10 ROUGH LAND

Plate 7: Scald Hill

Key Historic Landscape Characteristics

- Historic landscape types: upland moorland (open and enclosed), lowland moorland (open and enclosed), and reverted moorland
- Moorland origins lie in the prehistoric period
- Important resource for building materials (wood and stone) and summer grazing
- Significant reduction of rough land since the mid 19th century, largely due to increase of forestry
- Relatively little is open, or unenclosed
- Mainly grazed by sheep or managed for red grouse, with some cattle on lower slopes
- Wide range of archaeological sites of all periods, mainly surviving as earthworks

Rough land is a major part of the Northumberland landscape and covers over 128,000 hectares, just over one quarter of the county. This is land which is not cultivated and is generally covered with heather moorland, rough grassland, or moss and which have here been grouped together under the general heading 'moorland'. Most lies in the western and southern parts – in the Cheviots and the North Pennines, which have been recognised for their special qualities through designations such as the Northumberland National Park and the North Pennines Area of Outstanding Natural Beauty. However, moorland is not limited to the uplands. As well as occurring on the fringes of upland areas it is also found extensively in the central sandstone hills and isolated remnants of lowland moorland survive amongst farmland and along some parts of the coast.

The general impression of moorland landscapes in Northumberland is probably one of wide open hillsides, but only about 16% is unenclosed; in reality most rough land today, even in the uplands, is enclosed by very large enclosures, some over 100 hectares in size, and is grazed by sheep or managed for red grouse, with some cattle on lower ground (Lunn 2004, 107).

Rough land has therefore been divided according to whether it is enclosed or open and its altitude (upland above 250m and lowland below 250m).

The origins of Northumberland's moorland lie in prehistoric times but the precise processes are unclear. The highest parts of the Cheviots and North Pennines above the tree line (600-700m) were probably never forested, as were some of the peat bog areas, but elsewhere forest had re-established itself after the last glaciation. The change from a mainly wooded landscape to moorland and rough grazing began about 6000 years ago and was a combination of human (grazing, burning and draining) and natural forces (climate, soil and slope). The moorland area has contracted and expanded as conditions have dictated and previous attempts to farm and cultivate these marginal lands can be seen in moorland landscapes today, for example prehistoric and Roman-period field systems, medieval ridge and furrow, or enclosure fields that have reverted back to moorland. The following table summarizes the development of vegetation in the Northumberland landscape (after Lunn 2004):

