the semi-natural vegetation in these areas. Some fences or even built boundaries and pasture dividers survive.

#### **Past interaction with other HLC Types**

These marshes and wetlands would have been used as described above by occupants of the surrounding Enclosed Land (Ancient, Post-medieval and Modern).

#### **Evidence for time-depth**

Most coppiced and pollarded trees have been allowed to grow on and many are now over-mature but nevertheless indicate how long ago active management ceased. Some banks and other boundaries also survive within these marshes.

## **Values and perceptions**

Highly valued ecologically: Many important species of fauna and flora thrive or at least survive in these relatively undisturbed parts of Cornwall. Many are nature reserves or have been given national or county nature conservation designations. As yet, not given much attention by historians or archaeologists despite contributing much to our understanding of past communities' full and varied use of their landscape. Help contribute to the wooded character of valleys.

## **Potential for historical and archaeological research**

Relatively little research has been undertaken on the palaeo-environmental potential of studying peat profiles taken from lowland bogs. Further historical analysis of the uses made of these marshes and wet areas can be expected to yield useful information.

## **Potential for amenity and education**

Limited due to the difficulty of providing access to wet and awkward sites that are often only reached via working farmland. A number of pathways and boardwalks have been established in lowland bogs by the Cornwall Wildlife Trust and the National Trust elsewhere in Cornwall.

## **Survival**

The Type itself is likely to have been much more extensive before improvements in drainage in the 18th and 19th centuries. Within surviving blocks, however, it is likely that minimal modern use has left coppices and built boundaries quite well preserved.

## **Vulnerability**

Some marshes fall within the Cornwall and Tamar valley Areas of Outstanding Natural Beauty. Some are Sites of Special Scientific Importance or Cornwall Nature Conservation Sites. In addition to these designations, recently raised awareness of conservation issues might make it less likely that such areas would now be agriculturally improved.

## **Forces for change**

Notwithstanding the last statement, the principal threats to lowland bogs and marshes do come from agricultural improvement. There is also a likelihood that suspension of traditional land use will lead to changes to habitats and to neglect of internal boundaries and the like.

## **Importance**

Although the ecological importance of lowland bogs and marshes may outweigh the historical and archaeological, these features do have significant roles to play in determining local historic landscape character and demonstrating the variety and complexity of traditional land use.

## **Safeguarding the Type**

An ideal would see the retention of all surviving examples of this Type. Further agricultural improvements by draining bogs and marshes, while increasingly achievable with modern machinery, should be discouraged. This would ideally be done by raising farmers' awareness of the value of the Type, but if necessary might be achieved either by designation and protection or through developing financial disincentives (eg through agri-environmental schemes).

It appears reasonable, in the light of the concerns in the Lynher Valley Project area, to suggest that there should be positive encouragement for re-establishing lowland marshes,

where feasible, alongside the main river and its tributaries. This may be expected to further reduce input of nutrients into the river systems and have considerable benefits in terms of biodiversity and historic landscape character.

## 4 Results of the mapping exercise

Because of the differences in the quality of the historic mappings used in this exercise, as outlined in Section 2.2, the generation of statistics showing changes in marshland extent must be undertaken with considerable caution. The visual presentation of four separate maps for each area, with commentary on their content and a more impressionistic review of the changes they appear to portray, might be more effective for demonstrating marshland change than the use of flawed statistics.

### 4.1 Changes in marshland extent: River Ruthen (Fig 2)

#### 4.1.1 c1840 and the pre-modern situation (Tithe Maps)

The Ruthen catchment in the early Victorian period was an area of mature medieval farmland with convertible husbandry arable on the midslopes, summer grazing on the downs (such as Rosenannon Downs) on the higher northern hills, and very extensive lowland moors.

Whole valley floors appear to have still been retained, or even maintained as wetlands, valuable agricultural land when Cornwall's farming regime was still mixed and meadows, summer grazings and withy beds were at a premium (see Section 3.2). This was most evident at the head of the river, in the low ground of the medieval Borlase and Killeganogue Farms, and at the head of the main southern tributary, at Brynn. In these places a fan of minor streams rose at springs, and wetland was spread across relatively wide flat lands. Downstream the valley bottoms were narrower, but were still largely given over to either moor or meadow, the meadow land (probably a little less wet, often slightly marginal to the valley bottom) probably used for hay and sheltered grazing. Small patches of 'waste' were also recorded in some valleys, mere strips of land. These were probably not grazed (otherwise the Tithe Commissioners, keen to attribute as much land as possible to agricultural use to better benefit the church, would have classified it as some form of pasture), but we may imagine that the willows and alders that would have grown here were used as outlined in Section 3.2. One small area of 'Marsh' was recorded to the north-east of Withiel.

The image of the Ruthen valleys gleaned from the c1840 Tithe Maps may be regarded as typical of Cornwall's pre-modern farming landscape. It can be seen that the moors and marshes were integral elements of that landscape.

The following are simple totals of the areas of a range of land use types, derived from both the land use columns of the Tithe Apportionments and from the field names, and then mapped onto the GIS. Totals have been generated from the Access database sitting behind the GIS polygons.

<b>Land use type</b>	<b>Hectares</b>
Moor	143.6
Meadow	15.7
Rough Pasture	13.6
Rough Pasture / Arable (presumably mainly rough ground that was subject to occasional cultivation)	5.2
Pasture (ie outside the convertible husbandry land of the farm, not used for arable)	4.7
Arable (included where the fields have names suggestive of former	3.6

marsh)	
Furze (drier rough ground capable of supporting this important fuel plant; gorse)	1.6
Waste	1.4
Arable / Rough Pasture (where land was predominantly arable, but included portions of rough ground)	1.3
Marsh	0.9
Wood (alongside streams, possibly willow and alder dominated)	0.8
Furze / Rough Pasture	0.5
Rough pasture / Furze / Arable	0.2
Arable / Orchard	0.2

#### 4.1.2 c1880 and c1907 OS maps

If our understanding of the extents of former marsh and moor land in the Ruthen valleys had depended on the two first editions of the Ordnance Survey large scale mapping, we would imagine this to have been a land virtually devoid of very wet ground. Just two medium sized fields at Treliver and Old Trewithen Mill, on the main Ruthen River, survived to be recorded as marsh in c1880, plus a slip of land to the south of Lantuel. A line of osiers was shown along an old river course near where the Ruthen joined the Camel. There were, however, extensive stands of furze and large areas of rough pasture along the bottoms. Much of the low-lying ground seems still not to have been used as arable, but as summer grazing and fuel grounds. It is likely that this ground had benefited from considerable expenditure on drainage.

The c1907 OS map shows that those small patches of marsh that remained in c1880 had been drained by the beginning of the 20th century.

Land use type (from OS conventions)	c1880 extent (Hectares)	c1907 extent (Hectares)
Furze and Rough pasture (mixed)	298.8	315.6
Brushwood and Bush (probably dominated by willow and alder)	15.9	17.3
Marsh	2.9	1.1
Osiers	0.1	-

#### 4.1.3 1996 habitat mapping

The 1996 habitat mapping, undertaken by the LIFE programme, using colour aerial photographs, indicated that virtually all of the lowland rough ground, the furze and rough pasture of the first and second editions OS mapping had been removed during the twentieth century, probably largely through installation of drains.

It is of considerable interest this recent mapping indicates a significant increase in the area of wet land in the Ruthen catchment. Most of this is found on the broad flatlands at the heads of tributaries, especially the two main southern streams at Brynn and south of Tremorebridge, but also on the lower slopes of Rosenannon Downs and near Lantuel.

Most of the other land that had been fully or partially improved in the 19th century remains essentially dry, and it is noticeable that those areas that have reverted are amongst the most marginal or intractable in the area. It seems most likely, then, that the return of wetlands is a function of two factors:

- drains in the flatter lands at stream heads being more difficult to keep clear;
- and particular farm economics in some of these more marginal areas being such that maintaining improvements has either not been considered cost-effective, or has not been affordable or desirable.

<b>Habitat class</b>	<b>Hectares</b>
Wetland	56.0
Poor Unimproved Grassland	5.2
Scrub / Wetland	4.8
Heath / Wetland	2.4
Improved Grassland / Wetland	2.2

## **4.2 Changes in marshland extent: River Strat/Neet (Fig 3)**

### **4.2.1 c1840 and the pre-modern situation (Tithe Maps)**

Unfortunately, the Tithe Maps of Launcells and Kilkhampton parishes did not provide usable information on land use and field names, so the mapping of this layer is incomplete. There is also considerable variety in the use of terms that might obscure some patterns of land use. However, there does seem to have been considerably more ‘Marsh’ in the southern valleys of Whitstone, Week St Mary, Poundstock, and Jacobstow than in the northern valleys around Stratton and Marhamchurch where ‘Meadow’, ‘Moor’ and ‘Ham’ are more common, and may suggest that the land was less boggy generally.

As in the Ruthen catchment, the most extensive areas of wetland were around the heads of certain streams, such as in the vicinity of Bevill’s Hill in Whitstone (extensive ‘Moors’), while hams and meadows, essentially seasonally damp pastures, predominated in the middle reaches of the rivers. There were extensive areas of ham, meadow and moor along the tidal stretch of the river, north of Helebridge.

Land use type	Hectares
Meadow	104.5
Arable	90.4
Marsh	75.5
Ham (English term for wet bottoms, often meadow)	32.8
Pasture	28.6
Rough Pasture / Arable	8.6
Arable / Rough Pasture	7.9
Rough Pasture	3.9
Arable / Furze	2.6
Arable / Meadow	2.4

Arable / Rough pasture / Coppice	1.3
Arable / Coppice	1.1
Rough Pasture / Coppice	0.9
Arable / Pasture	0.8
Furze	0.4
Orchard / Pasture	0.3
Rough pasture / Furze	0.3
Furze / Rough Pasture	0.1
Furze / Pasture	0.1

#### 4.2.2 c1880 and c1907 OS maps

The c1880 and c1907 OS mappings show virtually no marshes or other wetlands surviving in the whole of the Strat/Neet catchment. The same processes as described above (Sections 3.3 and 4.1) are likely to have removed them. As in the Ruthen, there remained significant areas of rough grazing and furze.

Land use type (from OS conventions)	c1880 extent (Hectares)	c1907 extent (Hectares)
Furze and Rough pasture (mixed)	687.7	393.4
Brushwood and Bush (probably dominated by willow and alder)	12.7	44.4
Marsh	8.2	1.7
Osiers	0.6	-

#### 4.2.3 1996 habitat mapping

As for the Ruthen catchment, the 1996 habitat mapping, indicates loss of most of the lowland rough ground together with an increase in the area of wetland in the Strat/Neet catchment, although the extent of reversion to wetland is less pronounced than in the Ruthen. Again, the underlying reasons for this development are likely to be the same as in the Ruthen area.

Habitat class	Hectares
Poor Unimproved Grassland / Wetland	13.6
Wetland	3.6
Improved Grassland / Wetland	2.4
Grassland / Wetland	0.6
Broadleaf Wood / Wetland	0.2

### 4.3 Place-name evidence for former extents

Figure 8 presents place-name evidence for wetlands in Cornwall, based on the elements discussed above, in Section 3.1. The places mapped are largely farming settlements (see

Appendix 1 and Fig 10 for details); there will also be hundreds of other additional names, not included here, from topographical features and fields. More than half of the place-names used have secure medieval origins, and many of the others are likely to be as early, especially those with Cornish names and those whose earliest date is recorded in Appendix 1 as 'unknown'. The 39 mapped wetland place-names dated to the 18th and 19th centuries are mainly English; most are from intake farms created during the agricultural improvement that included the draining of the bogs that gave the farms their names.

As noted earlier, the significance of these settlement names lies in the fact that the bog or wetland was of such local importance in the medieval or early post-medieval periods that it contributed to the farm's name. This indicates that wetlands were distinctive and noticeable features in the farming landscape and were regarded not as blights, but instead as places of sufficient value to name the settlement from them.

The map shows a distribution of wetland place-names, both Cornish and English, that is biased towards the central spine of Cornwall. This reflects the patterns identified in the more detailed case studies of the Ruthen and Strat/Neet: the larger wetlands, those that might be expected to attract settlement names, being predominantly at the heads of the streams and rivers.

Without undertaking a full study of the present state of the landscape at all the names mapped on 10, it can be remarked that most have now had the wetlands that were marked in their names drained, and so effectively lost.

## **5 The basis of an Historic Environment Action Plan for lowland marshes in Cornwall**

### **5.1 Historic Environment Action Plans**

In June 1992, the [Convention of Biological Diversity](#) was signed by 159 governments at the Earth Summit, which took place in Rio de Janeiro (it is also referred to as the Rio Convention.). It entered into force on 29 December 1993 and it was the first treaty to provide a legal framework for biodiversity conservation. It called for the creation and enforcement of national strategies and action plans to conserve, protect and enhance biological diversity' ([www.ukbap.org.uk](http://www.ukbap.org.uk)).

Since the Rio Convention, natural environment agencies have been developing Biodiversity Action Plans (BAPs) to guide conservation and active sustainable management works in vulnerable parts of the environment. The historic environment sector has been slow to follow suit, despite the wide recognition that the natural environment of Europe has been altered by several thousands of years of human activity, largely related to agricultural land use, and so can be seen as a semi-natural environment, and thus also as an historic environment.

Historic Environment Action Plans, or HEAPS, were first conceived in Cornwall (the earliest example being a HEAP for the upland rough ground of Bodmin Moor; Herring and Preston-Jones 2003), and like BAPs they are developed from an assessment of an aspect of the historic environment's significance, then consideration of its condition, vulnerability, and the pressures acting upon it. Realistic recommendations are then made for the conservation and management of the resource.

HEAPs can be developed for types of site or complex (such as hillforts, or field systems), just as BAPs can be prepared for particular species and groupings (turtles or veteran trees). When considering developing HEAPs at the landscape scale, the equivalent of habitat BAPs, an equivalent mapping system and associated level of contextualisation and understanding to that of the natural environment's habitat mapping and analysis is historic landscape characterisation (HLC). Although, as noted earlier (3.4), there is not as yet a comprehensive mapping of the Lowland Marsh HLC Type in Cornwall, it is possible to build a HEAP on the work undertaken for the Morasses, Moors and marshes project.

### **5.2 Statements of significance of lowland wetlands in Cornwall**

This study did not set out to systematically assess the benefits of retaining and recreating Cornwall's lowland wetlands, but the following are some of the more obvious gains from doing so. Together with the text for the Lowland Marshes HLC Type (3.4), these may be read as statements of the significance of lowland marshes in Cornwall.

#### **5.2.1 Ecological**

As noted above, marshes have considerable biodiversity value. They are sheltered and rich habitats with communities of wetland grasses, sedges, rushes, trees, mosses, lichens, fungi, insects, amphibia, mammals and birds. Their difficult, wet nature, and the position of many of them within privately owned farmland often leaves them less disturbed by people than most other habitats in Cornwall. Most bogs have been replaced by the much less biodiverse improved grassland, or even arable land, and in most instances the ecological gains from reversion to bog will be substantial. It is understood that high biodiversity values can be regained more efficiently through recreating lowland bogs than through the recreation of most other British habitat types.

Wetland habitats were shown by the Cornwall LIFE Project to be the most threatened habitat in Cornwall. It was estimated that 8% of remaining wetlands were lost between 1988 and 1995 (Cornwall Biodiversity Action Plan).

### **5.2.2 Water management and pollution control**

Lowland marsh can serve as a metaphorical sponge, capturing run-off water from slopes and slowing its discharge into streams and rivers, thus reducing flooding.

Marshes can also improve the quality of water quality in watercourses by absorbing nutrients, chemicals and other pollutants that would otherwise drain directly into them. This does, however, create a negative impact on the quality of the water in the marsh itself, raising its nutrient levels and introducing pollutants that can alter the ecosystem of the marsh.

### **5.2.3 Landscape and visual amenity**

Marshes, whether under rushes, sedges, reeds, heathy vegetation, or willows and alders, provide considerable variety and interest in valley views. They introduce lines or patches of apparent wilderness to otherwise often intensively managed farming landscapes. These areas are also often subject to more colour changes through the seasons than other parts of the agricultural landscape. It is therefore in the interests of those who value Cornwall's famously beautiful rural landscapes to first retain existing wetlands and second encourage the re-creation of lost ones.

### **5.2.4 Historic landscape**

As set out in Section 3, lowland marshes were important elements in the much more varied farming landscapes of pre-modern Cornwall. Although many of the distinctive archaeological remains that would have developed through former exploitation of the marshes (wildfowl pools, hides, pasture boundaries, etc) will have been removed during their improvement, the re-creation of original semi-natural/semi-cultural communities would help re-establish a key component in the historic landscape character of traditional Cornish mixed farming landscapes.

## **5.3 Issues**

The following issues affecting lowland marshes in Cornwall have been drawn from the Cornwall BAP.

- There currently exists in Cornwall (and in the United Kingdom as a whole) a small total area of lowland marsh and critically small population sizes of several key species dependent on the habitat. Loss of marshes through drainage and conversion to intensive agriculture continues.
- There is a general lack of or inappropriate management of marshes leading to drying, scrub encroachment and succession to woodland.
- Eutrophication through leaching and run-off from fertiliser applied to agricultural land leads to increased growth and dominance of vigorous plant species and can lead to a loss of biodiversity.
- Water abstraction has lowered water tables and affected the balance between the differing qualities of ground and surface waters.

#### **5.4 Recommendation 1: cessation of marshland drainage and improvement**

Farming culture still encourages most farmers to see areas of rushes as evidence of poor practice and patches of more complete marshland as land with potential for improvement. The designation of many marshes as Sites of Special Scientific Interest has protected these from such improvement and the growing influence of bodies like FWAG and CWT will have made many farmers reconsider these values, which were continually reinforced during all periods from the 18th to the late 20th centuries. Extension of designations may be one proscriptive method of further preventing drainage, but a more positive approach would involve continuing to demonstrate to the farming and land-owning communities that marshes are not only important elements of the natural and historic environments but also places of value to themselves as places which can be seasonally grazed and which provide interest (including sport) to their farms. See below (5.6) for other potentially sustainable uses.

The Higher Level Scheme of the Environmental Stewardship agri-environmental scheme offers payments for land managers to undertake various activities to better manage their wetlands. In 2005 these include maintenance of reedbeds by controlling scrub cover, retaining some open water, cleaning ditches infrequently, etc (HLS scheme: HQ3: £60 per ha); maintenance of fen (HQ6: £60 per ha); maintenance of lowland raised bog (HQ9: £150 per ha); wetland cutting supplement (HQ11; £350 per ha) and wetland grazing supplement (HQ12; £200 per ha).

#### **5.5 Recommendation 2: re-creation of marshland**

Marshland is relatively easily re-created; often it is simply a matter of interrupting the lines of drains. Rich wetland communities can then develop rapidly. As agriculture moves towards a period where there will be increased encouragement for extensification of production and environmentally positive regimes, the loss from intensive production of small stream-side slips of land, usually at the margins of both fields and farms (property boundaries so often running along streams and rivers) can be expected to be more easily tolerated than in the recent past. Incentives could include payments through agri-environment schemes to cover capital works (blocking of drains, erection of fences where necessary) and if appropriate to compensate farmers for income foregone.

