

delta left behind a 'layer cake' of hard and soft rocks (called the Yoredale series). The Yoredale series lies above the Great Scar limestone and comprises bands of limestone along with layers of shale and sandstone in a repeating succession. As the various layers have different degrees of resistance to erosion, the slopes have a stepped appearance, as for example on the sides of Pen-y-ghent. The Yoredale series is also visible on the long scars along the valley sides of Wensleydale.

- 2.2.5 Later in the Carboniferous period (300 million years ago) the Millstone Grit Series was deposited upon the Carboniferous Limestone. The Millstone Grit was formed in a coastal environment of large river deltas and shallow marine waters and also contains many fossils of marine organisms. Differences between the Millstone Grit and older Carboniferous Limestone are indistinct with sandstone common in Carboniferous Limestone and likewise limestone present in Millstone Grit. Some Coal Measures can be found in a small area around Ingleton where swampy land was present amongst large river deltas during this period. Millstone Grit is also represented in the south and west of the Study Area by small, impervious dark caps on the high hills.
- 2.2.6 During the Permian period (290 to 248 million years ago) a sequence of sandstone, known as Yellow Sands, overlain by cream to buff coloured Magnesian Limestone was formed. This rock formation is present in a strip running north south throughout the centre of the County; with a low west facing ridge exposing the Magnesian Limestone running from Ripon to Wetherby. The Yellow Sands were formed by desert sand dunes and the Magnesian Limestone by deposits from a shallow landlocked sea extending from north east England to Poland, known as the Zechstein Sea. Remains of fossil reefs which would have lined the edges of this sea can be found embedded within the Magnesian Limestone.
- 2.2.7 Progressing further east, rocks deposited under the arid conditions of the Triassic period (248 to 205 million years ago) are found underlying the Vales of York and Mowbray. These rocks are represented by red mudstones and sandstones, but are rarely exposed, with the exception of the coastline, due to a thick covering of glacial deposits.
- 2.2.8 The majority of the landscape to the east of the Study Area constitutes rocks lain down in the Jurassic period (195 to 140 million years ago). These rocks are exposed over the Cleveland Hills, the Howardian Hills and the North York Moors and are also found in a narrow belt along the western edge of the Yorkshire Wolds. Jurassic rocks were formed by several periods of marine inundation and land movement. The shales, clays, thin limestones and sandstones of the Lias were firstly deposited during a period of marine incursion, followed by the sandstones, mudstones and limestones of the Ravenscar group being deposited during a period of gradual

uplift. This later episode resulted in the landscape of the North York Moors where the bulk of the Jurassic outcrop is exposed.

- 2.2.9 Later, Upper Jurassic rock sediments were deposited under marine conditions, forming calcareous sandstones and limestones (known as the Corallian). These are found along the stretch of the Tabular Hills. This set of hills forms strong northward facing scarp slopes between Scarborough and Helmsley and west of the Hambleton Hills, and west facing scarp slopes that rise from the east of the Vale of Mowbray. In the Vale of Pickering the Corallian geology is overlain by the marine mudstones and thin limestones of the Kimmeridge Clay.
- 2.2.10 During the Cretaceous period (142 to 65 million years ago) there was a drop in global sea level, resulting in the formation of land which was then subject to erosion. The early Cretaceous sea invaded from the east and left Cretaceous Speeton Clay at the north eastern edge of the Yorkshire Wolds, a deposit which yields well preserved fossils. Overlaying the Speeton Clay is Red Chalk, a pink limestone and brick red marl. Subsequent sea level rise marked the beginning of the Upper Cretaceous when the almost pure limestone of the chalk was deposited. This chalk forms the Yorkshire Wolds and outcrops in the southeast of the Study Area, forming a series of hills between Thixendale and Hummanby.
- 2.2.11 During the Quaternary period of the last two million years, the climate of Britain has fluctuated between temperate climes and interruptions of advancing and retreating glaciers and ice sheets. Much of the underlying or bedrock geology of the Study Area was heavily modified by the effects of glaciation.
- 2.2.12 Till from the penultimate and last glaciation is visible within lowland areas around the North York Moors and in and around the Vale of Pickering. The Yorkshire Dales have also been periodically glaciated resulting in glacial valleys such as Wharfedale, Wensleydale and Swaledale running eastwards toward the Vale of York from a possible ice cap or centre above Langstrothdale. Glacial lakes were also thought to have been formed due to the deposition of glacial material in the valley floors. Large amounts of till have been deposited in the Dales following the last retreat of the ice-sheet approximately 13,000 years ago.

Glaciation and the Impacts of Meltwater

- 2.2.13 Melting ice sheets and glaciers left behind large amounts of material that were transported by meltwaters, leaving fluvio-glacial sand and gravel deposits such as those found in the Vale of York. The retreating Vale of York ice sheet left an undulating landscape of glacial deposits to the south and west of the area. A large lake formed in the Vale of Pickering, due to ice blocking the western and eastern extents causing clays, sands and gravels to be deposited. The

lake's outlet was to the south west where it cut the deeply-incised Kirkham Gorge, which is now the course of the River Derwent.

- 2.2.14 At the eastern edge of the Study Area, the coast represents a product of glaciation. High cliffs are formed from glacial till, for example at Whitby West cliff, Robin Hood's Bay and Filey Bay. Elsewhere, the sea has reached the abandoned cliffline of the last (Ipswichian) interglacial and now erodes the in situ Jurassic rocks and overlying glacial tills.

