

# FARMS, FIELDS AND MINES: AN HISTORIC LANDSCAPE ANALYSIS OF CALSTOCK PARISH



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## 1: Summary

This report presents a characterisation of the ‘historic landscape’ – the present pattern of fields, roads, settlements and land-uses – in the parish of Calstock, in the Tamar Valley, Cornwall (Figure 1). The characterisation is based upon the Ordnance Survey First Edition Six Inch to One Mile maps of 1889, with additional data from earlier cartographic sources including the Tithe Map and Apportionment of 1839. The morphology of the landscape is described, along with data on when settlements are first documented, and the patterns of land-ownership and land-occupancy that they are associated with. A total of twelve historic landscape types are identified that range from ‘Late Enclosure’, that represents the enclosure of extensive former common pasture on the higher ground, through to ‘Strip-Based Fields’ that are derived from medieval open fields that were probably created by the time of the Domesday survey in 1086.

## 2: Introduction

The landscape all around us contains a remarkable record of past human achievement, and Calstock, in Cornwall, is a fine example. The different patterns of fields, roads, settlements and land-uses within this extensive parish reflect over a thousand years of agricultural and mining history, whose legacy is still with us today. By studying the landscape as it was recorded in the nineteenth century on a series of remarkably detailed maps – before the changes due to twentieth-century agricultural improvement and urban expansion – we can identify a series of ‘historic landscape character types’: areas of countryside whose particular appearance reflects their distinctive development over time. Some landscapes, such as the remarkably rectilinear pattern of fields and roads across the central and western parts of Calstock parish, are relatively recent, in this case reflecting the transformation in the nineteenth century of what was once a vast area of unenclosed common pasture into a tidy agricultural landscape. Other landscapes are much older, such as the distinctive long, narrow, slightly curving fields around hamlets such as Metherell, that reflect the former strips in a medieval open field that would have been laid out around the eighth to twelfth centuries (probably towards the start of this period), and was then enclosed through the agreement of all those who farmed the land towards the end of the medieval period (around the fourteenth to sixteenth centuries). Another contributory factor to the richness, diversity, and importance of the Calstock landscape is the legacy of industry, with major industrial complexes in both the medieval and the post medieval periods. In understanding the morphology of these and other historic landscape character types, along with other data such as the place-names and patterns of land-ownership and land-occupancy, we can reconstruct the origins and development of the landscape, and suggest what it may have looked like around a thousand years ago, at the time of the Domesday survey (Figure 2).

This report represents the results of an analysis of the historic landscape in Calstock parish undertaken in the Department of Archaeology at the University of Exeter. This project was commissioned by the Tamar Valley Area of Outstanding Natural Beauty as one part of the Calstock Parish Heritage Project, funded by the Heritage Lottery Fund. The project has also produced a digital output in the form of a GIS data set. This report includes an account of the methodology and sources used, followed by an in-depth analysis of each of the historic landscape character types identified across the parish, and discussions of other aspects of the historic landscape including the settlement pattern, field-names, and patterns of land-ownership and land-occupancy.

The historic landscape analysis thus brings together a variety of aspects and data sources, but at its core is the historic landscape characterisation (HLC). Historic landscape characterisation was promoted in the 1990s by English Heritage as a means of mapping and evaluating the historic environment by county councils and other public bodies. The Cornwall HLC (see Herring, 1998) established a model, but each county has its own methodology. The Cornwall methodology maps a number of defined landscape character types, and from this detailed mapping derives broader ‘character zones’. A similar approach was used in a recent study to discuss the Tamar Valley AONB

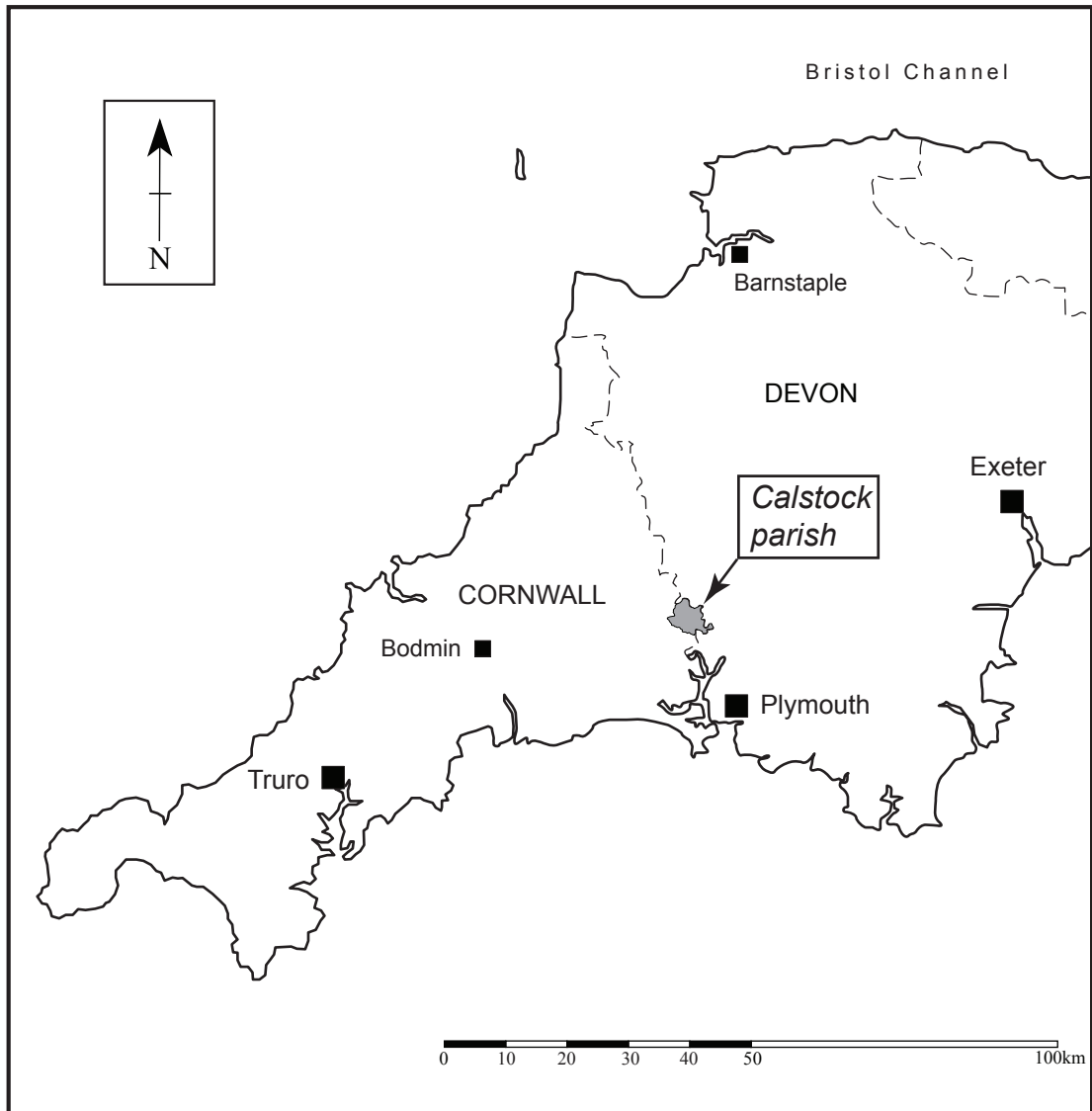


Figure 1: The location of Calstock parish within Cornwall and Devon.

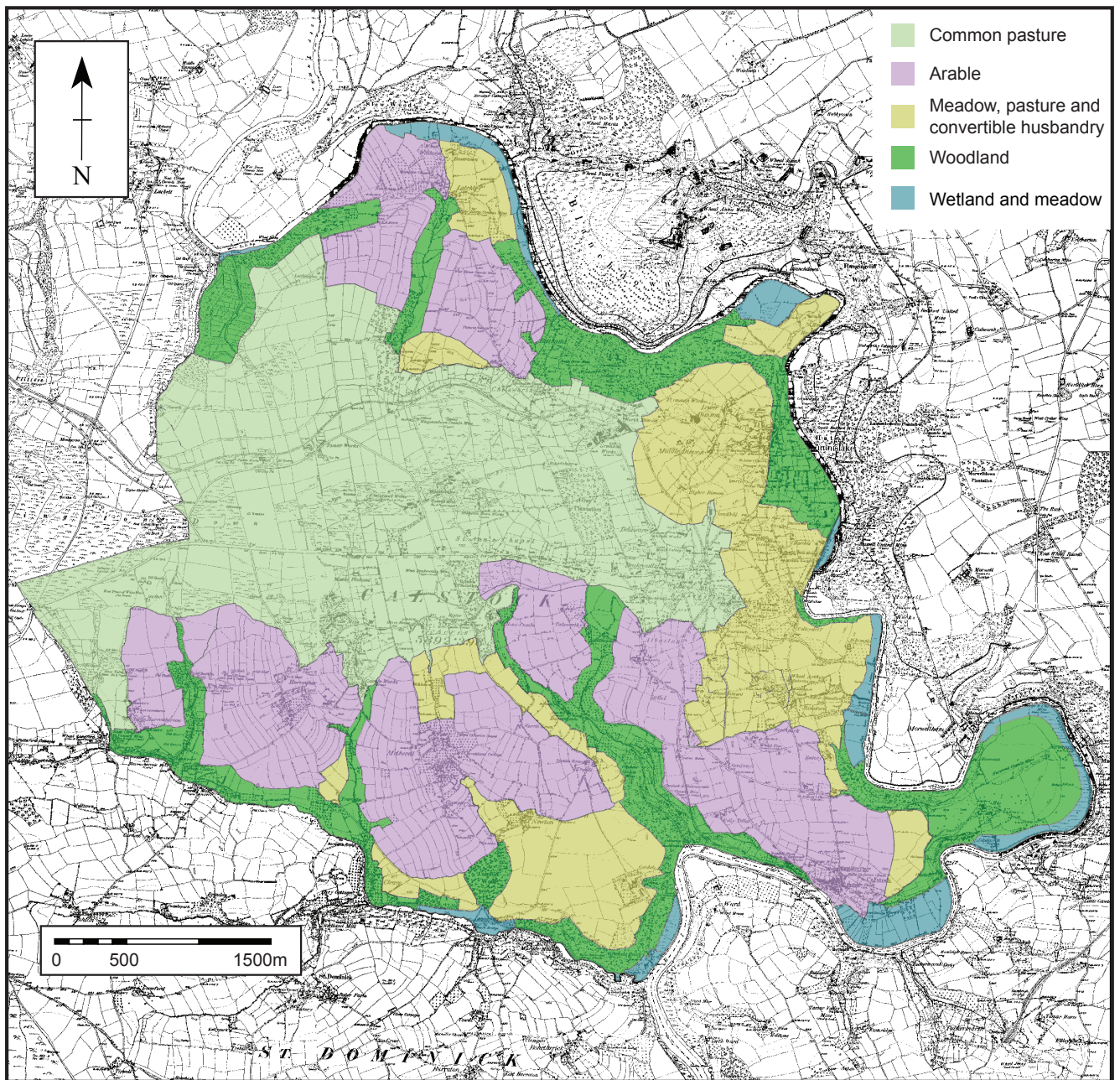


Figure 2: Reconstruction of early land use in Calstock based upon the Historic Landscape Characterisation reproduced in Figure 4. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

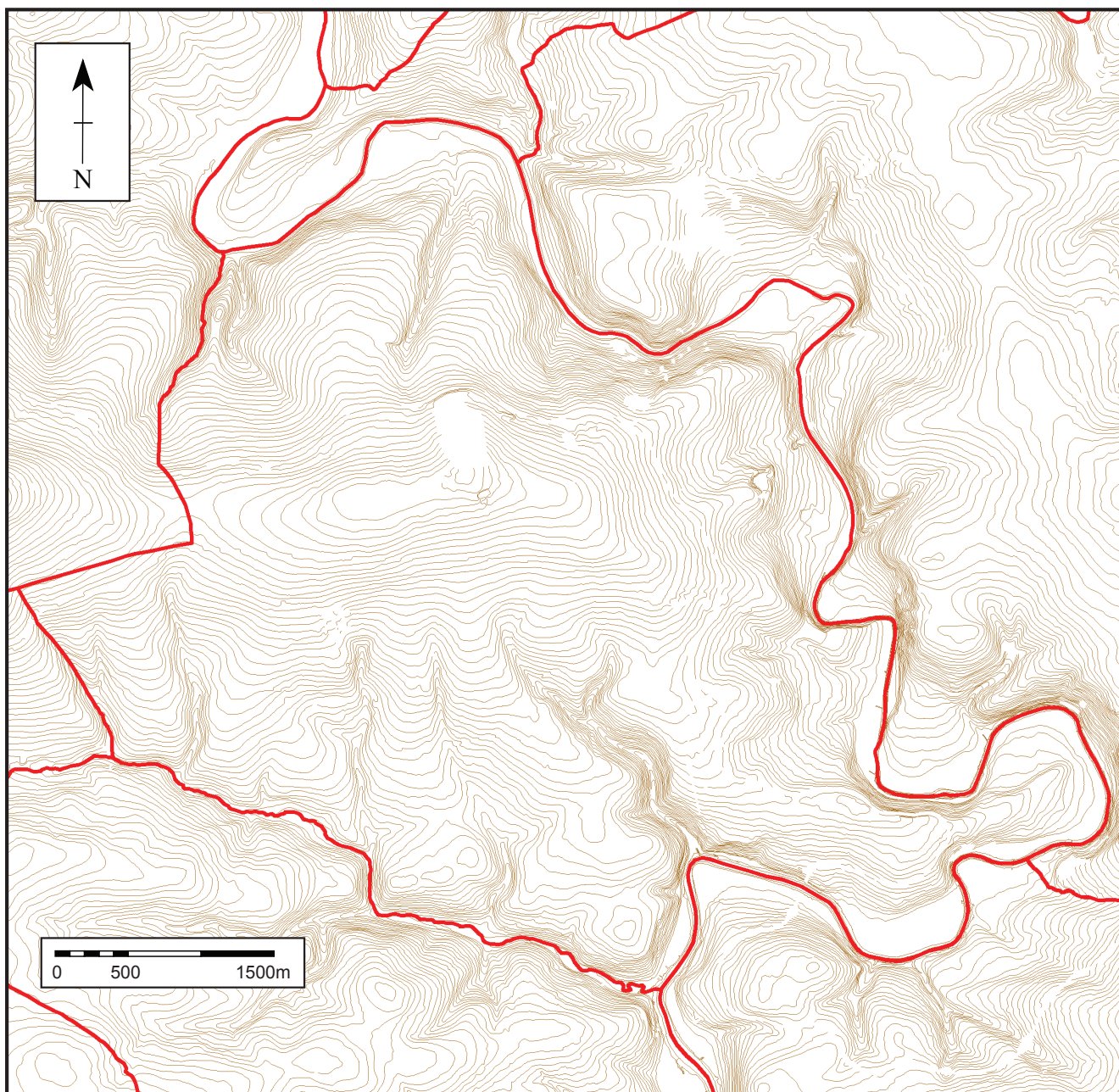


Figure 3: Calstock parish relief, Ordnance Survey contour data © Crown Copyright/database right 2012. An Ordnance Survey/EDINA supplied service

as a number of 'historic character areas' (Rouse, 2012). Both approaches aim to give time-depth to the present-day landscape, but they do not look 'underneath' the modern elements; for example Gunnislake and Drakewalls appear in both as modern urban development. In fact both of these communities are permeated by older historic environment components, and the present study aims to include these in the characterisation and thereby create an account of the historic landscape on which the modern buildings sit and amongst which its inhabitants live.

The way that the landscape is used is often influenced by topography – ground may be too steep to plough, some tree species will not thrive in waterlogged conditions. The topography of Calstock is particularly varied and many of the findings of this project refer to one aspect or another of the landforms in the parish. Figure 3 shows contours derived from modern Ordnance Survey mapping and is intended to provide a topographical context for what follows in this report.

We would like to thank Sam Barnes, AONB Project Officer, for supplying digital data on which much of this research is based, and volunteers at the Calstock Parish Archive for providing access to copies of historic maps and for useful discussion. Thanks are also due to Calstock Parish Archive for the image reproduced in Figure 11.

### 3: Sources and methodology

A wide range of sources were integrated as part of this historic landscape analysis in the Geographical Information System (GIS). Various electronic datasets were used as a background to the historic landscape analysis, and these are described first (the 'framework data' below). The historic landscape analysis methodology is then described, followed by work carried out on the Tithe Map and Award of 1839 and other documentary sources. This section then moves on to an assessment of the information contained within the Historic Environment Record for Cornwall. The report ends with a description of analysis carried out on certain specific historic landscape components, notably the road network, place and field-names, and the settlement pattern.

#### Framework data

**Parish boundaries:** The parish boundary used in this study was that recorded on the Tithe survey of 1839. The source of this data was Kain and Oliver's (2001) survey of historic parishes in England and Wales, which provided a digitised version of parish boundaries in Adobe Illustrator format. In this project's GIS Calstock parish was a polygon shapefile.

**Present-day Ordnance Survey digital base:** To ensure that all historic landscape information entered into the GIS is spatially related to the British National Grid, georeferenced Ordnance Survey MasterMap mapping was imported into the GIS and used as a base for the transcription of data. This digital data was obtained under licence through the Edina Digimap® service by staff on the Calstock HLA project as Authorised Users, via the University of Exeter acting as a Sub-Licensee. Owing to the license conditions of use of this material, this digital resource is not included within the GIS output.

See: <http://digimap.edina.ac.uk/main/copyright.jsp>

**Contours:** The topographic backdrop for the historic landscape analysis was created by inserting Ordnance Survey Land-Form PROFILE™ georeferenced digital data into the project GIS (eg Figure 3). This data was obtained under licence through the Edina Digimap® service by staff on the Calstock HLA project as Authorised Users, via the University of Exeter acting as a Sub-Licensee. Owing to the license conditions of use of this resource, this digital resource is not included within the GIS output. The topography is represented by contours at 5 metre vertical intervals, and the accuracy of this digital source is considered to be better than 2.5 metres (i.e. half the vertical interval).

See: [http://digimap.edina.ac.uk/main/help/index.jsp?file=data/os\\_products/profile\\_guidance.txt](http://digimap.edina.ac.uk/main/help/index.jsp?file=data/os_products/profile_guidance.txt)

#### Historic landscape analysis



Despite the flexibility of computer-based mapping, the historic landscape analysis for this project was initially developed on a paper copy base map. This decision was taken in view of the fact that a hard copy confers the ability to view the whole study area in a glance and to rapidly switch attention from one area to another. The process of creating an historic landscape analysis necessarily involves constant comparisons between one area and another, as well as periodically standing back to view the study area as a single cohesive entity. The First Edition 6 inches to 1 mile Ordnance Survey maps are acknowledged to provide the best base maps, partly because of their accuracy and unrivalled depiction of detail, and partly because they pre-date the mechanisation of agriculture and its attendant influence on the historic landscape. These maps were used as the base for a Historic Landscape Characterisation. The base map was assembled from printouts of digitised copies reduced by about 50% and stuck together to create a map of the whole parish as it was in the late nineteenth century. It should be noted that the only source available for the eastern part of the parish was part of the Devon OS 6 inch survey while the western part came from the Cornwall survey. The latter was carried out at a slightly earlier date and consequently there is a slight discontinuity in places, for example on Hingston Down. The methodology behind the historic landscape analysis itself is outlined separately below.

The base map assembled from early Ordnance Survey 6 inches to 1 mile maps was examined and a set of thirteen historic landscape types was identified:

- 'Unenclosed Land'
- 'Late Enclosure'
- 'Floodplain'
- 'Sloping Valley Sides'
- 'Woodland'
- 'Orchards'
- 'Semi-irregular Fields'
- 'Semi-regular Fields'
- 'Intermediate Enclosure'
- 'Cropping Units'
- 'Strip-based Fields'
- 'Industrial'
- 'Ornamental'

Definitions and detailed descriptions are given below under 'historic landscape character types'. These types embrace a wide range of historic landscape features including the morphology of the field systems and associated features such as roads and settlement patterns, and in some cases also topography (for example 'Sloping Valley Sides'). While some possessed fairly distinct characteristics (for example 'Late Enclosure'), others comprised spectra of attributes with a graduation from one type and another (for example 'Cropping Units' and 'Semi-regular Fields').

The base map was coloured appropriately, referring to present-day Ordnance Survey 1:25,000 maps for topographical detail where necessary (for example in assigning the 'Floodplain' type). In the case of distinct character types such as 'Late Enclosure', the choice was a simple matter. Types which represented a spectrum, such as 'Cropping Units' and 'Semi-regular Fields', presented more of a problem. While it was usually clear to which particular spectrum a field or cluster of fields belonged, assigning a particular field to either 'Cropping Units' or 'Semi-regular' types was inevitably a subjective choice in a few cases. In practice each historic landscape character type was coloured over the whole study area, starting with 'Late Enclosure', the most distinctive type.

### **Tithe maps and apportionments**

The Tithe Commutation Act of 1836 replaced the ancient tithes on produce with taxation based upon the land occupied by a farmer, and to this end detailed large scale maps were made of most English

parishes and documents drawn up which recorded ownership, occupancy, field-names, land-use, acreage and value of every plot depicted on the maps. These are known respectively as tithe maps and tithe apportionments, and copies are usually held by county record offices. The Tamar Valley AONB provided a set of high resolution photographs of the Calstock tithe map and apportionment, and GIS transcriptions of the data these two sources contain. This has been incorporated in the GIS output of this project.

Judging by the photographs, the Calstock tithe map (1839) is of good to high quality, and in good condition. This was fortuitous since experience has shown that the conditions in which these maps were stored prior to their deposit in county archives can sometimes result in deterioration to the point where they would be unusable in a project of this nature. It occasionally happens that, for a number of reasons, certain lands were not subject to tithes and the tithe maps may not depict these areas. Fortunately this was not the case in Calstock.

### **Inclosure Award**

Inclosure of common land authorised by Act of Parliament (now usually termed 'enclosure') was invariably recorded in a detailed document known as an Inclosure Award. This could consist of many pages and listed all the recipients of allotments, any exchanges or sales of land involved and numerous other details. The allotments themselves, and in some cases fields which were destroyed in the course of the subsequent enclosure, were depicted on a map which was normally stitched into the end of the document. The enclosure maps, in particular, can be important in demonstrating that the rigidly rectangular fields on high ground consist of parliamentary enclosure, and the dates of the maps give the dates from which these landscapes originate. They can also indicate small areas of late enclosure which are not immediately apparent on early Ordnance Survey maps. Another significant feature of these maps is that many show earlier enclosures on the commons concerned which were present at the time but which no longer exist. In most, if not all cases these were encroachments on the commons which presumably were not allowed by the enclosure commissioners and were therefore destroyed. In the case of Calstock the Inclosure Award was in 1862, mid-way between the tithe map (1839) and the OS 1<sup>st</sup> edition 6 inch (1889). It could therefore contribute little to this project beyond the fact that much of the late enclosure in the parish took place after 1862 and before 1889. A copy of the enclosure map in Calstock Parish Archive was examined to check that it contained no unexpected information.

