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# **Arnside & Silverdale Area of Outstanding Natural Beauty Management Plan 2019-2024 (Pre-adoption Version)**

Arnside & Silverdale AONB Partnership, April 2019

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## **Ministerial Foreword**

I am fortunate that England's Areas of Outstanding Natural Beauty are part of my Ministerial responsibilities. Whether it be rolling hills, sweeping coastline or a tranquil village, spending time in an AONB can stir the heart and lift the spirit.

This is a pivotal moment for all AONBs. The Government has set its ambition in the 25 Year Environment Plan which states clearly the importance of natural beauty as part of our green future, while AONBs retain the highest status of protection for landscape through national planning policy. Leaving the EU brings with it an opportunity to develop a better system for supporting our farmers and land managers, who play such a vital role as stewards of the landscape. And the Review of National Parks and Areas of Outstanding Natural Beauty led by Julian Glover - the first of its kind for generations - will make recommendations to make sure our designated landscapes can flourish in the years ahead.

In my visits to AONBs around the country, I have been struck by the passion of many people - farmers, volunteers, and hard-working staff - for the beautiful places they live and work. In this spirit I am delighted to welcome publication of this Statutory Management Plan for Arnside & Silverdale AONB. It is significant that this plan will be delivered in partnership by those who value Arnside & Silverdale AONB. I would like to thank all those involved in preparation of this document, and wish you the best of success in bringing it to fruition.

### **Lord Gardiner**

Parliamentary Under-Secretary of State at the Department for the Environment, Food and Rural Affairs

## **Chairman's Foreword**

The Arnside & Silverdale Area of Outstanding Natural Beauty is an extraordinary place, a place that is loved and valued by many people from all over the world and nationally designated for its natural beauty - stunning views and distinctive and diverse landscape, geology, wildlife and history.

The AONB Management Plan has been reviewed taking into account the results of consultations carried out throughout 2018. This Management Plan sets out proposals for delivering the AONB purpose over the period 2019-24.

The AONB Partnership has reviewed the AONB Management Plan on behalf of Lancaster City Council, Lancashire County Council, South Lakeland District Council and Cumbria County Council, with the support of Defra, the National Association for AONBs and many partner organisations, local groups and individuals. Thank you for your support and contributions!

Together and with collaboration, cooperation and good relationships we are well placed to meet the challenges, and make the most of the opportunities, that lie ahead, not least through the current independent national Designated Landscapes Review. Everyone has a role to play in looking after the Arnside & Silverdale AONB, from local communities, landowners and farmers to businesses and individuals. Working together we can make a real difference for the area and its future.

Thank you for your support, contributions and interest.

### **Cllr Dr Brian C Meakin**

Arnside & Silverdale AONB Partnership Chair

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# Arnside & Silverdale Area of Outstanding Natural Beauty Management Plan 2019-2024 (Pre-adoption Version)

## 1 Introduction

### 1.1 Areas of Outstanding Natural Beauty

Areas of Outstanding Natural Beauty (AONBs) are particularly special landscapes whose distinctive character and natural beauty are so precious that it is in the nation's interest to safeguard them. AONBs are unique and irreplaceable national assets and along with National Parks represent our finest countryside. There are 46 AONBs throughout England, Wales and Northern Ireland, covering 18% of the land area.

The primary purpose of AONB designation is to conserve and enhance the natural beauty of the area<sup>1</sup>. In pursuing the primary purpose, account should be taken of the needs of agriculture, forestry, other rural industries and of the economic and social needs of local communities. Particular regard should be paid to promoting sustainable forms of social and economic development that in themselves conserve and enhance the environment. Promoting opportunities for recreation is not an objective of designation, but the demand for recreation should be met so far as this is consistent with the conservation of natural beauty and the needs of agriculture, forestry and other uses.

AONBs were brought into being by the National Parks and Access to the Countryside Act 1949. The Countryside and Rights of Way (CROW) Act 2000 confirmed the significance of AONBs and created improved arrangements for their management, placing a statutory duty on all 'relevant authorities' to have regard to the purpose of conserving and enhancing natural beauty when discharging any function affecting land in AONBs and placing a statutory duty on local planning authorities to act jointly to produce a Management Plan for each AONB within their administrative area, and review it every five years. This is done through the establishment and management of a joint AONB partnership.

AONBs are recognised internationally by the International Union for Conservation of Nature (IUCN) as being within a worldwide category of protected areas, Category V – Protected Landscapes/Seascapes – '*protected areas where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value*'.

AONBs offer a wealth of opportunities for both people and wildlife to benefit from our countryside; as vibrant living landscapes they underpin the economy and the health and wellbeing of our society.

**ADD UP TO DATE NATIONAL MAP IN FINAL VERSION**

### 1.2 Natural beauty

Natural beauty remains largely undefined in legislation, despite being central to the National Parks and Access to the Countryside Act 1949. Since then, qualifications and amendments to the

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<sup>1</sup> National Parks and Access to the Countryside Act 1949; confirmed by Section 82 of the Countryside and Rights of Way Act 2000

legislation make it clear that natural beauty includes wildlife, geological features and cultural heritage while not being restricted to them. Government guidance relating to AONBs provides a useful nontechnical definition: 'Natural beauty is not just the look of the landscape, but includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries'. More recently the Natural Environment and Rural Communities Act 2006 clarified that land used for agriculture, woodlands, parkland, or with physiographical features partly the product of human intervention in the landscape, is not prevented from being treated as an area of 'natural beauty'.

The natural beauty of an AONB landscape is therefore partly due to nature and partly the product of many centuries of human modification and management. It encompasses natural and human factors that together make an area distinctive and special: geology, climate, soil, plants, animals, communities, archaeology, buildings, settlements, historic features, culture, people and the perceptions of those who live here or visit.

Importantly, landscape beauty is not limited to visual amenity but includes all aspects which underpin and contribute to the landscape's character. The conservation and enhancement of wildlife, built heritage and cultural heritage is integral to the conservation of landscape and its natural beauty.

### **1.3 The National Association for AONBs**

AONB partnerships from across the country work together through the National Association for AONBs to collaborate, share experience and promote good practice.

The National Association for AONBs (NAAONB) is a registered charity with a vision that 'the natural beauty of AONBs is valued and secure' and with a mission 'to support and develop a network of ambitious AONB partnerships with a strong collective voice'. Their strategic objectives are to:

- support policies for conserving and enhancing natural beauty;
- develop an understanding of AONBs and the issues they face;
- improve the way in which AONB partnerships and the NAAONB work together; and
- secure and manage resources.

### **1.4 Arnside & Silverdale Area of Outstanding Natural Beauty (AONB)**

Arnside & Silverdale AONB was designated in 1972 and covers an area of approximately 75km<sup>2</sup> in south Cumbria and north Lancashire, including around 30km<sup>2</sup> of intertidal sand and mudflats in the Kent estuary and Morecambe Bay.

Arnside & Silverdale AONB is especially celebrated for its distinctive limestone landscape, magnificent views and extraordinary diversity of wildlife. Low limestone hills, limestone pavements, ancient woodlands, mosses, orchards, meadows and pastures and an impressive coastline, along with a rich cultural history, make this a truly special place.

The intricate nature of many parts of the area and an exceptional variety of special features occurring in such a small place, creates a sense of intimacy and discovery. This fine-grained landscape character then contrasts in every way with the vast openness of adjacent Morecambe Bay.

**ADD UP TO DATE MAP OF AONB LOCATION AND BOUNDARY IN FINAL VERSION**

## 1.5 Arnside & Silverdale AONB Partnership

Effective joint working is needed to conserve and enhance the AONB for future generations.

The four responsible local authorities – Cumbria County Council, Lancashire County Council, Lancaster City Council and South Lakeland District Council – deliver their statutory duties and obligations arising from Part IV of the Countryside and Rights of Way Act 2000 in relation to the AONB through the operation and management of a statutory AONB Partnership and the publishing, reviewing, monitoring and implementation of the statutory AONB Management Plan. The AONB Partnership aims to conserve and enhance the AONB and is made up of the local authorities, statutory agencies, landowners, conservation organisations, local communities and interest groups, working together. Each partner nominates a representative to sit on the formal AONB Executive Committee. A full list of AONB Partnership members is shown in Appendix 1.

The partnership structure of the AONB is a particular strength and enables communication and understanding between many different interested parties and the delivery of sustainable, shared solutions.

A staff team is employed for, and on behalf of, the AONB Partnership by Lancaster City Council as host local authority. The Executive Committee formally oversees and monitors the work of the AONB staff team and their responsibilities include:

- managing the AONB Partnership
- coordinating action to conserve and enhance the AONB at both a local and strategic level
- developing, reviewing and publishing the AONB Management Plan
- securing funding and resources
- developing and delivering projects to implement the Management Plan
- advising upon, facilitating and co-ordinating implementation by others
- providing landscape related planning advice
- involving local communities in managing and conserving the area
- raising awareness of the national importance of the area and its special qualities
- promoting understanding and enjoyment of the area
- working with local businesses to support an environment-based local economy
- developing education resources and running events
- facilitating research about the area
- running an active volunteer programme
- monitoring and reporting on progress
- working at a national level through the National Association for AONBs

There are two voluntary bodies dedicated to supporting the purposes of the AONB: the AONB Landscape Trust, a charity with over 1000 members and the Bittern Countryside Community Interest Company, a social enterprise. Both contribute to delivery of the AONB Management Plan and are represented on the AONB Executive Committee.

The Arnside & Silverdale AONB Partnership is a member of the NAAONB contributing to and participating in national initiatives.

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## **2 The Arnside & Silverdale AONB Management Plan**

### **2.1 What is the Management Plan for?**

The AONB Management Plan is just that – a plan for the AONB area. It provides a strategic framework to guide all activities that might affect the AONB.

The AONB Management Plan is a statutory plan which sets out a shared long-term Vision for the area. It describes the broad range of issues facing this area and a framework for action to conserve and enhance the area for future generations.

In order to achieve effective conservation and enhancement of the area, working together in partnership is crucial; local authorities, communities, organisations, landowners/managers and businesses must work jointly to successfully implement the Plan.

The aims of the Management Plan, which reflect the AONB purposes, are to:

- conserve and enhance the natural beauty and special qualities of the AONB
- promote and support sustainable agriculture, forestry and other rural industries
- promote the social and economic wellbeing of people living within the AONB
- increase public understanding and enjoyment of the AONB
- meet the recreational needs of local residents and visitors alike - where these are compatible with the purpose of AONB designation.

### **2.2 Who is the Management Plan for?**

The Management Plan forms a key part of the strategic framework for action by the many organisations working in and around the AONB.

Its audiences include:

- AONB Partnership organisations and delivery partner organisations – these organisations will have a key role in delivering and championing the Management Plan.
- Relevant authorities – all public bodies and statutory undertakers have a duty to have regard to the primary purpose of the AONB; this Management Plan will guide them in fulfilling their statutory duties.
- Key strategic partnerships such as Morecambe Bay Local Nature Partnership and Cumbria and Lancashire Local Enterprise Partnerships.
- Landowners, farmers and land managers – those who own and/or manage land in the AONB have a vital role to play; the plan aims to guide, support and attract resources for sensitive management of the AONB.
- Local communities – all of us that live and work in the AONB can play an active role in caring for the Arnside & Silverdale AONB; the plan identifies some of the priorities for action and ways to get involved.

### **2.3 How the Arnside & Silverdale AONB Management Plan has been produced**

This Management Plan has been produced by the Arnside & Silverdale AONB Partnership on behalf of the four principal local authorities: Cumbria County Council, Lancashire County Council, Lancaster City Council and South Lakeland District Council according to an approved Project Plan



and following national guidance. A Review Working Group comprising representatives from the four local authorities, Natural England, the AONB Team and the AONB Executive Committee supported and oversaw this process. The Management Plan has been informed by public and stakeholder consultation including a public online survey in early 2018, a variety of stakeholder workshops held during 2017/18 and a full public consultation on the Draft Plan in late 2018.

The Management Plan has been subject to a Strategic Environmental Assessment and a Habitats Regulations Assessment.

## 2.4 Policy context

In January 2018, the Government published 'A Green Future: Our 25 Year Plan to Improve the Environment'<sup>2</sup> which set out an approach to improving the environment within a generation.

The Plan refers specifically to AONBs in Chapter 2 under 'Recovering nature and enhancing the beauty of landscapes', in which it states:

*"...the creation of designated landscapes – which also include Areas of Outstanding Natural Beauty AONBs – has been among the outstanding environmental achievements of the past 100 years. They provide a patchwork of stunning, and protected, landscapes. In England, a quarter of our landscape is designated in this way, around 10% as National Parks and 15% as AONBs. We will make sure they continue to be conserved and enhanced, while recognising that they are living landscapes that support rural communities."*

Under Section 2 'Conserving and enhancing natural beauty', the Plan also states that:

*"Over the next 25 years we want to make sure they [AONBs and National Parks] are not only conserved but enhanced. Many of the policies set out in the rest of the Plan will contribute to making all areas more beautiful..."*

Furthermore, the Plan then outlines two specific actions the Government wishes to undertake in relation to AONBs and National Parks, firstly to commission a Review of AONBs and National Parks and secondly, to work with and AONB Partnerships and Conservation Boards and National Park Authorities to deliver environmental enhancement, including through demonstrator projects, and engaging with communities through their statutory management plans.

The UK's National Parks and AONBs were created by an Act of Parliament in 1949, following the government's 1947 Hobhouse Report, which remains the basis for most protected landscape designation in England today. Now, 70 years on, the Government has commissioned a review for the 21st Century. The Review, which will complete in autumn 2019, considers coverage of designations, how designated areas deliver their responsibilities, how designated areas are financed, and whether there is scope for expansion. It will also consider opportunities to enhance the environment in existing designations, and expand on the existing plans to connect more people with the natural environment. The outcome of the review will have a profound effect on the future of our designated landscapes for many years to come.

Various other actions outlined in the Plan to improve the environment and people's connection with nature are also particularly relevant to AONBs, which include: designing and delivering a new Environmental Land Management Scheme; expanding the use of natural flood management solutions; developing a 'Nature Recovery Network' and connecting people with the environment to

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<sup>2</sup> A Green Future: Our 25 Year Plan to Improve the Environment, HM Government (Defra), 2018

improve health and well-being. The objectives and actions outlined in this Management Plan will aim to contribute towards the delivery of these actions.

A full review of the current national and local policy context has been undertaken as part of the Management Plan review process<sup>3</sup>.

## 2.5 Management Plan Core Principles

The following core principles underpin all the different elements of this Management Plan:

### **Landscape approach**

The landscape approach and an understanding of landscape character guide the AONB Partnership's work. Conservation and enhancement of the beauty, character and quality of the AONB landscape lie at the heart of all the chapters in this Management Plan. The AONB Partnership aims to work in an integrated and sustainable way to create a landscape that is more resilient to pressures. This will often mean taking a 'landscape-scale' approach working across numerous different sites and interests. A landscape approach, embracing both natural and cultural influences and the way people perceive them, is essential to the integrated delivery of a healthy natural environment that delivers the ecosystem goods and services that society needs.

### **Sustainable land management**

Landowners and managers have played a significant role in creating the beautiful landscape we see today. Encouraging and supporting farming, land- and woodland management practices that help to conserve and enhance the natural beauty, landscape and seascape character and special qualities of the AONB is essential in delivering the purpose of designation. Maintaining viable land management businesses and rural livelihoods are vital factors in keeping the area special.

### **Sustainable development**

This means ensuring that development is sound in environmental, social and economic terms, without compromising the ability of future generations to do the same. Within a nationally protected landscape, the landscape and special qualities must be given special consideration in order to achieve sustainable development.

### **Natural capital and ecosystems approach**

By bringing together three principles of the ecosystem approach, we can ensure that the public benefits we derive from the natural environment (ecosystem services) are safeguarded and enhanced. The principles are:

- The natural systems that operate within the AONB are complex and dynamic, and their healthy functioning should not be taken for granted.
- Those that live and work in and visit the AONB benefit from services provided by the natural environment. These services underpin social and economic wellbeing and have a value – both monetary and non-monetary.
- Those that benefit from the services provided by the AONB and those who are involved in the management of them should play a central role in making decisions about them.

Using the ecosystem approach helps to deliver 'bigger, better, more, joined up'<sup>4</sup> biodiversity, with greater ecological connectivity and enhanced landscapes that benefit wildlife and people.

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<sup>3</sup> Arnside & Silverdale AONB Environment Report (2019)

<sup>4</sup> Making Space for Nature, Lawton, 2010

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### **Climate change adaptation and mitigation**

In responding to climate change, there is a need to understand and adapt to the impacts such change is likely to have on the landscape and to seek ways in which CO<sub>2</sub> emissions can be reduced. Ensuring that adaptation and mitigation measures do not adversely affect natural beauty and maximising opportunities to improve landscape resilience such as improving habitat condition and enhancing connectivity will be a priority.

### **Community involvement and engagement**

Local people are at the heart of the AONB and are encouraged and supported to become engaged in its management through decision-making, volunteering and developing projects and initiatives that help to conserve and raise awareness of natural beauty. This involvement is highly valued and an important factor in securing the area's future.

### **Accessible to all**

There should be equality of opportunity for everyone to enjoy what this area has to offer. Barriers such as access to public transport, the need for better information or better infrastructure remain and need to be better understood. Enhancing intellectual and physical access to the AONB should be supported wherever possible.

### 3 What is special about Arnside & Silverdale AONB?

Arnside & Silverdale AONB is an extraordinary place. From the simple beauty of the Lady's-slipper Orchid to the wild sweep of Arnside Knott and the shining sands of Morecambe Bay, the area is simply awe-inspiring - full of natural spectacles, stunning views and a surprise to be discovered around every corner.

We need to be clear about what makes the area particularly special so that we can put in place effective management to conserve and enhance these qualities for the future.

Together, the special qualities define what 'natural beauty' means in the context of Arnside & Silverdale AONB<sup>5</sup> and therefore what makes the area nationally important.

#### 3.1 ***Outstanding landscape and spectacular views - a highly diverse and intimate mosaic of limestone hills, woodlands, wetlands, pastures and parklands, with spectacular views and an impressive setting***

Arnside & Silverdale AONB is a unique landscape defined by the underlying Carboniferous Limestone and coastal setting of Morecambe Bay. The area is a rich mosaic of species-rich limestone grasslands, limestone pavements, extensively wooded limestone hills, agricultural pastures, parklands, freshwater mosses, salt marsh, inter-tidal sand and mudflats, and distinctive settlements. The area is a living working rural landscape.

The high quality and outstanding natural beauty of the landscape and seascape sets the AONB apart from the wider countryside and is the reason for its national designation. The area's distinctive character is determined not simply by the presence of particular natural features or their rarity value, but also by a rich history and cultural heritage, and the ways in which all these elements combine to form a mosaic of landscape types. The landscape and seascape character of the area is described more fully in Chapter 4.

