



## Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper<sup>1</sup>, Biodiversity 2020<sup>2</sup> and the European Landscape Convention<sup>3</sup>, we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

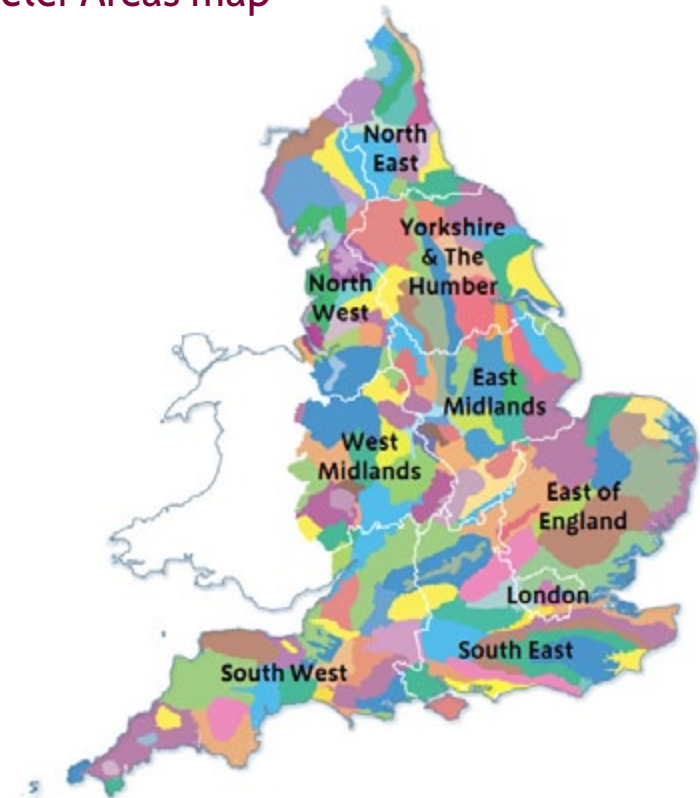
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing [ncaprofiles@naturalengland.org.uk](mailto:ncaprofiles@naturalengland.org.uk)

## National Character Areas map



<sup>1</sup> The Natural Choice: Securing the Value of Nature, Defra (2011; URL: [www.official-documents.gov.uk/document/cm80/8082/8082.pdf](http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf))

<sup>2</sup> Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: [www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf](http://www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf))

<sup>3</sup> European Landscape Convention, Council of Europe (2000; URL: <http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm>)

## Summary

Lundy is a flat-topped granite island surrounded by steep cliffs, up to 100 m high, plunging into the Bristol Channel. The shore has caves, stacks and huge granitic blocks along the rugged western coastline, which has always presented a danger to shipping. The east coast is much more sheltered from prevailing winds and waves, and the vegetated slopes extend further towards sea level. The cliffs are topped by a rich habitat consisting of open and windswept heathland plateau, grazed by a range of feral animals including Soay sheep and sika deer and goats and by domestic stock. Panoramic views over what appears an apparently endless sea give a strong sense of remoteness. Lundy's coastal links to Ilfracombe and Bideford in the Culm are vitally important – all food and supplies; other than meat from the feral stock, are imported to the island, and the MS Oldenburg carries island staff and visitors to and from the mainland.

The granite that forms the bulk of Lundy was emplaced into Devonian Morte Slates during the Tertiary Period. Lundy's granite is unique because it is the southernmost British granite associated with the opening of the Atlantic Ocean. Lundy's small settlement, which includes a church and the Marisco Tavern, is built in locally quarried granite with slate roofs.

Lundy has very high nature conservation value and much historical interest. It is of European significance and very well studied for its amazing marine fauna. It holds a unique place in England's nature conservation history as the first Marine Nature Reserve and Marine Conservation Zone, and as the first statutory No Take Zone. The seas surrounding the island, and much of the landmass, are designated a Special Area of Conservation; the same terrestrial area is designated a Site of Special Scientific Interest. The whole of Lundy's

coast is recognised as a Heritage Coast, and Lundy is within the UNESCO North Devon Biosphere Reserve.

The history that makes up Lundy's past is sprinkled with pirates, villains and benefactors who have left their mark on the island, along with structures from more recent landowners. The island now belongs to the National Trust and is managed on its behalf by the Landmark Trust. The island is a popular destination for day-trippers and has accommodation for longer-staying visitors who come to enjoy the peace, tranquillity and wealth of wildlife that Lundy has to offer.

Lundy is home to the endemic Lundy cabbage, a relative of the edible cabbage. This wild crop relative, which is protected under the Wildlife and Countryside Act, could help with the development of new food plant varieties.

Lundy is managed in such a way that key pressures and threats, for example visitor pressure, are minimised.

[Click map to enlarge; click again to reduce.](#)



## Statements of Environmental Opportunity

**SEO 1:** Protect and maintain the island's strong sense of history and tranquillity, the distinctive island landscape, its long coastal views and its wealth of geological, historical and cultural character.

**SEO 2:** Maintain the marine conservation areas surrounding the island, ensuring that special features of the seabed flora and fauna and territorial fish populations are protected from the adverse effects of human activities.

**SEO 3:** Protect and maintain the island's terrestrial habitats and biodiversity, ensuring that the priority habitats and the species that depend on them are able to thrive.

**SEO 4:** Sustainably manage the island, managing the impacts and pressures of visitors by ensuring that visitors are engaged and able to take home ideas and awareness of sustainability issues as part of their tourist experience.



Hell's Gate.

## Description

### Physical and functional links to other National Character Areas

Lundy, off the coast of north Devon in the Bristol Channel, is England's smallest National Character Area (NCA), at 451 ha.

Although Lundy feels remote, it is a prominent landmark viewed from north Devon and north Cornwall. It is a tourist destination; during the summer months, visitors to the island set sail from Ilfracombe in Exmoor NCA or Bideford in The Culm NCA on the MS Oldenburg. In winter, a helicopter service flies from Hartland Point, also in The Culm NCA. Lundy is now open as a tourist destination all year round, so the latter is an important link for tourists as well as a vital supply link for the island's permanent residents.

There are tremendous sea views from Lundy, with inspiring seascapes. On a clear day, Exmoor and the Culm – and even the Gower Area of Outstanding Natural Beauty in Wales, some 55 km away, and Cornwall as far as Newquay – can also be seen. Wind turbines in north Devon and north Cornwall are visible from Lundy.

Lundy lamb, produced from lambs born and raised traditionally through sympathetic management practices on the island, is a premium brand exported to the mainland.

All materials and supplies for the island are delivered on MS Oldenburg, on specific charters or by the helicopter.



MS Oldenburg at Lundy's jetty.

## Key characteristics

- Rugged cliffs rise from the sea; the top of the island is a heathland/grassland mosaic with an open, windswept feel and views across the sea giving a real sense of isolation. The island is divided into four sections by drystone walls.
- There is a more incised, undulating terrain at the south of the island; Millcombe Valley is large enough to shelter Millcombe House, built in 1836.
- Lundy's geology is very different to that of the Devon mainland. It consists of Tertiary Granites, which account for the majority of the island, intruded into Devonian Slates, which form the south-eastern peninsula.
- Lundy has high nature conservation value. In terms of Priority habitats, the sidelands and part of its top are maritime cliff and slope, and there are two relatively large areas of lowland heathland.
- Lundy is a nationally important seabird colony – the largest cliff-nesting colonies of birds in south-west England are found here. It is also an important resting and watering place for migrating birds during the spring and autumn, with rarities often resting on the island during long flights or periods of bad weather.
- The Lundy cabbage is prolific on the island, and it hosts an endemic species of flea beetle and a species of weevil.
- Lundy features amazing marine life, ranging from rich and often colourful benthic flora and fauna to resident seals, basking sharks and cetaceans. Lundy was England's first Marine Nature Reserve, superseded by its current status as a Marine Conservation Zone. Lundy is also one of four main haul-out sites for the Celtic fringe grey seal population and the second-largest pupping site in the south-west.

- There are historical features dating from the Bronze Age and early iron-age burial mounds, as well as Second World War anti-aircraft trenches.
- Lundy has one village – buildings there are built from local stone. The area around the village is agricultural, with small fields separated by fences and drystone walls constructed of local granite.



The maritime cliffs and slopes are a priority habitat.



