

Type 3

Coastal Limestone



These form part of the Morecambe Bay Limestones which are unique to Cumbria and Lancashire. A landscape rich in history derived from prehistoric features and medieval enclosure patterns and rich in biodiversity due to the mosaic of semi-natural habitats, including limestone pavements, scrub, semi-natural coppice woodland, herb-rich grasslands, peaty fenlands and mosses.

The conspicuous limestone hills, scarps and pavements rise above low lying pasture and wetland. The limestone farmland creates neat, ordered, rolling landscapes, larger in scale and more open than the wooded hill and pavement areas.

Late 19th century iron mine workings in the Barrow area of this character type have left a landscape which contrasts with other areas in this type, man-made irregular landforms and spoil heaps generally create a visually complex landscape.

Sub types:

3a Open Farmland and Pavements

3b Wooded Hills and Pavements

3c Disturbed Areas

Open Farmland and Pavements

Location

This sub type is found along the coast of Morecambe Bay south of Ulverston and west of Grange. Inland they are found around Farleton Knott and between Kendal and Levens. The sub type continues into the national park around Grange and Kendal and is classified as Type C – Coastal Limestone in the Lake District National Park Landscape Character Assessment. There is no sub type in the national park.

Key Characteristics

- Steep scarp limestone slopes, limestone pavement or other rocky outcrops
- Grazed land with stone wall field boundaries
- Rough pasture as open common or fell in higher areas
- Sporadic scrub and woodland on steep scarp slopes
- Stately homes and parklands in lower areas
- Extensive open and uninterrupted views from high ground

Physical character

This sub type is found on Lower Carboniferous limestone with calcareous brown soils. The landscape has steep scarp slopes, exposed limestone pavement or other rough rocky outcrops. It has similar characteristics to other limestone landscape types, but its coastal associations provide additional distinctiveness. Around the coast these are open, rolling limestone hills rising to between 130m and 230m. Inland the coastal limestone form distinctive scarp and rocky skyline features and rise to around 280m. The sub type contrasts sharply with adjacent lower lying coastal areas.

Land cover and land use

Both along the coast and inland most of the land is improved and semi improved grazing. There is a distinctive and sometimes historic pattern of fields which are strongly defined by a matrix of limestone walls and hedges at lower levels.

There are pockets of scrub, including juniper scrub, and deciduous woodlands associate with both pasture fields and limestone pavement. There are extensive plantations on Hutton Roof as well as extensive areas of bare rock with scrub developing around the edges. Some attractive semi-natural woodland and pavements form distinctive features around Hampsfield Fell, Eggerslack Wood and Curwen near Clawthorpe.

Settlements are generally small and dispersed, with the main settlement being the Victorian seaside town of Grange over Sands. Holme Park Quarry is a significant man made feature in this sub type and can be prominent in views, mainly from the west. Pylons provide some limited vertical features in the landscape.

Ecology

The ecological habitats of this landscape are almost entirely determined by the underlying limestone geology. Where the rock outcrops open limestone pavements support a range of characteristic and rare species, including dark red helleborine, limestone fern, rigid buckler-fern, angular Solomon's seal and lily-of-the-valley.

Pavements also support a number of rare invertebrates, such as the narrow-mouthed whorl-snail. Thin soils over limestone support limestone grassland, including the nationally scarce blue moor-grass grassland type. This grassland supports a range of uncommon plants, including spiked speedwell and is important for a variety of uncommon and rare butterflies, including northern brown crops, high-brown fritillary, pearl-bordered

fritillary, Duke of Burgundy fritillary and small blue. The woods of this landscape are of the upland mixed ash wood type and support a rich flora and fauna including dormouse, mezeon and yew. Juniper scrub is also characteristic of this landscape.

Historic and cultural character

Areas within this sub-type are rich in Neolithic remains, many artefacts such as bracelets and axe heads have been found. Several sacred sites are present. A stone circle exists at Birkrigg Common.