### **Early maps**

Library copies of early Cornwall county maps by Saxton (1579), Norden (c.1584), Gascoyne (1699) and Martyn (1748) were examined but did not show sufficient detail to contribute to this project beyond confirming that a network of tracks and roads existed in the parish. Some showed a medieval park that appeared to be to the west of Calstock village, but it was clearly associated with Halton in St Dominick parish and it was therefore disregarded. Copies of estate maps in Calstock Parish Archive for Cotehele (1731) and Harewood (1784) also contributed little since the fields they depict are more or less identical to those on the Tithe Map of 1839. A copy of the Ordnance Survey surveyor's drawing of the Calstock area (Gardner, 1786), also in the Parish Archive, was more useful. In particular, this map showed areas on the margin of Hingston Down that were unenclosed then (1786), but were shown enclosed on the Tithe Map (1839).

### **Documentary sources**

The time budget for this project did not permit documentary research, which is by its nature time-consuming, although future documentary research might enhance the project outcomes presented here. For example, two volunteers in the Parish Archive mentioned records of medieval allotments of 8 acres, known as landyokes, apparently enclosed from the waste (Chaplin and Massey pers. com. 11/10/2012). These sound similar to enclosures made on commons elsewhere in England known as

assarts, and if some of these could be positively identified with existing fields they might shed light on the date for one or more of the HLC character types described below.

### **Historic Environment Records**

The online version of the Cornwall HER is available through the Heritage Gateway website (<http://www.heritagegateway.org.uk/gateway/>) and digitised extracts as a GIS layer were supplied by Tamar Valley AONB. These sources were searched for particular information, notably the earliest known dates for various settlements in the parish. A disadvantage of HERs for projects of this nature is that they do not record every historic feature that exists, but only what particular workers have been interested in noting. HER data, therefore, is a valuable source of examples and corroborative evidence, but is not reliable for statistical purposes or for distribution maps in particular.

### **Place-name mapping**

In order to try and establish the chronology within which this landscape was colonised and enclosed, the earliest reference to all settlement-related place-names was mapped for the parish.

Many English counties are covered by a volume of place-names compiled by the English Place-name Society. These works give information on the earliest use, variations in spelling and meaning of names of places ranging from cities to individual farms, and can be useful in establishing the chronology of settlements in a study such as this. Unfortunately no volume has been published for Cornwall, but an unpublished typescript exists (Gover 1948). The time budget for this project did not permit reference to this work, but adequate citations are given on the online version of the Cornwall HER (see <http://www.heritagegateway.org.uk/gateway/>) for a number of settlements listed in Calstock parish, and these have been mapped (Figure 24).

### **Field-names**

It is known that field-names can be indicative of aspects of the history, use, topographical situation or other attributes of the enclosure to which they apply. For example, 'Brake' and 'Breach' imply an enclosure made from the waste or common while 'Mead' and 'Ham' are indicative of meadow, the latter close to water. The transcriptions of tithe data supplied by Tamar Valley AONB include the names of every field listed in the tithe awards. It is possible to query the GIS and highlight every field in a parish with a particular element to its name. However, the etymological origins of many of the field-names within Calstock parish, often describing size, topographical position, or ownership, are of little relevance to the overall Historic Landscape Analysis.

### **Settlement typology**

The settlement typology is based upon settlements as they are depicted on the Ordnance Survey 1st edition 6 inches to 1 mile mapping. The typology was transcribed directly into the GIS from digitised versions of the 1st edition made available through Edina Digimap®. Each settlement type was mapped as point data in a shapefile within the GIS, and each was 'tagged' in the Attribute Table with the number corresponding to its character, as outlined below. Settlement was characterised using a number of criteria. The physical size and service provision, as well as residential aspects of each settlement were integral to its classification. The degree of nucleation and dispersal was also considered, being particularly relevant to the classification of compact versus loose hamlets. Adjacent farmsteads and common name elements between farmsteads may be used to indicate divided land holdings (estates), formerly single larger units. The application of these criteria across the parish has identified five principle settlement types:

- Compact village
- Loose village
- Compact hamlet
- Loose hamlet

- Farmstead

**Compact villages:** One large cluster of dwellings can be identified within Calstock parish, this being the village of Calstock. Compact villages are characterised by the presence of a church, vicarage, chapel/s and school in addition to other service provisions such as inns, post offices and smithies. There are numerous residential properties associated with the core of these places.

**Loose villages:** Loose villages have many aspects common with compact villages, such as a chapel and inn for example, but they are characterised by a loose spatial structure, with their dwellings scattered among fields, paddocks and other open spaces. Elsewhere loose villages may include a church and be the principal focus of a parish, but the single historic example here is Gunnislake and is secondary to Calstock.

**Compact hamlets:** Compact hamlets, and are characterised by a small cluster of farms and cottages with perhaps an inn, chapel or smithy. Latchley and Metherell are characteristic of compact hamlets across the parish.

**Loose hamlets:** This settlement type is characterised by the presence of a number of services, such as an inn, school, chapel and smithy, along with a number of small farms and cottages dispersed across a small area, as typified by Chilsworthy. There is a degree of subjectivity in the distinction between this class and compact hamlets although in most cases the degree of aggregation is distinctive.

**Farmsteads:** Finally, a number of probable farms, over and above those encompassed within Types 1-4, have been identified. No examples were found on OS 1<sup>st</sup> edition maps of a settlement named as a farm, but in many cases it is clear enough that a named building or cluster of buildings was a farm, or was a high status house with an associated farm. Examples include Lowertown near Latchley and Trehill east of Metherell.

#### 4: Historic Landscape Characterisation type descriptions

##### Introduction

The Historic Landscape Characterisation (HLC) classifies fields and other enclosures primarily by their morphology, and to a lesser extent by the terrain in which they are located. The aim is to produce a model from which the development of the landscape over time can be interpreted and which simultaneously illustrates its evolution. By its nature, the HLC is an overview; too much detail or too many types would render it difficult to interpret and would impair its value as a tool, especially to the non-specialist. Some HLC types are unequivocal and have clear-cut characteristics, for example 'Late Enclosure'. Others are less easily defined, their definitions are fuzzy and their distinction one from each other may be more subjective, for example 'Cropping Units' and 'Semi-regular Fields'. Consequently the HLC should be regarded as a useful device for understanding the historic landscape rather than an absolute description of it, and local knowledge may be able to refine its detail in places or add depth and colour to the descriptions.

The Calstock HLC is based upon Ordnance Survey first edition 6 inches to 1 mile mapping, surveyed and drawn in the later nineteenth century. These maps have the advantage that they show the countryside before the mechanisation of farming and before the era of motorised transport, and therefore show many features that have since been destroyed. In the case of Calstock they have the added benefit of showing industrial areas that have since reverted to other uses. It should be emphasised here that the use of OS 1<sup>st</sup> edition mapping as the base means that the HLC does not address any features or developments in the Calstock landscape since the date of the OS survey (1889). Thus, for example, it does not show present-day housing development, which is considerably more extensive than in the nineteenth century.

This section of the report discusses the historic landscape types that have been distinguished in the historic landscape analysis of Calstock parish (Figure 4). Under their separate headings, each type has a brief definition, list of key characteristics and an interpretation. These are followed by a more extensive analysis that considers key topics including topography, field morphology, roads, settlements and mineral extraction. Each type is illustrated by a selected example taken from the historic landscape characterisation, overlaid on early Ordnance Survey mapping. These are intended as an enhancement of the text and it will be found helpful to refer to them while reading the descriptions.

### **Unenclosed Land** (Figure 5)

**Introduction:** In the South-West, unenclosed land includes the familiar moorland landscapes of, for example, Bodmin Moor. Smaller areas exist across the region, usually located on high ground and, like the moors, are today often as much venues for recreation as they are resources for profit. No unenclosed land remains in Calstock parish but a small area existed in the later nineteenth century in the extreme west of the parish. This is shown on the OS 1<sup>st</sup> edition map and so is included here.

**Definition:** More or less extensive areas of rough ground with few or no internal boundaries and typically situated in high areas.

**Key characteristics:** Few or no internal boundaries; semi-wild vegetation comprising rough grass, gorse, bramble, bracken etc and occasionally trees; frequently adjacent to late enclosure (see below); usually depicted on OS maps by the 'rough pasture' or 'furze' symbol conventions; roads often follow the external boundary of the type and are unfenced from the unenclosed land.

**Interpretation:** The small area of unenclosed land that appears on the OS 1<sup>st</sup> edition map represents the rump of an extensive area of formerly unenclosed land extending west from Drakewalls to the parish boundary and which was enclosed in the nineteenth century (see 'Late Enclosure', below). This in turn was part of a much larger area extending beyond the parish boundary across Hingston Down and Kit Hill; some unenclosed land remains on the latter. These areas are likely to have been common land on which commoners had customary rights such as grazing, cutting turf (turbary) and gathering furze (whin or gorse) for fuel. It is likely that in earlier periods the area of unenclosed land was even more extensive and that other HLC types represent episodes of enclosure in the medieval and, possibly, early post-medieval periods.

### **Descriptive analysis**

**Topography:** Unenclosed Land in the Calstock area is located on the higher ground, comprising more or less gently rolling hills, rising beyond the parish boundary to the steeper prominence of Kit Hill.

**Field morphology and boundaries:** The external boundaries of Unenclosed Land conform to those of the adjacent types, thus to the west of Sevenstones Farm at SX 387 709 there is a short section of straight, angular field boundary which represented the western limit of late enclosure in this area. The southern boundary of this area of Unenclosed Land conforms to the road, which probably pre-dates the adjacent late enclosure.

**Roads:** Roads in Unenclosed Land frequently hug the boundary of the type, as the road now known as the A390 does here. In larger expanses of this character type, such as Dartmoor, roads cross the open land, usually following gently sinuous routes that avoid bogs and marshes and seek suitable crossing points on watercourses. These roads may be of some antiquity, as indicated by the presence of medieval structures such as wayside crosses and clapper bridges.

**Settlements:** Settlements are rare in Unenclosed Land and there were none in the small area that existed in late nineteenth-century Calstock.

*Woodland:* Woodland is rare in Unenclosed Land and, as with settlements, there was none in Calstock.

*Land holding:* In tenurial and legal terms Unenclosed Land such as this small remnant is likely to have its origin in common pasture. Historically, although the lord of the manor may have been the legal owner of the land, other people, known as commoners, will also have had certain defined rights to the resources such land could supply. Typically these would include the right to pasture a defined number of livestock and to cut turf and furze for fuel. These customary rights, as they were known, were protected by law and if necessary could be defended in the manorial court. The unenclosed commons were thus a valuable resource, not just to the lord, but also to the community.

*Mineral extraction:* The OS first edition map does not show any mines, quarries or pits in this small area, though Prince of Wales Mine was adjacent to the south, and East Kithill Mine was just across the parish boundary north of Sevenstones.

*Associated features:* The only associated features in the small area of Unenclosed Land within Calstock parish are a number of boundary stones along the parish boundary, marked 'BS' on the OS 1<sup>st</sup> edition map. These served to define the position of the boundary in an area that was otherwise devoid of permanent features. It is also worth pointing out the tumuli marked on the OS 1<sup>st</sup> edition map just across the parish boundary north-west of Sevenstones. Such monuments are more likely to survive in Unenclosed Land which has never (or rarely) been subjected to ploughing, and more subtle traces of past human activity can sometimes be found amongst the rough vegetation.

#### **Late Enclosure** (Figure 6)

*Introduction:* Anyone who drives regularly around Calstock parish will be familiar with the striking difference between the lanes around Metherell and the road between St Anne's Chapel and Coxpark, for example. While the former are narrow, winding and bordered by high hedges, the latter is wide, straight and gives open views across neat-looking fields. The Metherell landscape is medieval in origin, while the land north of St Anne's Chapel is typical of late enclosure; its straight lines and geometric fields speak of the age of the Enlightenment and the Industrial Revolution.

*Definition:* Geometric and straight-sided enclosures, predominantly on high ground, more rarely on hill-side or lower ground.

*Key characteristics:* Usually located on upland; fields tend to be larger than those of other character types, though in the vicinity of settlements they are frequently smaller; dead-straight field boundaries; field shapes more or less rectilinear, sometimes triangular or rhomboidal; corners close to 90 degrees are common; roads predominantly dead-straight, wide and with parallel sides; woodland predominantly consists of plantation; visually open aspect.

*Interpretation:* Late-enclosed former open pasture and areas of former industrial use, typically extractive industries. The dead-straight character of the boundaries demonstrates that they were laid out using accurate surveying techniques. Comparison of the Tithe Map (1839) and the OS 1<sup>st</sup> edition maps demonstrates that most of the late enclosure in Calstock was created between these dates. The majority were set out following the Enclosure Award for Hingston Down Common of 1859, which authorised the enclosure of common land amounting to approximately 26% of the parish (Kain *et al.*, 2004, 309). The Tithe Map shows that some small areas were enclosed before 1839, for example a few small fields around Mount Pleasant (SX 403 707), north-east of Harrowbarrow, and a larger area between Gray's Plantation and Delaware (around SX 420 712). Neither of these groups of fields is depicted on a late eighteenth-century map (Gardner, 1786), implying that they were enclosed at some point between 1786 and 1839. Clusters of smaller fields, for example around St Anne's Chapel, are often associated with settlements that are contemporary with the late enclosure and may represent allotments to mine workers.

### ***Descriptive analysis***

*Topography:* Late enclosure is generally located on the higher ground in the parish and covers the east-west ridge of Hingston Down from Delaware Farm (SX 423 711) west to the parish boundary, together with its northern and southern slopes. A separate area consisting predominantly of small fields and settlements exists on lower ground above the Tamar north of Hatches Farm (around SX 434 713). An area of plantation on steeply-sloping valley sides in Greenscombe (SX 393 726) also contains small late enclosures within its perimeter. This has been distinguished in the HLC as 'Sloping Valley Sides' (see below) since it has a sharply defined perimeter separating it from the adjacent late enclosure on more gently sloping land.

*Field morphology and boundaries:* Late enclosure fields in Calstock are predominantly rectilinear or rhomboidal and many are more or less square with boundaries of similar length on all four sides. Boundaries are characteristically dead-straight – a result of the accurate surveying techniques which had been developed by the time of enclosure in the nineteenth century and which helped to ensure a fair division of the former common land amongst those who had held rights there. Some boundaries are post and wire fences, but low earth and stone banks surmounted by a living hedge are more typical. Road boundaries tend to have a more substantial bank, sometimes faced with dry stonework, for example north of Rising Sun at around SX 395 708. The hedgerows are predominantly of a single species, in contrast to those in other landscape character types. This is likely to be a result of their having been planted using nursery stock raised in bulk and the relatively short time since they were created. Both hawthorn and beech are used, the latter more frequently on roadsides. Nationally, both species were popular choices for late enclosure and beech is widespread in upland areas of the South-West, notably on Exmoor where it is a distinctive element of the present-day landscape.

*Roads:* Roads predominantly feature dead-straight stretches punctuated by few sweeping curves. In all cases the roads are wider than the lanes in adjacent character types, often with drainage ditches on one or both sides and relatively substantial hedgebanks (Figure 7). The change between late enclosure and an adjacent type can be quite pronounced, for example near Latchley Plain at SX 400 728, where the wide, straight lane from Coxpark suddenly becomes narrow and winding. Early maps (Gascoyne, 1699; Gardner 1786) show that a network of tracks or roads crossed the former open moorland on Hingston Down. These depictions are sketchy but it is safe to infer that the present straight roads are likely to represent a rationalisation of this network. An exception is the road between Tamar Ridge Farm (SX 400 716) and the parish boundary at SX 390 711 which, for reasons unknown, has a gently sinuous course.

A transcription of part of the 1827 Callington Turnpike Act on the *Turnpike Roads in England* website (<http://turnpikes.org.uk/> - consulted 3/10/2012) demonstrates that the present A390 across the zone of late enclosure was part of a turnpike connecting Tavistock and Liskeard. Turnpikes were toll roads established in the eighteenth and nineteenth centuries by Acts of Parliament on behalf of turnpike trusts, the tolls providing funds for improvement and maintenance of the roads. The exact route of this turnpike is described by reference to contemporary landmarks, most of which no longer exist. Reconstruction of this route is beyond the scope of this research, but would make an interesting project for an historian with good local knowledge.

*Settlements:* Some settlements within the late enclosure have names descriptive of their location (for example Uplands SX 398 711) or referring to a nearby feature (Hingston Down Farm SX 406 712). Others suggest idealistic expectations (Mount Pleasant SX 403 707) or appear to evoke distant and exotic places (Klondyke SX 401 720). Few have names that might be consistent with a settlement of any antiquity. The modern OS 1:25,000 map depicts only one settlement with a Cornish name (Treleath SX 394 717); this is also shown on the OS 1<sup>st</sup> edition map, situated within a characteristically rectilinear enclosure that implies it is no older than the fields around it. Comparison of the OS 1<sup>st</sup> edition and present-day 1:25,000 maps shows that some settlements have expanded from a nucleus of one or two buildings to become larger communities, for example Rising Sun (SX

397 704). St Anne's Chapel is first recorded in 1540-41 (Cornwall HER no. 176819) and possibly it was then no more than an isolated chapel. However, by the time of the OS 1<sup>st</sup> edition (1889) it had become a small community and, like Rising Sun, it has since expanded considerably. These communities tend to be located close to the margin of late enclosure and are all associated with large industrial sites. Rising Sun, for example, is close to the former Prince of Wales mine while St Anne's Chapel is down the hill from the quarries, mines and associated works on Hingston Down. It is reasonable to conclude that the dwellings in these areas were constructed to house the mine workers and their families.

*Woodland:* The only substantial woodland within the late enclosure type area is Gray's Plantation and Coxpark Plantation, which from their names can be assumed not to originate from ancient woodland, but to have been planted, probably in the eighteenth or nineteenth centuries. During this period there was a perception that England was short of timber and that the continued existence of the navy was threatened by this shortage. Landowners therefore saw it as their patriotic duty to plant trees, but in this case the reason for the plantation is likely to have been much closer to home. The numerous mines in the parish will have required considerable quantities of timber for pit props and any plantation will have had a ready local market for all the timber it could produce. Indeed, analysis of the Tithe Apportionment shows that both these plantations belonged to the owners of Drakewalls mine (see 'Industrial' below). Gray's Plantation is still marked on the modern OS 1:25,000 map, but is about one half the size it was in the late 19<sup>th</sup> century, having lost the southern portion to fields. A few other small plantations existed at the time of the OS 1<sup>st</sup> edition, for example west of St Anne's Chapel at SX 405 710, otherwise most of the existing wooded areas within this type have sprung up or been planted on former industrial sites.

*Land holding:* Before it was enclosed, most or all of the area covered by late enclosure will have been common land and the comments regarding land holding under 'Unenclosed Land' (above) will have applied. The Enclosure Map for Hingston Down Common was made in 1859 and the Award to which it relates was therefore made under the General Enclosure Act of 1845, which replaced the previous requirement of a separate Act of Parliament for each manor or parish with a universal legal mechanism. The granting of an enclosure award was thus a legal procedure ultimately under the jurisdiction of national government and the award ensured that all parties – landowners and those with common rights (commoners) – were granted allotments proportional to the customary rights they were to lose as a result of the enclosure (or inclosure, as it was called at the time). The process was overseen by officials, the Inclosure Commissioners, who employed surveyors to lay out the plots and adjudicated on the obligations of recipients to fence their plots one from another, resulting in the rectilinear landscape we see today.

*Mineral extraction:* Norden (c.1594, 66) says of Hingston Down: 'The Countrie people haue a Bye-worde, Hengston down welle wrowghte Is worth London town deare bowghte. It hath bene verie riche in tynn-workes, now nothing so plentifull ...'. At around the same time, Carew (1602, 184) also attributed the meaning of the rhyme to 'the store of tin in former times there digged up' and noted 'that gainful plenty is now fallen to a scant-saving scarcity'. Evidently, then, the zone of late enclosure in Calstock was worked for tin in the medieval or early post-medieval periods, but this industry had fallen into decline by 1600. However, there was a revival of extractive industry in the nineteenth century, with the OS 1<sup>st</sup> edition maps of 1889 depicting a number of mines and shafts within the late enclosure. Hingston Down Consols Mine (SX 409 713) employed 225 men in the 1860s and produced copper, tin, tungsten and arsenic between 1843 and c.1925, while the Prince of Wales Mine (SX 400 704) was older, closing in 1914 (Todd and Laws 1972, 213-8). There were also several clay pits producing specialised bricks through the later nineteenth and early twentieth centuries. The Phoenix Works (SX 396 715) produced glazed paving, while the Calstock Works (near the summit of Hingston Down at SX 406 713) and the Tamar Works (SX 399717) both produced firebricks; the latter operated between 1873 and 1935 and produced up to 80,000 firebricks a week (*ibid.*, 213).



*Associated features:* Two long boundaries running west to east across the zone of late enclosure are prominent due to their sinuous nature, in sharp contrast to the surrounding dead-straight field boundaries. These are former leats or artificial streams providing water for power and other uses to industrial sites such as mills and, in this case, mines. One starts at SX 406 706, a little south of West Drakewalls Mine on the OS 1<sup>st</sup> edition map, the other near the parish boundary south of Sherwill at SX 388 716. Both can be traced on the OS 1<sup>st</sup> edition map beyond the boundary of the late enclosure and can be seen in places on the modern 1:25,000 map, but they are much more clearly depicted on the Tithe Map, demonstrating that they existed by 1839. The Tithe Map shows that they merged in Drakewalls at SX 423 707 and then ran down the hill to Drakewalls Mine. In fields 1386 and 1397 a series of five stylised water wheels can be seen, and in field 1545 there are two more water wheels and a reservoir (see Figure 7). The leat continues down the hill, apparently providing power and water to further industrial sites around Slimeford before it empties into the Tamar. The fact that these two leats ran along the whole of the north and half of the south sides of Hingston Down, and therefore collected most of the water that ran off the hill, is a vivid demonstration of both the demands and the scale of the industry that existed in nineteenth-century Calstock.

### **Floodplain** (Figure 9)

**Introduction:** Classic floodplain develops in the lower reaches of rivers where it forms a typically flat expanse of land that periodically floods, or did before the development of flood-control systems. The floodplain in the relatively narrow and steep-sided Tamar valley consists of somewhat narrow strips of flat land, generally situated on the inside of bends in the river. Visitors and residents of Calstock will be familiar with it as the area on the east side of the town where the car park and river-side walks are located.

**Definition:** Flat, low-lying land adjacent to the river.

**Key characteristics:** Close to river; predominantly flat and low-lying; field boundaries may consist of water-filled ditches; landward field boundaries tend to conform to course of river; fields are typically approximately rhomboidal, dead-straight boundaries are rare; roads tend to follow the landward margin of the type; few settlements within the type.

**Interpretation:** 'Floodplain' is subject to periodic flooding and the resulting deposition of fertile mud, and is therefore most suited to hay production and rich grazing. On tidal reaches there may be earth banks along the river to control salt-water flooding of the meadows, but salt-marsh beyond these was a valuable grazing resource in the past. 'Floodplain' is unsuited to arable cultivation owing to risk of crop loss through flooding. In industrial contexts docks and quays for import of materials and export of produce are necessarily located on or close to floodplain.

### **Descriptive analysis**

**Topography:** The 'Floodplain' HLC type is by definition associated with water courses. In Calstock the steep valley sides of the Tamar give way abruptly to a narrow strip of flat land on the inner side of the curves in the river's course. In a parish that is otherwise hilly and often steep these river-side meadows have a quite distinctive feel. In contrast to the open views amongst late enclosure on Hingston Down, the views here are limited by the high valley sides but the aspect is sheltered for the same reason.