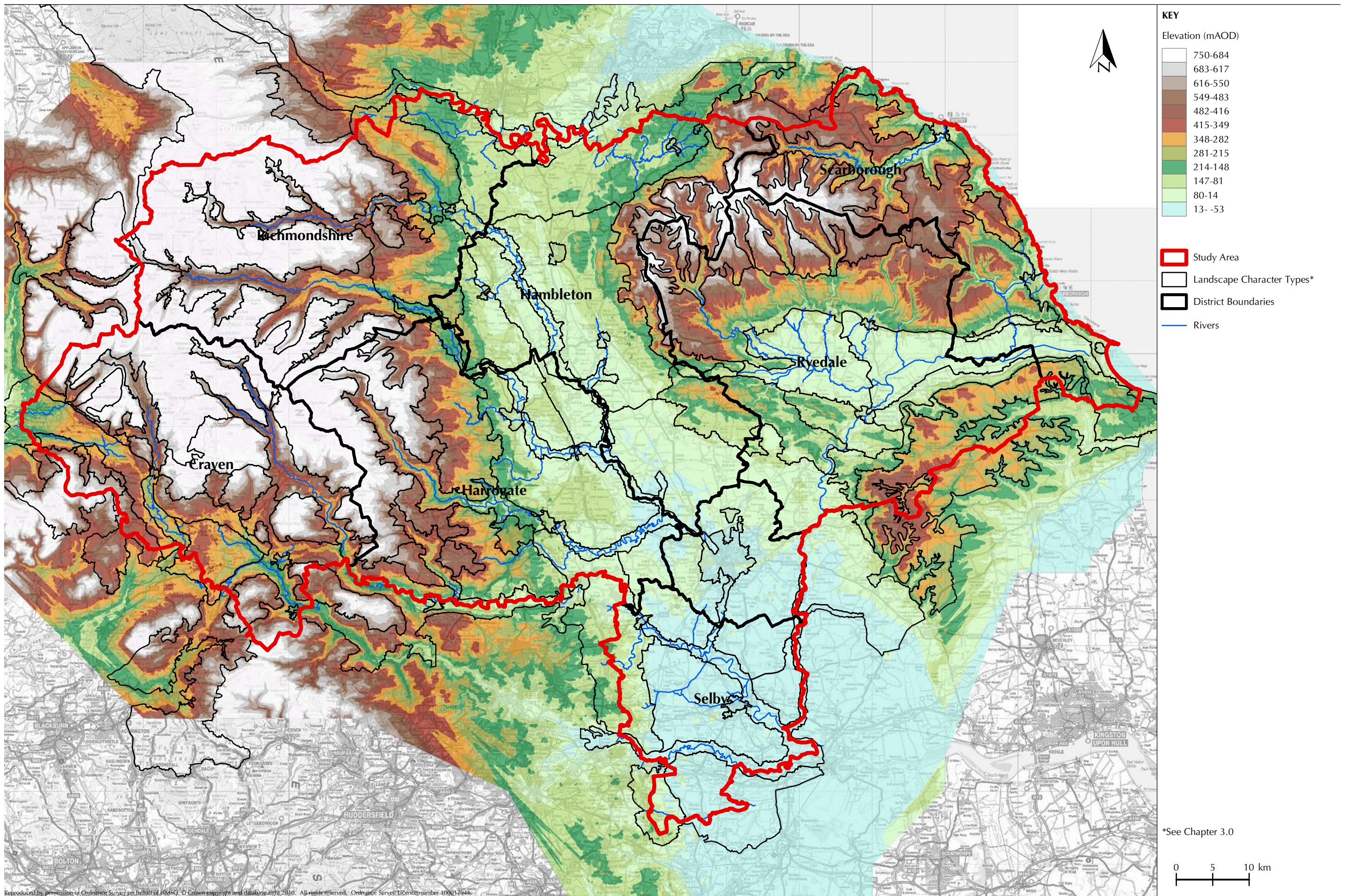
Landform and drainage

- 2.2.15 The landform of the Study Area (**Figure 2.2**) is strongly influenced by the underlying geology and the effects of glacial and hydrological processes. The highest landform encompasses the peaks and plateaux of the Yorkshire Dales in the west and the North York Moors in the east (ranging from 300 to 750 metres AOD). To the south of the North York Moors, separated by the vale of Pickering, a series of lower rolling hills (200-300 metres AOD) form the Chalk Wolds.
- 2.2.16 The higher land of the Yorkshire Dales in the west and North York Moors in the east is separated by a large, broad vale of lower land (between 100 and 200 metres AOD). Another broad vale of lower land also separates the North York Moors in the north from the Chalk Wolds to the south.
- 2.2.17 Rivers are a key feature of the landscape within the Study Area. The River Tees runs along the northern boundary of the Study Area, whilst the southern boundary is defined by the Wharfe and the eastern by the Derwent. The rivers Swale, Ure, Nidd, Wharfe and Aire all rise on the Carboniferous uplands of the central and eastern Yorkshire Dales, and flow south and south-east through glacially modified valleys into the lowlands of the Vale of York. In the Vale, these rivers meet to form the Ouse and are joined by the River Derwent flowing south from the North York Moors. The Ouse basin drains the majority of the Study Area whilst the River Ribble drains the western edge and the River Esk drains the north-eastern North York Moors.

2.3 Human and Cultural Influences on Landscape Character

Palaeolithic (500,000-8000BC)

- 2.3.1 Human activity flourished during the Upper Palaeolithic (c. 40,000-8,000 BC), when glaciations were interspersed with long periods of warmer climate. Britain was still joined to continental Europe at this time and during periods of intense cold, such as the last glaciation (25,000-12,000 years ago); populations retreated away from these areas to warmer parts of the



continent. By 11,000 or 10,000 BC, there was no longer any ice within the Study Area. As a result, it is thought that the landscape was dominated by tundra vegetation, with dwarfed forms of birch and willow and alpine flowering plants.