The settlement pattern is nucleated, but mainly became so in the 19th century. The field pattern is mixed but characterised by dry-stone walls with features including bee boles. Many of the farm buildings are traditional and limestone built. There is much evidence of quarrying and numerous lime kilns. Stately homes with parklands are a characteristic. Archaeological remains include evidence of past iron working. Iron Age and Romano-British settlement sites are characterised by well preserved extant earthworks. Medieval stone buildings occur sporadically. The remains of former quarrying occur throughout.

Perceptual character

A larger scale more open landscape than other coastal limestone landscapes. The farmed areas have a managed feel due to the improved pasture and neat stone walls displaying the underlying geology. These contrast with the rougher semi improved pasture. The dramatic limestone pavements provide shelter to many plants and species but have a wilder unmanaged feel to them. This is a rare and unusual landscape which is varied and interesting due to the range of limestone features and the strong sense of history derived from pre-historic features and medieval enclosure patterns. There are large expansive views from higher parts of the landscape. The undeveloped nature and uninterrupted views to the Lakeland Fells, Yorkshire Dales and across the coastal plain and moorland to Morecambe Bay provide a feeling of openness and exposure to the elements and seasons and the dramatic skyline above and seascape below.

Sensitive characteristics or features

The high ecological value of wooded pavements, outcrops and limestone grassland are sensitive to changes in land management practices. The small dispersed settlement pattern could be sensitive to unsympathetic village expansion. Prehistoric features, medieval enclosure patterns, the strong matrix of limestone walls and hedges and limekilns are sensitive to changes in land management practices. The openness in higher parts and long uninterrupted views to the Lakeland Fells and across Morecambe Bay are sensitive to large scale and infrastructure development.

Vision

The high scenic quality of these limestone hills will be conserved and enhanced. Development proposals will respect the open unspoilt tops and commons and will avoid causing disruption in the lower-scale patterns of farmland, woods and villages. There will be support for the maintenance of key components such as the historic pattern of small fields, stone walls and hedges in the lower areas. Limestone pavements, calcareous grasslands and ancient semi-natural woodlands are important components and will be conserved and enhanced through positive measures and management practices will improve in relation to grazing levels and recreation.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Management Practices

- Agricultural improvements including fertiliser application and reduction in grazing have reduced species diversity in limestone grasslands and led to the invasion of scrub.
- Pressure to extend quarries could further influence distinctive characteristics. In the past the removal of limestone pavement badly damaged an irreplaceable landscape feature and wildlife habitat. However, this now enjoys protection through Limestone Pavement Orders.

- Changes to the sheep farming economy could result in changes in management practices leading to either intensification or abandonment.

Development

- As part of the Government's response to Climate Change there could be interest in the development of large scale wind turbines in the higher and more exposed parts. These could erode the open character of the area and affect the settings of national landscape designations.
- The attractiveness and proximity to major towns has resulted in pressures to expand the historic villages; this may continue in order to support housing and economic growth.
- Planned and incremental expansion of villages and towns could result in a loss of vernacular character, the small dispersed settlement pattern, and a proliferation of settlement fringe development. This could erode the distinctive character of the area.

Access and Recreation

- Over the next decade, the planned implementation of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.
- An increase in visitor numbers and the roll out of coastal access could result in additional recreational pressures. If this is the case, it may need to be better managed to maintain paths in a good condition and enhance local landscape features.

Guidelines

Natural Features

- Manage limestone pavement and species rich grassland to improve their biological diversity including controlled light grazing, appropriate control of scrub and bracken and discouragement of fertiliser use and control of poor woodland management on the limestone pavements to reduce damage. Established stands of dwarf shrubs such as juniper should be protected and natural regeneration encouraged.

- Manage public access to limit disturbance to wildlife and sensitive habitats and improve awareness of natural features.
- Reinforce existing woods by appropriate management including traditional coppice working, natural regeneration, restocking and exclusion of stock.
- Conserve and manage scrub where it relates to characteristic vegetation patterns and provides valuable wildlife habitats. This may include rotational cutting to encourage a diverse structure or development to restore relic ancient semi-natural woodland.