A series of low extensively wooded limestone hills interspersed with steep-sided valleys characterise the landscape of the AONB with iconic views seen from these highpoints; Warton Crag is the highest point at 163m rising just above Arnside Knott, Beetham Fell and King William's Hill. This glaciated landscape has a complex range of features and landforms including limestone pavement, ridges, scree slopes, escarpments and erratics.

Woodland is a key component of the AONB landscape often associated with the hills and pavements and covering about a third<sup>6</sup> of the terrestrial AONB. Much of the woodland is broadleaved dominated by oak and ash and includes 652ha<sup>7</sup> of Ancient Woodland, 488ha of Ancient and Semi Natural Woodland and 164ha of Plantations on Ancient Woodland Sites (PAWS). Active woodland management has increased by 54% since 2013 and 73%<sup>8</sup> of the woodland is now in active management. Coppicing plays an important role as a traditional management practice.

Farming has been a principal influence on the development of the AONB landscape and limestone grasslands (both improved/semi-improved for agriculture and unimproved) cover a large part of the area, forming pastures and parklands. Grazing by livestock is a traditional land use. The Defra

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<sup>5</sup> The special qualities are described in more detail in a supporting report 'What is special about Arnside & Silverdale AONB?'

<sup>6</sup> © Forestry Commission copyright (2017), 2015 data

<sup>7</sup> April 2017, © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2017

<sup>8</sup> © Forestry Commission copyright (2017)

Agricultural Survey<sup>9</sup> show that 56% of the AONB was registered as agricultural land in 2016 with the large majority of this being pasture for livestock grazing. Sheep are the main livestock type (82% of stock) while dairy and beef cattle make up around 18%. Between 2010 and 2016 there was an overall decrease in sheep numbers of 1% and cattle numbers of 12%. Over the same period the number of horses has decreased but poultry numbers have risen. Management of land under environmental land management schemes, management plans and other appropriate mechanisms offer opportunities to promote and financially support sensitive management to enhance the landscape and protect natural capital such e.g. soils.

Many of the area's distinctive landscape features are associated with farming such as hedgerows, drystone walls, farmsteads and field barns. There are several ancient trees and numerous veteran and notable trees throughout the area occurring in open fields, within boundaries, within areas of woodland, and as part of designed landscapes and settlements.

Overall the AONB is a relatively dry landscape as a consequence of its limestone geology. Water is nevertheless an important feature of the landscape. Freshwater wetlands and mosses occur in the low-lying areas and valleys of the AONB often where natural springs emerge. Hawes Water is a marl lake, a rare type of waterbody that is dominated by stoneworts, a type of large green algae. The associated marl grasslands are formed from mollusc shells and are the largest area of this rare habitat in England, supporting specialised plants and invertebrates. Woodwell is a good example of a marl spring that coats the surrounding plants and stones in a gritty deposit of calcium carbonate (marl). Leighton Moss, managed by the RSPB, is the largest reedbed in northern England. Silverdale Moss and Barrow Scout fields are areas of reedbed that have been established for conservation over recent years. Hale Moss and Arnside Moss were drained in the 18th Century for agricultural improvement. A large project is in the planning stages to deliver a multiple benefit project that aims to alleviate flood risk in Warton village while creating a wet grassland habitat with a primary focus on breeding lapwing at Warton Mires.

The two principal rivers in the area, River Bela and River Keer form part of the AONB boundary, to the north east and the south respectively. Leighton Beck, Quicksand Pool and Black Dyke are smaller water courses. The deepest water body is Hawes Water, the largest area of open water is present at Leighton Moss and there is a small lake at Haverbrack. There are numerous springs and small ponds across the area which form distinctive features and are historically important having been a key factor in the location of settlement, in particular strongly influencing the dispersed pattern of Silverdale village.

The landscape is an intricate mosaic with an exceptional variety of features occurring in a small area, which creates a sense of intimacy and discovery. This fine-grained landscape character than contrasts in every way with the vast openness of Morecambe Bay.

### **3.2 *Stunning coast and seascape* – coastal cliffs, shingle beaches and extensive intertidal flats and saltmarshes create a distinctive transition between land and sea, supporting thousands of breeding waders and wildfowl**

About 37% of the AONB is covered by the tidal waters of the Kent Estuary and Morecambe Bay each day.

The AONB has a variety of distinctive coastal features including low limestone cliffs, saltmarshes, coastal woodland and windblown trees, pebble and shingle beaches, and intertidal sand and

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<sup>9</sup> Defra Agricultural Survey, 2016

mudflats. Much of the coastline is undeveloped and has a strong feeling of remoteness. The wide open views over Morecambe Bay are ever changing with the weather and tide, and sunsets over the Bay can be spectacular.

Morecambe Bay is the largest intertidal area in the UK where five estuaries meet in a horseshoe-shaped bay of spectacular scale and grandeur. Coastal saltmarsh and intertidal flats partly lie within the AONB but also extend westwards over a huge area of mud and sand. The combination of the panoramic backdrop of the Bay – a kaleidoscope of water and light; sea and sky; sound, texture and colour - bordered by coastal cliffs, coves and saltmarshes, produces often stunning coastal views.

The coast is dominated by open skies that create an ever-changing backdrop to the scene: clear blue skies; swift-blown clouds on a windy day; blackening clouds before a storm; shafts of light shining through a gap in the cloud cover; or vivid sunsets which fill the sky and reflect on the shallow waters of the mudflats. Shining sandbanks, mudflats and constantly changing channels are alive with the evocative calls of Curlew and flocks of waders and wildfowl keeping time with the ebb and flow of the tide.

On the east and north of the Bay, the intertidal flats are bordered by extensive areas of salt marsh, only covered by the highest tides.

Morecambe Bay is an internationally important wildlife site, with abundant bird life and varied marine habitats. Morecambe Bay is one of the most important sites in Britain for its wader populations, and in particular the Oystercatcher. Morecambe Bay is significant at an international level as a wetland being a Ramsar Site with 37,404 hectares designated.

As well as being a food resource for many thousands of wading birds, the rich cockle beds are well known and have been fished by locals for centuries. Morecambe Bay is also noted for its shrimp fisheries.

Warton Sands cockle bed is located in the south west corner of the AONB. There were active cockle fisheries in Morecambe Bay for most of 2017 but stocks of cockles were not of a commercial quantity at Warton Sands.<sup>10</sup> The fluctuation in cockle recruitment is natural and there can be huge variations over time. The sustainable management of the cockle fishery is very important as over exploitation could impact on the important oystercatcher population within the Bay, which feeds on the cockles in the intertidal area, along with other foods such as mussels and lugworm.

The Bay exerts a moderating maritime influence over the climate of the AONB, producing mild conditions that allow some southern species to survive beyond their normal range which, coupled with some northern species which find a niche at the southern reaches of their range, results in a great diversity of species. Therefore the Bay, merely by its presence, contributes much to the wildlife diversity of the area.

The Bay is famous for its fast-flowing tides, said to move as fast as a galloping horse. The speed of the advancing tide gives rise to a tidal bore which is most noticeable at Arnside.

Coupled with the fast-rising tides, quicksands make the Bay a potentially very dangerous place and many tragedies have occurred over the years. The sands at one time formed the most direct route to the Furness area, with traffic crossing the Bay until the Furness Railway line was connected to the rest of the country with the construction of the viaduct at Arnside in 1857.

The dangers of the route across the sands are the reason that there has been an official royally-appointed Guide to the sands since 1536. The traditional role carries no salary, but includes a rent

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<sup>10</sup> North Western Inshore Fisheries and Conservation Authority, Jan 2018

free residence known as "Guides Cottage", near Grange. Today the Queen's Guide leads Cross-Bay walks, usually to raise money for charity.

In Roman times Milnthorpe had a wharf for cargo and Sandside was a busy port until the mid-19th Century. Building of traditional Morecambe Bay nobby fishing boats took place at Crossfields Boat Yard in Arnside for generations. Pleasure boats sailed regularly to Silverdale and Arnside from Morecambe in the 19th Century.

### **3.3 Sense of tranquillity, space and place – inspiration, spiritual refreshment, unpolluted air, dark skies, peace and quiet and a place with unique character**

The AONB is a place for inspiration, spiritual refreshment, dark skies at night and clear, unpolluted air. People come here to relax, unwind and recharge their batteries, to get close to nature, breathe in the fresh sea air and absorb exhilarating wide open views. Tranquillity and a sense of space are easy to find both in the intimate inland landscape and on the hills and open coast.

A strong sense of tranquillity arises from the peacefulness and calm which can easily be found throughout the AONB. The intimate scale of the inland landscape means that numbers of visitors are easily absorbed and people can enjoy the landscape without any great awareness of others, while recreation activities within the AONB are primarily quiet and non-intrusive, such as walking, bird-watching, cycling and horse-riding; causing little or no disturbance. Even in the busiest parts of the AONB, such as the seaside village of Arnside and the Leighton Moss RSPB Reserve, there is a lack of commercialisation which gives a very traditional and relaxed feel.

The tranquillity of the AONB is one of its key features. According to the Council for Protection of Rural England<sup>11</sup>, much of the AONB, particularly along the coast, can be regarded as in the context of the wider area as 'most tranquil'.

The AONB has relatively dark skies<sup>12</sup>; the Milky Way and on rare occasions the northern lights can be visible.

The AONB is much-loved by many people from all over the world. The fresh air, stunning views and intimate character has made it a place of artistic inspiration and spiritual refreshment for and gives it a very particular sense of space and place.

The area's distinctive character and unique combination of scenery, history, abundance of wildlife, peace and quiet, and culture make the AONB unique. For many, this very particular sense of place is the primary motivation to visit and creates a strong connection with and love for this landscape.

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<sup>11</sup> Tranquillity map of England, CPRE, 2007

<sup>12</sup> 'Night Blight: Mapping England's light pollution and dark skies' CPRE, 2016

### **3.4 *Unique limestone geology* – rare and distinctive Carboniferous limestone geology with extensive areas of limestone pavement, low coastal cliffs, extensive folding and faulting and notable fossil assemblages**

The Carboniferous limestone bedrock of the Arnside and Silverdale area underpins the natural beauty of the AONB. The limestone unifies its character and creates the conditions that have allowed such a wide diversity of habitats to develop.

The superficial geology, for example tidal flats, saltmarsh, lacustrine and peat deposits, also contribute to the natural beauty by creating broad areas of flat ground which contrast with and provide a natural setting for the limestone hills. The saltmarsh areas, dynamically changing in their location and extent, provide natural beauty in their contrast with the different colours and textures of the tidal flats beyond. Deposits have contributed to the development of reedbed, fen and mosses.

Key geological elements of the mosaic of landscape characters across the AONB are the limestone hills, open and wooded limestone pavements, limestone scarps and slacks (including 'The Trough' close to Trowbarrow Quarry), the limestone quarries themselves, locally complex geological structures, low coastal cliffs, shingle bays, saltmarshes, tidal flats, former and current lakes, former areas of lowland raised bogs, residual peat bogs and reedbeds, and the shapely rounded low hills known as 'drumlins' which are associated with former ice sheets and glaciers.

However, it is not just the geology (i.e. the characteristics of the rocks, sediments and geological structures), which is important; it is also the 'geodiversity', the sheer variety of geological features, including the fossils, minerals, natural processes, landforms and soils – as well as the rocks – which underlie and determine the physical character of the landscape and the natural environment. Other features of geological interest which also contribute to the landscape character include solution hollows (or dolines) in the limestone, sea caves, scree-covered slopes, erratic boulders, karstic features and Carboniferous limestone fossil assemblages.

The landscape has been shaped primarily by its limestone geology but also by a range of geomorphological processes, which have acted upon it over many millions of years. Current active processes, such as erosion and accretion of saltmarsh and channel shifts across the estuary, lead to continuing changes; this is clearly not a static landscape.

There are two nationally important geological sites within the AONB, designated as SSSIs for their geological interest - Trowbarrow Quarry and Hale Moss Caves. The condition of both these sites remains favourable. While both Gait Barrows and Leighton Moss SSSIs are primarily designated for their biological interest they are also important for their geology. There are 8 Local Geological Sites, all of which are in positive management, and there are 16 Limestone Pavement Orders covering 16% of the AONB area.

Buildings and settlements constructed from local limestone, dating back from Medieval times around 800 years ago, are scattered throughout the AONB and contribute to the character and quality of the landscape and the historic character of the area. Also, limestone wall field boundaries, limestone solution features in boundary walls and buildings, and limekilns are key features.

Geology is also an important aspect of the industrial heritage of the AONB, in particular quarrying and mining. Limestone has long been quarried to provide building stone. Numerous small abandoned quarries contribute to the character of the AONB landscape. Other sites developed into



large-scale extraction industries, such as Middlebarrow and Sandside Quarry, and are highly visible reminders of the past industrial activity.

Historically, limestone was extracted and burnt to create lime powder, used for mortar, limewash and as a soil conditioner after firing in nearby limekilns. There are 36 known limekilns sites in the AONB, most of which are substantial limestone-built structures and form significant landscape and industrial heritage features in the AONB.

A Geology Audit and Assessment was undertaken in 2018 including an AONB-wide audit and research undertaken into the geological evolution of the area. This has provided a robust evidence base of the geodiversity of the AONB for monitoring landscape change and to inform an ecosystems approach to AONB management activity, helping to ensure the landscape is resilient to change and continues to deliver multiple benefits.

### **3.5 *Rare and precious habitats* – an outstanding number and mix of priority habitats within a small area creating a mosaic that is home to an amazing diversity of wildlife**

The AONB supports an exceptionally diverse range of habitats of local, national and international importance, creating a mosaic which is home to an outstanding variety of wildlife and forms a key element of the area's natural beauty.

Priority habitats cover around 70% of the AONB<sup>13</sup> and include:

- Deciduous woodland
- Upland mixed ashwoods
- Wet woodland
- Wood pastures and parkland
- Lowland calcareous grassland
- Lowland meadows
- Purple moor grass and rush pasture
- Lowland fens
- Reedbeds
- Intertidal mudflats
- Coastal and flood plain grazing marsh
- Coastal saltmarsh
- Maritime cliffs and slopes
- Inland rock outcrop and scree habitats
- Limestone pavements
- Oligo-mesotrophic lakes
- Ponds
- Rivers
- Traditional orchards
- Lowland heathland

A significant proportion of the AONB is designated for its biodiversity with 54% of the area being covered by national Site of Special Scientific Interest (SSSI) or international Special Area of Conservation (SAC) and Special Protection Area (SPA) designations, and 11% of the area recognised as Local Wildlife Sites.

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<sup>13</sup> Arnsdale & Silverdale AONB Priority Habitat Survey, G Skelcher, 2016

There is one National Nature Reserve in the AONB at Gait Barrows and two Local Nature Reserves at Warton Crag and Trowbarrow.

### **3.6 Internationally, nationally and locally important species – an amazing diversity of species many of which are uncommon in a national or international context**

Over 1,100 notable species have been recorded in the AONB, including over 170 priority species (S41 NERC Act) which are known to be resident or occur regularly within the AONB<sup>14</sup>. This represents an extraordinary richness and diversity within a relatively small area. Of particular note are the Bittern, High Brown Fritillary and the Lady's-slipper Orchid.

Restoring, creating and enhancing habitats and improving resilience of ecological networks are key to conserving species alongside taking specifically tailored and targeted action.

In 2016 the AONB Partnership consulted widely to develop a list of characteristic species and/or groups of species that reflected a variety of habitats and taxa and could potentially act as a focus for positive conservation action, management and monitoring<sup>15</sup>. These were:

- Limestone butterflies and day-flying moths - High Brown Fritillary, Northern Brown Argus, Pearl-bordered Fritillary and other butterflies and day-flying moths of limestone habitats including Small Pearl-bordered Fritillary, Dingy Skipper, Grayling, Scotch Argus, Duke of Burgundy, White-spotted Sable, Cistus Forester and Least Minor
- Limestone grassland and pavement plants - Dark Red Helleborine, Blue Moor-grass and other plant species of limestone grasslands and pavement including Spring Sandwort, Rigid Buckler Fern, Limestone Fern and Juniper
- Lady's-slipper Orchid
- Lancashire Whitebeam
- Waxcaps
- Ants - Red Wood Ant and Yellow Meadow Ant (and Shining Guest Ant associated with Red Wood Ant nests)
- Woodland moths - Netted Carpet and Barred Tooth-stripe
- Woodland birds - Marsh Tit, Hawfinch, Bullfinch and other breeding woodland birds
- Reedbed birds - Bittern, Bearded Tit, Marsh Harrier and other nesting reedbed birds
- Coastal birds - Oystercatcher, Redshank, Curlew, Lapwing and other breeding, passage and wintering waterfowl of saltmarsh and mudflats
- Otter
- Swift

Further work is required to establish a more comprehensive and coordinated research and monitoring programme for the area.

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<sup>14</sup> Notable and Characteristic Species in the Arnsdale & Silverdale AONB, G Skelcher, 2016

<sup>15</sup> Notable and Characteristic Species in the Arnsdale & Silverdale AONB, G Skelcher, 2016

### **3.7 Rich sense of history – archaeological, built and cultural heritage reflecting thousands of years of human occupation creating ‘time-depth’ within the landscape**

Historic features, buildings, archaeology and the historic landscape tell the story of the land and people over many generations, an important element of the area’s character and quality.

The historic environment includes all aspects of the environment resulting from the interaction between people and places through time, including designated and non-designated heritage assets, the potential for unrecorded archaeology and historic landscape character.

Many of the features that make the area distinctive reflect the estate, agricultural or industrial heritage of the AONB such as parkland, field boundaries (drystone walls and hedges), designed landscapes, ancient woodlands, traditionally coppiced woodland, orchards, limekilns and farmsteads. The settlements (the layout, character and appearance of villages and hamlets and the building traditions of the area) contribute strongly to the character and quality of the AONB landscape and are important to the area’s local distinctiveness and sense of place.

There are 695 Historic Environment Records within the AONB including 10 Scheduled Monuments, 115 Listed Buildings, 1 Registered Park and Garden and many non-statutory archaeological sites. There are 3 Conservation Areas – Warton, Beetham and the Yealands. Up to date Conservation Area Appraisals (CAA) are available for Beetham and Warton.