- 2.3.2 Archaeological investigations in a number of caves in the Yorkshire Dales have revealed animal bone material from a mixture of extinct wild faunas, together with domestic and wild faunas that are present in the region today. Raygill Fissure and Victoria Cave near Settle contain a suite of animals that were present in Britain during the last interglacial (the Ipswichian), approximately 130,000 years ago. This fauna is characterised by the presence of the spotted hyena, lion, hippopotamus, straight-tusked elephant and narrow-nosed rhinoceros. Elbolton Cave, Heights Cave, Kinsey Cave, Stump Cross Caverns and Victoria Cave contain cold stage faunas that are characteristic of the Devensian glaciation. Evidence from Stump Cross Caverns has been dated to 75,000 years ago and fauna from the other caves is likely to date from between 13,000 and 10,000 years⁷. There is also evidence of hunter-gatherer sites in the Late Upper Palaeolithic at the edges of the Vale of Pickering. Apart from this, the evidence for human activity during this period within the Study Area is, however, virtually non-existent.

Mesolithic (c. 8000-4000BC)

- 2.3.3 At the start of the Mesolithic period (c. 8000-4000 BC) the climate began to dramatically improve, the glacial ice sheets retreated and meltwaters separated Britain from the continent. The climate became warmer and wetter and by c.6500 BC pine forests had given way to deciduous woodland. Limestone, which predominates within the west and northeast of the Study Area, with its light covering of woodland, is likely to have supported hunter-gatherers. The woods offered a varied diet of fruits, shoots, nuts and roots and the lakes provided a rich source of fish. Numerous Mesolithic camp sites have been found on the high ground of the North York Moors, denoting that the landscape of the Study Area was being utilised during the Mesolithic period. Worked flints from the early Mesolithic have been discovered at Little Smeaton and a range of Mesolithic stone tools have also been found in the Chalk Wolds.
- 2.3.4 During this period, human activity was also concentrated around the shores of Lake Pickering, a late-glacial and early post-glacial lake which occupied the Vale of Pickering at Star Carr. This is a Mesolithic site of national and international significance where assemblages of artefacts including antler, headdresses, barbed points and shale beads have been found. Interpretations of the archaeological evidence suggest that the site may have been socially significant for Mesolithic hunter-gathering, predominantly of red deer. It has also been

⁷ Chamberlain, A.T (2002) A Gazetteer of Non-Human Vertebrate Remains from Caves in the Yorkshire Dales Described in the Scientific Literature. Capra 4 available at <http://capra.group.shef.ac.uk/4/bonecavechamberlain.html>

suggested that Star Carr may have been used as a butchery site and may have provided a winter and spring hunting base camp. It may also have had ritual significance. Recent radiocarbon dating at the site suggests occupation of the site for c. 350 years from c. 10,700-10,350 BP - approximately 1000 years earlier than the original radiocarbon dates had indicated⁸.

Neolithic (c. 4000-2000 BC)

- 2.3.5 During the Neolithic period (c.4000-2000 BC) there was a move from hunting and gathering towards farming, which is visible within the archaeological record in the form of querns, sickles, pottery and polished stone axes. The introduction of domesticated crops and animal husbandry was tied in with the development of permanent and semi-permanent settlement and the establishment of large ceremonial, religious and burial sites, including long barrows, round mounds and later, henges. In the Vale of Mowbray and the adjoining part of the Magnesian Limestone Ridge there is a group of six henges extending for 12km along the land between the rivers Ure and Swale, with particular concentrations to the north of Ripon and the north of Boroughbridge. Thornborough henges near to West Tanfield provide one of the largest surviving earthwork complexes within the Study Area. Each henge has a double entrance through a pair of ditches and banks. Three of the original seven monuments survive and ongoing archaeological exploration suggests that there is an immensely rich prehistoric landscape around them. The henges form part of a broader ritual landscape, including a cursus, probable mortuary enclosures, pit alignments and Bronze Age barrows. Neolithic long barrows and round barrows also feature along the northern edge of the Yorkshire Wolds, adjacent to the Vale of Pickering, built in areas cleared of woodland. Another sacred site has been found at Rudston in the Yorkshire Wolds, where at least three cursuses converge. Neolithic activity has also been recorded in the Yorkshire Dales, with a large henge at Castle Dykes near Aysgarth.
- 2.3.6 Duggleby Howe, a roundbarrow on the flanks of the Wolds provides another example of a ritual landscape feature. Aerial photographs suggest that the great tomb was surrounded by the hyphenated banks and ditches of a 'causewayed enclosure'⁹. This was thought to have been a ceremonial site serving the eastern Wolds.
- 2.3.7 The Neolithic is also associated with the removal of trees and the creation of grassland and moorland. Clearance of woodland during the Neolithic period is thought to have taken place in parts of Nidderdale, with wholesale felling commencing in the Bronze Age. There is evidence from the study of pollen in the North York Moors, that hunter gatherers were using

⁸ <http://www.arch.cam.ac.uk/projects/starrcarr.html>

⁹Old Yorkshire, Muir (1987)

fire to create and maintain clearings and suppress the tree line¹⁰. There is also likely to have been widespread clearance of woodland on the flatter, lower level landscapes in the southeast of the Study Area. Within this area, settlement is thought to have been concentrated on higher ground. Evidence of axe trading is also apparent in the low plains of the Vale of York.

Bronze Age (c.2000-800 BC)