**Field morphology and boundaries:** Fields tend to be roughly rhomboidal in outline and are often somewhat larger than those in adjacent types, giving the 'Floodplain' zone an open, uncluttered appearance on maps. An exception is the area south-east of Calstock town, which appears on the OS 1<sup>st</sup> edition map to have been subdivided into relatively small plots with uncharacteristically straight boundaries, suggesting these boundaries were laid out fairly recently. Landward boundaries strongly define the type boundary and generally run roughly parallel to the river, for example near Latchley (SX 411 737). Modern OS mapping shows water in blue and thus emphasises the fact that field

boundaries in this zone often consist of, or are accompanied by, water-filled ditches. The river-side field boundaries are often associated with a flood bank, which is clearly marked on large-scale maps, including the OS 1<sup>st</sup> edition.

*Roads:* Rarely a track crosses 'Floodplain', as near Slimeford at SX 438 699, where the OS first edition marks an 'old quay' and thus a requirement for access to the river-side. More typically roads follow the landward boundary of the type, for example to the west of Okeltor around SX 442 685, in order to avoid travelling through standing water during flood events.

*Settlements:* There are no settlements within the 'Floodplain' zone due to the risk of flooding.

*Woodland:* There is no woodland in this zone in Calstock parish. However, trees are a prominent feature, sometimes free standing (for example at Lowertown Farm, Latchley SX 410 738) but more often growing along the field boundaries. Historically, though hay and grazing were essential resources in the rural economy, wood was also an important material for construction, furniture, fuel and a host of other uses. In Calstock, with its high proportion of high and exposed land, it is likely that trees will have been grown wherever they could be slotted into other land-uses and they are thus likely to have been a feature of 'Floodplain' hedgerows for many centuries.

*Land holding:* Mapping of Tithe Apportionment data shows that in Calstock blocks of flood-plain are invariably held by single owners, in most cases as part of larger areas extending onto adjacent character types. The pattern of occupancy is similar, though a few plots on the floodplain east of Calstock are rented out. This is in marked contrast to some of the arable land in the parish, where holdings are mixed (see 'Strip-based Fields' below), but comparable to the woodland and some areas of mixed arable and pasture, which were similarly held in contiguous blocks.

*Mineral extraction:* There is no evidence for mineral extraction in this zone, but some quays and docks were situated here in places where convenient access to the river and to mines or works further inland could be made. Examples on the OS 1<sup>st</sup> edition map include east of Slimeford (SX 438 699), at Newquay (SX 453 695) near the former Harewood Consols Mine, and at Cotehele Quay (SX 424 681). In the nineteenth century Okeltor Works (SX 447 688), which the OS 1<sup>st</sup> edition indicates processed copper, tin and arsenic, was partially within the 'Floodplain' zone south of Harewood where it can be assumed a flood bank or other engineering contrivance protected it from flooding.

*Associated features:* Apart from the industrial remains described above there are no significant features associated with 'Floodplain'.

### **Sloping Valley Sides** (Figure 10)

*Introduction:* To the north of Trehill a narrow lane makes its way through the fields then suddenly plunges down a steep slope into a valley at SX 418 697. The sky becomes limited to a narrow strip between looming valley sides covered in trees and shrubby vegetation. The lane climbs the other side for a while then suddenly levels out, with the valley dropping away to the south and relatively flat countryside to the north. This is Danescombe, which typifies the 'Sloping Valley Sides' type.

*Definition:* The banks and adjacent steep slopes of deeply incised watercourses.

*Key characteristics:* Ribbon-shaped HLC type following watercourses; steep to very steep slopes; enclosures variable but typically relatively small and may be irregular in outline; a continuous field boundary upslope from and roughly parallel to the watercourse is common; orchards and wooded areas are frequent.

*Interpretation:* The steepness of the ground makes cultivation and mowing difficult and may be hazardous to stock. Therefore this character type is typically associated with woodland and coppice, and the presence of adjacent woodland on the OS 1<sup>st</sup> edition maps (see 'Woodland' below) suggests

that historically this was the case to some extent in Calstock. However, these maps also show extensive orchards in these valleys (see 'Orchards' below), and early to mid twentieth-century photographs show flowers being cultivated on the steep slopes (Figure 11). In the photographs the flowers are growing on low ridges that run up the slope. It is probable that the cultivation of flowers was augmented by other produce with a high market value, such as early potatoes and soft fruit. The shelter afforded by the deeply incised valleys would make early cropping reliable on south-facing slopes, and there was a ready market in Plymouth, easily reached by boat, and once the railway viaduct had been completed produce could be sent to market in London. This interpretation applies to the last two centuries, but in earlier periods the market for luxury produce in Plymouth will not have been large and it becomes more likely that these valleys would have supported coppice and orchards, principally for cider.

### ***Descriptive analysis***

*Topography:* By definition the topography of this type is steeply sloping ground associated with water courses. Much of the 'Sloping Valley Sides' in Calstock is along the west bank of the Tamar, the remainder are relatively short coombes that radiate from the high ridge of Hingston Down.

*Field morphology and boundaries:* Field morphology is quite variable. In the smaller coombes the fields are elongated ribbons with a smoothly sinuous boundary on one side and a more convoluted boundary on the other that coincides with the watercourse, for example to the north of Treragin around SX 402 694. The OS 1<sup>st</sup> edition maps often show fields of this type planted with orchards (see below) and it is likely that the steep ground was also formerly used for coppice. Where they cover more extensive areas, for example around Coldharbour (SX 430 704), fields are frequently relatively small and are often highly irregular in outline. The irregular shapes suggest early enclosure for pasture – they are unlikely to have been used for arable cultivation since the irregularity of the boundaries would make ploughing the whole of each field impossible. On the south-facing northern side of Danescombe, around SX 421 696, the fields are more rectilinear, some having their long axis across the slope, others running with the slope. The regular outline suggests later enclosure, possibly for periodic arable use. The sheltered south-facing aspect in Danescombe suggests these fields are likely to have been used for flowers and early crops in the nineteenth and early twentieth centuries, as mentioned above. Finally, west of Latchley Plain, around SX 394 726, is a relatively large area of small rectangular fields with dead-straight boundaries indicating late enclosure on this steep valley side. The purpose of these fields is more enigmatic: the Tithe Map (1839) does not depict them and the Tithe Apportionment gives the land-use of the whole area as coppice.

*Roads:* Roads in 'Sloping Valley Sides' tend to run diagonally across the slope to reduce the incline. They often follow a winding course and are typically narrow and deeply sunken relative to the adjacent ground. Routes that have not become roads but remain as tracks and footpaths are frequent, for example in Danescombe. Many of these are likely to have evolved as a means of getting produce out of the coombes rather than as routes between settlements.

*Settlements:* The OS 1<sup>st</sup> edition map shows that historically hamlets and villages avoided the steep valley sides, but individual settlements were surprisingly common scattered down the coombes. Some of these originated as water mills, of which there were several along the stream that forms the boundary with St Dominick parish. Others may have originated in the nineteenth century as the dwellings of smallholders and market gardeners.

*Woodland:* See 'Woodland' below.

*Land holding:* Analysis of Tithe Apportionment data shows that in most areas of 'Sloping Valley Sides' character type, land was held in large blocks of contiguous enclosures. For example, in the lower part of Danescombe the south side of the valley was part of Cotehele while (with the exception of two small plots) the north side belonged to the Kelly estate. The situation was rather different in the area

near Gunnislake known as Hatches Green (around SX 432 713). Here land was held in small blocks of three or four small fields by a number of owners, a pattern that is continued into the adjacent area of 'Late Enclosure' to the east. The name 'Hatches Green' suggests an area of common pasture that has been enclosed, in which case the blocks of land in different ownership are likely to be the allotments to commoners who had grazing rights on the original green. The rectilinear nature of the small fields implies a late date for this enclosure.

*Mineral extraction:* Some mines and quarries exploited mineral lodes exposed on the steep slopes. Most of these are embedded in woodland – for further discussion see 'Woodland' below.

*Associated features:* 'Sloping Valley Sides' are closely associated with woodland and orchards, which in many places were the most appropriate land-use for the difficult terrain. These are discussed in more detail under separate headings below.

## **Woodland** (Figure 12)

**Introduction:** Driving into the Tamar valley from Tavistock or Callington, one is struck by the contrast between the relatively treeless hinterland and the heavily wooded steep sides of the valley. A glance at an Ordnance Survey map shows that, in fact, this woodland is quite limited in extent, especially on the Cornish side of the river, though it is true that in Calstock parish the majority of woodland (as opposed to plantation) is close to the river.

**Definition:** Areas marked on OS 1<sup>st</sup> edition maps as woodland, usually having the word 'wood' in their name. Excludes areas marked or named 'plantation'.

**Key characteristics:** Predominantly deciduous woodland; marked or named 'wood' on OS 1<sup>st</sup> edition mapping; frequently located on steep ground.

**Interpretation:** Land devoted to woodland resources including timber, wood, charcoal, tannin (from bark) and forage for pigs. Enclosures within 'Woodland' are of variable dates, medieval to modern, but the woodland itself is ancient. Historically, woodland was closely managed to produce poles of various sizes from coppice, and larger timber from standard trees that were allowed to mature amongst the coppice. Because of their relative rarity and the length of time they took to grow, timber trees could be a very valuable resource. Carew (1602, 103) noted that the eastern part of Cornwall was well supplied with coppice, which fetched a high price because wood was a scarce resource in the county as a whole. Of timber he was scornful: '[The] force of the weather do so pare and gall [the trees] that they can pass under no better title than scarecrows' (*ibid.* 104). At about the same time Norden (c.1594, 62) wrote of Cotehele that it was '... verie well wooded, a speciall comoditie in those partes'. The high value of timber and coppice is emphasised in a seventeenth-century document that gives very precise instructions to the lessees of Harewood regarding the management of timber and coppice in their woodlands (Massey, 2009, 6). In Calstock from medieval times until relatively recently woodland was especially significant as a source of timber and fuel for the mining industry, and documentary and archaeological evidence of such use has been found elsewhere in the Tamar valley (see Rippon et al. 2009, 101-9).

### **Descriptive analysis**

**Topography:** The overwhelming majority of 'Woodland' in Calstock parish is located on steeply sloping ground along the Tamar and extending into some of the tributary valleys, such as the lower part of Danescombe. Owing to its steepness this land was difficult or impossible to work but woodland could be managed on it for the varied and valuable resources it provided.

**Field morphology and boundaries:** In Calstock parish blocks of 'Woodland' are typically elongated ribbons with sinuous outlines as a result of their being limited to the steep ground beside the Tamar and its tributaries. The steep slopes have a pronounced lip or edge at their upper limits, beyond which

inclines are more gentle and the ground more suitable for arable or pasture, and the upper limit of 'Woodland' tends to coincide with this break in slope. Maps show very few boundaries within the 'Woodland'. Where they do occur, for example in Clitters Wood (around SX 418 723), they tend to be straight implying a relatively recent origin. In this case the Tithe Apportionment shows them to have been farmed in 1839. All this suggests that former woodland was taken into cultivation or grazing during the century or so prior to 1839 but had reverted to woodland by 1889 when the OS maps were surveyed.

*Roads:* Perhaps because it is on such steep ground, there are very few roads within 'Woodland'. Such that do exist do not have any characteristics unique to the 'Woodland' type. Most of the woods contain tracks to facilitate access and the transport of woodland products. These tend to run diagonally across the slope in order to reduce their steepness.

*Settlements:* The OS 1<sup>st</sup> edition maps show few or no settlements within the 'Woodland'. Presumably the steep ground made such locations undesirable or impracticable, though modern materials and techniques make colonisation of the slopes possible today.

*Land holding:* The near total absence of internal boundaries suggests that historically each block of 'Woodland' was in the hands of a single owner and that they maintained exclusive rights to it. Nevertheless, it is possible that commoners had certain limited rights, for example to fallen wood or to grazing on acorns for pigs. The conclusion that the blocks of 'Woodland' were each owned by a single individual or estate is borne out by the Tithe Apportionment. In most cases the owner is also recorded as the occupier, that is to say the owner retained control of the woodland resources. Greenscoombe Wood, west of Latchley was owned and 'occupied' by John Hornbrook Gill, who also owned a sizeable holding of agricultural land west of Chilsworthy, which he rented out. Clitters Wood was owned by the same two men who owned Drakewalls Mine (for further comment see 'Land holding' under 'Industrial' below).

*Mineral extraction:* The OS 1<sup>st</sup> edition maps show quarries, mines and associated works within Clitters Wood around SX 421 722 and extending into adjacent character types towards Dimson. The steep slopes above the Tamar will have given easy access to the mineral lodes which had been cut into over geological time as the river eroded ever deeper. The surface extent of the Devon Great Consols Mine as depicted by the OS 1<sup>st</sup> edition on the opposite side of the river implies that the mineral lodes were particularly rich in this area, and during the late 19<sup>th</sup> century was the largest producer of copper and arsenic globally. In the south of the parish Cotehele Consols Mine (SX 422 693) is also located in 'Woodland' and presumably also exploited mineral deposits exposed in the steep side of Danescoombe.

*Associated features:* 'Woodland' is usually associated with and could be considered to overlie 'Sloping Valley Sides' HLC type (see above). Apart from those mentioned above, there are no major physical features associated with 'Woodland', though it is worth pointing out that close and informed examination of woods may reveal indications of past use. Trees that were formerly coppiced or pollarded are easy to identify; such management techniques produced poles suitable for a variety of purposes depending on the number of years they were left to grow. Levelled areas of ground provided platforms for the kilns of charcoal burners and these can often be found in old woods: indeed the existence of smelting industries in the parish might be expected to make their presence likely.

### **Orchards** (Figure 13)

*Introduction:* OS 1<sup>st</sup> edition maps show that in the nineteenth century orchards were quite numerous across the parish and in some areas continuous blocks of enclosures were devoted to this use. The many sheltered valley situations may have promoted heavy cropping, but the humid climate will have encouraged fungal disease, therefore only resistant fruit varieties could have been grown before the development of fungicides.

**Definition:** Areas marked on 1<sup>st</sup> edition OS maps with the orchard symbol of regularly spaced trees.

**Key characteristics:** Typically in valley situations; often associated with or overlying 'Sloping Valley Sides' HLC type; fields tend to be small and close to settlements.

**Interpretation:** Orchards were clearly a favoured choice of land-use for sheltered situations, especially where the ground was steep, for example in upper Danescombe (around SX 418 699). Such locations minimised risk of wind damage to trees and will have encouraged heavy cropping and possibly widened the choice of species and varieties of fruit that could be grown. Choice of varieties, however, would be limited to disease-resistant varieties since the humid climate this far west will have encouraged infection by fungal diseases, though airborne pollution from local smelting industries may have been beneficial in this respect. It is likely that, as in Devon and west Somerset, these orchards were originally growing apples for cider production. However, in the Tithe Apportionment of 1839 the use of many enclosures is given as cherry orchard. Like the flowers and early vegetables mentioned under 'Sloping Valley Sides' (above), the cherries could easily have been exported to Plymouth, possibly as far as London once the viaduct had been built, and would thus have been another valuable luxury crop. A further virtue of orchard as a land-use is that it is not exclusive: the grass around the trees provided grazing for geese, sheep and pigs, though not cattle since the lower branches would be within their reach.

#### **Descriptive analysis**

**Topography:** Typically located on steep ground bordering streams in the coombes, though sometimes extending onto gentler slopes, usually with a sheltered, south-facing aspect, for example north of Metherell (around SX 409 699). 'Orchards' thus overlie terrain that would otherwise be classed as 'Sloping Valley Sides'. Exceptions include orchards on 'Floodplain' south-east of Calstock village (at SX 438 683) and in an area of gently sloping land near Latchley (at SX 406 736).

**Field morphology and boundaries:** Field morphology generally conforms to that of 'Sloping Valley Sides' (see above) which the orchards overlie. Where 'Orchards' are situated within other types their field morphology similarly reflects the host type.

**Roads:** There are no special characteristics of roads associated with 'Orchards'.

**Settlements:** There are no special characteristics of settlements associated with 'Orchards'. However, it is worth noting that orchards were usually close to a hamlet, as at Metherell which was surrounded by orchards at the time of the OS 1<sup>st</sup> edition (1889), or to a dwelling, as at Whimple (around SX 438 702). This may reflect the value of the crop and of the animals grazed amongst the trees.

**Woodland:** 'Orchards' by definition are distinct from woodland.

**Land holding:** 'Orchards' do not appear to be associated with any particular pattern of landholding. Rather, the Tithe Apportionment data suggests that they reflect the general pattern of landholding in the area in which they are embedded. Thus around Danescombe 'Orchards' are elements in contiguous blocks of ownership extending across other character types, while around Metherell they have a somewhat fragmented ownership pattern, in common with the surrounding fields (see 'Strip-based Fields' below).

**Mineral extraction:** There are no instances of mineral extraction associated with 'Orchards'.

**Associated features:** The close association of 'Orchards' with settlements and with the 'Sloping Valley Sides' character type should be emphasised here.

#### **Intermediate Enclosure (Figure 14)**

**Introduction:** A few limited areas in Calstock have noticeably regular, broadly rectilinear fields which lack the dead-straight boundaries of late enclosure but are rather more geometrical than the various types of earlier enclosure which will be discussed below. Elsewhere in the South-West, notably the Blackdown Hills on the Devon – Somerset border, such fields form a distinct band between late-enclosed land on the high ground and earlier enclosures in the valleys.

**Definition:** Generally sub-rectangular, sometimes polygonal, fields on relatively high ground.

**Key characteristics:** Generally more or less rectangular fields, sometimes triangular or polygonal; boundaries only roughly straight, rarely dead-straight; roughly parallel boundaries are common; individual fields typically relatively small; usually occur as blocks adjacent to late enclosure; usually on higher and/or relatively steep ground.

**Interpretation:** Late medieval or early post-medieval enclosure of land on the margins of former common pasture. 'Intermediate Enclosure' in Calstock is predominantly adjacent to late enclosure, suggesting it was created fairly recently, possibly to feed an expanding population of miners. If it was cultivated, much of it is likely to have been managed as convertible husbandry with periods of two or three years of arable use separated by longer periods of grazing. Carew (1602, 102) remarks that in Cornwall 'tillable fields are in some places so hilly that the oxen can hardly take sure footing, in some so tough that the plough will scarcely cut them, and in some so shelfy [slaty] that the corn hath much ado to fasten his root... The tiller can commonly take but two crops of wheat and two of oats, and then is driven to give it at least seven or eight years leyre [fallow], and to make his breach elsewhere'. This account could well apply to the 'Intermediate Enclosure' in Calstock.

### **Descriptive analysis**

**Topography:** 'Intermediate Enclosure' tends to be situated on higher ground and often on relatively steep slopes. An exception is Hatches, south of Gunnislake (around SX 434 709) which is on lower ground but extends west onto very steep ground characterised here as 'Sloping Valley Sides' (see above).

**Field morphology and boundaries:** Fields tend to be relatively small and more or less rectangular, sometimes triangular or polygonal. Boundaries usually curve slightly or have slight deviations; they are very rarely dead-straight. Few boundaries continue for more than one field so that on a map the fields have the appearance of a collection of assorted tiles fitted together, for example east of Chilsworthy, around SX 418 720. On the OS 1<sup>st</sup> edition map in the area between Drakewalls and Cross (SX 426 705) the field pattern is so damaged by industrial activity that the assignation of 'Intermediate Enclosure' must be speculative, though it is supported by evidence from early mapping (Gardner, 1786).

**Roads:** Roads associated with 'Intermediate Enclosure' in Calstock tend to conform to the pattern of the fields and may form the boundary between intermediate and late enclosure, for example west of Honicombe at SX 409 704.

**Settlements:** Few settlements are located within 'Intermediate Enclosure', though its occurrence in Calstock is so limited that little significance can be attached to this observation. At Chilsworthy there are dwellings along the road east of the main hamlet that are embedded in this character type, suggesting that the hamlet expanded in this direction at the time these enclosures were created.

**Woodland:** There is no woodland associated with 'Intermediate Enclosure' in Calstock.

**Land holding:** For the 'Intermediate Enclosure' in the vicinity of Chilsworthy, the land occupancy data from the Tithe Apportionment shows a distinct pattern of division into small blocks of a few contiguous fields, representing the holdings of 9 or 10 individuals. This is consistent with the enclosure and division amongst commoners of an area of former common pasture, though the allotments are very

small; about 6.5 acres in the case of the holding rented by Thomas Osbourne from Elizabeth Honicombe.

*Mineral extraction:* Mines or quarries and their associated works are frequently either on or adjacent to 'Intermediate Enclosure'. Examples include West Devon Consols (SX 417 723) near Chilsworthy and Drakewalls Mine (SX 426 706).

*Associated features:* There are no further features associated with 'Intermediate Enclosure'.

### **Semi-irregular Fields** (Figure 15)

**Introduction:** In Calstock there are no truly irregular fields having amoeba-like shapes fitting together like a jigsaw, such as are found elsewhere in Devon and Cornwall (see Rippon, 2012, 129-30). There are, however, a small number of discrete blocks of fields that display only a limited degree of regularity. Some of these have been partly built over or rationalised since the OS 1<sup>st</sup> edition maps were drawn in the later nineteenth century, but some remain, notably around Middle Dimson (SX 424 716).

**Definition:** A spectrum of field outlines ranging from approximately rectilinear to irregularly polygonal, but generally lacking straight or parallel sides.

**Key characteristics:** Small to moderately sized fields; assorted shapes from roughly rectangular to triangular or polygonal; opposite field boundaries rarely parallel; curving boundaries are common, straight boundaries are rare; 90 degree corners are rare; adjacent fields rarely have a similar outline.

**Interpretation:** These areas are perhaps the most difficult to interpret. The irregularity of the fields in the area around Oakenhayes (SX 431 700) may be related to the steep ground on which they lie. The fields around Middle Dimson (SX 424 716) are more interesting. They lie upon more gentle terrain and may represent ancient enclosure that took place in a piecemeal and unsystematic way. This is supported by the fact that this group of fields is part of a fairly well-defined larger ovoid unit that extends east to Gunnislake and south to Sandhill and possibly beyond before workings associated with Drakewalls Mine covered this area.

### **Descriptive analysis**

*Topography:* 'Semi-irregular Fields' have no distinct association with topography. However, the small area of this type near Cotehele sits on high ground on the lip of the steep wooded slopes above Cotehele quay. It is worth noting that these fields are shown amalgamated into just two enclosures on an eighteenth-century estate map (Cotehele, 1731) and that the key to the map describes their use as furze. Furze was harvested for fuel and the exposed situation of this ground makes it an obvious choice of land-use.

*Field morphology and boundaries:* 'Semi-irregular Fields' typically consist of small to moderately sized units which vary from roughly rectangular to triangular or polygonal in outline. Boundaries on opposite sides of a field are rarely parallel. Curving boundaries are common, straight boundaries and 90 degree corners are rare. Adjacent fields rarely have a similar outline and the overall effect is reminiscent of a reassembled broken window pane.

*Roads:* Few roads cross the limited areas of this HLC type in Calstock. Those that do are narrow and winding, notably around Middle Dimson (SX 424 716).

