

PART TWO

Part 1 described the context of this Management Plan in terms of its landscape, designation, management and where the Plan sits within the local, national and international framework.

Part 2 provides a more detailed description of each landscape type and the forces for change acting upon it. Wider considerations come later where the setting of the AONB, coastal issues, climate change and other areas are considered. Finally, Part 2 explores the relationship between the AONB designation and the rural economy, tourism, education and access.

2.1.1 LANDSCAPE

“The Solway coast AONB contains a unique mosaic of coastal and pastoral landscapes set within a low and expansive coastal plain and lying under the ever-changing drama of the dominant sky. The landscape is further enriched by the twice daily influence of the tide that in turn reveals the rich birdlife which uses the estuary all year round”¹

The simple and subtly changing landforms within the AONB reflect the effects of glacial and post-glacial erosion and deposition on the shaping of the landscape. The resulting natural landscape and its ability to retain water has, in turn, influenced the pattern of settlement, constraining the activities of the early settlers and the ways in which they utilised the natural resources of the area.²

The landscape has been greatly modified by the actions of human communities, most significantly by land drainage from the Neolithic period to the modern industrial era and plays a significant role in the formation of its local identity. It has been created from a mix of cultural, social, economic, historical, geological, and ecological features. Today it is extremely fragmented but retains its identity as a large scale wetland.

The majority of the AONB, around 65%, is farmland, including arable. Raised mires cover a further 10% and the remaining 25% are areas such as saltmarshes, sand dunes, rivers, settlements and highways.

The Solway Coast Area of Outstanding Natural Beauty Landscape and Seascape Character Assessment was published in 2010 and describes, in detail, the principal landscape elements that exist across the AONB and which, either singly or in combination contribute the unique character and quality of the AONB and its setting (within 8 distinct landscape character types, see part 1 section 6). The study area includes the extent of the AONB, but also considers those areas of similar or matching landscape and seascape character around it, so that it can be seen where landscape/seascape character areas extend over the boundary, as well as those areas of land and sea which constitute the ‘setting’ of the AONB. Thus, developments such as renewables and visible developments can be considered

Natural England has recently reviewed its Natural Character Area profiles (NCAs). The AONB forms part of the Solway Basin NCA although the NCA area extends beyond the AONB boundary. There is a great relevance of the NCA “Statements of Environmental Opportunity” to this Management Plan.

(link:http://www.naturalengland.org.uk/publications/nca/solway_basin.aspx)

¹ AONB (2009) Solway coast Area of Outstanding Natural Beauty Management Plan 2010-2015

² The Solway coast Area of Outstanding Natural Beauty Landscape and Seascape Character Assessment 2010

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Change in Climate is driving changes in agriculture, affecting the water balance of the mosses, influencing shoreline and coastal erosion, and saltmarsh features Wetter warmer winters are bringing increased storminess and rainfall creating erosion, water-logging (standing water in fields) Though a portion of this is oversize machinery causing compaction and damaging drainsThe rain fed nature of the lowland raised mires is improving their condition</p> | <p>Solway Wetlands Landscape Partnership to restore lowland raised mires making them more robust to change. After the project, the legacy of the remaining partnership will continue to restore wetlands. and wet-up mires and farmland Agri environment schemes for Allerdale owned dunes , Nature Reserve ,Crosscanonby Carr, Salta Moss SSSI, and land within the Solway Wetlands Project Work with the planning system to forward plan prepare adaption strategies to accommodate future change</p> |
| <p>Inappropriate developments impacting on the landscape and its management, close to and within the AONB boundary affecting the scenic beauty and the skylines and views into and out of the AONB including wind turbine proliferation, tidal barrage research</p> | <p>. Solway Coast AONB Landscape and Seascape Character Assessment 2010, creates a basis upon which to comment to planning decisions helps us make informed decisions and responses regarding development. It also has an important role to play in guiding management of changes, and in so doing, protecting, managing and planning the landscape and seascape character and quality</p> |
| <p>Tranquillity is under threat due to increasing pressure from noise and light pollution., Small but significant increases in traffic has affected the tranquillity of the AONB (noise and light) primarily caused by the widening of the A74 M from Floriston to Gretna and the Carlisle Northern Relief Road. More frequent use of gyrocopters and other motorised recreation add to loss of tranquillity</p> | <p>Quiet Roads initiatives, calming measures and development planning for noise and light issues</p> |
| <p>Loss of traditional land management skills such as traditional North Cumberland Style hedgelaying ,which is being replaced by mechanised flail cutting is altering the landscape, denuding the area of hedgerow trees and creating manicured field boundary pattern. Standard trees in hedgerows are disappearing and are not being replaced creating lower horizons across the AONB. Each farm has a different way of flailing hedges and as such there is a lack of continuity of styles creating discord across the agricultural landscape</p> | <p>North Cumberland Style Hedgelaying Competitions and training to restore Cumberland Style kested hedges are run on an annual basis lead by the AONB Partnership keeping skills alive. Agri-environments schemes are mechanism to provide support future management guarantees. Gatestoop replacement projects will enable promotion of traditional boundary furniture</p> |
| <p>Increased road signage and road markings</p> | <p>Quiet Roads initiatives, calming measures</p> |

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| and road urbanisation Loss of traditional cast iron finger poles which are being replaced by modern aluminium signs. Posts are being shared by a proliferation of smaller plates for cycle routes, walking routes etc. Concrete kerbs and other highway hardware is particularly eye catching in a rural setting. | and development planning for noise and light issues Through AONB fora seeking opportunities to share signage where possible, reducing clutter. |
| The windscape is increasing around the Solway Firth in general with Scottish developments being outside the scope of the English planning process. The high wind resource is being exploited by developers on and around the Solway plain for wind clusters and single farm turbines. Tidal barrage research continues in the estuary with a view to developing a major scheme | Reducing the carbon footprint by achieving reductions in greenhouse gas emissions will help to reduce the degree and impact of climate change. This can be achieved through increasing energy efficiency, eg, using appropriate forms of renewable energy, reducing car use and using public transport, purchasing locally sourced food and services. Promote renewable energy sources that are complementary to AONB character |
| Overhead power and telecommunication wires and poles are intrusive in the flat open landscape including the overhead high voltage wirescape around the Eden estuary. | Continue to underground overhead wires with Electricity North West and identify new areas for the next 15 years |

Landscape Objective 1:

To ensure that the distinctive character and qualities of the Solway Coast AONB landscape and seascape are understood, conserved, enhanced and restored.

2.1.2 Land Management

The Farmed Landscape

The economics of farming are marginal and are a driver for change on the Solway Plain with low incomes and consequently less capital for reinvestment. A large majority of farms are livestock based with dairy, beef and lamb being the dominant product and the small amount of arable being cereals for winter stock feed as well as increasing prevalence of maize. The whole of the Solway Plain is heavily cropped for grass-silage. The intensification of stock numbers and modern methods has resulted in the production of more silage and slurry, which requires adequate storage, slurry being a valuable fertilizer when applied at the correct time. Nitrate vulnerable zones limit slurry spreading in winter so driving a need for long periods of slurry storage. . This need has been met by the installation of larger slurry tanks and silage clamps and some farms have created cooperatives and are jointly running bio-digesters to provide fertiliser and energy.

Farming occupies around 55% of the AONB's area and there are 85 farm holdings. In 2006, the area was 65% with 134 holdings. In 2010, there were 209 people employed in farming within the AONB. Of these, 119 were full-time farmers

Agriculture is the dominant land use of the Solway landscape. Pastoral systems are most common but there is a small amount of arable land resulting in the retention of a mixed farming landscape. The vast majority of agricultural area (73.8%) is grass (temporary and permanent) and is used for grazing. A further 5.8% is classed as rough grazing. 13.6 % is used for crops, mainly spring and winter barley, maize and wheat. Woodland comprises only 2.4 % of the agricultural land, 1.9% of the AONB. Away from the open coast a landscape pattern characterised by the presence of relatively small square or narrow fields, with generally maintained boundary hedges sometimes with associated ditches, reflect the evolution of the landscape over time.

Farming has been a major influence on the development of the Solway Coast landscape, with the raised mires, saltmarshes and sand dunes being subject to different management regimes which in turn have shaped their varied characters.

The majority of farms within the AONB are dairy and lowland livestock grazing and this has remained the same for many years (at least since 1990 from when data is available). The figures do, however, show a continuing decline in the number of holdings involved in dairy farming. Between 2000 and 2009 there was a consolidation of dairy production into fewer, larger but more intensive holdings and was probably initiated by the devastating effect of Foot and Mouth Disease in 2001 which resulted in many farm businesses making a switch from dairy to meat production.

Between 2000 and 2009 Defra data indicates a broadly stable agricultural land use with the exception of 'other crop types' which increased and this is likely to be attributable to the increased use of maize which is also a very good way to get rid of a lot of slurry in the spring.

Over recent decades a change in sheep management has occurred with increased numbers in winter as a consequence of 'off-wintering' of sheep from nearby upland areas.. Changes in agricultural policy have caused some changes in stock management, for example loss of some subsidies, and increased need for movement testing of cattle, have led to a decrease in cattle numbers in some areas. This has an effect on the summer grazing of some marshes which in-turn affects their vegetation structure.

Future cessation of Environment Agency maintenance of land drainage pumps on naturally water-logged land may result in the establishment of an Internal Drainage Board to oversee water level management in the near future but will be dependent upon landowner cooperation. Even with the establishment of an IDB farming economics may result in decreased levels of water level management in some areas with the consequent wetting up of areas of marginal farmland. However, a wider water management partnership – providing an opportunity for new visions, managed change and new partnerships should bring lasting improvements.

Woodland cover on the coastal plain is minimal with trees being largely restricted to occasional hedgerow standards, fringes of raised mires and river valleys. Low woodland cover increases the expansive and open feel to the landscape in the flatter parts of the Solway plain..

Summer grazing on the marshes by livestock, releases inland grasslands to be managed for silage production, while they are in themselves an important agricultural asset supporting dairy and meat production as well as the coastal and floodplain grazing marsh being the most extensive priority habitat in the lower parts of the Solway basin.

Many species of birds are associated with the agricultural landscape during the breeding season, including lapwing, skylark, grey partridge, corn bunting (now locally extinct) and yellow wagtail but all have declined in number across the area in tandem with agricultural intensification in the latter decades of the 20th century. However, non-breeding wintering migratory species such as pink-footed goose, barnacle goose and whooper swan which use pastures, stubbles and saltmarshes in the winter have increased their numbers significantly in recent years.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Uncertainty of incomes in farming caused by volatility in markets, the reform of CAP and impacts of potential diseases</p> <p>Farmers are growing sceptical that certain subsidies will be withdrawn</p> | <p>Influencing agri-environment scheme targeting and uptake.</p> <p>Implementing agri-environment schemes and farm diversification schemes that support management that complements AONB character.</p> <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> |
| <p>Insecurity of farm incomes driving farm diversification for economic sustainability.</p> <p>Diversification is evident in a variety of forms such as tea rooms, accommodation etc. While some diversification can reinforce the landscape character other types of investment can have damaging impacts, such as wind turbines as diversification because it is income generated from the land,</p> <p>Driven by the need for low carbon energy sources and associated Government policy the proliferation of farm based wind turbine applications to off-set electricity costs and to provide income from selling the excess electricity</p> | <p>Implementing agri-environment schemes and farm diversification schemes that support management that complements AONB character.</p> <p>Influence RDPE investment strategies for the AONB area and its buffers</p> <p>Influence development Planning with Local authorities</p> |

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| <p>Changes in farming patterns, linked to sustainability of certain crops could lead to landscape character change with biodiversity affected.</p> <p>An example of this could be due to further intensification of livestock management affecting the way agricultural land is managed</p> <p>One example of this is the creation of grey partridge habitat along field edges, however, if this is combined with mature hedgerow trees avian predators are likely to impact on the population</p> <p>Splitting of farmsteads from farmland, or consolidation of dairy farms may be unsympathetic to the landscape</p> | <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> <p>Support populations of farmland birds on land under arable management using AE to support</p> |
| <p>Larger farms, isolated farm houses and larger herds with their needs for winter layerage, slurry tanking and silage clamping for winter fodder. Intensification results in decreasing numbers of in field stock with an increasing level of stock permanently kept indoors and more mechanically managed grassland.</p> | <p>Influence LEP or RDP priorities to provide rural business development</p> <p>Promote cooperation between landowners where this can aid sustainability (for example in maintaining biomass digesters)</p> |
| <p>Loss of traditional field boundary skills, hedgelaying, and removal of hedges can lead to landscape character change, with larger fields and fences as boundaries. Flail cutting taking out trees denude the field patterns of mature trees.</p> <p>Hedges are declining and are being replaced by post and wire fences. Cumberland style hedge laying is only used sporadically around the AONB. The use of mechanical flails is increasingly creating a highly groomed look to field boundaries with different landholdings often cutting in different styles. .</p> <p>The loss of traditional sandstone gatestoops</p> | <p>Influencing agri-environment scheme targeting and uptake.</p> <p>Implementing agri-environment schemes and farm diversification schemes that support management that complements AONB character.</p> <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> <p>Promotion of Land management skills training</p> <p>Support populations of farmland birds on</p> |