The 10 Scheduled Monuments are:

- Arnside Tower, Arnside
- Beetham Hall (curtain wall and uninhabited portion), Beetham
- Hazelslack Tower, Beetham
- Ringwork in Dallam Park 380m south east of Dallam Tower, Beetham
- Dog Holes Cave, Warton Crag, Warton
- Badger Hole, Barrow Scout, Warton
- Warton Crag Hillfort, Warton
- Old Rectory, Warton
- Round cairn on Summerhouse Hill, Yealand Conyers
- Stone circle on Summerhouse Hill, Yealand Conyers

At Warton Crag a major project has recently been undertaken to research and investigate the ‘hillfort’. The research has resulted in a change in how Historic England interpret the site; what had previously been described as an Iron Age Hillfort is now considered best interpreted as a Bronze Age Hilltop Enclosure, most likely used as a site for significant gatherings, rather than as a defensive structure.

Since 2013 Grade II\* listed Slackwood Farm has undergone a full restoration and has now been removed from Historic England’s ‘Heritage At Risk Register’.

South Lakeland District Council and Lancaster City Council are currently preparing lists of local heritage assets within their districts which are not protected by a statutory designation and meet certain criteria. Once these lists are in place, these assets will be more easily managed through the planning system.

There are a wide range of non-designated heritage assets and features that make an important contribution to the historic landscape character of the AONB.

Much of the AONB has been managed for many years as part of private estates. Dallam Tower and Leighton Hall estates remain major landowners and manage large parts of the area for farming, forestry and rural sports. Numerous other smaller estates previously existed and had a strong influence in how the landscape developed in particular historic parkland and designed landscapes and gardens associated with estate houses and lands. The 18<sup>th</sup> century deer park at Dallam Tower is nationally important and registered. Six undesigned historic designed landscapes were identified to be of exceptional interest and quality and potential national importance in a 2013 research study<sup>16</sup>, including the gardens at The Hyning, which were designed by renowned landscape architect Ralph Hancock, those at Hazelwood Hall that were designed by Thomas Mawson and gardens at Greywalls (now Ridgeway Park) in Silverdale.

Agricultural features such as ancient enclosure and other traditional field patterns, such as strip field systems around the Yealands and Warton, traditional stone-built farmsteads, farm buildings and field barns, water troughs, milk churn stands, bee boles, mounting blocks, ponds, springs and wells, traditional boundary walls, hedgerows, historic pathways (such as the Coffin Route), milestones and markers, traditional road and directional signage and ancient and veteran trees and woodland, are important and distinctive features of the historic landscape.

Orchards have also been a feature of the landscape for hundreds of years. There are more than 90 orchards and gardens in the AONB<sup>17</sup>, growing a wide range of apple, plum, damson and pear varieties, including a number of rare and unique varieties. While some orchards are well managed, the condition of others is deteriorating and many are in need of concentrated restoration work.

The area has been a thriving industrial as well as agricultural landscape. Features such as limekilns, quarries (both redundant and active), mineral railways, copper/iron mining and processing sites, coppiced woodland and charcoal-making sites, commercial port facilities and shipbuilding tell the story of how the natural resources of the area have been exploited.

Finds such as a Viking Hoard, a collection of over 200 pieces of silver jewellery and coins dating back to 900AD, found buried in 2011, indicate that there is likely to be a significant resource of hidden features and archaeology, which would add to the understanding of the area's history.

Historic Landscape Characterisation Reports for both Lancashire<sup>18</sup> and Cumbria<sup>19</sup> provide valuable tools for understanding the cultural heritage of the AONB.

The area has a long association with the Quaker movement and forms part of '1652 Country', the area of northern England across which founder, George Fox, travelled and gathered many of the first Quakers.

Victorian novelist Elizabeth Gaskell (1810-1865) regularly holidayed in Silverdale and is said to have written some of her works in the village.

Groups such as the Arnside Archive and the Mourholme Society have contributed a great deal to the research, understanding and recording of local history, cultural associations and collections of photographs, written and documentary records.

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<sup>16</sup> Arnside & Silverdale AONB Historic Designed Landscapes Research Report, E. Bennis, 2013

<sup>17</sup> Orchards of the Arnside & Silverdale AONB, 2007

<sup>18</sup> The Lancashire Historic Landscape Characterisation Report, December 2002.

<sup>19</sup> Cumbria Historic Landscape Characterisation – final report, July 2009

### **3.8 *Distinctive settlement character* – the design, detailing and use of local materials especially limestone in the built environment, and the historic layout, pattern and rural character of settlements**

While there is evidence of occupation within the AONB dating back some 12,000 years, it is the stone buildings and settlements created during the last 800 years which contribute so strongly to the character and quality of the landscape today. This contribution lies not only in the strong vernacular traditions of the area but also in the settings of many of the buildings and the character of individual villages and hamlets. This distinctive settlement character of the AONB is integral to its character and includes rural character, pattern, layout, and vernacular design and materials. Limestone underpins the natural beauty and the use of local limestone in buildings and settlements across the AONB makes a major contribution to its special character.

The villages and hamlets of the area each have their own distinctive history and character with limestone buildings forming the traditional vernacular. All the settlements are rural in character and have open spaces and views which link strongly with the surrounding countryside.

Some of the vernacular building style dates back to Medieval times when some of the earliest stone buildings were built. Arnside Tower, Hazelslack Tower and Beetham Hall along with Warton Rectory, churches and older farmsteads represent some of the earliest buildings surviving within the AONB. They have a vernacular style that includes distinctive features such as the presence of date stones, small 'fire windows' and hood mouldings constructed over windows. Together with the 'slobbered masonry' used to weatherproof limestone rubble-wall buildings, these features demonstrate a strong local tradition that continued to be used by later generations, developing a local style of building that remains a key characteristic of the AONB.

Stone buildings utilising the local limestone including characteristic limestone solution features are common across the AONB and make a major contribution to maintaining the special character of the local vernacular. There are 115 Listed Buildings in the AONB.

Certain aspects of settlement character derive from their history, such as village layouts and the shapes of individual plots. The dispersed nature of Silverdale village, the linear pattern of the Yealands, the historic core of Beetham and the medieval layout of the centre of Warton, following old burgage plots, are examples. The density of housing, setting of individual buildings, views and visual amenity are also important elements of settlement character. New development should respect and be in keeping with historic settlement character.

Open green spaces within settlements are an important aspect of settlement character. They can contribute to the setting and appreciation of important buildings and have historical significance in themselves, either as part of historic settlement pattern and form or as an archaeological resource. They can also allow public views in to or out from within the settlement and can provide a recreational resource for the local community. Open spaces add distinctiveness to the character and interest of settlements and the quality of life of their inhabitants and are a key part of the rural character of the AONB's villages.

Three built environment Conservation Areas in the AONB cover parts of Beetham, Warton and the Yealands.

### **3.9 Strong community and culture – vibrant rural communities strongly identified with the AONB and local landscape; rural livelihoods rooted in land management, farming, woodland management and an environment-based visitor economy**

Working to conserve and enhance the exceptionally high quality environment of the AONB helps create the conditions for sustainable economic growth and prosperity both locally and across the wider region and creates tangible connections between businesses, communities and nature.

Vibrant communities exist within each of the villages and there is also a shared identity with parishes coming together as part of the AONB, strongly connected to the landscape. The most recent estimate of the population living in the AONB (mid 2016) is 7070, 480 fewer than in 2011<sup>20</sup>.

Working the land is the foundation of the rural economy; the long-standing cultures of low-intensity pasture management and woodland coppice management have created much of the distinctive landscape character we see today and the area remains very much a living working landscape. Farming and forestry make a major contribution to the landscape. Landowners and farming and forestry tenants actively maintain the natural beauty and distinctiveness of the area. The interdependent relationship between land management, natural beauty, community and the economy is clear. The health and viability of the land management sector, national policy approaches and work of individual landowners, farmers and land managers are all critical to conserving and enhancing the AONB. Maintaining an economically viable and sustainable land management sector will be essential to delivering the AONB purpose into the future.

56% of the AONB was registered as agricultural land in 2016<sup>21</sup> with the majority of this being pasture for livestock grazing, predominantly beef and dairy cattle and sheep.

The total number of commercial farm holdings in the AONB in 2016 was 48, with most of these being under 20ha. Farms grazing livestock (beef and dairy cattle and sheep) are the predominant farm type, 63%, with 17% being general cropping farms (predominantly silage). There appears to have been an increase in the percentage of larger farms (>100ha) since 2010 along with a continued shift away from small holdings (<5ha)<sup>22</sup>. Following a period of decline, employment in farming within the AONB increased by 23% between 2010 and 2016. In 2016, 26% of those employed in farming were full time farmers, 35% part time and the remainder full and part time employees and casual workers.<sup>23</sup>

Farming within the AONB has diversified over the years to encompass a range of non-agricultural activities including equestrian uses and the provision of holiday accommodation, small-scale campsites and other facilities associated with recreation and rural tourism.

Environmental land management schemes provide funding and support for farmers and land managers to deliver sensitive environmental management on their land. There is significant uptake of Environmental Stewardship and Countryside Stewardship within the AONB, with 24 live agreements in 2018 covering 1314ha. However, overall coverage has decreased over the last 5 years from 2095ha and 33 agreements in 2013.

Managing woodlands produces timber, coppice and woodfuel products and supports jobs. The profitability of forestry is dependent on world market prices and the cost of transport, but increasing interest in the use of woodfuel heating and other wood products is creating the

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<sup>20</sup> Census, 2011

<sup>21</sup> Defra Agricultural Survey, 2016

<sup>22</sup> Defra Agricultural Survey, 2016

<sup>23</sup> Defra Agricultural Survey, 2016

potential for the development and growth of a successful local woodfuel economy. This also leads to an expansion of managed woodland within the AONB with resulting benefits to biodiversity and provision of ecosystem services. Woodlands also play an important role in recreation and tourism, supporting the visitor economy. Forest Enterprise manage 221ha woodland in the AONB as part of the Public Forest Estate, but the majority of woodlands in the area are owned and managed by private landowners, or organisations such as the National Trust and Woodland Trust.

Rural skills such as hedge laying, drystone walling, coppice management and maintenance of traditional orchards are vital for maintaining the traditional landscape and habitats of the area and regular training sessions and competitions are held with the involvement of local organisations and training providers.

Tourism is a key component of the local economy; around 14%<sup>24</sup> of businesses are involved in tourism business activity and tourism accounts for nearly a fifth of total employment within the area. Tourism in the AONB is largely based on the area's nature, culture, special qualities and quiet outdoor recreational opportunities with a growing food and drink offer. The Morecambe Bay Visitor Survey<sup>25</sup> found the most popular reasons for people to visit the area were for its beautiful scenery and its peace and tranquillity. Almost 90% of respondents were interested in visiting places where they can see and or experience wildlife. 94% agreed that Morecambe Bay was good for nature and scenery; 70% of visitors agreed that the area was good for culture and heritage.

Key attractions include RSPB Leighton Moss, Leighton Hall, Silverdale Golf Club, Wolf House Tearooms and Gallery, Arnside promenade and Arnside Knott, Warton Crag, Heron Corn Mill and the Cross Bay Walks.

Leighton Moss visitor figures have grown steadily over the last three years from 99,669 in 2015/16 to 114,373 in 2017/18<sup>26</sup>.

The AONB, with its high quality landscape, clarity of air, spectacular views and diversity of wildlife attracts artists and crafts people who take inspiration from their environment. The Silverdale & Arnside Art and Craft Trail now involves nearly 90 local artists and craftspeople. Educational and knowledge-based businesses and consultancies are increasing.

Consumer interest in foods and products with local provenance is growing. Strong links can be developed between land management, local products and tourism to support the development of valuable short supply chains. Meat (beef, lamb, venison, game), milk, fruit, apple juice, wood products and arts/crafts are all produced in the AONB.

Local services and facilities, including schools, doctors' surgeries, shops, post offices, garages and pubs, all contribute to the quality of life of the AONB's communities and are also important to the visitor economy.

There are thriving primary schools and village/community halls in all of the AONB villages and there are convenience stores/post offices, in all except the Yealands. The largest settlements of Arnside and Silverdale both have medical practices, libraries and a range of other shops and services.

There is regular access to and from the AONB by public transport, principally by rail via the Furness line, which crosses the area with stations at Arnside, Silverdale and nearby Carnforth. This line provides connections with the rest of Morecambe Bay such as Lancaster, Grange, Ulverston and Barrow and the wider region, with direct services to Lancaster and Manchester. Passenger numbers

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<sup>24</sup> Protected Landscape Monitoring, Source: IDBR, 2009, Local Units

<sup>25</sup> Morecambe Bay Visitor Survey, 2013

<sup>26</sup> RSPB data, 2018

at all three stations have increased over the past five years – by 1% at Carnforth, 22% at Silverdale and 0.5% at Arnside<sup>27</sup>.

There is a local bus service linking Carnforth with Warton, the Yealands and Silverdale village including a service to Silverdale railway station. There are limited bus services from Arnside to Kendal.

### Community involvement in AONB designation and management

In the late 1960s and early 1970s, the six parishes of the AONB played a key role in securing the designation of the area as an AONB, working collectively to seek funding and influence the Government through the Countryside Commission and the two County Councils involved in the designation process – Lancashire and Westmorland (pre 1974 local authority re-organisation). By coming together and working toward the designation of the area, the six parishes helped establish the AONB as a distinct location with an identity in its own right. Encouraging community participation in decision-making offers an opportunity to strengthen involvement and community ownership. Vibrant, active and engaged communities are at the heart of delivering the AONB Management Plan. There is long-standing Parish Council representation on the AONB Executive Committee and good participation in AONB Management Plan consultation process.

Local people also raised money to buy and protect sites such as Trowbarrow Quarry, Arnside Knott and Dobshall Wood resulting in a strong sense of community ownership in some areas.

The Arnside & Silverdale AONB Landscape Trust is a registered charity with over 1000<sup>28</sup> members, run entirely by volunteers, and plays an important role in raising awareness of and achieving conservation of the AONB. The Trust owns a network of nature reserves which it manages for conservation, publishes Keer to Kent magazine and organises a popular annual events programme, all of which are instrumental in helping the public understand more about the AONB and its management. The Trust is one of the largest charities in the country that is associated with an AONB.

The Bittern Countryside CIC is a social enterprise, run entirely by volunteers, that seeks to promote a more sustainable future by delivering a programme of community-based sustainable development initiatives with local communities, businesses and organisations active in and around the AONB. For example the CIC has undertaken a community renewables scheme and a project to address fuel poverty.

There are many opportunities within the AONB for people to get involved, learn about and actively participate in the conservation of the area. There are numerous local groups and societies that provide activities based on, and which support interest in, the AONB, such as natural history, local history, ornithology, sustainability and walking groups and societies. There is high community awareness of the area's unique qualities and of its designation as an Area of Outstanding Natural Beauty.

A strong culture of volunteering is reflected in the many thousands of hours that residents contribute to looking after the area by working with local organisations. Habitat and land management at many sites is undertaken by volunteers. There is tremendous scope for local people from the AONB and surrounding areas to take an active role in conserving the character of the AONB and there are many local groups across the AONB which come together as communities of place or interest. Where these are connected to the purposes of the AONB designation, every effort should be made to build capacity of and support for these organisations and to work

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<sup>27</sup> Office of Rail and Road Data

<sup>28</sup> The Landscape Trust had 1083 members in March 2019



collaboratively to develop appropriate initiatives and projects. Further opportunities exist to establish and support community-led volunteer groups to take action to conserve and enhance key sites.

### **3.10 *Opportunities to enjoy and understand the countryside* – the network of narrow lanes and paths offers wonderful opportunities to enjoy quiet recreation such as walking, running, cycling and wildlife watching, and to improve health and wellbeing, and a wide range of events and activities enable people to learn about and celebrate the area**

The AONB is outstanding in the extent and quality of access available, providing wonderful opportunities to enjoy quiet recreation such as walking, running, cycling, wildlife watching and horse riding. The network of narrow lanes and minor highways is one of the delights of the AONB and, along with an intricate web of public rights of way, access land and other paths, provides many opportunities for people to come into close contact with the area's wildlife, geology and history, providing inspiring learning opportunities and engaging visitors with the landscape. This has the potential to have a profound beneficial impact on people's health and well-being and a significant contribution to the local economy.

There is an extensive network of over 110km of Public Rights of Way (PRoW) within the AONB, including footpaths and bridleways, and there are also numerous permissive paths. Significant areas of the AONB are openly accessible to the public such as the Local and National Nature Reserves and National Trust-owned land. Ranger and wardening services are provided on many of these sites. Footpaths are largely signposted with high quality wooden directional way markers. The England Coastal Path is due to open in this area during the lifetime of this Plan and will establish new access to the coast in certain locations.

The National Cycle Network Route 6, runs through the area, between Warton, Yealand Conyers and Milnthorpe. Parts of the Lancashire and Cumbria Cycleways also run through the AONB along with the Morecambe Bay Cycle Way, Route 700, opened in 2015, which takes the routes closest to the coast. Figures supplied by Morecambe Bay Partnership suggest that The Bay Cycle Way brings over 50,000 cyclists to explore the wider Bay area each year.

Improving opportunities for people with disabilities and/or reduced mobility to enjoy the area is a priority. The AONB Tramper, an all-terrain off road mobility scooter, is currently hosted at RSPB Leighton Moss to enable people with limited mobility to discover the reserve; it used regularly.

The bridleway network for horses has the potential to be extended to improve availability and connectivity of routes.

The development of a footpath and cycleway link from Arnside to Grange across the viaduct would provide a key strategic access link and a significant new visitor attraction, with the potential to bring significant economic and health and wellbeing benefits to the area.

Encouraging enjoyment and improving understanding of the special qualities of the AONB and the benefits provided to society by the landscape generates support and positive action for conservation, contributes to the local economy and improves the quality of people's lives. Information, interpretation and communications raise awareness; events and activities encourage more and a wider range of people to connect deeply to nature, culture and landscape.

The tourism offer within the AONB is based on the area's special qualities. Visitors' experiences are enhanced by good quality information being available about the special qualities, and about how people can experience them and support their conservation. Promotion of opportunities for quiet enjoyment and recreation such as walking, running, cycling and bird watching enables visitors to make the most of what the area has to offer.

We know that many people care passionately about Arnside & Silverdale AONB. An online study carried out in 2016 saw over 100 people placing pins on an online map to describe how and why they valued the landscape. The results clearly showed the AONB is much loved and highly valued particularly for its beauty, views, wildlife, sense of place, tranquillity and recreational opportunities<sup>29</sup>.

The AONB Partnership produces a variety of high quality online and printed communications and operates a small Information Centre at Arnside station. There were 95,942 unique pageviews on the AONB website in 2017/18 and 1734 face to face enquiries were dealt with at the AONB Information Centre in 2017. In September 2018 the AONB Facebook page had 1611 followers, with 2788 on Twitter and there were 791 subscribers to the AONB e-newsletter.

Events encourage people to enjoy, learn about and celebrate the special qualities of the area, connecting people with nature and encouraging participation and engagement. Partner organisations organise a vibrant programme of events throughout the year for all age groups including walks, talks, activities and festivals.