*Settlements:* There is a clear association between the northern area of this HLC type and the settlements of Lower, Middle and Higher Dimson. The adjectives in these names imply that originally there was a single estate called simply Dimson which later subdivided into three separate landholdings, each with its own settlement. It is noteworthy that the other large area of this type is



associated with just two settlements – Slimeford and Oakenhayes. This suggests that some ‘Semi-irregular Fields’ developed on single farmsteads held in severalty.

*Woodland:* There is no woodland associated with semi-irregular enclosure.

*Land holding:* Analysis of Tithe Apportionment data for the Dimson area shows an interesting pattern (Figure 22). Ownership of the fields around Lower Dimson is strongly intermixed between 8 or 9 individuals, most of whom are owner-occupiers. A large area extending west from Middle Dimson is owned and occupied by a single individual, as is a smaller area associated with Higher Dimson. It is suggested that an original hamlet existed at Lower Dimson and a number of individuals had control of the surrounding fields. At some point two individuals colonised the adjacent unenclosed land and established the settlements at Middle and Higher Dimson. This hypothesis is supported by the observation that the adjacent ‘Late Enclosure’ shows that until historically recent times Middle and Higher Dimson were at the frontier of enclosed land in Calstock parish.

*Mineral extraction:* Mineral extraction and other industrial use are not specifically associated with ‘Semi-irregular Fields’. The presence of Wheal Arthur (SX 431 700) within this type is coincidental; the OS 1<sup>st</sup> edition map shows several further mines within 500 metres and in a variety of other HLC types.

*Associated features:* ‘Semi-irregular Fields’ do not have any additional associated features.

### **Semi-regular fields** (Figure 16)

**Introduction:** In several areas of Calstock parish there are expanses of relatively large fields on rather gently sloping land. These fields lack the geometric character of late enclosure but do tend towards approximately rectangular or square outlines and frequently have boundaries that extend along several fields. They are often adjacent to areas of ‘Cropping Units’ and ‘Strip-based Fields’ HLC types (see below).

**Definition:** Typically large, approximately square fields usually associated with cropping units or strip-based fields.

**Key characteristics:** Typically larger than average fields; approximately square or rectangular outline; curving or sinuous boundaries common; parallel boundaries rare; boundaries that continue for more than one field are common; areas of this type have a characteristically ‘open’ appearance on OS 1<sup>st</sup> edition maps; frequently adjacent to ‘Cropping Units’ and ‘Strip-based Fields’ HLC types (see below); smaller enclosures that share many of the larger fields’ characteristics form ribbons on the margin of other types.

**Interpretation:** ‘Cropping Units’, ‘Strip-based Fields’ and ‘Semi-irregular Fields’ tend to occur in blocks associated with a settlement or hamlet, and a block or ribbon of ‘Semi-regular Fields’ often occurs on the margins of these other types furthest from their core settlement (for example at Metherell, Trehill and Dimson). In these cases these fields could be the result of enclosure of outlying common pasture or meadow at the margins of original open fields, now represented by ‘Cropping Units’ and ‘Strip-based Fields’ (see below). Two further blocks of ‘Semi-regular Fields’ are associated with high status houses at Cotehele (SX 421 686) and Harewood (SX 446 691). The Tithe Apportionment shows field-names around Harewood that include the elements ‘plains’, ‘lawn’ and ‘warren’, all of which can be indicative of a medieval park. The Cornwall HER states: ‘The settlement of Harewood is first recorded in 1337, when it is spelt Horawode’ (Online source: Heritage Gateway, 2012). However, Massey (2009, 6) states that the earliest house on the Harewood site was built in the 1630s and concludes that before that time this area had been mostly woodland. Cotehele is known to have medieval origins and the ‘Semi-regular Fields’ around it are likely to have a similar origin. A case could be made for their being a rationalisation of an area of ‘Semi-irregular Fields’ by removal of selected boundaries. All of this implies that fields of this type originate during the medieval and early post-medieval periods, either by enclosure from waste or by rationalisation of a pre-existing pattern.

### ***Descriptive analysis***

*Topography:* Predominantly on gentle slopes below the highest ground in the parish, but above the steep slopes bordering the river Tamar. Some 'Floodplain' fields (see above) are morphologically identical (for example north of Gunnislake around SX 432 727) and are likely to have been laid out at the same time as the 'Semi-regular Fields'. The ribbons of 'Semi-regular Fields' along the margins of 'Cropping Units' and 'Strip-based Fields' (see below) tend to be on rather steeper ground above 'Sloping Valley Sides' and its associated types (see above).

*Field morphology and boundaries:* Fields of this type tend to be larger than average fields in the parish. They typically have a roughly square or rectangular outline, with curving or sinuous boundaries that frequently continue for more than one field. Exactly parallel boundaries are rare and are absent from some blocks. Compared to adjacent HLC types, areas of 'Semi-regular Fields' have a noticeably 'open' texture on OS 1<sup>st</sup> edition maps. The ribbons along the margins of 'Cropping Units' and 'Strip-based Fields' (see below) are smaller but otherwise have the same characteristics as the larger fields.

*Roads:* Roads rarely cross 'Semi-regular Fields', though a notable exception is the lane to the west of Cotehele. This is noticeably straighter than nearby lanes, taking a direct route between the Newton turnoff (SX 417 690) and the junction with the road running up the valley from Cotehele Quay at SX 415 684. This road, then, appears to have been planned and set out at the same time as the fields, either rationalising an earlier route or as a complete innovation. The lane in the ribbon of smaller 'Semi-regular Fields' south of Metherell, between Treragin (SX 401 691) and Comfort Wood (SX 411 684), appears to cut across some fields, implying that it was added at a later date.

*Settlements:* Some settlements are surrounded by this type, for example Whimple (SX 437 702) and Harewood (SX 447 691). These settlements may have been established at the same time as the fields amongst which they sit, as has already been suggested for Harewood (see above). Other settlements are located at the edge of semi-regular blocks, for example Latchley (SX 409 735) and Cotehele (SX 422 685). Many areas of 'Semi-regular Fields', however, are not directly associated with any settlement on the OS 1<sup>st</sup> edition maps, for example west of Chilsworthy around SX 408 723 and the ribbon on the margin of the 'Strip-based Fields' (see below) to the south of Harrowbarrow. As suggested above, these are likely to represent enclosures from the waste on the margins of contemporaneous existing cultivation.

*Woodland:* Woodland does not occur within areas of this type, and close inspection of the OS 1<sup>st</sup> edition maps shows that hedgerow trees (which are depicted on these maps) were also rare. In the present-day landscape, the hedgerows around Cotehele retain this treeless quality.

*Land holding:* As might be expected from the foregoing discussion, blocks of 'Semi-regular Fields' tend to be in single ownership and occupancy in the Tithe Apportionment; Whimple, Harewood and Cotehele are all examples. Ribbons of the smaller fields generally match adjacent landholding, often conforming to the pattern of mixed ownership and occupancy in areas of 'Strip-based Fields' (see below). Examples include the area around Trehill (SX 419 694) and around Cleave (SX 404 685).

*Mineral extraction:* Relatively few mines or works are located within this type – an exception is Harewood Consols (SX 451 695).

*Associated features:* There are no features associated with this type beyond those discussed above.

### **Cropping units (Figure 17)**

***Introduction:*** There are several blocks of markedly rectilinear fields across the parish, including around Calstock village. Their pattern superficially resembles late enclosure (see above), but close examination shows that individual field boundaries here are rarely, if ever, dead-straight. Furthermore,

these fields lie on lower ground than late enclosure but above the deep coombes that intersect the areas of cropping units.

**Definition:** Coherent blocks of rectilinear fields with slightly curvilinear boundaries and tending towards uniform sizes within the blocks.

**Key characteristics:** Predominantly rectilinear fields arranged in coherent blocks; blocks comprise fields of roughly uniform size; boundaries vary from gently curving to straight; numerous parallel boundaries; numerous boundaries that continue for two or more fields; located on gently sloping ground and away from the highest areas of the parish.

**Interpretation:** The rectilinear shape of these fields and the way they are aggregated into coherent blocks is consistent with an origin in areas of open field arable whose strips have been enclosed (see 'Strip-based Fields' below). The original open field will have been divided into blocks of parallel strips, known as furlongs, and these have been preserved in the coherent blocks of cropping units, for example in the area between Calstock village and the parish church. The term 'cropping unit' is applied to this type of field in *Cornwall's historic landscape* (Herring, 1998, 27). It usefully distinguishes these fields from 'strip based fields', where just one or two enclosed strips makes each modern field. 'Cropping Units', by contrast, represent several amalgamated strips whose characteristic curving profile has been rationalised to the more or less rectilinear shapes we see on maps. The rectilinear shapes are suited to ploughing, and the similarity of these blocks across the parish suggests that they were all created at about the same time.

### **Descriptive analysis**

**Topography:** Cropping units tend to be located away from the higher ground and on relatively gentle slopes. Typically the longer axes of these rectilinear fields run more or less with the slope and perpendicular to the contours, but in a few places fields are found whose axes run across the slope, for example north of Calstock village around SX 436 689.

**Field morphology and boundaries:** Fields are typically more or less rectilinear and show a high degree of uniformity. Parallel boundaries are the norm, and boundaries extending for several fields are common, though usually on one axis only. Groups of cropping units thus often appear as coherent blocks made up of several rows or tiers of fields, for example north-east of Metherell around SX 411 698. Boundaries are typically approximately straight.

**Roads:** Roads often skirt the boundaries of blocks of cropping units and help to define them, for example between Metherell and Norris Green. Roads north of Calstock village have a somewhat grid-like structure, imposed by the groups of cropping units that they pass through. This may represent a fossilised relic of parts of the network of tracks that would have been needed for access to strips in the original open field.

**Settlements:** On the OS 1<sup>st</sup> edition maps settlements are rarely, if ever, within a block of cropping units, though they are often to be found on or close to their margins, for example Newton (SX 414 690), Todsworthy (SX 419 703) and Calstock village.

**Woodland:** There is no woodland within cropping units and the two HLC types are rarely adjacent.

**Land holding:** Patterns of landholding shown by the Tithe Apportionment are surprisingly variable in 'Cropping Units'. South of Latchley they are very mixed with the lands of individual tenants and owners scattered seemingly at random. The situation is similar north of Calstock, and this pattern clearly reflects the origin of these parcels in medieval open field (see 'Strip-based Fields' below). In contrast, the areas of cropping units near Honicombe (around SX 415 703) and West Harrowbarrow (SX 389 699) are each in the hands of just one or two individuals. It is suggested that such a pattern originates from a consolidated form of landholding whereby what was originally a series of separate

tenements was amalgamated. This may have happened while the land was part of a still-functioning open field, or after it was enclosed by agreement.

*Mineral extraction:* There are few mines or quarries associated with cropping units. Possibly this is because the value of the arable land was high and if a mineral lode could be accessed from another location this would be the preferred option.

*Associated features:* There are no further features associated with cropping units.

### **Strip-based fields** (Figure 18)

*Introduction:* One of the most striking features of the OS first edition 6 inch maps of Calstock is several groups of remarkably long and narrow fields arranged in parallel groups. These fields can be seen from several vantage points in the parish, where they appear to be a series of closely spaced parallel hedges (see Figure 19). These fields are a fossilised relic of the medieval landscape that preserves the pattern of strips in open fields before they were enclosed.

*Definition:* Groups of parallel fields substantially longer than they are wide resulting from enclosure of arable strips in open fields.

*Key characteristics:* Long, narrow fields grouped into parallel blocks; continuous boundaries separating adjacent blocks and at 90 degrees to long axes of fields are common; long boundaries of fields are often curved, sometimes forming a reversed S profile; boundary with adjacent types is frequently sinuous and curving to form a large semi-ovoid; blocks of fields often show a strongly mixed pattern of ownership or tenure.

*Interpretation:* In the classic medieval open field system of a typical English Midlands parish, all settlements were clustered in a nucleated village surrounded by its arable land, divided into two or three huge fields which in turn were sub-divided into furlongs (groups of strip-shaped units ploughed into distinctive ridge-and-furrow). There were no hedges, walls or permanent fences in the open field. This system has its origins in the medieval period, broadly between the 8<sup>th</sup> and 12<sup>th</sup> centuries. In Cornwall and Devon open fields are rarer and where they do occur are smaller, covering only parts of a parish, are often associated with a hamlet, and may have originated with a change in land-use practices around the 8<sup>th</sup> century (see Rippon et al. 2006; Rippon, 2012, 130; 318-20). This is the case in Calstock, where relict open fields are associated with Latchley, Harrowbarrow, Metherell and possibly Albaston. The strips in open fields were allotted to individual tenants on a yearly basis and each tenant's allotments were randomly scattered across the field, ensuring that everyone had a fair share of good and bad land and it was rare for an individual to have control of two or more adjacent strips in a particular year. Through the later medieval and early modern periods the open fields were enclosed, initially by mutual agreement or by an autocratic decision by the lord of the manor, and later by Act of Parliament. Parliamentary enclosure of both open field and common pasture was widespread in the Midlands between the eighteenth and twentieth centuries, but only touched Calstock in the enclosure of common pasture on Hingston Down (see 'Late Enclosure' above). The small common fields had been enclosed long before, probably during the medieval period. Their enclosure thus preserved an ancient pattern in the landscape, much of which survives today.

### **Descriptive analysis**

*Topography:* Strip-based fields are found on relatively gentle slopes and the margins of blocks of these fields tend to coincide with the rim of steeper ground above 'Sloping Valley Sides' HLC type (see above). In most cases the long axes of the strips run more or less with the slope on which they lie and perpendicular to the contours, though in some places they run diagonally across the slopes, for example south-east of Harrowbarrow around SX 400 696 (see Figure 19). This research has not found any examples that run parallel to the contours.

*Field morphology and boundaries:* These fields have a characteristic strip-shaped outline which is often curved, sometimes a double curve forming a reversed S shape, for example south of Metherell around SX 408 688. The ribbon-like strips are arranged in parallel blocks typically terminating at either end in boundaries that run across all the fields in the block and separate it from adjacent blocks. This results in a characteristic pattern of rows or bundles of parallel strips; on the west side of Metherell the OS 1<sup>st</sup> edition map shows six rows.

*Roads:* Roads amongst strip-based fields tend to run at 90 degrees to the strips and form the terminating boundaries of a row of fields. Very few run parallel to the strips. One which does is a bridleway located south of Albaston; at SX 422 699 it reaches the top end of the adjacent strips, where there is a break in the slope and the ground begins to fall away to the west. At this point there is a dog-leg and the lane begins to run along the ends of the strips on the west-facing slope. The general pattern of roads running along the ends of the strip-based fields reflects their origin as tracks providing access for the tenants to reach their allotments in the original open field.

*Settlements:* Each group of strip-based fields is associated with a nucleated hamlet – Harrowbarrow, Metherell, Albaston and Latchley. The OS 1<sup>st</sup> edition maps show very few settlements away from these hamlets amongst the strip-based fields. Those that are can be assumed to have been established after the fields were enclosed since while the strips were functioning in an open field no individual had control over any particular strip for longer than one year.

*Woodland:* There is no woodland associated with strip-based fields. The OS 1<sup>st</sup> edition maps, surveyed 1889, suggest that hedgerow trees were not common in Calstock parish, but a glance at the maps suggests that there may have been rather more amongst strip-based fields than in other HLC types.

*Land holding:* The GIS transcriptions of land holding and tenure data from the Tithe Map and Apportionment clearly show fragmentation of both sets of data across the former open fields. Both maps show areas where the fields appear as different coloured stripes, indicating that each was in different ownership and / or tenure; clear examples are south of Metherell around SX 408 688 and south of Harrowbarrow around SX 400 696 (Figure 23). This distinctive pattern arose when the open fields were first enclosed and the random distribution of strips amongst tenants was preserved as tenancies of the newly enclosed fields became permanent. An exception to this pattern is in a large area west of Harrowbarrow. Here the Tithe Apportionment shows that a large area was owned by one individual (William Worth) and that the land was tenanted either by him or by a small number of others, with the land being parcelled up in contiguous blocks of fields. This pattern extends into adjacent character types to the west and appears to be associated with the settlement of West Harrowbarrow. The large block in single ownership, subdivided into smaller tenancies, suggests that a powerful individual acquired control here at an early date and consolidated his holdings into discrete blocks which were then divided amongst his tenants.

*Mineral extraction:* Several mines and disused shafts are within this HLC type, particularly to the north-west of Harrowbarrow. Their presence can be attributed to the presence of an underlying mineral lode rather than to any particular characteristic of strip-based fields, though it is probable that it would have been difficult or impossible to open a mine in such a location before the open field had been enclosed and individuals acquired more control over particular pieces of land.

*Associated features:* A continuous field boundary extending west from Rising Sun coincides with the northern limit of 'Strip-based Fields' at Harrowbarrow. The hedgebank on this boundary is noticeably more substantial than others in the vicinity and it is likely that this boundary marked the edge of the former open field. An approximately parallel boundary to the south may represent an earlier limit of arable cultivation before the open field was extended, perhaps to feed an expanding population. There is a tendency for areas of strip-based fields to be associated with ribbons of small 'Semi-regular Fields' and with 'Sloping Valley Sides' and 'Orchards' (see above for descriptions of these types). This

association has a topographical aspect; the strip-based fields lie on gently sloping ground which is intersected by steep-sided valleys that were generally unsuitable for arable cultivation. Above these valleys is a zone of relatively steep ground on which the ribbons of 'Semi-regular Fields' lie. These are likely to have been common pasture or meadow when the open fields were in operation, and enclosed at the same time as the open fields, or possibly later.

### **Industrial** (Figure 20)

**Introduction:** Driving around the lanes of Calstock one is inevitably struck by the number of chimneys, ruined buildings, heaps of spoil and other evidence of former industry across the parish. A painting hung on the wall outside the Parish Archive in the Tamar Valley Centre (George Cole, 1875, 'Weir Head, Gunnislake') depicts the view up river from the vicinity of Morwell View (SX 433 706), and at Gunnislake, in the distance, is a mass of tall smoking chimneys and masts of boats at the quays. It becomes clear that the present-day 'green and pleasant land' of Calstock was a century or so ago a very different environment – smoky, dusty, noisy and, in all probability, badly polluted.

**Definition:** Land depicted on OS 1<sup>st</sup> edition maps as quarry, mine, works etc or an enclosure containing these.

**Key characteristics:** Defined on OS 1<sup>st</sup> edition maps as mine, works, quarry etc; in the field, broken ground, ruined buildings, piles of waste, scrub vegetation are all common.

**Interpretation:** Industrial sites exploiting mineral, clay, granite and other resources in the parish, processing the products, and exporting products from the riverside and importing raw materials. As discussed in the 'Mineral extraction' section under 'Late Enclosure' (above), early modern writers refer to a medieval tin mining industry in Calstock, particularly on Hingston Down, and comment that by around 1600 this industry had very much declined. However, there was a revival in the nineteenth century, mining not just tin but also copper, tungsten and arsenic. Clay was also dug for firebricks and other specialised products. Pearson's Quarry in Gunnislake (SX 430 715) yielded a fine-grained granite for about a century from 1808 and contributed the stone for Blackfriars Bridge in London, amongst other buildings (Todd and Laws, 1972, 215). Before the present railway and viaduct opened in 1908, industrial products were exported from quays on the river which from 1860 were served by the East Cornwall Mineral Railway (1972, 216). Besides this heavy industry Todd and Laws (1972, 215-8) also mention paper mills on the riverside close to the canal and in the Danescombe valley and corn mills along the stream that runs down Silver Valley on the south-west boundary of the parish. Some of the corn mills are likely to have been older, or on the sites of older mills, since the parish and manor will always have required a mill to grind its corn.

### **Descriptive analysis**

*Topography:* Industrial sites exist on all topographical situations in the parish.

*Field morphology and boundaries:* Not applicable.

*Roads:* Roads associated with industrial sites have no special features, however all such sites will have required access for workers and for the inward and outward transport of materials. Therefore, with the possible exception of some riverside sites, all must have had access to the road network.

*Settlements:* Comparison of the OS Surveyor's Drawing (Gardner, 1786) with the OS 1<sup>st</sup> edition map, which was published about a century later, shows that the string of settlements now known as St Anne's Chapel did not exist in the later eighteenth century but that many dwellings had been built within the next 100 years. A road or track connects St Anne's Chapel with the mines and clay works on Hingston Down and it is likely that the dwellings were built to house workers at the mines. Similar collections of dwellings are associated with mines across the parish, and the preponderance of apparently nineteenth-century architecture supports this conclusion.

*Woodland:* There is no direct association between woodland and industrial sites. However, it is likely that the plantations shown on the OS 1<sup>st</sup> edition maps were established to provide pit props, charcoal and other necessary wood products to the mines. For further comment see 'Land holding' immediately below.

*Land holding:* The GIS transcription of Tithe Apportionment land ownership data shows large holdings across the parish by John Michael Williams and William Williams, including Drakewalls Mine. Other large plots held by these two men have their land-use stated as 'plantation' in the Apportionment, including Gray's Plantation (SX 419 712), Coxpark Plantation (SX 405 723) and Rylands Plantation (SX 410 707), and they also owned Clitters Wood (SX 425 722). This strongly suggests that in the nineteenth century the mines consumed most or all of the woodland resources in the parish. It is also interesting to note that the two Williams also owned numerous arable plots, including some strip-based fields and a string of small late enclosures along the south side of the road in what is now St Anne's Chapel. Though it is beyond the scope of this project, it is tempting to speculate that these apparently agricultural holdings were also connected to their business interests in some way, possibly leased to miners.

*Associated features:* The two long leats that run across either side of Hingston Down have already been discussed under 'Late Enclosure' (above). Another prominent feature, cutting across all character types, is the dismantled mineral railway, which was opened in 1860 and ran beyond the present Gunnislake station until 1966 (Todd and Laws, 1972, 212-6). The original route ran west from the quays at Calstock village and up an incline where wagons were hauled by a stationary engine at the summit (SX 425 695). From here it wound in a sinuous path through the parish to cross the boundary into Stoke Climsland south of Sherwill at SX 389 714. The present railway follows the same course for about 1km south from Gunnislake station before veering away to the west near the former Wheal Edward Mine (SX 425 700). From here the route of the old line is clear on modern OS maps, and the engine house and other buildings associated with the incline survive beside the lane east of Danescoombe at SX 425 695.

### **Ornamental** (Figure 21)

***Introduction:*** Residents and visitors will be familiar with the National Trust's property, Cotehele, and its grounds. Though the ornamental grounds are mostly of nineteenth century origin, parts of the house are much older. The gardens are included on the English Heritage Register of Parks and Gardens at Grade II\*.

***Definition:*** Land manipulated to create an aesthetic environment.

***Key characteristics:*** Usually associated with a high-status residence; internal boundaries often lacking; frequently include specimen trees.

***Interpretation:*** Ornamental landscapes are created as an embellishment to high status houses and may be seen as a status symbol. In the present they are often open to the public and many are in the care of the National Trust. In the past they were thus exclusive places, but today they are valued and appreciated by many.

### ***Descriptive analysis***

***Topography:*** Cotehele is situated near the top of a small east-facing combe above the Tamar.

***Field morphology and boundaries:*** The external boundary of the ornamental landscape at Cotehele conforms to the surrounding 'Semi-regular Fields', which are therefore likely to pre-date it.