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| <p>continues to decline as they are damaged by heavier and wider farm implements and tractors.</p> | <p>land under arable management through appropriate hedgerow management and uncultivated margins providing nesting locations</p> |
| <p>Loss of wildlife diversity and wildlife corridors and habitats due to any of the above and uptake of AE Schemes to counter it is important.</p> <p>AE Schemes can combat these changes but need to be tailored to reflect all key features identified within Farm Environmental Plans including the overarching aim of supporting landscape quality within the AONB to deliver full potential.</p> | <p>Implementing agri-environment schemes and farm diversification schemes that support management that complements AONB character.</p> <p>Influence targeting and uptake of AE schemes</p> <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> <p>Support populations of farmland birds on land under arable management through appropriate hedgerow management and uncultivated margins providing nesting locations</p> |
| <p>Increased prevalence of tree pests and, crop pests, from global trade, climate change and import of diseased material</p> <p>Locally invasive species are an increasing issue with Himalayan balsam a particular issue along river courses. They are also an issue in other areas in later sections</p> <p>The situation is getting worse with the spread of known species increasing as is the list of new invasive species. The resistance of invasive species to clearance measures cannot be under estimated. Combining the high cost of eradication alongside the fecundity of these species makes intervention a priority.</p> | <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> <p>Monitor to provide an early warning and allow remediation before impacts are realised</p> |
| <p>Policy shifts affecting the management of agricultural drainage infrastructure including agency withdrawal from watercourse maintenance, wetting up of agricultural land for AE schemes and lack of an Internal</p> | <p>Use Agri-environment schemes and farm diversification schemes to manage change</p> <p>Promote awareness of AONB and biodiversity duties to a new IDB should it be</p> |

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| <p>Drainage Board. The activity of wetland restoration is driven by changes in water-level management policy and economics</p> <p>Withdrawal of the EA funding to provide a pumped land drainage scheme on the southern edge of the AONB is providing a debate on what the value of this land is for society. Landscape in general is likely to be subject to change when the issue is combined with climate change and predicted increased rainfall.</p> | <p>established.</p> |
| <p>Where agriculture is present on peaty soils, intensive management can often result in the reduction of stored soil carbon through peat wastage and soil erosion, particularly where land is ploughed for grassland reseeding or arable cropping..</p> | <p>Promotion of sustainable and carbon sensitive farming regimes that are economically viable.</p> |

Farming Objectives

Objective 2: To ensure that sustainable farming remains the primary means by which the distinctive farmland landscapes and qualities of much of the AONB are maintained.

Objective 3: To ensure that the skills required to care for the traditional landscape and its special qualities are appreciated and increased, with opportunities to acquire and develop such skills made available to all

Objective 4: To ensure rural land management, which conserves and enhances natural resources-including biodiversity, landscape character and the historic environment- and which aids public enjoyment of the AONB is supported and promoted [and is economically sustainable?]

2.1.3 Intertidal Saltmarshes and associated Mudflats

The salt marsh and intertidal systems are of national and international importance and provide an area of high tranquillity that have a remote and isolated feel and are away from the major transport routes. These areas are part of one of the 5 Natura 2000 sites in the AONB. Known as the 'Upper Solway Flats and Marshes' they are designated as Special Conservation Areas (SAC) (as the Solway Firth SAC), Special Protection Area (SPA), a RAMSAR site and also as a Site of Special Scientific Interest (SSSI).

The salt marshes of the Solway estuary provide an unbroken ribbon around the inner estuary, some form narrow fringe areas and others are extensive such as those at Rockcliffe and Newton. The areas are generally grazed with cattle during the summer months and sheep brought down from the surrounding uplands during the winter, both wander freely on the unenclosed marshes but are moved according to the tides. On smaller marshes grazing is managed by 'marsh committees' separate from land ownership and are based on the

Medieval stint system that is based on 'headage' (stock numbers) rather than land area with the stinted rights on different marshes historically linked to individual Parishes.

Summer grazing on the marshes by livestock, releases inland grasslands to be managed for silage production, and are an important agricultural asset supporting dairy and meat production as well as the coastal and floodplain grazing marsh being the most extensive priority habitat in the lower parts of the Solway basin.

The large areas of salt marsh also act as carbon stores through retaining organic matter and carboniferous material.

The marshes are priority habitats and support nationally and regionally important populations of many species. The few un-grazed marshes tend to be more diverse in coastal plants while natterjack toads are associated with the more tightly grazed marshes. In the inner Solway marshes there are areas of erosion and deposition, but as a whole there has been an increase in salt marsh extent, this is most prevalent in the inner most part of the Solway to the east of Bowness-on-Solway, where Rockcliffe marsh has both expanded and risen in response to sediment deposition.

On the salt marshes of the inner Solway the grazing regime is important for maintaining the grass sward height for wintering wildfowl (swans, geese and ducks) and breeding waders (lapwing, redshank and oystercatcher). As well as their importance for biodiversity the marshes perform an important role in providing coastal protection, carbon sequestration and storage (through retaining organic matter and carboniferous material), food provision, sense of place and tranquillity.

| Issues and Forces for Change | Possible Mechanisms to Manage Impacts |
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| <p>Changes in agricultural policy have caused some changes in stock management, for example loss of some subsidies, and increased need for movement testing of cattle, have led to a decrease in cattle numbers summer grazing on the marshes subsequently affecting their vegetation structure</p> | <p>Retaining grazing systems that provide the conditions for key species and allow the natural development of the marshes, and managing recreational use, will be important in maintaining the value of the marshes into the future.</p> <p>Implementing agri-environment schemes that help with the perpetuation of traditional land management systems.</p> <p>Influence targeting and uptake of AE schemes</p> |
| <p>A number of species characteristic of the coastal zone have seen declines in recent years, in particular breeding waders on the saltmarshes, and wintering waders on the intertidal flats. However, species such as barnacle goose and whooper swan have increased.</p> | <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> <p>Gaining a better understanding of causes of change will allow for adaptive future management.</p> <p>Policy drivers such as Biodiversity 2020,</p> |

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| | <p>Water Framework Directive and Natura 2000 targets are likely to see the continuation of a programme of restoration of semi-natural habitats, particularly wetland and coastal habitats, of which there is an exceptional coverage in the AONB</p> <p>Conserve the Inner Firth Intertidal Flats for nature conservation for SPA/SAC status and possibly restore areas of reclaimed farm land to marshes where possible</p> |
| <p>Along the saltmarsh coast there may be an increased dynamism of coastal processes ,with sea level rise and exacerbated storminess causing floods</p> | <p>Policy drivers such as Biodiversity 2020, Water Framework Directive and Natura 2000 targets are likely to see the continuation of a programme of restoration of semi-natural habitats, particularly wetland and coastal habitats, of which there is an exceptional coverage in the AONB</p> <p>Conserve the Inner Firth Intertidal Flats for nature conservation for SPA/SAC status and possibly restore drained farmed areas to marshes where possible</p> <p>Seeking management which supports saltmarsh function as a regulator of coastal process</p> |
| <p>Saltmarsh sediments and soils (3% of the area) may be lost to coastal erosion, including from sea level rise. At present there is a net accretion of salt marsh soils in the area fed by material delivered to the Solway estuary both by rivers (alluvium) and coastal processes.</p> <p>Developments such as tidal barrages in the Solway Estuary would create visible effects and alterations to the hydrology of the estuarine intertidal flats and marshes</p> | <p>Policy drivers such as Biodiversity 2020, Water Framework Directive and Natura 2000 targets are likely to see the continuation of a programme of restoration of semi-natural habitats, particularly wetland and coastal habitats, of which there is an exceptional coverage in the AONB</p> <p>Monitoring changes in sea level and coastal erosion to determine any trends or patterns; and to manage the process of realignment and allow natural processes to act as stated in the shoreline Management Plan2, if appropriate</p> <p>Use of Environmental regulation, and environmental impact assessment to prevent damaging change</p> |
| <p>Influences such as the Marine and Coastal</p> | <p>Respond to the requirements of legislation</p> |

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| <p>Access Act, may require modifications for a long distance coastal access route and may affect key species. Influences of the Shoreline Management Plan² will influence management recommendations affecting the intertidal landscape</p> | <p>such as the Countryside and Rights of Way Act and Marine and Coastal Access Act to promote development of the coastal access route whilst ensuring its development and implementation is in line with the landscape management of the marshes for all its key features.</p> |
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Saltmarsh Objective

. Objective 5 : To ensure the effective conservation and management of the saltmarsh habitat for its unique character, specialist species and role regulating coastal process.

2.1.4 Sand Dunes

Fringing the outer Solway Firth an extensive coastal dune and heath system is situated along the southern section of the AONB including stretches designated as Silloth Dunes and Mawbray Banks SSSI and the Grune dunes which are part of the USF&M SSSI and Solway Firth SAC To the south the dunes also extend beyond the SSSIs to Allonby Bay.

The Silloth Dunes and Mawbray Bank SSSI extend for about 8km from Silloth in the north, to Dubmill Point in the south, excluding the narrow area around Beckoot. It covers 0.79% of the AONB. 41.4% of the SSSI is in unfavourable/ recovering condition. The Grune dune system extends XXXXkm North East from Skinburness it covers XXXX% of the AONB and is in favourable condition.

The areas of acidic dune grassland and heath are of particular note, as they comprise the second best example of this rare and restricted habitat in Cumbria. There is a rich diversity of dune and maritime heath plant and animal communities and the protected natterjack toad and great crested newt have breeding sites within the dunes. The SSSIs are and non-designated dunes form one dunes series which is one of only three sand dune systems in north and west Cumbria.

The dune system, as well as the salt marshes of the inner Solway, act as a natural sea defence in that they absorb and dissipate tidal energy thus protecting inland areas. This dynamic system also helps to trap sediments so increasing the level and extent of sand dune and salt marshes providing enhanced natural protection as they increase in height or expand seawards.

Coastal squeeze is significant with the B3500 highway creating an unnatural barrier to dune extension further inland. As a consequence, where erosion dominates, a number of 'pinch points' occur along the length of the dunes where hard engineering has been deployed to protect the highway infrastructure from loss to erosion.

People enjoy dunes for summer recreation and this has an undoubted effect on the fragile dune system. As dunes are primarily created from vegetated unconsolidated sands they can be damaged very easily by human interventions such as cars, motorcycles and even footfall

from walkers. This in turn can compromise the resistance of the dunes to tidal energy which can eventually lead to flood breaches and the subsequent damage to infrastructure inland.

In recent years the dune system of the outer Solway coast has seen a decline in direct damage caused by unmanaged access, such as by vehicles, allowing stabilisation of sand dunes. However, recent declines in coastal grazing have also seen changes in vegetation to those associated with grazed systems, so more rank grasses, gorse, invasive species such as ragwort and other shrubs have invaded the heath and dune grassland areas.