In 2005 there are various provisions within the Environmental Stewardship Scheme for either restoring or recreating wetlands: restoration of reedbeds (HQ4; £60 per ha); creation of reedbeds (HQ5; £380 per ha); restoration of fen (HQ7; £60 per ha); creation of fen (HQ8; £380 per ha); and restoration of lowland raised bog (HQ10: £150 per ha).

Explicitly encouraging the management and re-creation of lowland marshland through ES targets in Cornwall is therefore strongly recommended.

#### **5.6 Recommendation 3: encourage sustainable uses of marshland**

The most effective way of maintaining and re-creating marshes would be to develop sustainable economic uses for them, especially if these did not act as a drain on a farmer's time and resources. If marshes could again be seen as places with economic value, as they clearly were in early post-medieval times, then those who do most to manage and sustain the countryside and its natural and historic components, the farmers, would see direct benefits from retaining and re-creating them.

Some marshes are still grazed in Cornwall, but it must be conceded that they are not as easy to manage as open grassland, and many farmers may not wish to endure the hassle of

checking for beasts in difficulties. There may also be a perception that the animals are more at risk from infection and injury when turned out into marshes.

It would be unrealistic to expect busy modern farmers to resurrect many of the former uses of marshes – none can be expected to find time to peel rushes and draw them through fat to create sticky smelly candles (3.2.5). However, in a climate where agricultural diversification is continually encouraged, they could consider diversifying into some of the former products of marshland. This need not entail direct involvement in the use of the marshes if farmers were instead to allow other groups or individuals to manage the marshes.

This could be most effectively achieved through the use of co-operatives which might organise the cultivation, nurturing, harvesting and marketing of products from a large number of marshes, the farmers or land-owners receiving benefit through payment for produce. Potential products might include those that would be required from the several minor crafts and industries that are being resurrected in rural Cornwall, such as basket-making and thatching, which require withies and reeds/sedge respectively. Another potentially viable and thus sustainable use of marshes might be for sport, especially wildfowling. Again this might be organised by local sporting syndicates similar to those that already exist on the higher moors and which control much of Cornwall's fresh-water fishing. Alternatively farmers may find that they obtain significant pleasure from fowling on their own marshes, and from successfully enhancing those marshes to attract the birds.

It seems likely that there will be developing in the Cornish countryside in the next few years increasing numbers of models for such co-operative means of production and it may be hoped that they will breathe new life into those unnecessarily neglected and maligned morasses, moors and marshes.

## 6 References

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## 7 Project archive

The CAU project number is **PR200100**

The project's documentary, photographic and drawn archive is housed at the offices of Cornwall Archaeological Unit, Cornwall County Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. This report held in digital form as: G:\CAU\HE Projects\Sites\Sites MMorasses, Moors and Marshes\MMM report, May 2006.doc



<b>Id</b>	<b>Name</b>	<b>Earliest date</b>	<b>Element</b>	<b>Id</b>	<b>Name</b>	<b>Earliest date</b>	<b>Element</b>
1	Penhale	1086	*Pen-hal	64	Halmeers	1305	Hal
2	Halwyn	1086	Hal	65	Woolley Moor	1306	Moor
3	Otterham	1086	Ham	66	Halgrosse Moor	1306	Hal, *Cors
4	Dinham	1131	Ham	67	Penwenham	1306	Ham
5	Measham	1140	Ham	68	Yeolm Bridge	1308	Ham
6	Withybrook marsh	1140	Withy	69	Penkestele Moor	1310	Moor
7	Bamham	1150	Ham	70	Trewortha Marsh	1310	Marsh
8	Loggans Moor	1156	Moor	71	Little Luckham	1311	Ham
9	Upham	1175	Ham	72	Chynhale	1311	Hal
10	Newham	1180	Ham	73	Kitsham	1311	Ham
11	Shortstone Moor	1201	Moor	74	Lanner Moor	1311	Moor
12	Bottaborough Moor	1201	Moor	75	Chenhale	1312	Hal
13	Tremoreland	1201	Moor	76	Treven	1314	Fen
14	Moorland Mill	1201	Moor	77	Penhallow	1314	*Pen-hal
15	Gooseham	1201	Ham	78	Trewithen Moor	1315	Moor
16	Penhale	1201	*Pen-hal	79	Halgavor Moor	1315	Hal, Moor
17	Tregoss Moor	1210	Moor, *Cors	80	Penhalvean	1319	*Pen-hal
18	Newham	1215	Ham	81	Sparnon Moor	1319	Moor
19	Newham	1216	Ham	82	Penhalveor	1319	*Pen-hal
20	Lower Penhale	1220	*Pen-hal	83	Brane Moor	1323	Moor
21	Higher Penhale	1220	*Pen-hal	84	Halmur	1325	Hal
22	Wareham Wood	1224	Ham	85	Newham	1327	Ham
23	Escalls Moor	1227	Moor	86	Chynhale	1327	Hal
24	Hallgarden	1244	Hal	87	Halvose	1327	Hal
25	Penhole	1250	*Pen-hal	88	Lower Penhale	1327	*Pen-hal
26	Moor	1256	Moor	89	Carvear Moor	1327	Moor
27	Wrasford Moor	1256	Moor	90	Newham Farm	1327	Ham
28	Halwell	1257	Hal	91	Morvah	1327	*Morva
29	Trerank Moor	1260	Moor	92	Penhale	1327	*Pen-hal
30	Penelewey	1267	*Pen-hal	93	Tavan	1327	Fen
31	Halwyn	1270	Hal	94	Penhale	1327	*Pen-hal
32	Brazemoor	1279	Moor	95	Penhalurick	1327	*Pen-hal
33	Castallack Moor	1284	Moor	96	Venn Down	1327	Fen
34	Penhale	1284	*Pen-hal	97	Scorsham	1327	Ham
35	Marsh	1284	Marsh	98	Venn	1327	Fen
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37	Hellesveor Moor	1284	Moor	100	Penhale	1327	*Pen-hal
38	Witheven	1284	Withy	101	Penhale	1327	*Pen-hal
39	Bosworlas Moor	1284	Moor	102	Venn	1329	Fen
40	Bussow Moor	1284	Moor	103	Ham Mill	1330	Ham
41	West Witheven	1284	Withy	104	Newham	1331	Ham
42	Penhale	1284	*Pen-hal	105	Hambland	1333	Ham
43	Polwin	1287	Hal	106	Halvose	1334	Hal
44	Trevarnon Moor	1289	Moor	107	Carnyorth Moor	1334	Moor
45	Halvasso	1289	Hal	108	Halgarrack	1334	Hal
46	Criggan Moors	1292	Moor	109	Halbathick	1337	Hal
47	Bodelva Moor	1293	Moor	110	Chenhall	1337	Hal
48	Laity Moor	1295	Moor	111	Halabezack	1337	Hal
49	Davidstow Moor	1296	Moor	112	Tredenham	1337	Ham
50	Ilcoombe Moor	1296	Moor	113	Innyham	1337	Ham
51	Halwin	1298	Hal	114	Trenale	1337	Hal
52	Penhale Jakes	1299	*Pen-hal	115	Broadmoor	1337	Moor
53	Gnatham	1301	Ham	116	Morden	1339	Moor
54	Redmoor	1301	Moor	117	Whetherham	1342	Withy
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56	Eastcott Moor	1302	Moor	119	Halwyn	1350	Hal
57	Penhale	1302	*Pen-hal	120	Hersham	1355	Ham
58	Hale	1302	Hal	121	Moor (Farm)	1356	Moor
59	Hackmarsh	1302	Marsh	122	Ham	1356	Ham
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61	Venn	1302	Fen	124	Halemal (moor)	1361	Hal
62	Halgabron	1302	Hal	125	Hallow	1364	Hal
63	Penhale	1302	*Pen-hal	126	South Moor	1370	Moor

127	Druckham	1377	Ham	191	Penhallow	1748	*Pen-hal
128	Hallivick	1379	Hal	192	White Moor	1748	Moor
129	Penhale	1382	*Pen-hal	193	Penhallow	1755	*Pen-hal
130	North Moor	1394	Moor	194	Lowertown Moor	1759	Moor
131	Plashford	1394	Marsh	195	Halvarras	1760	Hal
132	Luckham	1394	Ham	196	Haldinas	1800	Hal
133	Lettermoor	1400	Moor	197	Bog Farm	1810	Bog
134	Blacktor Downs	1401	Moor	198	Hall	1813	Hal
135	Colliford Downs	1401	Moor	199	Penhale	1826	*Pen-hal
136	Doublebois Moor	1418	Moor	200	Newton Moor	1837	Moor
137	Fillamore	1426	Moor	201	Hallorickle Moor	1839	Moor, Hal
138	Stuffle Moor	1439	Moor	202	Penhallow	1839	*Pen-hal
139	Hallworthy	1439	Hal	203	Penhallow Moor	1839	*Pen-hal
140	Little Halveor	1450	Hal	204	Venn Wood	1839	Fen
141	Hendramoor	1502	Moor	205	Lower Hams	1840	Ham
142	Halgoss	1507	Hal	206	North Hams	1840	Ham
143	Lawellen Moor	1518	Moor	207	Chy en Hal	1840	Hal
144	Redmoor Common	1521	Moor	208	Venn	1841	Fen
145	Heatham	1523	Ham	209	Tremethick Moor	1883	Moor
146	Venton Hall	1525	Hal	210	West Moors Head	1884	Moor
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148	Penhale	1531	*Pen-hal	212	High Moor	c1407	Moor
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152	Halwortha	1567	Hal	216	Penhale	unknown	*Pen-hal
153	Crimp Moor	1568	Moor	217	Penhale Wood	unknown	*Pen-hal
154	Hallagather	1569	Hal	218	Penhale	unknown	*Pen-hal
155	Poligy Moor	1571	Moor	219	Hallew	unknown	Hal
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161	Penhallows	1613	*Pen-hal	225	Moorshill	unknown	Moor
162	Crowdy Marsh	1613	Marsh	226	Ogbeare Moor	unknown	Moor
163	Fairmoor	1613	Moor	227	Venton Moor	unknown	Moor
164	Dewey Marsh	1613	Marsh	228	Halgavor	unknown	Hal
165	Hall Farm	1620	Hal	229	Penhale-an-Drea	unknown	*Pen-hal
166	Penhaldavva	1620	*Pen-hal	230	Chark Moor	unknown	Moor
167	Penhallow	1632	*Pen-hal	231	Halezzy	unknown	Hal
168	Hartswell Marsh	1654	Marsh	232	Menamoor	unknown	Moor
169	Paramoor	1659	Moor	233	Marsh Farm	unknown	Marsh
170	Halviggan	1660	Hal	234	Trefrogham	unknown	Ham
171	Nanpean Moor	1660	Moor	235	Goose Moor	unknown	Moor
172	Bridgemoor	1660	Moor	236	Halgavor	unknown	Hal
173	Halamenning	1661	*Pen-hal	237	Moorswater	unknown	Moor
174	Venn	1662	Fen	238	Little Halgavor	unknown	Hal
175	Frogmore	1662	Moor	239	Draynes Moor	unknown	Moor
176	Chenhalls	1681	Hal	240	Lower Penhale	unknown	*Pen-hal
177	Killham	1687	Ham	241	Hayle Kimbro Pool	unknown	Hal
178	Singamore	1690	Moor	242	Goosemoor	unknown	Moor
179	Halancoose	1697	Hal	243	Higher Newham	unknown	Ham
180	Timbrelham	1700	Ham	244	Halgarras	unknown	Hal
181	Exe Moor	1713	Moor	245	Halbullock Moor	unknown	Hal
182	Bickbeans	1713	Fen	246	Trewint Marsh	unknown	Marsh
183	Halwinnick Butts	1727	Hal	247	Hallon Moor	unknown	Hal, Moor
184	Madderly Moor	1740	Moor	248	Penhale	unknown	*Pen-hal
185	Halgalluir	1741	Hal	249	West Moor	unknown	Moor
186	Frogmore	1748	Moor	250	Hallagenna	unknown	Hal
187	Marshgate	1748	Marsh	251	Carmarthen Moor	unknown	Moor
188	Lockengate Moor	1748	Moor	252	Barrows Moor	unknown	Moor
189	Neeham	1748	Ham	253	Penhale	unknown	*Pen-hal

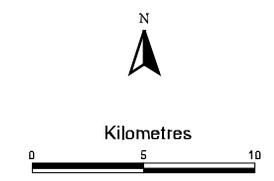
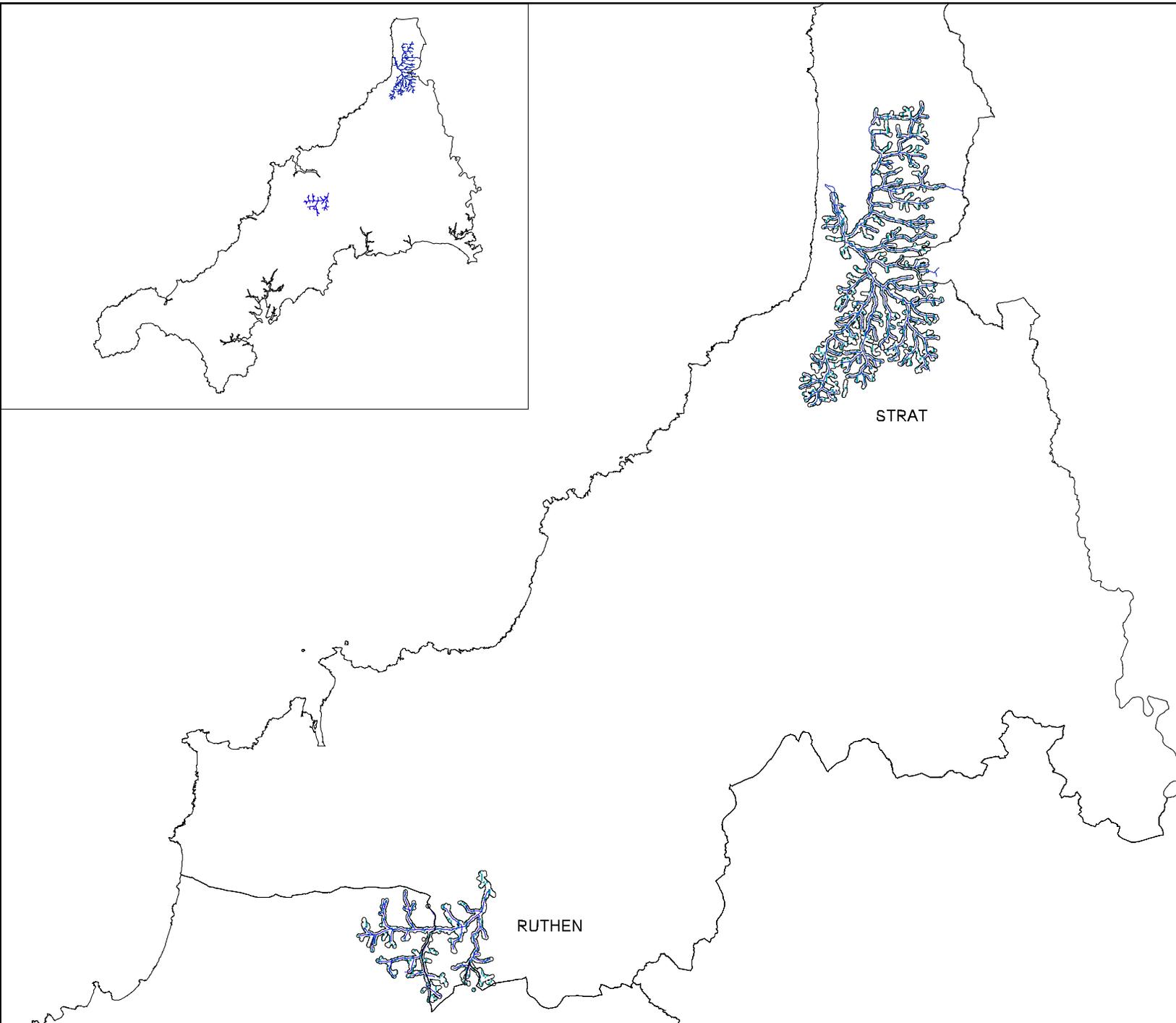
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257	New Moor	unknown	Moor
258	Moorhead	unknown	Moor
259	Millham	unknown	Ham
260	Trungle Moor	unknown	Moor
261	Moor	unknown	Moor
262	Marazion Marsh	unknown	Marsh
263	Marshall	unknown	Marsh, Hal
264	Walhalla	unknown	Hal
265	Gweny Moor	unknown	Moor
266	Tawnamoor	unknown	Moor
267	Haldrine Cliff	unknown	Hal
268	Polveithan	unknown	Budin
269	Penquearn	unknown	*Keun
270	Halankene	unknown	*Keun
271	Trequean	unknown	*Keun
272	Brounqueen	unknown	*Keun
273	Kennack	unknown	*Keun
274	Kenneggy	unknown	*Keun
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254	Halwyn	unknown	Hal