Cultural Features

- Discourage field enlargement and introduction of fences to replace or gap-up walls and hedgerows.
- Restore and manage limestone walls and hedgerows using traditional methods.
- Protect selected features including remnant medieval 'strip fields' around villages.

Development

- Preserve the distinct historic forms of settlements and intimate relationship to the scale and form of the landscape.
- Protect uncluttered skylines and key views to and from the area from large-scale energy infrastructure developments such as large scale wind turbines, pylons or telecommunications masts.
- Resist expansion of quarries where these will produce prominent scars or destroy irreplaceable features and habitats.
- Ensure quarries have high quality restoration schemes that support the expansion of semi-natural habitats.
- Ensure new developments respect the scale, traditional form and materials of villages and do not infill important open spaces such as orchards and gardens integral to their character.
- Enhance settlements through sensitive environmental improvements to village greens, ponds, lakes and other features.

Access and Recreation

- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type.

- In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.
- In areas where coastal access will introduce new routes, appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.
- Manage public footpaths through better waymarking, improved gates and gaps and appropriate surfaces and better interpretation, whilst retaining the open and comparatively wild character of the landscape.
- Preserve the distinct historic forms of settlements and intimate relationship to the scale and form of the landscape.

Wooded Hills and Pavements

Location

This sub type is found in Arnside and Silverdale Area of Outstanding Natural Beauty only.

Key Characteristics

- Low rolling wooded hills
- Open pasture of mainly drained mossland
- Coastal features include cliffs salt marshes and shingle beaches
- Extensive limestone pavement
- Views out across Morecambe Bay and up to the Lakeland Fells exist

Physical character

This sub type is found on Lower Carboniferous limestone with calcareous brown soils. The landscape has steep scarp slopes, exposed limestone pavement or other rough rocky outcrops. It has similar characteristics to other limestone landscape types, but its coastal associations provide additional distinctiveness.

Limestone pavement is an important feature of the area. Most of the pavement is within woodland blocks which are often visible in open clearings.

This landscape of low, rolling hills terminates in a varied coast including estuarine features such as cliffs, salt marsh and shingle beach.

Land cover and land use

This landscape is a complex mosaic of improved pasture, grassland, mosses, limestone outcrops and woodland and woodland pasture. The pasture is divided into small to medium sized fields bound by a strong matrix of limestone walls and high hedges. Woodland cover is

extensive and includes former coppice pavement, hazel, ash and natural yew woods. Pavement is often visible in open clearings within the woodlands. Large coniferous plantations are being restored back to locally native woodland. Small orchards are scattered throughout the area.

Nineteenth and 20th century settlements are generally nucleated and include Victorian coastal towns. More traditional vernacular farmsteads and settlements are dispersed inland. Medieval and historic field patterns are often visible close to the settlements and provide open spaces within them. Pele towers notable historic features in the area. The settlements, woods and fields are connected together by a complex network of narrow winding lanes enclosed by stone walls and high hedges which thread through the area.

Ecology

A landscape characterised by large expanses of upland mixed ash wood and wooded limestone pavement, limestone grassland and species-rich hedgerows. The woods support high-brown fritillary and mezeleon, whilst the grassland is important for butterflies such as northern brown argus, high-brown fritillary, pearl-bordered fritillary. Duke of Burgundy fritillary and small blue and rare plants such as fingered sedge. Where the rock outcrops open limestone pavements support a range of characteristic and rare species, including dark red helleborine, limestone fern, rigid buckler-fern, angular Solomon's seal and lily-of-the-valley. Pavements also support a number of rare invertebrates, such as the narrow-mouthed whorl-snail.