- 2.3.8 Except in the uplands, which remained open, much of the Study Area was still wooded, however most of this woodland was now secondary and interspersed with scrub. Grazing animals were making use of the woods and clearings. Evidence suggests that Early Bronze Age communities began to modify the meaning of their landscapes through the construction of ritual and symbolic monuments, sometimes on a vast scale.
- 2.3.9 Archaeological evidence from the Bronze Age period (c.2000-800 BC) includes remains of ritual monuments, settlements such as hut circles and field systems bounded by permanent boundaries, indicating the beginnings of enclosure of the landscape. Few remain as 'standing' monuments; however, parts of a Bronze Age ritual complex at Ingleborough in the Yorkshire Dales are still visible within the present day landscape.
- 2.3.10 The upland areas, particularly around Yearsley Moor have a dense distribution of Bronze Age monuments, in particular burial mounds, as well as flint, stone and metal artefacts. Along with the long barrows and other burial sites, notably on Grimston Moor and at Cawton Heights, complexes of enclosures and trackways have been recorded at Cawton, Coulton and around Hovingham Spa. In the North York Moors, traces of more than 10,000 round barrows (burial sites) have been recorded. Early Bronze Age barrows are also associated with Thornborough Henges, in the Vale of Mowbray, between the Rivers Swale and Ure.
- 2.3.11 Most evidence from this period has been found in upland areas, due to evidence from lowland areas being destroyed by subsequent human activity. Huts and boundaries appear to have been originally constructed of timber followed by ramparts of earth and stone and later just stone, such as dry stone walls or concentric banks. Evidence of curvilinear enclosures is visible on Burton Moor in Wensleydale, which is typical of the kind of remains associated with stock management during the Bronze Age. Much of the upland area appears to have been managed, although practices tended not to be intensive.
- 2.3.12 Additional evidence from the Bronze Age period includes cremation furnace barrows such as those on Sawdon Moor to the west of Scarborough and a small number of stone circles on Danby Rigg, along with nearby barrows and 300 clearance cairns. The remains of twenty four

¹⁰ England's Landscape: The North East, Allen (2006)

stone circles have also been recorded at Standing Stone Rigg on the North York Moors to the northwest of Scarborough. It is thought that a series of stone walled enclosures above the rock of the Yoredale series on Penhill, West Burton may date from the Bronze Age, with suggestions that they may have been used for animal herding or storage.

2.3.13 During the Bronze Age, the climate deteriorated which resulted in a shift of farming to lowland areas, resulting in upland areas being used predominantly for pasture. The peat moorlands were used for grazing and a source of fuel and building materials. Settlements appear to have developed on both upland and lowland areas, tending to be clustered on the edges of the most fertile land. It is thought that people lived in small farmsteads during this period, which may have been occupied until the earlier part of the Roman period. This farming system sometimes extended over several hectares, particularly within the Yorkshire Dales, where fields were often concentrated around farmsteads. Fields were created at right angles to the ridges (which gave rise to the term co-axial field systems). Examples of co-axial fields can be found in several locations within the Study Area, including Swaledale, Wensleydale, Ribblesdale and Wharfedale within the Yorkshire Dales. Examples of rectilinear, Middle Bronze Age field systems are also evident in Eskdale. Evidence suggests that these field systems were designed for livestock.

2.3.14 In the Yorkshire Wolds, linear earthworks (for example at Weaverthorpe) were developed through the Bronze Age. It is thought that these were used to divide the landscape into blocks and corridors or droveways that were used for stock management. Within the lower, levels landscapes to the south, evidence denotes the creation of series of raised mires (c. 3500 BC). Fishing, fowling and other marsh-edge activities comprised important additional sources of income in wetland areas, where prior to enclosure and drainage, the lush grassland provided a source of summer grazing for surrounding communities. There is further Bronze Age evidence towards the centre of the Study Area (within the Vale of York), in form of bronze artefacts such as rapiers and axes to the east and west sides of the Vale.

Iron Age (800 BC-AD 43)

2.3.15 During the Iron Age (800BC –AD43), there is little evidence of human activity within the Study Area. The climate is thought to have worsened, leading to the abandonment of waterlogged plateaux and valleys, continuing removal of woodland and the intensification of farming. The limited available evidence suggests that there was a move towards a greater nucleation of settlements. The well-drained limestone landscapes, still supported agriculture during the Iron Age and in some places, such as at Addleborough, evidence of settlements has been found at heights of over 300 metres. Also in the upland pastures of High Close and Lea Green above Grassington in Wharfedale, where an extensive network of small, rectangular Iron Age fields

are visible on the limestone slopes and plateaux. It is possible that these enclosures originated in the Bronze Age period. There is also evidence of Iron Age enclosures in Crummackdale. There is also extensive evidence for Iron Age settlement within the North York Moors.

- 2.3.16 In many places within the Study Area it became necessary to farm the more marginal lands of the Wolds and North York Moors and the drier vales of the magnesian limestone belt between the Pennines and the Vale of York. It is thought that a system of mixed farming was being practised, combining wheat, barley, oats, rye, flax and animals such as cattle, sheep, goats, horses, pigs and geese. Cereal growing is evidenced by the discovery of stone querns which were used for grinding grain. There is evidence of high status farmsteads, marked by palisaded enclosures located on hilltops within the Chalk Wolds.
- 2.3.17 Archaeological evidence also suggests that there was a need for more elaborate and extensive defence of the landscape as a result of a certain level of social unrest¹¹. Evidence of such defensive sites is apparent in the form of hillforts located on the western escarpment edge at Roulston and Boltby Scars.

Roman Period (AD 43 –410)

- 2.3.18 The Roman period saw the expansion and intensification of agricultural activity (particularly arable farming) within the Study Area. This included the ploughing of heavier clay-based soils. Other Roman influences included the development of a thriving pottery industry, the establishment of military sites associated with the development of an associated road infrastructure and the construction of grander and more elaborate buildings, including villas.
- 2.3.19 When the Romans legions arrived in the Study Area, the landscape would have consisted of an open landscape, with lowland areas divided into small fields delineated by ditches and earthwork banks, possibly topped by hedgerows, and upland areas with fields delineated by stone walls. Evidence suggests that woodland was found on steep banks and within wet valleys and was probably managed under a coppicing regime.
- 2.3.20 The north of England escaped the Roman invasion of AD43 which overran nearby lowland areas. Local people negotiated alliances with tribal leaders, a situation which lasted for nearly three decades in the middle of the 1st century AD. Finds from excavations suggest that places such as Stanwick (to the north of Richmond) which had already established itself as a tribal capital from about AD50, traded with the Romans, as finds from excavations include numerous exotic trade goods from the Romanised parts of Britain and elsewhere in the empire.