Period	Landscape Development
Late Glacial	Treeless, tundra-like landscape with dwarf birch.
Windermere Interstadial (c.14,000 BP)	Warmer with open (tree) birch woodland.
Loch Lomond Stadial (c.12,000 BP)	Intense cold and woodland retreated southwards.
Mesolithic (c.9500 BC 4000 BC)	Warmer with cool-temperate forest species – birches, hazel and Scots pine followed by oak, elm and lime. Increase in alder at about 7000 BP. Forest animals emerged, like aurochs, elk, red and roe deer, wild boar, wolf, brown bear and lynx. Mesolithic people may have used fire to open up some upland woodland.
Neolithic (c.4000 – 2000 BC)	Forests cleared for pasture and arable with intervening periods of forest regeneration. By c.3350 BC high loss of elm in 'elm-decline'.
Bronze Age (c.2000 – 800 BC)	Forest clearance continued in upland and lowland areas and settlement expanded, eg into the eastern Cheviots and northern sandstone hills where there is evidence of settlements and farming. Forest clearance in the Cheviots led to soil erosion and flooding. In the North Pennines, woodland was largely lost to blanket bog formation in the first millennium BC.
Iron Age (800 BC – AD 43)	Forest clearance continued much as before, especially on volcanic soils on the lower slopes of the Cheviots and led to soil erosion and flooding. Evidence of settlements and farming in the Cheviots.
Roman (AD 43 – 410)	Generally population increased, more land was brought in to cultivation, and more woodland was cleared. In the Cheviots there are settlement and farming remains, including field boundaries, clearance cairns and cultivation terraces. Further south, the first signs of human impact on the landscape appear in pollen diagrams. Around Hadrian's Wall it remains unclear whether woodland had already been cleared or whether the Romans carried it out, but it probably varied along the Wall.
Early medieval (AD 410 – 1066)	In the vicinity of Hadrian's Wall there was general abandonment of land with woodland regeneration; some parts remained open, perhaps during the seventh and eighth centuries.
Medieval (AD 1066 – 1540)	From the mid-12th century monasteries acquired extensive grazing lands in the Cheviots, right to the Border; population grew, woodland clearance continued and settlement expanded up the valleys high into the hills. Royal hunting forests were established on vast tracts of the uplands – preserving woodland and deer. Remoter moorland became shieling grounds for summer grazing. Agricultural progress was halted by Scottish wars, and settlement and cultivation came back down the hills; the Little Ice Age (c.1350-1850) may also have contributed to this regression. Woodland and scrub regenerated in places from about the 14th century. This period of instability helped natural and semi-natural habitats to survive or re-establish.
17th – 19th century	With the end of warfare with Scotland, agricultural reform transformed Northumberland in a relatively short time. Enclosure of moorland was carried out on a parish or area basis from the mid-18th century and most of the moorlands were enclosed by the mid-19th century. Lime was applied to improve soils; peat was dug from upland bogs for fuel. In some areas, heather moorland management by burning has taken place from at least the 17th century, but it became regular practice from the 1800s. Improvement around moorland edges (intake).
20th – 21st century	Afforestation of large tracts of moorland west of the River North Tyne (Kielder Forest). Continued improvement around moorland edge (intake) although a general trend of reversion of highest improved fields in the North Pennines to rough grassland. Loss of heather to rough grassland and remaining heather moorland largely managed for game (red grouse).

Table 4: Summary of vegetation development in the Northumberland landscape

The change in Northumberland's moorland landscapes over the last 150 years can be measured by comparing the first and second edition Ordnance Survey maps with 21st century OS mapping. The most apparent difference is in the overall amount of rough land, which has reduced from around 209,000ha (40% of the county) in the mid 19th century to about 128,000 (25% of the county) in the 21st century. The greatest loss has been to forestry and the vast plantations of Kielder and other forests, which have swallowed up nearly 60,000ha of moorland; second is the loss to agricultural improvements with nearly 20,000ha of fields taken from moorland for good pasture or cultivation; and third is that lost to the creation of water bodies, such as Kielder and other reservoirs which have taken nearly 1000ha of moorland. All remaining changes of land use from moorland to, for example, industry, recreation and designed landscapes account for just over 1200ha of former moorland. There is another measurable change to moorland landscapes which is in the type of moorland vegetation present. Ordnance Survey mapping symbols from the 19th century record the difference between moorland and rough grassland and as the most up-to-date OS MasterMap also distinguishes these types by comparing these areas it is apparent that there has been a significant loss of heather moorland – in fact two-thirds of appears to have been lost, a reduction from about 199,999ha in the 1860s to about 67,000ha in the 21st century. Although it might be assumed most of this is now woodland or improved farm land, a similar proportion has been lost by a change to rough grassland. Overall, the North Pennines moorland appears to have seen the least change through encroachment by other types of land use, whereas the Cheviots and Northumberland sandstone hills have seen the most change, and the extent of lowland moorland has greatly contracted.