Historic and cultural character

The historic landscape is mainly a mixture of ancient enclosure, parkland and woodland. Much of the woodland is ancient coppice wood and contains

evidence of former woodland management and industries. There are former quarries: limekilns and occasional iron mines scattered throughout. The limestone kilns are a common feature and many date from the late 18th to mid 19th century when farmers burned limestone to create quick lime, which was then added to the land to improve its fertility. Caves contain evidence of prehistoric occupation from the Ice Age through to the Romans. Deer parks and designed landscapes are still evident.

Perceptual character

This is an unusual or rare landscape and its scenic beauty is recognised in the national landscape designation. In places it is a complex, intimate landscape which can easily lose a new visitor not familiar with its matrix of roads and footpaths and woodlands. Towards the coast and around Arnside Knott it is more open and the contrast between the expanses of sand and limestone cliffs and headlands provide additional drama. In higher parts there are dramatic views across the sky, sands and mudflats of Morecambe Bay out to sea and across to Grange over Sands and the Lake District fells. Here the changing weather, seasons, skies and tides influence the open views which can sometimes be tranquil and calm and at other times be wilder and more elemental. Local views, which are generally limited by rolling topography or woodland and are sometimes dominated by large features such as Arnside Knott and Middlebarrow Hill.

Sensitive characteristics or features

The complex mosaic of grassland, mosses, limestone features and woodland are sensitive to changes in land management practices. The matrix of limestone walls and high hedges is sensitive to changes in land management and farming diversification. Pele towers and their open locations are sensitive focal points in the landscape. The enclosed narrow and winding rural lanes are sensitive to road improvements and new access to development. The special character of the Arnside and Silverdale Area of Outstanding Natural Beauty is sensitive to unmanaged changes to land management, village expansion and tourism development. There are some valued views from open parts of wooded pavements across Morecambe Bay and the Lakeland

Fells that could be sensitive to changes in woodland management and poorly sited development.

Vision

This landscape will be conserved and enhanced in accordance with the Arnside and Silverdale Area of Outstanding Natural Beauty Management Plan. Development and the intensity of vehicular traffic will be subject to strict controls. The co-ordination between recreation and countryside management will continue enhancing facilities for quiet enjoyment and understanding. Pasture, mossland, woodland and pavements will be managed to enhance biodiversity. Farmers and landowners will be encouraged to adopt detailed management and restoration projects to support mosaic habitats, traditional farming patterns, semi-natural woodlands, unimproved and limestone grasslands, mosslands and features of historic or cultural significance including parkland.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Management Practices

- Intensification of agriculture and larger farm holdings could affect distinctive features such as species rich grassland, traditional field boundaries and woodland.
- Afforestation using non-native species now ceased.
- The former destruction of limestone pavement for garden rockery has been stemmed as a result of protection afforded by Limestone Pavement Orders.
- A decline in the distinctive character of historic parklands, and in the fabric of historic features such as lime kilns and fortified farmhouses

Development

- Development of residential, holiday homes, caravan sites (and extensions), minor road improvements and recreational facilities have led to some 'suburbanisation' of rural character.
- Planned and incremental expansions of settlement such as Arnside could result in a loss of historic boundaries and a weakening of vernacular or traditional characteristics.

- Extension of limestone quarrying and small-scale local industry can erode the woodland and intimate character.
- Energy infrastructure or other large scale development could be sited in adjacent landscapes which could affect open views.

Access and Recreation

- Over the next decade, the planned implementation of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.
- Parts of the landscape are likely to continue to be attractive for recreation and tourism purposes. This could lead to traffic congestion, issues with parking and heavy use of some footpaths. Footpaths and facilities may be improved linked to the coastal access roll out.
- There is likely to be continued interest in development linked to tourism and recreational activities including the expansion of some of the large caravan sites. This could lead to loss of open farmland, woodland. Incremental suburban features could also erode the character of the area.