Open access land along the Solway coast, includes a large proportion of the sand dune coast. Hadrian's Wall Cycleway and Cumbria Coastal Way are long distance routes which also cross the area. This has also been one of the first areas in the UK to receive formal Coastal Access provision of England Coastal Path within a section from Allonby to Maryport

Access to the dunes and foreshore for recreation/fisheries/travellers can create issues if not done sympathetically for both other users and nature conservation

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Coastal processes have caused modification of coastline with some areas subject to erosion and others deposition. Erosion along the coast from Dubmill to Beckfoot has reached a point where hard defence of the coastal road has been undertaken. To the south there are a number of points where erosion is approaching the coast road. Further north coastal defences have been strengthened at Skinburness. Grune Point, the northernmost point on the outer Solway, continues to realign in response to modification of sediment supply with erosion of the western shore and deposition on the east.</p> | <p>Encourage integrated designation management to help ensure the objectives of differing designations do not conflict with objectives for the Outer Firth Beaches and Dunes.¹</p> <p>¹ Seascape/Intertidal Landscape Character Type B: Outer firth Beaches and Dunes (LCSA 20100)</p> <p>Appropriate management would be linked to seeking long term sustainability including opportunities to adapt in accordance with SMP policy</p> |
| <p>Increases in coastal dynamism due to the impacts of Climate change including, variously increased erosion and deposition along tidal water courses, frequency and intensity of storm flooding events, will have far reaching impacts including risk to coastal historic assets (saltpans, Roman Cemetery) and community demands for coastal defences around settlements and infrastructure.</p> <p>Loss of coastal car parks due to increased storms and erosion</p> | <p>Encourage integrated designation management to help ensure the objectives of differing designations do not conflict with objectives for the Outer Firth Beaches and Dunes.(¹ Seascape/Intertidal Landscape Character Type B: Outer firth Beaches and Dunes (LCSA 20100)</p> <p>Work with PCs and landowners to close informal car parks but maintain main car parks</p> |
| <p>Access to the dunes and foreshore for recreation/fisheries/travellers can create issues if not done sympathetically for both other users and nature conservation.</p> | <p>Working with PCs, landowners and key user groups to ways of managing access that supports legitimate and traditional land use without causing conflict with the character and nature conservation value of the dune</p> |

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| | <p>system.</p> <p>Discourage groups of travellers from settling along the dune areas.</p> |
| <p>Increases in recreational access by foot, through open Access and the Coastal Path, and cycle along the Hadrian's cycleway and other access types eg fishery, travellers may increase dune erosion and may have an impact on tranquillity, sensitive species and archaeology</p> | <p>Ensure the sections of the Hadrian's Cycleway on the dune areas is sensitive to the archaeology and on the dunes</p> <p>Work with PCs and landowners to close informal car parks but maintain main car parks</p> <p>Respond to the requirements of legislation such as the Countryside and Rights of Way act and the Marine and Coastal Act to promote the positive development of a long distance coastal access route whilst ensuring its development and implementation is in line with the landscape management of the dunes for all its key features.</p> <p>Monitor access to mussel fisheries through the dunes so that no further erosion occurs</p> <p>Discourage groups of travellers from settling along the dune areas.</p> |
| <p>The SSSI status needs to move towards favourable condition</p> | <p>Higher Level Stewardship of Allerdale owned land on the dunes (2012-2022) will be used to support the management of the dune grasslands and until appropriate and sustainable management techniques are found to restore appropriate levels of grazing, mechanical grass cutting will be undertaken.. This will continue to conserve the dunes and heathlands for nature conservation (reflecting their improving SSSI status)</p> <p>•</p> |
| <p>Some overhead electricity lines and poles still affect views to the dunes SSSI and from the dunes inland to the fells</p> | <p>Continue to work in partnership with Electricity North West in undergrounding more 11kv overhead lines to improve visual amenity.</p> |

Objective 6: To ensure that organisations responsible for the conservation and enhancement of the natural beauty of the dunes deliver appropriate actions and that the dunes are enjoyed sensitively by all users

2.1.5 Lowland Raised Mires - Mosses

Within the coastal plain a series of lowland raised bogs are present. Parts of the series are collectively designated as the South Solway Mosses Special Area of Conservation (SAC) with parts of the SAC also designated as National Nature Reserve (NNR). The SAC designation recognises the fact that the raised mires comprise the most intact and extensive series of sites in England, with their unique communities of peat-forming mosses, dwarf shrubs, cotton grasses, sundews, dragonflies and large heath butterflies.

The mosses were once even more extensive across the Solway plain, before being fragmented through drainage and improved for agriculture (low grade pasture). These large areas of rain-fed peatland form shallow raised domes of peat at a maximum depth on Solway Plain of around 6.5m. The four largest mosses are found on and around the Cardunock Peninsula: Wedholme Flow, Bowness Common, Glasson and Drumburgh Mosses (of which Bowness Common and Glasson Moss are in the AONB). The sites and their margins include a range of wetland types including raised bog, mire, heathland, open water, reeds, fen and some fringing wet woodland. The latter typically includes birch, alder and goat willow. Wetland and wet woodland habitats are of high biodiversity value and are rich in birdlife.

The mosses provide a tranquil environment and are generally not very visible from the surrounding areas of coastal pasture due to their low elevation and screening by fringes of woodland. Large parts of the mosses are managed by Cumbria Wildlife Trust (CWT), Natural England (NE) and the RSPB, though others are still under private ownership. Several of the mosses have been subject to, and continue to be subject to, 're-wetting', to restore their hydrology and condition as wetland habitats for nature conservation, as have some surrounding pastures through reversion. Some of the species present are lapwing, curlew, reed bunting, and willow tit and the area is popular with bird watchers. The mosses are also enjoyed by visitors for their attractive semi-natural landscapes. The Solway Wetlands Landscape Partnership Scheme (SWLPS) seeks to provide much of the improved access as well as facilities for visitors and some wetting up (reversion) projects.

Unmodified raised mires are rainwater fed and consequently at the head of hydrological systems, acting as reservoirs and releasing their latent water slowly into the surrounding system. Within the Solway plain this is not the case where past hydrological interventions have been made to de-water peat land for reclamation as low-grade pasture. These 'interventions continue to compromise natural hydrology and have a devastating effect on the flora and fauna of the bogs and their edge habitats and landscapes.

Little of the surviving lowland raised mire (SSSI) is in favourable condition because of past degradation. Historically conservation landowners have provided much valuable restoration work with much of this 'good practice' being passed onto surrounding landowners. As a result the larger mires are now being restored in a collective way through the SWLPS so that on Bowness Common 87.5% of the SSSI is in favourable or recovering condition; and on Glasson Moss 63.8% is in favourable or recovering condition. However, the other lowland raised mire in the AONB Salta Moss, remains largely in unfavourable declining condition due to inappropriate ditch management draining the site, pheasant rearing, inappropriate scrub control and water pollution (discharges).

Visually the most extensive changes in recent years have been seen on some of the lowland raised mires where restoration has taken place with resultant decreases of secondary woodland cover and a directly related increase in wetland species.

On the mire edges unimproved semi-natural grasslands have declined through the latter half of the 20th century as agricultural management has intensified and sites have been subject

to reseeded with the related increases in nutrient levels compromising the wetland habitats which once flourished adjacent to the mires.

Conversely habitat restoration work has allowed some habitat specialist species to be restored such as the marsh fritillary butterfly which had declined to local extinction in the late 1990's. [So far this restoration has happened outside the AONB but there is potential to restore further populations in the AONB].

Peatlands are carbon rich and contribute greatly to the national carbon balance. When raised mires are in favourable condition carbon uptake through the burial of peat forming vegetation is considerable. However, when in unfavourable condition, through modified drainage, peat stripping or habitat succession as a consequence of damage their ability to both sequester and store natural carbon is compromised. This situation leads to a double negative whereby stored carbon is lost to the atmosphere and the mechanism for primary storage is also lost.

The importance of these sites cannot be over emphasised both on nature conservation grounds and as natural carbon storage vaults. Current long range climate projections for the future 10 years and more, point toward wetter milder winters and drier warmer summers. This scenario could prove to be a climatic 'perfect storm' for these sites accelerating decline of damaged sites and as such the time is right to return them to their natural state through restoration.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Continued decline of sites not subject to restoration with consequent loss of condition, species, carbon and resilience</p> | <p>To protect and restore lowland raised bogs for their biological and historical value through sustainable management</p> <p>The restoration and management of peat bogs has potential to reduce the loss of nationally important carbon storage capacity and reduce emissions from degraded peat soils.</p> <p>Increasing awareness of the biological, historical and carbon value of the bogs amongst the local community.</p> <p>Management to reduce carbon loss includes reversion of high risk arable land to pasture and management which promotes the return of organic material to the soil</p> <p>On some sites species reintroductions may be appropriate for specialist species to facilitate recolonisation, eg the Marsh Fritillary butterfly and increase public engagement with the sites</p> <p>Seek management of lowland wetlands and pasture that delivers benefits both biodiversity and sustainable farm business,</p> |

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| | in particular measures that support key species such as breeding waders, and reduces nutrient loading of watercourses. |
| pressures for renewable energy development including onshore and offshore wind farms and other large scale development which may change the views from the mosses, particularly extension of developed skylines along open and undeveloped land or sea horizons; | Work with local Planning Authorities to control inappropriate developments |
| increased flows in water courses and increased winter rainfall, contrasting with increased summer drying potentially result in damage to the raised mire systems, such as cracking, erosion and moorland type fires | Protecting and restoring lowland raised bogs by restoring appropriate hydrology for their biological value, their historical values as an archive of past environmental conditions and their value as a climate regulator by both securing the storage of carbon in peat and preventing its release as carbon dioxide and by enabling the sequestration of carbon dioxide from the atmosphere. (SWLPS) |
| possible increases in the salinity or incidence of sea water incursion to the edges and deep basal layers of the mosses due to sea level rise; | Restoration of site hydrology, which generally involves the removal of recently established woodland and scrub and work to block drains on the moss surface, would be expected to result in a fresh-water buffer to any saline incursion. |
| drainage of areas of wetland moss, intensification of agriculture across areas which are already drained, demand for different crops, or changes in grazing regimes in response to increasing demands for food or energy crops; | Protecting and restoring lowland raised bogs for their biological value, their historical values as an archive of past environmental conditions and their value as a climate regulator by both securing the storage of carbon in peat and preventing its release as carbon dioxide and by enabling the sequestration of carbon dioxide from the atmosphere. (SWLPS) Seeking sustainable management regimes that ensure areas of agriculturally managed peat are managed in the most appropriate manner |
| increasing visitor pressure affecting tranquillity and biodiversity, for example at Glasson Moss and Drumburgh Moss; | In tandem with generally increasing awareness of the mosses and the valuable role they perform securing appropriate access provision to allow engagement with sites that is sympathetic to their character. |
| Changes in water quality influencing landscape character, for example through | Restoration of site hydrology which generally involves the removal of recently established |

presence of higher levels of nutrients which could alter vegetation, or reed growth which may affect the extent of open water.

Inappropriate scrub control and water pollution (discharges).

woodland and scrub and work to block drains on the moss surface.

Use legislation to protect and improve the condition and through improved awareness make the mosses more widely valued for their biological and historical values

Objective 7 : To ensure continued creation, restoration and enhancement of new and restored raised mire habitat

2.1.6 Biodiversity

The Solway Coast AONB landscape is unique for several reasons. Following the last ice age (Devensian) the area was cloaked in glacial deposits such as gravels, sands and similar deposits described collectively as 'Drift'. These deposits have been scoured and modified by subsequent meltwater events, changes in sea level and coastal processes. These processes [plus post-glacial peat formation] have created the basis for the generation of habitats and the species which inhabit them. The hand of man has since modified the natural landscape through drainage, woodland clearance and agriculture leaving us with a patchwork of modified habitats. What is left is important to conserve and some cases restore supporting a range of distinctive features, habitats and their dependent flora and fauna.

The layer cake of designations designed to protect the areas habitats and wildlife is testament to the importance locally, nationally and internationally of the assets that make up the AONB landscape.

The Solway Firth is designated as a Special Area of Conservation (SAC) for its salt marshes, sand dunes, and intertidal habitats and Special Protection Area (SPA) and Ramsar site for its populations of breeding birds and wintering waders and wildfowl, including barnacle geese and whooper swans, whose daily movements between roosts and feeding areas are also an iconic feature of the landscape.

Inland from the coast many of the series of lowland raised bogs make up the South Solway Mosses SAC which includes the most intact and extensive series of raised bogs in England, with their unique communities of peat-forming mosses, dwarf shrubs, cotton grasses and large heath butterflies. In the East is the River Eden and Tributaries SAC which extends far beyond the AONB with its populations of salmon, otters lamprey and beds of water crowfoot.

Priority habitats within the AONB include coastal and floodplain grazing marsh, salt marsh, lowland raised bog and sand dunes as well as a number of other habitats. (Priority habitats within the AONB include 3014 ha of coastal and floodplain grazing marsh, 2694 ha of salt , 1136 ha of lowland raised bog and 260ha of sand dunes as well as 1871ha undetermined f habitats from a total of 9077ha). The area also supports nationally and regionally important populations of many species, such as natterjack toad, breeding and wintering waders, wintering wildfowl and coastal plants. However, others, such as farmland birds, are associated with the wider landscape.

Geodiversity The post-glacial geology of the area is important with coastal feature and terrestrial peats providing significant information about past climatic fluctuations and a palaeo-environmental record . There are two SSSIs within the AONB – Upper Solway Flats

and Marshes and the River Eden and Tributaries – which are designated partly for their geological importance.

There are also four Regionally Important Geological/Geomorphological Sites (RIGS) in the AONB : Beckfoot- submerged forest; Rockliffe – sandstone outcrop; Swarthy Hill – drumlin and raised beach profile; Dubmill Point and Allonby – raised beach profiles

The area is exceptional for its biodiversity associated with a range of lowland habitats. These are important both in their own right, as key assets of local sense of place and in many cases as the support for other services.

On the salt marshes of the inner Solway the grazing regime is important for maintaining the habitat for wildfowl and wading birds, whilst the few ungrazed marshes tend to be more floristically diverse. As well as their biodiversity importance these marshes perform an important role in providing coastal protection, carbon sequestration and storage, food provision, sense of place and tranquillity.

The Outer Solway Firth is dominated by sandy beaches and sand dunes, including both mobile and fixed dune types hosting a range of communities. As well as their biodiversity these dunes provide the first line of coastal defence away from the coastal settlements and are an important recreational asset used for walking and golf.