***Roads:*** Not applicable.

*Settlements:* The associated settlement, Cotehele House, has a medieval origin, has been a seat of the Edgcombe family since 1353, and was partially rebuilt and extended in the sixteenth century (Cornwall HER <http://www.heritagegateway.org.uk/Gateway/>). The house is thus considerably older than the ornamental landscape, which the Cornwall HER describes as a nineteenth-century remodelling and extension of an earlier (possibly sixteenth-century) garden.

*Woodland:* The ornamental landscape at Cotehele is adjacent to woodland on the steep ground above the river. Ornamental landscapes often incorporate pre-existing woodland, or a plantation where no older woods exist.

*Land holding:* The ornamental landscape at Cotehele is a part of a larger estate owned by the Edgcombe family.

*Associated features:* The HER lists several associated features, including a medieval chapel and barn and a post-medieval folly tower. Great houses frequently include a chapel for convenience of the owners, and folly towers are frequent additions to ornamental landscapes that are often regarded with affection by local inhabitants and visitors.

## 5: Settlement typology commentary

### Introduction

The settlement typology developed for the Calstock Historic Landscape Assessment is derived from the wider study of the lower Tamar valley conducted as part of the Bere Ferrers Project (Rippon *et al.* 2009). Like the Calstock HLC, that typology was based upon OS 1<sup>st</sup> edition 6 inch mapping and therefore refers to the parish as it was in the late nineteenth century. In Calstock parish settlements can be separated into five distinct types: compact village, loose village, compact hamlet, loose hamlet and farmstead. Examples referred to below are marked on Figure 24.

### Compact village

The only large compact group of dwellings in the parish is the village of **Calstock** itself (SX 436 686). Individual dwellings crowd together on the slopes immediately above the river on a tight network of narrow streets. Numerous small plots are associated with the village, and on the evidence of the tithe survey many of these supported orchards and market gardens, taking advantage of the sheltered southerly aspect. To the north of the village the HLC shows an area of 'Cropping Units' that is likely to represent a former open field (see above). Within the village, the OS 1<sup>st</sup> edition map shows three non-conformist chapels, though the parish church is c.800m to the north in open countryside (SX 436 692). This arrangement is not unusual in Cornwall, where settlement patterns generally tend to be dispersed with hamlets and farmsteads scattered across the landscape and the parish church in a more or less central location.

The most obvious feature of Calstock in the nineteenth century is its close association with the quays on the Tamar, which is tidal and navigable between the village and the sea. Also significant in the nineteenth century was the incline connecting the quays to the hinterland via the mineral railway. The import of materials and export of products from extractive industries inland used this access point until the completion of the viaduct and new railway in the early twentieth century. There is evidence of mining in the parish before the Industrial Revolution, with the sixteenth-century topographical writers Carew (1602, 184) and Norden (c.1594, 66) referring to a valuable medieval extractive industry on Hingston Down. The products of this industry will almost certainly have been exported by water, this being the most direct and cheapest form of heavy transport in times before metalled roads, and the quays at Calstock are the nearest access to navigable water.

The date of origin of the present village of Calstock is not clear. The Cornwall HER (<http://www.heritagegateway.org.uk/Gateway/>) notes that the manor of Calstock is recorded in



Domesday Book, but there being no other manors in the parish, this reference must be to the whole territory, not just the village. After the Conquest Calstock was held by Reginald from the Count of Mortain, brother of William the Conqueror, and the Domesday entry suggests a mixture of woodland, pasture and cultivable land, but with 30 villagers and 30 smallholders Calstock appears to have been more populous than adjacent manors (for example Ashton, Cornwall – 4 smallholders; Halton, Cornwall – 10 villagers, 10 smallholders; Bere Ferrers, Devon – 16 villagers, 5 smallholders) (Thorn and Thorn 1979, 5,2,12; 5,2,17; 5,2,27; Thorn and Thorn 1985, 15, 46). The HER (<http://www.heritagegateway.org.uk/Gateway/>) notes a consensus that much of the present church is fifteenth-century.

There is, then, ample evidence of a relatively populous (and possibly wealthy) manorial estate in Calstock by the eleventh century, but no clear evidence that the present nucleated village existed that early. However, the existence of an area of likely former open field implies an early village somewhere nearby – this could have been located within the present village, or it may have been elsewhere. Archaeological survey and excavation in fields surrounding St Andrew's church have revealed a palimpsest of archaeological remains, most notably a Roman fort, but also evidence of medieval settlement and activity, beginning in the 8<sup>th</sup> century and continuing until the early 13<sup>th</sup> century (Smart, forthcoming). Evidence for this period of occupation has been found in archaeological trenches spaced 200m apart, which may indicate an extensive area of former settlement adjacent to the parish church. This location is more or less central to the area of probable former open field, characterised in this work as 'Cropping Units', in contrast to the location of the present village.

To summarise, the present village of Calstock is probably not in the original location. This is likely to have been in the vicinity of the church, where it would have been near to the centre of its open field. The present-day village developed as a result of the long-lived mining industry in the parish and its dependence on the quays on the navigable reach of the Tamar.

### **Loose village**

In contrast to Calstock village, the group of dwellings and other buildings that is **Gunnislake** (approx. centre SX 432 717) is spread over a relatively wide area with numerous paddocks and small plots between the buildings, and any focus it may have originally possessed is no longer apparent. There is, however, a clear association with the road that climbs from the Tamar crossing at Gunnislake New Bridge to Hingston Down. The 1827 Callington Turnpike Act (<http://turnpikes.org.uk/>) shows that this was part of a turnpike connecting Tavistock and Liskeard in the nineteenth century, and early county maps show a road from the bridge to Callington, which may have approximated to the present route. The Cornwall HER (<http://www.heritagegateway.org.uk/Gateway/>) states that the bridge was built in the early sixteenth century, and that the earliest reference to Gunnislake dates from 1485. It is not known if the New Bridge replaced an earlier structure or ferry at the same point, or whether the main earlier crossing was at the ford near Latchley, or at Horsebridge, which dates from 1437 so is actually not a lot older than New Bridge. Prior to the construction of the Tamar Bridge, which connects Plymouth and Saltash, in 1961 these places were of great significance as they provided the lowest road crossings of the River Tamar.

The earliest record of Gunnislake dates from 1485, and it has been suggested that the place-name derived from a personal name 'Gunnis' combined with a word meaning 'stream' (Mills 1991, 151; Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>). The local context may refute this assignation, as 'Gunnis' is a Cornish term for an open mine or worked-out lode, so 'Gunnislake' is probably better explained as a place where water issues from a mine work. The place-name pre-dates the bridge, but the record is not particularly early. Earlier sources, such as the 1337 Caption of Seisin of the Duchy of Cornwall (Hull 1971) which recorded the lands and rents of tenants of Calstock, might be expected to mention it if it were a place of any significance. The fact that they do not suggests that its origin is late medieval, or even later if the 1485 reference is to a place (for example, a crossing point on a stream) rather than a settlement.

The OS 1<sup>st</sup> edition map records a number of chapels in Gunnislake and a church, which the Cornwall HER (<http://www.heritagegateway.org.uk/Gateway/>) notes was built in 1880 as a chapel of ease to Calstock. This implies that by that time there were sufficient parishioners to warrant investment in a new building, and might also be seen as the established church making a stand against the non-conformists. The HER also records a school and a blacksmith shop in the later nineteenth century. By that time, therefore, Gunnislake was provided with most of the services that would be considered essential to contemporary society.

The OS 1<sup>st</sup> edition map also shows a large quarry and a mine associated with Gunnislake. The quarry was active through the nineteenth century, producing a fine-grained granite and employing 700 men in 1900 (Todd and Laws 1972, 215). This large workforce easily accounts for the size of Gunnislake as depicted on the early OS maps and for the services that were available.

Gunnislake, therefore, appears to have developed from a late medieval nucleus, possibly no more than a cottage, achieving its present extent largely in the nineteenth century as housing and services for mine and quarry workers. It is possible, indeed likely, that a smaller loose village developed after construction of the bridge in the sixteenth century to provide services for travellers on the road from Tavistock to Liskeard.

Two further loose villages on the present A390 are **Drakewalls** (SX 425 708) and **St Anne's Chapel** (SX 413 709), but the OS 1<sup>st</sup> edition maps show that neither consisted of more than a few buildings in the late nineteenth century. The HLC created for this project emphasises the connection between Drakewalls and the large mining complex of the same name. St Anne's Chapel is within the zone of late enclosure and has evidently evolved as a ribbon development along the road during the last 150 years or so. The name, however, is older and is first recorded in 1540/1 (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>), implying that a chapel existed somewhere in the vicinity by that date or earlier. This is too early for a non-conformist chapel, of which there are many in Calstock, and the chapel therefore must have been Anglican or (more probably) Catholic.

### Compact hamlets

As depicted by the OS 1<sup>st</sup> edition mapping, compact hamlets in Calstock include **Latchley** (SX 408 735), **Albaston** (SX 423 703), **Metherell** (SX 408 693) and **Harrowbarrow** (SX 397 698). These are all compact groups of a small number of dwellings and associated buildings, though Metherell shows signs of expansion further up the valley from the principal focus. All are recorded relatively early: Latchley in 1318, Albaston 1337, Metherell 1298, and Harrowbarrow in 1280 (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>). Their most noticeable common feature, however, is that each is associated with one of the areas of strip-based fields as identified by this project (see HLC and Figure 2), and each has a place-name derived from Old English (ie Anglo-Saxon) according to the Cornwall HER (<http://www.heritagegateway.org.uk/Gateway/>). It should be noted here that the HER places the original site of Harrowbarrow at present-day West Harrowbarrow (SX 387 698) and does not record a medieval settlement at the present main focus. Furthermore, the HER discusses the strip-based fields around Harrowbarrow as part of an open field associated with Metherell. However, the HLC produced by this project clearly shows two blocks, one associated with each hamlet. It is therefore concluded that the western block of strip-based fields is associated with Harrowbarrow and the eastern with Metherell.

These compact hamlets, then, probably have pre-Conquest origins and followed at a small scale the pattern of classic Midland open-field villages, with a compact nucleated core surrounded by or adjacent to its arable land in the open field, with pasture and woodland resources beyond. In the Calstock examples the fields were considerably smaller than those of a typical Midland village and it follows that the communities they supported were also smaller, resulting in the scatter of hamlets across the parish rather than a single large village. The woodland resources for these hamlets were

largely located in the steep coombes, and extensive pasture was available on Hingston Down, which probably also provided fuel in the form of furze and turf.

### Loose hamlets

The hamlet of **Chilsworthy** (SX 413 722) is rather different from the compact hamlets discussed above. On the OS 1<sup>st</sup> edition map it consists of a small number of buildings strung out along a lane, rather than clustered together in a tight group. It does have a fairly early first record (1337) and its name derives from an Old English combination of a personal name and ‘-worthy’, meaning ‘farmstead’ (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>). Its location in respect of the HLC produced by this project is, however, different to the compact hamlets in that there is no association with strip-based fields, instead there is an adjacent block of rather atypical cropping units to the north and to the south a small area of ‘Intermediate Enclosure’ beyond which is ‘Late Enclosure’.

Until historically recent times, then, Chilsworthy sat between the frontier of enclosure and an area of fields that probably derive from a small open field. The fact that these fields do not reproduce the open-field strips as distinctly as those around the compact hamlets implies that the open field was enclosed as a result of a different procedure and / or at a different time to those discussed above.

**Dimson** (approx. Centre SX 427 716) is different again in that it consists of three small clusters of buildings known as Higher, Middle and Lower Dimson. (North Dimson is surrounded by the remains of an industrial site (Plymouth Works); its earlier historic landscape is too damaged to be discussed here). The earliest record for the name is 1327 and the HER does not cite a derivation (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>). The context in the HLC is also very different in that there are no fields associated with Dimson that can easily be interpreted as deriving from open-field strips. Dimson sits among fields whose shapes are more or less irregular and are located at the edge of late enclosure. Like Chilsworthy, Dimson therefore sat at the edge of enclosed land, but its fields have the appearance of having been enclosed directly from the waste in a rather unplanned way. The pattern of ownership from the Tithe Apportionment (Figure 22) shows intermixed ownership around Lower Dimson while Middle and Higher Dimson is each associated with a single ownership block. This suggests that Lower Dimson was the original settlement, with Middle and Higher Dimson being subsequent colonisations of the waste by two individuals.

### Farmsteads

The OS 1<sup>st</sup> edition maps show a number of probable farms scattered across the parish, some of which have since become loose hamlets through twentieth-century development, and some may have included more than one dwelling at the time of the OS survey. None, however, is the size of the hamlets discussed above. Very often these settlements are located adjacent to or within a clearly defined block of fields of a particular character type on the HLC (Figure 4). Examples include **Newton** (strip based fields; SX 414 690), **Todsworthy** (cropping units; SX 419 703) and **Whimple** (‘Semi-regular Fields’; SX 437 702). All of these examples are first recorded in 1337 (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>) and the names of the first two, at least, suggest a pre-Conquest origin. This suggests that many of these farmsteads are on the sites of early settlements and that the fields associated with them in some way preserve the boundaries of the holdings.

A more enigmatic example is **Sherwill** (SX 389 719) on the north-western parish boundary. This is located deep amongst late enclosure, yet it is first recorded in 1337 (Cornwall HER, <http://www.heritagegateway.org.uk/Gateway/>), which early date would lead us to expect an equally early historic landscape character type. It is clear from their geometric morphology that the surrounding fields are no earlier than eighteenth century in origin, therefore any earlier fields associated with this settlement must have been entirely erased. Alternatively, Sherwill was a settlement without fields situated in a remote spot at the head of a moorland valley, suggesting its inhabitants were shepherds. The location on the parish boundary may also be significant.

In conclusion, the general pattern of farmsteads in Calstock is scattered across the lower and less exposed areas of the parish more or less evenly. This is characteristic of the settlement pattern in the upland areas of the South West, and a glance at the OS 1<sup>st</sup> edition mapping on the Devon side of the Tamar shows a very similar distribution of farms.

## 6: Field-names assessment

### Introduction

As discussed in Section 2, field-names can be a source of useful information regarding past use of the enclosure in question. Elements such as 'arrish' and 'gratton' refer to arable use, 'breach' and 'brake' can indicate fields enclosed from the waste or former common pasture, and 'ham' is a common name for fields located by a river or stream. Historic estate maps often include field-names, but these usually cover a limited area. For a study such as this the most useful source is the Tithe Apportionment, which lists the name of every field in the parish, combined with the Tithe Map, which locates them through their allotted number. In practice it was found that field-names in Calstock were not very revealing and they contributed little to the outcomes of this project. The distribution of a small number of key name elements is illustrated in Figure 25.

### Discussion

#### *Mapped name elements* (Figure 25)

*Ham:* The element 'ham' has an Old English (ie Anglo-Saxon) origin and meant 'land in the bend of a river' (Field, 1993, 94). This is graphically illustrated by the distribution of fields with this name element in Calstock, all of which are on bends in the Tamar.

*Long:* The distribution of this name element shows a clear association with strip-based fields and cropping units, both of which were primarily arable. This name is descriptive of the shape of the fields which, as discussed in Section 3, derives from former open field strips. There are a few occurrences in other types, where the 'long' element simply refers to the shape of the field and has no further significance.

*Furze:* This name refers to the use of the fields for growing furze or gorse as a source of fuel. The distribution is not significant, though it does emphasise the importance of this crop, for example in the extent of land devoted to it on the Cotehele estate, to the south-west of the house.

*Brake:* This element was mapped because it can derive from 'breach', which frequently indicates an enclosure from the waste (Field 1993, 80), and at first sight many fields with this element are located in or close to the central area of late enclosure. However, it was noticed that in the majority of cases the land-use of these fields was given in the Tithe Apportionment as 'Furze'. This calls into question any historical significance of the name, though the distribution emphasises further the importance of furze in the rural domestic economy.

#### *Other name elements*

Names that describe a distinctive feature, the location of a field or allude to its tenant are widespread, such as Three Gates (Tithe field no. 1820, near Calstock), Higher West Park (Tithe field no. 1350, Abaston) and John's Field (Tithe field no. 975, Gunnislake). References to land-use are also common, particularly 'garden' and 'orchard', emphasising the significance of market gardening in nineteenth-century Calstock.

Finally, a note should be made regarding the very common element 'park'. In other areas of the country this field-name can be an indication of a former deer park. These were high status features of the medieval landscape, including that of Cornwall; Carbullock Park was just across the Calstock parish boundary in Stoke Climsland. However, in the South-West 'park' usually means simply a field

and therefore no significance can be attached to it, though it would not be surprising if fields in the former Carbullock Park include this element.

## 7: Early land-use reconstruction

### Introduction

The Historic Landscape Characterisation developed for this project can be used to reconstruct a map of land-use across Calstock in the early stages of the evolution of the historic landscape we see today. This reconstruction sketches the landscape of the parish as it was likely to be in the centuries following the Norman Conquest (Figure 2).

### Methodology

The early land-use reconstruction was derived from the HLC (Figure 4) by removing 'overlying' character types ('Orchards' and 'Industrial') and combining analogous types ('Woodland' and 'Sloping Valley Sides'; cropping units and strip based fields; semi-regular and 'Semi-irregular Fields'; 'Intermediate' and 'Late Enclosure'). A few minor changes were then made to reconcile obvious inconsistencies, and a larger area of 'sloping valley side' between Hatches Green and Drakewalls Plantation was reassigned to 'Meadow, pasture and convertible husbandry' on account of the ground here not being so steep as to rule out one or more of these land-uses.

### Discussion

Perhaps the most striking feature of the early land-use reconstruction is the large area of unenclosed land in the centre and west of the parish. It should be emphasised that the geometric nature of the field boundaries in this area demonstrates that it remained unenclosed until the eighteenth century, and the Inclosure Award shows that most of it was not enclosed until the later nineteenth century. This was the common pasture of the parish and will also have been a source of fuel in the form of turf, furze and possibly some trees. Comments by Carew (1602) and Norden (c.1594) remind us that this was also the site of medieval extractive industries, particularly of tin.

The arable zones are also extensive, forming a series of discrete areas representing former open field on the lower slopes surrounding the open moorland. Each of these is associated with a documented medieval hamlet or village, including Calstock, Albaston, Todsworthy, Trehill, Harrowbarrow, Metherell, Chilsworthy and Latchley. These fields all lie upon relatively gentle slopes, and many have a south-westerly aspect and are thus particularly amenable to arable use. In all cases the close association of the hamlets with their arable fields is emphasised by this map.

An almost equal area represents fields that do not appear to have evolved from open field strips and are defined here as used for meadow, pasture and convertible husbandry. Meadows are traditionally used primarily as a source of hay for winter fodder. The best meadow grass grows on low-lying, fertile and moist soils, but Calstock has very little land of this nature and tenants will have taken what hay they could from the best of these fields. Carew (1602, 102) notes 'the tiller can commonly take but two crops of wheat and two of oats, and then is driven to give it at least seven or eight years leyre [fallow], and to make his breach elsewhere'. This practice of alternating between short periods of arable use and longer periods of fallow pasture to allow the ground to recover its fertility is known as convertible husbandry, and this would have been the most appropriate use for most of the land in this categorisation. In order to protect crops on the ploughlands from beasts on the pasture in any particular year it is likely that these fields were enclosed at an early stage in the colonisation of this landscape, and the hedges of these fields are therefore likely to be older than those in the arable areas.

The area of woodland is noticeably greater than it is in today's landscape. The value of woodland in a time before modern building materials, fuels and efficient transport cannot be overemphasised.

Everything from twigs to the thickest tree trunks had a use and a value, including for example, basketry, small building materials, boats and wagons, and charcoal. In an area with an active mining industry the latter will have been vital and will have consumed a great deal of wood. Most of the woodland will have been managed as coppice to produce a steady and reliable crop of poles of the optimum size depending on end-use.

Finally, the small area of meadow and wetland on the Tamar floodplain was also a significant resource. Depending on the degree of saturation it was capable of supplying the best hay, or reed for thatching, or rushes for floor cover. The salt marsh found along the tidal reaches will have provided valuable grazing, though, owing to its limited extent, only for a small number of animals.