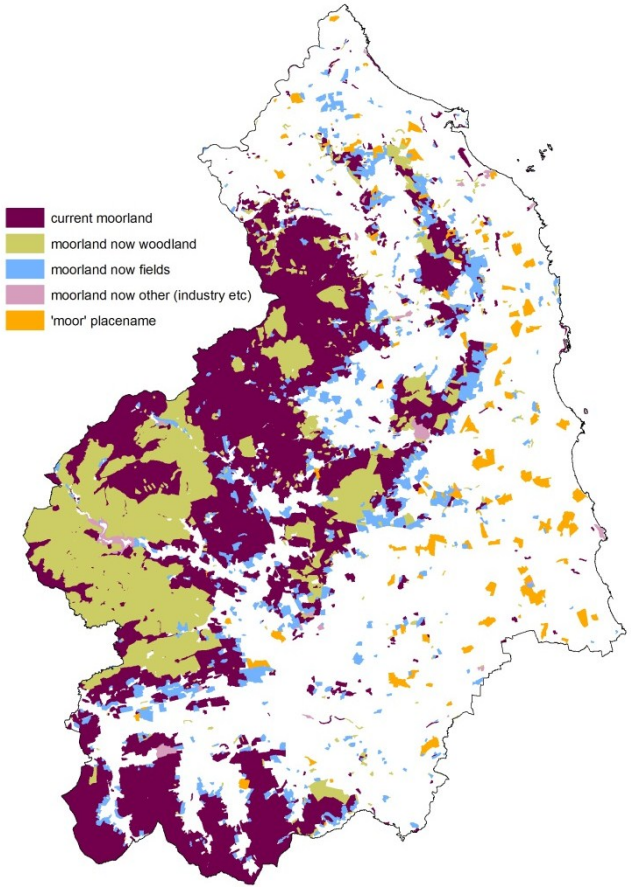


Figure 27: Maximum extent of rough land in the mid-19th century overlaid with later land use types.

In addition to the changes described above, place names are also able to provide information about former areas of moorland as the element 'moor' represents the enclosure of former lowland wastes (Petts 2006, 90). The townships of medieval Northumberland contained large proportions of uncultivated moorland, often comprising more than half the township, for example Longhoughton; but these areas of rough land were vulnerable to the pressure of

population growth and later, the intensification of agriculture. Therefore, by plotting 'moor' place names, a picture of former lowland moorland begins to emerge.

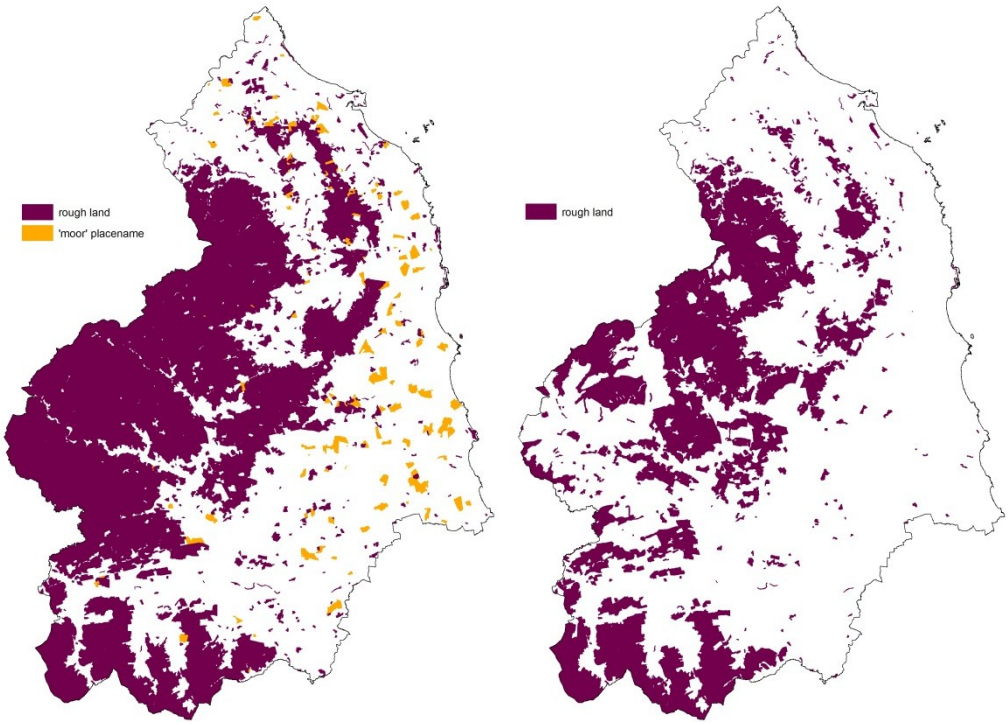


Figure 28: Extent of rough land in the mid-19th century with the addition of place name evidence (left); extent of rough land in 21st century (right).