The reefs of the outer Solway are important in their own right but additionally provide a food resource for wintering waders, and support a commercial mussel fishery.

Little of the surviving lowland raised mire is in favourable condition because of past degradation, however, a number of the larger mires are now being restored.

The farmland landscape of the AONB is also important for a suite of species in decline adapted to the agriculturally managed landscape such as grey partridge, tree sparrow and barn owl.

Section 41 of the Natural Environment and rural communities (NERC) Act (2006) include lists of habitats and species which are of principal importance for the conservation of biodiversity in England commonly referred to as 'Priority Habitats/Species'. The following habitats and species are considered to be characteristic of the Solway Coast AONB.

Habitats

(The following S41 'Priority Habitats' are present within the AONB³)

Coastal and Floodplain Grazing Marsh
Coastal Sand Dunes (including both Dune Grassland and Dune Heath)
Lowland Raised Bog (and Lowland Heathland)
Coastal Vegetated Shingle
Coastal Grassland(in sand dunes and maritime cliffs and slopes)
Maritime Cliffs and Slope
Reedbed
Lowland Fen
Saltmarsh
Mudflats
Saline Lagoons
Honeycomb worm reefs (*Sabellaria alveolata*)

³ Nature on the Map, <http://www.natureonthemap.org.uk/map.aspx?m=sssi>

Traditional Orchards

Wet Woodland

Purple Moor grass and Rush Pasture

The location and extent of Priority habitats within the AONB is available on the Natural England website but there is currently no information available on the condition of those habitats outside the designated SSSI series or whether they are recovering or declining or remaining stable.

Species

Within the AONB there are a number of S41 Priority species present including Of these there are eight species for which there is a Cumbria recovery plan (see Cumbria Biodiversity Action Plan) :

Songthrush,

Barn Owl,

long-eared Bat

Natterer's Bat,

Pipistrelle Bat,

Marsh Fritillary,

Natterjack Toad and

Great-crested Newt (also known as Warty Newt)

There are also six EU Habitats Directive 'Annex II' Species⁴ – Common Porpoise, Common Seal, Grey Seal, Otter, Marsh Fritillary, Great-crested Newt; recorded in the AONB and EU protected species⁵ - Brown long-eared Bat, Common porpoise, Natterers Bat, Pipistrelle Bat, Otter, Bottle-nosed Dolphin, Natterjack Toad and Great-crested Newt. Fish species include Atlantic salmon and Lamprey.

There are also those plants and animals that are classified as invasive, non-native species. These fall into the opposite category whereby measures are being taken to try to eradicate them from the AONB. Himalayan Balsam along water courses, and Japanese rose within the sand dunes are two such plants. Wildlife disease has been detected within the AONB one of which, chytrid fungus, impacts on a priority species, the Natterjack toad.

In recent years there has been a shift from site based policy to secure biodiversity to one that prioritises a landscape-scale approach and which raises awareness of the important role biodiversity plays for society this is set out in the Natural Environment White Paper published in June 2011 Outcomes will be delivered through actions in four areas:

- a more integrated large-scale approach to conservation on land and at sea;
- putting people at the heart of biodiversity policy;
- reducing environmental pressures;
- improvement of knowledge.

In the short term the policy ambition focuses on 2020, which co-incides with the end of this management plans life. National outcomes are set out in "Biodiversity 2020: A strategy for England's wildlife and ecosystem services" and it is anticipated that protected landscapes will make a significant contribution to achieving its aims

⁴ "Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or endemic in the European Community) whose conservation requires the designation of special areas of conservation."

⁵ The Conservation Regulations (1994) are the UK law that enacts the EU Habitats and Species Directive Annex 4 and 5, which are respectively lists of "Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or endemic in the European Community) in need of strict protection. They are protected from killing, disturbance or the destruction of them or their habitat." and "Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or endemic in the European Community) whose taking in the wild and exploitation may be subject to management measures. Member states must ensure that taking wild specimens and their exploitation is compatible with the species being maintained in favourable conservation status."

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Policy shifts away from site-based approaches to landscape scale delivery of biodiversity that link core sites through a permeable wider landscape</p> | <p>Through the SWLPS and beyond work with AONB partners to align ambitions and maximise opportunities arising from the suite of reserves that are such an important component of the AONB landscape.</p> <p>Influence targeting and uptake of AE schemes so that the wider landscape is well managed for biodiversity, with a particular emphasis on areas that link core sites.</p> <p>Implementation/enforcement of policy and legislation eg WFD, Designated Sites protection, Bio2020 prioritisation to secure key outcomes</p> |
| <p>Characteristic habitats and some species are in decline or may be lost because of a range of factors including, changes in farming practices, climate change influences, poor management techniques, development pressures from new planning regulations on green and brownfield sites</p> | <p>Implementing agri-environment schemes that support sympathetic management across the habitats that underpin AONB character.</p> <p>Influence targeting and uptake of AE schemes</p> <p>Implementation/enforcement of policy and legislation eg WFD, Designated Sites protection, Bio2020 prioritisation</p> <p>Planning guidance and commenting</p> <p>Ensuring appropriate SMP implementation</p> <p>Increasing awareness of sensitivities especially among recreational users</p> <p>Develop programmes targeting INNS</p> <p>Securing actions such as retaining grazing systems that provide the conditions for key species and allow the natural development of the marshes, and managing recreational use, will be important in maintaining the value of the marshes into the future.</p> <p>Key actions to restore raised mire sites will include the restoration of site hydrology which generally involves the removal of</p> |

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| | <p>recently established woodland and scrub and work to block drains on the moss surface. On some sites species reintroductions may be appropriate for specialist species to facilitate recolonisation. Generally increasing awareness of the valuable role these mosses perform through appropriate access provision would also be desirable.</p> <p>It will be important to continue to allow dynamic coastal processes, secure appropriate grazing regimes and manage recreational access to the dunes if they are to continue to fulfil this varied role as biodiversity asset, recreational asset and flood defence.</p> |
| <p>There has been a drift to site based approaches which are not effective in the long term to meet species needs. So there is the need for better site linkage and more permeable fabric of the landscape</p> | <p>Develop landscape scale initiatives, eg Nature Improvement Areas and Landscape Partnership activity, such as the Solway Wetlands Landscape Partnership Scheme, to create a wider scale of biodiversity improvement.</p> <p>This will move focus away from site based solutions toward site linkages and wildlife corridors.</p> |
| <p>There is still a limited knowledge about the overall biodiversity resource of the AONB because of the scale of the task and lack of recorders</p> | <p>Improve biological recording and use of record centre (Tullie House) for all species including non-native species</p> <p>.</p> |
| <p>Non-native species are arriving in the AONB and not being targeted or eradicated</p> | <p>Improve awareness by identification training and leafleting.</p> <p>Raising awareness on marine non-native species across the whole Solway is being undertaken by the Solway Firth Partnership supported by the AONB Partnership in England</p> |
| <p><i>Sabellaria</i> reefs are at risk from disturbance and trampling by mussel and crab fishers even though they often 'look after themselves'</p> | <p>Raising awareness of this sensitivity may be appropriate through the Marine Protected Areas (MPA's). The Allonby Bay MPA would be appropriate for this approach.</p> |

Objective 8: To ensure the conservation, enhancement, expansion and enhanced connectivity of habitats, creating resilient ecological networks across the Solway Coast AONB and beyond with a focus on 2020 priorities

Objective 9: To ensure targeted action is taken for the recovery of characteristic species and the restoration/enhancement of characteristic habitats

Objective 10: To ensure the prevention of introduction of, halt the spread of and where appropriate eradicate, invasive non-native species and plant diseases

Objective 11: To ensure conservation and understanding of geodiversity and its importance in the landscape and biodiversity of the AONB

Objective 12: To ensure the conservation and protection of Marine Protected Areas and coastal dunes and marshes

2.1.7 Water Environment

The Solway Coast AONB landscape is essentially a heavily modified lowland wetland, away from the coast. Over the past 1000 years, since the establishment of a Cistercian Abbey and its ancillary trades and land uses, the area has been drained to provide agricultural land. Until recently the network of drainage channels, rivers and ditches have been maintained by the Environment Agency through the understanding of the complex hydrology created through piecemeal drainage schemes. However, since the publication of the Catchment Flood Management Plan (CFMP) in 2005, the EA has reduced the extent of its maintenance activities in rural areas.

Within the Waver and Wampool river catchments and adjoining smaller waterways both surface water and ground water aquifers are used by agriculture and amenity users. Around 504ha of farmland in the Waver-Wampool catchment is pump drained at present by the Environment Agency, of which approx xx is in the AONB, but the formation of a new Internal Drainage Board (IDB) by 2016 is proposed. There are currently 4 pumping stations the EA wants to cease the maintenance of along with the cessation of ditch clearing and dredging for solely agricultural benefit. Future work of this nature undertaken by the EA will be more tightly prioritised to protect property and other infrastructure.

Climate Change is likely to be a major driver of change in the Solway Coast AONB, its low lying character and network of coastal and wetland sites are likely to be especially vulnerable to change. (See NE CC Risk Model: <http://naturalengland.org.uk/ourwork/climateandenergy/climatechange/vulnerability/nationalvulnerabilityassessments.aspx> model)

Environmental policy drivers such as Biodiversity 2020, the Water Framework Directive and Natura 2000 targets are likely to see the continuation of a programme of restoration of semi-natural habitats, particularly wetland and coastal habitats, of which there is a large coverage in the AONB.

Combinations of low lying geography, high average rainfall, areas of free draining soils and under surface drift deposits, some of which are also free draining (sands and gravels), should provide high water tables in many areas.

National measures implemented to improve water quality in recent years have included the upgrading of waste water treatment facilities discharging into both the coastal waters and the river systems that feed the Solway. The ecological status of river waters and estuaries is generally moderate or poor.

The AONB includes three designated bathing water beaches (Silloth West Beach, Allonby Bay and Crosscanonby). In recent years two of these have passed water quality standards however the third has experienced some failures which are attributable to nutrient loads following storm events. From 2015 bathing waters standards will be increased in line with European policy which may affect categorisation of AONB beaches.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Climate change projections suggest that the AONB is likely to see increases in both summer and winter temperatures, an increase in winter rainfall but a decrease in summer rainfall, and an increase in the number and intensity of storm events. Rainfall is likely to be focused into fewer events of higher intensity. Recent years have seen increased instances of flooding in the river systems.</p> | <p>Global changes influencing local climates cannot be directly influenced by local measures. However, opportunities exist for local mitigation of adaptation to impacts. Opportunities arise through changes in land management such as ‘wetting-up’ and other schemes such as reversion, restoration and re-wilding.</p> <p>Mechanisms include AE schemes, WFD priorities and new policy/programmes eg Carbon credits. These will help by managing flows and supporting water quality targets.</p> <p>Securing sympathetic management of the diverse array of high quality wetlands both inside and outside designated sites including rivers, valley mires, lowland raised bogs, coastal and floodplain grazing marsh, reedbeds and fens to reinforce the AONB character; and support the provision of ecosystem service benefits</p> |
| <p>Inland wetlands are likely to experience lower summer water levels and consequent decreases in water quality, increases in CO₂ emissions from dried out peat, increased risk of flooding events in low lying areas and a risk of saline intrusion into coastal fresh water wetlands</p> | <p>Global changes influencing local climates cannot be directly influenced by local measures. However, opportunities arise through changes in land management such as ‘wetting-up’ and other schemes such as reversion, restoration and re-wilding.</p> <p>Locally measures such as the restoration of lowland raised bogs can reduce water loss at periods of high rainfall, with consequent benefits for surrounding agricultural land.</p> <p>Restoring and enhancing the suite of wetland SSSIs, and SACs, and their component</p> |

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| | habitats present in the AONB. |
| <p>Flood management policy prioritising resources to residential property and key infrastructure is likely to draw government funding away from agricultural areas, which may have particular implications in what is a predominantly rural, low lying and flat landscape with large areas of farmland close to sea level.</p> | <p>Setting up of IDB/Water Level management Board by Farmers and landowners. Would oversee and support management – but costs would still have to be met so there is still likely to be a significant agricultural impact.</p> |
| <p>Because of water quality failures the catchments of the Rivers Waver and Wampool are Priority Catchments for Catchment Sensitive Farming funding initiatives. Soil erosion and diffuse pollution are identified as issues within these catchments. Soil erosion can carry pollutants such as inorganic fertilizers and slurry as well as sediment into watercourses</p> | <p>Developing new wetlands that trap sediments, manage agricultural flood risk and help support wetland species through CSF funding, Nitrate sensitive zone regulations and Code of Good Agricultural Practise linked to Single Farm Payment</p> <p>Pressure on land to receive agricultural waste such as slurry when ground conditions are not suitable can be reduced through measures such as the timing of operations and securing improvements in farm infrastructure. Supporting and guiding programmes such as CSF can help address these issues.</p> <p>While generally beneficial in field measures would be likely to result in short-term decreases in some services such as food provision, however, impacts in the longer term would likely be neutral or positive.</p> <p>Covering slurry areas to reduce high nutrient runoff entering water courses, covering yards (to prevent rain water increasing the volume of material to be stored), increasing slurry storage capacity, and better management of point source points of pollution such as around gateways. Regular soil sampling to promote a better understanding of soil nutrient status and potential is also recommended.</p> <p>Ensuring that ditches and other watercourses have buffers of vegetation, including trees where appropriate, and riparian habitats along their margins to support riparian species and enable species movement, trap sediment and run-off in</p> |

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| | areas of high erosion risk, and ensure that stock access does not result in sediment entering watercourses |
| Ensuring marine bathing water is monitored and marine litter is controlled | . The EU Water Framework Directive is a driver to protect water bodies including bathing waters from pollution and seeks to secure good ecological condition as a driver for change/solutions. Seek opportunities to reduce impacts on bathing waters by reducing diffuse pollution entering watercourses and monitor marine litter |

Objective 13: To ensure that national and local agencies have put in place policies and guidance to implement the sustainable use of water resources in the AONB

Objective 14: To ensure water courses are appropriately managed and their quality enhanced,

Objective 15: To secure land management that sustainably regulates flooding

Objective 16: To make a significant contribution to the delivery of the Water Framework Directive by improving water quality and water body status in and around the AONB and Coast

2.1.8 Historic Environment (and Culture)

Shaped by more than 5000 years of human activity, the Solway Coast AONB contains a wealth of archaeological sites and historic buildings set within a distinctive historic landscape. The conservation of these is essential to the well being of the local settlement character and the sense of history of the area.