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**Online source**

Heritage Gateway (Cornwall Historic Environment Record),  
<http://www.heritagegateway.org.uk/Gateway/>

Turnpike Roads in England <http://turnpikes.org.uk/>



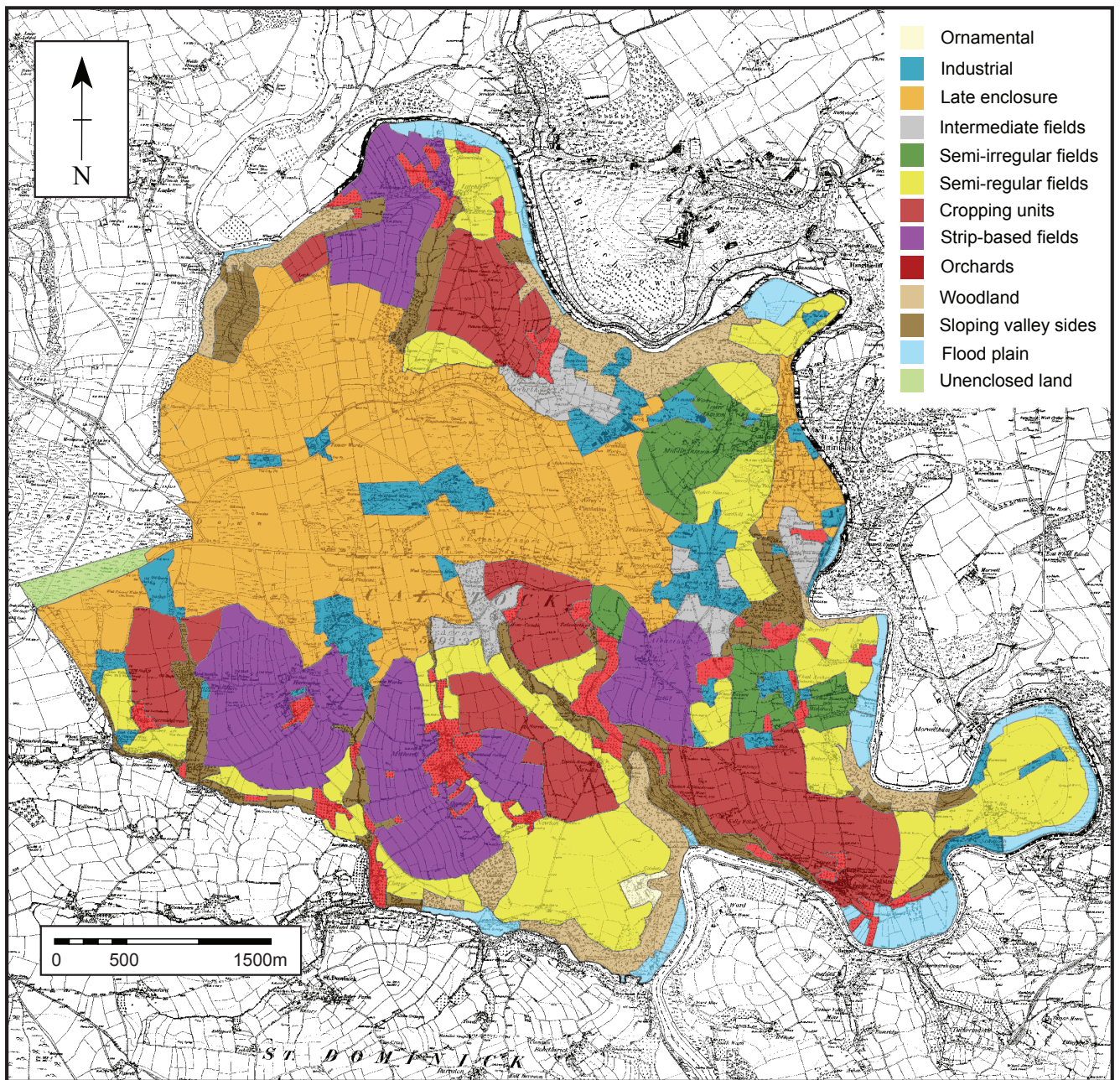


Figure 4: Historic landscape character types within Calstock parish as identified by this project, based upon Ordnance Survey 1st edition 6 inches to 1 mile mapping 1889 © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

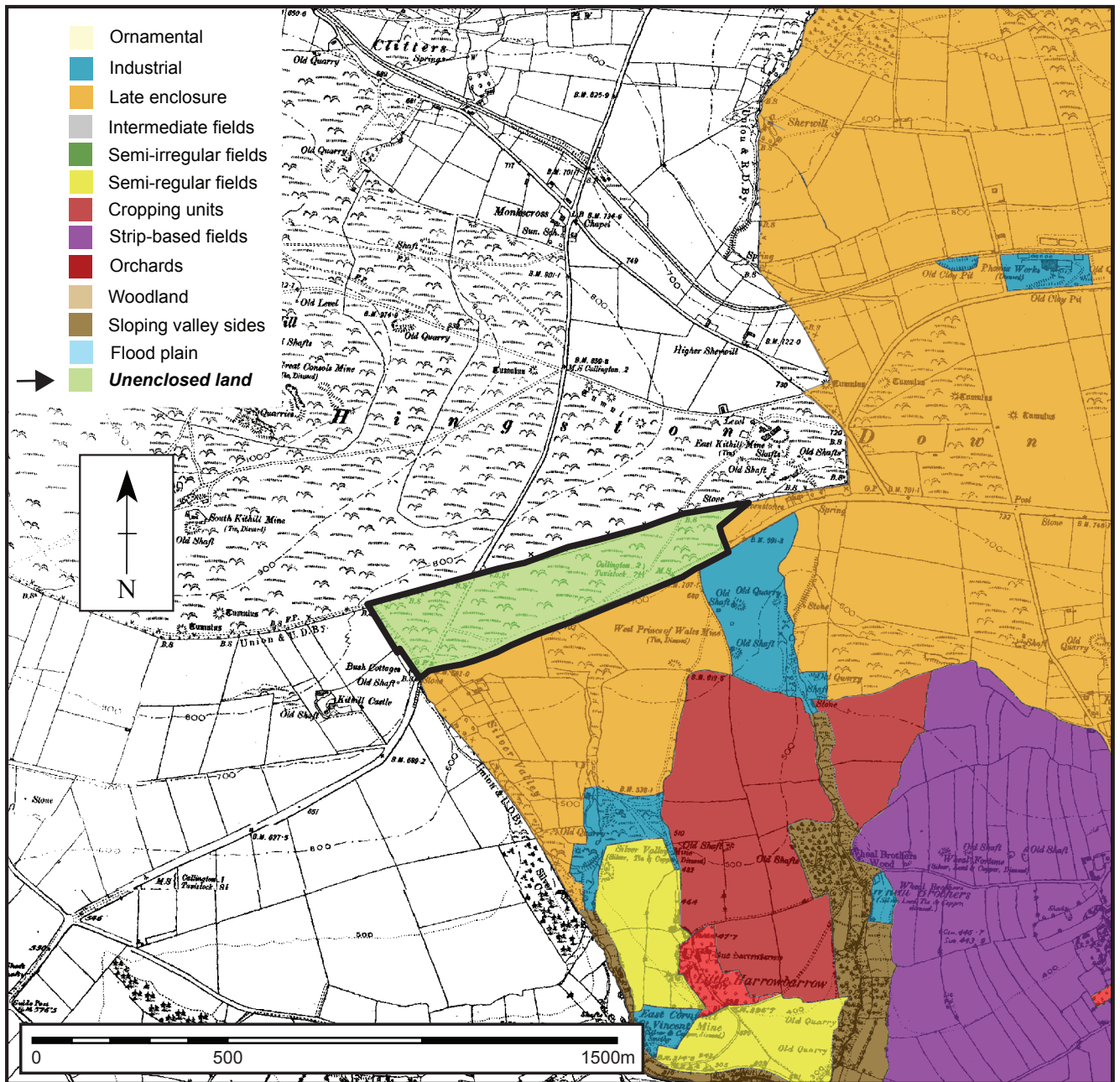


Figure 5: Historic landscape character type 'Unenclosed land', west of Sevenstones farm. A small area of Calstock parish remained unenclosed c.1880. There was a larger area beyond the parish boundary in Stoke Climsland, some of which remains unenclosed today. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

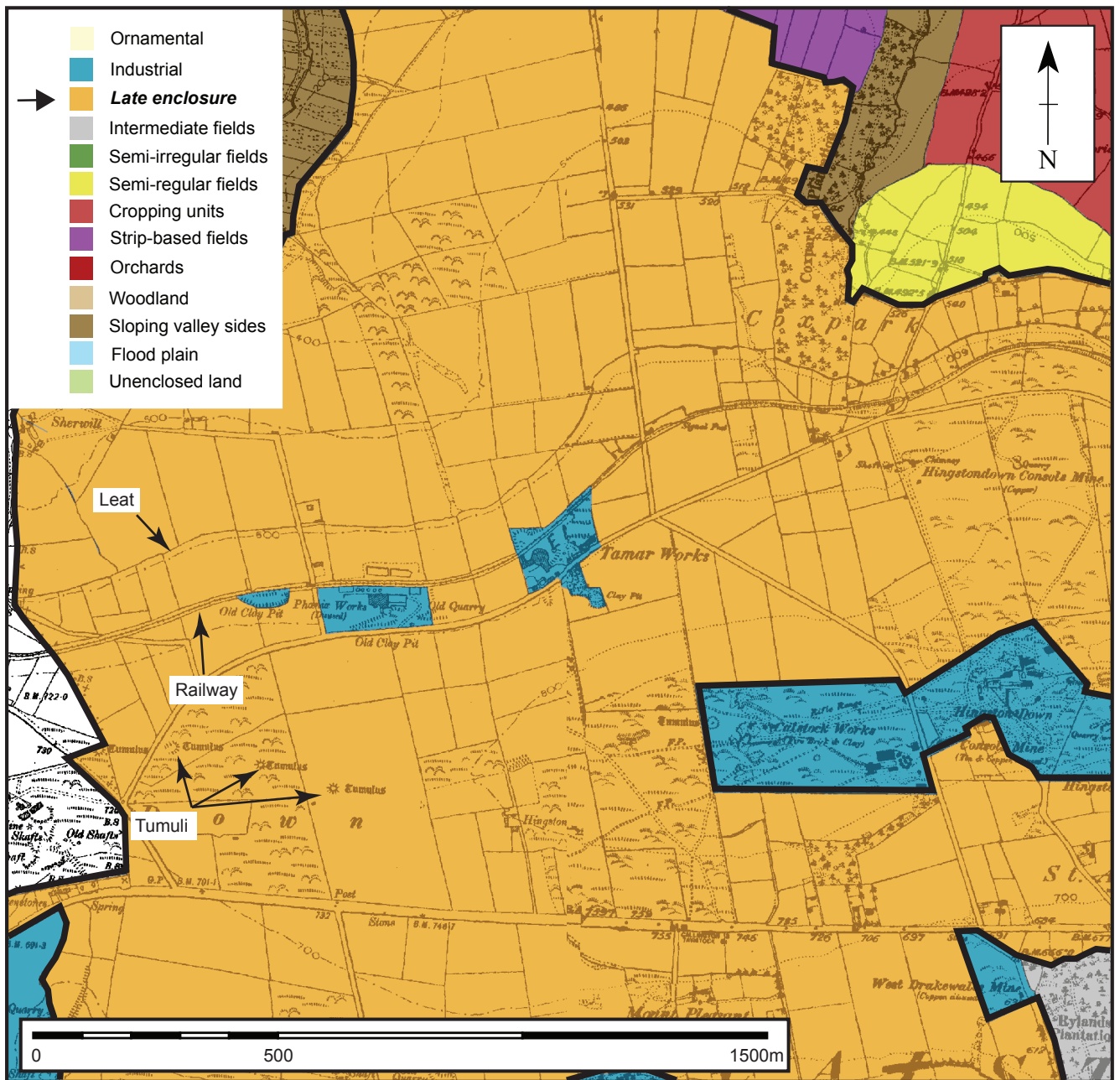


Figure 6: Historic landscape character type 'Late enclosure', around the former Tamar Works. Dead-straight field boundaries, sparse settlements and wide roads are characteristic. Note the tumuli surviving in the recently enclosed pasture, and the sinuous lines of the leat and railway. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).



Figure 7: Road in historic landscape character type 'late enclosure' north of Rising Sun, looking south, showing beech hedge, drainage ditch and hedge banks.



Figure 8: Extract from Calstock Tithe Map (1839) showing Drakewalls Mine area. The leats from Hingston Down meet upper left then flow down the hill through plots 1387, 1396 and 1545, powering a series of 7 probable water wheels. Image supplied by Tamar Valley AONB.

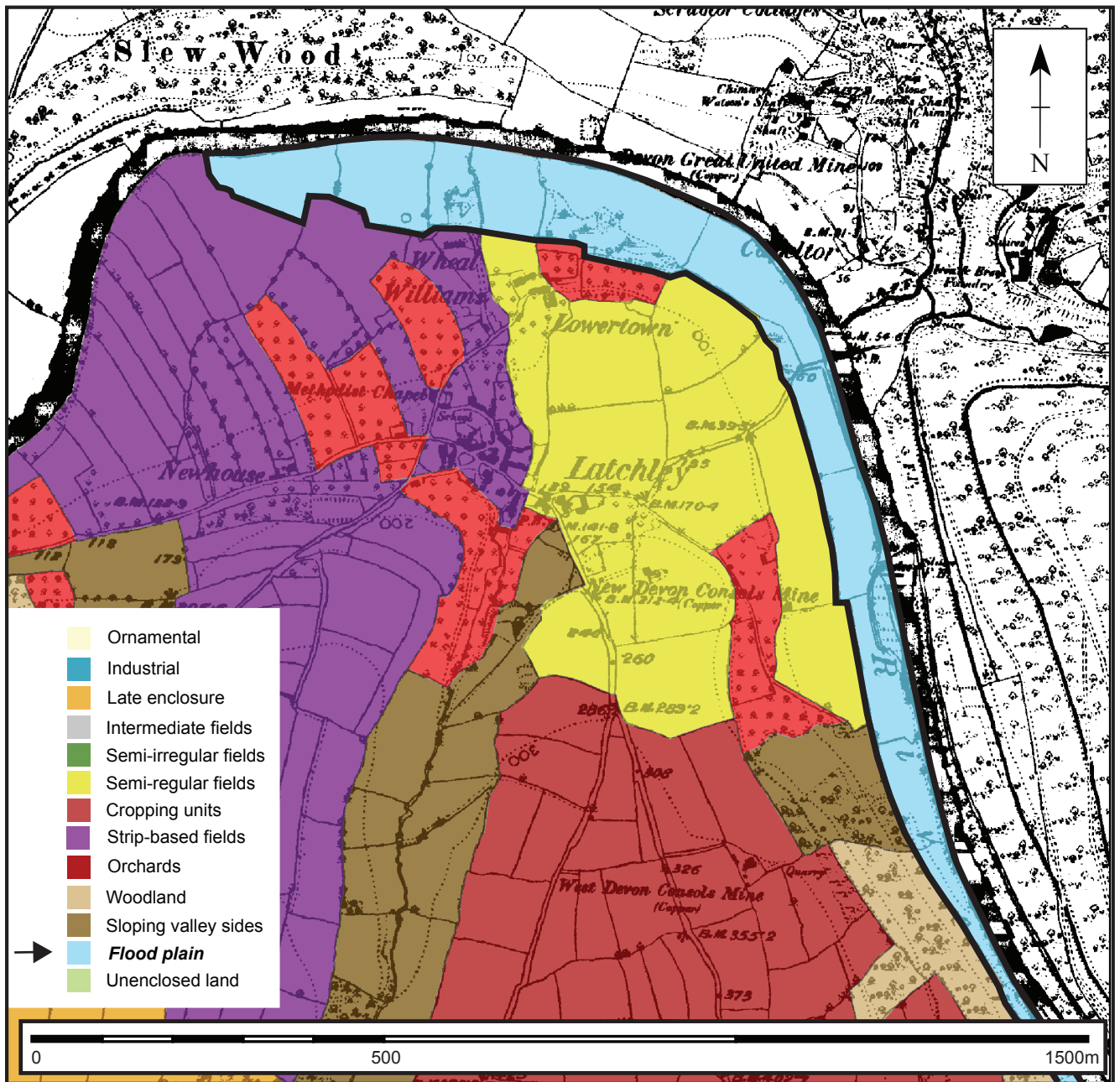


Figure 9: Historic landscape character type 'Flood plain', Latchley. Meadows on low-lying, flat land close to the Tamar. A continuous field boundary separates the flood plain from adjacent character types. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

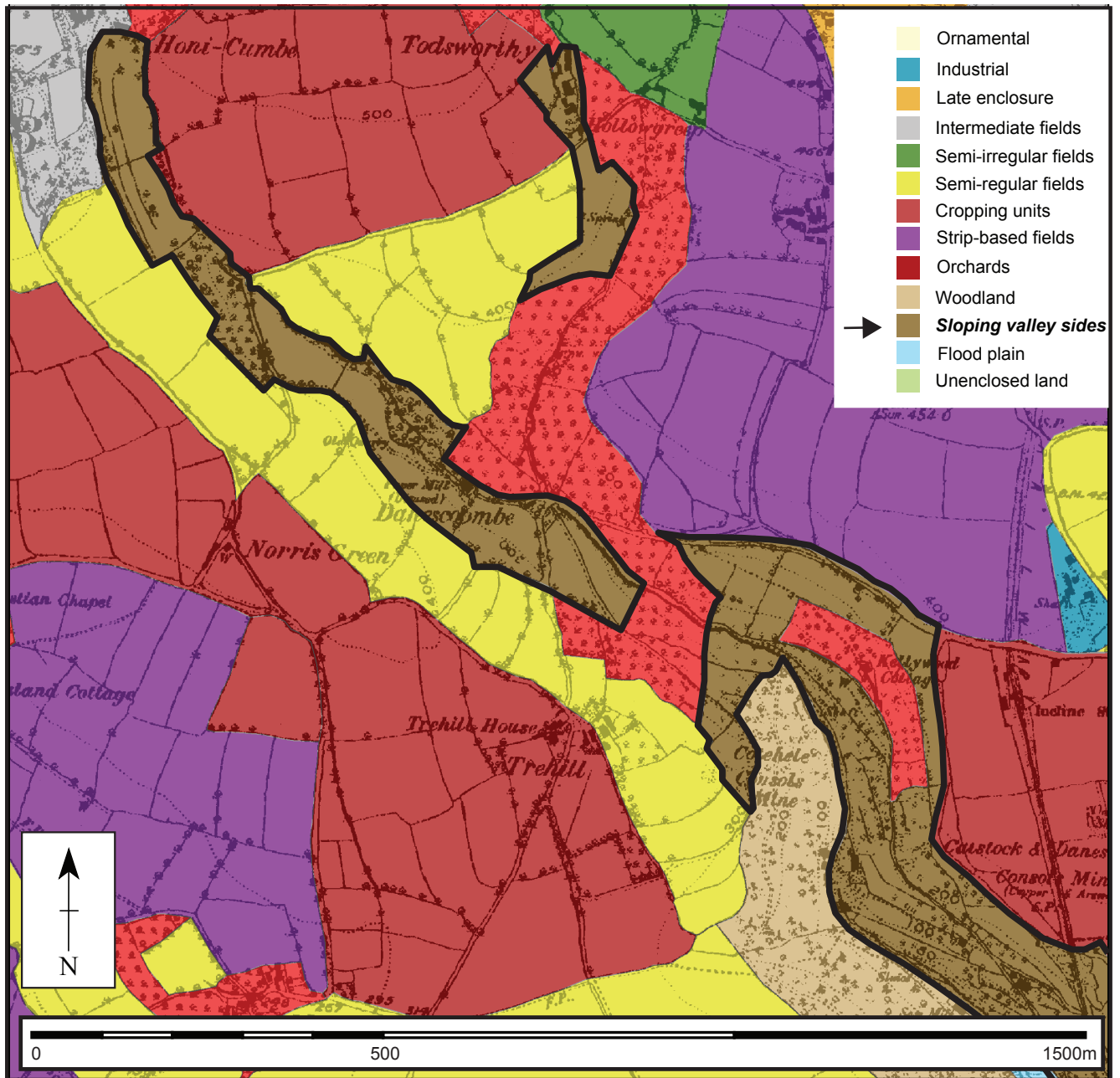


Figure 10: Historic landscape character type 'Sloping valley sides', Danescombe. Steep to very steep slopes flanking narrow valleys that often support orchards or woodland, as here. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).



Figure 11: Market garden, probably in Danescombe, mid-20th century. Note hand cultivation on very steep ground. Other photographs of the period show that south-facing slopes supported horticulture, with woodland or orchards on ground with a northerly aspect. Image supplied by Calstock Parish Archive.

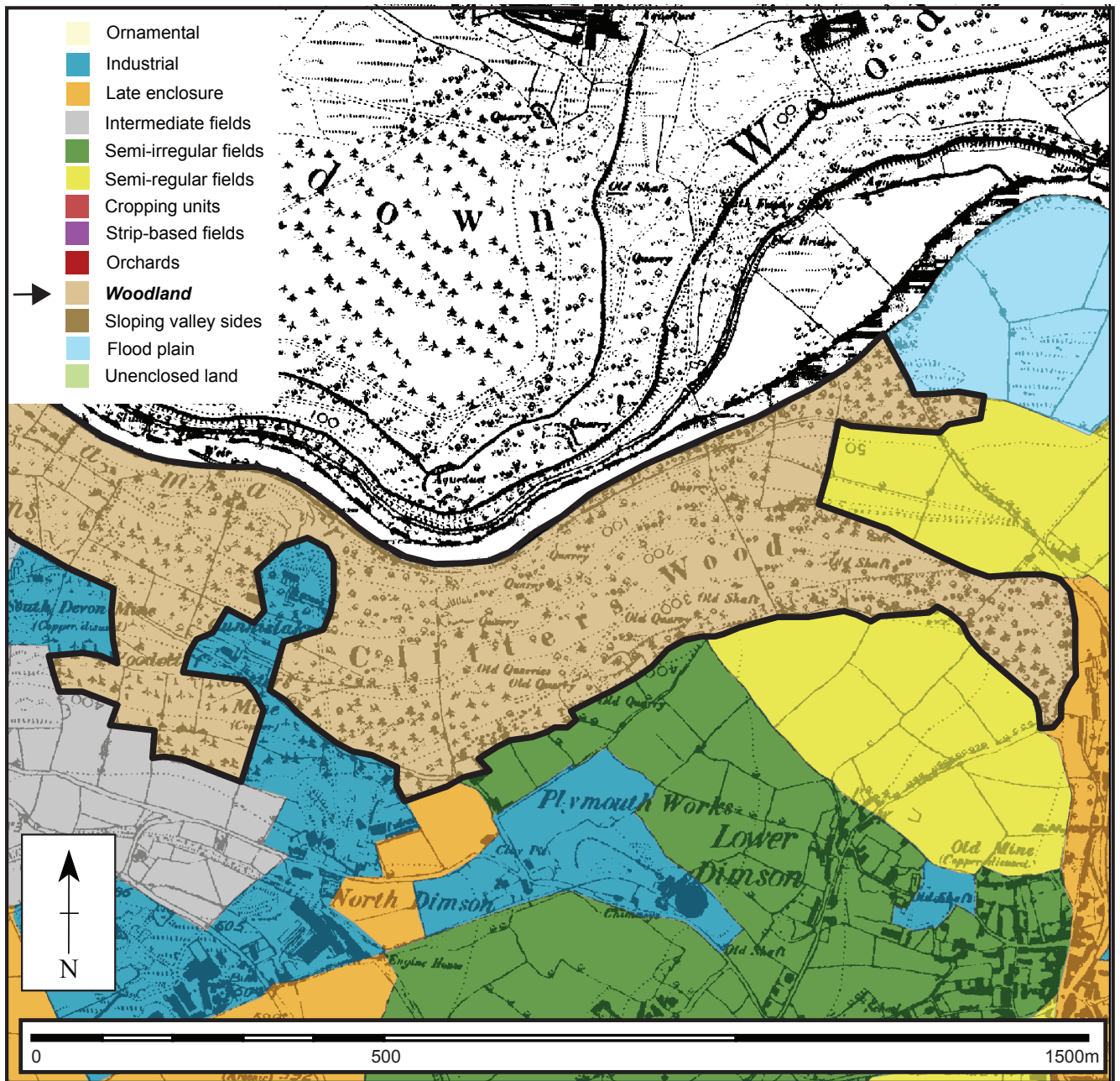


Figure 12: Historic landscape character type 'Woodland', Clitters Wood. Areas of ancient woodland usually named 'Wood' on OS maps and, as here, normally located on steep to very steep ground. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).