For example, the AONB Partnership's Go Wild! initiative encourages children and families to get outside and have fun. It brings together a whole series of events for schools and families happening across the area. A Woodland Fun Day held in July 2018 attracted over 100 people to build dens, play games and enjoy the woodland and a series of successful Land Art events promote a deep connection with nature through art.

Over 900 visitors attended the AONB Apple Day in 2017 to celebrate the orchards of the AONB, the wildlife they support and the associated local produce. An AONB Annual Conference is held with a different theme each year; over 60 people attended in 2018.

A broad range of educational activity is delivered including working with local Primary and Secondary schools, hosting work experience placements, supporting University field visits and research, presenting specialist subject talks to local groups and societies and leading guided visits for a range of groups. For example, in 2017 over 25 educational group visits were hosted at Warton Crag Local Nature Reserve and over 2000 school pupils visited RSPB Leighton Moss.

Better health and wellbeing are major social and economic benefits that can be secured through good management of the natural environment. The AONB landscape provides relevant cultural ecosystem services including beauty, sense of place and space, tranquillity, recreation and sense of history; health and wellbeing benefits arise from relaxation and unwinding, exercise, connection to nature, fresh air, inspiration and spiritual refreshment. 95% of people living in the AONB reported that they were in 'very good, good or fair' health in the 2011 Census, slightly above average.

Active outdoor activity such as walking, running, cycling and conservation work has been shown to boost both mental and physical health and wellbeing including enabling people to lead happier more fulfilling lives. Good access to the countryside is key to delivering these benefits and the AONB offers a range of opportunities to enjoy the countryside. For example, over 500 people took part in the AONB Walking Festival in 2012. Volunteering offers valuable opportunities to

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<sup>29</sup> Natural Capital and Resilient Landscapes in Arnside & Silverdale AONB Report, 2017

participate in active sociable tasks which make a real difference. The wide range of opportunities to enjoy the countryside represents one of the special qualities of the AONB.

There are also proven therapeutic effects of natural beauty and nature and tailored activities can help tackle national health issues such as obesity and social exclusion, or enable people to live well with conditions such as dementia.

The AONB Partnership is well placed to contribute to public health and wellbeing through its work to conserve and enhance the natural environment of the AONB and through the management and promotion of opportunities to access and enjoy it.

### **3.11 *A highly designated area* – a large number of local, national and international designations for biological, geological and historical interest**

The significance and importance of the area and is emphasised by the large number of designations that cover the area.

A measure of how important the area is for its biological, geological and historical interest is provided by the number and extent of designated sites which lie within the AONB. 49% of the AONB area is designated under European directive for its habitat, species or bird interest. A total of 54% of land within the AONB is covered by national Site of Special Scientific Interest (SSSI) designation while a further 12% of land area has been identified as being of local wildlife value by Lancashire and Cumbria County Councils. There are 16 Limestone Pavement Orders covering 15% of the area and 8 Local Geological Sites. 10 Scheduled Monuments, 114 Listed Buildings, 1 Registered Park and Garden, and 3 Conservation Areas have also been identified for their historic value.

## **4 Landscape and seascape character**

### **4.1 European Landscape Convention**

The European Landscape Convention (ELC) is the first international convention to focus specifically on landscape. Created by the Council of Europe, the convention promotes landscape protection, management and planning, and European co-operation on landscape issues. The ELC came into force in the UK on 1 March 2007. It applies to all landscapes, towns and villages, as well as open countryside, the coast and inland areas, and ordinary or even degraded landscapes, as well as those that are afforded protection.

The ELC defines landscape as: "*an area as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*" (Council of Europe 2000). It highlights the importance of developing landscape policies dedicated to the protection and management of landscapes and establishing procedures for the general public and other stakeholders to participate in policy creation and implementation.

### **4.2 Landscape and seascape character**

Landscape and seascape character are a key element of natural beauty.

'Landscape' and 'seascape' are made up of many different 'layers' interacting together – landforms, views, geology, soils, water, wildlife, land management, buildings, heritage and more – and also how we as people perceive them.

The character of the Arnside & Silverdale AONB landscape has been classified and described at various levels.

On a national scale, the AONB falls largely within the Morecambe Bay Limestones National Character Area (NCA 20), which also covers land to the east of the AONB, including Hutton Roof and Farleton Knott, and much of the south Cumbria coast. A sliver of the southern end of the AONB around the River Keer estuary and floodplain falls within the Morecambe Bay Coast and Lune Estuary National Character Area (NCA 31), which also covers the low lying coastal area bordering east Morecambe Bay.

At the county scale, the Cumbria Landscape Character Guidance and the Lancashire Landscape Character Assessment both identify two basic landscape types covering the AONB, named 'Estuary and Marsh' and 'Wooded Hills and Pavement' in Cumbria and 'Open Coastal Marsh' and 'Wooded Limestone Hills and Pavements' in Lancashire.

The Arnside & Silverdale AONB Landscape and Seascape Character Assessment (2015) describes in much greater detail the key elements and qualities that make up the landscape and seascape character of the AONB and classifies its distinctive character types and character areas at a smaller scale.

### **4.3 The Arnside & Silverdale AONB Landscape and Seascape Character Assessment**

The landscape/seascape character types that make up Arnside & Silverdale AONB are defined in the Arnside & Silverdale AONB Landscape and Seascape Character Assessment (2015) as:

- Intertidal flats
- Bay saltmarshes and lagoons
- Lowland moss
- Coastal limestone pasture
- Inland pasture and parkland

- Wooded limestone hills and pavements

Three landscape character types forming part of the setting of the AONB are also defined:

- Drumlin farmland
- Low coastal drumlins
- Lowland valley and coastal margins

### **ADD MAP IN FINAL VERSION**

#### **4.3.1 Seascapes**

Arnside & Silverdale AONB seascapes comprise extensive areas of Morecambe Bay and the River Kent and River Keer estuaries. The dynamic and changing coastline includes intertidal sand and mudflats and saltmarshes, bounded in places by shingle bays, rising to low cliffs with caves. The transition between land and sea is marked by characteristic windswept and stunted oak woodland such as that which hugs the coast south of Arnside.

##### Intertidal flats

This seascape character type comprises two distinctive parts of the AONB: a large expanse of intertidal flats and skeers (channels) at the north east end of Morecambe Bay, and the Kent Estuary to the north.

These intertidal seascapes, usually underwater at high tide, have an open character and dynamic nature, with ever-changing tides and weather conditions contributing to their distinctive and valued perceptual qualities. Shifting patterns of light, textures and colours change with different seasons, weather and times of day providing spectacular panoramic views; there is a sense of wildness and remoteness and a perception of natural processes at work. The presence of large numbers of birds and their calls are also important to the experience of these areas. The intertidal flats contrast strongly with the wooded limestone hills and pavements and drumlin farmland which rise above them.

##### Bay saltmarshes and lagoons

This seascape character type is present at Warton Marshes, consisting of intertidal saltmarsh and lagoon areas fringing the intertidal flats of Morecambe Bay.

The saltmarshes and lagoons make up an extensive flat area with open skylines and long views. These are dynamic depositional landscapes of fine sand and silt vegetated with *Spartina*, fine grasses, and salt tolerant species, and drained by winding creeks. They are strongly influenced by the changing state of the tide and longer term cycles of erosion and deposition of the saltmarsh. They are characterised by the sights, sounds and smells of the sea, and birdlife, notably breeding oyster-catchers, lapwing and redshank, and flocks of overwintering waders and wildfowl and pools and channels of water reflecting the light. In places the open saltmarshes are used for grazing livestock.

### 4.3.2 Transitional and lowland landscapes

The lowland landscapes of the AONB comprise a diversity of low mosses and wetland landscapes contrasting with enclosed limestone pastures and areas of historic parkland. Evidence of a long and historic land use is seen in the field patterns, such as ridge and furrow exposed when the sunlight is low, with landscape features associated with farming and estate management such as hedgerows, drystone walls and parkland trees along with the historic remains of towers, such as Arnside Tower, which are local landmarks. Features also include Leighton Moss and Hawes Water, where the birds and flora attract visitors.

#### Lowland moss

There are five main areas of lowland moss: Arnside and Silverdale Mosses; Leighton Moss and Barrow Scout; Hale and White Mosses; Holme/Burton and Hilderstone Mosses; and River Keer/Warton Floodplain.

These are variable depending upon the way in which they have been managed including landscapes of low lying rushy farmland with reeds along ditches, hedges and wet woodland, and some mosses and reedbeds with areas of open water. There are open views, distinctive seasonal variations and a diversity of wildlife.

#### Coastal limestone pasture

There are four examples of this lowland landscape character type in the AONB at Storth, Far Arnside, Silverdale and Warton.

Limestone pastures enclosed by limestone walls, and sometimes hedgerows, provide a distinctive pattern of small fields, with an intimate character. Gently rolling green landscapes are enclosed by the woodlands of the limestone hills, the interplay between open areas, settlement and woodland are characteristic. Glimpses and views of the intertidal areas give a coastal feel and influence. Key features are the historic villages, buildings and limestone walls, winding narrow lanes and low limestone cliffs and wind-sculpted trees along the coastal fringe.

#### Inland pasture and parkland

Farmed pastoral landscapes are present across the lower inland parts of the AONB including Leighton Park in the centre of the AONB, the medieval villages and strip fields around the Yealands and Hale and the areas characterised by the parklands of Dallam and the Hyning. Further inland pasture is present along Leighton Beck Valley.

Characteristic well maintained limestone walls and neat hedges divide small often low lying and damp fields, which are used for grazing giving a pastoral feel and atmosphere. Both large and smaller parklands are present, often with visible underlying medieval and post-medieval ridge-and-furrow field systems. Parkland avenues and trees, and railings are features, as are grand 18-19th century houses. The inland farmland is well enclosed with a secluded character and limited views outwards. The soft green backdrop of the wooded limestone hills and pavements forms the setting. Lanes wind through the farmland connecting scattered farmsteads and historic villages, including the distinctive linear villages of the Yealands with their characteristic medieval strip fields.

### **4.3.3 Woodland Limestone Hills**

Wooded limestone hills and pavements rise above the lowland landscapes. Inland woodlands are rich and verdant, characterised by the highly distinctive flat bedding planes of the limestone pavements among which many of them grow. Natural crags and outcrops have been exposed by historic and present day quarrying for limestone, including Trowbarrow, now a Local Nature Reserve, Middlebarrow, no longer in use, and Sandside where extraction continues. Arnside is a Victorian seaside resort on the lower slopes of Arnside Knott, overlooking the distinctive Arnside Viaduct across the Kent Estuary.

#### Wooded limestone hills and pavements

The wooded limestone hills and pavements of Arnside & Silverdale AONB are a defining feature of the AONB, with hills such as Arnside Knott and Warton Crag being widely visible in the landscape. Lower areas, such as Gait Barrows include classic limestone pavement landscapes, punctuated by stunted yew woodland.

These are: Arnside Knott/Arnside Park; Middlebarrow/Eaves Wood; Heald Brow/Burton Well; Warton Crag/Grisedale Wood; Hyning and Cringlebarrow; Gait Barrows/Thrang End, and Fairy Steps/Whin Scar.

The wooded limestone hills and pavement mosaics are often protected by Limestone Pavement Orders and designated for their nature conservation interest. The limestone hills rise above the farmland and mosses of the AONB, and provide a soft green backdrop to views and a much-loved sense of space and tranquillity. The low limestone cliffs at the coastal edge form an important and distinctive edge to the adjacent sands and marshes.

Although frequently wooded, the hills include contrasting areas of wood pasture and open limestone grassland on hill tops, from which there are expansive panoramic views towards the Lake District, Forest of Bowland and Yorkshire Dales, and across Morecambe Bay. The changing light across the estuary and bay is best appreciated from these elevated locations.

### **4.3.4 Landscape sensitivity and condition**

The landscape and seascape character assessment concludes that the landscape and seascape character in the AONB has a high or very high level of inherent sensitivity with limited or very limited capacity to accommodate change or development. Landscape and seascape condition is assessed as moderate to good, or good.

### **4.3.5 The setting of the AONB**

Arnside & Silverdale AONB is connected to land, ecosystems, people and business beyond its boundaries. The AONB lies within an area known for its outstanding environmental quality. The AONB shares a boundary with the Lake District National Park to the north and the Forest of Bowland AONB and Yorkshire Dales National Park are clearly visible to the south and east. Much of the surrounding countryside, while not covered by landscape designations, is still of extremely high quality, including the Morecambe Bay coast and Hutton Roof and Farleton Fell to the east.

Three landscape character types form the immediate setting of the AONB and are important to the AONB's character:

- Drumlin farmland
- Low coastal drumlins
- Lowland valley and coastal margins

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Therefore management of and development in these areas must also take the AONB designation into account.



## 5 Public Benefits

### 5.1 Natural capital and ecosystem services

Natural capital assets are the elements of the natural world from which flow a series of services or benefits to society. For example, woodland, species rich grassland, wetlands, and soils are all aspects of natural capital, whilst carbon storage, clean air and water and opportunities for recreation are some of the ecosystem services which flow from them. These services are also influenced by financial and social capital, but at their root is the natural capital that makes their delivery possible.

Natural capital is essential for people and everyday life. By securing and investing in the natural capital of the AONB over the long term we will support a more resilient, better managed landscape that is good for people as well as nature and provides significant public benefits.

As described in Appendix 2, the special qualities and natural capital assets of Arnside & Silverdale AONB provide a wide range of ecosystem services such as food, water, fibre, and fuel, climate regulation, flood protection, recreation, tranquillity, sense of inspiration, education, pollination and biodiversity.

Several studies have been carried out recently to help better understand the natural capital of the AONB and in particular the benefits it provides to people through its *cultural* ecosystem services, those non-material benefits for people, for example beauty, sense of place, or tranquillity. A review<sup>30</sup> of these studies shows a strong interrelationship between the areas that people value, and the area's landscape character and priority habitats.

This Management Plan includes the identification of future land management approaches needed to ensure the landscape is resilient to change and can continue delivering multiple benefits for people into the future. Many of the objectives and actions set out in this Plan influence the management of land and natural systems to help sustain and improve the range and quality of benefits or ecosystem services that are provided.

The area's natural capital is complex, resulting in strong connections between many of the ecosystem services. As a result, it is likely that a range of approaches will be necessary for the continued and future management of resilient landscapes. These include improving our understanding of natural capital and ecosystem services, working together at a catchment scale to adapt to climate change, and managing water, woodlands, farmland, habitats and landscapes to support a strong local economy.

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<sup>30</sup> Natural Capital and Resilient Landscapes in Arnside & Silverdale AONB Report, 2017

## 6 Planning and development

### 6.1 Planning and development in AONBs

The fundamental principle underlying planning and development management in AONBs is that, as designated landscapes, AONBs have the highest status of protection in relation to landscape and scenic beauty. All development is expected to conform to a high standard of design and conserve and enhance the AONB's special qualities.

Section 85 of the Countryside and Rights of Way Act (2000) places a statutory duty on all local planning authorities to have regard to the purpose of conserving and enhancing natural beauty in carrying out their functions in relation to, or so as to affect, land in AONBs. The Act confirms that the landscape qualities of AONBs and National Parks are equivalent. As such, the protection given by the land use planning system to natural beauty in both types of area should also be equivalent.

Planning policies for AONBs are contained in the National Planning Policy Framework (NPPF), Local Plans, Mineral and Waste Local Plans and Neighbourhood Plans. The NPPF provides specific guidance for development planning and decision-making in relation to AONBs. It confirms that *'great weight should be given to conserving and enhancing landscape and scenic beauty'* in AONBs and that *'the scale and extent of development within these designated areas should be limited'* and also that *'planning permission should be refused for major developments in AONBs other than in exceptional circumstances and where it can be demonstrated that they are in the public interest'*<sup>31</sup>.

The NPPF confirms that local planning authorities should set out the strategic priorities for their areas within Local Plans that contribute to and enhance the natural environment, by

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services;
- maintaining the character of the undeveloped coast; and
- minimising impacts on and providing net gains for biodiversity.<sup>32</sup>

AONB designation and AONB Management Plans are material considerations in the planning process as adopted statutory policy of the local authorities.

### 6.2 Local Plans and the Arnside & Silverdale AONB Development Plan Document

The district-wide Local Plans of both South Lakeland District Council (SLDC) and Lancaster City Council (LCiC) contain policies relating to the conservation and enhancement of the Arnside & Silverdale AONB and its setting.

A dedicated Arnside and Silverdale AONB Development Plan Document (AONB DPD) has been prepared jointly by SLDC and LCiC which is part of the two authorities' Local Plans<sup>33</sup>. The AONB DPD includes specific development management policies for the AONB to reflect the purposes of AONB designation and relevant policies in the National Planning Policy Framework<sup>34</sup> and a number

<sup>31</sup> Paragraph 172, National Planning Policy Framework, 2018

<sup>32</sup> Paragraph 170, National Planning Policy Framework, 2018

<sup>33</sup> the two authorities' Local Plans both comprise of a number of Development Plan Documents that will be applied in conjunction with the AONB DPD

<sup>34</sup> The AONB DPD has been assessed under provisions of National Planning Policy Framework, 2012

of land allocations where housing and employment development has been found to be appropriate. It also designates open spaces within settlements that make a significant contribution to their character as Key Settlement Landscapes, to be protected from development. Public open spaces valued for their recreational importance are also identified and protected.

The AONB DPD sets out a joint planning policy approach to ensure development is planned and managed in a way that conserves and enhances the natural beauty and special qualities of the AONB. Any new development should seek to deliver enhancements to the landscape, biodiversity and settlement character wherever possible. Robust implementation of the AONB DPD will help to enable the local authorities to fulfil their statutory duty to have regard<sup>35</sup> to the AONB purpose in their decision-making with respect to planning matters.

As is the case in many rural areas, within the AONB there is a recognised need for housing to meet local needs, in particular affordable housing. In Arnside & Silverdale AONB there are only a very limited number of sites that are considered appropriate for development (i.e. can be developed without causing harm to the special qualities of the AONB). It is therefore very important to ensure that affordable housing is in fact delivered on the appropriate sites that have been allocated, as well as windfall developments or redevelopments on other sites, otherwise the need and the consequent pressure for development will remain. In order to address this issue, the AONB DPD stipulates that in developments of 2 or more houses, 50% must be affordable.

### **6.3 The role of the AONB Partnership in planning matters**

Planning decisions and enforcement action affecting the AONB will be made by the relevant local planning authority with reference to Local Plans, the AONB DPD and the AONB Management Plan, as a material consideration. The role of the AONB Partnership is to provide landscape-related planning advice to the local authorities to assist this process. The AONB Partnership also liaises with Natural England, the statutory consultee for landscape, on planning matters. The AONB Partnership will also provide advice and consultation responses to other bodies on relevant strategic plans and policies affecting the AONB.