There are many historic assets and influences in this landscape, most notable being the features associated with the Roman Frontier World Heritage Site including Hadrian's Wall itself as well as a series of mile fortlets and larger forts. More recently the landscape has been heavily influenced by medieval monastic activity and its position within the 'debatable lands' - an administrative no-man's land – that once separated England from Scotland and was dominated by the 'Border Reivers'. This has left a legacy of abbey ruins, fortified farmsteads and a nucleated rural settlement pattern as well as the field patterns and areas of ridge and furrow that are a key feature of the rural landscape. The most recent features of the historical landscape are again those of conflict and are associated with the Second World War comprising a suite of airfields now largely adapted to light industrial uses.

A mixture of materials have traditionally been used as building material including red sandstone; limestone; cobbles; local clay; and Welsh and Cumbrian slate, reflecting the varied history of the area, local skills and particular trade links. Of particular local note are the cruck roofed and clay-walled buildings, known as 'clay dabbins' which are to be found on the Solway Plain.

Non-scheduled features, including ponds, traditional field boundaries (kested hedges), salt pans, 'clay dabbins' and traditional farm buildings are all important and distinctive features of the historic landscape but which can be threatened by neglect, under-management or lack of consistent recording. A sense of how the land was sequentially adapted for agriculture over time is evident in the patterns of drainage ditches, hedgerows and stone-faced hedgebanks (kests).

Oral and cultural traditions also provide a sense of history. In addition to place names, many of which are Viking and French in origin, the persistence of traditional fisheries maintains a direct cultural link to the area's past. Of particular note is the tradition of 'haaf netting' for salmon in the river mouths of the Solway Firth. This technique has a Viking origin and retains Viking technology, phraseology and equipment.

| Issues and Forces for Change | Possible Mechanisms to Manage Impacts |
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| <p>There are seven Conservation Areas (Built environment) and one listed building within the AONB that is on the national English Heritage 'Register of Buildings at Risk'. Hadrian's Wall, between Port Carlisle and Bowness on Solway, which is listed as a Scheduled Monument, is at risk with its condition being poor. Being on this at risk register should be a mechanism prioritising intervention to protect it.</p> | <p>Conserve and enhance the important sites and features linked to cultural heritage and their surrounding cultural landscape with particular reference to Hadrian's Wall and Hadrian's Wall buffer World Heritage sites and the historic Holme Cultram Abbey.</p> |
| <p>In rural areas most farm buildings were considered intact in 2003 (CQC) though some had been converted. Since that time Agri-environment funding has seen many remaining under active management and some restored. None the less there remains a continued loss of some building types, in particular clay dabbin buildings which require specialist building techniques. These have declined greatly in recent years as cheaper building materials have become available and knowledge of how to maintain clay walled buildings has declined, for example the importance of using lime-wash mortar rather than concrete, as the latter corrodes the clay.</p> | <p>Promote increased awareness of the Roman and Cistercian Solway through improved interpretation and archaeology research</p> <p>Promoting awareness of the surviving historic landscape including both the built features and their associated landscapes, improving access to sites and linking up cultural heritage sites to natural heritage sites and the rights of way network including long distance paths and cycle ways.</p> <p>Seeking opportunities to maintain local vernacular styles in new developments and seeking to ensure that the layout of new developments reflects local settlement structure.</p> |
| <p>Along the outer Solway coast some sites are being lost to coastal erosion, for example the Roman cemetery at Beckfoot.</p> | <p>Conserve and maintain the salt pans and Roman remains in the AONB in collaboration with EcosalUK. Where</p> |

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| | <p>sites cannot be protected from coastal erosion then prioritise documentation and see ex situ conservation of heritage</p> |
| <p>Generic land management practises and the loss of local skills are a threat to the long-term maintenance of the historic assets of the area, for example clay dabbin building skills are almost lost while much field boundary maintenance no longer follows traditional management practise.</p> | <p>Protecting and restoring traditional buildings, and developing the skills to restore them using traditional techniques, using appropriate materials and techniques including cobbles, clay dabbin and local sandstone.</p> <p>Protecting and restoring boundary features such as hedges, mature trees, ditches, sandstone gate stoops and riparian corridors. Carrying out works such as earth-bank 'kest' restoration, and gapping up and protecting hedges, including management in the Cumberland hedge laying style.</p> |
| <p>Poorly documented sites are at threat from loss through inappropriate management, for example some roman sites are managed as part of arable systems and other sites such as some mile forts, which should be present, are undocumented.</p> | <p>Conserving archaeological features through securing sympathetic land management practices – for example, through reversion of arable land to grassland where ploughing threatens the integrity of below-ground archaeology.</p> <p>Identifying the locations of sites that should be present but are undocumented.</p> |
| <p>Maintaining a strong sense of history throughout the landscape will require raising awareness both of key assets and their value and securing increased capacity to deliver appropriate management in to the future.</p> | <p>Improving interpretation of historic sites through both onsite information and new technologies such as web base resources and mobile technologies.</p> <p>Provide improved access, interpretation and educational facilities to increase visitor experience of, understanding of,</p> |

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| | <p>and enjoyment of the AONBs natural and historic heritage, and engage the local community in its future management</p> <p>Continue to promote Haaf Netting as a traditional means of fishing in the Solway</p> <p>Promotion of events celebrating traditional land management skills eg North Cumbreland Style hedge laying competition</p> |
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Objective 17: To ensure the effective conservation and management of the Solway Coast AONB historic environment, including historic buildings, archaeological sites, heritage landscapes and heritage fisheries

Objective 18: To ensure and increase in professional and public knowledge and understanding of the AONB's historic environment

2.1.9 Development and Planning

Villages and individual buildings and farmsteads and their settings form a vital element of the character of the Solway Coast AONB, particularly because of the traditional materials used in the vernacular buildings on the Solway. The planning and design of development, both within the AONB and around it, is of major importance in maintaining the landscape and scenic beauty of the area. Decision making is the responsibility of the local planning authorities within the context of the National Planning Policy Framework, Local Plans, Core Strategies and Neighbourhood Plans.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| There is a need for affordable housing within the AONB and it will be very important to ensure that in meeting these needs detrimental impacts upon the character of individual settlements and the overall landscape character of the AONB of any new housing development are minimised. | Affordable housing programmes developed by the Local Authorities and social housing providers All new development needs to consider local settlement character including housing layout, scale, design, vernacular tradition and materials |
| Development of infill plots for residential housing can lead to loss of important semi-natural habitat and have an urbanising effect on villages, | Position Statements and design guidance provided by the Local Authorities in conjunction with the AONB, Parish councils and local |

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| <p>removing the local character in its setting.</p> | <p>communities All new development needs to consider local settlement character including housing layout, scale, design, vernacular tradition and materials</p> |
| <p>Conversion of buildings continues within the AONB and inappropriate repair or insensitive conversion can result in features associated with the building's original use being lost. Addition of features and styles which detract from their setting, all contribute to a gradual erosion of settlement character</p> | <p>Through National Planning Policies, Local Plans, neighbourhood planning control will be regulated to the setting of the AONB</p> <p>All new development needs to consider local settlement character including housing layout, scale, design, vernacular tradition and materials</p> |
| <p>In rural locations where conversions of redundant agricultural buildings result in the intensified use of a site, there can be detrimental effects on character and tranquillity. This also may lead to adverse impacts on wildlife such as bats. The rural nature of the AONB and its villages is an important element of the special landscape character of the area. Gradual urbanisation of settlements and rural roads through, for example, increased road signage and road markings and inappropriate street furniture needs to be avoided.</p> | <p>Position Statements and design guidance provided by the Local Authorities in conjunction with the AONB, Parish councils and local communities</p> <p>Minimising light and noise pollution from development and recreation Engagement with the Highways Departments, Local Authorities and Parish councils on road infrastructure improvement and signage within the AONB</p> |
| <p>Pressure for commercial scale wind energy development, both terrestrial and offshore, remains strong in the area surrounding the AONB. Development in the setting of the AONB can be just as damaging to the character of the area as development within the boundary. Turbines can be visually intrusive, particularly if seen against the skyline, and have the potential to significantly affect views out from the AONB.</p> | <p>Through National Planning Policies, Local Plans, neighbourhood planning control will be regulated to the setting of the AONB</p> <p>Position Statements and design guidance provided by the Local Authorities in conjunction with the AONB, Parish councils and local communities</p> <p>Continued assessment of planning applications within the AONB, and other large scale developments outside the boundary but which may affect the setting of the AONB and impacts on the landscape character of the AONB, whilst not discouraging small scale renewable energy schemes in appropriate locations</p> |

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| <p>The potential for the development of bioenergy (biofuels derived from agriculture eg. miscanthus, and other biomass sources such as short-rotation coppice) within the AONB is limited but could lead to large-scale agricultural operations taking over some permanent pastureland . This would have major landscape and agricultural impacts unless sensitively managed.</p> | <p>Through National Planning Policies, Local Plans, neighbourhood planning control will be regulated to the setting of the AONB</p> <p>Continued assessment of planning applications within the AONB, and other large scale developments outside the boundary but which may affect the setting of the AONB and impacts on the landscape character of the AONB, whilst not discouraging small scale renewable energy schemes in appropriate locations</p> |
| <p>Proposals for a Solway Barrage or other tidal energy generator would have significant impact on the AONB in terms of both landscape and the natural environment.</p> | <p>Through National Planning Policies, Local Plans, neighbourhood planning control will be regulated to the setting of the AONB</p> <p>Position Statements and design guidance provided by the Local Authorities in conjunction with the AONB, Parish councils and local communities</p> <p>Continued assessment of planning applications within the AONB, and other large scale developments outside the boundary but which may affect the setting of the AONB and impacts on the landscape character of the AONB, whilst not discouraging small scale renewable energy schemes in appropriate locations</p> <p>Continue to engage with the Solway energy Gateway Scheme as to proposals for a Solway Barrage</p> |
| <p>National Grid's North West Coast Connections Project -National Grid is currently carrying out research and consultations on how best to connect a number of new energy projects to the national electricity network including several offshore windfarm projects in the Irish Sea and the proposed new nuclear power station near Sellafield, West Cumbria. There is currently a need to upgrade and develop the existing electricity transmission network to provide these connections. The route of this network may pass through, or pass</p> | <p>Position Statements and design guidance provided by the Local Authorities in conjunction with the AONB, Parish councils and local communities</p> <p>Minimising light and noise pollution from development and recreation</p> <p>Engagement with the Highways Departments, Local Authorities and Parish councils on road infrastructure improvement and signage within the AONB</p> <p>Continued assessment of planning applications within the AONB, and other large scale developments</p> |

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| <p>by the boundary of the AONB in certain locations but there remain significant concerns regarding potential impact on the setting of the AONB and views out from the area.</p> | <p>outside the boundary but which may affect the setting of the AONB and impacts on the landscape character of the AONB, whilst not discouraging small scale renewable energy schemes in appropriate locations Continue work with E-NW on Undergrounding for Visual Amenity project whilst assessing the impact of designated sites</p> <p>Continue to engage with the Stakeholder Reference Group on the National Grid proposals to ensure impacts are minimal on the AONB</p> |
| <p>The development of high-speed broadband connections and undergrounding for Visual Amenity could disturb designated areas</p> | <p>Through National Planning Policies, Local Plans, neighbourhood planning control will be regulated to the setting of the AONB Minimising light and noise pollution from development and recreation</p> |

Objective 19: To ensure the special qualities of the AONB and its setting are fully respected in all Local Plan (National Plans) documents and decision-making processes have regard to the Statutory Management Plan.