**Figure 1  
Location**

**Key**

 Ruthen and Strat Rivers

 100m Buffer Zone

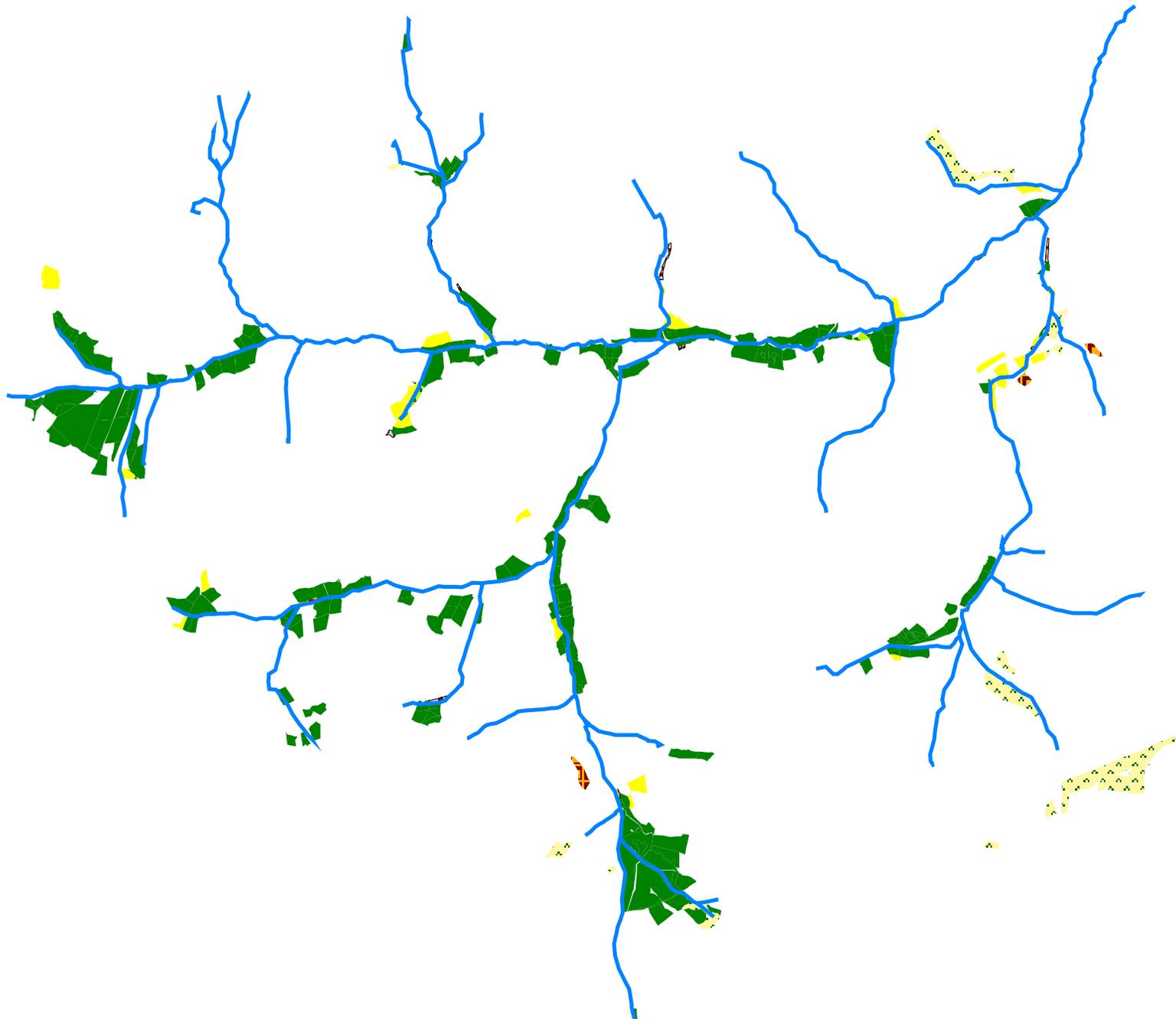


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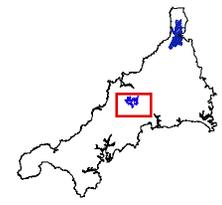


**Figure: 2 (a)**  
**Ruthen 1840**



**Key**

-  Marsh
-  Meadow
-  Moor
-  Waste
-  Furze
-  Ham
-  Rough Pasture
-  Ruthen river



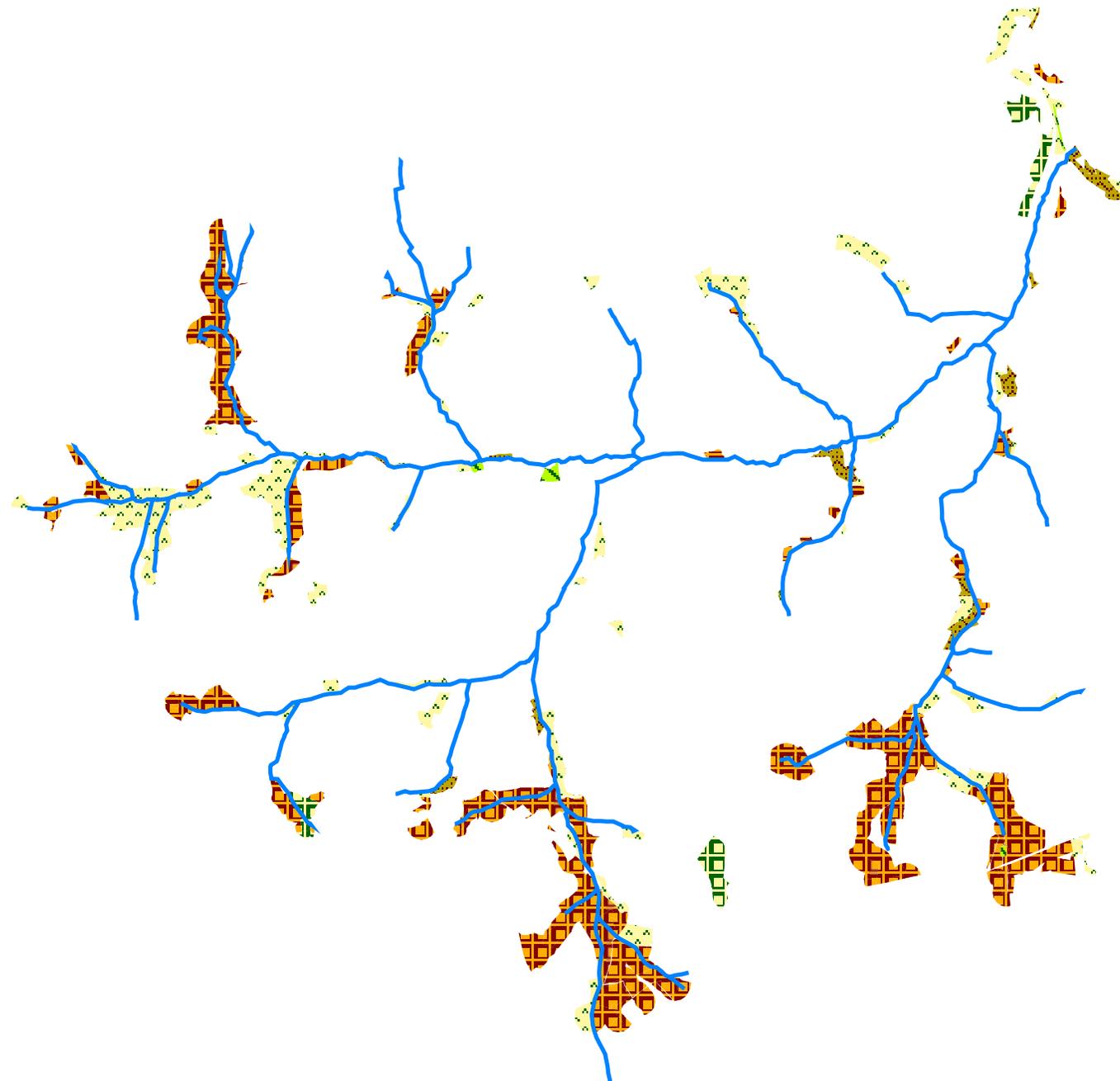
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Figure: 2 (b)  
Ruthen 1880



**Key**

- Brushwood
- Furze
- Marsh
- Osiers
- Rough Pasture
- Rough Pasture and Furze
- Ruthen river



N

Kilometres

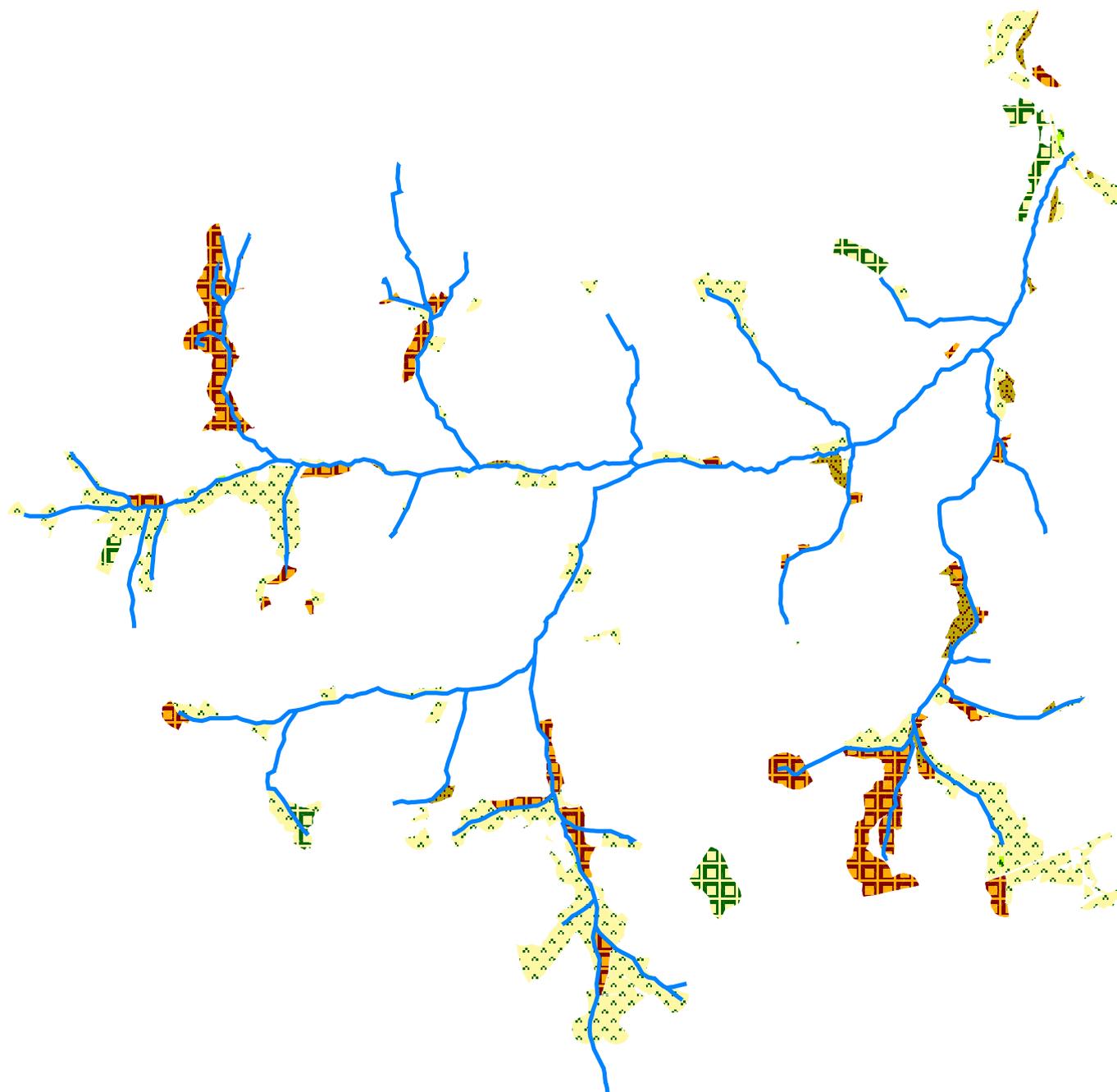
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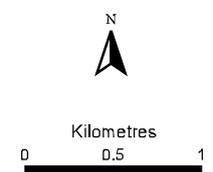
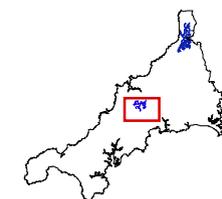


**Figure: 2 (c)**  
**Ruthen 1907**



**Key**

-  Brushwood
-  Furze
-  Marsh
-  Osiers
-  Rough Pasture
-  Rough Pasture and Furze
-  Ruthen river



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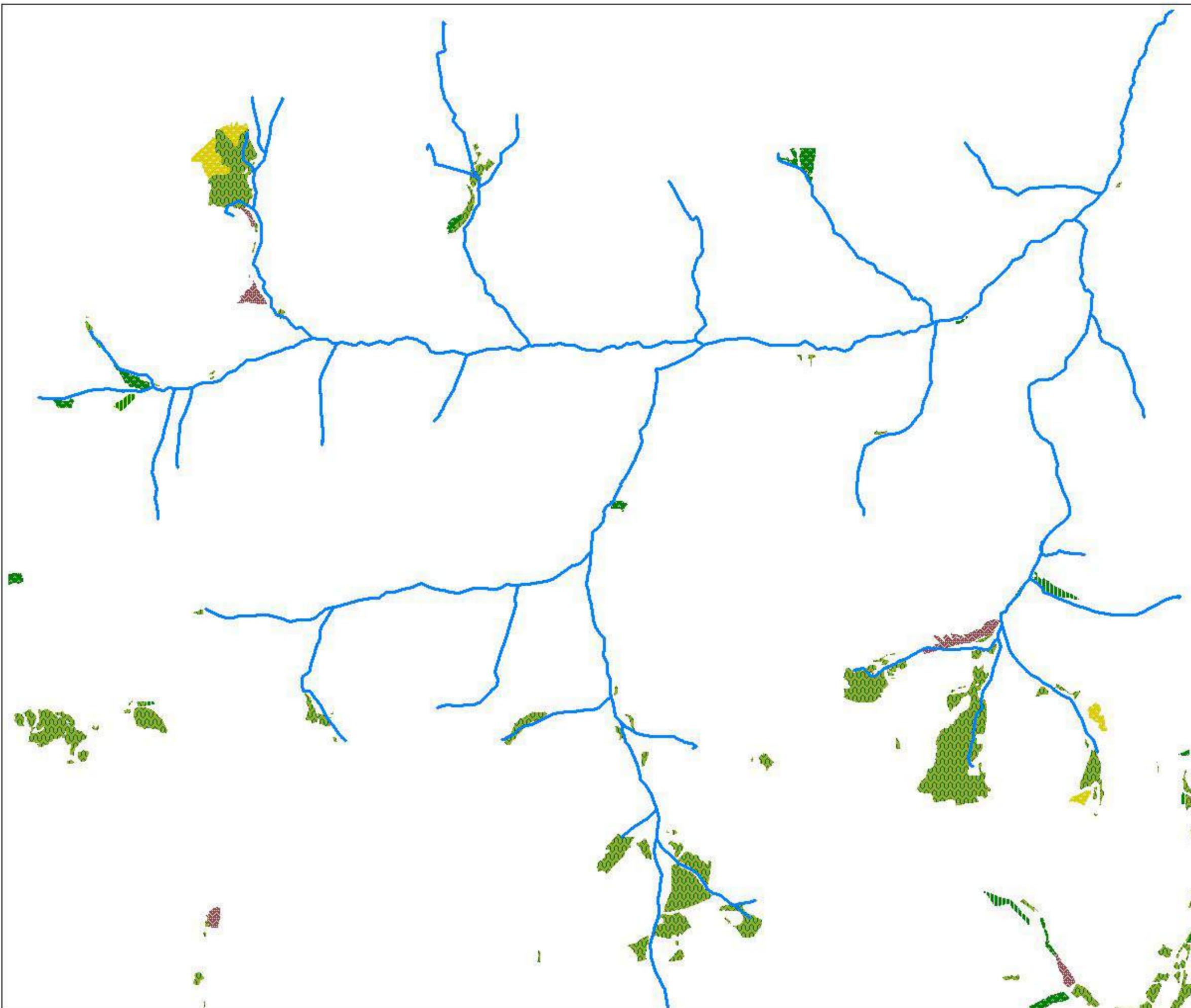
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**Figure: 2 (d)**  
**Ruthen 1996**

**Key**

-  Heath/Wetland
-  pU Grass/Wetland
-  Scrub/Wetland
-  Wetland
-  Improved Grassland/Wetland
-  Ruthen River



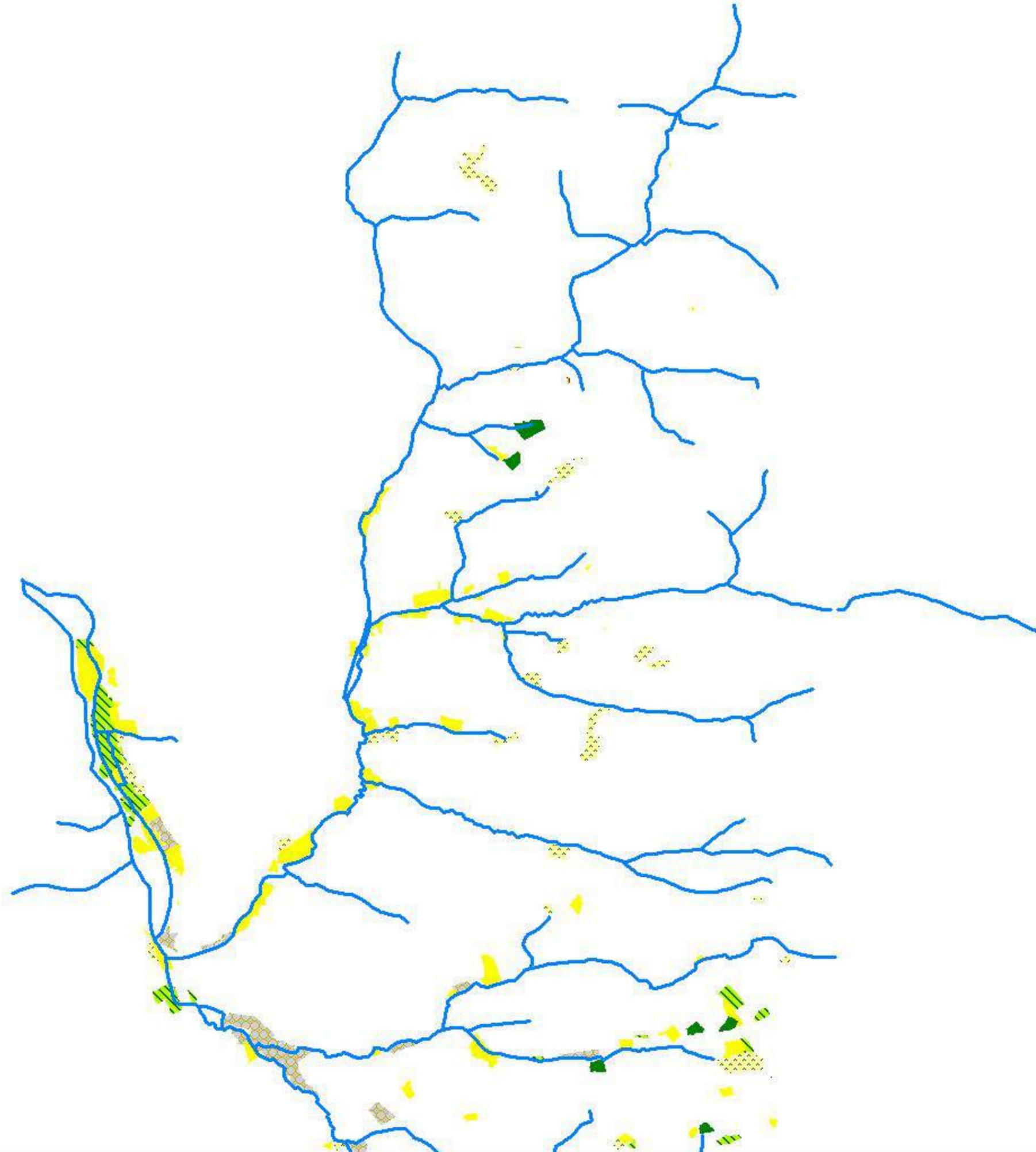
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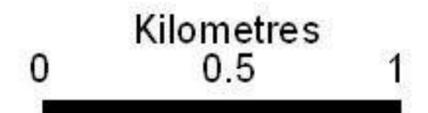
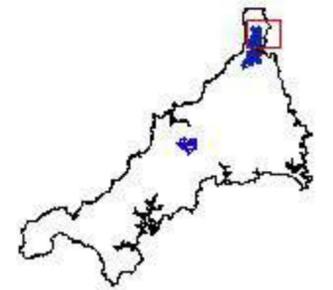


