

National Park Management Plan 2015-2019



Pembrokeshire Coast National Park Authority



Parc Cenedlaethol / National Park
 Llwybr Arfordir / Coast Path

Contents

1 PEMBROKESHIRE COAST: ONE OF BRITAIN'S BREATHING SPACES

1.1 NATIONAL PARK PURPOSE	5
1.2 PEMBROKESHIRE COAST NATIONAL PARK AUTHORITY	5
1.2.1 What the Authority is	5
1.2.2 What the Authority does	5
1.2.3 Authority Staff and Members	5
1.2.4 How the Authority is funded	6
1.3 THE ROLE OF THE MANAGEMENT PLAN	6
1.4 THE LOCAL DEVELOPMENT PLAN FOR THE NATIONAL PARK	7

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

2.1 NATIONAL PARKS IN THE UK	8
2.2 PEMBROKESHIRE COAST NATIONAL PARK	8
2.3 SPECIAL QUALITIES OF THE NATIONAL PARK	9
2.4 THE PARK AS A WORKING LANDSCAPE	9
2.5 WELSH GOVERNMENT POLICY ON PROTECTED LANDSCAPES IN WALES	11
2.6 A DUTY OF SUSTAINABLE DEVELOPMENT ON PUBLIC BODIES IN WALES	11
2.7 GUIDANCE ON NATIONAL PARK MANAGEMENT PLANNING	11
2.8 AN ECOSYSTEM APPROACH TO MANAGEMENT	11
2.9 WHAT MIGHT THE NATIONAL PARK LOOK LIKE IN 2050?	12
2.10 SOCIAL AND ECONOMIC BENEFITS OF THE NATIONAL PARK	13

3 MEASURING PROGRESS: THE STATE OF THE PARK

3.1 HOW WILL WE KNOW IF THE MANAGEMENT PLAN IS WORKING?	15
3.2 ASSESSMENT OF THE MANAGEMENT PLAN	17
3.2.1 Sustainability Appraisal, Strategic Environmental Assessment and Habitats Regulations assessment	17
3.2.2 Equality Impact Assessment	17

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

4.1 AIMS AND OUTCOMES	18
4.2 EVIDENCE	20
4.2.1 Special Qualities	20

4.2.2 Landscape Character	22
4.2.3 Seascape Character	23
4.2.4 Tranquil areas	23
4.2.5 Public survey	25
4.3 POLICIES	25
4.3.1 Landscape quality and ecological function	25
4.3.2 Seascape quality and function	26
4.3.3 Development and the special qualities	27
4.3.4 Light pollution	28
4.3.5 Noise pollution	29

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

5.1 AIM AND OUTCOMES	30
5.2 EVIDENCE	31
5.2.1 The state of UK ecosystems	31
5.2.2 UK and regional habitat and species assessments	31
5.2.3 The state of local Biodiversity Action Plan habitats and species	32
5.2.4 The state of designated conservation sites	32
5.2.5 Connectivity and the state of the wider countryside	35
5.3 POLICIES	35
5.3.1 Ecological functioning and habitat connectivity	35
5.3.2 Conservation of marine ecosystems	39
5.3.3 Managing invasive non-native species	41
5.3.4 Linking biodiversity, landscape and culture	41

6 THE HISTORIC ENVIRONMENT

6.1 AIM AND OUTCOMES	43
6.2 EVIDENCE	44
6.2.1 The number and condition of Scheduled Monuments	44
6.2.2 The number and condition of non-scheduled historic assets	45
6.2.3 Historic Landscape character	45
6.2.4 The number and condition of Listed Buildings	46
6.2.5 The number and condition of Conservation Areas	47
6.2.6 The number of Parks and Gardens of Special Historic Interest	47
6.2.7 Local distinctiveness in the built environment	48