Guidelines

Natural Features

- Conserve and restore the broad scale pattern of ancient semi-natural woodland cover through appropriate management for amenity and nature conservation benefits.
- Encourage appropriate species and structural diversity of woodlands to maximise ecological interest and attractive combinations of colour and texture.
- Retain the character and structure of yew dominant woodland.
- Retain and appropriately manage areas of historic 18th and 19th century designed landscapes and parkland.
- Continue to enhance the appearance and biodiversity value of existing commercial and coniferous plantations and support the removal of planted woodland from pavement areas.
- Conserve and enhance through appropriate management, the biological diversity of the characteristic open mosaic of bare rock outcrops, species rich calcareous grassland, heath and scrub vegetation.
- Encourage natural diversity through the reversion of drained and intensively managed mossland and pasture back to semi-natural wetland and meadows.
- Reverse the effects of agricultural improvements and scrub/woodland encroachment on remaining wetland mosses through the adoption of environmentally sensitive management measures.
- Encourage the reversion of drained and managed mossland back to semi-natural wetland.

Cultural Features

- Conserve and restore through appropriate management the dry stone walls and hedges which enclose the historic pattern of small-scale fields and lanes.
- Discourage field enlargement and introduction of fencing to subdivide fields, or to replace or gap-up walls and hedgerows.
- Conserve and enhance disused quarries and historic structures such as medieval farmhouses, wells, lime kilns and associated quarries.

Development

- Manage any further expansion of villages to respect their natural and historic boundaries and features and to avoid sprawl and encroachment into surrounding countryside and important village settings.
- Protect village fringes from unsympathetic peripheral development. Ensure any new developments are visually contained and respect the scale, traditional form and character of the settlement and building materials.
- Resist infill development of important open or historic spaces within villages.
- Enhance villages through sensitive environmental improvements to entrances, village greens, estuary frontages etc.
- Retain the character of the rural road network and encourage new highways signage to reflect the rural character of the area.
- Manage other development, such as new or extensions to caravan sites, to prevent unsympathetic development, additional suburban characteristics and to ensure they are visually contained and are of an

appropriate scale.

- Manage the siting of large scale development, and particularly energy infrastructure, in adjacent landscapes where it could adversely affect key coastal and inland views.

Access and Recreation

- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type.
- In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.
- In areas where coastal access will introduce new routes appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.
- Protect sensitive natural habitats through careful routing of paths and provision of vehicle restraints.
- Resist the expansion or further development of tourism or recreation facilities, which would prejudice the quiet scenic qualities of this area.
- Develop traffic management schemes to address the problems of congestion and parking whilst avoiding measures to increase capacity for cars.
- Minimise the visual intrusion and ecological damage created by existing facilities such as car parks, lay-bys, waymarking, signage and footpaths through sensitive siting and design, and use of high quality durable materials.

Disturbed Areas

Location

This sub type is found in three small areas north of Dalton-in-Furness.

Key Characteristics

- Undulating glacial till
- Restored mine working landscape
- Patchy woodland cover; small areas of marsh, ponds and reed beds
- Abandoned mine buildings, old limestone quarries and reclaimed agricultural land

Physical character

Glacial till and mineral veins on Carboniferous limestone underpin this sub type. The hummocky land rises up to 130m AOD. It has been created by iron mine workings superimposed on undulating land. Mining has left an irregular landform strewn with spoil heaps and steep sided depressions containing ponds.

Land cover and land use

This disturbed hummocky land is fast becoming naturalised and taking on a bosky appearance, although the new man made landforms still dominate the character of the sub type. The sides of the spoil heaps and depressions are commonly covered by a mixed native scrub of willow, alder, hawthorn, gorse, elder, bramble and rose. Several pits have been filled in with refuse and reclaimed for agriculture. Grazed pasture can be found between these semi natural habitats. Small patches of marsh occur in the lower areas along with ponds and reed beds.

Woodland cover is patchy. Ash and birch are colonizing land around Burlington Pits and ash and sycamore can be found around Lineal Moor.

Views tend to be intermittent and limited by the hummocky terrain. The hilltops offer long views across the coast.