**Figure: 3 (a)**  
**Northern Strat 1840**



**Key**

-  Marsh
-  Meadow
-  Moor
-  Waste
-  Furze
-  Ham
-  Rough Pasture
  
-  Strat/Neet River



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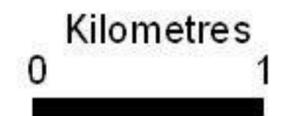
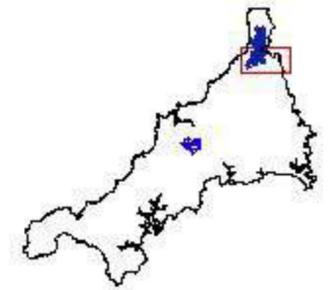
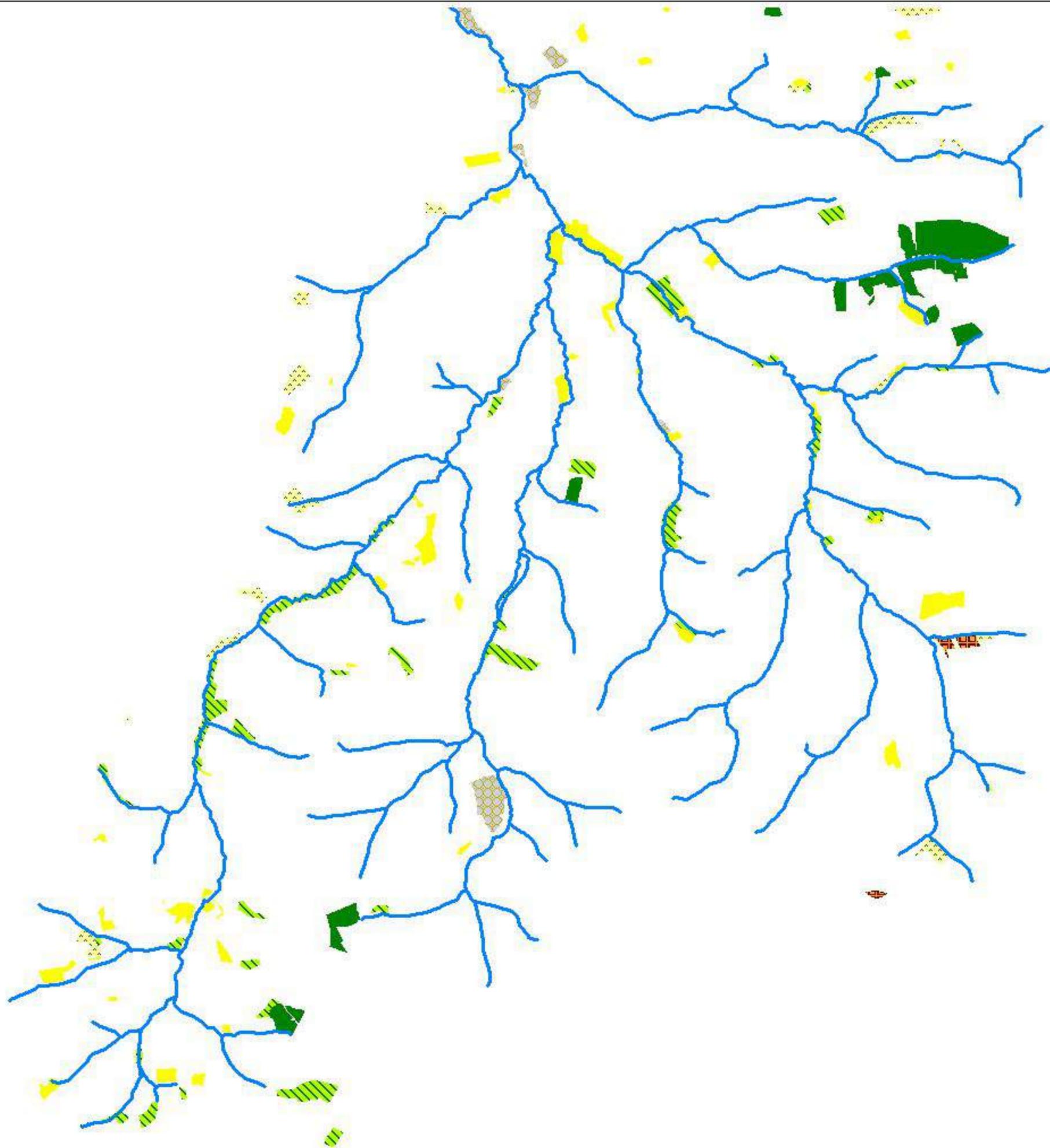
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Figure: 3 (a)  
Southern Strat 1840

Key

-  Marsh
-  Meadow
-  Moor
-  Waste
-  Furze
-  Ham
-  Rough Pasture
  
-  Strat/Neet River

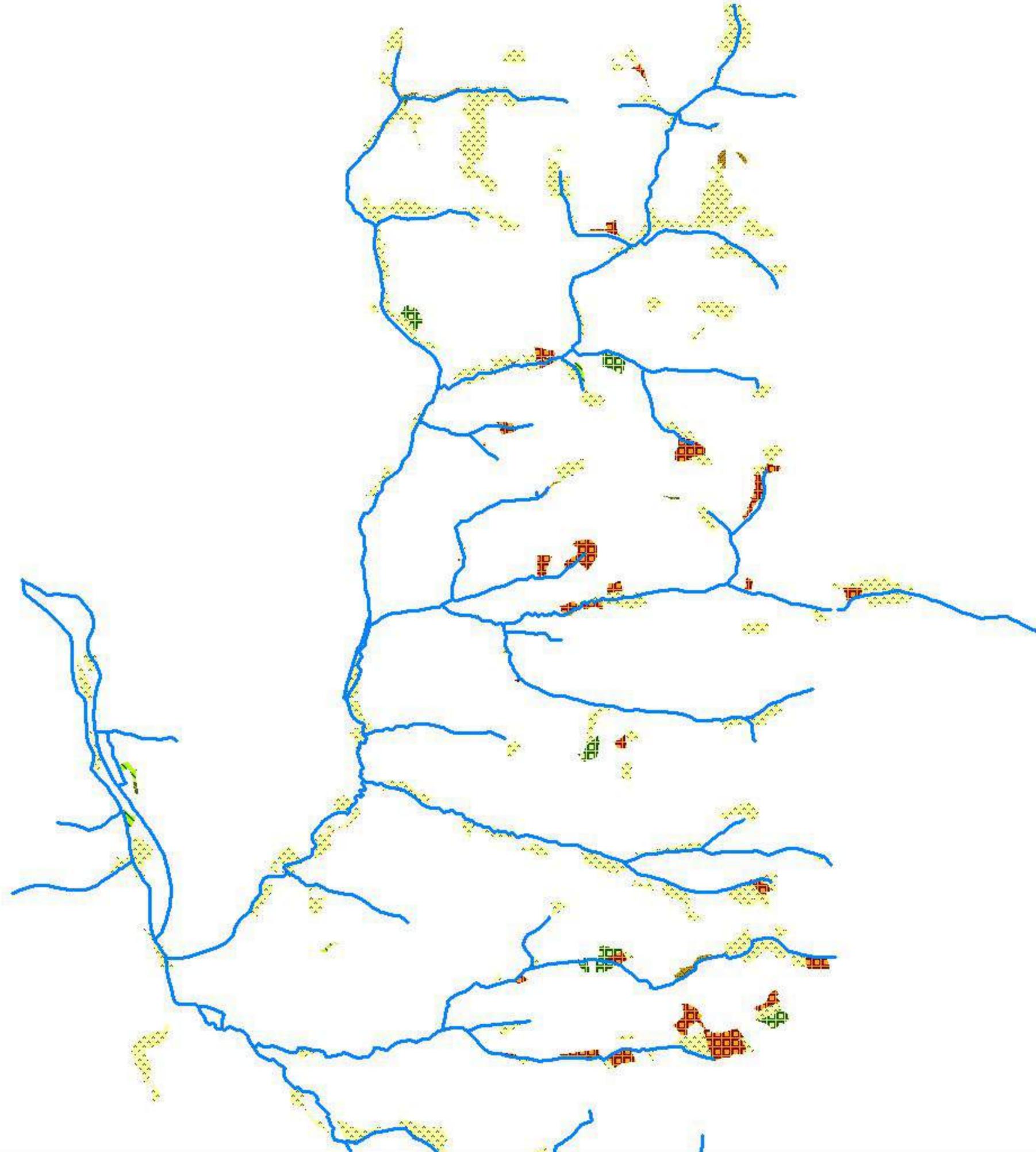


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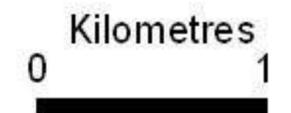
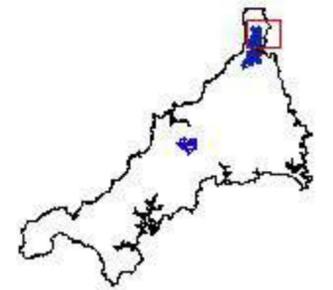


**Figure: 3 (b)**  
**Northern Strat 1880**



**Key**

-  Brushwood
-  Furze
-  Marsh
-  Osiers
-  Rough Pasture
-  Rough Pasture/  
Furze
-  Strat/Neet  
River



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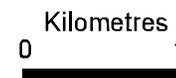
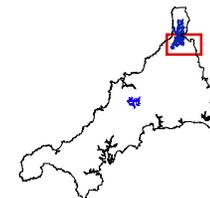
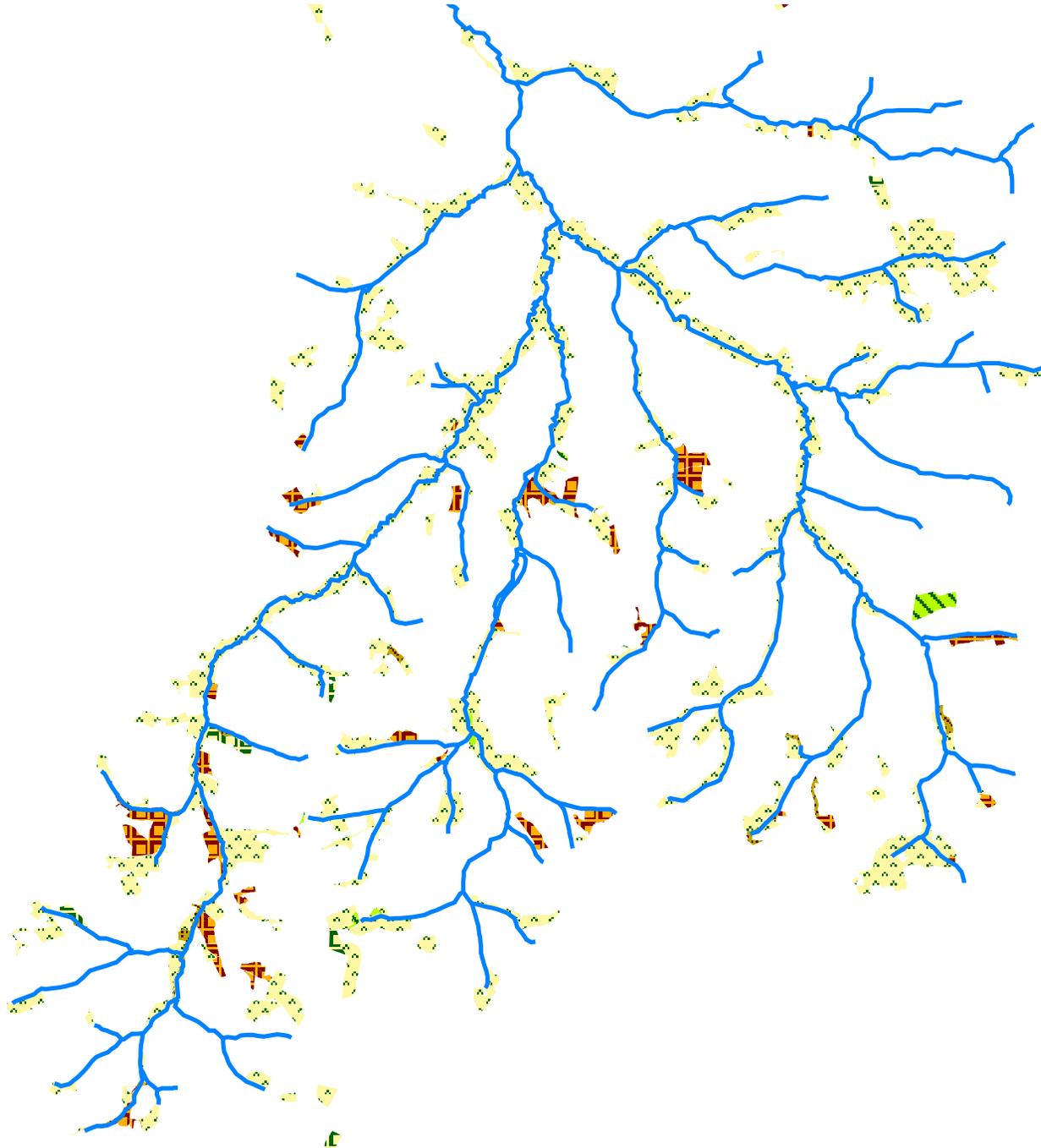
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**Figure: 3 (b)**  
**Southern Strat 1880**

**Key**

-  Brushwood
-  Furze
-  Marsh
-  Osiers
-  Rough Pasture  
Furze
-  Rough Pasture
-  Strat/Neet  
River

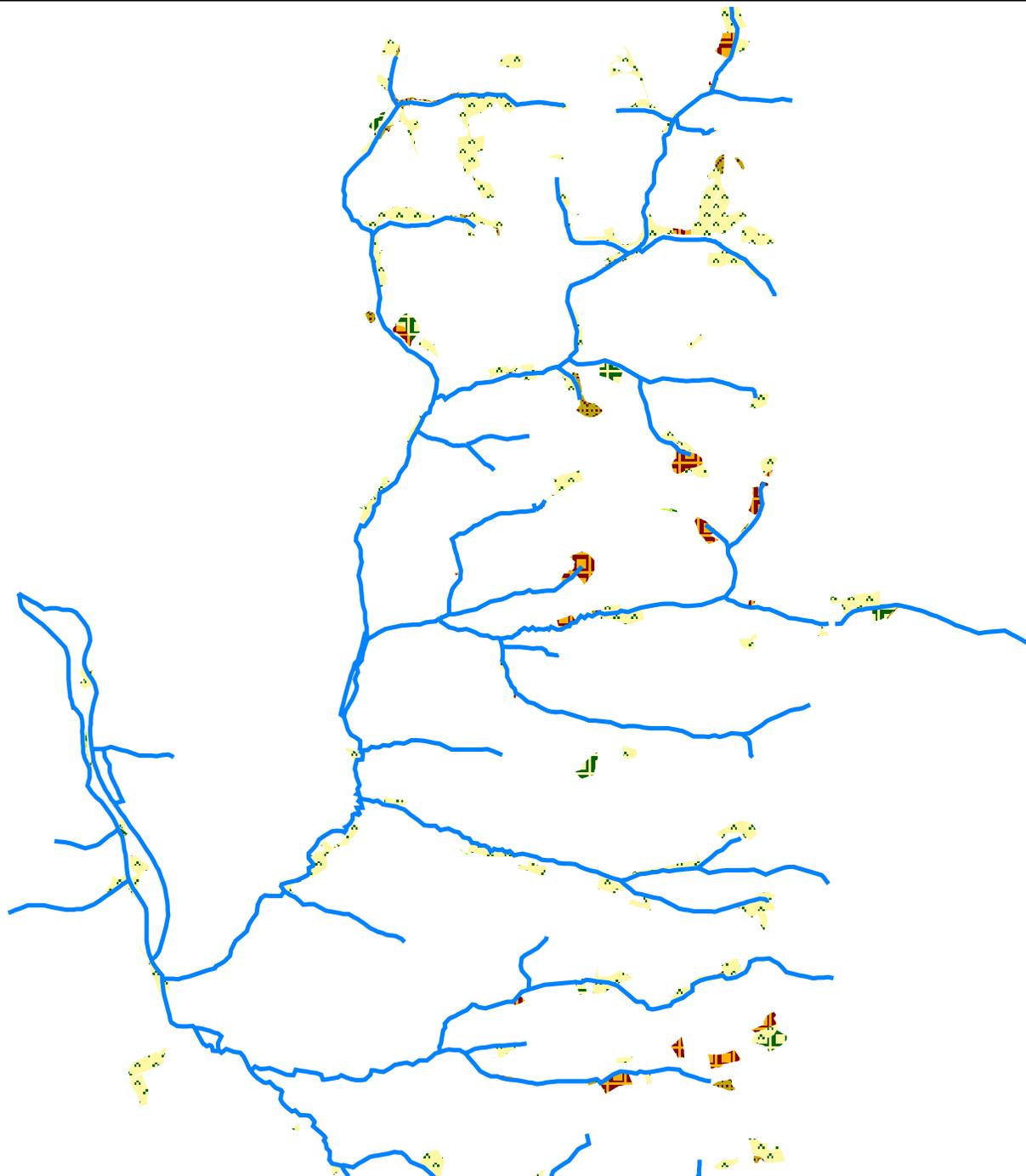


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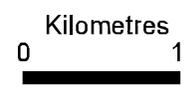
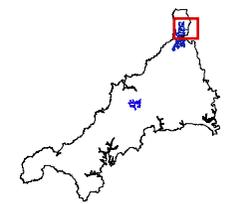


**Figure: 3 (c)**  
**Northern Strat 1907**



**Key**

-  Brushwood
-  Furze
-  Marsh
-  Osiers
-  Rough Pasture
-  Rough Pasture/  
Furze
-  **Strat/Neet  
River**