Contents

6.3 POLICIES	48	9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY	69
6.3.1 Statutory protection	48	9.1 AIMS AND OUTCOMES	69
6.3.2 Proactive management of archaeological sites	49	9.2 EVIDENCE	70
6.3.3 Awareness of the archaeological resource	51	9.2.1 UK Climate Projections	70
6.3.4 Development	51	9.2.2 Renewable energy potential and capacity	70
6.3.5 Climate change and natural processes	52	9.3 POLICIES	71
6.3.5 Proactive management of historic buildings	53	9.3.1 Reducing greenhouse gas emissions	71
6.3.6 Protection through the planning system	54	9.3.2 Climate change adaptation and a low carbon world	71
6.3.7 Local distinctiveness	55		
7 EARTH HERITAGE	56	10 DISCOVERING AND ENJOYING THE NATIONAL PARK	75
7.1 AIMS AND OUTCOMES	56	10.1 AIM AND OUTCOMES	76
7.2 EVIDENCE	57	10.2 EVIDENCE	78
7.2.1 The number, condition and accessibility of Geological Conservation Review sites	57	10.2.1 Physical activity in Pembrokeshire	78
7.2.2 The number and condition of Regionally Important Geological Sites	57	10.2.2 Reported health in national parks	78
7.2.3 Progress on the strategic outcome for soils	58	10.2.3 Motivations for outdoor recreation	79
7.3 POLICIES	58	10.2.4 The value of the visitor economy in national parks	80
7.3.1 Development and geodiversity	58	10.2.5 Recreation patterns in the National Park	80
7.3.2 Soil conservation and land management	59	10.2.6 Awareness of UK national parks	82
7.3.3 Awareness of geodiversity	60	10.2.7 Health and wellbeing benefits of outdoor learning	83
8 PROTECTING AIR AND WATER	61	10.3 POLICIES	83
8.1 AIMS AND OUTCOMES	61	10.3.1 Promoting recreation based on the National Park's special qualities and on health benefits	83
8.2 EVIDENCE	62	10.3.2 Enabling access for everyone	86
8.2.1 Performance against Local Air Quality objectives	62	10.3.3 Promoting the National Park as a resource for health and personal development	87
8.2.2 Ecological status of the Western Wales River Basin District	63	10.3.4 Connecting people and landscapes	87
8.2.3 Watercourse flow rates and groundwater levels	64	10.3.5 Involving people in decision-making and delivery	87
8.2.4 Designated bathing water standards	65		
8.2.5 Non-designated bathing water standards	66	ANNEX 1 – OXFAM: A SAFE AND JUST SPACE FOR HUMANITY	89
8.3 POLICIES	66	ANNEX 2 – PRINCIPLES OF THE ECOSYSTEM APPROACH AND HOW THEY ARE ADDRESSED BY THE MANAGEMENT PLAN	90
8.3.1 Emissions to air	66		
8.3.2 Water resources	67		
8.3.3 Water pollution	68		

1 PEMBROKESHIRE COAST: ONE OF BRITAIN'S BREATHING SPACES

1.1 NATIONAL PARK PURPOSES

1.1.1 Pembrokeshire Coast National Park was designated in 1952, with the following purposes:

- to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park
- to promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public

1.1.2 If there's a conflict between the purposes which can't be reconciled, the conservation purpose has greater weight. This is known as the 'Sandford principle'.

1.2 PEMBROKESHIRE COAST NATIONAL PARK AUTHORITY

1.2.1 WHAT THE AUTHORITY IS

1.2.1.1 The body specifically charged with delivering these purposes in Pembrokeshire Coast National Park is the Pembrokeshire Coast National Park Authority ("the NPA"), although very many other organisations and individuals are involved.

1.2.1.2 The NPA also has a duty to try and improve the social and economic wellbeing of National Park communities in its pursuit of the purposes. While social and economic wellbeing are not explicitly referred to in the National Park purposes, it is hoped that this Management Plan will demonstrate that the environmental and economic fortunes of the National Park are intertwined.

1.2.2 WHAT THE AUTHORITY DOES

1.2.2.1 The NPA has a wide range of roles: in nature conservation, in heritage conservation, in providing access and outdoor recreation, in promoting the National Park, in providing learning opportunities, and in planning and managing the built environment through planning and managing development.

1.2.3 AUTHORITY STAFF AND MEMBERS

1.2.3.1 Employees of the NPA work to a committee of 18 National Park Authority Members, 12 of whom are selected from the elected councillors of Pembrokeshire County Council, and 6 of whom are individuals appointed



1 PEMBROKESHIRE COAST: ONE OF BRITAIN'S BREATHING SPACES



by Welsh Government. National Park Authority Members make or ratify the key management and planning decisions.

1.2.4 HOW THE AUTHORITY IS FUNDED

1.2.4.1 About two-thirds of the NPA's funding comes from Welsh Government and from a levy on Pembrokeshire County Council. The rest comes mainly from locally-generated income (for examples rents, car park charges and franchises) and from external grants. More information on the NPA, including its corporate plan, Welsh language scheme, and service and environmental standards, can be found at www.pembrokeshirecoast.org.uk.