## Lundy today

Lundy is a small island with an area of just 451 ha in the Bristol Channel, more than 20 km from the nearest mainland. Thanks to the Shipping Forecast, the name Lundy is known around the world. The waters around Lundy have a massive 9 m tidal range which changes the look of the foreshore dramatically as any given day progresses.

The slatey southern end is incised to the point where two small islands, Rat Island and Mouse Island, become separated from the main island at high tide. These razor-sharp Devonian Morte Slates, which make up 7 per cent of Lundy, give way to the Tertiary Granites which form the bulk of the landmass as the visitor walks up the beach road to the plateau.

The south of the island is undulating with some scrubby growth, mainly sycamore and thorn, in the eastern valleys. The top of the island is a moorland plateau with a sense of remoteness and wide sea views.

The island is divided into 'quarters' by three drystone walls – the appropriately named Quarter, Halfway and Three-quarter Walls.

Lundy has important plants and plant communities. On the moorland are acidic bogs and pools supporting mosses and sundew. Most famously, the island has two endemic species – the Lundy cabbage and the associated flea beetle. Two priority habitats are present: lowland heathland and maritime cliff and slope. There is some rare waved heath to the north of the island. The lichen flora includes golden hair lichen. Lundy grassland is exceptionally rich in species of fertiliser-resistant fungi which have disappeared from over 97 per cent of UK pastures.



'Marisco' Castle.

In addition to the domesticated stock – sheep and ponies – Soay sheep, feral goats, sika deer and pygmy shrews among other wildlife have made Lundy their home. A small herd of suckler steers has recently been introduced to assist with grazing.

The largest cliff-nesting colonies of birds in south-west England are found here – nesting species include razorbill, kittiwake, guillemot and fulmar as well as a small but increasing puffin population. The Manx shearwater population has increased to more than 3,000 pairs since 2000. The eradication of rats has been the primary factor, providing protection from disturbance on the nesting sites. Lundy also hosts a breeding colony of grey seals which are a big draw for visitors.

The majority of buildings are in the southern half of Lundy, clustered around the village. Local Lundy granites were used in their construction, giving them a rugged appearance and uniformity. The village is the island's main infrastructure, including the island's public house (the Marisco Tavern), the castle, the old lighthouse and the church.

The north and south lighthouses were both built in 1897 at the island's northern and southernmost points. They replaced the original, now disused, lighthouse which was decommissioned in 1897, because it had been built on the plateau and was frequently in or above the cloud. The Old Light is now used as holiday accommodation.

Lundy is owned by the National Trust and managed by the Landmark Trust; more than 20,000 people visit the island every year. Many of these visitors are day-trippers but the remainder stay in the 22 properties available in addition to the old lighthouse. These provide accommodation for 135 people, making the island population approximately 165, including the 30 residents, at the peak of the season.

A wide range of people use the island – divers value the marine wildlife surrounding Lundy, artists and writers gain inspiration from it, bell ringers come to ring the ten bells in the church, walkers enjoy the terrain, and climbers enjoy the challenges posed by the cliffs and rocks, for example the Devil's Slide. Lundy is a haven for birdwatchers.



Lundy cabbage is unique to the island.



## The landscape through time

The granite which forms the bulk of Lundy was emplaced into Devonian Morte Slates, now found at the south-east of the island, during the Tertiary Period. Lundy's granite is unique because it is the southernmost part of the British Tertiary Volcanic Province associated with the opening of the Atlantic Ocean. It originated partly from an alkaline (basic) intrusion from partial mantle melting resulting from extensional forces, as did the rocks of Skye, Rum and Arran which were formed by the same events, and partly from the same lower crustal material as the Cornubian Batholith. Lundy granite has, therefore, chemical similarities to the older Devon and Cornwall granites. There is evidence of the basic intrusion (gabbro) below Lundy, not least in that the granite and slates have both been intruded by a series of injections of lava (a dyke swarm) which may well be the remains of a volcano 2 to 3 km to the west of Lundy. The dykes in question show evidence of increasing fractionation of the magma to dolerites, trachytes and rhyolites.

The more recent geological history is less clear. The surface of the island has effectively been 'planed' to its current form but the processes responsible have not been ascertained. During the ice ages, Lundy may have been the focal point of the ice sheet which left sediments at Trebetherick Point in Cornwall, and gravels on the island may have been deposited by retreating ice sheets, but since removed by erosion processes. There are small areas of sand and gravel beach deposits around the coast of the island.

The Earthquake, between the Quarter Wall and the Halfway Wall, is a fissured area which is reputed to have faulted as a result of the Great Lisbon Earthquake of 1755. It is more likely, however, to be the result of mining or much earlier tectonic activity. Also in this area are the quarry cottages and the Devil's Punchbowl – a bowl-shaped granite feature located adjacent to the stream in Punchbowl Valley.



**The Earthquake is reputed to have opened on the day of the Great Lisbon Earthquake in 1755.**

Lundy has tremendous historical interest with much evidence of human activity and population dating back to the Stone Age. Mesolithic flintwork has been found at Brick Field and other locations. Bronze-age pottery has been found at Admiralty Lookout. A group of kistvaens – burial chambers lined with stone slabs – of disputed age (anywhere from the Iron Age to early Viking) was discovered in 1851, followed by the discovery of 'Giants' Graves' in 1856 at the southern end of the island.

There are four Celtic gravestones dating back to the late 5th to late 6th centuries at Beacon Hill and there was an early medieval monastery on the island.

At the western end of the Halfway Wall, and in front of the castle, the remains of the two platforms of the mangonel (stone-throwing catapult) batteries, dating back to 1220, can be seen.

In 1160, Lundy was granted to the Knights Templar who, at the time, was a major maritime force. The ownership was disputed by the Marisco family, apparently already on the island, and it is not certain that the Knights Templar ever took possession. The Marisco family have played a major part in Lundy's history – William de Marisco fled to the island in 1235 after he was implicated in the murder of a messenger of Henry III and he 'ruled' Lundy until 1242 when he was hanged, drawn and quartered for piracy. 'Marisco' Castle was built by Henry III at this time to keep the island under control. For several hundred years after these events pirates and privateers, both British (including the Mariscos) and foreign, controlled Lundy for short periods of time. Barbary pirates held Lundy for five years from 1627, raising the Ottoman flag over the island.

Thomas Bushell held Lundy for Charles I during the Civil War and garrisoned the island, rebuilding the castle at his own expense.

It is known that quarrying took place on Lundy during the 18th and 19th centuries; the buildings on the island are constructed from local granite. It was intended to use Lundy granite for London landmarks but the poor quality of the product led to commercial failure. The Lundy Granite Company, which employed up to 300 workers, was established in 1863 but went bankrupt five years later. There are still the remains of quarrying on the east coast.



St Helena's Church.

The Heaven family purchased Lundy for 9,400 guineas (then the equivalent of £9,870) in 1834; St Helena's Church and Millcombe House date to their ownership. In 1918 Augustus Langham Christie bought the island but it was sold on to Martin Coles Harman in 1945. The press described that Harman declared himself King after he issued his own coinage, for which he was successfully prosecuted and found guilty after appeal by the House of Lords.

Neither has Lundy's recent military history been uneventful; HMS Montague was wrecked, running aground in the early hours of 30 May 1906, and two Heinkel He 111 bombers crashed on the island during the Second World War.

Lundy was bought for the National Trust by Jack Hayward after Albion Harman died in 1969, and is now managed on lease by the Landmark Trust. Since then, most of the properties have been repaired, converted and restored at significant cost and are now used to provide staff accommodation or as holiday rental properties.

The overall combination of the landscape and its history gives it great appeal to a range of people including artists, poets and scientists.

## Ecosystem Services

Lundy NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in Lundy NCA is contained in the 'Analysis' section of this document.



Lundy lamb is a premium product.

### Provisioning services (food, fibre and water supply)

- **Food provision:** The waters around Lundy, excepting those of the No Take Zone, are fished for open sea species and seabed crustaceans. The establishment of the No Take Zone has led to increases in the size and numbers of locally caught lobster. There is agriculture on the island – Lundy lamb is a valuable high-quality but small-scale export to the mainland. Meat from the control of feral stock is also sold and consumed on the island in the Marisco Tavern. A small number of pigs (Gloucester Old Spots) and Highland cattle have now been introduced onto the island as well, for grazing, and their meat will be used in the tavern.