Rough land types are defined by their altitude (upland lies above the 250m contour and lowland below) and whether or not they are enclosed; they also comprise several vegetation types, including heather moorland, rough grassland and moss, which have been grouped together under the broad heading 'moorland'. The rough land types identified by HLC are: **open moorland (upland), enclosed moorland (upland), open moorland (lowland), enclosed moorland (lowland), and reverted moorland.** They occupy a total area of 128,144ha (25.23% of the county) and comprise 1352 polygons (8.71% of the total).

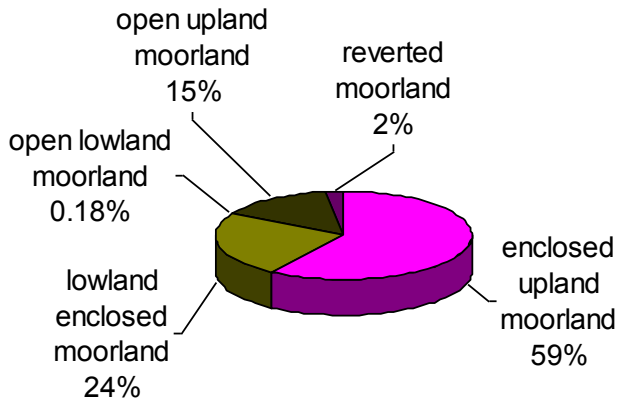


Figure 29: Proportions of rough ground HLC types

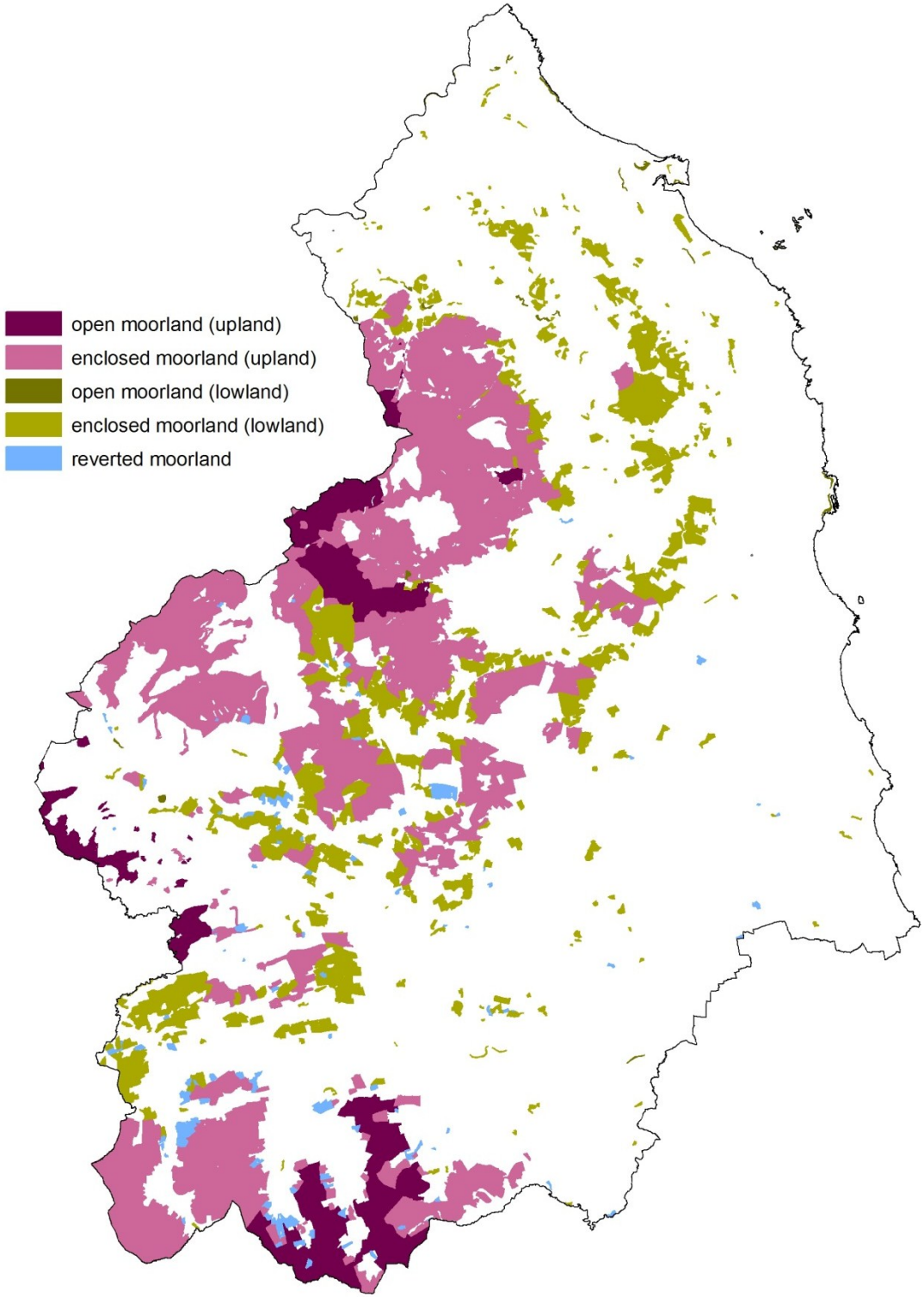
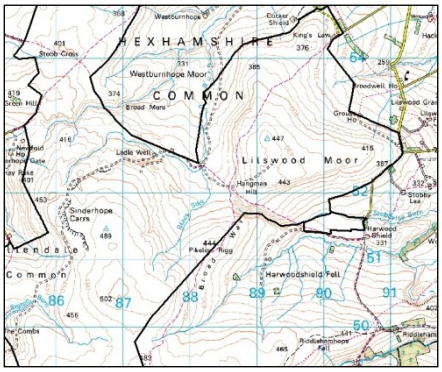