1.3 THE ROLE OF THE MANAGEMENT PLAN

1.3.1 The Management Plan should give people a clear line of sight between National Park purposes and management policies. It is one of the ways in which the NPA explains what the National Park is, how it is managed, and why it is proposed to manage it in one way rather than another. It is for partner organisations, residents, auditors and anyone with a more detailed interest in the National Park and the NPA's role in its management.

1.3.2 The Management Plan is about conserving the National Park and, although the National Park and the economy are interlinked, the Plan is not prescriptive in terms of business activity. Rather, the Plan seeks to set out environmental parameters within which businesses can flourish.

1.3.3 The NPA cannot achieve National Park purposes on its own, and other organisations have a legal duty to have regard to the purposes in their own operations¹. The Management Plan is a way of coordinating that effort: it is a plan for achieving National Park purposes, not just a plan for the NPA. While the NPA is responsible for producing the Management Plan, many other people have contributed to it and are essential to delivering its policies. The Management Plan is therefore a joint effort and is offered to partner organisations as a management manual, setting out how they can continue to help achieve National Park purposes in the course of their own business. The Sandford principle (see 1.1.2) also applies to these organisations.

¹ Environment Act 1995, Section 62 (2) <http://www.legislation.gov.uk/ukpga/1995/25/section/62>

1 PEMBROKESHIRE COAST: ONE OF BRITAIN'S BREATHING SPACES

1.4 THE LOCAL DEVELOPMENT PLAN FOR THE NATIONAL PARK

1.4.1 Planning and managing the built environment has a key role to play in helping to deliver National Park purposes and the NPA's duty. Within the National Park, the NPA is responsible for setting development policy and for determining the outcome of development planning applications. The Management Plan provides context for that development policy, which is set out in the Pembrokeshire Coast Local Development Plan (to 2021) for the National Park².

1.4.2 A separate Local Development Plan, prepared by Pembrokeshire County Council, exists for the non-National Park area of Pembrokeshire.



² <http://www.pembrokeshirecoast.org.uk/default.asp?PID=102>

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

2.1 NATIONAL PARKS IN THE UK

2.1.1 The UK's National Parks were created in order to protect areas of scenic beauty, their wildlife and their cultural importance for everyone's enjoyment and wider benefit. There are fifteen National Parks in the UK: ten in England, three in Wales and two in Scotland. Three areas in Northern Ireland have been shortlisted as potential National Parks. In England, National Parks cover about 9% of the land area. In Scotland they cover around 7% of the land area. Wales' three National Parks - Snowdonia National Park, Brecon Beacons National Park and Pembrokeshire Coast National Park - cover about 20% of the land area.

2.1.2 The UK's National Parks complement another protected landscape designation, that of Area of Outstanding Natural Beauty. There are five Areas of Outstanding Natural Beauty lying wholly or partly within Wales, covering a further 4% of Wales' land area. National Parks and Areas of Outstanding Natural Beauty include many other protected sites and features within their boundaries, for example Special Areas of Conservation, Geological Conservation Review Sites, Listed Buildings and Scheduled Monuments.

2.2 PEMBROKESHIRE COAST NATIONAL PARK

2.2.1 The Pembrokeshire Coast National Park runs in a ribbon around the Pembrokeshire coast and includes the lower sections of the Cleddau rivers. The National Park is the only UK national park designated primarily for its coastline, and the Pembrokeshire islands are included within it, although the seaward boundary of the National Park (and the NPA's statutory remit) is the mean low water mark. The National Park is not continuous however, and large areas of development on the Milford Haven Waterway, for example, are not included within the National Park.

2.2.2 The National Park covers an area of 614km² and is one of the more densely-populated of the UK's national parks, with almost 22,000 people living in 49 community, town and city council areas (2010 census figures). Most of the National Park is privately owned; however about a quarter lies in the public realm or in charitable ownership. For example, the NPA leases or owns about 1% of the land area of the National Park. In addition the NPA leases large sections of the foreshore west and north of Giltar Point from The Crown Estate. Around 7% of the National Park is Common Land, while the National Trust's holdings account for over 6%. The Ministry of Defence owns around 4%; the Wildlife Trust of South and West Wales owns or leases approximately 1% and Natural Resources Wales around 0.6%.