- **Biomass energy:** Lundy has only stunted trees in narrow valleys, limiting the opportunities for biomass production from the existing woodland resource – any wood that is removed is burned in the tavern.
- **Water availability:** Rainfall is the primary source of water, backed up by a borehole. Water is imported when necessary.
- **Genetic diversity:** The Lundy cabbage is a relative of the edible cabbage. This wild crop relative growing in the NCA is an important store of genetic diversity which could help with the development of new food plant varieties.

## Regulating services (water purification, air quality maintenance and climate regulation)

- **Climate regulation:** Biological carbon storage in this NCA is very limited because of the general lack of mature woodland and the small areas of wetlands, although there is some peat in the latter. Small amounts of carbon are retained in mineral soils.
- **Regulating soil erosion:** Soil erosion is not a major problem on Lundy although it is more obvious at the southern end in areas which historically acted as warrens for tens of thousands of rabbits.
- **Regulating water quality:** The Island's water is rainfall supplemented by a borehole. It is a vital resource for the grazing mammals and the local flora and it is therefore essential to maintain its quality. Flooded quarry workings and naturally occurring and man-made pools provide significant supplementary water for feral and domestic stock.

## Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** A sense of place is provided by rugged cliffs and the heathland plateau, by the drystone 'quarter' walls and by the vernacular building stone. Interpretation at MS Oldenburg's mainland departure points gives information about Lundy and its wildlife.

The views across the sea to both England and Wales provide a calming, tranquil seascape in good weather and an exhilarating experience in stormy conditions.

The topography of the island is inspiring in itself – dramatic, sheer cliffs, the path up from the jetty, a secluded valley and a moorland plateau. There are no streetlights or light pollution on Lundy, and no mains electricity, so night skies can be outstanding.

- **Sense of history:** Lundy has a tremendously rich history; a sense of this is created by the archaeological remains and the buildings on the island. More recent military history is also evident – there are remains of shallow trenches built during the Second World War to impede aircraft landing and taking off.
- **Tranquillity:** Lundy feels far from the mainland and its hustle and bustle. There is very little light pollution and noise pollution.
- **Recreation:** The whole of Lundy is accessible to visitors. People visit Lundy for walking, climbing and bouldering – the Devil's Slide is a popular climb. There are continuing opportunities for ornithology and the waters around Lundy are famed for their marine fauna and flora. Recreational diving is popular here. Artists and poets are attracted to Lundy to escape to tranquillity.

- **Biodiversity:** There are opportunities to conserve the island's endemic species – the Lundy cabbage and the associated flea beetle. Lundy is famous for its marine life. It was England's first Marine Nature Reserve and first Marine Conservation Zone with designated area of No Take Zone. Most of the island and its surrounding waters are covered by multiple designations for their habitats and species. The island provides nesting and breeding habitats for the assemblage of seabirds which depend on it.
- **Geodiversity:** Lundy has geology unique in England in that its granite preserves a record of the opening of the Atlantic Ocean. Some of the dykes cutting the granite consist of a unique trachyte which has previously been commonly known as Lundyite. There is an accessible boundary between the slates and the granite and there are opportunities to study and conserve Lundy's geology.



A Lundy sunset.

## Statements of Environmental Opportunity

**SEO 1: Protect and maintain the island's strong sense of history and tranquillity, the distinctive island landscape, its long coastal views and its wealth of geological, historical and cultural character.**

**For example by:**

- Protecting, managing and interpreting the unique scenery of Lundy, maintaining the link between the geology, ecology and people.
- Maintaining views of geological features and exposures, where appropriate ensuring that opportunities for geological research are available.
- Allowing natural coastal processes to be maintained.
- Protecting the distinctive, tranquil open plateau with extensive seascapes in all directions, giving a strong sense of isolation.
- Maintaining and restoring the island's characteristic stone walls, including the three dividing walls and those that enclose the small fields of the south.
- Maintaining the existing village with its vernacular of locally quarried granite and slate roofs.
- Protecting and interpreting the distinctive cultural landscape which is the product of the island's geology, settlement and history.
- Protecting and maintaining the island's rich archaeological heritage and historic field patterns.
- Managing and conserving the island's heritage assets as an integral part of its distinctive landscape.
- Improving the condition of heritage assets through appropriate measures and seeking to reduce conflicting or unsympathetic management regimes.

- Conserving and interpreting archaeological earthworks and sub-surface archaeology while recognising the potential for undiscovered remains.
- Removing scrub where current land cover threatens the integrity of important earthworks and remains dating back to around 1500 bc at the northern end of the island.



Coastal processes maintain exposures.



**SEO 2: Maintain the marine conservation areas surrounding the island, ensuring that special features of the seabed flora and fauna and territorial fish populations are protected from the adverse effects of human activities.**

**For example by:**

- Ensuring that special features of the seabed flora and fauna and marine species present on rock and in sediments are protected from the adverse effects of human activities.
- Maintaining and extending the marine conservation areas surrounding the island for the benthic and pelagic flora and fauna including crustaceans and marine mammals and for foraging and loafing seabirds.
- Using the No Take Zone's conservation and economic success to influence similar zones in other places.
- Demonstrating the benefits of sustainable fisheries outside the No Take Zone.
- Maintaining freedom from invasive non-natives species and developing strategies for the removal of any existing invasive non-native species.



A sunset cup coral: Lundy's marine life is glorious.

**SEO 3: Protect and maintain the island's terrestrial habitats and biodiversity, ensuring that the priority habitats and the species that depend on them are able to thrive.**

**For example by:**

- Protecting the cliff habitats of nesting seabirds.
- Maintaining Lundy's rat-free status.
- Maintaining Lundy's unique genetic diversity including the endemic Lundy cabbage and associated invertebrates.
- Protecting the island's terrestrial birds and shrews.
- Maintaining the exposed nature of the island, with open heathland in the north and rough and improved grassland in the south.
- Maintaining the mosaic of heathland and acid grassland with patches of mire and open water through extensive grazing, benefiting important plant and invertebrate communities, including the fertiliser-resistant fungi, where appropriate.
- Sympathetically managing habitats by controlling the grazing regime of domestic animals and the numbers of feral animals.
- Maintaining freedom from invasive non-natives species and developing strategies for the removal of any existing invasive non-native species, and continuing with the existing programme of rhododendron removal.
- Managing recreational activities, for example sport climbing and diving, so as not to damage habitats or disturb wildlife.



Manx shearwater.

**SEO 4: Sustainably manage the island, managing the impacts and pressures of visitors by ensuring that visitors are engaged and able to take home ideas and awareness of sustainability issues as part of their tourist experience.**

**For example by:**

- Offering inspiration and education; both scientific and aesthetic experiences should be the 'take home' services provided by the island. Demonstrable sustainability is well linked to the natural limitations of being an island.
- Using water in an efficient way so that the borehole does not run dry and minimising water wastage through rainwater use.
- Investigating and developing sustainable solar, wind and water energy to reduce the use of the generator on the island without destroying the feel of an undeveloped place and conflicting with the aesthetical look of the island.
- Continuing to market Lundy lamb widely as a premium brand and highlighting the animals' grazing roles on the island.
- Where it is necessary to cull feral animals, using their meat on the island.
- Promoting sustainable tourism initiatives based around the island's role in nature conservation, supported by its statutory No Take Zone and other designations.
- Continuing the Schools Outreach Programme, linking Lundy with the schools of north Devon and Torridge.
- Encouraging visitors to take part in citizen surveys to help to foster a greater appreciation and knowledge of the natural environment and assist with biodiversity research.
- Encouraging sustainable snorkelling and diving to enable visitors to experience the unique underwater seascape and marine life around Lundy, and monitoring diving activity on Protected Wrecks.



The Cheeses, Lundy's west coast.



## Supporting document 1: Key facts and data

Total area: 451 ha

### 1. Landscape and nature conservation designations

The whole of the island of Lundy (451 ha), in the Bristol Channel, is designated as the Lundy Heritage Coast. Lundy's 3 km<sup>2</sup> No Take Zone was the first in England to be designated. Lundy was also England's first Marine Nature Reserve and England's first Marine Conservation Zone

Source: Natural England (2011)

#### 1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	% of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	Lundy	29	6
National	National Nature Reserve (NNR)	Lundy Marine Nature Reserve NNR	4	1
National	Site of Special Scientific Interest (SSSI)	A total of 1 site wholly or partly within the NCA	335	75

Source: Natural England (2011)

Please note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

The terrestrial portion of the SAC is also designated as a SSSI. The NTZ is contained within Lundy SAC which also coincides with the NNR.