Figure 30: Distribution of moorland at the beginning of the 21st century.

10.1 Open moorland (upland)

Key Features:

- Only a small proportion of moorland is open
- Wide range of archaeological sites of many periods
- Total area = 18,789ha
- % of County = 3.69%
- Number of polygons = 43



There is relatively little open rough land in Northumberland and upland open moorland comprises only 15% of all moorland in the county. Most lies in large tracts on the boundaries with Scotland and Cumbria in the most remote parts of Northumberland. Some of the open land belongs to named commons, for example Allendale Common and Hexhamshire Common in the North Pennines; further north and west the open land is surrounded by the modern forestry plantations of Wark and Kielder along the Irthing valley; and in the Cheviots is now largely part of the military training area at Otterburn – the Cheviots are unusual in an English context for being a range of high hills with no common land (Frodsham 2004, 119).

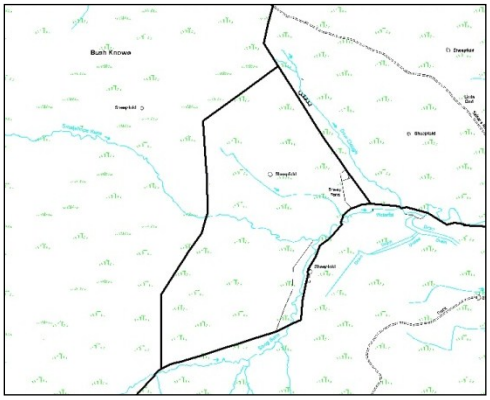
The range of archaeological sites in open upland rough land is dominated by post-medieval types which account for more than half of all records. The types of site include industrial remains of coal and lead workings, quarries and peat cuttings; there are also remains of field systems, sheepfolds and farmsteads and other structures like bridges and boundary markers. Medieval remains are quite sparse and include a few deserted settlements, farmsteads and shielings, as well as wayside crosses; early medieval sites are absent. The Roman period is also only represented by a few sites which are mainly native settlements and farmsteads with the exception of a temporary camp. Prehistoric remains are rather more numerous and include remains from the Mesolithic to Iron Age: from flint and stone tools to clearance and burial cairns as well as a standing stone, cup and ring marked stone, and hillforts. Over a third of these sites survive as earthworks.