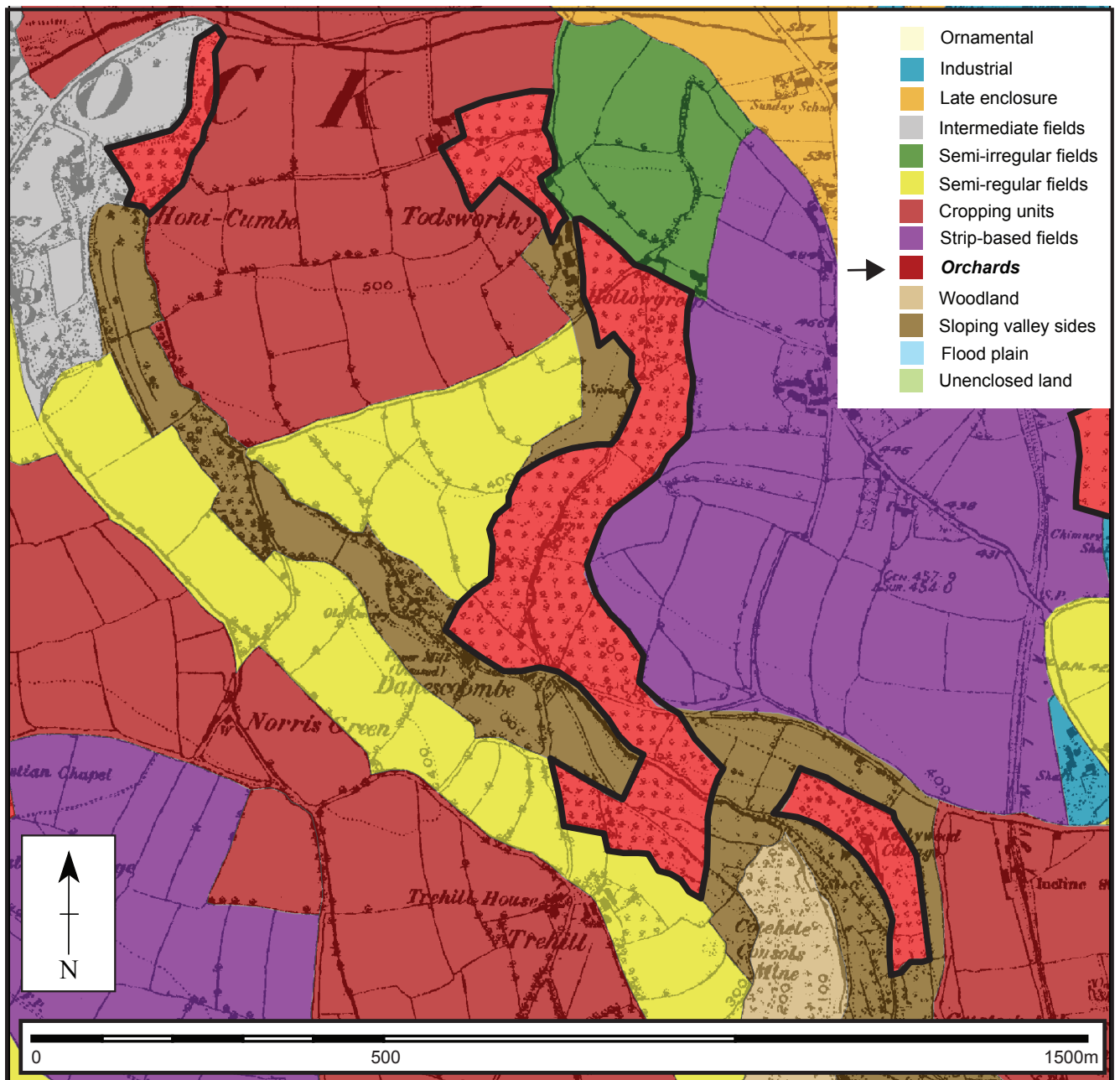


Figure 13: Historic landscape character type 'Orchards', Danescombe. Several orchards are scattered across this area, with a continuous ribbon between Danescombe and Todsworthy. Note the close association with 'Sloping valley sides'. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

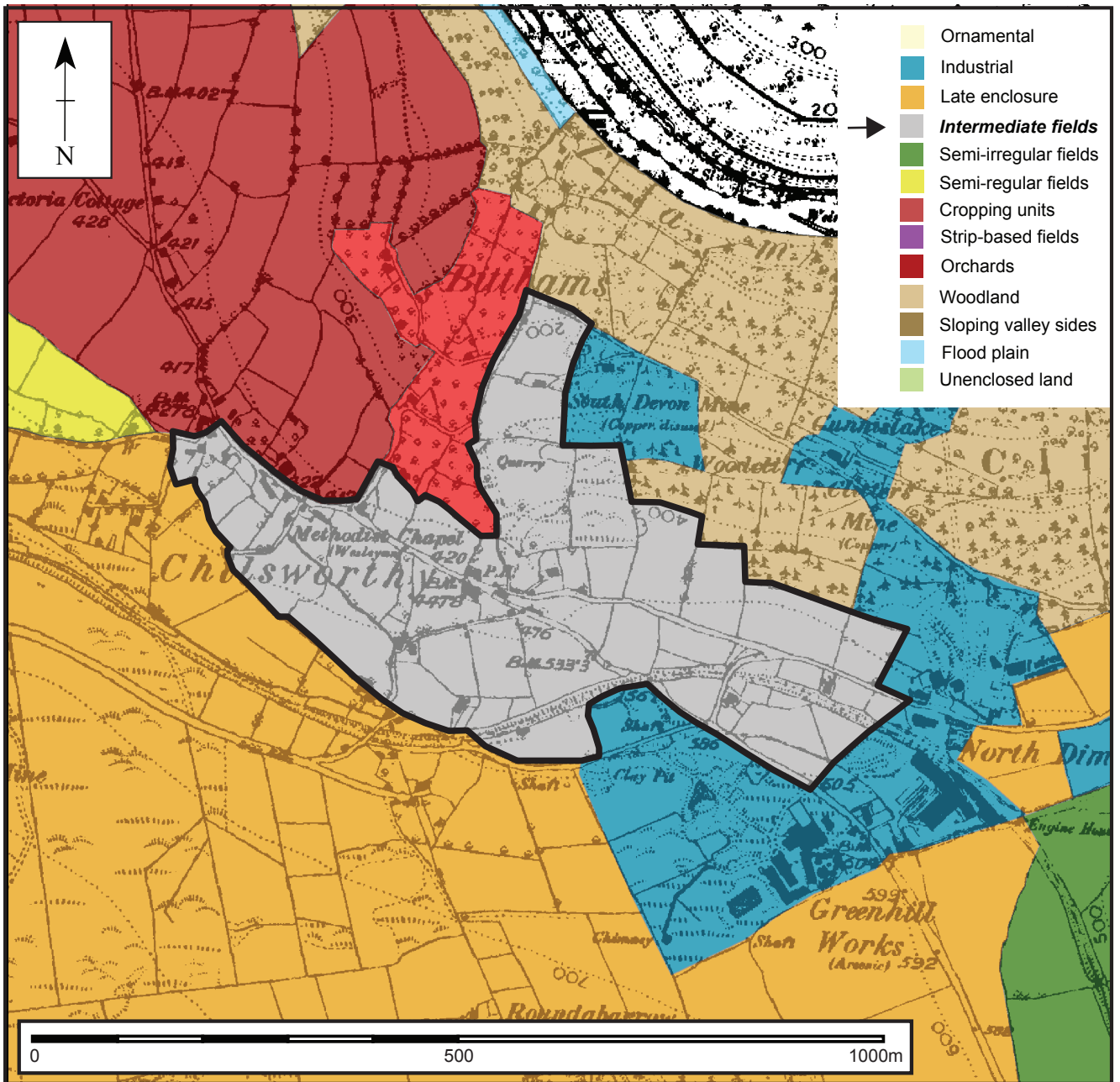


Figure 14: Historic landscape character type 'Intermediate fields', Chilsworthy. Clusters of relatively small, roughly rectangular fields close to 'Late enclosure'. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

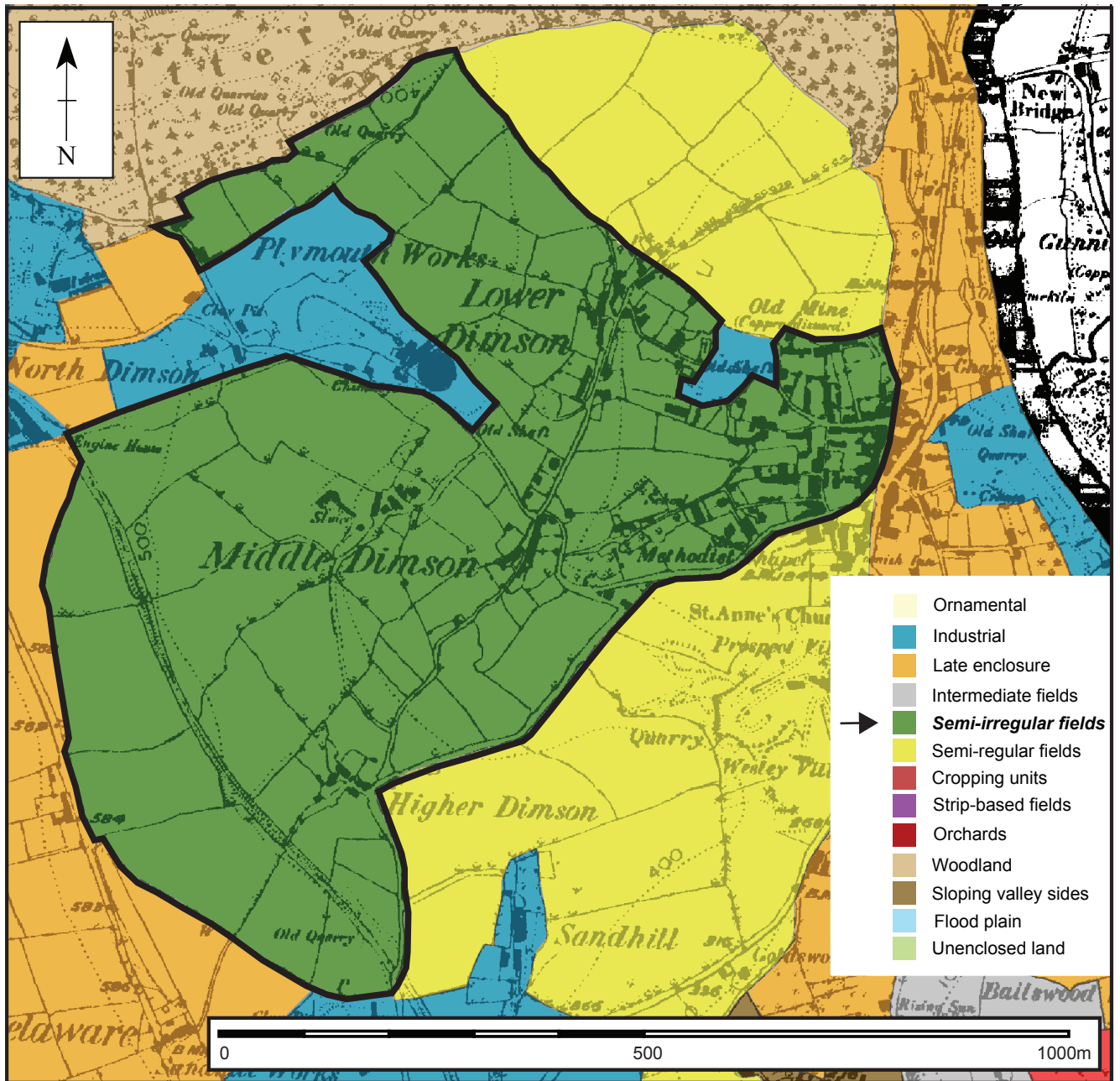


Figure 15: Historic landscape character type 'Semi-irregular fields', Middle Dimson. Clusters of irregularly shaped fields generally lacking straight or parallel boundaries. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

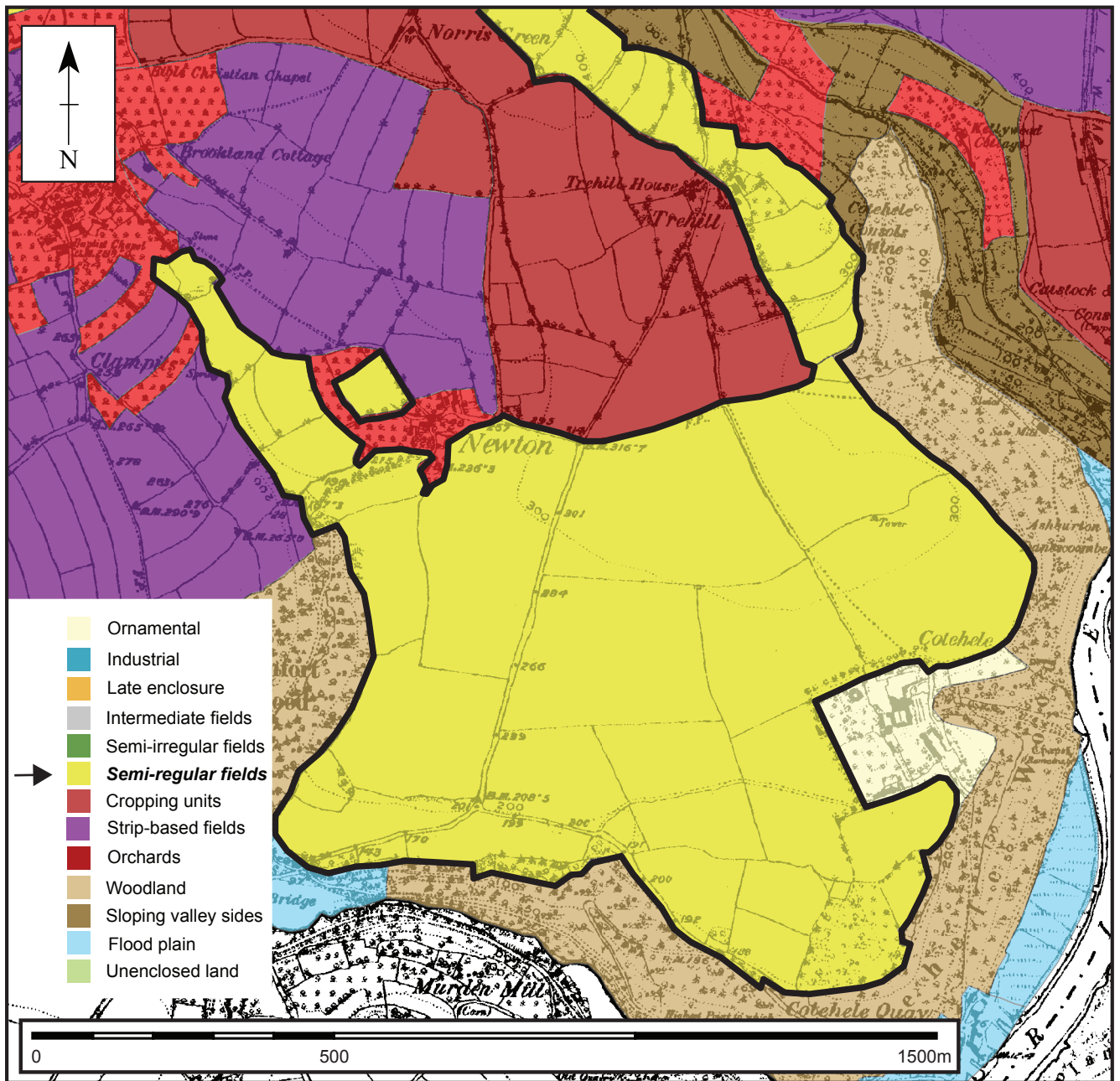


Figure 16: Historic landscape character type ‘Semi-regular fields’, near Cotehele. Large fields of this type have a characteristically open appearance on maps, while ribbons of smaller fields share many of the larger fields’ properties. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

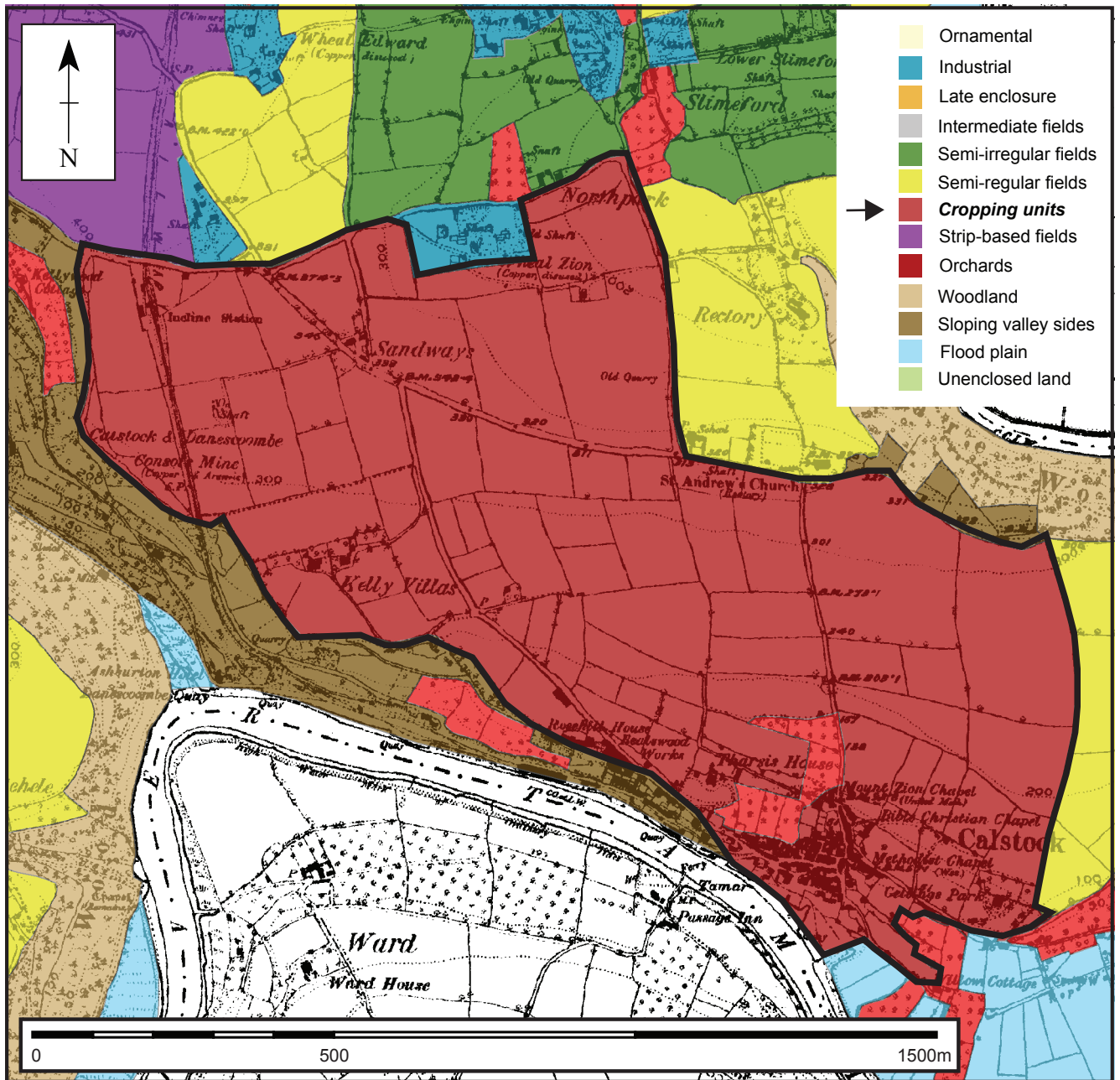


Figure 17: Historic landscape character type 'Cropping units', near Calstock. Fields forming a noticeably regular pattern of rectangular enclosures with boundaries along one axis extending for several fields, giving a ladder-like effect. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

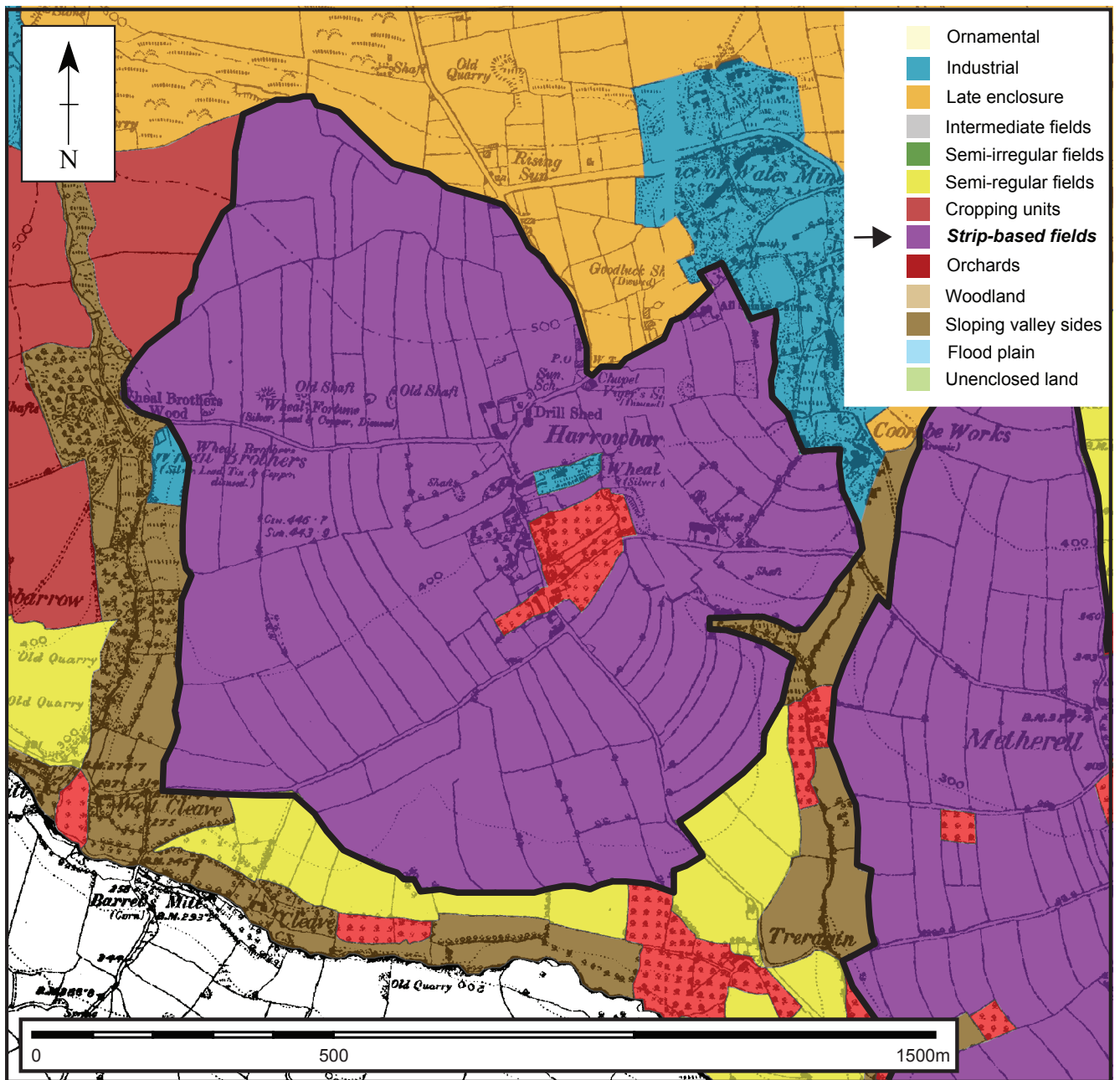


Figure 18: Historic landscape character type 'Strip-based fields', Harrowbarrow. Elongated strip-shaped fields enclosed directly from strips in former open field. Note the grouping into furlongs – groups of parallel strips each of roughly the same length. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).



Figure 19: Strip based fields south-east of Harrowbarrow. In this example the fields are running diagonally across the contours of the slope – in Calstock it is more common for them to run with the slope and at around 90 degrees to the contours.