There are no local sites in the Lundy NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: <http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>
- Details of Local Nature Reserves (LNR) can be searched: [http://www.lnr.naturalengland.org.uk/Special/lnr/lnr\\_search.asp](http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp)
- Maps showing locations of Statutory sites can be found at: <http://magic.defra.gov.uk/website/magic/> – select 'Rural Designations Statutory'.
- Details of the Marine Conservation Zone can be found at: [www.lundymcz.org.uk](http://www.lundymcz.org.uk)

#### 1.1.1 Condition of designated sites

A breakdown of SSSI condition as of March 2011 is as follows:

SSSI condition category	Area (ha)	% of SSSI land in category condition
Unfavourable declining	163	49
Favourable	169	51
Unfavourable no change	0	0
Unfavourable recovering	0	0

Source: Natural England (March 2011)

Details of SSSI condition can be searched at:

<http://www.sssi.naturalengland.org.uk/Special/sssi/reportIndex.cfm>

## 2. Landform, geology and soils

### 2.1 Elevation

The highest point on the island is 145 m above sea level, the lowest just 5 m. Lundy has a mean elevation of 90 m.

Source: Natural England 2010

### 2.2 Landform and process

Lundy is an unmistakable, flat-topped granite island lying in the Bristol Channel, surrounded by steep cliffs up to 100 m high. The land runs steeply down to the landing beach on the south-east side. The south-eastern part of the island, below the settlement, has an incised and undulating landform, with small, narrow valleys running down to the sea. The northern half is more irregular in form.

Source: Lundy Countryside Character Area description

### 2.3 Bedrock geology

Lundy is geologically very distinct from the mainland. It comprises chiefly Tertiary granite, except for the south eastern peninsula, which is formed of the Devonian slates into which the granite was intruded. The granite is much younger than the outcrops to be found at Dartmoor or elsewhere in south-west England. Both granite and slate are intruded by a suite of thin, mainly vertical, basic dykes.

Source: Lundy Countryside Character Area description, British Geological Survey maps

### 2.4 Superficial deposits

Lundy has small areas of sand and gravel beach deposits.

Source: Lundy Countryside Character Area description, British Geological Survey maps

### 2.5 Designated geological sites

Designation	Number of Sites
Geological Site of Special Scientific Interest (SSSI)	0
Mixed interest SSSI	0

There are no Local Geological Sites within the NCA.

Source: Natural England (2011)

■ Details of individual Sites of Special Scientific Interest can be searched at:

<http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>

### 2.6 Soils and Agricultural Land Classification

The soils of the island are chiefly brown podzols, giving rise to impoverished, acidic conditions. The podzols are humic in the northern half of the island.

Source: Lundy Countryside Character Area description

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area (ha)	% of NCA
Grade 1	0	0
Grade 2	0	0
Grade 3	0	0
Grade 4	101	22
Grade 5	310	69
Non-agricultural	0	0
Urban	0	0

Source: Natural England (2010)

Maps showing locations of Statutory sites can be found at:

<http://magic.defra.gov.uk/website/magic/> – select 'Landscape' (shows ALC classification and 27 types of soils)

### 3. Key water bodies and catchments

#### 3.1 Major rivers/canals

The following major rivers/canals (by length) have been identified in this NCA.

Name	Length (km)
n/a	n/a

Source: Natural England (2010)

Please note: other significant rivers (by volume) may also occur. These are not listed where the length within the NCA is short.

#### 3.2 Water quality

None of the area is identified as a Nitrate Vulnerable Zone.

Source: Natural England (2010)

#### 3.3 Water Framework Directive

Maps are available from the Environment Agency showing current and projected future status of water bodies

[http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e)

### 4. Trees and woodlands

#### 4.1 Total woodland cover

The NCA contains no woodland and therefore no ancient woodland.

Source: Natural England (2010), Forestry Commission (2011)

#### 4.2 Distribution and size of woodland and trees in the landscape

There is no woodland but there are some small clumps of stunted trees, mainly oak and sycamore.

Source: Lundy Countryside Character Area description

#### 4.3 Woodland types

A statistical breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha)

Woodland type	Area (ha)	% of NCA
Broadleaved	0	0
Coniferous	0	0
Mixed	0	0
Other	0	0

Source: Forestry Commission (2011)

Area and proportion of Ancient Woodland and Planted Ancient Woodland within the NCA.

Woodland type	Area (ha)	% of NCA
Ancient semi-natural woodland	0	0
Ancient re-planted woodland (PAWS)	0	0

Source: Natural England (2004)

### 5. Boundary features and patterns

#### 5.1 Boundary features

The northern half of the island is open heath, intersected by only three stone walls which run across the whole width of the plateau. The southern half of the island consists of small fields enclosed by stone walls or wire fencing.

Source: Lundy Countryside Character Area description;  
Countryside Quality Counts (2003)

#### 5.2 Field patterns

Only small fields occur on the southern half of the island.

Source: Lundy Countryside Character Area description



## 6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

### 6.1 Farm type

There is one livestock farm on Lundy.

Source: Agricultural Census, Defra (2010)

### 6.2 Farm size

The whole island; 421 ha

Source: Agricultural Census, Defra (2010)

### 6.3 Farm ownership

The Lundy Company

Source: Agricultural Census, Defra (2010)

### 6.4 Land use

Grazing and pasture

Source: Agricultural Census, Defra (2010)

### 6.5 Livestock numbers

Sustainable, variable numbers of sheep, cattle and pigs

Source: Agricultural Census, Defra (2010)

### 6.6 Farm labour

One farm manager

Source: Agricultural Census, Defra (2010)

**Please note:** (i) Some of the Census data is estimated by Defra so will not be accurate for every holding (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA belonging to holdings whose centre point is within the NCA listed.

## 7. Key habitats and species

### 7.1 Habitat distribution/coverage

The whole coastline of the island is maritime cliffs and slope, and there are two areas of lowland heathland on the plateau.

Source: Land's End to Minehead Natural Area Profile

### 7.2 UK Biodiversity Action Plan (BAP) priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at; [www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx](http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx).

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

UK BAP priority habitat	Area (ha)	% of NCA
Lundy	305	61
Lowland heathland	87	17

Source: Natural England (2011)

### 7.3 Key species and assemblages of species

Lundy cabbage is unique to the island, as is its associated flea beetle.

- Maps showing locations of UK BAP Priority Habitats are available at: <http://magic.defra.gov.uk/website/magic/> – select 'Habitat Inventories'
- Maps showing locations of S41 species are available at: <http://data.nbn.org.uk/>

## 8. Settlement and development patterns

### 8.1 Settlement pattern

The settlement lies mainly at the southern end of the island, and comprises a small group of farm buildings, cottages, a shop and an inn, together with St Helena's church.

Source: Lundy Countryside Character Area description;  
Countryside Quality Counts (2003)

### 8.2 Main settlements

There are no towns or villages; the settled area of Lundy is at the southern end of the island.

Source: Lundy Countryside Character Area description;  
Countryside Quality Counts (2003)

### 8.3 Local vernacular and building materials

The buildings are all constructed of the locally-quarried grey granite, with slate roofs.

Source: Lundy Countryside Character Area description;  
Countryside Quality Counts (2003)

## 9. Key historic sites and features

### 9.1 Origin of historic features

There is evidence of settlement dating from the Bronze Age or early Iron Age. Celtic field systems have been identified and the pattern of small cultivated areas and extensive rough grazing was probably established at an early date. Occupation in the early post-Roman period is evident from the Christian enclosure at Beacon Hill. The keep of Marisco Castle was built in 1242 and remains a prominent landmark. Lundy was occupied by the Royalists during

the Civil War. At this time many new fortifications were constructed, of which the Brazen Ward is a prominent survival. Granite quarrying formed a short-lived industry in the 19th century, when the resident population reached a peak of about 300 individuals, and the workings remain conspicuous on the east coast. 19th century gun emplacements are also dotted around the coast.