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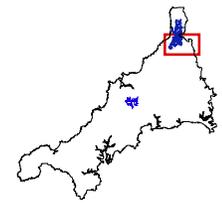
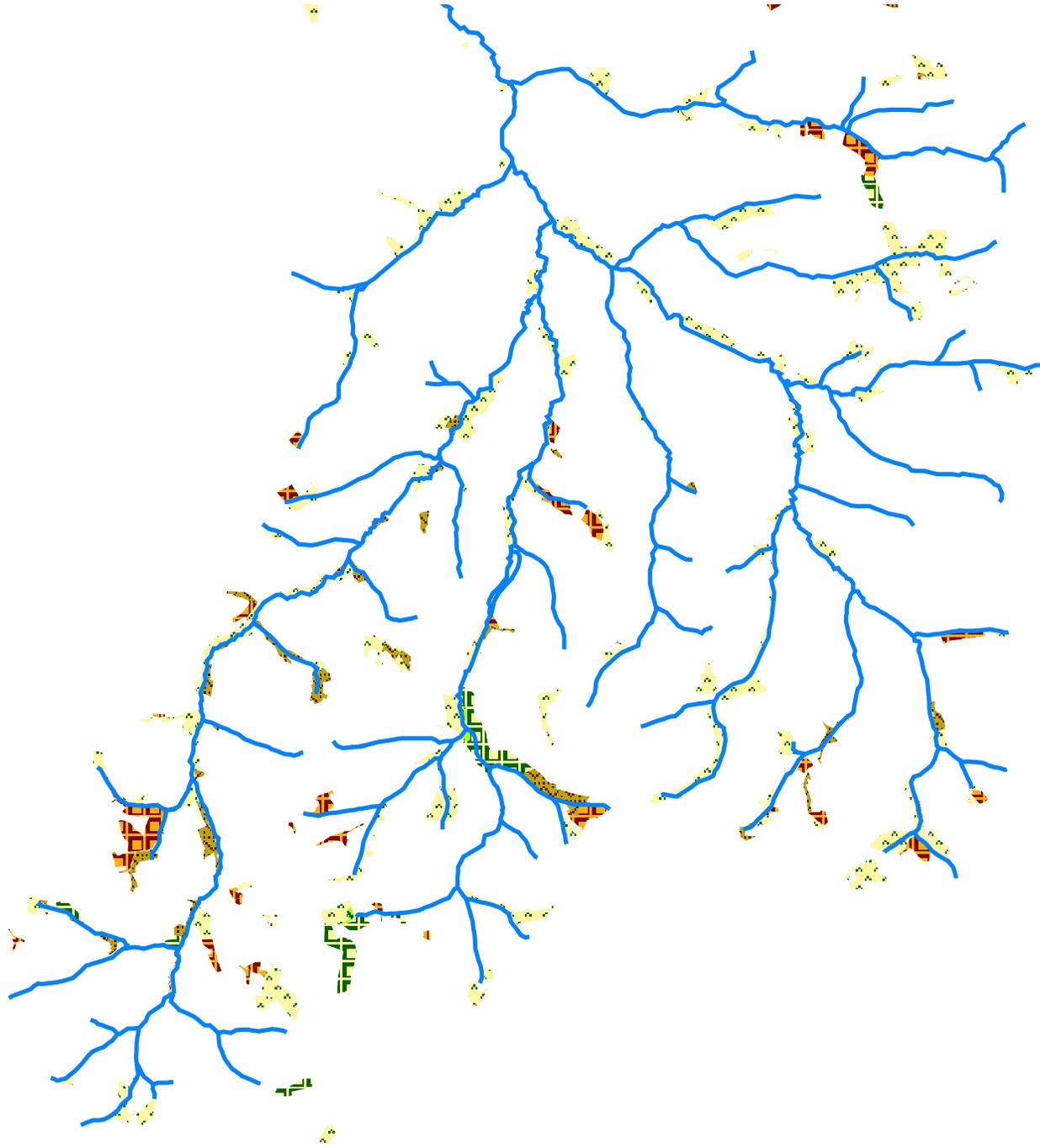
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**Figure: 3 (c)**  
**Southern Strat 1907**

**Key**

-  Brushwood
-  Furze
-  Marsh
-  Osiers
-  Rough Pasture
-  Rough Pasture  
Furze
-  **Strat/Neet  
River**



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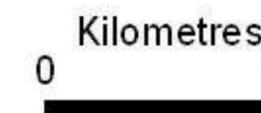
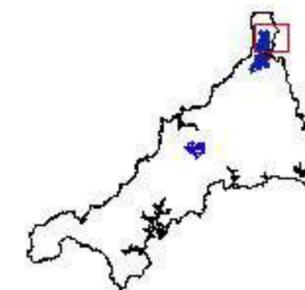
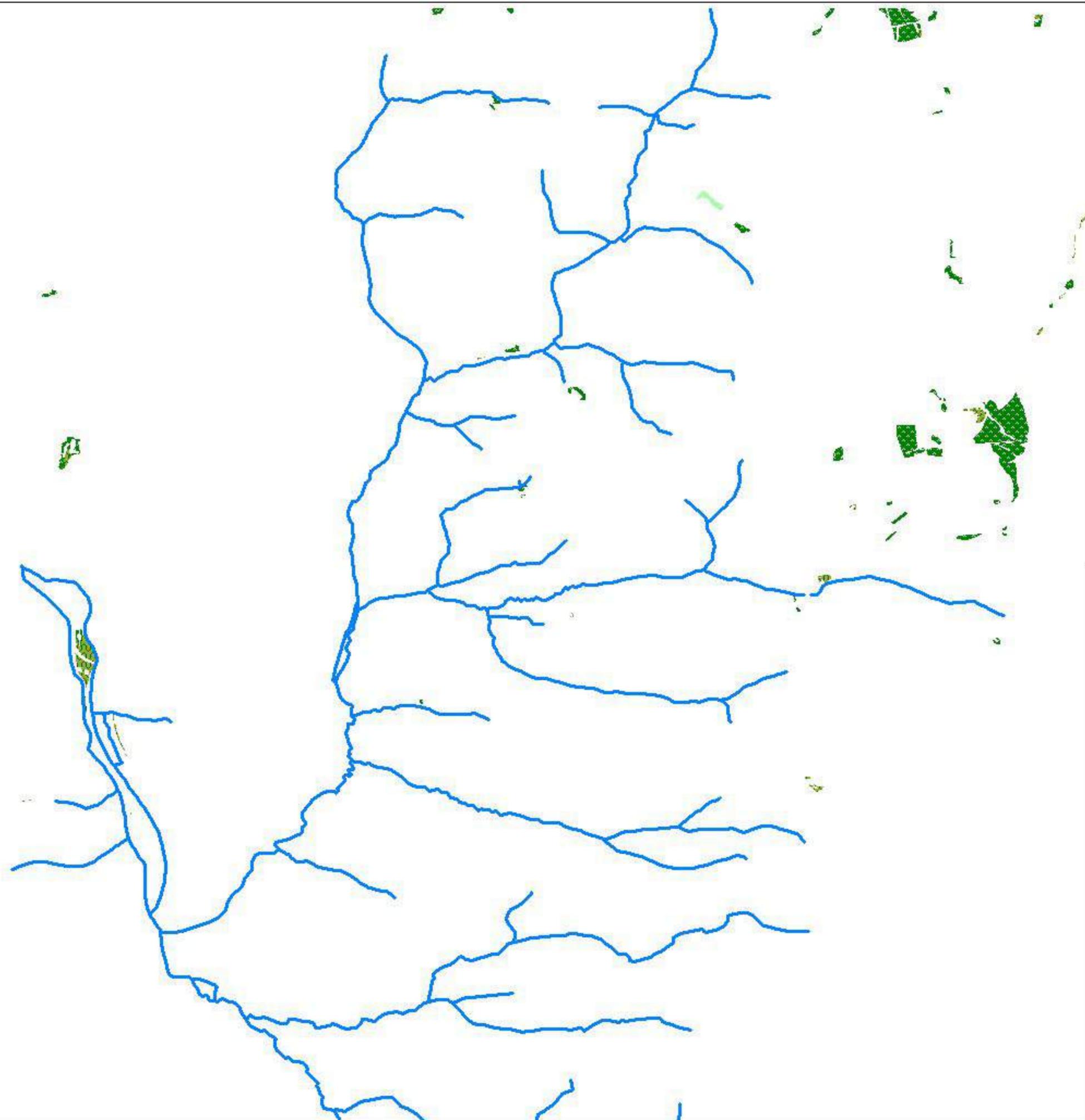
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**Figure: 3 (d)**  
**Northern Strat 1996**

**Key**

-  Heath/Wetland
-  pU Grass/Wetland
-  Scrub/Wetland
-  Wetland
-  Improved Grassland/Wetland
-  Ruthen River



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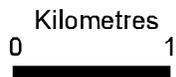
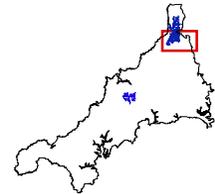
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**Figure: 3 (d)**  
**Southern Strat 1996**

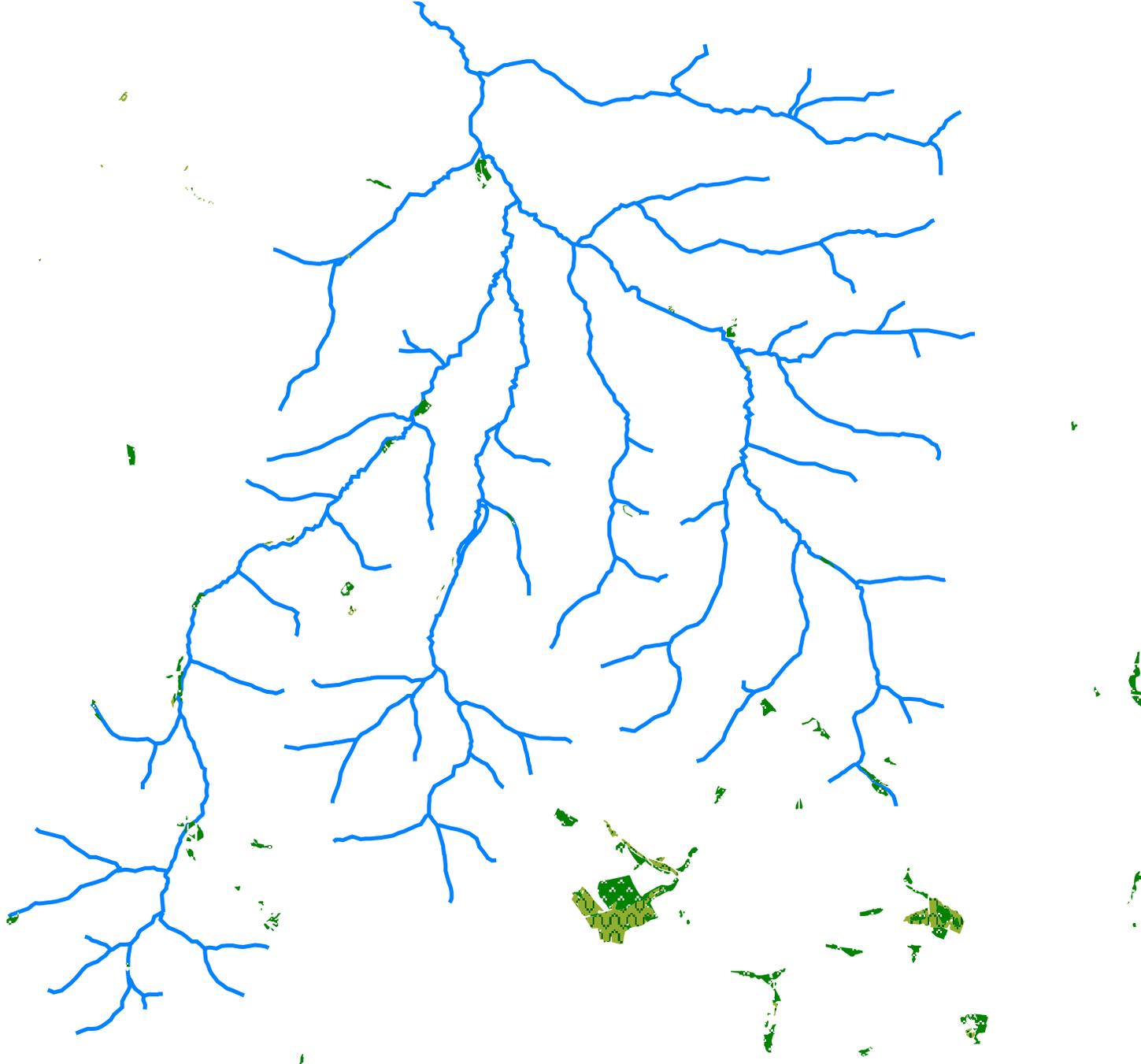
**Key**

-  Heath/Wetland
-  pU Grass/Wetland
-  Scrub/Wetland
-  Wetland
-  Improved Grassland /Wetland
-  Ruthen River