2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

2.3 SPECIAL QUALITIES OF THE NATIONAL PARK

2.3.1 National Park purposes refer to 'promoting opportunities for understanding and enjoying the special qualities of the area by the public'. The special qualities are the attributes of the National Park which, individually or in combination, give the Park its particular character and which can evoke out-of-the-ordinary experiences and emotions in those who live or visit there.

2.3.2 Residents and visitors identified what they consider to be the special qualities of the National Park, and factors affecting them, as the first stage in the preparation of the previous Management Plan and the current Local Development Plan for the National Park³. More detail of people's comments is given in section 4.2.1, but the special qualities highlighted were:

- Accessibility
- Coastal splendour
- Cultural heritage
- Distinctive settlement character
- Diverse geology
- Diversity of landscape
- Islands
- Remoteness, tranquillity and wildness
- Rich historic environment
- Richness of habitats and biodiversity
- Space to breathe
- The diversity of experiences and combination of individual qualities

2.4 THE PARK AS A WORKING LANDSCAPE

2.4.1 Although parts of some UK national parks are wild and remote, they all have long histories of human occupation, and their special qualities which we enjoy today have been shaped by previous generations' practical and economic decisions, the tools and technology available to them, and by their cultural values. Across the UK as a whole, wildlife has coexisted alongside what was historically a pastoral economy, while historic buildings reflect commercial need as well as cultural values and status. The links between people and the landscape are particularly strong in Pembrokeshire Coast National Park.



³ Residents and Visitors survey for the Management Plan and Local Development Plan, Pembrokeshire Coast National Park Authority, 2007. Special qualities were also identified through Landscape Character Assessment and Seascape Character Assessment.

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE



2.4.2 The NPA has a duty to support the social and economic wellbeing of Park communities in its pursuit of National Park purposes. However, the National Park landscape, and people's enjoyment of it, provides a wide range of social and economic benefits in its own right. On a practical level, a healthy, functioning landscape enables us to grow food and harvest fish, and can contribute to renewable heat and electricity production. The landscape also supports critical processes such as climate regulation, soil formation, carbon storage, pollination, natural flood protection, and water and nutrient cycling. Diverse, healthy ecosystems provide a buffer against environmental change. These 'ecosystem services' are the basis of people's wellbeing and prosperity and underpin many other aspects of our quality of life, including culture and spirituality.

2.4.3 Research published in 2013 estimated that Wales' National Parks contributed £1 billion to Wales' economy, with a large amount of this coming from visitor spending. A 2006 study estimated that over 4,500 jobs were directly dependent on the quality of the environment of Pembrokeshire Coast National Park. The Pembrokeshire Coast Path National Trail, for example - now part of the Wales Coast Path – runs for 300km along the coast, through spectacular scenery and wildlife, and is a core part of Pembrokeshire's tourism offer. The National Trail can be evaluated in terms of the 900,000 user days spent on it each year and the associated spending into the local economy.

2.4.4 But the National Trail can also be valued, less precisely, in terms of the health benefits it can offer: the contribution it makes to preventing obesity, and to reducing the risks of heart disease, depression and stress for example. Other benefits which people draw from the National Trail, and from the National Park more generally, are even less tangible. Peace, inspiration and feelings of freedom, for example cannot be directly bought or sold, and there are no real substitutes for them. They are in every sense invaluable and their loss cannot be compensated for in any meaningful way.

2.4.5 Conservation of these special qualities often depends on their continued management, which often depends on their continued social and economic value and use. But value depends on the state of the special qualities themselves. This brings us full circle and to the conclusion that National Park purposes, and the NPA's duty to foster socio-economic

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

wellbeing in the pursuit of them, are inseparable. Together, the purposes and the duty form a sound economic strategy – protection and growth of natural, cultural and social capital, while taking a sustainable income from it. This relationship between people and the landscape is increasingly recognised in policy, legislation and guidance notes. Some of these are summarised below.

2.5 WELSH GOVERNMENT POLICY ON PROTECTED LANDSCAPES IN WALES

2.5.1 A new policy statement from Welsh Government on Wales' national parks and areas of outstanding natural beauty is expected in 2014, following public consultation in 2013. The policy statement replaces the previous (2007) policy statement on national parks and national park authorities in Wales. The revised statement is expected to set out a range of outcomes expected of Wales' protected landscapes. The consultation statement recognises that they "should be in the vanguard of demonstrating how Wales can secure healthy, biologically diverse and productive environments that are managed sustainably, with communities that are safe and sustainable, and where people choose to live and work."