Objective 20: To ensure that development in the AONB and its setting, is of a nature, scale, location and design so that it meets community need without compromising the special qualities of the Solway Coast AONB

SECTION 2 UNDERSTANDING AND ENJOYMENT

2.2.1 ACCESS & RECREATION

The Solway Coast AONB is ideal for outdoor recreation and enjoyment, particularly walking, cycling, wildlife-watching and horse riding. It features a range of different landscape types, each offering their own opportunities for exploring and enjoying, such as the sand dunes and coast, the lowland raised mires, salt marshes and the important World Heritage Site of Hadrian's Wall and associated Mileforts and traditional villages.

There is an extensive network of over 86,418 m of public rights of way (PRoW) within the AONB including footpaths, bridleways, National Trails 14,193 m, Countryside Stewardship Linear Access 7224 m, and Open Access amounts to 19% of the area of the AONB, with spreading room associated with the England Coast Path increasing the available area..

The National Cycle Network Route 72 passes through the AONB (the Hadrian's Wall Cycleway) and part of this (and the Cumbria Cycle Way) between Silloth and Maryport has been specifically re -routed off-road due to the danger of the traffic on the B5300.

Four long distance footpaths pass through the AONB: the Cumbria Coastal Way, the Hadrian's Wall Path National Trail the England Coast Path and the Allerdale Ramble that extends northwards along the shore as far as Grune Point. There are also 11.4km of Easy Access walks.

Natural England has completed improved public access along the first stretch of the England Coast Path between Allonby and Whitehaven. The next planning phase is now underway to link the rest of the AONB coast from Allonby to Floriston, and beyond the AONB to the Scottish border to the path .

A range of information on walking, wildlife watching, cycling in the AONB is available to help people discover different parts of the AONB, including the lesser-known areas.

Retaining this high quality access network and ensuring it is maintained and promoted will ensure that residents and visitors can continue to access and enjoy the area fully.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Access, via Rights of Way, should be maintained and available for use by people with a wide range of mobilities. There may be much less input from Cumbria County Council on upkeep of PRoW and reduced funding in countryside management can impact on accessibility standards.</p> | <p>The management and improvement of the rights of way network by local authorities and others with the assistance of volunteer activity, with coordination of activity encouraged by the AONB partnership</p> |
| <p>There is often some conflict between recreational users and private landowners where dogs may interfere with grazing sheep and cattle, or on sensitive sites which may harm wildlife and high biodiversity value</p> <p>Generally there is an increase in recreational access to the coast in various forms eg. on foot, with dogs, and in gyrocopters this can cause disturbance for both wildlife and other user groups. Need to ensure increases in recreational access are managed so they do not compromise key assets.</p> | <p>Secure provision for appropriate access and promote best practise.</p> <p>Access to particular areas, such as agricultural grazing land and sensitive wildlife sites should be restricted at certain times to avoid disturbance to wildlife or breeding animals.</p> |
| <p>The coastal area of the AONB can be very dangerous with the strong currents and fast moving tides of the Solway. Increased coastal access under the Marine and Coastal Act is likely to lead to additional visitor numbers using this area</p> <p>The salt marsh creeks and erosion here can also be very dangerous to visitors not familiar with these areas</p> | <p>Continued work with NE and Local Authorities to develop and deliver well informed coastal access</p> <p>Information regarding the safe access on the coast needs to be widely available and promoted. The development of the coastal access trail will bring significant social and economic benefits to the coastal communities and visitors to west Cumbria and provide a great recreational resource.</p> |
| <p>The impact of increased walkers and cyclists along the Hadrian's Wall route adds extra</p> | <p>Signage and speed limits need to be placed on the rural and coastal road to improve</p> |

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| impact on the rural roads with the danger of the speeding traffic and safety issues | safety in partnership with other lead organisations (CCC, HW) |
| Access onto the peatlands can be difficult and dangerous to visitors who do not know the areas and the nature of the peatlands | Encouraging access to and improving the quality of and enjoyment of the recreational experience for all should be a priority, including improved, but site appropriate and asset sensitive, access to the peatlands through the legacy of the Solway Wetlands Landscape Partnership |
| AONB attracts relatively low numbers of under-represented, hard to reach groups. In particular people from inner-city areas, ethnic minority groups, and young and less mobile people are infrequent users of the rural environment. | Encourage the promotion of all forms of access via leaflets, interpretation signs, apps, and any other media to increase the awareness of the vast opportunities of Access for All in the AONB |
| The low level of public transport provision inhibits visiting much of the AONB for recreation for those without access to a car. | Promotion of access via public transport where possible and encourage the provision of more regular rural services |
| Overuse of some of the more popular countryside and recreational sites, combined with reduced funding for site management, leads to degradation and erosion of key areas, including important sites for biodiversity. | Encourage the promotion of all forms of access via leaflets, interpretation signs, apps, and any other media to increase the awareness of the vast opportunities of Access for All in the AONB |
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Objective 21: To ensure that a wide range of opportunities exist for everyone to gain access to the AONB and understand its special qualities

Objective 22: To maintain, improve and promote access and quiet recreational opportunities in a sustainable way for a diverse group of people

Objective 23: To encourage and promote responsible, well informed, and safe access and enjoyment of the coast and AONB countryside

2.2.2 TOURISM

Tourism is a key component of the local economy and a shared approach to the development and management of sustainable tourism in the AONB is needed, which takes into account the needs of the environment, local residents, businesses and visitors. Historically tourism within the AONB has been concentrated along the coast and, particularly, around Silloth and Allonby for traditional 'seaside' holidays.

Becoming more popular are the quiet recreational activities such as, walking, cycling, bird watching, wildlife identifying, fishing and windsurfing. Heritage tourism and cultural tourism are also important, with more visits to the Hadrian's World Heritage Site, Hadrian's Wall and the related cycle route and National Trail.

The tourism offer within the AONB is based on the area's special qualities and this relies on good quality information being available and how people can experience them and support their conservation

There are nine caravan/holiday parks within the AONB predominantly located along the south coast, and two hotels. Further accommodation is available in the form of Bed and Breakfast, guest-houses, self catering accommodation and camp sites.

There are a further six caravan/ holiday parks and three hotels in and around Silloth, which although not within the AONB boundary, provide bases for tourists visiting the AONB. There is one Tourist Information Centre (TIC) within the Solway Coast Discovery Centre at Silloth, managed by Allerdale Borough Council with further centres at Maryport and Carlisle..

Allerdale Borough Council in its Tourism Strategy⁶ identifies tourism as a vital sector in the local economy and a large employer in the borough. Tourism is seen as an important component of Allerdale's economy. The report also confirms that Allerdale attracts a predominantly day visitor market. As well as shorter days and lower spend, the AONB also attracts a high proportion of day visitors

Tourism activity in Cumbria (and the AONB) and the consequent tourism revenue is subject to seasonal variations, July to September being the busiest part of the year. Revenue created by tourism activity is a key measure of a destination's performance. In 2012, visitors to Cumbria generated 50.6 million tourist days (Cumbria STEAM Report⁷).

| Issues and Forces for Change | Possible Mechanisms to Manage Impacts |
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| <p>Survey data regarding visitor make-up for the AONB is not currently available but it is thought that day visitors come chiefly from Carlisle, north Cumbria, Southern Scotland and from the northern Lake District; staying visitors are dominated by traditional seaside holidays based at the coastal chalet and caravan parks..</p> | <p>Development of a single destination management plan for the AONB by Destination Management Organisations</p> <p>Working with businesses to improve their environmental and 'Green' credentials will be important (Thurstonfield lodges eg)as can be visitor payback schemes to fund environmental projects</p> <p>Promoting locally produced food and other products will help to reinforce the local distinctiveness and add value to the local economy (saltmarsh fed beef, shrimps, fish).</p> <p>Work with the LEP, Cumbria Tourism and other partners to implement a sustainable visitor strategy for the AONB.</p> |
| <p>Although visitor numbers recorded by both Allerdale Borough Council and Carlisle City</p> | <p>Close working relationships need to be developed and maintained between tourism businesses, the AONB partnership and</p> |

⁶ A Strategy for Tourism 2005-2015, Allerdale Borough Council, August 2005.

⁷ Cumbria STEAM (Scarborough tourism Economic Activity Monitor) Report (2012), Research Dept., Cumbria Tourism <http://www.cumbriatourism.org/research/surveys-data.aspx>

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| <p>Council (and across Cumbria) have shown a recent downward trend the number of visitors to the AONB specifically is rising mainly as a result of the designation of Hadrian's Wall as a World Heritage Site and the development of the Hadrian's Wall Cycleway and Trail.</p> | <p>tourism support organisations (Cumbria ACT, Cumbria Tourism, Allerdale Borough Council (ABC).</p> <p>Work with the Local Enterprise Partnership (LEP), Cumbria Tourism and other partners to implement a sustainable visitor strategy for the AONB.</p> |
| <p>There is limited but essential collaborative working with Cumbria Tourism for the Solway Coast in general but also for the AONB.</p> | <p>Development of a single destination management plan for the AONB by Destination Management Organisations Close working relationships need to be developed and maintained between tourism businesses, the AONB partnership and tourism support organisations (Cumbria ACT, Cumbria Tourism, ABC).</p> <p>Promoting locally produced food and other products will help to reinforce the local distinctiveness and add value to the local economy (saltmarsh fed beef, shrimps, fish).</p> <p>Work with the LEP, Cumbria Tourism and other partners to implement a sustainable visitor strategy for the AONB.</p> |
| <p>There is a heavy reliance among visitors on the use of private cars.</p> <p>Facilities and infrastructure are required such as adequate car parking, cycle hire, tramper hire , litter bins and accessing the AONB via public transport needs to be explored</p> | <p>Marketing and promotion of the area and its special qualities and accessibility, both locally and more widely is important and close working is needed with organisations responsible for carrying out pre-arrival marketing.</p> <p>Work with the LEP, Cumbria Tourism and other partners to implement a sustainable visitor strategy for the AONB.</p> <p>Promote the Solway Wetlands Landscape Partnership Scheme and its legacy, as a destination for important peatlands and wildlife</p> |
| <p>Within Cumbria there is insufficient, specific, visitor-focused information, in a variety of formats, about the AONB, its sense of place and distinctive features</p> | <p>Development of a single destination management plan for the AONB by Destination Management Organisations Close working relationships need to be developed and maintained between tourism businesses, the AONB partnership and tourism support organisations (Cumbria</p> |

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| | <p>ACT, Cumbria Tourism, ABC).</p> <p>An important element of promoting the AONB as a nature and wildlife destination will be to help businesses understand and promote the nature of the area.(and to understand what businesses need from the wildlife asset as a two way process).</p> <p>Working with businesses to improve their environmental and ‘Green’ credentials will be important (eg. Thurstonfield lodges) as can be visitor payback schemes to fund environmental projects</p> <p>Marketing and promotion of the area and its special qualities and accessibility, both locally and more widely is important and close working is needed with organisations responsible for carrying out pre-arrival marketing.</p> <p>Locally produced food and other products will help to reinforce the local distinctiveness and add value to the local economy (saltmarsh fed beef, shrimps, fish).</p> <p>Work with the LEP, Cumbria Tourism and other partners to implement a sustainable visitor strategy for the AONB. Promote the Solway Wetlands Landscape Partnership Scheme as a destination for important peatlands and wildlife</p> <p>Make use of M6/mainline rail to Carlisle as a source of visitors to the Eastern part of the AONB?</p> <p>Develop the offer to visitors transiting the area on long distance trails eg. Hadrian’s wall, England Coast Path</p> |
| <p>There is a lack of up-to-date and accurate research data to improve understanding of visitor profiles, patterns and tourism trends in the AONB in order to inform future plans/actions</p> | <p>Development of a single destination management plan for the AONB by Destination Management Organisations</p> <p>Marketing and promotion of the area and its special qualities and accessibility, both locally and more widely is important and close working is needed with organisations responsible for carrying out pre-arrival marketing.</p> <p>Work with the LEP, Cumbria Tourism and</p> |

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| | <p>other partners to implement a sustainable visitor strategy for the AONB.</p> <p>The production of an AONB visitor survey as part of a wider project</p> |
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.Objective 24 :To ensure the tourism industry is environmentally and economically sustainable, based on, and actively supports, the special qualities of the Solway Coast AONB and brings benefits to the community and has a consistent recognisable brand?