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<sup>35</sup> Section 85 of the Countryside and Rights of Way Act (2000)

## 7 Vision for the future

### 7.1 Long-term vision

The shared long-term vision<sup>36</sup> for the AONB is:

Arnside & Silverdale Area of Outstanding Natural Beauty is a landscape of international importance, whose distinctive character is conserved and enhanced for future generations.

It is a place that is much loved and highly valued, for its strong sense of place, unique geology, diverse wildlife and rich heritage and the benefits it provides to society.

Its outstanding landscape - an intimate mosaic of low limestone hills, woodland, wetland, pastures, limestone pavements, intertidal flats, coastal scenery and distinctive settlements - and rich natural and cultural heritage are enjoyed, cherished, conserved and enhanced by those who live in, work in and visit the area.

The high quality and resilient landscape supports and is supported by the area's thriving rural economy and vibrant sustainable local communities. There are many and varied opportunities for people to access, enjoy and understand the area's special qualities, and participate in their conservation and enhancement, creating a strong connection with nature and the landscape.

Challenges and pressures are effectively and sensitively managed in an integrated way through a partnership approach. The area's natural capital and cultural assets are appropriately and sustainably managed to ensure a wide range of public benefits for present and future generations.

To achieve this, the AONB Partnership is aiming for 3 key outcomes which reflect the national objectives of the AONB Family:

- an outstanding landscape rich in natural and cultural heritage
- vibrant and sustainable communities
- a strong connection between people and the landscape

In working to deliver these outcomes, we must consider environmental, economic and social objectives. The challenges faced by the area are many and diverse, some are local in nature while others are national issues. Some can be relatively easily addressed but others are difficult to resolve. We must work together with partners and stakeholders to deliver these outcomes while recognising

<sup>36</sup> 94% of respondents to the Management Plan Review Consultation Survey, 2018, agreed with the Vision with the remaining respondents suggesting a small number of positive amendments, which have now been incorporated

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that different organisations, groups and individuals have different opinions on and priorities for how best to conserve the features and qualities which make this landscape special.

Sustaining this exceptional landscape is a major challenge and requires collaboration, cooperation and significant resources. We believe that there should be an aspirational approach to working in partnership to source and attract funding and investment to allow landscape enhancement and management across the AONB.

## 8 What is needed to conserve and enhance Arnside & Silverdale AONB?

This section sets out what is needed to achieve the Vision and key outcomes. A framework of strategic objectives is presented along with identification of key issues and forces for change, outcomes and recommendations for delivery between 2019 and 2024, and beyond, that all authorities, partners, stakeholders, farmers, landowners and communities can work to in order to conserve and enhance the AONB. Actions are to be achieved through decision-making, land management and joint projects. While it is recognised that many partners will contribute – the delivery of the Management Plan is a joint collaborative enterprise – key partners important for delivery are identified.

This section has been strongly influenced by the consultation responses received during the review of the 2014-19 AONB Management Plan.

It is important to note that the Management Plan does not cover everything affecting the Arnside & Silverdale area, rather those matters directly linked to the purposes of AONB designation.

The State of the AONB Report (2019) gives further more detailed information and evidence about the current status of matters relevant to the Management Plan.

All objectives and actions are to be delivered in a way that supports the AONB purpose and causes no harm to Natura 2000 sites.

<b>A framework of strategic objectives for Arnside &amp; Silverdale AONB</b>
<b>Outstanding landscape rich in natural and cultural heritage</b>
<b>Landscape and seascape</b>
Strategic objective 1: Conserve, enhance and improve understanding of the natural beauty, landscape and seascape character, and special qualities of Arnside & Silverdale AONB.
<b>Natural capital and ecosystem services</b>
Strategic objective 2: Conserve, enhance and improve understanding of the natural capital of the AONB and the range and value of the public benefits and ecosystem services that it provides to society.
<b>Geodiversity</b>
Strategic objective 3: Conserve and improve understanding of the geodiversity of the AONB.
<b>Habitats and species</b>
Strategic objective 4: Conserve, enhance and restore the AONB's characteristic mosaic of habitats and improve their connectivity, take targeted action to conserve key species and improve understanding of the biodiversity of the AONB.
<b>Water environment</b>
Strategic objective 5: Improve water quality and condition of watercourses and waterbodies in the AONB and support natural flood management.
<b>Historic and cultural heritage</b>
Strategic objective 6: Conserve, restore and improve understanding of the historic environment of the AONB including heritage assets, historic landscape character and cultural heritage.
<b>Development management</b>
Strategic objective 7: Implement a landscape capacity-led approach to development planning and management, which conserves and enhances the natural beauty, landscape, seascape and special qualities of the AONB and its setting.

<b>Vibrant and sustainable communities</b>
<b>Land management and rural livelihoods</b>
Strategic objective 8: Support landowners and managers to sustainably manage the landscape in ways that conserve and enhance the special qualities of the AONB and deliver a range of environmental, community and local economic benefits, in particular by encouraging farming, land- and woodland management practices that enhance natural beauty and landscape character.
<b>Sustainable visitor economy</b>
Strategic objective 9: Ensure that the visitor economy is environmentally sustainable and contributes to the conservation and enhancement of the area's special qualities, and enable visitors to have high quality experiences of nature, culture and quiet recreation.
<b>Affordable housing, rural services and local economy</b>
Strategic objective 10: Support delivery of affordable housing and services to help meet local community needs and environmentally sustainable local economic activity that conserves and enhances the special qualities of the AONB.
<b>Community engagement and volunteering</b>
Strategic objective 11: Engage local communities in conserving and enhancing the AONB and encourage active involvement through volunteering.
<b>A strong connection between people and the landscape</b>
<b>Enjoyment and understanding</b>
Strategic objective 12: Provide high quality information, events and activities to enable people to enjoy, learn about and celebrate the AONB's special qualities in a sustainable way.
<b>Access and recreation</b>
Strategic objective 13: Maintain and improve access to the coast and countryside in a sustainable way for a diverse range of people and promote responsible, safe and quiet recreation.
<b>Health and wellbeing</b>
Strategic objective 14: Provide opportunities for people to improve their health and wellbeing by connecting with nature, culture and the landscape.

## 8.1 An outstanding landscape rich in natural and cultural heritage

### 8.1.1 Landscape and seascape

#### Key issues, challenges and forces for change

- international conventions and obligations such as the European Landscape Convention, the Convention on Biodiversity and Climate Change Agreements
- changes in and uncertainty about national policies relating to farming, forestry and the environment as a result of the UK's exit from the European Union, in particular new approaches to environmental land management and rural development schemes and other support mechanisms for farmers and landowners
- Government ambitions to improve the environment as set out in 'A Green Future: Our 25 Year Environment Plan'

- the landscape and seascape character in Arnside & Silverdale AONB has a high or very high level of inherent sensitivity with limited or very limited capacity to accommodate change or development, as confirmed in the Landscape and Seascape Character Assessment
- incremental changes over time lead to cumulative loss of character and erosion of the special qualities of the AONB
- effects of climate change including extreme weather, storm surges and sea level rise and temperature change
- land use and land management changes, including agricultural change, particularly intensification
- soil erosion, compaction (both machinery and flood compaction) and management
- over or under grazing of limestone grassland
- under management of woodland
- potential for loss and deterioration of key landscape features
- loss and deterioration of traditional boundaries including dry stone walls (and associated features) and species-rich hedgerows (through intensive mechanised cutting), reducing effectiveness to contain stock and value as wildlife corridors
- potential for loss of ancient, veteran, notable and parkland trees
- dynamic cycles of erosion, deposition and accretion of saltmarsh/mud/sand due to natural geomorphological processes within the Kent Estuary
- increased intrusion through noise and light pollution affecting tranquillity, dark skies and sense of place
- loss of key views due to vegetation and tree growth

### **Strategic objective and outcomes**

Strategic objective 1: Conserve, enhance and improve understanding of the natural beauty, landscape and seascape character, and special qualities of Arnside & Silverdale AONB
Outcomes: <ul style="list-style-type: none"> <li>• A high quality landscape, seascape and undeveloped coastline where landscape and seascape character, natural beauty and the area's special qualities are conserved and enhanced</li> <li>• A landscape and seascape that is resilient to climate change and other pressures</li> </ul>

### **Actions**

- 1a. apply the guiding principles of the European Landscape Convention and use landscape and seascape characterisation as the basis for policy- and decision-making to conserve and enhance landscape and seascape character and natural beauty
- 1b. periodically review and update the AONB Landscape and Seascape Character Assessment and raise awareness of landscape and seascape character
- 1c. take coordinated landscape-scale approaches to conserving and enhancing natural and cultural heritage, developing and facilitating collaboration, partnership projects and innovative approaches and solutions
- 1d. protect undeveloped coastline and conserve and enhance coastal features and seascape character
- 1e. manage the mosaic of landscape and seascape types to conserve and enhance the distinctive character of the AONB and create a resilient landscape



- 1f. promote the importance of good soil management for carbon storage, water quality and flood regulation by establishing and implementing soil management plans
- 1g. support and encourage appropriate and sensitive land and woodland management practices and approaches including uptake of environmental land management schemes or site/farm/woodland management plans
- 1h. achieve appropriate grazing regimes on limestone grassland sites, including conservation grazing regimes where appropriate
- 1i. conserve and restore distinctive landscape boundaries and features such as hedgerows, drystone walls, field barns and other features and assets
- 1j. remove infrastructure that adversely affects the landscape, such as pylons and overhead cables wherever possible such as through the undergrounding for visual amenity project
- 1k. conserve ancient, veteran, notable and parkland trees and ensure succession planting
- 1l. carry out a programme of landscape monitoring and produce a State of the AONB report every 5 years
- 1m. avoid increasing light and noise pollution which would cause adverse impacts on tranquillity or dark skies
- 1n. reinforce the AONB's distinctive sense of place
- 1o. maintain open views from key view points by managing vegetation and tree growth as appropriate

#### **Key partners**

Landowners, farmers, land managers, woodland managers  
 Local planning authorities  
 Highways authorities  
 Natural England  
 Environment Agency  
 Forestry Commission  
 Electricity Northwest

### **8.1.2 Natural capital and ecosystem services**

#### **Key issues, challenges and forces for change**

- need to continue to improve knowledge and awareness of natural capital and ecosystem services and their public benefits and value to society

#### **Strategic objective and outcomes**

Strategic objective 2: Conserve, enhance and improve understanding of the natural capital of the AONB and the range and value of the public benefits and ecosystem services that it provides to society.
Outcome: <ul style="list-style-type: none"> <li>• The natural capital of the AONB and the ecosystem services and public benefits derived from these assets are understood, valued and promoted</li> </ul>

## Actions

2a. manage the area based on natural capital and ecosystems services approach to increase landscape resilience especially resilience to climate change

2b. research and improve understanding of the natural capital and ecosystem services that the landscape provides in terms of public benefits and value to society

2c. undertake further evidence gathering and research about the cultural ecosystem services provided by the AONB

## Key partners

AONB partners

Natural England

Universities and research institutions

### 8.1.3 Geodiversity

#### Key issues, challenges and forces for change

- potential for loss of, damage to or under management of geological sites or features
- lower than expected levels of awareness and understanding of the area's geodiversity, its importance and its links to biodiversity and heritage
- ensuring monitoring and positive management of Local Geological Sites and areas covered by Limestone Pavement Orders, and other geological designations
- further research required about certain aspects of the area's geodiversity

#### Strategic objective and outcomes

Strategic objective 3: Conserve and improve understanding of the geodiversity of the AONB.
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Outcomes:
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- |   |
|---|
| <ul style="list-style-type: none"><li>• Geodiversity is in favourable condition</li><li>• The area's geodiversity is well researched and understood</li></ul> |
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## Actions

3a. develop a local Geodiversity Action Plan for the AONB to provide a framework for conserving, managing and raising awareness of the AONB's geodiversity

3b. conserve and manage geodiversity, including both statutory (Special Areas of Conservation, Limestone Pavement Orders, SSSI) and non-statutory (Local Geological Sites) sites and also non-designated geological features and assets

3c. raise awareness of the importance of geodiversity as part of the landscape character and cultural heritage of the AONB, its importance in providing ecosystem services and its key link to biodiversity

3d. increase awareness and appreciation of geology and the conservation of geodiversity in a sustainable way at key sites, for example through the publication of geotrails and provision of interpretation etc.

3e. carefully manage works to conserve or research historic assets or archaeological sites using a multi-objective approach so that they do not cause harm to geodiversity

3f. build improved links with universities and local geological societies

3g. facilitate geodiversity research projects in the area for example, to aid in understanding the potential complexities of the Silverdale Disturbance and the age and formation of Hale Moss

Caves, and to raise awareness of the Quaternary geomorphological landforms e.g. drumlins, kames, kettleholes, eskers and ongoing coastal processes

### **Key partners**

Landowners and managers  
Local authorities  
Natural England  
Cumbria GeoConservation  
Westmorland Geological Society  
GeoLancashire  
Universities and research institutions

## **8.1.4 Habitats and species**

### **Key issues, challenges and forces for change**

- changes in and uncertainty about support mechanisms for farmers and landowners to enable biodiversity enhancements
- effects of climate change including extreme weather, storm surges, sea level rise and temperature change
- loss and deterioration of some characteristic habitats, habitat fragmentation and declining resilience of ecological networks
- loss or decline of characteristic species and species diversity including low genetic diversity of some species that are on the brink of extinction e.g. Teesdale violet
- unfavourable or declining condition of a small number of SSSI sites/units: while 99.1% of the SSSIs are in favourable or recovering condition (64.7% in favourable condition and 34.4% in recovering condition), Middlebarrow unit 3 remains in decline, Hawes Water unit 3 has declined from favourable to declining, Hawes Water unit 12 remains unfavourable no change, and both Gait Barrows (Little Hawes Water) and Warton Crag (Three Brothers allotments) have declined from favourable to unfavourable no change<sup>37</sup>.
- relatively low level of positive management of Local Wildlife Sites: only 21 of the 64 Local Wildlife Sites have been assessed as being in positive management<sup>38</sup>.
- a focus on designated sites can make non-designated areas of priority habitat more vulnerable
- scrub encroachment on and nutrient enrichment (through fertiliser, manure or slurry application) of species-rich limestones grassland sites leading to declines in species-richness
- achieving appropriate grazing and management regimes on limestone grassland to enhance their species-richness
- under management of woodland, particularly on sensitive difficult-to-manage sites such as limestone pavement and damage to woodland caused by Grey Squirrels and deer
- dieback of ash caused by the fungus *Hymenoscyphus fraxineus* is present in the AONB and is likely to significantly affect ash woodlands, the dominant woodland type within the area
- fungus-like pathogens *Phytophthora austrocedrae*, which causes dieback and mortality of juniper and *Phytophthora ramorum* that causes extensive damage and mortality to trees and other plants, are now present in northern England

<sup>37</sup> © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2018.

<sup>38</sup> County Wildlife Sites Survey, G Skelcher, 2014/15

- invasive non-native species now present at a small number of locations within the AONB include Japanese Knotweed, Giant Hogweed, Himalayan Balsam, Piri-piri Burr and New Zealand Pygmy Weed; Cotoneaster and Buddleia have been recorded at various SSSIs within the AONB and Grey Squirrels are well established, with Mink also present
- high tide salt water incursion into Leighton Moss and other low-lying mosses during storm surges and high tide erosion impacts on saline pools on Warton Marsh
- recreational disturbance of wildlife particularly breeding and overwintering waders and wildfowl on the coast
- potential to cause harm to biodiversity through works to conserve or research historic assets or archaeological sites
- decline in species reliant on the built environment such as swifts and bats
- terrestrial and marine litter
- wildlife crime
- need for further coordination of biodiversity research and monitoring, including up-to-date condition surveys of designated sites, and data collation and analysis

### **Strategic objective and outcomes**

Strategic objective 4: Conserve, enhance and restore the AONB's characteristic mosaic of habitats and improve their connectivity, take targeted action to conserve key species and improve understanding of the biodiversity of the AONB.