2.5.2 The consultation statement also suggests investigating different approaches to management planning of protected landscapes, such as using a single strategic plan for protected landscapes, to be supported by local delivery plans. The contents of this Management Plan would logically form one of the delivery plans – setting out how national outcomes for protected landscapes, ecosystems and other natural assets would be achieved within the Pembrokeshire Coast National Park area.

2.6 A DUTY OF SUSTAINABLE DEVELOPMENT ON PUBLIC BODIES IN WALES

2.6.1 The consultation White Paper A Sustainable Wales: Better Choices for a Better Future published in 2012 contained proposals for a Future Generations (Wales) Bill, expected in 2014. The proposals include introducing a new duty on the Welsh public service, requiring sustainable development to be embedded in strategic decision making and risk assessment out to and beyond 2050.

2.6.2 The nature of National Park purposes, the NPA's duty in pursuit of

them, and the adaptive, long-range, outcome-based, collaborative management planning approach taken by this Management Plan, help to ensure that action taken by the NPA and its partners helps fulfil the proposed duty and the wider intentions of Welsh Government in terms of natural resources, culture, health, equality and prosperity.

2.7 GUIDANCE ON NATIONAL PARK MANAGEMENT PLANNING

2.7.1 Guidance on preparing National Park Management Plans in Wales was published by the Countryside Council for Wales⁴ in 2007. That guidance still stands, and has been supplemented with advice commissioned by Natural Resources Wales on incorporating ecosystem conservation into protected landscape management (advice issued in 2014).

2.8 AN ECOSYSTEM APPROACH TO MANAGEMENT

2.8.1 In 2010, Welsh Government published a Natural Environment Framework, known as the Living Wales programme. This set out proposals for managing and regulating Wales' landmass and seas in accordance with principles for ecosystem health and productivity set out in the Convention on Biological Diversity⁵. The Convention describes the ecosystem approach as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way." National Park purposes and the Management Plan's aims and responsive or 'adaptive' policy approach are consistent with the definition and principles of the Convention on Biological Diversity and with the Living Wales programme. The principles include the recognition that change is inevitable, and that everyone should be involved in decision-making.

2.8.2 In UK national parks, the emphasis is less on managing pristine ecosystems and more on managing human impacts on landscapes that are already heavily modified. While the natural beauty, heritage, access and recreation aspects of National Park purposes can be readily accommodated by the ecosystem approach, they are not essential to it and the NPA believes therefore that there should be an enhanced application of the ecosystem approach in UK protected landscape management – a whole-landscape approach. This is necessary to reflect the strong cultural and social dimensions of the designations and the exceptional nature of the landscape.

⁴ In April 2013 the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales became part of a new body, Natural Resources Wales. Where relevant, the three constituent bodies will be referred to by their former names.

⁵ <https://www.cbd.int/ecosystem/principles.shtml>

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

2.8.3 In 2014, Natural Resources Wales issued advice on incorporating the ecosystem approach into management plans for protected landscapes. The advice includes case studies and the key messages which can be taken from them. These and the principles of the Convention on Biological Diversity have been taken into account in reviewing this Management Plan (Annex 2).

2.8.4 A proposal of the Living Wales programme is to adopt natural resource management plans at national and local levels, and this was further developed in 2013 in Welsh Government's Environment (Wales) Bill White Paper. Natural resource plans might be expected to have a geography which derives from the nature of the resource – for example, water resources might be managed in terms of catchments or river basins – and these could be amalgamated into regional or pan-Wales plans. Protected landscapes “cookie-cutter” through these other natural resources; landscapes are also natural assets in their own right. Protected landscape management plans are needed therefore to reflect the particular needs of landscapes while recognising the context of natural resource planning, with which there would be a reciprocal relationship. Natural Resources Wales is exploring the extent to which ecosystems services identified by the UK National Ecosystems Assessment can be mapped at a regional level.

2.8.5 This Management Plan can be viewed as part of that proposed framework and the wider planning system: fulfilling National Park purposes, contributing to national ecosystem, catchment, and heritage planning for example, and helping to deliver Welsh Government goals for health and wellbeing.