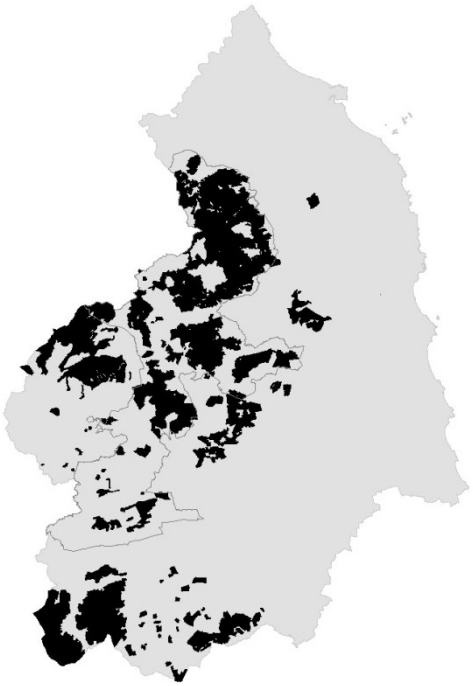
Rarity: common
Trajectory of change: decreasing critically
Susceptibility: high

10.2 Enclosed moorland (upland)

Key Features:

- Largest proportion of rough ground
- Enclosed by mid to late 19th century
- Wide range of archaeological sites of all periods
- Total area = 76,282ha
- % of County = 15.02%
- Number of polygons = 482





Upland enclosed moorland makes up the largest proportion of rough ground at 60%. Enclosure of moorland in Northumberland was generally a much later development than the enclosure of lower lying farmland and generally seems to have taken place by the middle of the 19th century (Aalen 2006, 80; Lunn 2004, 30). The lower parts were divided into fields and large rectangular allotments and the more remote parts simply enclosed with a boundary wall (Lunn 2004, 30). This seems to be confirmed in the North Pennines by the 1860s first edition Ordnance Survey, but in the Cheviots along the Scottish border most of the moorland seems to have remained open until the second edition maps of the 1890s.

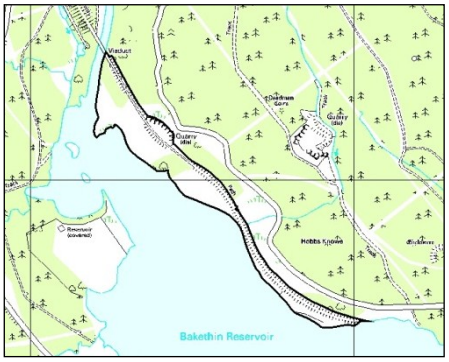
The range of archaeological sites in enclosed upland moorland is dominated by post-medieval and prehistoric period remains; there are also large numbers of medieval and Roman sites. The post-medieval remains are mainly agricultural and include farmsteads and farmhouses, field systems, enclosures, sheepfolds, shielings and stack stands. The medieval remains are mainly agricultural and settlement related with sites such as deserted villages, shielings, moats and longhouses, together with field systems, enclosures and boundary banks; many survive as earthwork features. The few early medieval sites include possible settlements on the flanks of Yeavering Bell. The Roman remains are mainly those of the native population at that time, with numerous farmsteads and villages together with traces of their field systems; there are also a few military remains connected with troop movements northwards with a few temporary camps and stretches of Roman road present in this HLC type. Prehistoric sites occur in their greatest numbers in upland enclosed moorland and account for nearly 30% of sites in this HLC type. They range in date from Mesolithic to Iron Age and include some of the best preserved sites in the county. There are numerous cairns, including individual examples and more extensive cairnfields, as well as unenclosed and enclosed settlements, field systems, and cup and ring marked stone. Nearly 60% of the sites in this HLC type survive as earthworks.