Ecology

A rich diversity of semi-natural habitats forms a valuable wildlife refuge bounded by pasture or built up areas. Habitats include open water, scrub, woodland, carr and roadside verges. Ponds are steep sided and deep with little emergent vegetation. Shallow ponds have been created to improve the habitat for fish. Between the ponds there is willow/alder carr, hawthorn scrub and patches of unimproved, herb rich grassland which was formerly found in surrounding fields. Birds using the ponds include mallard, moorhen, common and black-headed gull. Insects such as butterflies, dragonflies and damselflies also occur.

Former mine workings and quarries and steep banks support stands of limestone grassland, together with areas of gorse and hawthorn scrub. Damp hollows hold stands of rush pasture, reed bed and wet woodland in the form of willow carr.

Historic and cultural character

These areas have a heavy industrial mining heritage. This is celebrated through Norman Nicholson's poetry of Millom. Percy Kelly, a local artist painted around Hodbarrow iron mines and also the works at Millom. This is an industrial landscape with evidence of former iron mining and limestone quarrying. Little evidence of pre 19th century field patterns.

Perceptual character

The unity and identity of this landscape is derived from the disturbance by mining which has produced a distinctive landform and land cover. The industrial scars are softened by the colonizing vegetation. They give a strong sense of both the pre and post industrial character associated with nearby quarries and towns.

Sensitive characteristics or features

Emerging semi natural habitats and recently colonised land support rich biodiversity that is sensitive to changes in land management.

Vision

These areas will be conserved and enhanced to retain their industrial legacy and wildlife interest. Recreational demands such as fishing will be carefully managed. Other areas which are predominantly working landscapes will be enhanced and restored through the improved management of key features and the integration of high quality development respecting traditional character. In order to achieve this, field patterns and woodland cover will be strengthened, field enlargement will be resisted and the intrusion of modern farm buildings will be reduced. There will be little capacity to accommodate further development; therefore, harsh development edges will be softened and peripheral development will be integrated within a stronger landscape framework.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Management Practices

- Activities such as tipping and agricultural reclamation can damage character of these areas.

Development

- Some areas are subject to development pressures, often linked to village expansion. There is some loss of hedges and replacement with intrusive fences.

Access and Recreation

- Given their proximity to urban centres these landscapes can provide opportunities for quiet enjoyment and other recreational activities. However the areas are susceptible to damage from inappropriate activities, such as motorbike scrambling,

Guidelines

Natural Features

- Conserve and enhance the diversity of natural habitats including scrub woodland, open water, marsh and herb-rich grassland. This may include exclusion of livestock, avoidance of agricultural improvements such as liming, herbicide and fertiliser applications, maintenance of a high water table and controlling access and recreation use.
- Resist land filling or tipping within pits and quarries of historical, ecological or geological importance.
- Ensure where possible that 'linked networks' of vegetation are created using native trees and shrubs to enhance their nature conservation value and their use as 'ecological corridors'.
- Improve and manage facilities for recreation such as existing car parks in appropriate rural vernacular and using high quality durable materials.

Cultural Features

- Encourage retention, restoration and traditional maintenance of hedgerows.
- Increase planting of native broadleaf trees as features within hedgerows.
- Encourage retention and restoration of stone walls, traditional gate posts and features on a whole farm basis.

Development

- Encourage retention of existing traditional stone buildings, gate posts, planting on garths, around buildings, along farm access roads and main entrances.
- Reduce the impact of any large scale new farm buildings by sensitive siting, breaking down mass, choice of sympathetic colours and non-reflective finishes and landscaping using traditional hedgerows and woodland screen planting.
- Resist proposals to reclaim former mining areas for development.

Access and Recreation

- Improve the network of public rights of ways and encourage the quiet enjoyment of these areas by sensitively upgrading routes with appropriate surfacing, better waymarking, improved gates and gaps (that can restrict unauthorised vehicular activities), better interpretation and enhancement of viewpoints.