2.9 WHAT MIGHT THE NATIONAL PARK LOOK LIKE IN 2050?

2.9.1 The Future Generations (Wales) Bill includes a proposal for local authorities to look at least as far ahead as 2050. The description below, of the National Park as it might look in the future, is based on people's views and comments in the previous planning cycle, and gives the Management Plan an overall direction of travel towards 2050 and beyond. Progress will depend on factors including external factors (covered by this Management Plan), but also internal factors such as organisations' financial resources.

The Pembrokeshire Coast National Park is an enviable year-round visitor destination and an inspiring and welcoming place to live, work and play, drawing on its strengths: welcoming people, great food, stunning landscapes, bountiful access to the coastline and water, wildlife-rich countryside, a rich and colourful history, and peace and quiet.

Built development and business respect local character and the special qualities of the internationally-important National Park landscape, and contribute to sustaining local communities. Development is low impact and includes an affordable housing element, while a distinctive and evolving building style combines the best of the old with the best of the new.

People can buy high quality local food in the knowledge that Pembrokeshire's economy and countryside benefit. The viability of smaller family holdings, related businesses and communities in the National Park is much improved, and farmers and other land managers receive proper recognition and reward for the many public benefits which derive from the countryside in their care. Revision of agricultural and fishing policy has helped reduce pressure on the National Park's native biodiversity.

The local economy is lower carbon, and community and domestic renewable heat and electricity generation projects, and efficiency measures, help to insulate people from volatile energy prices. Communities are thriving, inclusive and active, and engaged with decision making in the Park. Sustainable design is inherent in all new buildings, and renewable energy schemes respect settlement character and the pattern of the landscape. Towns, villages and their communities are diverse and distinctive, heritage is better protected and accessible, and the Welsh language is thriving all around the Park.

The public transport network is convenient and affordable, and links remoter communities to urban centres. The polluting effect of the car has been reduced, through technology and cleaner fuelling, but traffic volumes are still a concern. Getting to community facilities or to work on foot or by bike is safe and easy, and improved rail and shipping links make Pembrokeshire more easily accessible, for passengers and freight.

2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

2.10 SOCIAL AND ECONOMIC BENEFITS OF THE NATIONAL PARK

2.10.1 The 'National Park of the future' in box 2.9 above describes how the National Park's natural and social assets can be managed over the long term to deliver identified outcomes.

2.10.2 The NPA will demonstrate in this Management Plan that management of the National Park leads in and of itself to a full range of benefits for people. This Plan contains policies for sustainable food production and sustainable fisheries management; for strategic and local generation of renewable energy and reduced greenhouse gas emissions, and for waste reduction and efficiency. The outcomes also lead to policies for a National Park visited, enjoyed and valued for its welcoming communities, its coastline, its wildlife and historic landscapes; for its woods, rivers and hills; its patchworks of fields and hedgerows, for its local produce and artistic inspiration, and for its distinctive buildings and big skies – the basis of the area's visitor economy.

2.10.3 The Management Plan therefore sets out a framework for provision of some of the most important things in life: opportunities to enjoy the rest of nature, get fit and healthy, enjoy great food, find satisfying employment, benefit from clean and secure energy sources, become self-reliant and help build friendly, resilient communities. The simple graphic diagram below aims to give a quick answer to one of the first questions about the National Park and landscape management: why is it important?

2.10.4 The graphic also suggests that the economy can be seen as a set of ecological transactions taking place within a global environment. If so, it is up to us as a nation, in the way the economy and monetary system are structured, and through regulation in the event of market failures, to determine whether these transactions are environmentally benign and socially equitable, or otherwise. Oxfam Great Britain's "safe and just space for humanity" model offers a compelling way of visualising the space that a sustainable and fair economy can occupy (Annex 1).



2 PEMBROKESHIRE COAST: A PARK FOR PEOPLE

The 2013 ARUP report, *Valuing Wales' National Parks*, reported that more than 3,500 jobs are directly dependent on the National Park environment. A 2006 report, *Valuing our Environment – Economic Impact of the National Parks of Wales*, estimates direct environmentally-linked income in Pembrokeshire Coast National Park to be £50 million, with an overall contribution to Gross Domestic Product of £80 million.