Rarity: common
Trajectory of change: increasing significantly
Susceptibility: medium

10.3 Open moorland (lowland)

Key Features:

- Occurs in marginal areas, eg river banks and coastal fringe
- Total area = 231ha
- % of County = 0.04%
- Number of polygons = 33



Open lowland moorland accounts for less than 1% of rough land in Northumberland, most having been reclaimed for agriculture, probably in the 17th to 19th centuries. The small parts that remain are mainly in marginal locations such as on the edges of forest plantations, along the coastal fringe or islands, and along the banks of some river courses.

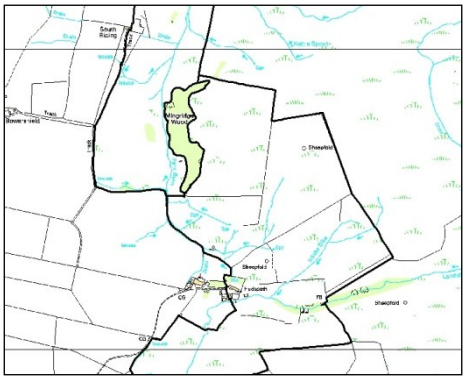
Fewer than 50 archaeological sites occur in this HLC type and the majority are medieval in date. Many of the medieval sites are on the islands of Inner Farne and St Cuthbert's Isle near Holy Island, which both once housed monastic cells. The early medieval sites are also on Inner Farne and were the precursors to the medieval cell. Earlier remains are almost unknown, with only one Mesolithic flint flake from Inner Farne. Post-medieval remains are fairly well-represented and include remains of lighthouses and farming-related structures like lime kilns, farmsteads, and field system.

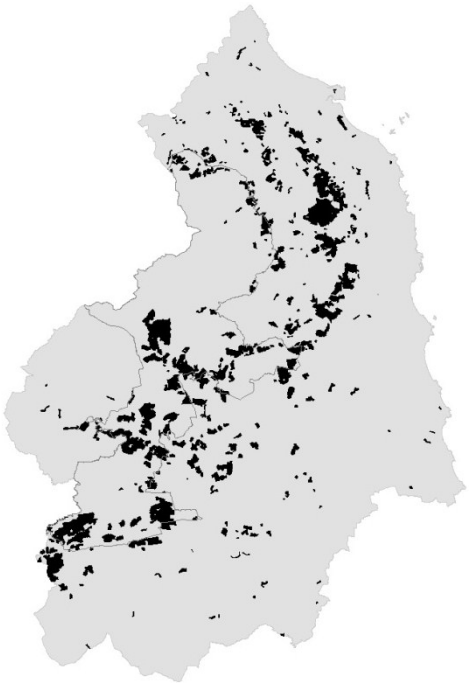
Rarity: very rare
Trajectory of change: decreasing critically
Susceptibility: high

10.4 Enclosed moorland (lowland)

Key Features:

- Probably enclosed in the 18th and 19th centuries
- Range of archaeological sites of all periods
- Total area = 29,860ha
- % of County = 5.87%
- Number of polygons = 645





Enclosed lowland moorland accounts for 24% of rough land in Northumberland. Most was probably enclosed in the 18th and 19th centuries by the Parliamentary enclosure movement, and the enclosures commonly cover large areas. The amount of lowland moorland has reduced by a quarter since the mid-19th century, with the edges of moorland areas being taken into cultivation and improved for good pasture. Most occurs on the fringe of the Cheviots, the sandstone hills of central Northumberland, the valleys of the North Tyne and Rede, and around Thirlwall Common in the south-west of the county.