¹¹ England's Landscape: The North East, Allen (2006)

- 2.3.21 The Roman army finally did move north, which is thought to have been the result of a revolt by one of the tribes. Upon their advances north they dug ditches and threw up earth banks to create marching camps, one of which was located at Malham Moor in the Yorkshire Dales, another at Cawthorn Camps within the North York Moors. Permanent fortresses were also constructed at Newton Kyme, near Tadcaster (*Calcaria*), Aldborough, Catterick (*Cataractonium*), Brough –by-Bainbridge, Wensleydale (*Virosidvm*) and York (*Eboracum*). Few survive as prominent monuments today, however many of the remaining features and sites are designated as Scheduled Monuments for their national historic importance.
- 2.3.22 Like many other Roman towns in England, York began as a military base, being a turf and timber fortress created by *Petillius Cerialis* during the initial invasion in AD 71¹². During the reign of Trajan (98-117) the fort was redeveloped, gaining stone walls, corner towers and grates, the walls superseding the timber palisades which derived from an earlier refurbishment around AD 81. In AD 208, the Emperor *Severus*, used York as his command post; three years later he died and was cremated there. In recognition of York's importance and prestigious role during the campaign, the designated title of *colonia* or 'colony' was granted to the civilian settlement there. By this time, York was well established as a provincial capital, a major military and civilian settlement and communication centre at the hub of the region's road network.
- 2.3.23 Early in the third century, the city experienced a comprehensive reorganisation, perhaps coinciding with the promotion to colony status which took place at some time between AD 211 and 237. Roman York had two components, with the Ouse flowing between them. On the north-eastern side of the river was the massive rectangular fortress, one of the strongest in the whole empire, its centrally placed headquarters standing on a site now occupied by the Minster. Just across the Ouse, to the south-west lay the fortified and neatly planned civil colony, containing the imperial palace occupied by Severus.
- 2.3.24 York also flourished as a commercial and manufacturing centre, trading with Bordeaux and the Rhineland and supporting important linen and Whitby jet-carving industries, as well as the less specialised iron, bronze and pottery industries. Around AD 300, it was thought necessary to strengthen the defences of York even further and a series of imposing and prestigious bastions were added to the riverside wall of the fortress – the Multangular Tower is a celebrated survival from this phase of fortification. The other Roman towns were of a less prestigious and grandiose nature, and Aldborough, Catterick and probably a town near Malton were distinctly provincial in comparison. Aldborough, near Boroughbridge, was *Isurium Brigantum*, the civilised capital of the Brigantes. Like York, Aldborough probably had its origin in an invasion fort, which gradually acquired the walls, gates and bastions needed to establish its status and

¹² Old Yorkshire, Muir (1987)

protect its interior. Catterick (*Cataractonium*) lacked some of the prescribed functions of a Roman town, yet developed a fort site and grew to acquire walls and a planned grid-work of streets, which extended across ten hectares and is now cut by the A1 just to the south-east of Richmond.

- 2.3.25 In addition to Roman towns, evidence suggests that there were also several small country mansions and estate centres – the villas. These are thought to have been both working farmsteads and country houses; many of which contained mosaic floors and central heating. The owners of the villas sought fertile farmland or easy access to markets or ports.
- 2.3.26 Roman defensive features are also still visible along the coastline, for example the remains of the watch-and-beacon tower at Scarborough. The Romans also built an extensive road network including the two main north-south roads which ran through North Yorkshire; these were Ermine Street passing East of York and Dere Street passing west of York (which forms the basis for much of the modern A1 road corridor). Roads also radiated out from York. The landscape was under control for the first time in a very systematic manner. The current route of the A66 follows the path of a Roman road which still provides a key route across the Study Area. The road between Bainbridge and Ingleton also provided a key Roman road running across the Yorkshire Dales. In addition, Wade’s Causeway, a track running in a north to south direction across the North York Moors was a key feature of this period.
- 2.3.27 Quarrying for stone, digging for clay and removal of woodland for construction may have affected the landscape south of the frontier, plus an increased need for food may have altered some farming patterns, however most of the late prehistoric system of mixed farming remained unchanged during the Roman period. Evidence of trade between subsistence farmers and the market economy has been discovered with finds of exotic goods at native sites. Settlements at distance from the Roman forts also continued to develop in much the same way that they had in pre-Roman times, although stone was more likely to have been used as a building material. Some of the most northerly extents of the Roman, villa orientated agricultural economies including those at Gargrave on the edge of the Yorkshire Dales, in the Vale of York, and on the Wolds around Malton (including that at Beadlam which contained one of the most northerly mosaics in the empire) were situated within the Study Area.
- 2.3.28 From the middle of the 4th century the Roman world was in decline after 350 years of occupation. This may have been the result of a deteriorating climate making levels of production difficult to sustain, inroads of restless people from beyond the frontier and rising sea levels causing flooding in important areas such as York. After the Roman retreat production fell back to pre-Roman levels due to lack of access to wider markets.

British Saxon and Scandinavian Period (AD 410-1066)