Outcomes:

- Increased area of priority habitats that are well connected and resilient
- Priority habitat condition is favourable or improving
- Key species are being conserved or are recovering
- The area's biodiversity is well researched and monitored leading to a good understanding of the condition and status of habitats and species and appropriate management requirements to ensure resilience for the future

### **Actions**

- 4a. establish a 'Nature Recovery Network' for the area: deliver net gains in biodiversity, developing robust ecological networks that are resilient to climate change through habitat enhancement, expansion, restoration and creation including improving habitat connectivity by establishing buffer zones, linear corridors and 'stepping stones', with a focus on priority habitats and enhancing landscape character
- 4b. take a coordinated and landscape-scale approach to nature conservation within the AONB and across the Morecambe Bay area, including by supporting the work of the Morecambe Bay Local Nature Partnership
- 4c. strive to ensure that statutory designated sites are adequately protected, prioritise achieving favourable condition status and carry out regular condition monitoring and ensure that any plans or projects do not have a significant adverse effect on the important features of Natura 2000 sites

- 4d. improve understanding of the attributes of healthy, resilient landscapes and how this relates in detail to the AONB – for example, what habitat diversity, patch size and connectivity is needed to build resilience
- 4e. increase the proportion of Local Wildlife Sites that are in positive management
- 4f. encourage high nature-value farming and forestry/woodland management practices, providing bespoke advice and support to landowners, land managers and farmers and facilitate uptake of environment land management schemes or site/farm/woodland management plans
- 4g. retain, improve and expand areas of species-rich calcareous grassland including by clearing scrub and ensuring appropriate grazing regimes, including conservation grazing schemes where appropriate
- 4h. ensure appropriate seasonal cutting of hay meadows
- 4i. facilitate species-rich green hay spreading using appropriate donor and receptor sites
- 4j. create more transitional habitats, such as woodland edge, to blend habitats and form 'ecotones' to enhance the boundaries between high quality habitat and surrounding land
- 4k. prioritise protection and enhancement of ancient semi-natural woodlands
- 4l. sustainably manage woodland through coppicing, selective thinning, creating rides and glades, freeing up veteran trees, retaining deadwood and felling within woodlands, and encourage sensitive low-impact woodland management techniques such as horse-logging, where appropriate
- 4m. manage Grey Squirrels and monitor Red Squirrel sightings in a coordinated way according to an agreed local strategic approach consistent with approved national policy, working through the Arnside and Silverdale Red Squirrel Initiative, coordinated by Westmorland Red Squirrels
- 4n. manage deer in a coordinated way through the Deer Initiative and the Arnside and Burton Deer Management Group
- 4o. install and monitor wildlife boxes in appropriate locations
- 4p. create, restore and enhance wetland habitats in appropriate locations including wet grassland, moss and fenland, and reedbed
- 4q. ensure collaboration and joined-up habitat management at key sites such as Warton Crag
- 4r. raise awareness of, monitor, control, manage, prevent spread and/or eradicate invasive non-native species and diseases including Giant Hogweed, Himalayan Balsam, Piri-piri Burr, Japanese Knotweed, Cotoneaster, dieback of ash, Phytophthora spp. etc. (through Cumbria Freshwater Invasive Non-Native Species, Rapid Response Plans, Tree Health Group, volunteer work parties and focussed projects etc.)
- 4s. take planned targeted action to conserve key species with a focus on S41 priority species including High Brown Fritillary, Lady's-slipper Orchid, Maidenhair Fern, Autumn Lady's Tresses, Teesdale Violet, Bittern etc.
- 4t. implement appropriate species reintroduction working with appropriate bodies and according to IUCN and other appropriate guidelines e.g. floral restoration, dormouse etc. working through the Back on Our Map project
- 4u. tackle wildlife crime in a coordinated way
- 4v. support efforts to conserve swift populations and other species reliant on the built environment
- 4w. conserve, enhance and improve the resilience of pollination as an ecosystem service supporting actions to create pollinator habitat and help pollinating insects
- 4x. encourage sensitive management of roadside margins and verges to enhance their biodiversity value

- 4y. coordinate a collaborative programme of biodiversity monitoring and research and data sharing to inform management decisions
- 4z. carefully manage works to conserve or research historic assets or archaeological sites with a multi-objective approach so that they do not cause harm to biodiversity
- 4aa. Deliver a multi-objective partnership project at Warton Mires to restore wet grassland habitat with a focus on breeding lapwing
- 4bb. Tackle recreational disturbance via education, appropriate signage and awareness raising

### **Key partners**

Landowners, farmers, land and woodland managers  
 Defra  
 Natural England  
 Morecambe Bay Local Nature Partnership  
 RSPB  
 National Trust  
 Landscape Trust  
 Environment Agency  
 Woodland Trust  
 Wildlife Trusts  
 Cumbria Biodiversity Records Centre  
 Lancashire Environmental Records Network  
 Arnside Natural History Society  
 Universities and research institutions  
 Parish Councils  
 Highways authorities  
 University of Cumbria

### **8.1.5 Water environment**

#### **Key issues, challenges and forces for change**

- diffuse water pollution from agriculture and point source water pollution from private sewage treatment infrastructure and assets [Where water quality monitoring takes place in the AONB it shows that water quality is overall generally good in the rivers and streams and in Hawes Water. At Leighton Moss monitoring indicates levels of phosphorus and nitrate elevated above the level required to ensure that the SSSI is in favourable condition. Agriculture has been identified as the primary reason for the elevated levels. While there is currently little monitoring information to confirm it, there are concerns about groundwater quality in the Silverdale area. Discharges from private sewage treatment infrastructure and assets are the cause of concern here. The vast majority of the area drains to private sewerage treatment infrastructure rather than the public sewerage system]
- lack of comprehensive and coordinated water quality monitoring programme
- effects of climate change including extreme weather, storm surges, sea level rise with increased risk of fluvial, surface water and coastal flooding and also low flows in times of drought
- fluvial and surface water flood management [fluvial flood risk has previously been low within the AONB but in 2015 Storm Desmond resulted in December being the wettest calendar month overall since records began and there was flooding in Warton and Beetham villages and across

the mosses. Surface water flooding can be an issue in Warton, Arnside and Yealand and coastal flooding is a potential risk in certain areas such as Storth and Sandside. The issue of coastal flooding and salt water inundation of the low lying mosses is cross cutting with climatic factors.]

- eutrophication, particularly in the Leighton Moss SSSI, and sedimentation of water courses and water bodies
- modification and loss of natural processes for rivers and wetlands
- increasing and conflicting demands on the coastal zone resulting from coastal squeeze due to sea level rise, enhanced coastal access and land use
- achieving suitable water quality and conditions for migrating and spawning native fish stock
- sustainable management of shellfishery [The intertidal sand and mudflats of Morecambe Bay support a range of shellfish, including cockles. Warton Sands cockle bed is located in the south west corner of the AONB. There were active cockle fisheries in Morecambe Bay for most of 2017 stocks of cockles were not of a commercial quantity at Warton Sands. The fluctuation in cockle recruitment is natural and there can be huge variations over time. The sustainable management of the cockle fishery is very important as over exploitation could impact on the important oystercatcher population within the Bay, which feeds on the cockles in the intertidal area, along with other foods such as mussels and lugworm.]

### **Strategic objective and outcomes**

Strategic objective 5: Improve water quality and condition of watercourses and waterbodies in the AONB and support natural flood management.
<p>Outcomes</p> <ul style="list-style-type: none"> <li>• High water quality and good condition of water courses and water bodies</li> <li>• Sensitive and sustainable flood risk management</li> </ul>

### **Actions**

- 5a. take a coordinated approach to catchment management through Catchment Partnerships, delivering projects to help increase flood resilience and improve the quality of the water environment, supporting delivery of the North West River Basin Management Plan and to meet Water Framework Directive objectives
- 5b. support measures and local action to protect and enhance the water environment, both terrestrial and coastal/estuarine, and improve water quality, working with Environment Agency, South Cumbria Rivers Trust and Lune Rivers Trust
- 5c. support effective delivery of the Leighton Moss and Hawes Water Diffuse Water Pollution Plan
- 5d. promote and implement a comprehensive programme of monitoring water quality in water courses and water bodies if feasible
- 5e. implement catchment sensitive farming initiatives to tackle agricultural diffuse and point source pollution in target areas
- 5f. raise awareness of issues and what action residents can take to improve condition and management of septic tanks through initiatives such as the Love My Beach campaign
- 5g. ensure any new development implements high quality sewerage infrastructure
- 5h. support the creation, restoration and enhancement of wetland habitats and the reinstatement of natural processes, in appropriate locations

- 5i. support appropriate natural flood management schemes to help reduce inland and coastal flood risk wherever appropriate
- 5j. implement sustainable and integrated coastal zone management supporting measures which protect and enhance the coastal and estuarine habitats of the area and protect bathing waters
- 5k. ensure appropriate involvement in marine planning (e.g. Shoreline Management Plan, North West Marine Plan, Coastal Strategies etc.) regarding internationally and nationally important coastal and intertidal wildlife sites, water quality management, the seascape, the coastal historic environment, climate change adaptation and mitigation, coastal change, erosion and flooding, shell fisheries, tourism and recreation (particularly coastal access)
- 5l. reduce marine and coastal litter
- 5m. ensure engagement in the development of any coastal zone management and flood risk strategy for the Kent estuary or coastal defence strategy for outer Kent estuary, including Grange and Arnside or any realignment and habitat creation studies
- 5n. encourage uptake of environmental land management schemes to help deliver multiple benefits including flood risk benefits, supporting restoration of natural floodplain wherever possible
- 5o. sustainably manage Warton Sands shellfishery through flexible permitting byelaw for hand-gathering shellfish
- 5p. ensure that any new development is directed away from areas at highest flood risk, is safe both now and in the future, and does not increase flood risk elsewhere

### **Key partners**

South Cumbria Rivers Trust  
 Lune Rivers Trust  
 Catchment Partnerships  
 Environment Agency  
 Natural England  
 Flood Authorities  
 Local Authorities  
 Landowners and managers  
 Marine Management Organisation  
 Morecambe Bay Partnership  
 North West Coastal Forum  
 Inshore Fisheries and Conservation Authority North West

### **8.1.6 Historic and cultural heritage**

#### **Key issues, challenges and forces for change**

- four scheduled monuments remain on the Historic England Heritage At Risk Register: Arnside Tower, Hazelslack Tower, Beetham Hall (curtain wall and uninhabited portion) and Warton Crag Hillfort
- declining condition of, loss of and under management or poor management of heritage assets and features
- heritage assets and features that contribute to historic landscape character



- the lack of information and research about, and recording and interpretation of, the heritage assets and historic landscape character of the AONB
- the need for greater collaboration between owners, partner organisations and communities to conserve, enhance and improve understanding of the historic and cultural heritage of the AONB
- a focus on designated assets can make non-designated assets more vulnerable to loss, damage or neglect
- non-designated historic assets that are an important part of the historic landscape and are valued by people are not always well described or recognised
- gradual loss or fragmentation of traditional field patterns resulting from the removal and erosion of field boundaries such as drystone walls and hedges
- loss of and deterioration in condition of orchards and loss of traditional fruit varieties
- risk of harm to the archaeological resource and traditional character of settlements and individual buildings through inappropriate development
- increased likelihood of damage to and deterioration of structure and foundations of historic buildings through storm events, heavier and winter waterlogging due to climate change
- damage to or loss of chimney and associated structures at Jenny Brown's Point due to erosion of salt marsh and sea level rise
- potential to cause harm to historic assets or archaeology through works to conserve or enhance biodiversity
- while some projects have been undertaken, information on social and cultural history of the AONB such as land management practices, local history and development of the villages is at risk of being lost as people get older and if it is not formally recorded in some way

### **Strategic objective and outcomes**

#### Strategic Objective 6:

Conserve, restore and improve understanding of the historic environment of the AONB including heritage assets, historic landscape character and cultural heritage.

#### Outcomes:

- Historic landscape character is conserved
- Key heritage assets and features are retained and sensitively restored where appropriate
- The area's heritage, including cultural heritage, is well researched and understood

### **Actions**

- 6a. establish an historic environment working group to ensure a coordinated AONB-wide approach to conserving, enhancing and improving understanding of historic and cultural heritage
- 6b. take targeted action through projects or other mechanisms where feasible to reduce the number of scheduled monuments and other heritage assets that remain on the Historic England Heritage At Risk Register
- 6c. conserve and enhance heritage assets and features and their settings including taking targeted action to research, record and protect heritage assets at risk of damage due to climate change or other factors, including the chimney at Jenny Brown's Point likely currently at risk due to erosion of saltmarsh and sea level rise

- 6d. monitor condition of heritage assets and use this to inform future management and/or restoration
- 6e. improve knowledge and understanding of heritage and culture through surveys, research and interpretation
- 6f. maintain and improve the Historic Environment Record for the area
- 6g. provide signposting, advice, guidance and support for owners
- 6h. manage orchards in need of restoration work
- 6i. undertake surveys to record historical interest before conversion of historic buildings such as farmsteads and barns to new uses
- 6j. research and record oral history and cultural heritage
- 6k. support local authorities in preparation of Local Heritage Lists as part of the protective framework for heritage assets through the planning system
- 6l. support local organisations and projects to enhance local capacity, increase awareness of and public involvement in the management of the local historic environment
- 6m. encourage uptake of environment land management schemes to enhance the historic landscape
- 6n. raise the profile of archaeology and support the delivery of archaeology-related projects
- 6o. promote the historic environment so that people can appreciate and enjoy heritage assets
- 6p. research and describe non-designated heritage assets and features
- 6q. carefully manage works to conserve or restore biodiversity or geodiversity using a multi-objective approach so that they do not cause harm to heritage
- 6r. conserve and restore historic designed landscapes and gardens where feasible
- 6s. conserve and ensure positive management of historic springs, ponds and wells such as Bank Well and Wood Well in Silverdale
- 6t. finalise a conservation management plan for Warton Crag scheduled monument to balance the needs of the archaeology of the site with its natural heritage importance and management and carry out further research such as targeted excavation and/or core sampling

### **Key partners**

Site/property owners and managers  
 Historic England  
 Local authorities  
 Museums services  
 Mourholme Society  
 Arnside Archive  
 Morecambe Bay Partnership  
 Universities and research agencies

### **8.1.7 Development management**

#### **Key issues, challenges and forces for change**

- development pressure and inappropriate development were identified as one of the most significant issues affecting the AONB in the Management Plan consultation held in early 2018<sup>39</sup>.

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<sup>39</sup> 86% of respondents to the Full AONB Management Plan Review Consultation Survey, 2018, indicated that development pressure was the most important issue affecting the AONB

- inappropriate location, design scale and/or nature of development which causes harm to the area's landscape character, visual amenity or natural and cultural heritage within the AONB or its setting (for example loss of priority habitat, loss of traditional boundaries, impact on heritage features etc.)
- small-scale cumulative development resulting in incremental erosion of landscape integrity and quality over time
- potential pressure for major development within the AONB or its setting including commercial scale energy development such as wind, tidal schemes, overhead wires and pylons or the winning of shale gas by hydraulic fracturing (fracking)
- loss of character and/or features due to insensitive conversion or modification of traditional vernacular buildings e.g. barns, farmsteads
- significant pressure for new housing development leading to potential loss of open spaces within settlements which contribute to rural, landscape and settlement character or encroachment into the countryside
- urbanisation of villages and rural lanes and roads
- achieving 'net gain' and securing enhancements through sensitive development
- lack of mains sewerage systems in large parts of the AONB, particularly Silverdale
- if affordable or other local needs are not met on sites which may be suitable for development in the AONB, those needs will remain unmet potentially putting pressure on more sensitive sites
- development just outside the AONB such as large scale holiday complexes and further commercial development along the A6/M6 corridor, has the potential to adversely affect the setting and views out from the AONB, particularly on the eastern margins

### **Strategic objective and outcomes**

<p>Strategic Objective 7: Implement a landscape capacity-led approach to development planning and management, which conserves and enhances the natural beauty, landscape, seascape and special qualities of the AONB and its setting.</p>
<p>Outcomes:</p> <ul style="list-style-type: none"> <li>• Implementation of a landscape-capacity led approach to development policy and management consistent with the approach set out in the National Planning Policy Framework and AONB DPD</li> <li>• All development is appropriate and sensitive, conserves and enhances the natural beauty, landscape and seascape character and special qualities of the AONB, and helps meet identified local needs</li> </ul>

### **Actions**

- 7a. ensure all development conserves and enhances the AONB, and avoid major development, consistent with paragraph 172 of the NPPF
- 7b. implement a landscape capacity-led approach to planning and development management as set out in the AONB Development Plan Document (AONB DPD) and the districts' Local Plans

- 7c. ensure all development conserves and enhances the natural beauty and landscape character of the AONB and its setting and prevent development that would cause harm to the natural and cultural heritage and special qualities of the AONB
- 7d. ensure that all development management decisions relating to proposals within the AONB or its setting have regard to the AONB Management Plan, AONB Landscape and Seascape Character Assessment and relevant county landscape character assessments
- 7e. ensure that the national importance of the AONB landscape is recognised and that policies to ensure the conservation and enhancement of the area are included in new and reviewed plans and policies relevant to the area
- 7f. enable the AONB Partnership to provide independent landscape-related planning and policy advice to local authorities, including reviewing and making formal responses to planning applications, according to an agreed Planning Protocol
- 7g. develop bespoke policy statements and guidance on current landscape planning issues affecting the AONB landscape, including design guidance to encourage sensitive design appropriate to the AONB
- 7h. conserve and enhance the landscape and natural beauty of the area, in particular its characteristic features, rural nature, historic character, local distinctiveness, coastal landscape and seascape, visual amenity and views, tranquillity, dark skies and sense of place and space
- 7i. respect local traditional settlement character including pattern, layout, scale, design, vernacular tradition and materials
- 7j. encourage robust landscape and visual amenity impact assessments which take full account of cumulative and incremental impacts to be undertaken
- 7k. deliver housing which closely reflects identified local needs (with affordable housing a high priority) in appropriate and sustainable locations
- 7l. protect and enhance the natural environment in particular biodiversity (including priority habitats, species, local and statutory designated sites), trees and woodland, geodiversity and the robustness, function and value of ecological networks and ecosystem services
- 7m. ensure new development delivers appropriate 'net gains' in biodiversity wherever possible
- 7n. protect public open space and recreational networks
- 7o. support the designation and protection of areas of open space within settlements that make a key contribution to landscape and settlement character as Key Settlement Landscapes
- 7p. protect and enhance the historic environment, including historic buildings, heritage assets and their settings and historic landscape features such as drystone walls, field barns, hedgerows, veteran trees etc.
- 7q. encourage the highest standards of design, construction and landscaping that respond to the character of the landscape and local built environment and reinforce what is special and locally distinctive about the area
- 7r. retain and improve rural services and community facilities in a way that conserves and enhances the special qualities of the AONB
- 7s. ensure economic development supports an environment-based economy, is appropriate and environmentally sustainable and does not harm the natural beauty or special qualities of the AONB
- 7t. require new development to meet the infrastructure needs arising from it and contribute towards new infrastructure in a way that reflects the AONB purpose with high priority being given to green infrastructure and benefiting walking, cycling and public transport

- 7u. restrict new caravan, chalet cabin or lodge style development and ensure tourism development is appropriate and environmentally sustainable and does not harm the natural beauty or special qualities of the AONB
- 7v. improve and deliver new high quality sewerage infrastructure and sustainable drainage systems
- 7w. ensure advertising and signage is appropriate to the AONB implementing restrictions as required
- 7x. ensure sensitive design and management of highway and public realm schemes

### **Key partners important for delivery**

Local planning authorities  
 Owners  
 Developers  
 Parish Councils  
 Planning Inspectorate  
 Natural England  
 Historic England  
 Environment Agency  
 Highways authorities  
 CPRE

## **8.2 Vibrant and sustainable communities**

### **8.2.1 Land management and rural livelihoods**

#### **Key issues, challenges and forces for change**

- changes in and uncertainty about new trade agreements, national policies relating to farming, forestry and the environment as a result of the UK's exit from the European Union, in particular new approaches rural development schemes and other support mechanisms for farmers and landowners
- an older than average population and loss of young people affects the ability of the area to maintain a vibrant local economy [the AONB has an older than average population with fewer children and young working age people than in Cumbria and Lancashire as a whole]
- lack of economic and business information applicable to the AONB boundary
- sustaining viable rural, farming and forestry businesses and livelihoods
- decline in number and coverage of environmental land management schemes in the AONB and uncertainty about future of such schemes
- loss of expertise in traditional rural skills and land management practices such as hedgelaying, drystone walling, woodland management, coppicing and orchard management
- developing short supply chains for and marketing of local products
- limited access to training, business support and networking

## Strategic objective and outcomes

Strategic Objective 8: Support landowners and managers to sustainably manage the landscape in ways that conserve and enhance the special qualities of the AONB and deliver a range of environmental, community and local economic benefits, in particular by encouraging farming, land- and woodland management practices that enhance natural beauty and landscape character.