National Park purposes

Conservation, enjoyment and understanding of the special qualities of the National Park

Policy delivery through:

- Pursuing an ecosystem approach to conservation
- Involving people in decision-making and delivery
- Providing access to the coast, countryside and sea
- Providing outdoor opportunities for people to enjoy, learn and develop
- Adapting to climate change
- A low-carbon economy
- Development which is compatible with National Park purposes
- Appropriate renewable energy generation
- Conserving water and soil
- Safeguarding air quality
- Reducing pollution by noise and light

Economic and social outcomes of the purposes:

- Inspirational surroundings
- A sense of interconnectedness with landscape and heritage
- An enviable visitor and recreation destination
- New business and marketing opportunities
- Learning and access opportunities for all
- Active travel opportunities
- Connected, cohesive communities
- Improved health and wellbeing
- Personal growth and development
- Rewarding employment
- Distinctive, attractive settlements
- Sustainable agriculture and fisheries
- Clean, secure, energy sources
- Peace and quiet
- Fresh air and clean water
- Higher activity rates



3 MEASURING PROGRESS: THE STATE OF THE PARK

3.1 HOW WILL WE KNOW IF THE MANAGEMENT PLAN IS WORKING?

3.1.1 The NPA needs to monitor change in the National Park in order to know whether policies are having an individual impact and whether they are collectively achieving National Park purposes. Much of the information the NPA uses for this is collected by other organisations. For the purpose of this Management Plan, the NPA has identified three tiers of information.

3.1.2 If all the factors affecting achievement of the outcomes have been identified, and management addresses these factors, partners' combined efforts are likely to be contributing towards the desired outcomes. Whether that effort is actually enough to achieve the outcome may only become apparent over time, since the National Park is a dynamic place and may be influenced by factors that are beyond partners' direct control, and/or which originate outside the National Park.

What?	Why?	Comment
1. Outcome information	To assess progress on National Park purposes.	<p>This is the most important type of monitoring as it tracks the overall result of various influences on the National Park. An explanation of the measures that we use to measure outcomes is given in the 'Evidence' subsections of each Management Plan chapter.</p> <p>A drawback of these measures is that outcomes may change only slowly and may not, on their own, tell us why things are changing. It can however be supplemented with factor information – see below.</p>
2. Factor information	To identify existing and future causes of change.	<p>Often helps identify existing and future causes of change in a more timely way than outcome data. The many influences on the state of the Park present challenges and opportunities. These give rise to the policies found in each section of this Management Plan.</p> <p>We then need to determine what impact, if any, policies are having on the influences. This is the purpose of the third tier of information.</p>
3. Impact information	To assess effectiveness and efficiency of organisational performance.	<p>Coupled with the reasons for management (provided by 1 and 2 above), this information completes the basic audit trail.</p> <p>Performance information (e.g. impact-to-cost ratios) is collected by individual organisations, often in relation to their Corporate or Business Plan, and is not included in this Management Plan. The NPA's Corporate Plan is available from www.pembrokeshirecoast.org.uk.</p>

3 MEASURING PROGRESS: THE STATE OF THE PARK



3.1.3 The result is that ‘success’ is rarely a fixed quantity, and will often, in addition, depend on how people feel or what they perceive. For example, people’s expectations of recreational opportunities will change, as well as recreational provision itself. Thus, even if provision remains the same, what was good enough last year may not be good enough this year, or there may be demand for something completely new. For this reason, this Management Plan (like the previous 2009-13 version) avoids using fixed outcome targets to try and define a desired state of the National Park. Instead, outcome and factor measures are used to assess the direction and rate of travel towards Management Plan aims.

3.1.4 The Management Plan is divided into a number of related themes. The NPA recognises that the various themes are inseparable in a relatively highly-populated and economically productive landscape such as the Pembrokeshire Coast National Park. Accordingly, and as befits a protected landscape, we consider the landscape first, as the overall management unit. However, we also consider attributes of that landscape as themes in their own right, and with management outcomes in their own right, in order that they have the management and monitoring attention they individually require. Overall, the themes more or less follow the citation of the National Park purposes and include the special qualities. They are:

- Landscape, seascape, tranquillity and dark skies
- Ecosystems and biodiversity
- The historic environment
- Earth heritage
- Discovery and enjoyment of the National Park

3.1.5 Cultural and economic aspects of the National Park cut across all the themes and so are included, wherever they are relevant, throughout.

3.1.6 Environmental quality, climate and energy generation are key factors affecting the National Park in their own right and chapters on these factors are also included.