- 2.3.29 Following the departure of the Romans in the fifth century, the succeeding Angles and Saxons found the landscape already organised into a series of complex and well established land holdings. The Angles and the Anglo-Saxons appear to have generally occupied and developed the existing political, administrative and religious structures and boundaries that had been developed earlier. The landscape gradually developed as a system of feudal ownership, based on communal, open-field farming. Ripon and York developed around their minster churches during the Saxon period. Place names within the North York moors also indicate extensive settlement and farming by Angles along the south-facing tabular hills.
- 2.3.30 Coulton, Hovingham and Gilling have Anglo-Saxon associations. More radical changes did not begin until the late Saxon period when structured villages, large estates and the introduction of the three-field rotation system occurred. These changes continued until the 12th century and reflect the consciously planned reorganisation of the landscape on a major scale.
- 2.3.31 The Saxon building of churches in the Study Area, spanned more than four centuries. Examples of churches with Saxon elements include Sherburn in Elmet Church and Alborough, St Peter's at Hackness, near Scarborough and Skipwith, near Selby. Some of the most elaborate 8th century church architecture is located in the crypt beneath Ripon cathedral.
- 2.3.32 Evidence of the arrival of the Vikings within the Study Area is most prevalent within the city of York, which became the capital of the Danish Viking kingdom in 867 (*Jorvik*). York was a highly important trading town in the Viking period. Few tangible Viking elements remain, although Viking place names are abundant within many of the city streets such as 'Petergate, Davygate and Fossgate'. Other features include Scandinavian 'hogback' tombstones (for example, Burnsall in Wharfedale and at Pickhill, near Thirsk).
- 2.3.33 Evidence suggests that during this period, landscape within the Study Area was criss-crossed by boundaries, many of them very old, mostly derived from the splitting up of ancient multiple estates. Churches dominated parishes, many of the parishes equating to estates. Peasant communities inhabited vills 'small townships, supporting single communities', some containing villages and some devoid of them but embracing a scattering of hamlets and farmsteads. A system of tenure was also in place.
- 2.3.34 There was already a system of estates, known as shires, in place before the Norman Conquest. Pre-conquest settlements may well have been less nucleated and smaller, consisting of a loose aggregation of manor houses, churches, hamlets, greens and farmsteads. The place names

suggest a mixture of Scandinavian and English influences and the area was subject to periodic Viking raids in the eighth and ninth centuries.

Medieval (AD 1066-1500)

- 2.3.35 William the Conquerors' 'Harrying of the North in 1069-1070 crippled and depopulated many of the estates. There are suggestions that surviving feudal tenants were shifted from less-productive upland locations to re-populate lowland estates. Many settlements were completely destroyed as can be seen from the 1086 doomsday book. The Normans divided much of the area into estates belonging to powerful aristocratic classes. In the lowlands the medieval estate owners seem to have been responsible for the establishment of planned villages, such as Appleton le Moors, which are particularly common in the Vale of York. These nucleated villages were often arranged around a village green. The villages were surrounded by communal open-fields which were divided into strips and shared out between the villagers who would use the land for growing crops. These infield strips were often very long (up to 1000 metres) and were set between trackways which led to outfields and higher areas of moorland grazing.
- 2.3.36 There are several sites with significant Norman earthworks in Yorkshire, such as at Middleham Castle. Substantial stone towers were built by the King in York, Knaresbrough and Scarborough. Richmond, Pickering, and Skipton Castles were also constructed at this time. By the 14th Century castles had become difficult to defend, however several large baronial houses were built in the style of castles, including Castle Bolton in Wensleydale and Sheriff Hutton Castle. In the same spirit many manors in the area were adorned with moats.
- 2.3.37 The farmed landscape during the medieval period was chiefly open arable fields broken sporadically by deer parks and managed woodland. Pasture was located on valley bottoms as well as on the upland plateau areas of moorland. In the main, between two and three unenclosed fields, centred on a single settlement, were farmed communally but divided into strips. It was this process that results in the narrow strip fields and older remnant ridge and furrow found today. As demand for arable land increased, steeper slopes across the area were terraced for cultivation. After the harrying of the north, several fields were also laid out in a regular and carefully planned way, known as sun division 'solskifte' such as at Wharram Percy in the Wolds, where several long, strip fields have been recorded, almost all aligned from north to south, corresponding to a peasant's house plot.
- 2.3.38 A high proportion of villages within the Vale of York, display traces of planned medieval origins. This planning is evident in layouts where the dwellings were set out beside the road or roadside green in neat rows. East Witton provides a clear impression of medieval planning,

with the houses laid out around an elongated central green. In general, the Vales and the Wolds became village country with relatively modest numbers of hamlets and scattered farmsteads, although some existing upland farmsteads stand on sites that formerly supported hamlets. The Dales, however, developed a mixture of villages, mainly lying in the valleys and numerous scattered hamlets and farmsteads.

- 2.3.39 Larger estate villages, churches, roads, land divisions and woods all have their origins in the Middle Ages. Many of these changes were instigated by local lords in their castles but also influenced by the monasteries. Local sites include Helmsley and Gilling Castles, plus Rievaulx and Byland Abbey, and Newburgh Priory. The priories of Kirkham and Malton were also influential in the change to a more ambitious scale of land planning. Whitby Abbey was also re-established in 1078, having been destroyed by the Danes in 867-9.
- 2.3.40 The area's priories controlled large areas of land divided between individual farms and granges. As the influence of the monasteries grew, smaller farmsteads were abandoned and this contributed to the growth of centralised villages (with arable land surrounding) around Parish churches.
- 2.3.41 Much of Yorkshire had been deforested by the end of the prehistoric period and woodland cover was not extensive in the medieval era. 'Coppice with standard' woods provided a range of timber products for fuel, building and fencing, with the coppice shoots providing food for animals. Many commons contained pollards in a system known as wood pasture which allowed timber production to be combined with grazing domestic animals. Many medieval woods had woodbanks to prevent animals from grazing tender coppice shoots. Some woodland was used for grazing swine or cattle. Evidence of patches of this woodland still remains within the Study Area.
- 2.3.42 Large areas of land within the Study Area were set aside for Royal Forests which were established as reserves where the King might hunt deer. These were not necessarily wooded but were often on marginal land. Royal forests included Galtres in the Vale of York, Pickering in the North York Moors and Wensleydale, Warfedale and Knaresbrough in the Dales. Small villages were often located within the forests.
- 2.3.43 As the population increased during the Norman period, forests began to be used more profitably and hunting became focused on deer parks. The deer park was a piece of land enclosed with a park pale which allowed deer to enter, but prevented them from leaving. Deer parks became common features with many houses and manors having at least one. The parks consisted of woodland with clearings for grazing, and often contained pollarded trees. There is a major concentration of deer parks within the Hambleton Hills.