### Outcomes:

- Viable high nature-value farming and forestry delivering a wide range of public benefits including conservation and enhancement of natural beauty
- Sustainable land management producing high quality products with short supply chains
- Environmentally-sustainable businesses linked strongly to the nature and culture of the AONB

## Actions

- 8a. develop an AONB Land Management Network to liaise with and involve the land management sector, and provide information, knowledge sharing, training and events to support a viable sustainable approach to 'high nature-value' farming and forestry which conserves and enhances natural beauty
- 8b. promote and provide bespoke advice and support to landowners and managers on land management practices which help conserve and enhance the landscape and natural and cultural heritage of the area through a range of mechanisms e.g. woodland/site management plans, felling licences, environmental land management scheme agreements etc.
- 8c. support and implement the Morecambe Bay Countryside Stewardship Facilitation Scheme
- 8d. influence, test and trial new approaches to environmental land management schemes and encourage uptake of any new environmental land management scheme once it is launched
- 8e. develop and support a network of woodland management and woodfuel businesses to make greater use of under-managed woodlands and add value to locally produced wood products
- 8f. support social forestry initiatives including Silverdale District Wood Bank
- 8g. deliver an AONB rural skills programme (competitions, demonstrations and training events)
- 8h. provide apprenticeships / graduate traineeships / internships/ training contracts where possible

## Key partners

Landowners, farmers, land- and woodland managers and agents

Local businesses

Defra

Morecambe Bay Local Nature Partnership

Natural England

Forestry Commission

Butterfly Conservation

NFU

CLA

Schools and colleges

Silverdale District Wood Bank

## 8.2.2 Sustainable visitor economy

### Key issues, challenges and forces for change

- relatively low level of collaboration between businesses and opportunities to help conserve, enhance, celebrate and benefit from and link directly with the landscape/special qualities of the AONB
- risk of detrimental impacts on landscape character, visual amenity and the coast from tourism development in particular detrimental impacts of caravan development including cumulative impacts, urbanisation of sites, erosion of undeveloped coastline, loss of tranquillity and increased traffic (including regular transportation of static caravans requiring escort vehicles) on narrow lanes of the area
- a sustainable approach to the management of tourism in the AONB is required which takes account of the needs of the environment and does not harm, rather enhances, the special qualities of the AONB
- the number of visitors to the AONB is expected to rise in the future, particularly due to Eden Project North being developed in nearby Morecambe and the forthcoming England Coast Path; managing this increase while protecting the special qualities of the AONB is a key challenge
- limited access to training, business support and networking opportunities

### Strategic objective and outcomes

**Strategic objective 9:** Ensure that the visitor economy is environmentally sustainable and contributes to the conservation and enhancement of the area's special qualities, and enable visitors to have high quality experiences of nature, culture and quiet recreation.

#### Outcomes:

- A high quality sustainable tourism offer – quiet recreation, nature, culture, local food/products, arts and crafts – benefitting the local landscape, environment and economy
- A strong collaborative network of local businesses

### Actions

- 9a. ensure tourism development is consistent with the AONB purpose of designation and does not cause harm to the AONB's special qualities including encouraging an environmentally responsible tourism industry (e.g. by encouraging steps to improve environmental performance of a business) and managing impacts of tourism growth
- 9b. establish an AONB Business Network providing information, advice, knowledge sharing, familiarisation visits, training and networking events and actively recruit tourism businesses to become sustainable tourism partners to work together to promote the wildlife, cultural and quiet recreational experiences the area has to offer and the AONB Visitor Charter
- 9c. encourage businesses to support, promote and distribute AONB publications and leaflets
- 9d. promote and support Silverdale and Arnsdale Arts Trail
- 9e. improve understanding of visitor numbers, perceptions and spend within the area by carrying out a business and visitor survey
- 9f. effectively market and promote the area using Morecambe Bay destination branding – a collective approach by local authorities, Cumbria Tourism and Marketing Lancashire and a range of other organisations

- 9g. develop a sustainable 'visitor giving' scheme if feasible
- 9h. manage key visitor sites and gateways and monitor impacts including recreational disturbance
- 9i. deliver local food and products initiatives - support development of short supply chains which link land management, local products and tourism, and promote local food and products

### **Key partners**

Local businesses and accommodation providers  
 Local authorities  
 Marketing Lancashire  
 Cumbria Tourism  
 Bay Tourism Association  
 Morecambe Bay destination branding partners

## **8.2.3 Affordable housing, rural services and local economy**

### **Key issues, challenges and forces for change**

- the need to deliver housing which meets local needs, with affordable housing as a particular priority, without harm to the special qualities of the AONB
- to maintain the vibrancy of local communities retention of local rural services and facilities is vital
- mobile phone and superfast broadband coverage is improving overall but is still limited in some parts of the AONB
- reliance on private cars for travel and under-use of sustainable forms of transport leading to detrimental impact of vehicles and traffic on the AONB's character and tranquillity
- decline in bus and train services and need for improvements to station infrastructure
- lack of car parking and cycling and walking infrastructure provision in some locations
- risk of detrimental impacts on landscape character, visual amenity and the coast from economic activity
- the global need to reduce carbon emissions, reduce consumption of natural resources and adopt sustainable lifestyles

### **Strategic objective and outcomes**

#### **Strategic Objective 10:**

Support delivery of affordable housing and services to help meet local community needs and environmentally sustainable local economic activity that conserves and enhances the special qualities of the AONB.

#### **Outcomes**

- Retention/enhancement of rural services and delivery of appropriate affordable housing schemes and facilities to meet local needs and in a way that conserves and enhances the special qualities of the AONB



## Actions

- 10a. prioritise delivery of affordable housing in appropriate locations, which do not harm natural beauty or landscape character, and retention of local services and facilities in policy and decision-making
- 10b. ensure any new infrastructure and/or facilities are delivered in a way that conserves and enhances the special qualities of the AONB
- 10c. ensure any local economic activity is consistent with the AONB purpose of designation and does not cause harm to the AONB's special qualities
- 10d. promote use of and improvements in sustainable transport particularly bus/train travel, cycling and walking for both residents and visitors to help retain usage of local services and mitigate against climate change
- 10e. promote the Furness train line as a key transport link supporting improvements and appropriate developments through the activities of the Furness Line Community Rail Partnership (FCRP) including improving station facilities and information so that Arnside and Silverdale stations act as arrival hubs for visitors, and promoting the train journey as part of the experience of visiting the AONB
- 10f. support Broadband 4 the Rural North (B4RN) and other bodies to achieve enhanced super/hyperfast broadband connections and mobile phone signal coverage in a way that does not harm the special qualities of the AONB and avoids new vertical infrastructure in sensitive locations
- 10g. advise and encourage local communities and businesses to engage with- and access future relevant rural growth and development funding programmes

### 8.2.4 Community engagement and volunteering

#### Key issues, challenges and forces for change

- encouraging effective engagement, participation and representation by local communities in the management of and decision-making about the AONB - putting people at the heart of policy-making
- supporting communities to conserve and enhance the special qualities of the AONB
- maintaining a shared sense of identity linked to the AONB and its special qualities
- maintaining a high level of volunteer involvement

#### Strategic objective and outcomes

**Strategic objective 11:** Engage local communities in conserving and enhancing the AONB and encourage active involvement through volunteering.

#### Outcomes:

- Communities are actively engaged and involved with caring for the AONB resulting in a range of public benefits
- Volunteering plays an integral role in delivering conservation and enhancement of the AONB

## **Actions**

- 11a. ensure effective inclusive consultation and participation with local communities regarding AONB policy and projects - seek people's views, experiences and ambitions for their environment, in order to understand what environmental features and services people value and how people wish to access the natural environment
- 11b. maintain Parish Council representation on AONB Executive Committee
- 11c. deliver the AONB Grants Fund – a small grants scheme managed by the AONB Partnership and Landscape Trust working together, to enable projects which support AONB Management Plan delivery
- 11d. support and build the capacity of community-led organisations which directly support the conservation of the AONB in particular the AONB Landscape Trust, Bittern Countryside CIC and Silverdale District Wood Bank
- 11e. support and promote practical volunteering programmes via the AONB Partnership, Landscape Trust, National Trust, RSPB, Butterfly Conservation, Natural England etc.
- 11f. support and encourage community initiatives and groups which help to conserve and enhance the area including Friends groups, Arnside District Natural History Society, John Barnes Memorial Trust, Mourholme Society, Arnside Archive etc.
- 11g. run a successful AONB Volunteer Programme providing opportunities to engage in practical conservation management tasks, monitoring, administration and event support
- 11h. work alongside communities, helping them to identify local issues and develop sustainable innovative solutions, while conserving and enhancing the special qualities of the local natural and built environment
- 11i. deliver a programme of litter picks and beach cleans

### **Key partners**

Parish Councils  
Landscape Trust  
Bittern CIC  
Silverdale District Wood Bank  
Local clubs and societies  
Volunteers  
National Trust  
Natural England  
RSPB  
Butterfly Conservation

## **8.3 A strong connection between people and the landscape**

### **8.3.1 Enjoyment and understanding**

#### **Key issues, challenges and forces for change**

- the need to raise awareness and understanding about the area, its special qualities and opportunities for enjoyment

- maintaining high quality and up to date communications with limited resources including responding to the changing ways people use and consume data and information
- maximising opportunities for lifelong learning
- providing and resourcing a wide range of events and activities to engage with different audiences including those with additional needs
- lack of resources to cover transport costs for school visits
- the national issue of children and young people losing their connection with nature
- a highly competitive environment for attracting funding support
- relatively low awareness nationally of AONB designation

### **Strategic objective and outcomes**

**Strategic objective 12:** Provide high quality information, events and activities to enable people to enjoy, learn about and celebrate the AONB's special qualities in a sustainable way.

**Outcomes:**

- High awareness and understanding of the AONB designation and the special qualities of the AONB
- More and wider range of people connecting deeply to nature and the landscape through opportunities to enjoy and appreciate the special qualities of the AONB

### **Actions**

- 12a. take a strategic approach to communications, providing a variety of high quality online and printed communication, information and interpretation materials with a recognisable and consistent 'AONB identity'
- 12b. provide high quality visitor information and interpretation and promote a range of forms of quiet recreation as ways of enjoying the AONB
- 12c. offer an integrated and coordinated annual AONB programme of events, guided walks, festivals, talks and conferences - including a flagship biennial AONB event (Apple Day or similar) and Annual Conference
- 12d. run and support education programmes for primary and secondary schools (e.g. Forest Schools, John Muir Award, links with urban areas) in particular offering structured educational visits to key sites such as the Local Nature Reserves and RSPB Leighton Moss
- 12e. connect with and work in partnership with Universities to encourage research projects and field studies
- 12f. operate the AONB Information Centre at Arnside Station
- 12g. deliver projects to interpret and celebrate the special qualities of the AONB, in particular by developing arts based activities and projects
- 12h. use AONB events and educational visits to encourage participation and engagement by young people, helping develop their voice in setting future policy for conserving and enhancing the AONB
- 12i. deliver and develop the AONB WILD! Project, a series of events and activities for families

## Key partners

Local authorities  
Local schools and community groups  
Arts organisations  
RSPB  
National Trust  
Universities and research institutions

### 8.3.2 Access and recreation

#### Key issues, challenges and forces for change

- the need to maintain the Public Rights of Way network to a high standard
- improving public access for a wide range of people often requires the cooperation of many different partners, stakeholders and landowners and ability to attract significant additional resources
- relative lack of bridleway routes for horses in the AONB and off road cycling routes
- maintaining high quality signage for the AONB access network
- irresponsible behaviour in the countryside
- recreation, particularly with dogs, can cause disturbance of wildlife on the coast and other sensitive sites
- the delivery and management of the new England Coast Path is a key challenge
- increasing volume and speed of road traffic
- erosion of paths at key locations
- recreational activity can cause disturbance, damage and other detrimental impacts e.g. jet skis/ motorbikes on the foreshore, mountain bikes on footpaths, use of drones/UAVs
- While the vast majority of people treat the countryside with respect, public access can lead to issues that cause problems for landowners, managers and farmers. Public access particularly with dogs, can disturb grazing livestock or wildlife on sensitive sites. Dog attacks on sheep or cattle cause a significant impact on farmers' livelihoods and their wellbeing. Noise disturbance, cycling on footpaths, damage to infrastructure, litter and dog fouling are all potential issues which need to be managed.
- The coastal area of the AONB can be dangerous, with shifting quicksands and fast incoming tides; Arnside coastguard responded to approximately 50 incidents in 2018. Increased coastal access and the loss of salt marsh along the AONB coast due to natural erosion is likely to lead to increased risk of more people using the intertidal sandflats for recreation.

#### Strategic objective and outcomes

**Strategic objective 13:** Maintain and improve access to the coast and countryside in a sustainable way for a diverse range of people and promote responsible, safe and quiet recreation.

##### Outcomes:

- A high quality and well managed access network facilitates enjoyment of the AONB for a diverse range of people
- People are enjoying the coast and countryside safely and responsibly

## **Actions**

- 13a. maintain the Public Rights of Way network to a high standard
- 13b. identify opportunities to improve and/or expand public access, engage partners and deliver appropriate schemes, in particular seek to encourage access for all and multi user routes in appropriate locations
- 13c. work in partnership to adopt the section of the England Coast Path through the AONB Habitats Regulations Assessments will aim to ensure no adverse impact on the interest features of Natura 2000 sites
- 13d. continue to make the AONB Tramper available for use at RSPB Leighton Moss and develop the network of Tramper routes through the More to Explore project, with the priority being to provide a new Tramper route linking RSPB Leighton Moss, Trowbarrow Local Nature Reserve, Gait Barrows National Nature Reserve, Challan Hall woodlands and Coldwell reserves
- 13e. improve network and connectivity of bridleways for horses where possible
- 13f. secure agreements for permissive paths at appropriate strategic locations
- 13g. provide high quality and consistent style of path waymarker signposts throughout the area
- 13h. encourage and promote responsible behaviour in the countryside, particularly in relation to dogs, and increase awareness of potential impacts
- 13i. actively promote The Countryside Code
- 13j. work with landowners and managers to address site specific access issues where appropriate
- 13k. widely promote public safety on the sands and the coast and raise awareness of issues around recreational disturbance of wildlife including by promoting a new Coastal Code
- 13l. work towards securing a new footpath/cycleway link to Grange over Sands across Arnside viaduct to provide a key strategic access link and a significant new visitor attraction, with the potential to bring significant economic and health and wellbeing benefits to the area
- 13m. provide a variety of downloadable self-guided routes on the AONB website
- 13n. promote sustainable forms of travel including public transport, walking and cycling (including electric bikes) to contribute to people's wellbeing and mitigate climate change
- 13o. minimise recreational disturbance of sensitive sites wherever possible, restricting access if required, for example at Warton and Kent Estuary saltmarshes

## **Key partners**

Lancashire County Council  
Cumbria County Council  
Landowners and managers  
Ramblers  
North Lancashire Bridleways Association  
Morecambe Bay Partnership  
Natural England  
RSPB  
Local businesses and information outlets

### **8.3.3 Health and wellbeing**

#### **Key issues, challenges and forces for change**

- national public health issues such as obesity and social exclusion

- barriers to accessing nature and the countryside
- low level of collaboration between the environmental and health and wellbeing sectors

### **Strategic objective and outcomes**

**Strategic objective 14:** Provide opportunities for people to improve their health and wellbeing by connecting with nature, culture and the landscape.

**Outcomes:**

a wide range of opportunities to improve people's health and wellbeing by accessing and engaging with the natural and cultural heritage of the AONB

### **Actions**

- 14a. offer a programme of therapeutic walks / outdoor experiences for people living with dementia and their carers and other 'walking for health'-style initiatives
- 14b. promote the network of footpaths and public rights of way, quiet recreational activities and regular and meaningful physical activity to help to increase participation, improve mental health and wellbeing and tackle social exclusion
- 14c. offer opportunities for schools from nearby urban areas to access and discover the AONB
- 14d. build new partnerships between the environmental and health and wellbeing sectors and develop new initiatives and project

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## **9 Delivering the Plan**

### **9.1 Delivery**

Delivery of the AONB Management Plan is a joint combined effort. Delivery will be achieved in a variety of different ways and will be undertaken by many partner organisations, landowners and managers, businesses, individuals and groups. We know that the mechanisms for delivery are likely to change during the lifetime of the AONB Management Plan.

However, the Plan will act as a framework so that land management, decision-making and projects deliver conservation and enhancement of the AONB, support vibrant sustainable communities and connect people with the landscape, whatever changes occur and whatever the political and funding context.

All delivery will be carried out in a way that supports the AONB purpose and causes no harm to Natura 2000 sites.

### **9.2 A dynamic and successful partnership**

Dynamic and successful partnership working is critical to enable delivery of the Management Plan and to create a strong and resilient AONB Partnership. The AONB Team plays an essential role in this process: providing management and leadership; making things happen on the ground, translating vision and national policy into local action; stimulating collaboration and delivering results; and providing value for money by accessing funding and resources.

Partners believe that:

- the long-term resourcing of the AONB staff team is a critical success factor in the delivery of this Management Plan
- AONB management structures should be strongly supported by partners and relevant authorities
- the statutory requirement to produce Management Plans provides an important opportunity to strengthen partnerships and achieve better outcomes
- security and flexibility of funding for AONBs will deliver better outcomes
- training and skills development is an important element in delivering the Management Plan

Implementation of this AONB Management Plan will need the support and involvement of many organisations and individuals who play an important role in the future of the area. There are likely to be opportunities for sharing resources and collaborating to provide value for money.

Sustaining the exceptional landscape of Arnside & Silverdale AONB is a major challenge and requires significant investment. In order to successfully deliver many of the actions, additional resources will need to be secured. It will therefore be a key priority for the AONB staff team to secure additional funding from a range of external sources and to collaborate and work together with partners to bid for funding and resources and develop innovative solutions to income generation.

## 10 Monitoring

It is important that the AONB Partnership is aware of the effects and impacts of its work and background trends in relation to the special qualities of the AONB to be able to adapt management both in terms of geographic targeting and thematic approaches.

Monitoring has been undertaken in response to previous AONB Management Plans and this data provides the evidence on which this Management Plan is based and forms a baseline for monitoring over the next 5 years. This information is presented in the State of the AONB Report 2019, which includes a wide range of indicators, and sits alongside this Management Plan.

Monitoring will take two forms:

- monitoring performance: to establish how well the Partnership is progressing in delivering the Plan's objectives and actions; and
- monitoring landscape condition/status : to establish whether the special qualities/features of the AONB are in favourable condition, showing no change or deteriorating and to analyse trends.

Monitoring performance will involve collecting data from partners to demonstrate delivery. Performance will also be monitored by reviewing progress on actions in the AONB Business Plan. An AONB Annual Report will be produced detailing and evaluating progress with implementing the Plan and summarising achievements of the AONB Partnership. It is also important that the collective impact of the work of the AONB network is reported to Government, and this will be done in the form of Key Performance Indicators agreed with Defra.