Objective 25 : To ensure an increase in heritage management, tourism, hospitality and outdoor education to help secure the future of the area

Objective 26: To monitor and manage recreational pressure to avoid harmful impacts on the special qualities of the AONB

SECTION 2.3; SOCIAL AND ECONOMIC WELL-BEING

2.3.1 EMPLOYMENT AND BUSINESS

In the AONB, farming and tourism are both key generators of income for the local economy and key employers.. The total number of people employed in farming has fallen significantly since the 1990s, from over 300.

Tourism is important to the local economy. AONB specific data is not available but some figures give a picture of the importance of tourism to employment within the local area. Direct employment in tourism includes accommodation, food and drink, recreation, shopping and transport but indirect employment is also important. The accommodation sector is the primary direct tourism employer in Cumbria but the food and drink sector is also important in supporting tourism employment.

Ward profiles based on the 2011 Census indicate that a significant number of people within the AONB work from home ranging from around 7.2% of the working population in Burgh to 10.7% in Holme. This compares with 4.5% for Cumbria as a whole.

The level of unemployment in the AONB has remained fairly stable over recent years.

There are around 200 businesses operating in the AONB. Just over half (53%) of these are related to agriculture, forestry and fishing. Construction accounts for 11% and tourism a further 10% of the number of businesses. With the exception of agriculture, forestry and fishing (47% of the AONB working population) and construction (10% of the AONB working population) there are no published numbers of people employed in the AONB by industry. 81% of households are owned and 8.5% are rented. within the AONB, with rented accommodation being proportionately higher in the south. Owner occupation is higher in the AONB than in Cumbria (71%) but rented is much lower (27%).

House prices range considerably across the AONB , but in 2013-14 house prices have fallen.

Figures show that the majority of the resident population in the AONB cannot afford to buy a house. Caravan sites in the AONB can also effectively be second homes and have a positive economic importance in the area.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>The Government's Rural Economy Growth Review in 2011 confirmed the large contribution made by rural areas to the national economy. In the following Rural Statement 2012, the need for rural businesses to make a sustainable contribution to national economic growth was highlighted.</p> | <p>Working in partnership with land owners, land managers and local businesses is needed to support and encourage sustainable growth in the rural economy during the life of this Management Plan.</p> <p>Promote locally produced food and other products to help reinforce local distinctiveness and add value to the local economy, developing a local products initiative (see tourism) to support local product development.</p> <p>Through the NAAONBs influence the next phases of the EU and UK government investment (including RDPE, LEP, Natural Environment White Paper Initiatives) to ensure that investment is targeted at supporting land managers in the AONB.</p> |
| <p>Modern telecommunications, including access to high-speed broadband and good mobile phone coverage are vitally important to a successful rural economy and the development of local businesses.</p> | <p>Modern telecommunications, including access to high-speed broadband, are vitally important to a successful rural economy throughout the AONB and the delivery should be supported</p> |
| <p>Limited availability in rural areas like the AONB of other services such as locally-based job centres and training schemes, business advice, affordable start-up premises and affordable regular public transport can restrict employment opportunities, restrict economic growth and lead to progressive loss of young people from the area.</p> | <p>Work with and support local businesses and facilitate projects that support sustainable growth</p> <p>Work with local tourism businesses to develop sustainable tourism within the AONB, and outside the AONB (see tourism) Tourism is an important element of the economy of the AONB. It is inevitable that there will be a continuing need for new sustainable tourist-related developments within the AONB</p> <p>Work with Coastal Communities Schemes (and FLAG) where possible to promote coastal business and sustainable tourism</p> <p>The importance of providing affordable housing throughout the AONB is recognised as vital to ensure that balanced communities can survive and prosper and particularly that</p> |

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| | <p>those who care for the landscape of the AONB have an opportunity to live within it.</p> |
| <p>The future of public funding for farming and other environmental payments is uncertain and expected to follow a downward trend. This may lead to pressure on the profitability of farms in the AONB, and lead to farm diversification (see agriculture) or abandonment and potential development of derelict barns. The AONB retains traditional agricultural buildings that have not, as yet, been converted for other uses.</p> <p>This development could lead to urbanisation of the rural countryside landscape, but could also provide a mechanism to retain and reinforce landscape character by preserving buildings in vernacular styles that would otherwise become redundant and be replaced by generic buildings. Holiday accommodation, campsites and other facilities eg equestrian uses, may also be a spin off from diversification.</p> | <p>Conversions need to be carefully appraised so that the buildings' distinctive character and setting are retained and adverse impacts on important nature conservation interests, such as bats, are avoided. Equine-related activities provide valuable farm diversification opportunities.</p> <p>Position Statements and design guidance produced by the AONB, agencies and local authorities can help in providing suitable housing developments.</p> <p>The Localism Act and provision for Neighbourhood Planning provides an opportunity for local people to actively engage in the development of their community.</p> <p>National Planning Policies, Local plans/Core Strategies including the Community Infrastructure Levy (CIL), neighbourhood planning, Local Transport Plans all are important for employment and development.</p> |
| <p>Diminishing traditional local skills among contractors and land managers for hedgelaying and dry stonefaced kest banks may affect opportunities for small business development but also affect the quality of the landscape</p> | <p>Work with AONB partners to encourage and target, the uptake of Environmental Stewardship Schemes within the AONB especially Higher Level Stewardship (HLS) through the Solway Wetlands Landscape Partnership with an emphasis on land management options that reinforce landscape character and support key attributes. Support traditional skills development using training and Cumberland style hedgelaying competitions</p> <p>Farm diversification may provide opportunities for local business to set up. Increasing the number of training events for volunteers, landowners and contractors in traditional local skills will benefit the landscape and the rural economy.</p> <p>Through the NAAONBs influence the next phases of the EU and UK government investment (including RDPE, LEP, Natural Environment White Paper Initiatives) to ensure that investment is targeted at supporting land managers in the AONB.</p> |

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| | Promote value and role of traditional local skills |
| Increasing fuel costs and changing markets will add pressure on business (especially small businesses) and farming costs. | <p>Work with local tourism businesses to develop sustainable tourism within the AONB (see tourism) Tourism is an important element of the economy of the AONB. It is inevitable that there will be a continuing need for new sustainable tourist-related developments within the AONB</p> <p>Work with Coastal Communities Schemes (and FLAG) where possible to promote coastal business and sustainable tourism</p> <p>Through the NAAONBs influence the next phases of the EU and UK government investment (including RDPE, LEP, Natural Environment White Paper Initiatives) to ensure that investment is targeted at supporting land managers in the AONB.</p> |
| Noise and activity arising from developments in the countryside, together with lighting, can have an adverse impact on tranquil and dark sky areas. | <p>Position Statements and design guidance produced by the AONB, agencies and local authorities can help in providing suitable housing developments.</p> <p>Promoting best practise in design through use of the AONB Management Plan</p> <p>The Localism Act and provision for Neighbourhood Planning provides an opportunity for local people to actively engage in the development of their community.</p> <p>National Planning Policies, Local plans/Core Strategies including the Community Infrastructure Levy (CIL) , neighbourhood planning, Local Transport Plans all are important for employment and development.</p> |
| The AONB and its surroundings may well attract proposals for developments of significant scale, such as wind turbines. These could have significant adverse effects on the AONB landscape | <p>There is a need to manage development pressures and land use changes, both within and contiguous with the boundaries of the AONB, with sensitivity in order to maintain a balance in promoting economic and social viability whilst retaining traditional AONB character.</p> <p>Position Statements and design guidance produced by the AONB, agencies and local authorities can help in providing suitable</p> |

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| | <p>housing developments. The Localism Act and provision for Neighbourhood Planning provides an opportunity for local people to actively engage in the development of their community.</p> <p>National Planning Policies, Local plans/Core Strategies including the Community Infrastructure Levy (CIL) , neighbourhood planning, Local Transport Plans all are important for employment and development.</p> |
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Objective 27: To ensure that the returns from farming and land management are sufficient to sustain the farming community and support the conservation of natural beauty through sustainable incentives such as AE.

Objective 28 : To ensure opportunities are there to access training and employment and build skills base in sectors related to the purpose of designation such as land management and sustainable tourism

Objective 29: To ensure planning for housing development is both appropriate to the needs of communities and has regard to the AONB character

Objective 30: Across the sectors to develop an economy based on the valuing of, and support of, the key attributes of the AONB with a consistent brand that makes the link to the AONB landscape

Objective 31 : To ensure maximisation of opportunities for the AONB’s designation, special qualities and management to drive and support rural economic growth

2.3.2 SERVICES

Within the AONB, the provision of local services is very variable and often services lie outside the AONB and can only be accessed via public transport or car transport.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| <p>Local services, including GP surgeries, schools, libraries, banks and building societies, post offices, petrol stations, shops, and pubs, all contribute to the quality of life and community cohesion in the AONB’s communities but are threatened with closure or reduced service due to local government</p> | <p>Continue the promotion of local services, businesses and products in all AONB communications</p> <p>Gain better understanding of what AONB designation could do for local communities and businesses?</p> |

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| <p>fiscal austerity measures.</p> <p>To maintain the vibrancy of local communities within the AONB, one of the special qualities, retention of these services is vital</p> | <p>Support local services, businesses and product which contribute to AONB objectives through funding from the SWP or its legacy and other sources.</p> <p>Work with Local Authorities and other partners to retain and promote local services</p> <p>The Localism Act and provision for Neighbourhood Planning provides an opportunity for local people to actively engage in the development of their community</p> <p>The AONB partnership can provide an opportunity for developing skill and training around business services linked to its special quality, such as tourism, traditional skills, environmental skills</p> |
| <p>The continued cost of local housing in the area compared with average earnings means that the provision of affordable housing for local needs remains a significant issue within the AONB (see employment and business).</p> | <p>Finding appropriate locations for affordable housing which will not have detrimental impacts on the landscape should be a priority</p> <p>Preparation by Allerdale Borough Council, and Carlisle City Council of dedicated Local Plans which incorporate the AONB and development management guidance and design guidance in cooperation with the AONB partnership, Parish Councils and local communities</p> |
| <p>Many villages appear to have less than thriving facilities and services, which may lead to social isolation</p> | <p>Continue the promotion of local services, businesses and products in all AONB communications</p> <p>Support local services, businesses and product which contribute to AONB objectives through funding from the SWP or other sources.</p> <p>The Localism Act and provision for</p> |

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| | Neighbourhood Planning provides an opportunity for local people to actively engage in the development of their community |
| Training and skills to service the growth of rural micro-businesses is essential to sustain business growth | <p>Support local services, businesses and product which contribute to AONB objectives through funding from the SWP or other sources.</p> <p>The AONB partnership can provide an opportunity for developing skill and training around business services linked to its special quality, such as tourism, traditional skills, environmental skills</p> <p>Use NAAONB network to identify information share case studies to learn from other AONBs.</p> |
| There is still a need for improved links to high-speed broadband to support small businesses and services in the AONB. | Further links to high-speed broadband and the relevant infrastructure are needed for the further development of rural businesses |

Objective 32 : To ensure the current level of local services and access to those services by all is maintained and enhance where possible to support sustainable communities

Objective 33 : To encourage infrastructure improvements to achieve superfast broadband and mobile phone coverage for the whole of the AONB without a significant adverse impact

2.3.3 TRANSPORT

The majority of visitors arrive in the AONB by private car, however, the use of sustainable transport options such as public transport , cycling and walking are encouraged so that people can enjoy the special qualities of the AONB.

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| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
| Transport to and around the AONB by public | The AONB partnership promotes walking |

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| <p>transport is poor with buses running only infrequently and only on certain routes. Cut backs in County Council spending may lead to further reduced routes.</p> | <p>and cycling through in-house guides and publications. Initiatives under Local Transport Plans and Sustrans, may continue to stimulate better use of public transport and cycling events. Integration of public transport network with other transport businesses to create hubs.</p> |
| <p>People without a car in the AONB rely on the frequency and quality of public and/ or community transport and on local shops and facilities which are vulnerable to closure</p> | <p>Though working with and enabling partners, such as Hadrian's Wall Trust, buses may be run over the weekend period from Carlisle to Bowness on Solway</p> <p>Develop/promote walking/cycling loops that integrate with public transport</p> <p>Work with local councils to promote opportunities in the AONB at key public transport 'get on points'.</p> <p>Linking events and activities to available public transport wherever possible, eg, volunteers events and workdays.</p> |
| <p>The main coast road, the B5300, has suffered a large amount of erosion due to storm damage and requires constant upgrading.</p> | <p>Constant repairing is carried out by the Highways department. The SMP may give direction as to the future of the road</p> <p>Encourage LA through SMP process to identify a long-term sustainable solution</p> |
| <p>There are a large amount of lorries and 'heavy vehicles' now using the minor roads in the AONB which increase noise and pollution but also make it dangerous for walkers and cyclists to co-use. This can also impact on the landscape.</p> | <p>The Hadrian's Cycleway section which opened in November 2013 provides a safe route for cyclists, avoiding the busy stretch of the B5300 coast road between Allonby and Maryport.</p> <p>Hadrian's Wall Trust offer electric cycles from the 'Wave' at Maryport for day hire, promoting cycling for all abilities and a good link to Allonby to provide more visitors to the local services. Build on this model?</p> <p>Lorry routing schemes could be introduced through the highways authorities working with the AONB partnership</p> |
| <p>Excessive transport signage has a negative impact on the special qualities of the AONB</p> | <p>New low cost speed restrictions have been put in place on the B5300 to slow down speeding vehicles and increase awareness of cyclists. This could be done throughout the minor roads of the AONB. To remove cluttering of transport signage</p> |

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| | from the AONB the highways authorities could undertake clutter audits, to remove unnecessary signage and that any signage should be in keeping with the special qualities of the AONB |
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Objective 34 : To ensure the special qualities of the AONB are respected in the planning, design, provision and management of all types of transport and associated infrastructure

Objective 35: To ensure opportunities are taken to promote walking, cycling and public transport and enhance schemes where possible to provide an alternative to private car use.