- 2.3.44 Notable changes were visible in the landscape by the 12th century, with the arrival of the monasteries, seeking to benefit initially from the remoteness of upland areas and then from opportunities for sheep rearing. It was the Cistercian Monasteries, created after the Norman Conquest, which were to have a defining influence on the landscape of the Study Area. The first Abbey to be founded was Fountains in 1132. The order gradually gained land by winning endowments from nobles and developed large estates extending far beyond the Abbeys themselves. Notable Cistercian Abbeys include Byland, Kirkstall, and Jervaulx. Fountains and Rievaulx were particularly powerful with large numbers of monks and lay brethren. Rievaulx was among the most distinguished of Yorkshire monasteries. And had a strong influence on the cultural landscape of the Study Area. The Abbeys raised large numbers of sheep, selling the fleeces to continental merchants. They also bred livestock, owned fisheries and potteries, and carried out mining, smelting and forging activities. They operated a system of farms, known as granges, which managed large estates throughout the Study Area. Many lanes were established by the monks to reach their land. The abbeys managed a prosperous rural economy as can be seen from the legacy of fine buildings. Within Ribblesdale, virtually all of the land was within the control of the monasteries. An Augustinian monastery, Bolton Priory, was also established in Wharfedale in 1154. It managed wide territories and traded in wool, horse breeding, lead mining and ironworking.
- 2.3.45 The arrival of the Black Death in 1349 affected the power of the monasteries. Prior to the plague many people had wanted to join the monastic orders. However widespread death, caused by the plague, left empty landholdings for people to take up, and fewer chose to become monks. The prosperity of the region continued however with populations increasing in many villages. This wealth was reflected in the architecture of the parish churches, with many medieval churches surviving to this day. Particularly noteworthy were the late-medieval wool churches of the western uplands, built in the Perpendicular style. Despite the growth of villages in this period, settlement in the large areas of upland was widely dispersed.
- 2.3.46 Leading up to the 14th century there was a steady expansion of agriculture and silviculture; marginal land was brought into use while coppice woods were established to meet the demand for timber. However the Black Death, which killed almost half the population, together with a worsening climate, resulted in people retreating from marginal land. The 14th century also saw the beginnings of a shift away from the communal open-field to the enclosure of strips of private land with hedgerows. With the scarcity of labour and favourable market conditions, sheep rearing expanded in the Study Area. Traditional sheep rearing areas such as the Dales were little affected, but many villages in the High Wolds and the Vales were depopulated and ceased to exist. Deserted/shrunken medieval settlements are visible throughout the study area, with a particularly high concentration along the Magnesian Limestone Ridge, running north-

south. Wharram Percy, situated to the south-east of Malton provides another key example of a Deserted Medieval upland village. First settled in prehistoric times, Wharram flourished as a village between the 12th and 14th centuries, before final abandonment in about 1500. It occupies a position in a chalk wolds valley and substantial ruins of the church, a recreated fishpond and the outlines of many lost houses are traceable on a grassy plateau.

- 2.3.47 A few larger settlements, such as York, developed around successful markets or ports. Selby developed as a port from the late 11th century and its abbey and grange was a major forces in the drainage of the marshes to make farmland (including the watercourse of Selby Dam), which drained the present Gowthorpe Common. Ripon developed as a planned borough in the 12th century, with market and church of collegiate canons. Knaresborough originated as a medieval market centre between the Pennines and the Vale of York.

Early Modern Period (AD 1500-1750)

- 2.3.48 Industrial and agricultural development has had a large impact on the landscapes of the Study Area. In the 16th century the landscape was still dominated by many large open fields with few hedges and little tree cover, however during the following centuries a pattern of farms surrounded by fields enclosed with hedges or stone walls was established. The exception was within upland areas which remained dominated by unenclosed commons. During this period many wastelands were enclosed and cultivated due to population increase and a relaxation of legal restrictions. Increased sheep grazing in the 16th century meant that it was advantageous for land-owners to enclose their land and this was often done by common agreement.
- 2.3.49 From the 16th century, earlier deer parks were subsumed into designed landscape parks. These were prevalent within the Vale of York and included key sites at Bilton Hall, Rufforth Hall, Beningborough Hall and Upsall Estate, Thirsk. Many of these parklands survive, at least in part, as key features of the modern landscape. Notable parklands were also present at Bedale Hall.
- 2.3.50 By 1700, an enclosure act resulted in large scale enclosures that were often accompanied by the conversion of old pasture to a new arable system. Enclosed pastures were common in the Dales and the fields on the edge of the North York Moors had been enclosed. However, many hectares in the Vale of York and the Wolds remained unenclosed until a series of Acts between 1730 and 1810. The majority of parliamentary enclosures were carried out between 1760 and 1830. Fields were improved by the spreading of lime, which was burnt in kilns before spreading over the fields. Kilns tended to be built near limestone outcrops, within carting distance of supplies of coal from the Yoredale seams. Folding of sheep on turnips and the production of manure from yard-based cattle on steadings or outfarms was common within the

Yorkshire Wolds. Enclosures were instigated by landowners and more prosperous tenants for commercial gain, and these resulted in a social division for the countryside into three broad sections: landowners, farmers and landless farmworkers. The village unit was endangered by enclosures and many villages disappeared along with their open fields, as farmers moved out to new farmhouses. In harness with progress in agricultural techniques, enclosures resulted in what has been seen as an agricultural revolution and great prosperity for landowners and more efficient farmers. This was demonstrated by the numerous 18th farmhouses that were constructed.