Source: Draft Historic Profile, Lundy Countryside Character Area description

### 9.2 Designated historic assets

This NCA has the following historic designations:

- No Registered Parks and Gardens
- No Registered Battlefields
- 45 Scheduled Monuments
- 14 Listed Buildings

Source: Natural England (2010)

More information is available at the following address:

- <http://www.english-heritage.org.uk/caring/heritage-at-risk/>
- <http://www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/>

## 10. Recreation and access

### 10.1 Public access

- 78 per cent of the NCA, 359 ha, is classified as being publically accessible.
- There are no public rights of way.
- There are no national trails within the NCA.

Sources: Natural England (2010)

The table below shows the breakdown of land which is publically accessible in perpetuity:

Access designation	Area (ha)	% of NCA
National Trust (Accessible all year)	346	77
Common Land	0	0
Country Parks	0	0
CROW Access Land (Section 4 and 16)	342	76
CROW Section 15	0	0
Village Greens	0	0
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	0	0
Local Nature Reserves (LNR)	0	0
Millennium Greens	0	0
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	4	<1
Woods for People	0	0

Sources: Natural England (2011)

Please note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

## 11. Experiential qualities

### 11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) the whole of the island is tranquil save for natural sounds.

A breakdown of tranquillity values for this NCA is detailed in the table below:

Tranquillity	Tranquillity Score
Highest value within NCA	33
Lowest value within NCA	25
Mean value within NCA	30

Sources: CPRE (2006)

More information is available at the following address:

<http://www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity>

### 11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that none of the island suffers from visual or auditory intrusion.

A breakdown of intrusion values for this NCA is detailed in the table overleaf.



Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	n/a	n/a	0	0
Undisturbed	n/a	n/a	98	n/a
Urban	n/a	n/a	n/a	n/a

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are the fact that the island has remained undisturbed during the time covered by these data.

More information is available at the following address:

<http://www.cpre.org.uk/resources/countryside/tranquil-places>

## 12 Data sources

- British Geological Survey (2006)
- Natural Area Profiles, Natural England (published by English Nature 1993-1998)
- Countryside Character Descriptions, Natural England (regional volumes published by Countryside Commission/Countryside Agency 1998/1999)
- Joint Character Area GIS boundaries, Natural England (data created 2001)
- National Parks and AONBs GIS boundaries, Natural England (2006)
- Heritage Coast Boundaries, Natural England (2006)
- Agricultural Census June Survey, Defra (2000,2009)
- National Inventory of Woodland & Trees, Forestry Commission (2003)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)\*
- Ancient Woodland Inventory, Natural England (2003)
- BAP Priority Habitats GIS data, Natural England (March 2011)

- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006) Detailed River Network, Environment Agency (2008)

**Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100%. The convention <1 has been used to denote values less than a whole unit.**

## Supporting document 2: Landscape change

### Recent changes and trends

#### Trees and woodlands

- Rhododendron had been a locally-dominant element of the east cliff scrub but is being controlled through a focused eradication plan which will eliminate it completely by 2025. Small sections of native scrub are being developed to replace the shelter and nesting habitat that the Rhododendron provided.

#### Boundary features

- Lundy is a small island with few boundary features save for three drystone walls transecting the island and smaller walled enclosures surrounding the village.

#### Agriculture

- Lundy lamb is being marketed as a premium brand. Highland cattle have been introduced onto the island for grazing purposes – their meat will also be supplied locally, as will meat from the new, small herd of pigs. Grazing in other areas is by the feral stock (Soay sheep, goats and sika deer) the numbers of which are managed through a programme of control with animals removed being used within the Tavern.

#### Settlement and development

- There are 23 properties which have recently been restored or converted for holiday bookings, including the castle and the Old Lighthouse. Each has a sustainable ethos; there are no telephones, radios or televisions in them.

- Access to the island is via a modern jetty and remedial works have been carried out following collapse of the beach road from the jetty to the settlement.

#### Semi-natural habitat

- 345 ha of the island are designated SAC and SSSI and are recognised as BAP habitats (lowland heathland, lowland dry acid grassland, maritime cliff and slope) and for seabirds. Localised over-grazing on the plateau has given rise to erosion and loss of heathland in places. The managed grazing stock competes with the feral goats, Soay sheep, sika deer and rabbits; numbers of which are controlled where necessary through regular culls.
- The Lundy Management Plan notes that clearance of Rhododendron aims to be complete by 2025 with all mature stands, stumps and bushes removed by the end of 2012. The maritime cliff and slope habitat is largely maintained by natural processes and has undergone no significant change in the recent past. The SAC extends out to sea.

#### Historic features

- Lundy was bought for the National Trust by Jack Hayward in 1969 following the death of Albion Harman in 1968, and has been managed by the Landmark Trust since then. Given the nature of the governance of the island, there has been no change to the historical features of the island and any future work will be focused on the consolidation of features.

## Coast and rivers

- Lundy's granite cliffs, which are an important geological resource, are maintained by natural processes as are the softer and more fragile Morte Slates at the south of the island. The access road, between the Landing Stage and the village, collapsed in the in the early 2000s. Its repair was a major and urgent project.
- There are no major watercourses on Lundy but a large number of freshwater ponds.

## Drivers of change

### Climate change

- More frequent storms could increase erosion, especially of the slates at the south of the island which will lead to the eventual collapse of the area between the South light and the main island.
- Storms also cause wave turbulence which also has the potential to affect the benthos and the associated flora and fauna, as could increasing temperatures and seawater acidity. Lundy provides an ideal location for the study of these effects.
- Increased winter and summer temperatures could see changes in vegetation structure.
- The viability of the natural water supply has always been affected by drought – the supply could be more stressed with extremes of weather.
- Soil erosion could be an increasing problem. The soils are very thin and could suffer from the effects of the weather. There is little soil left at the heathland at the north of the island due to a significant fire in the 1930s – the heathland now grows on mosses over granite.



Increasing storminess could lead to increased erosion.



## Supporting document 3: Analysis supporting Statements of Environmental Opportunity

The following analysis section focuses on a selection of the key provisioning, regulating and cultural ecosystem goods and services for this NCA. These are underpinned by supporting services such as photosynthesis, nutrient cycling, soil formation and evapo-transpiration. Supporting services perform an essential role in ensuring the availability of all ecosystem services.

Biodiversity and geodiversity are crucial in supporting the full range of ecosystem services provided by this landscape. Wildlife and geologically-rich landscapes are also of cultural value and are included in this section of the analysis. This analysis shows the projected impact of Statements of Environmental Opportunity on the value of nominated ecosystem services within this landscape.



The Early Christian gravestones.

Statement of Environmental Opportunity	Ecosystem service																		
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / Inspiration	Sense of history	Tranquillity	Recreation	Biodiversity	Geodiversity
<b>SEO1:</b> Protect and maintain the island's strong sense of history and tranquillity, the distinctive island landscape, its long coastal views and its wealth of geological, historical and cultural character.	↔ ***	↔ ***	↗ **	↔ ***	↔ ***	↔ ***	↗ **	↗ **	↗ **	↗ **	↔ ***	N/A	↔ ***	↑ ***	↑ ***	↑ ***	↑ ***	↗ **	↗ **
<b>SEO 2:</b> Maintain the marine conservation areas surrounding the island, ensuring that special features of the seabed flora and fauna and territorial fish populations are protected from the adverse effects of human activities.	↗ **	↔ ***	↔ ***	↑ ***	↔ ***	↔ ***	↔ ***	↔ ***	↔ ***	↔ ***	↔ ***	N/A	↔ ***	↑ ***	↗ **	↔ ***	↑ ***	↑ ***	↗ **
<b>SEO3:</b> Protect and maintain the island's terrestrial habitats and biodiversity, ensuring that the priority habitats and the species that depend on them are able to thrive.	↗ **	↔ ***	↗ **	↑ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	N/A	↔ ***	↗ **	↗ **	↗ **	↑ ***	↑ ***	↗ **
<b>SEO4:</b> Sustainably manage the island, managing the impacts and pressures of visitors by ensuring that visitors are engaged and able to take home ideas and awareness of sustainability issues as part of their tourist experience.	↗ **	↔ ***	↔ ***	↔ ***	↗ **	↗ **	↔ ***	↔ ***	↔ ***	↔ ***	↔ ***	N/A	↔ ***	↗ **	↗ **	↗ **	↗ **	↗ **	↔ ***

Note: Arrows shown in the table above indicate anticipated impact on service delivery ↑=Increase ↗=Slight Increase ↔=No change ↘=Slight Decrease ↓=Decrease. Asterisks denote confidence in projection (\*low \*\*medium\*\*\*high) °=symbol denotes where insufficient information on the likely impact is available.