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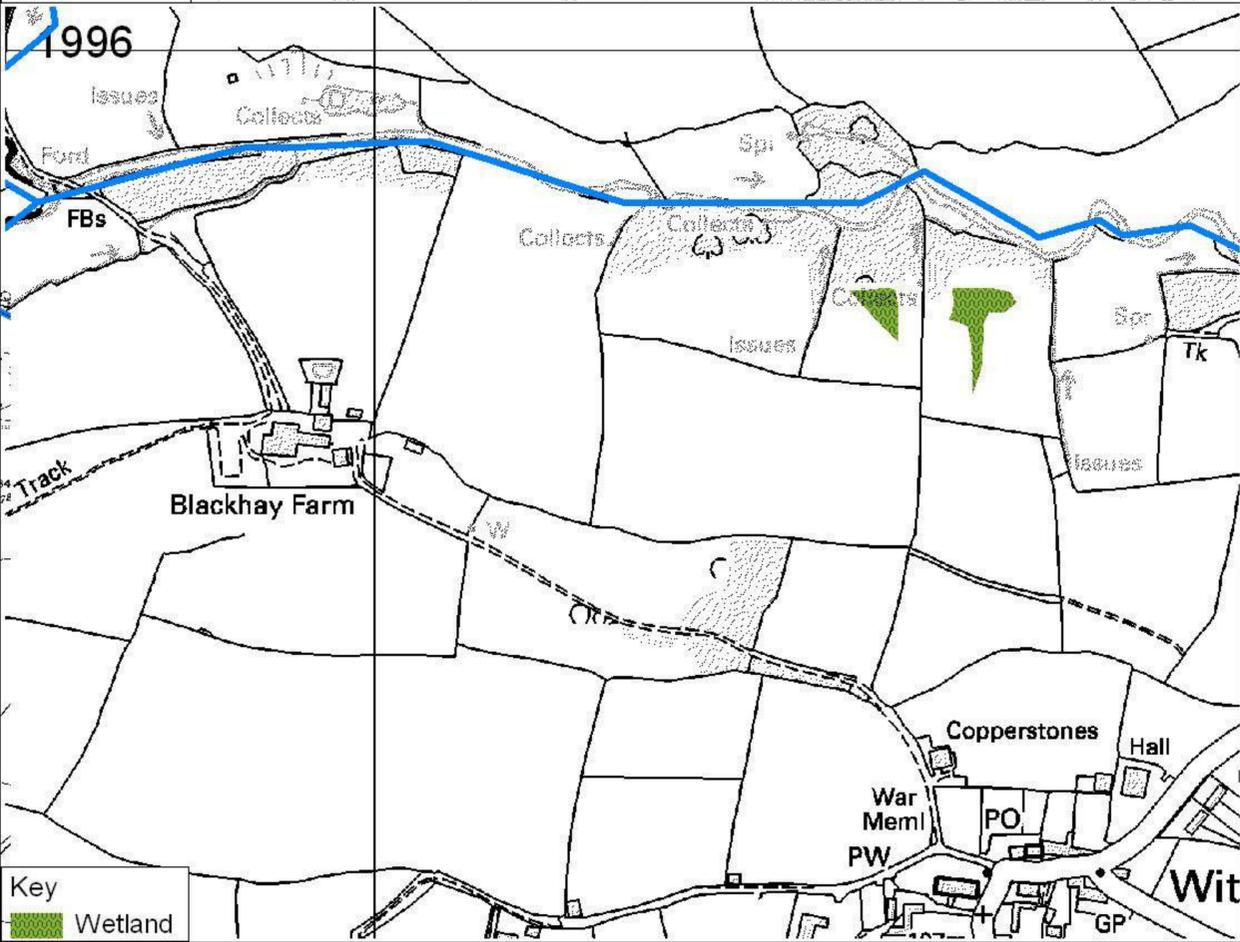
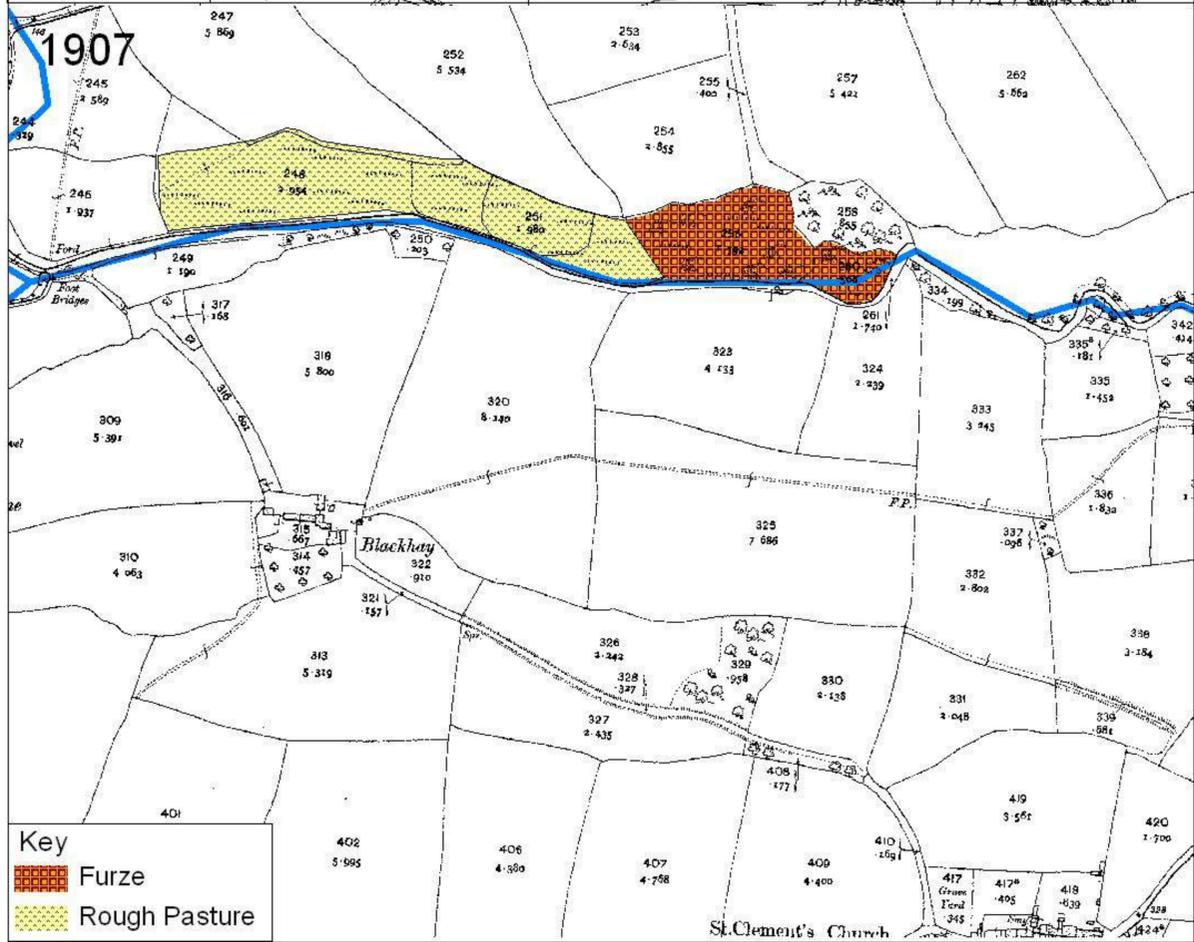
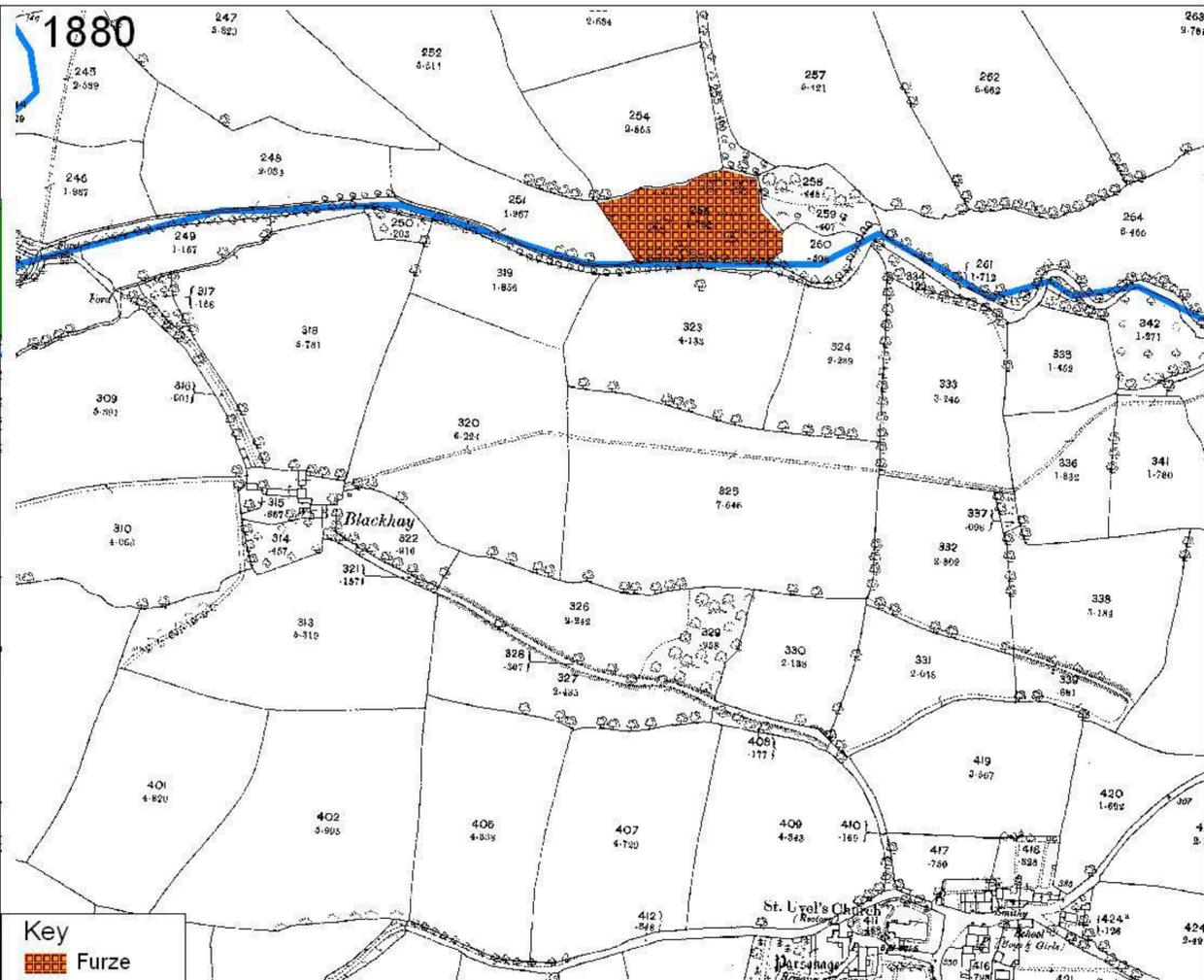
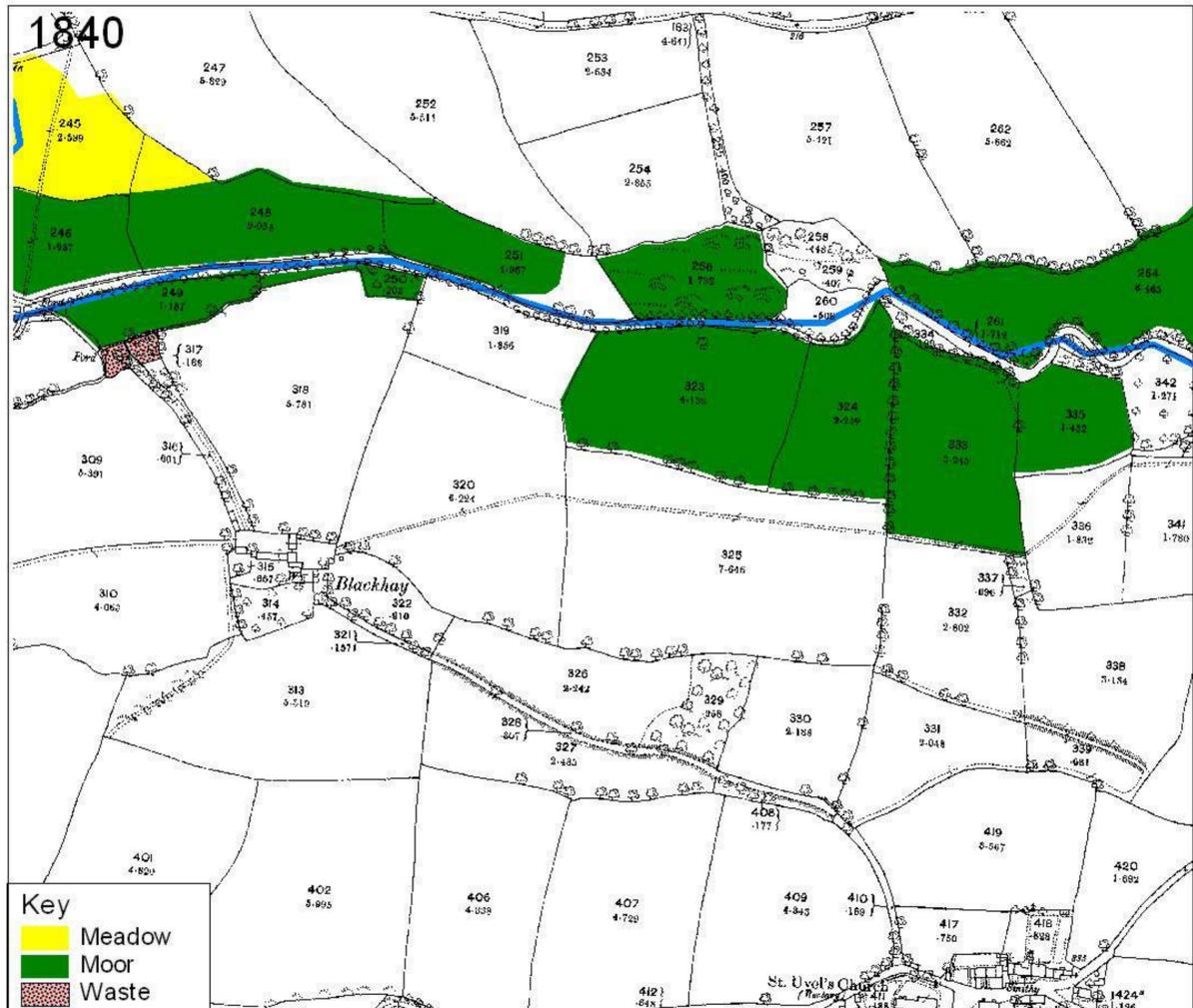
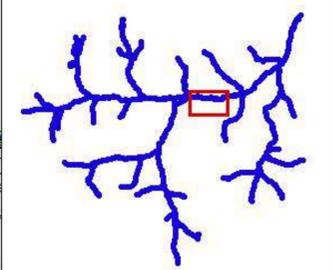


Figure: 4  
River Ruthen



Sample area  
showing changes  
in marshland extent  
and form between  
1840 and 1996

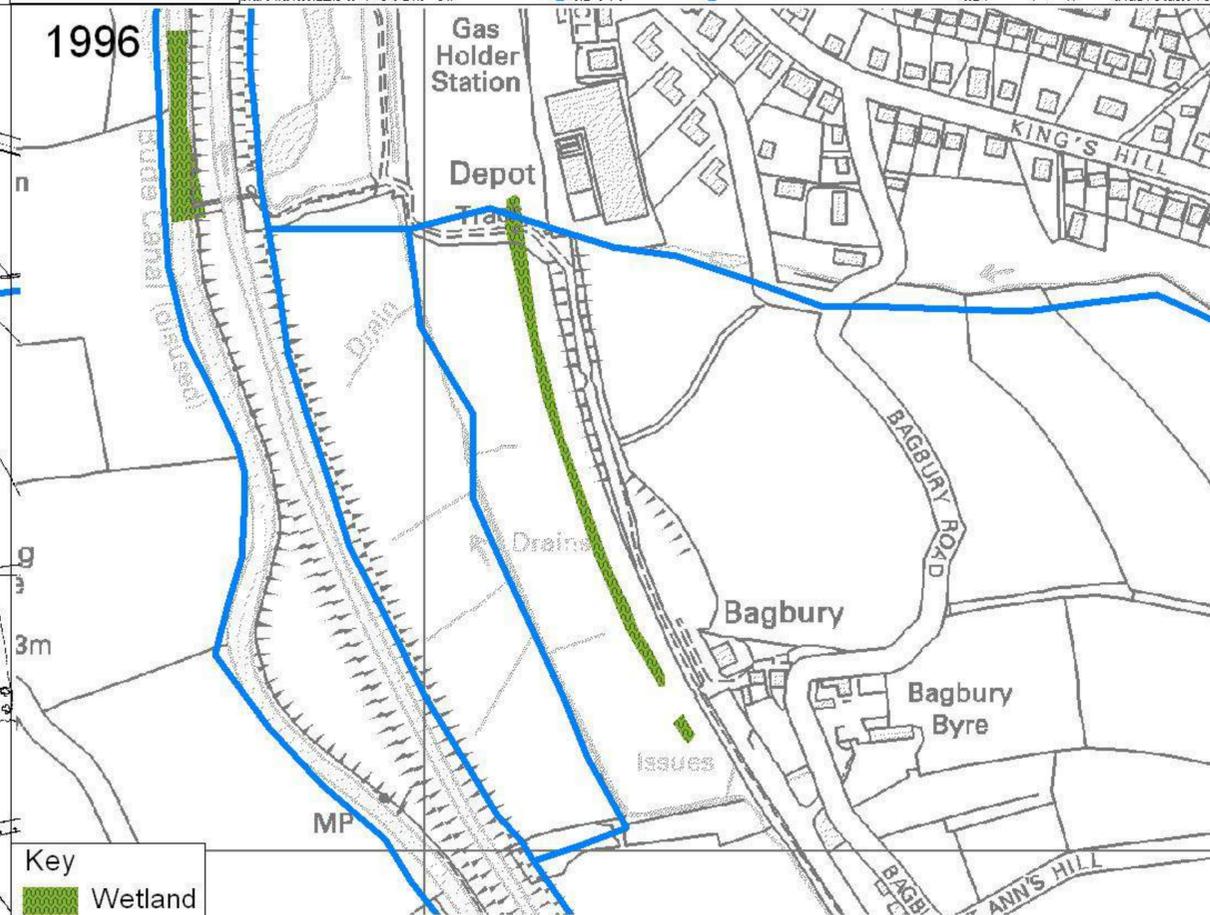
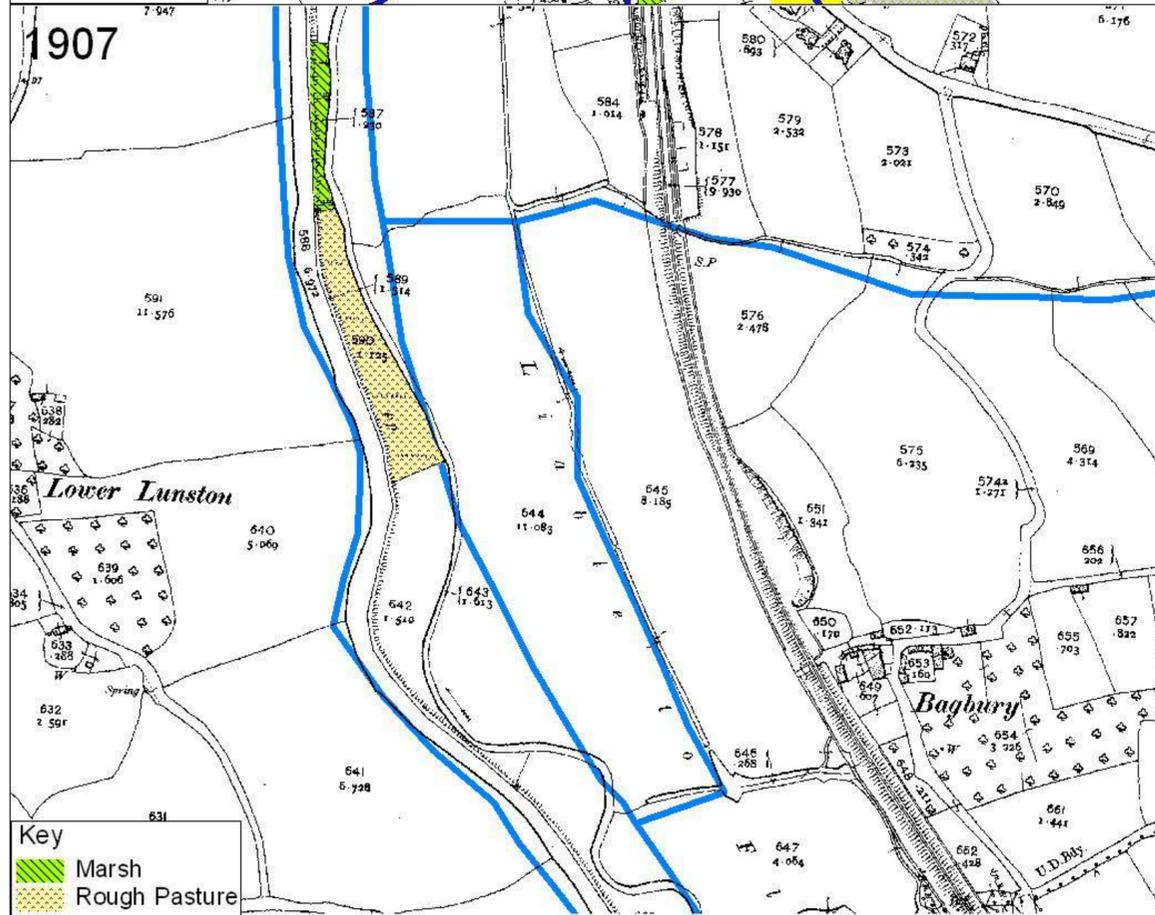
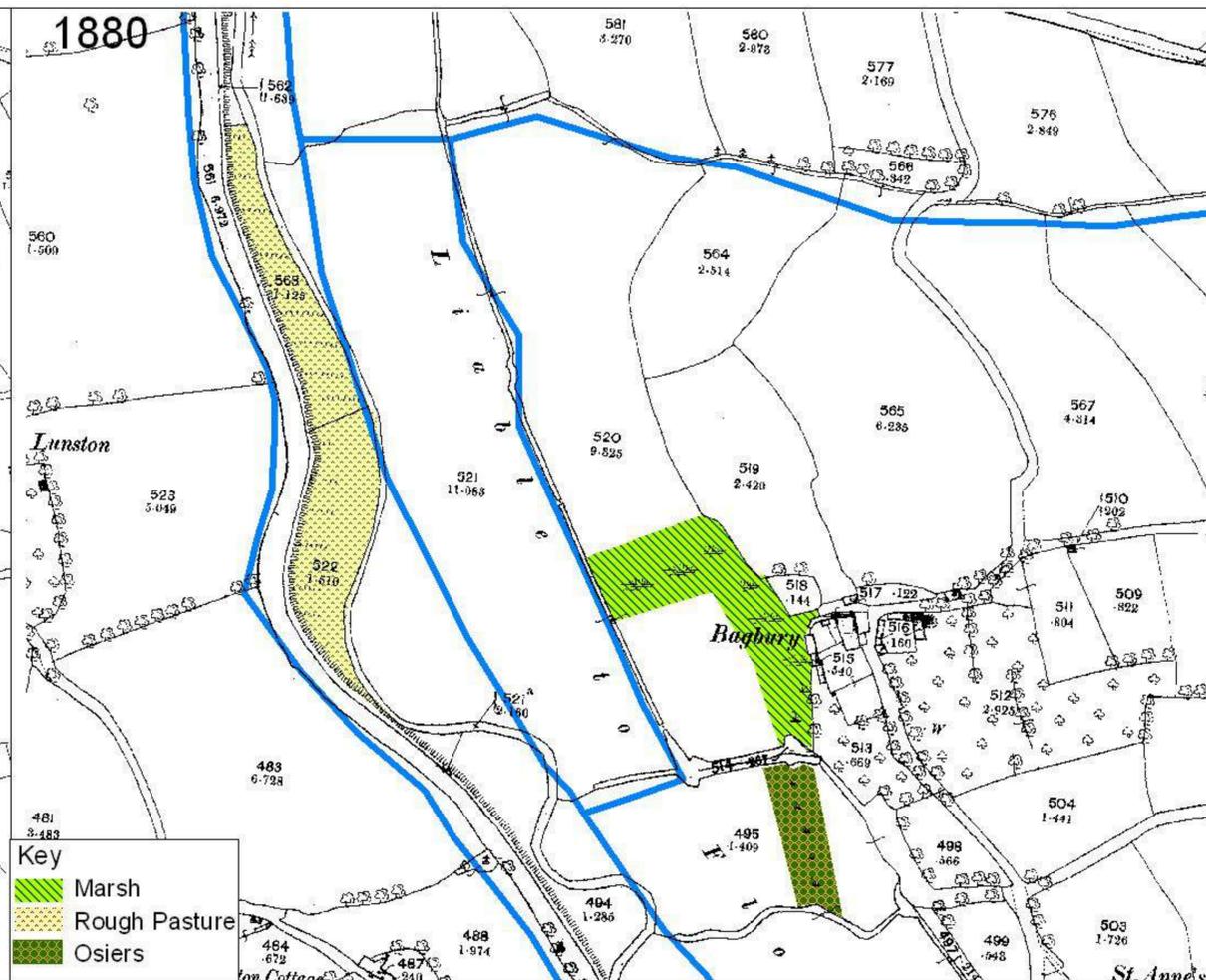
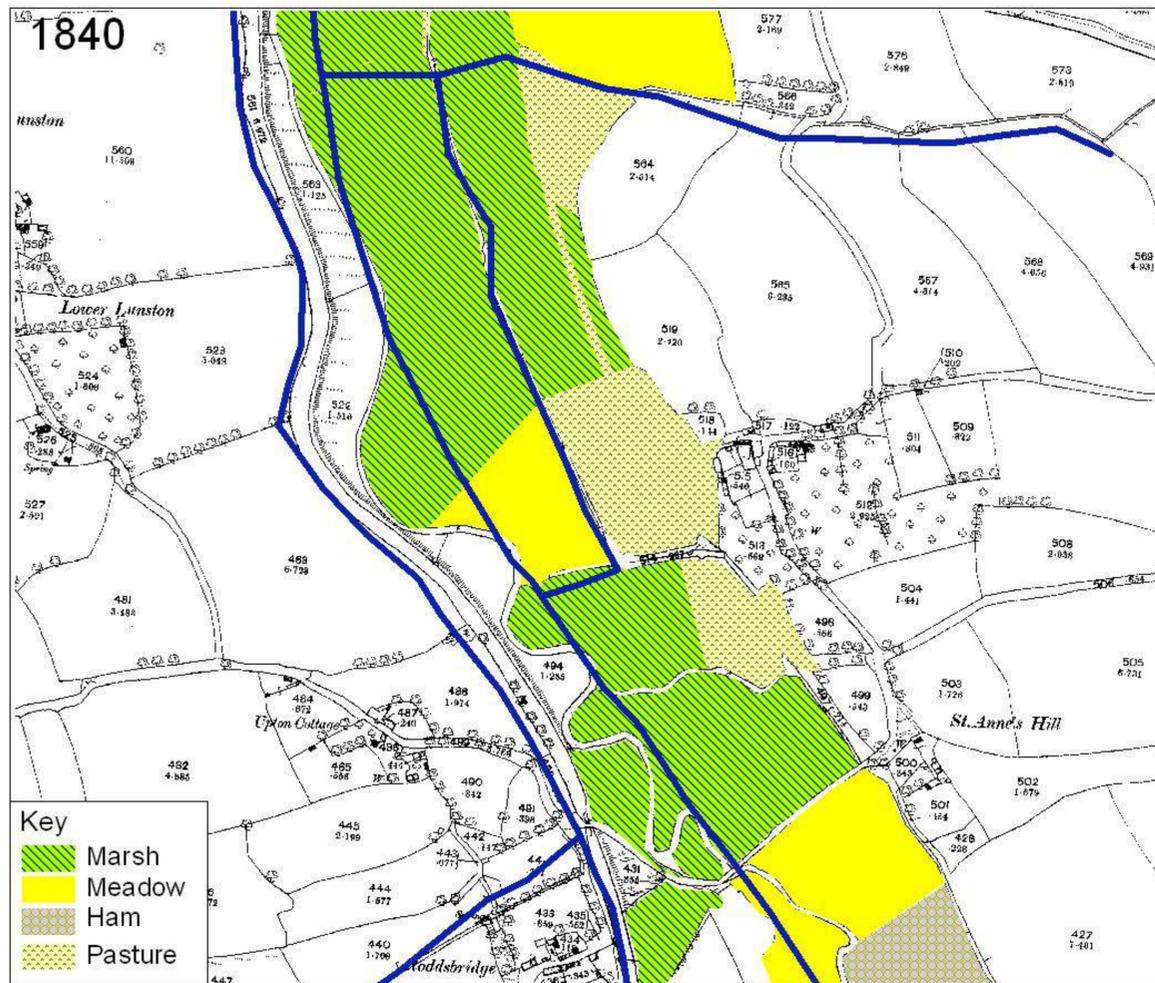