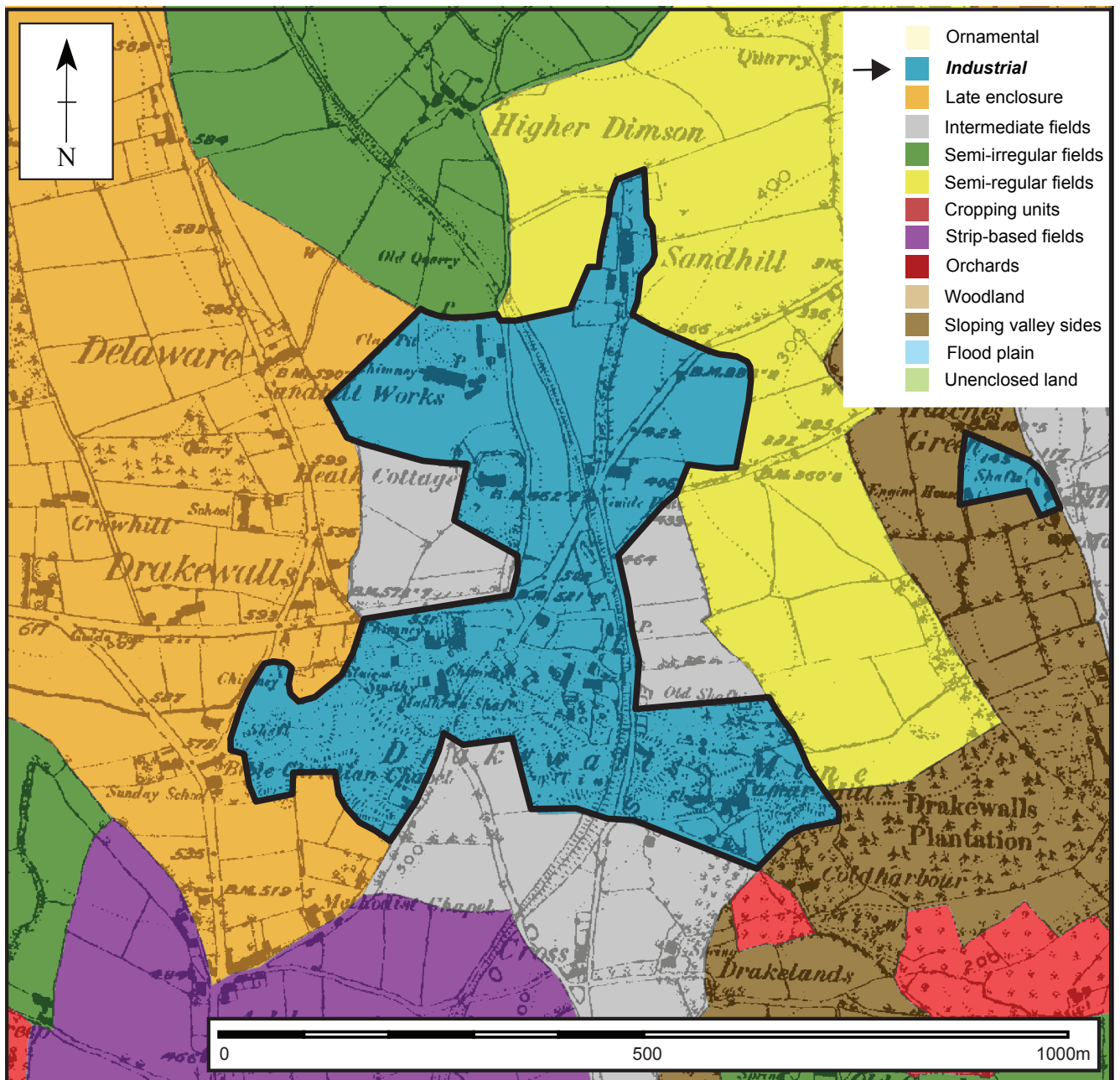


Figure 20: Historic landscape character type 'Industrial', Drakewalls. Mines and associated works and dumps overlie any pre-existing character types. The railway is a significant presence. This area today is relatively tranquil and is home to the Tamar Valley Centre. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).



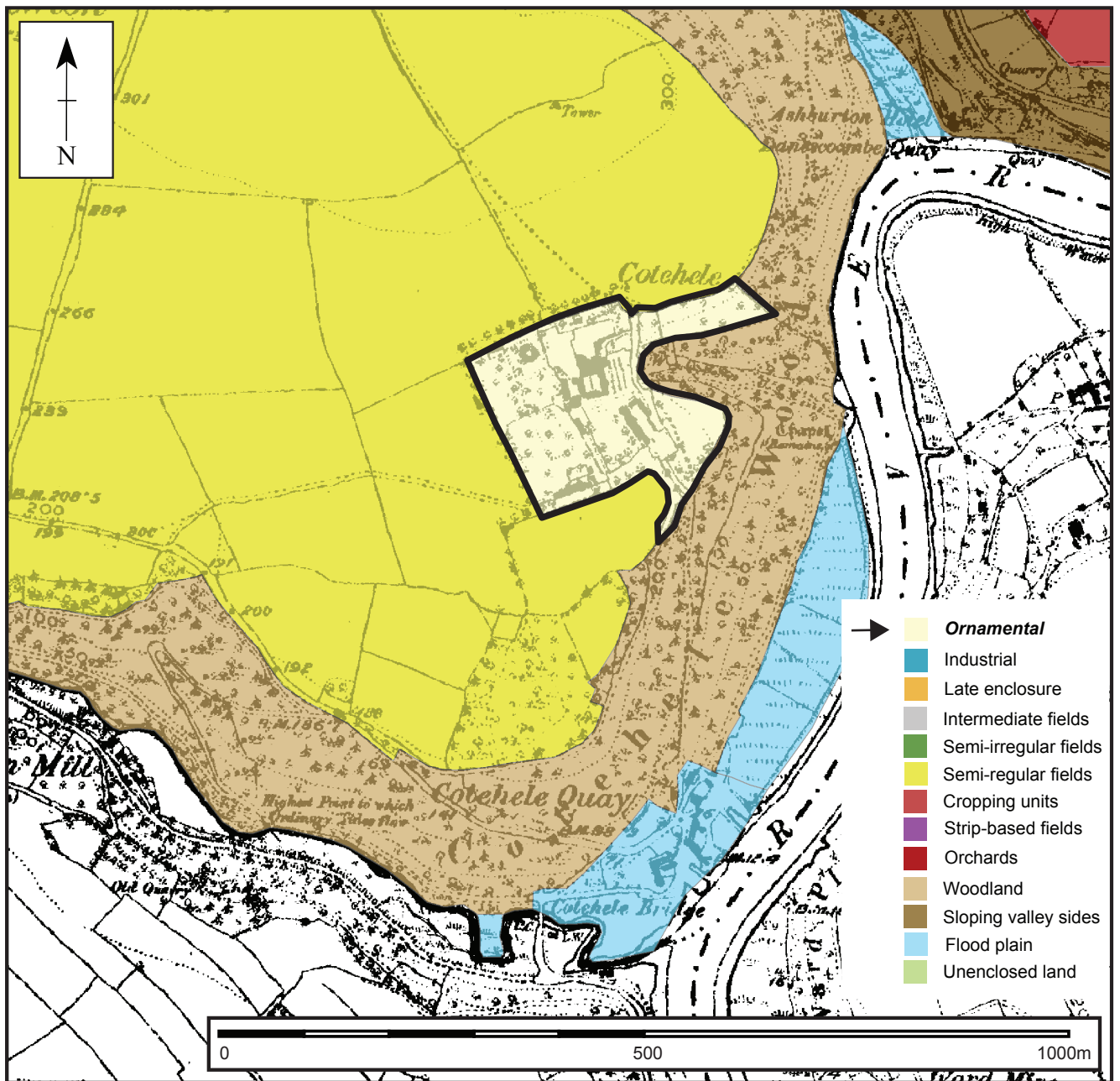


Figure 21: Historic landscape character type 'Ornamental', Cotehele. Cotehele is a popular visitor attraction today and there was already an ornamental landscape here in the later nineteenth century. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

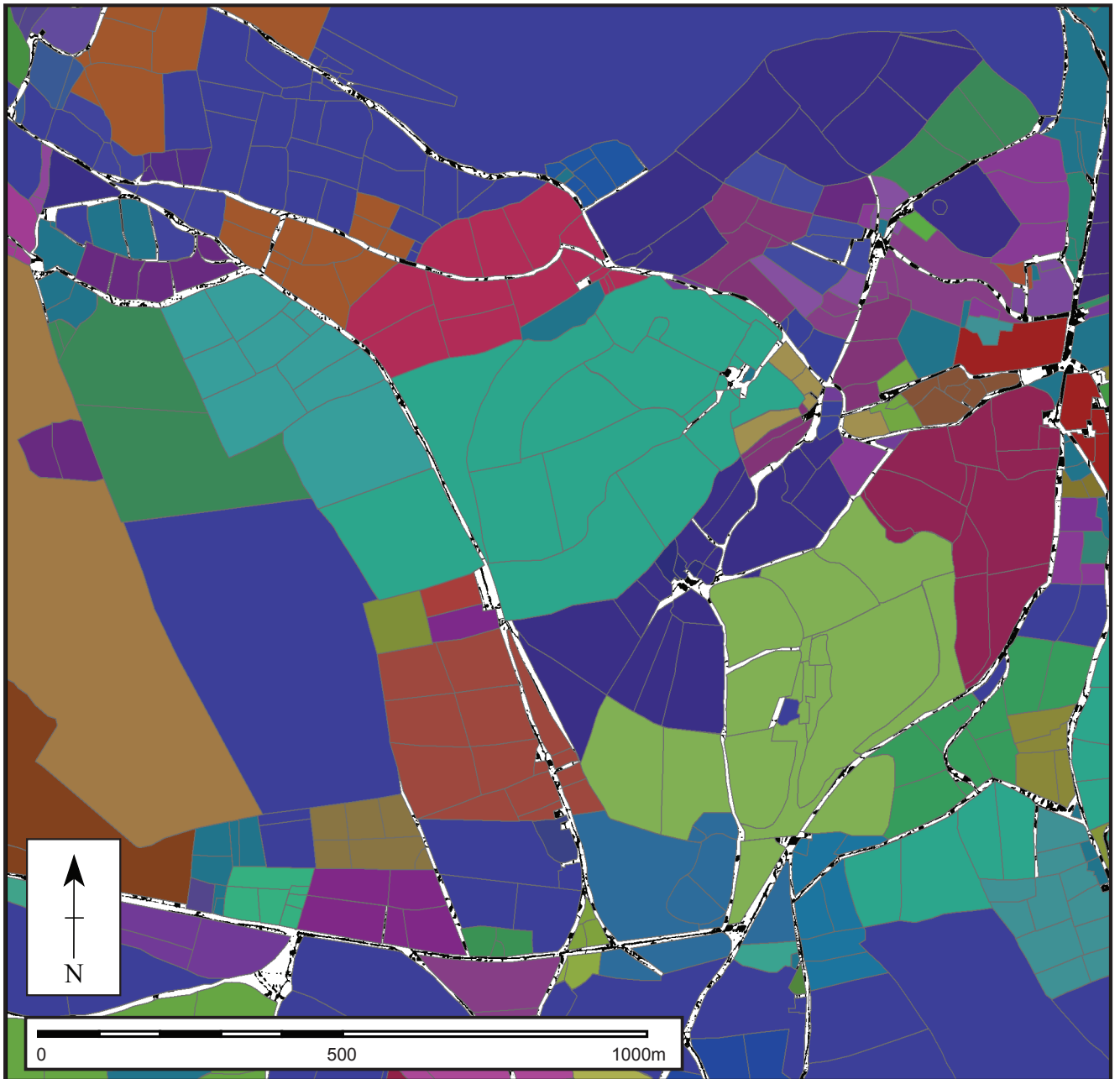


Figure 22: Dimson and Drakewalls tithe ownership. Each colour tone represents a different owner at the time of the Tithe Apportionment (1839). Land in this area is predominantly held in contiguous blocks. Most of the western part of this view is late enclosure, where individual ownership was established in the 19th century. The large blocks in the centre and east are mostly semi-irregular fields and the ownership pattern is therefore considerably older. Note the small area of mixed holdings around Lower Dimson (upper right). Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

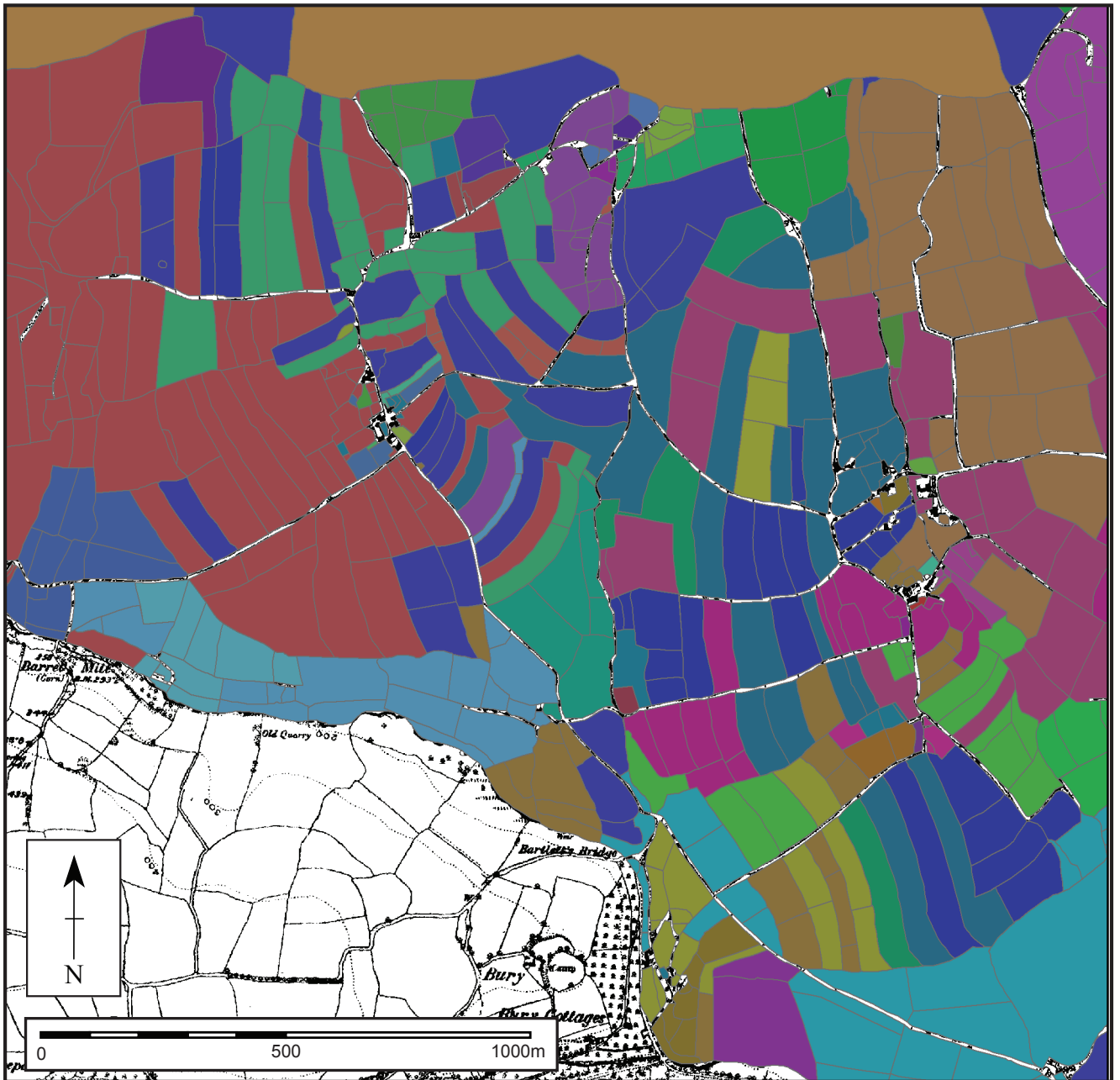


Figure 23: Harrowbarrow and Metherell tithe ownership. Each colour tone represents a different owner at the time of the Tithe Apportionment (1839). Note the strongly intermixed pattern of ownership in these strip-based fields. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).

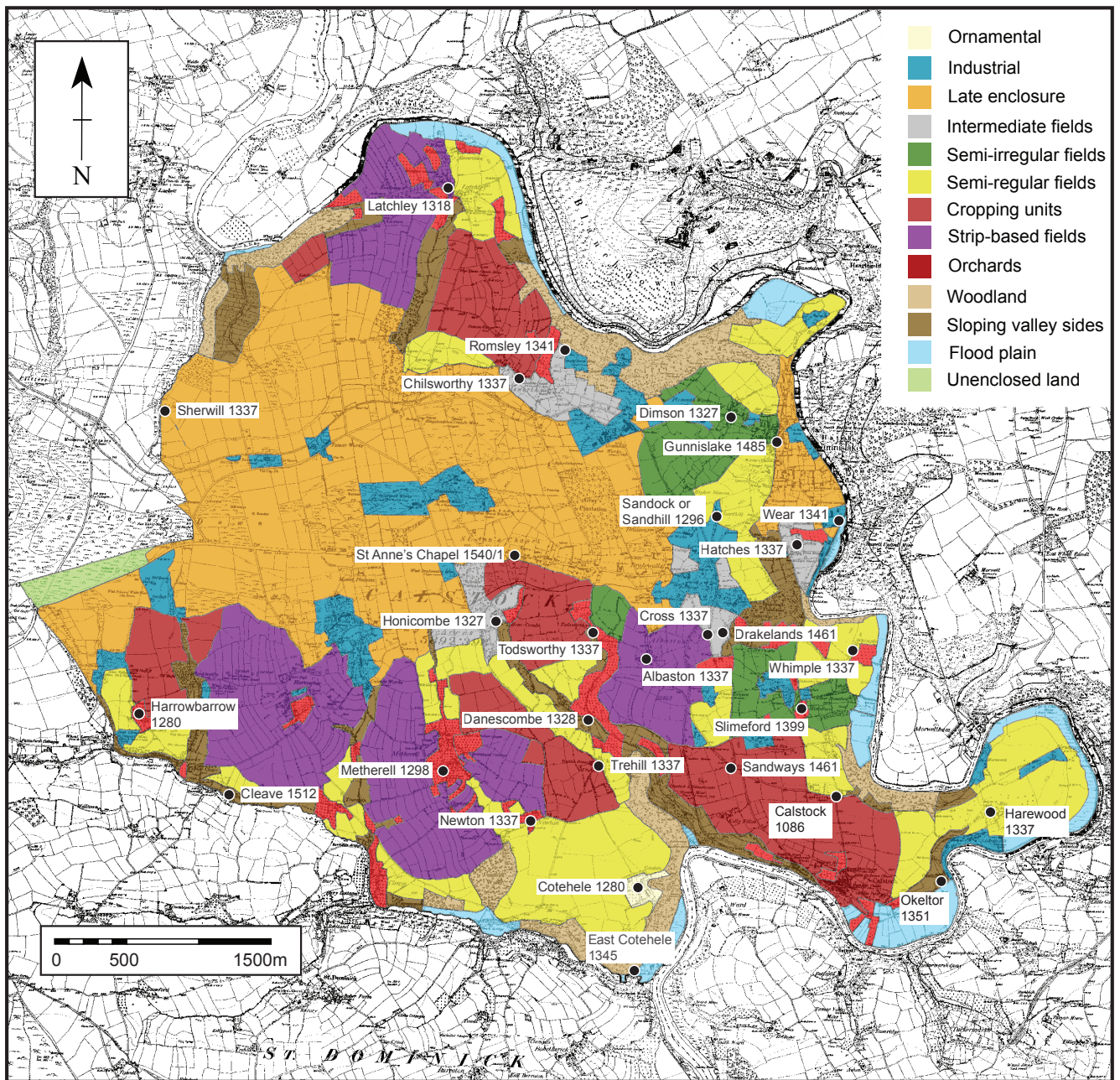


Figure 24: Historic settlements in Calstock parish with earliest recorded dates, superimposed on the HLC reproduced in Figure 4. Overlain on OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889); settlement data from Cornwall HER online via Heritage Gateway, <http://www.heritagegateway.org.uk/Gateway/>

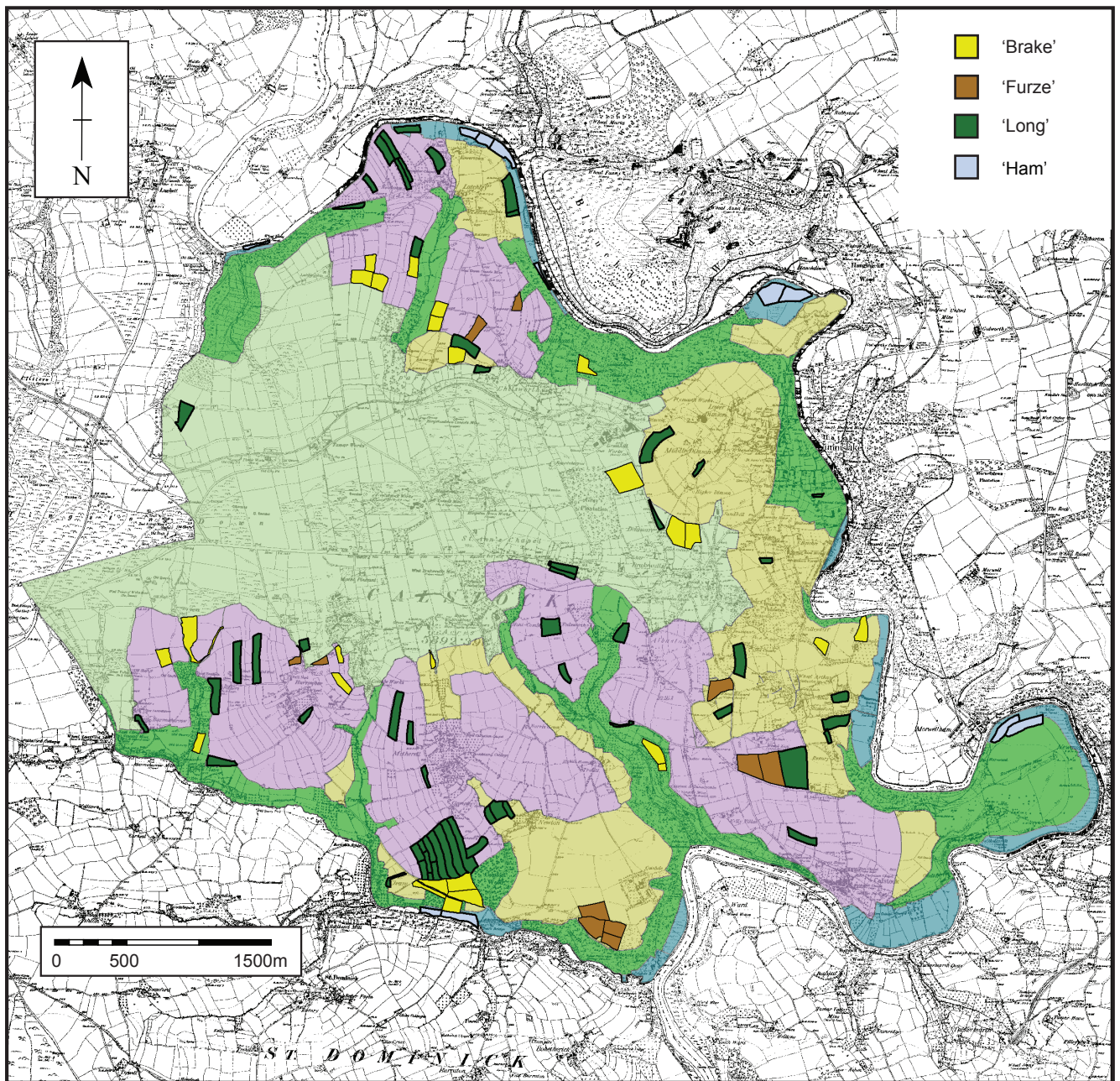


Figure 25: Occurrence of selected field name elements in the Calstock Tithe Apportionment and Tithe Map (1839). Overlain on Figure 22 (reconstructed land use) and OS 1st edition 6 inch mapping © Crown Copyright and Landmark Information Group Limited (2012). All rights reserved. (1889).