SECTION 2.4; ENGAGEMENT

Information regarding the special qualities and the importance of the designation of the AONB is essential in order to ensure that the area is effectively managed, conserved and enhanced for the future. By improving awareness and understanding of these qualities (ecosystem services) to local people and visitors will help their better understanding of the importance of effective management of the area and lead to greater appreciation and enjoyment of these special qualities in order to conserve it.

2.4.1 AWARENESS AND COMMUNICATION (Education)

Information is needed about the current extent and condition of the special qualities of the area and the range of pressures acting upon them. Education is central to the promotion of the AONB and a consequent respect to ensure its future protection. The AONB Partnership has a key role in raising awareness regarding the special qualities of the AONB. Information provided to help raise awareness can include education through an AONB Officer, Volunteer Coordinator, other forms of social media from the AONB website, facebook, twitter, interpretation panels, leaflets and the Solway Coast AONB tourism signage with its unique brand image.

| Issues and Forces for Change | Possible Mechanisms to manage Impacts |
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| There is lack of evidence to document the condition and value of attributes and direction of change of local wildlife sites, condition of hedgerows, speed of erosion of the shoreline and its dynamics, condition monitoring of heritage sites and assets of the AONB and a lack of continuity of recording cultural heritage within the AONB (CCC cut backs), amongst others. Data cut to AONBs is still limited to sources from NE and EA. | Research, monitoring and analysis to address data gaps and ensure there is a good understanding of the status of the AONB’s special qualities The range of interpretation and electronic media will continue to enhance communications effectiveness and provide many opportunities to present information and help to reach new audiences. The use of Facebook, Twitter and the AONB and SWP |

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| | <p>websites, or partners websites will enable greater communication of the special qualities (ecosystem services) and events within the AONB.</p> <p>Improve GIS capability in the AONB team and develop data sharing protocols with key partners.</p> <p>Use of BARS2 will improve wildlife data</p> |
| <p>Local communities and visitors need high quality information and a range of interpretation about the special qualities of the AONB and the opportunities for enjoyment including walking, cycling, wildlife watching, fishing, to enable them to make the most of the area and to help support its conservation.</p> | <p>More highway signage to help visitors realise the importance of England's Solway Coast and the AONB should be extended beyond the boundary.</p> <p>Continued production of interpretative leaflets, booklets, newsletters will further promote the AONB and activities through the media</p> <p>Continue to run the Community Volunteer Group and other volunteering opportunities with partners to promote quiet recreation and involvement with the management of the AONB</p> |
| <p>Knowledge of less accessible or well- known places such as the peatlands, hinders the appreciation of these important habitats for biodiversity</p> | <p>Further development of the SWP, or partners interpretation and access at Campfield Marsh (RSPB) Reserve, Drumburgh Moss (CWT), Glasson Moss (NE) and Wedholme flow (NE) will enable people to explore and better understand these fragile habitats. Supporting programmes that deliver social, cultural and economic benefits from sustainable management of wetland resources and promote informed interaction with the wetland landscape such as educational and volunteer programmes that raise awareness of the unique wetlands in the AONB and promote skills associated with traditional management such as wetland grazing.</p> <p>Raise awareness of ecosystem service roles of healthy habitats</p> |
| <p>Education is essential to provide the future of the AONB as a national asset, a special area of economic diversity and a great place to live or visit.</p> | <p>The educational and community officer working with the Solway Wetlands Project, the Wetlands Centre and Visitor Centre at Holme Cultram, will provide a range of opportunities for schools and groups both within the AONB and outside to promote awareness and communication of the AONB. after the SWP project ends then this</p> |

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| | awareness will rest with the relevant partners |
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Objective 36: To ensure fostering a community interest and culture linked to the AONB's strong sense of place.

2.4.2 COMMUNITY INVOLVEMENT

Community involvement is vital to promoting understanding and awareness of the AONB and its special qualities. Through involvement and participation of local communities the 'ownership' of the AONB is sustained and preserved for years to come. Maintains link between people and the management of their local environment, raises awareness of management need and gives them ownership of the wider landscape and its stewardship.

Communities within the AONB rely on sustainable sources of food, water, air quality, and a healthy living style. Through a healthy life style the economic benefits of the AONB can be promoted through good management of the natural environment.

Sustainable lifestyles within communities help mitigate against climate change

| Issues and Forces for Change | Possible Mechanisms to manage Impact |
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| There is a lack of understanding as to what the meaning is of the designation of the AONB and what this means in terms of sense of place | <p>Only through involvement of communities in AONB projects and outcomes can this be improved.</p> <p>Through involvement of the Solway Coast Community Volunteers, schools, colleges and other organisations, the importance of conservation and enhancement of the AONB is maintained for future generations. Other partners such as Natural England, Cumbria Wildlife Trust, RSPB, Environment Agency, Carlisle Diocese, which together form part of the Solway Wetlands Landscape Partnership Scheme, can all be involved in community participation to enhance the AONB. Opportunities for people to get involved and actively participate in the conservation of the area should be supported and widely promoted</p> <p>Seeking opportunities to extend stewardship of natural environment to new areas</p> <p>Gain better understanding of what volunteers would want to do if enabled to do so</p> |
| Rural communities that are quite isolated do not share the same knowledge of the AONB and outputs generated. | Through seeking opportunities to work alongside communities, helping them to identify local issues and develop solutions, |

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| | <p>whilst conserving and enhancing the special qualities of the local natural and built environment.</p> <p>The Education and Community Engagement Officer involved in the SWP, will continue to engage with local communities to provide information, seek active engagement and promotion of the AONB, events and activities. This is also provided by the Volunteer Coordinator</p> <p>Volunteer activities, promotion of walking, cycling, wildlife watching and other healthy activities will continue to be promoted through our websites, leaflets, newsletters and other electronic media. This will engage with Government policies for health and well-being and opportunities to form partnerships with the health sector in promoting access and enjoyment of the AONB.</p> |
| <p>Lack of recycling schemes and promotion of sustainable measures to reduce carbon emissions and water and energy efficiency all affect the 'green credentials' of the AONB.</p> | <p>Continue work with partners towards a low carbon landscape for the AONB, following on from the SWP projects of wetting-up and repairing the peatlands. Promotion of public transport, cycling and walking instead of car use, and small scale renewable energy schemes appropriate for the AONB could all help to produce a contribution to energy reduction targets</p> |

Objective 37: To enable communities to get involved in the custodianship of the AONB through engaging with the management and support of key assets.

Objective 36: To support local communities in moving towards sustainable low carbon living

2.5 Global Considerations

2.5.1 CLIMATE CHANGE

Global warming is "unequivocal". This is the finding of the most recent report of the Intergovernmental Panel on Climate change ('IPCC Fourth Assessment Report: Climate Change', 2007). The report also states that "most of the observed increase in globally averaged temperature since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations".

Being coastal, low lying and at the head of the Irish Sea the AONB will be particularly vulnerable to impacts felt through changes in the marine environment including raised sea levels, increases frequency and intensity of storm events, and impacts on coastal dynamism that arise as a consequence.

Through the policies in this Management Plan, the partnerships can develop a comprehensive approach to mitigate and adapt to climate change within and to a degree, around the AONB. This is particularly the case with management of coastal habitats, the provision of water supplies and control of flooding, soil management, species and habitat adaptation, habitat restoration, sustainable tourism provision and small scale renewable energy generation.

| Issues and Forces for Change | Possible Mechanisms to manage Impact |
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| <p>Milder wetter winters and warmer drier summers. Changes in weather patterns since 2007</p> <p>The AONB is likely to experience more extreme weather events with increasingly warmer drier summers and milder wetter winters. Peatlands may dry out in the summers, releasing carbon dioxide and erosion of the peat and the plant life on it.</p> | <p>Maintain favourable conditions of habitats and heritage sites and expand networks of natural habitats to deliver NIAs</p> <p>Continue working with partners and volunteers to deliver on-going habitat enhancement and stability</p> |
| <p>Rate of coastal change is likely to increase as a consequence of climate change.</p> <p>Sea level rise compounded by increased strength and frequency of storm surges could lead to an increased risk of coastal erosion and flooding with inundation of freshwater habitats by salt water.</p> <p>More erosion of the salt marshes and dunes could occur. Coastal squeeze may result in loss of inter-tidal habitats and important bird breeding sites.</p> <p>The winter of 2013-14 has caused extensive erosion leading to coastal squeeze on infrastructure</p> | <p>Work with partners to address coastal squeeze as part of the delivery of the SMP.</p> <p>Working with partners to secure coastal management regime that mitigate impacts, eg through AE schemes to allow saltmarsh accretion and land level rise to offset sea level rise.</p> <p>Manage access to the coastal zone so that fragile 'barrier' habitats are not damaged compromising their coastal protection function.</p> <p>Work to reduce need for unsustainable infrastructure in the coastal zone.</p> <p>Raise awareness of the inevitability of coastal change</p> |
| <p>Damage to historic buildings and archaeological sites through winter water-logging of land could occur</p> | <p>Maintain favourable conditions of habitats and heritage sites and expand networks of natural habitats to deliver NIAs</p> |
| <p>New non-native invasive species and pests and diseases could be introduced due to changing weather patterns and some species may disappear</p> <p>Change driving range increases of various species of invasives and plant diseases affecting marine, aquatic and terrestrial environments</p> | <p>Improve awareness of invasive species and support 'early warning' networks. Increase vigilance to prevent establishment of invasives wherever possible</p> <p>Maintain favourable conditions of habitats and heritage sites and expand networks of natural habitats to deliver NIAs (see Biodiversity section)</p> |

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| | <p>Continue working with partners and volunteers to deliver on-going habitat enhancement and stability</p> |
| <p>Loss of characteristic habitats, fauna and flora with replacement by new colonists.</p> <p>Change having an effect on breeding habitats, soil conditions and food availability</p> | <p>Secure favourable conditions of habitats and habitat networks to make ecological systems as robust as possible to climate change impacts.</p> <p>Use policy drivers such as Natural Environment White Paper and WFD to push for better ecological networks and more sustainable land use.</p> <p>Continue working with partners and volunteers to deliver on-going habitat enhancement and stability</p> <p>Make sure habitats are able to receive new colonists where appropriate.</p> |
| <p>Changes in agricultural landuse; Changes in weather patterns may lead to changes in agriculture leading to more arable land use which will affect the landscape character Winter waterlogging creating changes in landuse (arable shift) and drier pasture in summer reducing winter fodder (grass silage)</p> | <p>Maintain favourable conditions of habitats and heritage sites and expand networks of natural habitats to deliver NIAs Continue working with partners and volunteers to deliver on-going habitat enhancement and stability</p> |
| <p>Renewable energy developments Wind and tidal renewable infrastructure increasing exponentially based on increased wind and tidal resources Potential development for a tidal barrage or inappropriately sized wind turbines due to the increased tidal and wind resource in the Solway area.</p> | <p>Reducing the carbon footprint by achieving reductions in greenhouse gas emissions will help to reduce the degree and impact of climate change. This can be achieved through increasing energy efficiency, eg, using appropriate forms of renewable energy, reducing car use and using public transport, purchasing locally sourced food and services.</p> <p>Promote renewable energy sources that are complementary to AONB character.</p> <p>Deliver new housing proposals in safe sites in conjunction with the Local Authority Planning Departments</p> <p>Continue to work with Planning Authorities on matters relating to housing, wind turbine development and a possible Solway Barrage</p> |

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Objective 38 : To ensure carbon emissions within the AONB are reduced by reducing energy consumption, applying energy conserving measures, encouraging MORE sustainable patterns of development, and utilising renewable energy generation technologies that are of an appropriate type and scale for their siting

Objective 39 :To ensure less waste is produced through waste minimisation and recycling of waste materials generated by communities

Objective40: to ensure land is managed sustainably in accordance with best practice to minimise erosion and water pollution and maximise resilience to drought services

Objective 41:To work with the SMP2 policy in managing coastal change and securing adaptive management of coastal habitats