Dark plum =National Importance; Mid plum =Regional Importance; Light plum =Local Importance

## Landscape attributes

Landscape attribute	Justification for selection
Gently undulating plateau giving extensive views of the island, the surrounding seas and the mainland in the distance beyond.	<ul style="list-style-type: none"> <li>■ The Plateau provides views of almost the entire island.</li> <li>■ Views out to sea, which can be equally spectacular in either stormy or still conditions.</li> <li>■ Unique views across to the mainland coasts of both England and Wales.</li> </ul>
Sense of remoteness.	<ul style="list-style-type: none"> <li>■ The sense of remoteness arising from the distance from the mainland and the lack of prominent infrastructure on the island or surrounding environment.</li> </ul>
More incised area at south of Lundy including Rat Island and Mouse Island.	<ul style="list-style-type: none"> <li>■ Distinctive area with different look and feel from the rest of Lundy – the geology here is slate rather than granite.</li> <li>■ The jetty is the lowest point of the island.</li> </ul>
Rugged cliffs rising sharply from the sea.	<ul style="list-style-type: none"> <li>■ The cliffs provide dramatic views and opportunities for climbing.</li> <li>■ They are important for nesting seabirds.</li> <li>■ Many lichens present due to unpolluted air.</li> </ul>
Views along the coastline.	<ul style="list-style-type: none"> <li>■ Views reveal an eroded shoreline with caves, stacks and huge granite blocks.</li> <li>■ Granite quarry workings are conspicuous along the eastern coast.</li> <li>■ Prominent changes in the foreshore as the tide changes – Lundy has a tidal range of 9 m.</li> <li>■ The island provides views along the north Cornwall coastline towards Newquay and Bodmin Moor and back up the Bristol Channel to Exmoor.</li> </ul>
Clear and evident connections between underlying geology and subsequent historical development and land uses.	<ul style="list-style-type: none"> <li>■ Geodiversity is revealed through both natural features and quarries – Lundy granite has been used both to construct the island's buildings and, during the 19th century, for export to the mainland.</li> <li>■ Building using local stone has given a strong sense of visual continuity.</li> <li>■ The three 'quarter walls' divide the plateau into four sections.</li> </ul>
Rich time depth, with evidence of settlement from the Bronze or early Iron Ages onward.	<ul style="list-style-type: none"> <li>■ Mesolithic flintwork has been found at Brick Field and other locations on the island.</li> <li>■ Historical features and structures include Kistvaens of uncertain age, bronze-age pottery, Celtic gravestones, the mangonel battery and the castle, and more recently Millcombe House, which was built in 1836.</li> </ul>



Landscape attribute	Justification for selection
Habitats, natural environment and pervading sense of 'wilderness' extending out to sea.	<ul style="list-style-type: none"> <li>■ The combes, rock promontories and heathlands give Lundy a unique sense of place.</li> <li>■ Lundy's terrestrial habitats provide a secluded section for feral animals.</li> <li>■ Lundy cabbage is peculiar to the island, and there is a unique endemic species of flea weevil.</li> <li>■ The maritime cliff and slope and lowland heathland are important and distinguishing habitats.</li> <li>■ The marine environment of Lundy is tremendously important with habitats including reefs (intertidal and subtidal), subtidal sandbanks, submerged and partially submerged sea caves.</li> </ul>
Land use and grazing.	<ul style="list-style-type: none"> <li>■ Lundy supports both domestic and feral stock with the grazing maintaining the condition of the island.</li> </ul>



Heathland on the plateau.

## Landscape opportunities

- Maintain the open and exposed nature of the island and its cliffs with open heathland in the north and pasture in the south, principally through the eradication of Rhododendron and by maintaining appropriate grazing regimes.
- The existing solitary settlement in the south, with a vernacular of locally-quarried granite walls and slate roofs, should be maintained but not expanded.
- Lundy's historic environment, both visible and buried, should be conserved, researched and with ongoing cataloguing, recorded to assess rates of change and occasional loss to natural erosive actions. Remove scrub and bracken where they threaten the integrity and legibility of archaeological sites and structures. Maintain the clear sense of Lundy's historical depth.
- Restoration and maintenance of the area's characteristic stone walls, including the three walls crossing the northern heathland and those that enclose the small fields of the south.
- Managing the numbers of day-trippers to the island by the availability of transport and promoting sustainable tourism initiatives based around the island's role in nature conservation, supported by its statutory No Take Zone.
- Managing in line with the objectives of the Island's Conservation Management Plan.
- The geodiversity of Lundy provides future opportunities to research and study the processes of the opening of the Atlantic Ocean.
- Maintain natural coastal processes.

- Lundy's marine biology has been well studied. There are opportunities to study future changes as they occur.
- Lundy could be a model island for nature conservation.
- Energy generation: The Island's future energy strategy is based on (i) reducing energy consumption and (ii) non-reliance on fossil fuels, using alternative power generation wherever possible.
- Island Supply infrastructure – linked to the energy generation policy, Lundy will be supplied in the most environmentally-friendly way possible where it is not possible to grow or supply a given good on the island. MS Oldenburg will remain in service as long as possible.



The village.

## Ecosystem service analysis

The following section shows the analysis used to determine key Ecosystem Service opportunities within the area. These opportunities have been combined with the analysis of landscape opportunities to create Statements of Environmental Opportunity.

Please note that the following analysis is based upon available data and current understanding of ecosystem services. It does not represent a comprehensive local assessment. Quality and quantity of data for each service is variable locally and many of the services listed are not yet fully researched or understood. Therefore analysis and opportunities may change upon publication of further evidence and better understanding of the inter-relationship between services at a local level.

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Food provision</b>	<p>Small livestock farm on Lundy</p> <p>Feral animals (Soay sheep, sika deer and goats)</p> <p>Poor quality Grade 4 and Grade 5 soils</p> <p>Fisheries around the island</p>	<p>Agriculture takes place across the island. 20 per cent of Lundy's soils have been classified as Grade 4 and 80 per cent classified as Grade 5 under the Provisional Agricultural Land Classification (ALC) Survey.</p> <p>Control of feral animals contributes to food provision as culled animals are eaten.</p> <p>Angling around the island is important for the local economy.</p>	Local	<p>All of Lundy is grazed either by domestic or feral livestock or both. There is no arable production on the island. There is little or no scope for increasing the amount of land available for food production or outputs from the existing resource.</p> <p>The numbers of sheep on the island vary depending on a range of factors including vegetation sward height, rabbit numbers and the impacts of grazing by feral stock. Lundy lamb is a premium product.</p> <p>The population of Soay sheep is managed at approximately 140 breeding ewes to maintain a population that will maintain the condition of the SSSI and produce approximately 30 lambs per year for slaughter.</p> <p>A small herd of Highland cattle has been introduced; there are plans to market their meat. The cattle will graze in conjunction with ponies.</p> <p><b>Continued over...</b></p>	<p>Maintain livestock numbers and manage them sustainably to ensure this does not have a detrimental effect on the other ecosystem services available, for example; water availability, water quality, soil quality and biodiversity. This will in turn bring benefits to wider food provision.</p> <p>The premium value of Lundy lamb could be increased through extra marketing and the money returned to the island for conservation work.</p> <p>Highland cattle are being introduced for grazing and there are opportunities to market their meat.</p> <p><b>Continued over...</b></p>	<p><b>Food provision</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Regulating water quality</b></p> <p><b>Sense of history</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Biodiversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Food provision continued</b>				<p><b>...continued from previous.</b></p> <p>Populations of sika deer and goats should be kept at the lowest possible level (10 nannies and 10 billies and 30 hinds with 10 stags respectively) that remains sustainable both as a visitor attraction and to produce meat for the Tavern.</p> <p>The marine protection around Lundy has led to an increase in the number and size of lobsters fished around the island.</p> <p>All foodstuffs other than the locally-produced meat need to be brought onto the island.</p>	<p><b>...continued from previous.</b></p> <p>There are continuing opportunities to improve the size and number of lobsters and other species caught outside the No Take Zone as a result of its presence. There are also opportunities to use its success to influence similar zones in other nearby marine locations</p>	
<b>Timber provision</b>	Small areas of scrub and stunted trees at the south of the island	Existing woodland cover is made up of shrubs and a few stunted trees.	Local	The exposed nature of the island, thin soils and grazing pressures limit the opportunities for timber production from the existing woodland resource. There is very little potential for timber on Lundy.	Management of scrub would locally provide small amount s of timber for fuel and prevent encroachment into important vegetation communities.	<p><b>Timber provision</b></p> <p><b>Biodiversity</b></p> <p><b>Sense of history</b></p>
<b>Water availability</b>	Groundwater and rainfall	The principle water supply comes from rainwater topped up by Lundy's aquifer from which is pumped via a borehole.	Local	<p>Water availability is the biggest issue for the island. The viability of the natural water supply could be affected by future drought - the supply will be more stressed with extremes of weather. It has been necessary to import drinking water onto the island at times in the past to avoid running the borehole dry.</p> <p>There are several small ponds on Lundy, the largest being at Pondsburry but these are used by livestock and are not part of the potable supply.</p>	<p>There are limited opportunities to make significant increases in the availability of groundwater on the island.</p> <p>Further storage tanks could be installed although space for them is limited. The recycling of grey water should be considered as part of any future renovations or development.</p> <p>There are opportunities to make sure that ponds and groundwater are not polluted by agricultural runoff or spillages, for example, fuel.</p>	<p><b>Water availability</b></p> <p><b>Biodiversity</b></p> <p><b>Regulating water quality</b></p> <p><b>Food provision</b></p>



Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Genetic diversity</b>	Lundy cabbage and associated invertebrates  Soay sheep	Lundy cabbage, a crop relative present on the island, exists in the coastal vegetation of the area. The semi-natural habitats and bare cliffs where it grows provide favourable conditions for it to thrive.	National	<p>Lundy cabbage and other maritime cliff species provide a restricted and location-specific pool of genetic material. Lundy cabbage is a crop wild relative that is endemic. Its numbers fluctuate because it is grazed by rabbits and other fauna.</p> <p>The Lundy cabbage supports an endemic flea beetle and other species that may also be endemic.</p> <p>Feral on Lundy, the Soay sheep is currently classed as "at risk" by the Rare Breeds Survival Trust.</p>	<p>There is opportunity to maintain Lundy's unique genetic diversity including the Lundy cabbage which is potentially important in terms of future crop development and food security.</p> <p>Control the rabbit and feral livestock populations to maintain viable populations of Lundy cabbage – the meat from these could be sold.</p> <p>Develop posters and literature to educate the visiting public about the importance of crop wild relatives and Lundy cabbage in particular.</p> <p>Continue to maintain a feral flock of Soay sheep with numbers not detrimental to the important vegetation on the island.</p>	<p><b>Genetic diversity</b></p> <p><b>Biodiversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Climate regulation</b>	Carbon storage in scrub and bog communities	There is limited carbon storage and sequestration potential; the storage that does occur takes place in Lundy's scrub and small areas of bog.	Local	<p>Small areas of peat under heath and bog on the plateau may be vulnerable to desiccation and loss as a result of changing climatic conditions</p> <p>Bracken, which can store small quantities of carbon, is prevalent, but also invasive and detrimental to other flora.</p> <p>Carbon storage in this NCA is very limited because of the general lack of mature woodland or wetlands and because of the thin soils that cover the plateau.</p>	<p>Protect the island's heaths and bogs to retain the carbon storage by maintaining appropriate vegetation through managed grazing and by maintaining suitable water levels.</p> <p>There is little opportunity to regulate soil erosion, but maintaining suitable vegetative cover may avoid some peat wastage.</p>	<p><b>Climate regulation</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Biodiversity</b></p>
<b>Regulating water quality</b>	Rainwater	Rainwater is collected in tanks and water also extracted from the Lundy aquifer via a borehole.	Local	<p>The island's water is extracted from a borehole and supplemented through small amounts of rainfall.</p> <p>Lundy's water is a vital resource for the grazing mammals and the local flora and it is therefore essential to maintain its quality.</p>	<p>There are opportunities to influence and affect the regulation of water quality on Lundy by ensuring that pollutants do not enter water</p>	<p><b>Regulating water quality</b></p> <p><b>Biodiversity</b></p>
<b>Regulating water flow</b>	There are no significant watercourses on Lundy	N/A	N/A	<p>There are no significant watercourses on Lundy and therefore fluvial flooding is not an issue. This is expected to remain the same into the future.</p>	<p>There are opportunities to prevent meteoric flooding and to minimise the impact on Lundy's septic tank.</p>	<p><b>Regulating water flow</b></p>
<b>Regulating soil quality</b>	Acidic podzol soils resulting from the underlying geology.	The soils are of universally poor quality, being chiefly graded at Grade 5 under the Provisional Agricultural Land Classification Survey. Some 20 per cent of the soil was classified as of slightly higher quality at Grade 4.	Local	<p>The soils of Lundy are chiefly brown podzols, giving rise to impoverished acidic conditions. The podzols are humic in the northern half of the island, where heathland vegetation predominates.</p>	<p>There may be opportunities for local composting to provide opportunities to increase soil carbon at selected spots on the Island</p>	<p><b>Regulating soil quality</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Regulating soil erosion</b>	Permanent pasture  Scrub	Most of the island is now covered with permanent vegetation, grassland or scrub, and the soils are largely stabilised.	Local	<p>In an exposed coastal environment the soils found on Lundy would be susceptible to erosion if the land were cultivated. Given that most of the area outside the village is now under permanent pasture or heathland the soils are generally stable.</p> <p>Some of the thin peaty soils developing under bog and heath vegetation may become more susceptible to erosion as a result of desiccation following periods of prolonged drought.</p> <p>Around quarries and in areas with high visitor pressure soil erosion may be more pronounced</p>	Minimise or prevent soil erosion through careful maintenance of vegetative cover by reducing feral animal numbers and by moderating and managing visitors to the island.	<p><b>Regulating soil erosion</b></p> <p><b>Climate regulation</b></p> <p><b>Biodiversity</b></p>
<b>Pollination</b>	Semi-natural lowland heathland	There are 87 ha of lowland heathland, 17 per cent of the land area.	Local	Habitat for pollinating insects is limited to small areas of semi-natural lowland heathland, the product of long-standing land use on Lundy; however, other than domestic vegetable and flower growing there is little service provided	Continue clearing invasive Rhododendron and therefore to restore the extent of semi-natural habitats to benefit populations of pollinating insects.	<p><b>Pollination</b></p> <p><b>Food provision</b></p> <p><b>Biodiversity</b></p>
<b>Pest regulation</b>	Natural predators	N/A	N/A	N/A	N/A	N/A

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Regulating coastal erosion</b>	The geology of Lundy	<p>Most of the coast has granite cliffs.</p> <p>The southern end of the island consists of softer Morte Slates</p>	Local	<p>The cliff exposures are maintained by natural processes.</p> <p>The southern end of the island consists of the softer Morte Slates through which the granite was intruded.</p> <p>The eastern side of the island is slightly more protected from the elements than the western side.</p>	Opportunities to maintain natural processes by e.g. not increasing the infrastructure of the landing stage area.	<p><b>Regulating coastal erosion</b></p> <p><b>Sense of place/ inspiration</b></p> <p><b>Recreation</b></p> <p><b>Geodiversity</b></p>
<b>Sense of place/ inspiration</b>	<p>A remote Atlantic island</p> <p>Rugged cliffs</p> <p>The plateau</p> <p>The path from the jetty</p> <p>The settlement</p>	The cliffs, plateau, and settlement give Lundy a unique sense of place, particularly combined with its remote Atlantic island location.	Regional	<p>Lundy, an island with a plateau edged by steep cliffs, has a unique sense of place. Views from the island across the sea and to the English and Welsh coasts also contribute to this.</p> <p>The Atlantic weather has a strong influence on the island. On a stormy day, the waves crashing against the jetty and the cliffs can be spectacular and inspiring, as can the tranquillity found on a calm day or moonlit night.</p>	<p>Continue to protect, manage and interpret the unique scenery of Lundy, maintaining the link between the Atlantic island location, geology, ecology and people.</p> <p>Continue to provide interpretation at the MS Oldenburg's mainland departure points for people who would like to visit Lundy but are unable to do so to find out more.</p>	<p><b>Sense of place/ inspiration</b></p> <p><b>Recreation</b></p>



Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Sense of history</b>	<p>The Castle</p> <p>Millcombe House</p> <p>St. Helena's Church</p> <p>Archaeological remains</p>	<p>Millcombe House and the Castle are currently in use as tourist accommodation.</p> <p>Archaeological remains are scattered across the island and are indicative of some continuous human occupation over time.</p> <p>The island has a 'colourful' history much influenced by a number of notable characters.</p>	Regional	<p>St Helena's church (Anglican) is still in use, part of the deanery of Hartland on the mainland. Many historic buildings have been restored or are maintained by the Landmark Trust and are currently used for holiday accommodation – Millcombe House alone sleeps 12 occupants.</p> <p>The history of the island is closely connected with the wider maritime heritage of the UK, including its defensive role on many occasions and as a stepping-stone to the mainland.</p>	<p>Continue to preserve and interpret the history of Lundy, to make it accessible to the widest possible audience.</p> <p>Protect and maintain the heritage assets found on the island, particularly those that represent wider maritime connections and national associations.</p>	<p><b>Sense of history</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Recreation</b></p>
<b>Tranquillity</b>	<p>The remote and disconnected nature of the island</p>	<p>Very quiet island, especially in calm weather</p>	Regional	<p>Lundy can be very tranquil in calm weather. There is no mains electricity between midnight and 6:00 a.m. so sound pollution from televisions and other electrical appliances is minimal.</p>	<p>The tranquillity of the island should be maintained by monitoring and responding to changes in the levels of intrusion resulting from increased visitor pressures and any demands for increased infrastructure.</p>	<p><b>Sense of tranquillity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Recreation</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Recreation</b>	<p>Walking, rock-climbing, wildlife-watching, general relaxation.</p> <p>Lundy is now open all year round.</p>	<p>Recreation and tourism on Lundy is seasonal, consisting largely of day-trippers with 23 properties, managed by the Landmark Trust under lease from the National Trust, being available for overnight or longer accommodation</p> <p>The whole of Lundy is accessible land. People visit Lundy for walking, climbing and bouldering – the Devil’s Slide is a popular climb.</p>	National	Seasonal day-trippers and staying visitors use the island in large numbers. In general they have a limited effect on the landscape, since their activities are mainly confined to the southern half of the island. Visitors come not only to experience the island’s tranquillity but also for bird-watching, diving, climbing and bouldering, and the sense of history.	<p>Aim to prevent adverse effects of seasonal day-trippers and resident holidaymakers by monitoring and responding to localised erosion and wildlife disturbance.</p> <p>Encourage ‘green’ snorkelling and diving and the appreciation and scientific monitoring of marine life around Lundy.</p> <p>Encourage sustainable climbing to ensure that cliffs and their flora and fauna are not damaged/ disturbed.</p> <p>Continue the development of visitors’ understanding of the importance of Lundy, supporting the production of literature and information accessible to a wide audience.</p>	<p><b>Recreation</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p> <p><b>Tranquillity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Biodiversity</b>	<p>Marine flora and fauna</p> <p>Birds</p> <p>Mammals</p> <p>Endemic species</p>	<p>Lundy is protected under many international and British designations and is part of the UNESCO North Devon Biosphere Reserve. Most of Lundy is a Site of Special Scientific Interest (SSSI), the same area plus the waters around the island are a Special Area of Conservation (SAC) of approximately 3,400 ha.</p> <p>Lundy was England's first Marine Nature Conservation Zone and first No Take Zone. The 4 km<sup>2</sup> NTZ lies on the east coast of the island.</p> <p>The numbers of Lundy cabbage and its endemic flea beetle vary from year to year.</p>	International	<p>The areas of maritime cliff and slope and other BAP habitats and the non-intensive agriculture provide favourable conditions for the island's important terrestrial and bird species.</p> <p>Marine conservation around Lundy has demonstrated best practice for the rest of England to follow. Lundy's marine biodiversity is tremendously important and it was England's first Marine Nature Reserve (MNR) which became a Marine Conservation Zone and has a proportion that is designated as a No take Zone (NTZ).</p> <p>There is a breeding colony of grey seals, and Lundy is very important for its bird life. It hosts some of the largest cliff-nesting colonies in south-west England, with guillemots, kittiwakes, fulmars, Manx shearwaters and shags among the species found. Peregrines and ravens both nest on the cliffs, and there is a small but increasing puffin population.</p> <p>Lundy is also very important for migrating birds including passerines. Lundy has red-listed species including starlings, linnets, skylark and house sparrows.</p> <p>There are feral Soay sheep, feral goats, sika deer and pygmy shrews have made Lundy their home.</p> <p>Lundy has two unique species – Lundy Cabbage and a flea-beetle.</p> <p>Invasive species pose a significant risk to Lundy. Rats have previously caused huge damage.</p> <p>Rhododendron has also been a major problem but work to clear it has been largely completed.</p>	<p>Maintain and extend the marine conservation areas surrounding the island as appropriate</p> <p>Prevent overgrazing by managing livestock numbers and the numbers of feral animals.</p> <p>Maintain and improve biosecurity requirements through, for example the removal of rats and ensure they do not re-colonise the island. No domestic pets are allowed onto Lundy.</p> <p>Rhododendron should be completely absent from Lundy by 2025, creating space and conditions suitable for native species.</p>	<p><b>Sense of place</b></p> <p><b>Genetic diversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Geodiversity</b>	<p>Striking landform that clearly reveals geological processes</p> <p>Exposures in the cliffs, at the Earthquake, and in old quarries.</p> <p>Local stone used for building</p>	Coastal processes maintain exposures but can rapidly erode the Morte Slates of the southern peninsula. The granites and dykes are more resistant to erosion.	National	<p>The granites of which Lundy is largely composed are related to the opening of the Atlantic Ocean during the Tertiary, unlike the granites of Devon and Cornwall that are related to the earlier (late Carboniferous) Variscan Orogeny. They are unique in England – other complexes of the British Tertiary Volcanic Province are all found in Scotland and Northern Ireland. It is noteworthy that they originated partly from the same lower crustal material as the Cornubian Batholith, which is why Lundy granite has chemical similarities to the Devon and Cornwall granites.</p> <p>Intrusions from later volcanic activity cut through both the slates and the granites.</p> <p>Access to the cliffs and disused quarries allows continued research into the geodiversity of the NCA and of England and further afield. Exposure of these features also makes a positive contribution toward sense of place and sense of history. Exposure to the geology of the cliffs is maintained by natural processes.</p>	<p>Maintain views of geological features and exposures where appropriate, for instance making sure that the Earthquake does not become overgrown, so as to improve understanding and enjoyment of geodiversity and Lundy's geological history.</p> <p>Identify and support ongoing and new opportunities to research the local British Tertiary Volcanic Province granites.</p>	<p><b>Geodiversity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p>



## Photo credits

Front cover: Mist draping the eastern cliffs of the island. © Stuart Leavy

Page 5: © Natural England/Angela Moffat

Page 4, 6, 10, 11, 14, 26, 30 & 31: © Natural England/Naomi Stevenson

Page 7: © Mike Wynne

Page 8 & 13: © Natural England

Page 9: © Natural England/Mark Duffy

Page 15: © Mike Deaton

Page 16: © Stuart Leavy

Page 27: © Grant Sherman



**Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.**

Catalogue Code: NE455

ISBN: 978-1-78367-012-3

Should an alternative format of this publication be required, please contact our enquiries line for more information: 0845 600 3078 or email [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

**[www.naturalengland.org.uk](http://www.naturalengland.org.uk)**

---

This note/report/publication is published by Natural England under the Open Government Licence for public sector information. You are encouraged to use, and reuse, information subject to certain conditions.

For details of the licence visit [www.naturalengland.org.uk/copyright](http://www.naturalengland.org.uk/copyright)

Natural England images are only available for non commercial purposes. If any other information such as maps or data cannot be used commercially this will be made clear within the note/report/publication.

**© Natural England 2014**