- 2.3.51 Wealthy aristocrats often shaped the countryside to enhance its aesthetic quality. In the 17th century the need for defence declined and aristocratic houses, such as Newby Hall (1693), began to be built for comfort and display. Much attention was given to the grounds and gardens of these houses, as can be seen at Studley Royal. The water gardens at Studley Royal were key landmarks within the development of the English landscape style. New estate villages were sometimes built as part of large estates. Newby Hall, near Ripon, built in 1693 is a fine example of a late 18th century mansion built to project wealth, leisure, display and taste with almost as much care lavished on the gardens and grounds as on the house itself, employing the foremost gardeners of the day¹³. Similarly, the extensive grounds associated with Castle Howard were created between 1698 and 1738 for the great Whig magnate, the 3rd Earl of Carlisle. It is seen as an outstanding example of the English Baroque landscape. Vanburgh and his assistant, Hawksmoor were the architects. From the early 18th century estate owners planted many parkland trees together with new shelterbelts and copses. This reflected aesthetic concerns as well as providing a source of timber for the estate and cover for game, such as partridge and pheasant, and foxes.
- 2.3.52 The enclosure of heath and moor generally occurred as a result of a series of Acts from the Mid-18th century. Enclosure led to farmhouses surrounded by private farmland being established and several medieval villages were abandoned. Enclosure was accompanied by new and more efficient farming techniques, and the prosperity of the farmers can be seen in the farmhouses built in the 18th century.
- 2.3.53 There is a long history of cottage industry within the landscape of the Study Area, including breweries, mills, tanners and weavers. Along the coast Alum works, interspersed with agriculture were also landscape features. Grindstones were extracted from the northern quarries for centuries. In the 17th century mineral extraction became more intensive. Coal and lead mining, lead smelting and ironworks were common and evidence of industry can be seen on many moors. In Yorkshire, cottage based spinning and weaving had complemented sheep

¹³ England's Landscape: The North East, Allen (2006)

rearing for centuries. However the introduction of steam power early in the 19th century provided the impetus for the development of mills and the growth of towns.

- 2.3.54 During the 17th and 18th centuries, the Yorkshire Dales was a predominantly industrial landscape, with smallholdings supporting the lead miners and lead smelting. This led to the distinctive pattern of smallholdings comprising a few valley fields with a field barn, access to common grazing on the fell tops, and coppiced hazel woodlands on steeper slopes.

Industrialisation and the Modern Period (AD 1750-Present)

- 2.3.55 In the early 19th century, industry began to develop rapidly in the North East with coal mining in South Yorkshire and County Durham and mills in Lancashire (adjacent to the Study Area). Mills, coal mines and smaller ironworks were common within the Study Area; however the Pennine uplands did not support heavy industry. The Yorkshire Dales, however, did support some heavy industry, in the form of lead mining. High Mill at Langcliffe is one of the few remaining Arkwright Mills. In the 18th century seaside resorts, such as Scarborough, became fashionable for their supposed health benefits.
- 2.3.56 One of the most striking industrial related developments within the Study Area was the arrival of the railway in 1834, initially linking Leeds to Selby and Hull. Thousands of kilometres of railway tracks were constructed alongside embankments, spectacular bridges and viaducts. The 1840's and 1850's saw a fast rate of development in the north-east rail system. By this time, York was a major railway hub and other towns such as Selby developed with the arrival of the railway. In addition, Selby was a bridging point, shipbuilding centre and major junction on the Aire and Calder Navigation.
- 2.3.57 Despite canals and railways, sea and river transport remained a central factor in urban and industrial development. In the 19th century, fishing fleets expanded in towns such as Whitby and Scarborough, and trading links with London grew. Rising living standards brought more visitors in the middle of the 19th century to towns such as Whitby, Robin Hoods Bay and Staithes. Harrogate also became popular with polite society as healthy spa town with 'curative' waters. The 1960's also saw the expansion of the Selby coalfield, with the building of power stations at Drax and Eggborough, which became dominant landscape features.

2.4 The Landscape Today

Land Cover and Management

- 2.4.1 Today the Study Area remains a predominantly rural landscape. As shown on **Figures 2.3 a, b, c and d** the higher areas (within the Yorkshire Dales and North York Moors) are dominated by dwarf shrub heath and open dwarf shrub heath, interspersed with pockets of bog. Neutral and calcareous grassland also dominates in the Yorkshire Dales and parts of the North York Moors. At the fringes of the Dales and Moors, fields of improved grassland are a key component of land cover. Within the North York Moors, valley landscapes are characterised by predominantly pastoral farming, with clear demarcation between the enclosed fields, farms, settlements and the moorland ridges above. The transition is often marked by bracken fringes. The Yorkshire Dales encompass a pattern of bleak sweeping moorland of heather or extensive blanket bog on the plateaux, with rough grazing on the upper slopes, permanent pasture on dale sides and fields cut for hay or silage on more fertile land in the bottom of the dales.
- 2.4.2 Arable agricultural fields are the dominant land use within the lower vale landscapes of the Study Area, interspersed with small areas of improved grassland. There is a notable difference between the western and eastern halves of the Study Area, with western lowland landscapes dominated by improved grassland and eastern lowland landscapes dominated by arable fields. The lowest areas of farmland, surrounding Selby, in the south of the Study Area, are predominantly farmed for a combination of root crops, cereals and livestock (pigs, poultry, beef cattle and dairy herds). Within this area of farmland, pastures and flood meadows often line rivers, such as the Derwent.
- 2.4.3 The narrow chalk valleys of the Wolds contain unimproved or semi-improved chalk grassland along the steep-sided valleys, whilst the fertile, chalk-based soils associated with the Chalk Wolds and foothills provide extensive areas of open grazing. Woodland within the Chalk Wolds is limited, with broadleaf woodland mainly confined to steep slopes within dry valleys. The Magnesian Limestone ridge, running north-south across the Study Area supports well-drained and calcareous brown earths which have been suited to a long history of arable cultivation, from the Neolithic period, with pasture on the steeper slopes and within the valley bottoms.
- 2.4.4 There is wide diversity in woodland cover across the Study Area. There is a notable presence of woodland within the lower eastern fringes of the Dales and along the western and southern fringes of the North York Moors and in the Howardian Hills. In places such as the Vale of York and Humberhead Levels, areas of woodland are associated with infertile soils arising from glacial deposits, whilst on the Magnesian Limestone Ridge, ancient woodland is mostly