Monitoring landscape condition/status will make the best use of data collected by a range of organisations and interest groups. It is important that changes in condition/status are monitored against a baseline set of evidence, and a range of indicators for which data is available will be used for this process. As new issues present themselves, new indicators may be needed and an initial baseline will need to be established.



## 11 Glossary of terms

### **AONB**

Areas of Outstanding Natural Beauty are areas of high scenic quality that have statutory protection in order to conserve and enhance the natural beauty of their landscapes. AONBs are designated solely for their landscape qualities, for the purpose of conserving and enhancing their natural beauty (which includes landform, geology, plants, animals, landscape features and the history of human settlement over time).

### **Appropriate**

Within the AONB Management Plan the word "appropriate" is generally used to mean "appropriate to the AONB statutory purpose and designation and the AONB's special qualities" unless it is being quoted from another source, document or policy statement etc.

### **Biodiversity**

The variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems

### **Buffer zone**

Areas between core protected areas and the surrounding landscape or seascape which protect the network from potentially damaging external influences and which are essentially transitional areas.

### **Calcareous**

Mostly or partly composed of calcium carbonate, calcium or limestone.

### **Carbon sequestration**

The process of capture and long-term storage of atmospheric carbon dioxide (CO<sub>2</sub>).

### **Carboniferous period**

Geological time period dated 385 - 300 million years before present.

### **Carboniferous limestone**

Sedimentary rock laid down in a warm tropical sea some 340 - 320 million years ago.

### **Conservation Area (building)**

Conservation Areas are places of special architectural or historic interest where it is desirable to preserve and enhance the character and appearance of such areas.

### **Corridor**

Way of maintaining physical linkages between core areas for vital ecological or environmental connectivity.

### **Ecosystem**

A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

### **Ecosystem services**

The benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits.

### **Favourable condition**

Favourable condition means that the SSSI land is being adequately conserved and is meeting its 'conservation objectives'; however, there is scope for the enhancement of these sites. Unfavourable **recovering condition** is often known simply as 'recovering'. SSSI units are not yet fully conserved but all the necessary management measures are in place. Provided that the recovery work is sustained, the SSSI will reach favourable condition in time. The condition of the SSSI land in England is assessed by Natural England, using categories agreed across England, Scotland, Wales, and Northern Ireland through the Joint Nature Conservation Committee.

**Geodiversity**

The diversity of minerals, rocks (whether “solid” or “drift”), fossils, landforms, sediments and soils, together with the natural processes that constitute the Earth’s topography, landscape and the underlying structure.

**Geology**

Science of the Earth (and other planets), including origin, structure, composition, development and history (including the development of life), and the processes that have given rise to their present state.

**Glacial processes**

The processes of erosion and deposition of land arising from the presence and/or movement of an ice mass on a landscape

**Karst**

Water-worn limestone scenery, where erosion has principally occurred through the percolation of ground water and underground streams rather than surface run-off and typically includes the development of limestone pavements and cave systems. Paleokarst is the general term for ancient karst features that have been fossilised or preserved.

**Limestone pavement**

Continuous areas of exposed limestone consisting of rock blocks (clints) interspersed with cracks/clefts (grikes).

**Local Nature Reserve**

Land owned by a local authority can be established as a Local Nature Reserve by that local authority in consultation with Natural England.

**Local Geological Sites**

Non-statutory geology sites, protected through the planning system. They are designated for their inherent geology, education, aesthetic and cultural values.

**Local Wildlife Sites**

Commonly known as Biological Heritage Sites in Lancashire and as County Wildlife Sites in Cumbria, these sites are of local or regional importance for biodiversity. These sites do not enjoy direct statutory protection but are the subject of specific Local Plan policies aimed at ensuring their wellbeing.

**Marl**

A lime-rich mud laid down in freshwater conditions, which has high levels of carbonate material, usually calcium carbonate (calcite) that precipitates out, giving a gritty coating over substrates.

**National Nature Reserve**

Established to protect some of the country’s most important habitats, species and geology and to provide outdoor ‘laboratories for research. About two thirds of England’s NNRs are managed by Natural England, as is the case for GAIT Barrows within the AONB.

**Natura 2000**

An European network of nature protection areas established under the 1992 Habitats Directive. The aim of the network is to assure the long-term survival of Europe’s most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) designated under the 1979 Birds Directive and Ramsar sites, wetland sites of international importance designated under the Ramsar Convention.

**Priority habitats and species**

UK BAP priority species and habitats were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). The original list of UK BAP priority species was created between 1995 and 1999. In 2007, however, a revised list was produced, following a 2-year review of UK BAP processes and priorities, which included a review of the priority species and habitats lists. As a result of new drivers and requirements, the 'UK Post-2010 Biodiversity Framework', published in July 2012, has now succeeded the UK BAP. The UK BAP lists of priority species and habitats remain, however, important and valuable reference sources. Notably, they have been used to help draw up statutory lists of priorities in England. The Natural Environment and Rural Communities (NERC) Act came into force on 1st Oct 2006. Section 41

(S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.

### **Resilience**

In the field of ecology, resilience means building the capacity of a system to withstand shocks and to rebuild and respond to change, particularly unanticipated change. The Resilience Alliance defines resilience as the capacity of a system to absorb disturbance, undergo change and still retain essentially the same function, structure, identity and feedbacks. **Climate change resilience** is the capacity of an individual, community or institution to respond dynamically and effectively to shifting climate impacts circumstances while continuing to function at an acceptable level. Simply put it is the ability to survive and recover from the effects of climate change. It includes the ability to understand potential impacts and to take appropriate action before, during and after a particular consequence to minimise negative impacts and maintain the ability to respond to changing conditions.

### **Sites of Special Scientific Interest (SSSI)**

Sites of national importance for their plants, animals, or geological or physiographical features designated for statutory protection by Natural England

### **Special Areas of Conservation (SACs)**

Areas of European importance that are protected under the EC Habitats Directive. They are sites of community importance for habitats or species listed under the Directive where a 'favourable conservation status' is to be maintained or restored.

### **Special Protection Areas (SPAs)**

Areas of European Importance that are protected under the EC Birds Directive 1979 for vulnerable species listed on Annex1 of the Directive and also regularly occurring migratory species.

### **Stakeholders**

Those individuals or organisations which are vital to the success or failure of an organisation or project. Primary stakeholders are those needed for permission, approval, implementation and financial support and also those who are directly affected by the activities of the organisation or project. Secondary stakeholders are those who are indirectly involved or affected.

### **Sustainable Development**

A widely accepted definition is: 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'.

### **Sustainability**

The ability to maintain a certain process or state. It is now most frequently used in connection with biological and human systems. In an ecological context, sustainability can be defined as the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future.

## **APPENDIX 1 Arnside & Silverdale AONB Partnership Executive Committee members**

Cumbria County Council  
Lancashire County Council  
Lancaster City Council  
South Lakeland District Council  
Environment Agency  
Natural England  
Arnside Parish Council  
Beetham Parish Council  
Silverdale Parish Council  
Warton Parish Council  
Yealand Conyers Parish Council  
Yealand Redmayne Parish Council  
Arnside & Silverdale AONB Landscape Trust  
Campaign to Protect Rural England  
Country Land and Business Association  
Royal Society for the Protection of Birds  
National Farmers Union  
National Trust  
Wildlife Trusts  
Ramblers  
North Lancashire Bridleway Association  
Farming/landowner representative  
Business/tourism representatives x2

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**APPENDIX 2 Ecosystem Services provided by the natural capital of Arnsdale & Silverdale  
AONB**

<b>ECOSYSTEM SERVICES PROVIDED BY THE NATURAL CAPITAL OF ARNSIDE &amp; SILVERDALE AONB</b>	
<b>Provisioning Services: provided by natural resources</b>	<b>Relevant Objectives</b>
<p><b>Food provision (e.g. crops, livestock, fish, game)</b> AONB farmers produce food through the breeding of store lambs, suckled calves and, increasingly, finished lamb and beef and a limited quantity of dairy products. Wild venison, wildfowl and pheasant is sourced within the AONB and marketed locally by licensed butchers and game dealers. Within the intertidal zone of Morecambe Bay, some traditional tidal fishing (flounder in particular) takes place. When commercial stocks of cockles are available, cockle fishing takes place under byelaw permit on the Warton Sands cockle bed and at other locations in Morecambe Bay. Apples, plums, damsons and pears are grown non-commercially in the numerous orchards and honey is also produced on a small scale at some locations.</p>	<b>1, 2, 3, 5, 8, 9, 14</b>
<p><b>Woodfuel</b> Local woodlands have a long history of providing woodfuel and charcoal supplies, both for domestic and industrial activity. Coppicing once widespread declined during the 20<sup>th</sup> Century but has increased more recently providing a reliable source of local woodfuel and charcoal. There is considerable scope for further development of this sustainable resource.</p>	<b>1, 2, 3, 8,11</b>
<p><b>Genetic diversity</b> Rare breed species, particularly cattle, are a feature of the management regime of some areas of semi-natural habitat. Local orchards contain many rare historic varieties of fruits, significantly adding to the gene pool of fruit varieties. There are significant areas of species-rich limestone grassland in the AONB and well over a third of the flowering plant species of the British Isles are known to occur here. This makes the AONB a significant 'seed bank' for the surrounding areas for seed dispersal to increase biodiversity of suitable habitats within the Morecambe Bay Limestones NCA. Similarly opportunities also exist for invertebrate species to spread to suitable habitats outside the AONB. There are many rare and threatened species of both flora and fauna. Presence of unique species: The Lancaster Whitebeam is only found naturally within the Morecambe Bay area.</p>	<b>1, 2, 3, 8, 11</b>
<p><b>Fibre (e.g. timber, arable crops, wool)</b> Historically, the AONB was an important producer of wool, timber and woodland products. Some areas of woodland are managed as part of the active coppice industry that has been successfully rejuvenated over the last 20 years. There are now new opportunities to develop local markets for wood products. There are a number of commercial forestry holdings which are managed for timber production.</p>	<b>1, 2, 3, 8,</b>

<p><b>Water Supply</b> Natural springs occur and historically dictated the pattern of settlement prior to the introduction of mains water supplies. Some of these natural springs are important for aquatic habitats. Some areas of wildlife interest that are managed in part by conservation grazing require rainwater water storage tanks for animal welfare as the sites are remote from mains water or natural springs.</p>	1, 2, 3, 5, 7, 8, 10, 14
<p><b>Rock and mineral resources</b> Until the mid-20th century the AONB hosted an extensive limestone extraction industry. Mineral operations, particularly iron ore quarrying and smelting, also took place up to the late 19th century. Today, there remains one active quarry within the AONB providing various stone, aggregate and tarmac products.</p>	1, 2, 4, 8
<p><b>Regulating Services: provided by the regulation effects of natural systems and processes</b></p>	<b>Relevant Objectives in Management Plan</b>
<p><b>Climate regulation and carbon storage</b> Carbon is absorbed from the atmosphere in farmland, woodlands and coastal habitats, particularly salt marsh and an important carbon store is provided in the soils. Woodlands and functioning mossland in and around the AONB are active carbon stores and work to re-wet areas of moss and manage woodlands will help boost carbon sequestration.</p>	1, 2, 3, 8, 9, 10, 14
<p><b>Water quality</b> Ecosystems can help in the filtering out and decomposition of organic wastes introduced into water bodies and can also assimilate and detoxify compounds through soil and sub-soil processes, improving water quality.</p>	1, 2, 3, 5, 7, 8, 9, 10, 11, 14
<p><b>Water flow and flood regulation</b> Permeable limestone geology, extensive areas of woodland and a mosaic of varied soil types, including peat mosses in the low lying, undeveloped floodplains, help to regulate water flow and alleviate flooding in times of low and high rainfall. Saltmarsh also provides a buffer against coastal flooding.</p>	1, 2, 3, 4, 5, 7, 8, 11, 14
<p><b>Soil quality</b> Extensive farming systems used to manage permanent pasture, particularly on species rich limestone grassland provides effective erosion control, often on vulnerable sites where the depth of soil is very shallow and over limestone, making it prone to drought. Limestone grassland species are more resistant to drought stress than ryegrass dominated pasture helping protect soil quality and reducing erosion.</p>	1, 2, 3, 5, 8
<p><b>Pollination</b> Although the agricultural sector is currently predominantly pastoral, pollination of fruit trees is important for the area's orchards. Most wildflowers are also dependent on insect pollination, yet the numbers of wild and managed pollinators, such as bees, are in decline. The considerable areas of unimproved grassland and wetlands provide key habitat for insect communities, important for both pollination and pest control.</p>	1, 2, 3, 8, 11, 14
<p><b>Disease and pest regulation</b> A healthy and diverse ecosystem is less vulnerable to pests and disease.</p>	1, 2, 3, 5, 8, 14

<b>Cultural Services:</b> <b>the non-material benefits people gain from ecosystems</b>	<b>Relevant Objectives</b>
<p><b>Beauty – landscape and seascape, views, wildlife and habitats, variety and contrast</b></p> <p>The area is nationally designated for its outstanding natural beauty. The landscape, seascape and outstanding views create a unique and distinctive place which is much loved and highly valued by people from all over the world. The area is especially celebrated for its wealth of plants, birds and butterflies. The intricate nature of many parts of the area, an exceptional variety of features occurring in such a small place creates a sense of intimacy and discovery. This fine grained landscape character then contrasts in every way with the vast openness of the coast and the Bay.</p>	<p>1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Sense of place – uniqueness, distinctiveness, inspiration, spiritual refreshment</b></p> <p>The special qualities of the AONB, together, give the area a strong sense of place. The AONB is a place for inspiration, spiritual and mental refreshment, dark skies at night and clear, unpolluted air. People come here to relax, unwind and recharge their batteries, to get close to nature, breathe in the fresh sea air and absorb exhilarating wide open views. The area’s distinctive character and combination of scenery, history, settlement character and patterns, abundance of wildlife, peace and quiet, and culture make the AONB unique. Strong village communities and community activities contribute to the sense of place.</p>	<p>1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Tranquillity – sense of space, peace and quiet, dark skies, connection to nature</b></p> <p>Tranquillity and a sense of space are easy to find both in the intimate inland landscape and on the hills and open coast. Much of the AONB is distant from the noise of road traffic and other urban and industrial activities – a quality which is increasingly hard to find. Light pollution is low resulting in dark skies where the milky way is visible and even occasionally the Northern Lights. The landscape and wildlife provide a strong connection to and enrichment from nature.</p>	<p>1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14</p>
<p><b>Recreation – opportunities for quiet enjoyment, walking, cycling and horse riding</b></p> <p>There is a well-developed Public Rights of Way Network within the AONB, which gives access to important wildlife sites and places of historical interest. A network of country lanes, areas of open access land, Local and National Nature Reserves, extensive areas of National Trust land and the coast provide further opportunities to engage in a range of quiet recreational activities such as walking, cycling, wildlife watching and horse riding. Access to the natural environment can improve mental and physical health and wellbeing. The value of recreation to the local visitor economy based on the AONB landscape and special qualities is high.</p>	<p>1, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Sense of history – heritage buildings and features, historic landscape, villages, culture</b></p> <p>Heritage can be thought of as ‘memories’ in the landscape from past cultural activity. Human influence within the area can be traced back more than 5,000 years. The heritage of the area includes scheduled ancient monuments, listed buildings, historic parkland, settlement pattern, character and form, field boundaries, industrial features and a wealth of other archaeological and historic features. Heritage also incorporates various traditional practices and rural skills such as drystone walling, coppicing and hedgelaying, and the cultural history of the area’s communities.</p>	<p>1, 6, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Visitor economy – sustainable tourism destination, contribution to local economy</b></p>	<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14</p>



<p>The landscape and natural beauty of the area, together with its wildlife, history and tranquillity, are key attractions for visitors and therefore contribute directly to the local economy by supporting a network of tourism businesses and accommodation providers. Many visitors come to the area to enjoy quiet recreation, particularly walking and cycling and wildlife watching. Key visitor attractions include Leighton Hall, RSPB Leighton Moss, National Trust land properties.</p>	
<p><b>Health and wellbeing – relaxation, exercise, connection to nature, fresh air, volunteering, benefits to mental and physical health</b>  Visits to the countryside provide excellent opportunities for walking, relaxing days out and other forms of quiet recreation. These can contribute to an individual's health and wellbeing, at a minimal cost. There are numerous opportunities to take part in active countryside management work at a range of sites, as part of a volunteer team. Evidence suggests that taking part in environmental volunteering has very positive impacts on both physical and mental health and wellbeing. Air quality is generally very high, due to a lack of sources of pollution locally and the predominant maritime climate with prevailing Atlantic airflows. The high landscape quality, extensive views, quality of light and the AONB's special qualities provide a sense of spiritual inspiration which benefits mental health and gives many people a stronger sense of health and wellbeing through relaxation, unwinding and enjoying the peaceful nature of the area.</p>	<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14</p>
<p><b>Knowledge and education – opportunities for formal and informal learning, research, training</b>  The AONB provides a location for both formal and informal learning and education. The value for education and research is enhanced by ease of accessibility to many high-value sites with rare or notable habits and species. There are many and varied opportunities for people to learn about and experience the area's special qualities through events, site visits, festivals and interpretation materials including an interactive website. It is also a place for scientific monitoring and research, and training in rural skills.</p>	<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13</p>
<p><b>Supporting Services: necessary for the production of all other ecosystem services</b></p>	<p><b>Relevant Objectives</b></p>
<p><b>Biodiversity</b>  The AONB contains a high diversity of important and rare habitats and species and their conservation is vital to sustaining the ecosystems that deliver the range of services set out above. Two thirds of the area are designated in some way for wildlife interests, 54% of the AONB is covered by Site of Special Scientific Interest designations with a further 11% designated as Local Wildlife Sites.</p>	<p>1, 2, 3, 5, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Geodiversity</b>  Limestone bedrock underlies the AONB and unifies its character. Limestone outcrops and cliffs are important features, particularly the extensive pavements and exposures of complex faulting and folding. Exposures in disused quarries display depositional and tectonic features. Some localities are important scientific study sites including shelf complexes and fossiliferous beds. Many sites display clear evidence of glacial and post-glacial processes. There are a number of small cave systems. Peat-forming bogs and the intertidal environment are both examples of dynamic geomorphological processes.</p>	<p>1, 2, 4, 7, 8, 9, 11, 12, 13, 14</p>
<p><b>Nutrient and water cycling</b>  The wide diversity of plants, animals, micro-organisms and fungi, and the landscape, play a crucial role in the cycling of nutrients (e.g. breaking down decayed vegetation in to basic nutrients) and water essential for the delivery of ecosystem benefits.</p>	<p>1, 2, 3, 4, 5, 7, 8</p>