0 100  
Meters

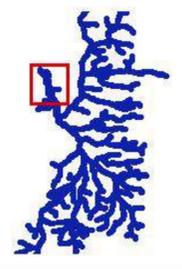
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**Figure: 5**  
**River Strat**



Sample area  
showing changes  
in marshland extent  
and form between  
1840 and 1996

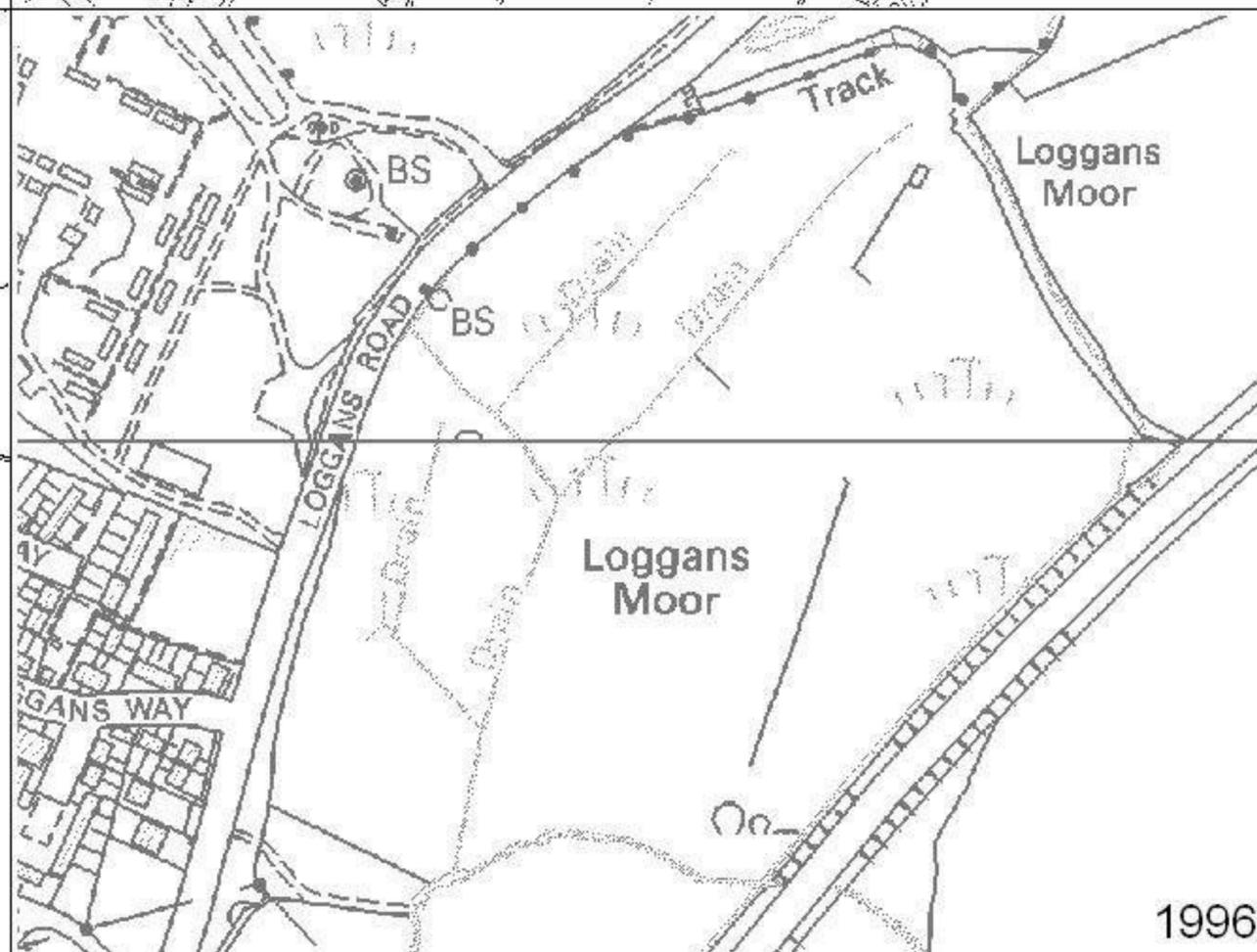
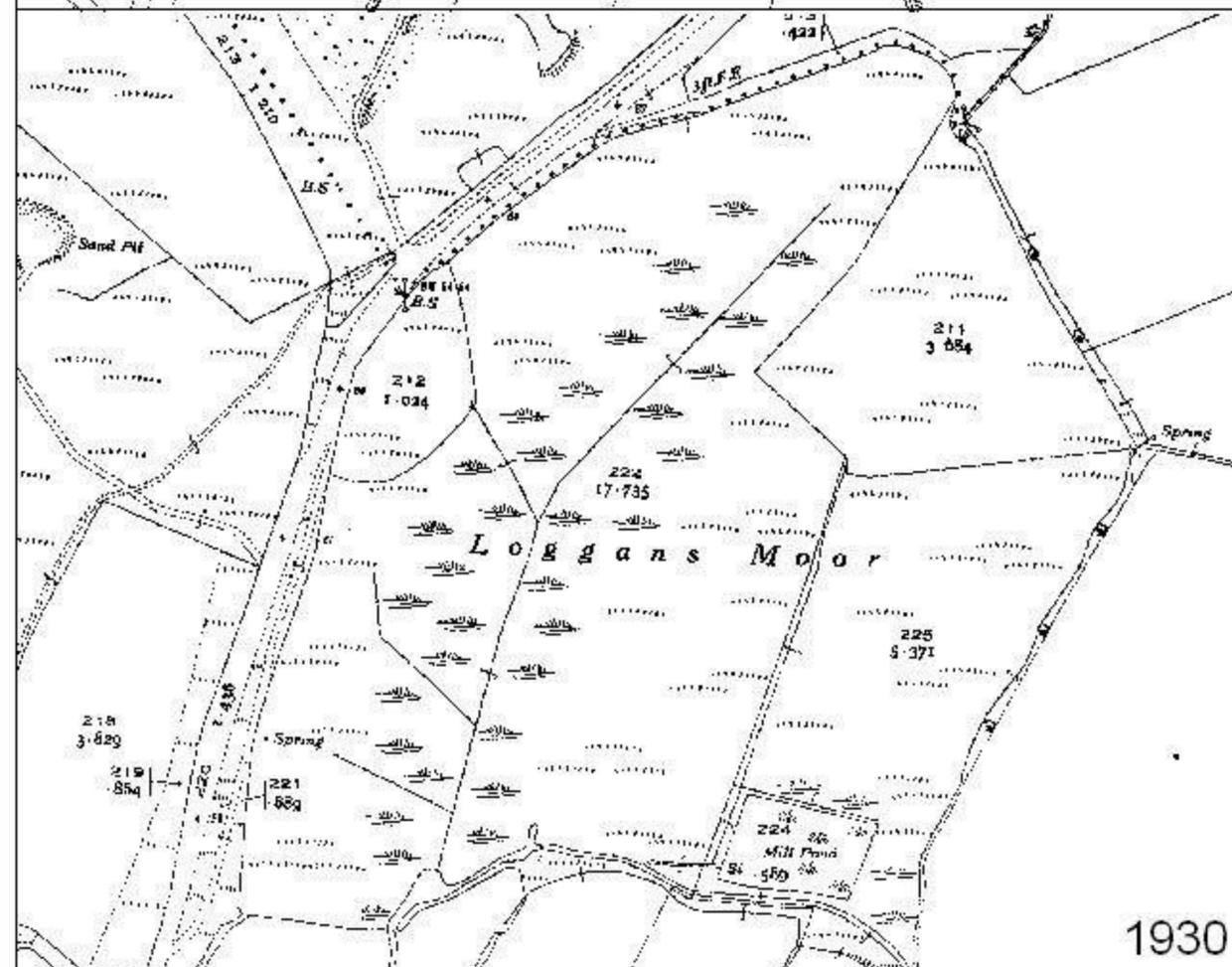
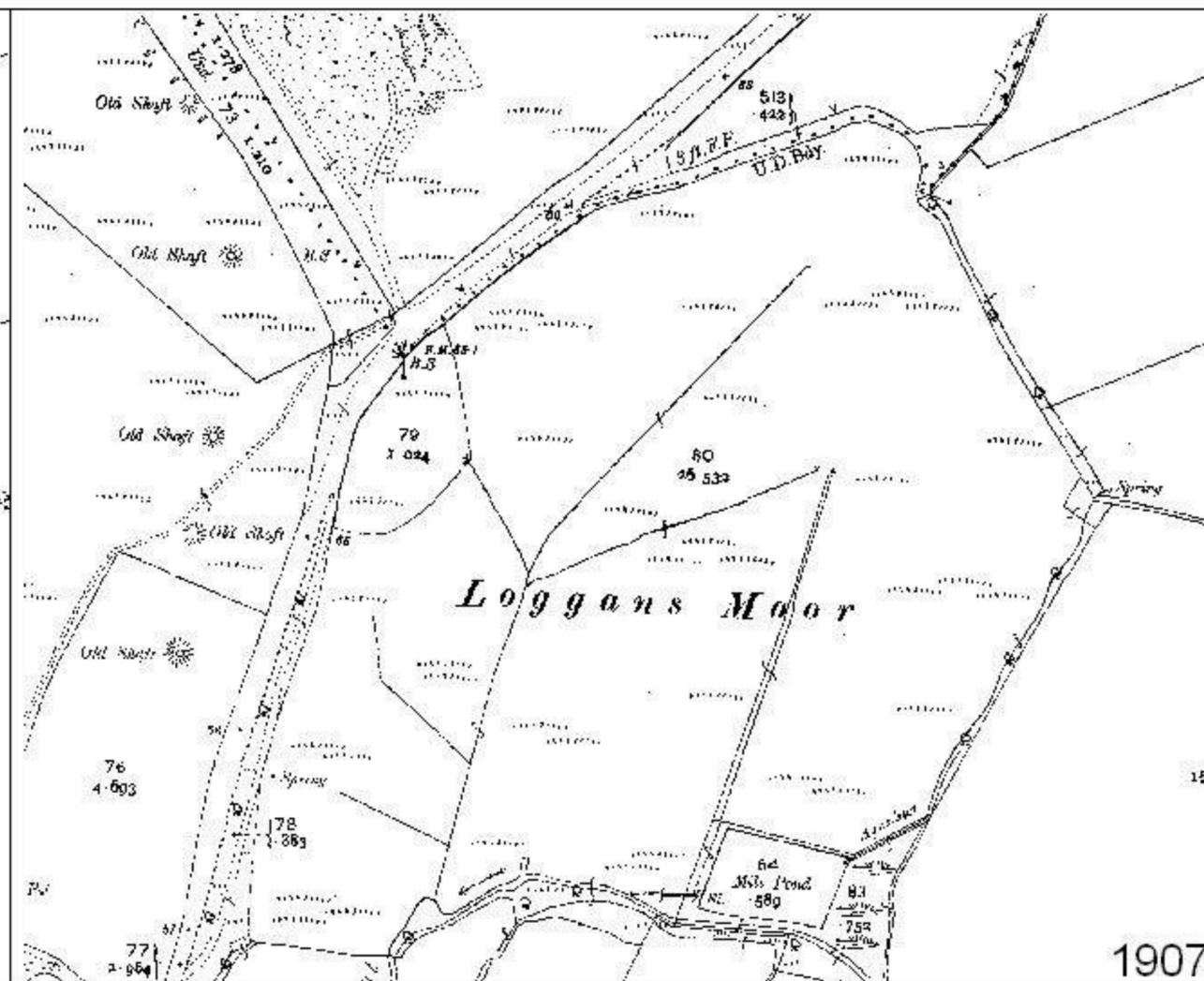
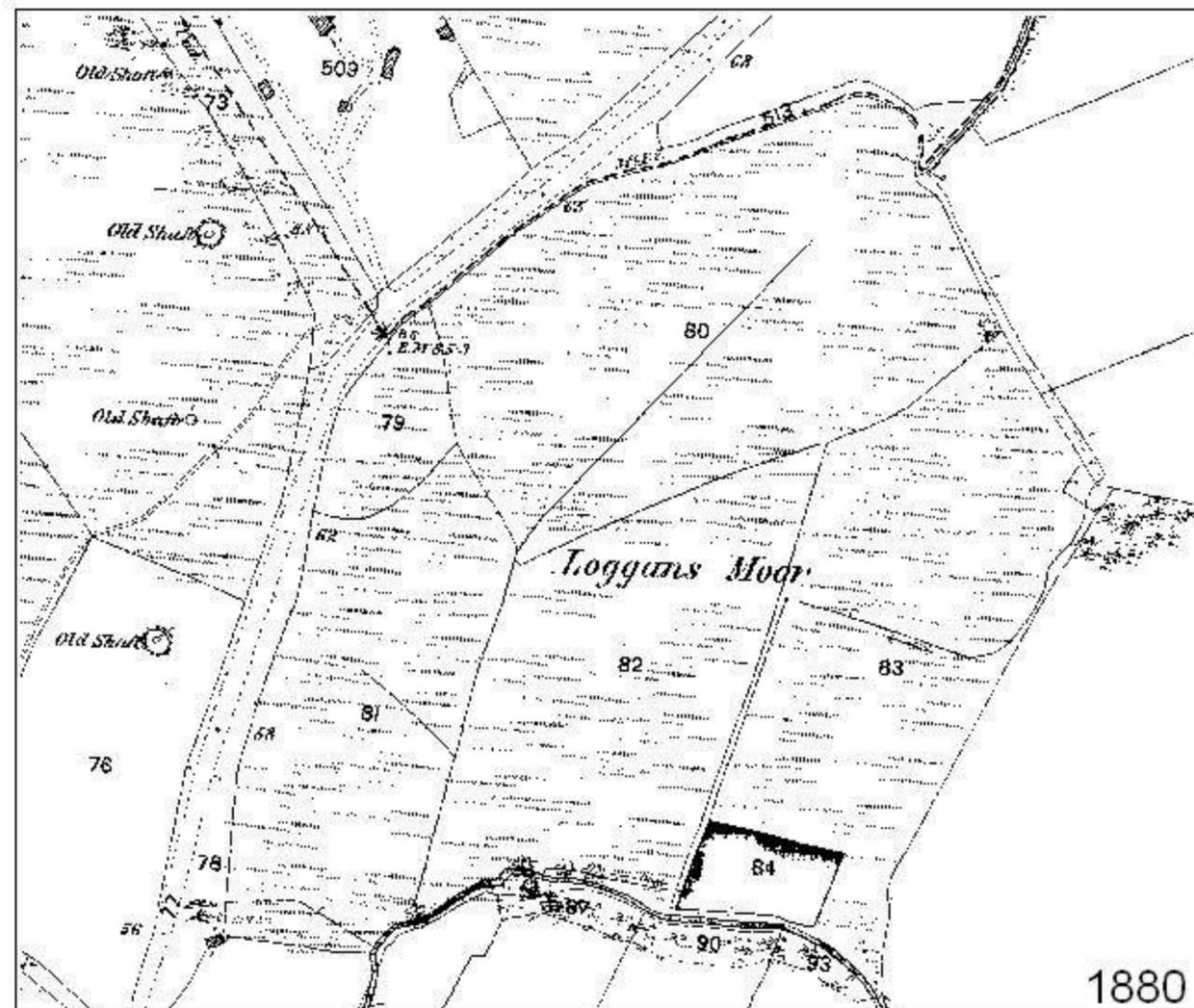