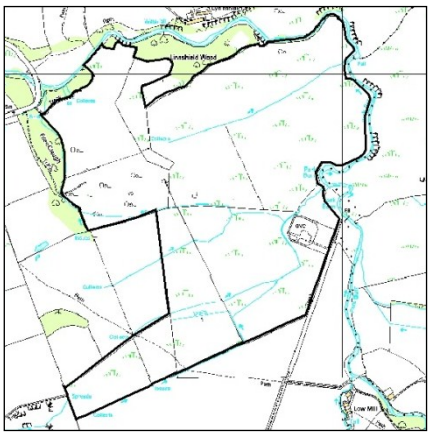
Archaeological sites of all periods are known in this HLC type; they are dominated by those of prehistoric and post-medieval date but there are also large numbers of medieval and Roman remains. Over half of the sites survive as earthworks and include some of the best surviving monuments in the county. The post-medieval sites include a wide range of monuments and numerous remains related to farming (farmsteads, field systems, sheepfolds, shielings and stack stands) and industry (bell pits and other coal workings, limekilns and quarries), as well as series of boundary stones. Medieval sites include a castle and tower houses together with deserted and shrunken villages, shielings and field systems with ridge and furrow cultivation. Early medieval sites are limited to a possible settlement on Holy Island and a cross near Heavenfield. Roman sites are known in some quantity with military sites (temporary camp, part of Hadrian's Wall, with milecastles and turrets) and native farmsteads and field systems. The many prehistoric records are of finds and monuments dating from the Mesolithic to Iron Age. They include Mesolithic and Neolithic flints and stone tools, cup and ring marked stones and standing stones, Bronze Age cairnfields and cists, and Iron Age hillforts, together with later prehistoric field systems and settlements.

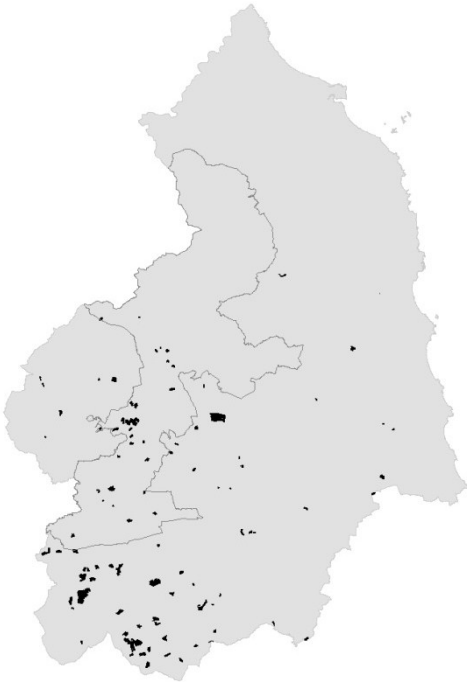
Rarity: common
Trajectory of change: decreasing rapidly
Susceptibility: high

10.5 Reverted moorland

Key Features:

- Late 19th or 20th century
- Mainly post-medieval archaeological sites
- Total area = 2679ha
- % of County = 0.52%
- Number of polygons = 127





Reverted moorland is one of the smallest categories of rough land, second only to open lowland moorland. It is land that was once cultivated fields or good pasture which, through lack of management or removal of livestock, has allowed moorland vegetation to regenerate; some may now be managed as grouse moor or rough sheep pasture. The change has taken place between the 19th century first or second edition Ordnance Survey maps and modern 20th or 21st century mapping. The distribution of this type is very south-westerly with most occurring in the North Pennines and the valleys of the Rede and North Tyne.

Although the range of archaeological sites is not as broad as some previous rough land categories, they include a variety of monuments. Post-medieval sites are the most numerous and include sites connected with lead mining and lead processing as well as other industries like quarrying and lime kilns. There are also buildings and structures connected to farming such as sheepfolds and farmhouses. The small number of medieval sites is mostly settlement related with deserted villages, shielings and a tower house; there are no early medieval remains in this HLC type. Roman remains are minimal with only one coin, and there are only slightly greater numbers of prehistoric sites from the Neolithic to Iron Age. They include cairns and cord rig field system, an unenclosed settlement and stone axe.

Rarity: occasional
Trajectory of change: new
Susceptibility: low