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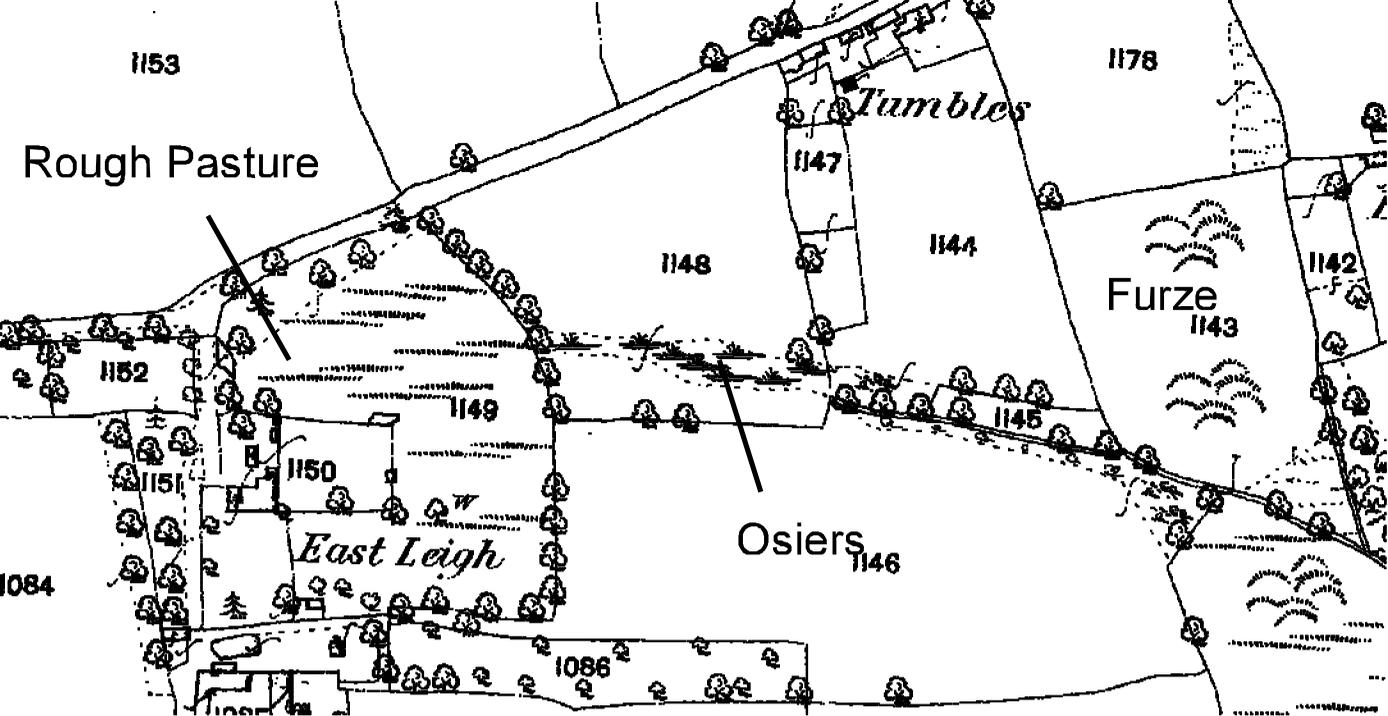
Figure 6:  
Development of  
drainage and  
improvement of  
Loggans Moor,  
Hayle



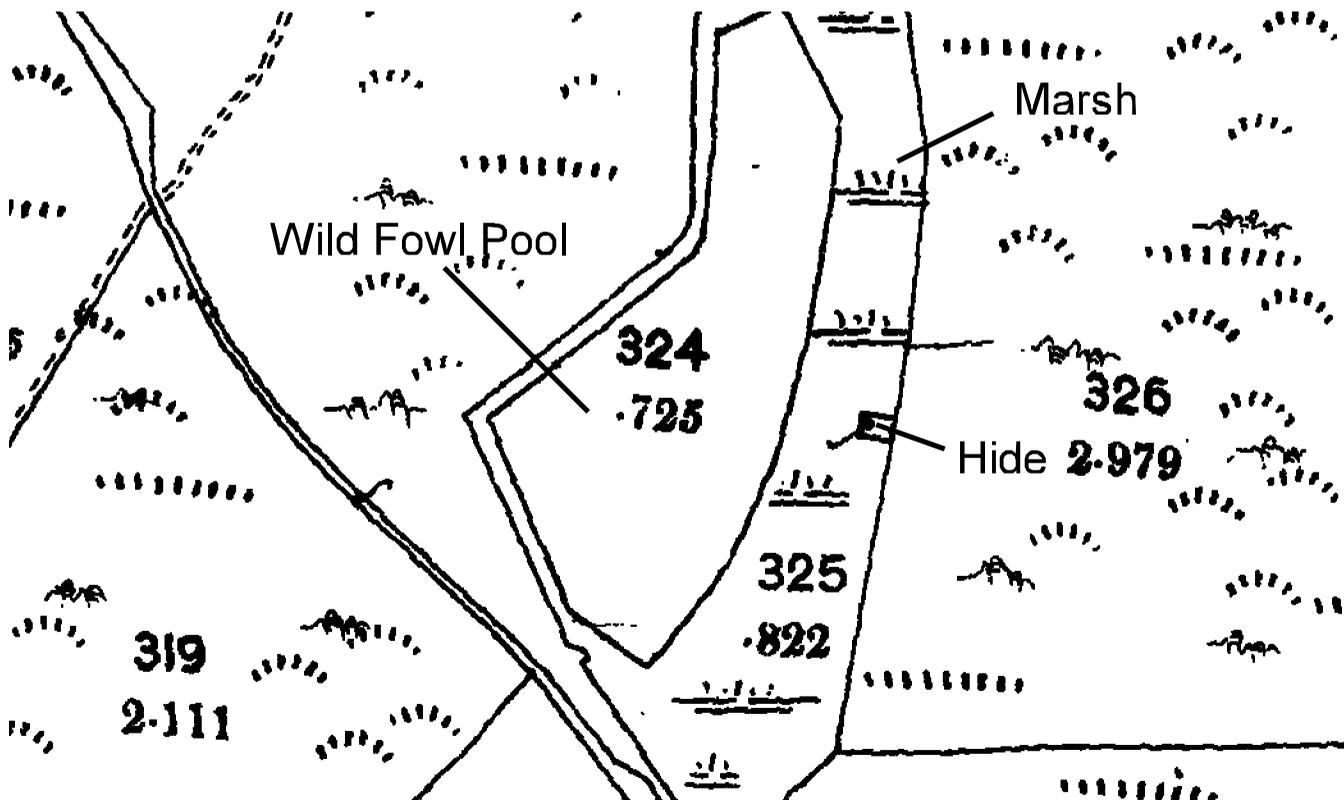
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Examples of Osiers, Furze and riverside Rough Pasture, Tumbles (River Strat), 1880 OS Map



An example of a wild fowl hide, Mayon Cliff, Sennen, 1880 OS Map

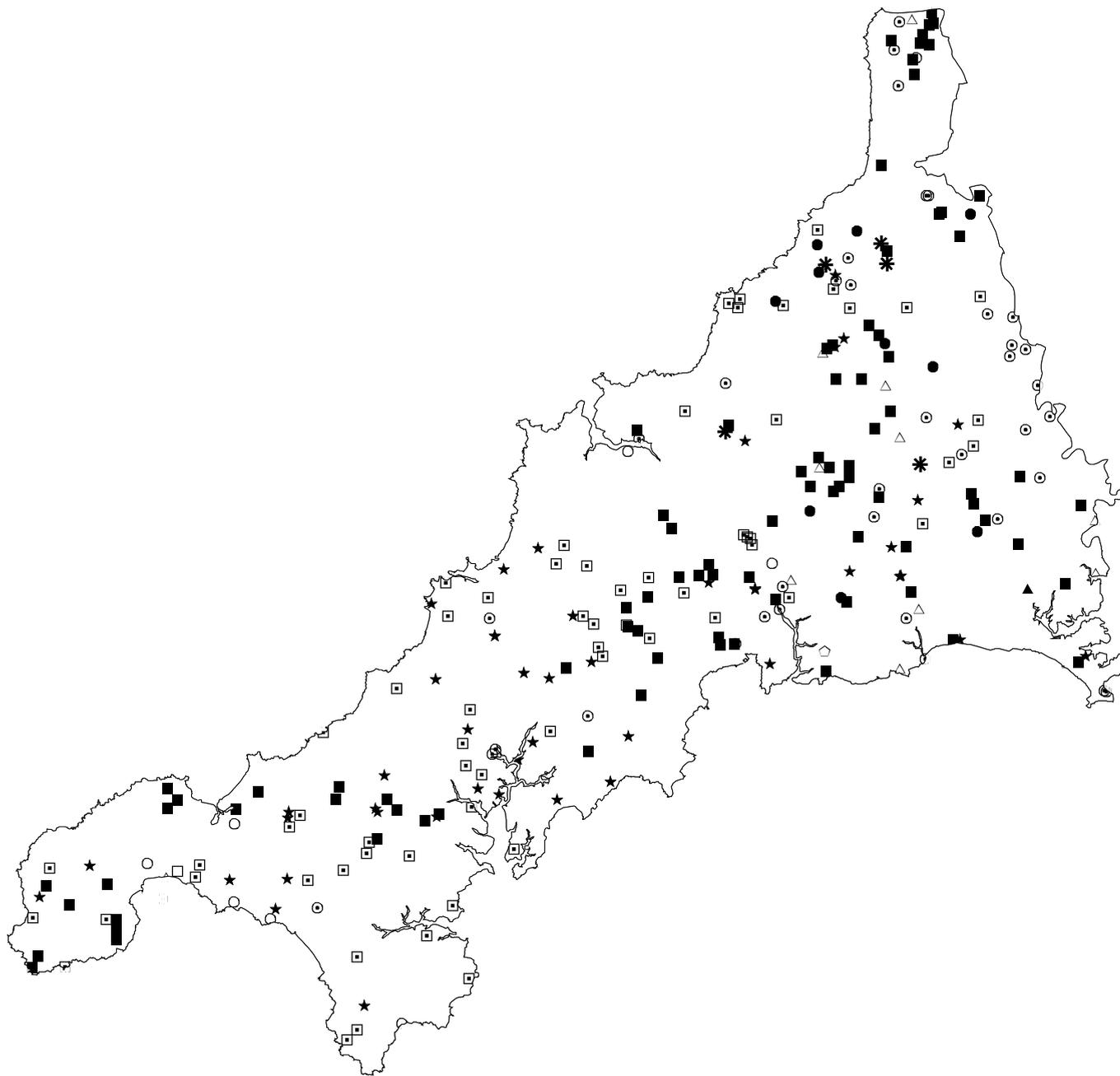
Figure 7: Examples of MMM Types and Fowl Hide

**Figure 8 (a):  
Place Names  
by element**

**Key**

Place name by elements

- \*Keun
- Bog
- ◊ Budin
- Fen
- ◻ Hal
- ⊙ Ham
- △ Marsh
- Moor
- ▲ Morva
- ★ Pen-hal
- \* Withy



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**Figure 8 (b):  
Place name by  
element  
(Thessian Polygons)**

**Key**

Place name by language derivation

-  Pen-hal
-  Hal
-  Ham
-  Withy
-  Moor
-  Marsh
-  Fen
-  Morva
-  Bog
-  Budin
-  \*Keun

(simply this represents the mid distance between any two points and smoothes the pattern)

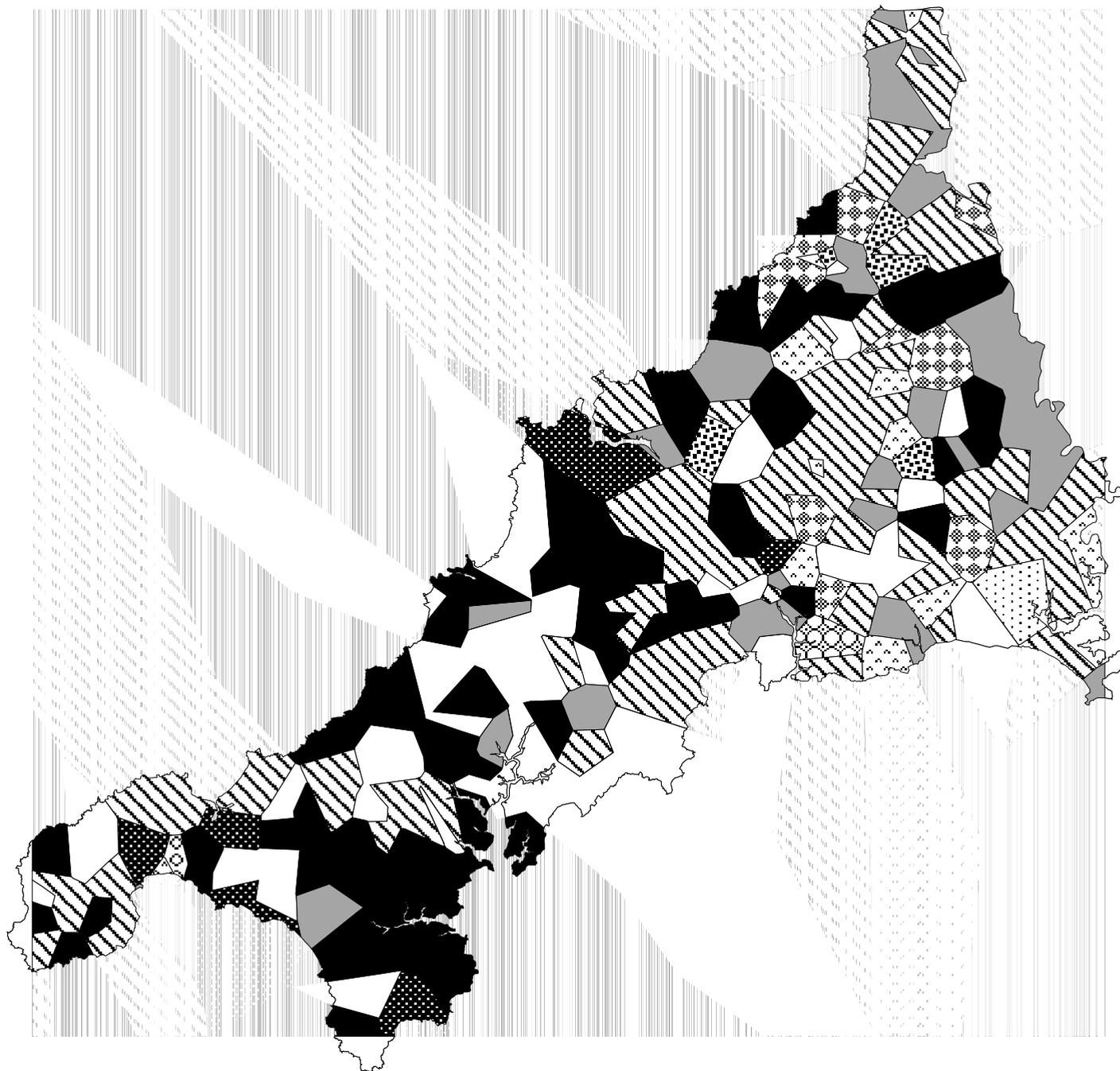


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**Figure 9:  
Place name by  
language derivation**

**Key**

Place name by language derivation

-  Cornish
-  English
-  Cornish/English
-  Cornish/French?

(simply this represents the mid distance between any two points and smoothes the pattern)



Kilometres

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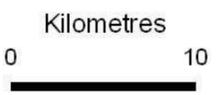
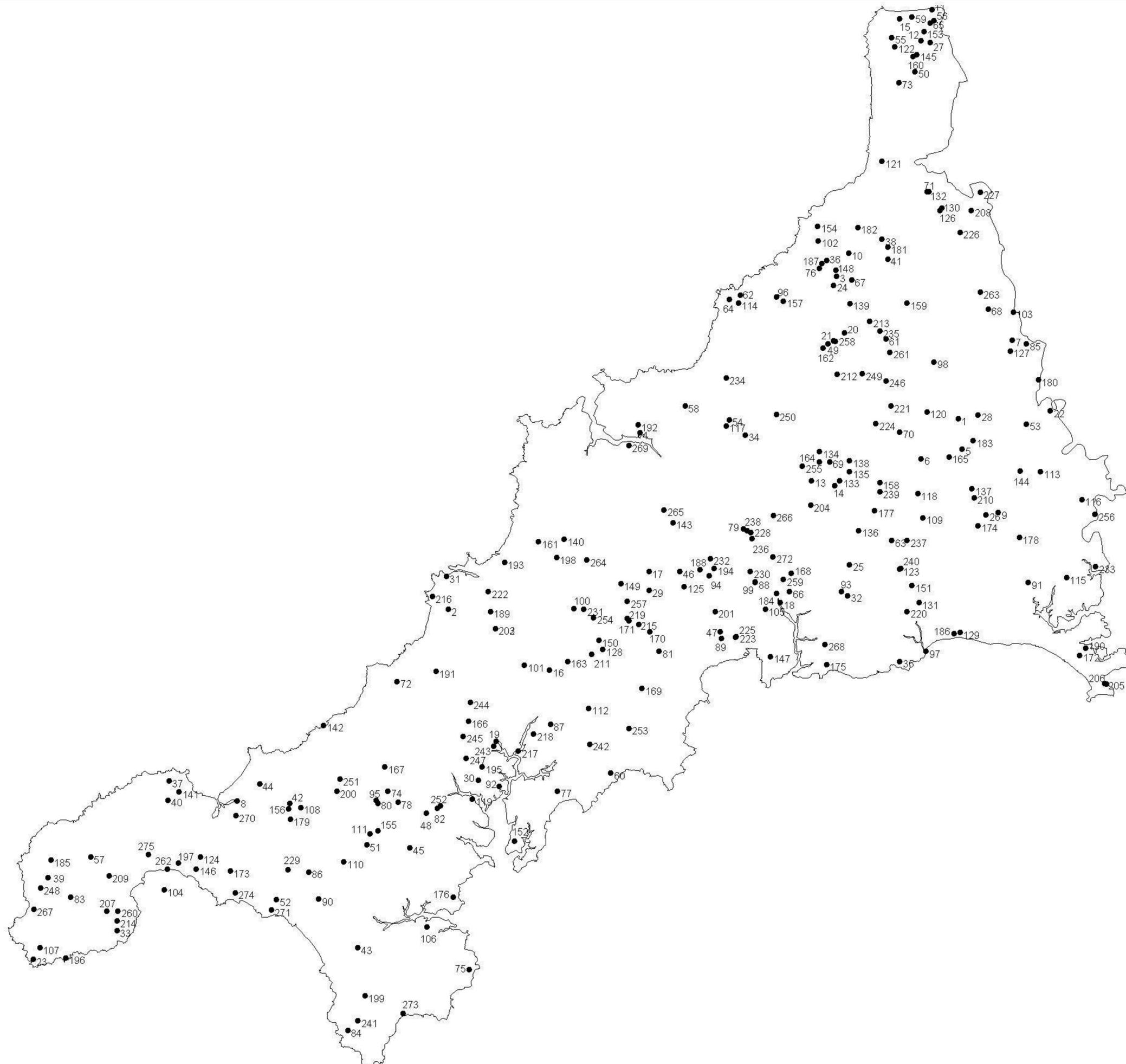
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**Figure 10:  
Locations of  
Place Names  
analysed**

**See Appendix 1  
for details**



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