3 MEASURING PROGRESS: THE STATE OF THE PARK

3.2 ASSESSMENT OF THE MANAGEMENT PLAN

3.2.1 SUSTAINABILITY APPRAISAL, STRATEGIC ENVIRONMENTAL ASSESSMENT AND HABITATS REGULATIONS ASSESSMENT

3.2.1.1 Sustainability Appraisal assesses the environmental, social and economic implications of the Management Plan's strategies and policies. It includes Strategic Environmental Assessment⁶.

3.2.1.2 A precursor document (the Preferred Strategy) to the current Management Plan (2009-13) and Local Development Plan (to 2021) was subject to a full, combined, Sustainability Appraisal/Strategic Environmental Assessment. The NPA consulted on the scope of the appraisal in 2007, and a full draft Sustainability Appraisal was consulted on alongside the previous draft Management Plan. The NPA has reviewed and updated this work.

3.2.1.3 The draft Management Plan (2009-13) was screened by external consultants for significant impact under the Habitats Regulations⁷, but did not need to proceed to a full assessment.

3.2.1.4 This review of the Management Plan has updated the evidence base for the Management Plan and elaborated on the policy framework. The NPA has undertaken what it considers to be a proportionate approach to assessment: assessing any changes to policy, and any potential cumulative or in-combination effects that might arise from them, taking into account external plans, policies and programmes and any changes to European Sites (e.g. changes to area or features of designation). No significant effects have been identified.

3.2.2 EQUALITY IMPACT ASSESSMENT

3.2.2.1 The Equality Act 2010 focuses on ending discrimination, advancing equality of opportunity and outcome, and fostering good relations between different individuals and communities. The NPA adopted an Equality Plan on 28th March 2012. As part of its duties, and in line with the NPA's Equalities

Plan, the NPA screens for potential equalities impacts of proposed policies and practices on people with protected characteristics. No significant effects have been identified.

⁶ As required by The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004, the Planning and Compulsory Purchase Act 2004, Section 62(6) and European Directive EU2001/42/EC

⁷ European Union Directive 92/43/EC (the Habitats Directive) requires any plan or programme likely to have a significant impact on a Special Area of Conservation or Special Protection Area to be screened for likely effects on the site. If there are likely effects, the plan or programme must be fully assessed ("appropriate assessment") to determine whether these effects can be justified, and to identify any mitigation measures that must be taken. The relevant UK legislation is The Conservation of Habitats and Species Regulations 2010.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

The National Park is not a static natural landscape but a changing cultural landscape, reflecting how the environment, the economy and people's values change through time.

Landscape conservation means looking after processes and ways of life as well as things, celebrating people's contribution to the landscape, and preparing for a range of possible futures.

4.1 AIMS AND OUTCOMES

Aim	Current position
<p>Conserve and enhance landscape and seascape quality.</p>	<p>Outcome: Landscape quality and ecosystem functioning Landscape quality has been defined as "a measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements."⁸</p> <p>In 2011, Pembrokeshire Coast was voted the second best coastal destination in the world by the National Geographic Traveller magazine.</p> <p>People's views on the special qualities of the National Park and issues affecting them were canvassed for the Management Plan (2009-13) and Local Development Plan. Landscape character assessment for the Pembrokeshire Coast was published as Supplementary Planning Guidance in 2011. Landscape quality is vulnerable to a number of chronic and acute threats. Most of the issues identified in this Management Plan have implications of some degree for the appearance and functioning of the landscape, and information on a range of natural and cultural attributes (which underpin the typical character) of the National Park is given throughout the Management Plan. However, the following are of particular relevance for landscape quality and the ecological functions which underpin it:</p> <ul style="list-style-type: none"> • Land management practices, which have particular implications for semi-natural habitat and associated wildlife, and for management of stocks and flows of natural resources, such as soils and water. • Development, which needs to conserve and enhance the special qualities of the National Park • Climate change, which could significantly alter the distribution of biodiversity, crops, farming practice, and the appearance of the coast and low-lying areas. <p>Outcome: Seascape quality Pembrokeshire Coast National Park is a maritime landscape and offshore development and activity can affect the coastal and inland qualities of the National Park - through visual intrusion, impacts on coastal wildlife (see section 5 of this Management Plan), alteration of coastal processes and so on. A detailed seascape character assessment for the Pembrokeshire Coast was published as Supplementary Planning Guidance in 2013.</p>

⁸ Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for landscape and Visual Impact Assessment (3rd Edition), p157.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

Aim	Current position
<p>Conserve and enhance night skies and tranquillity.</p>	<p>Outcome: Night skies Parts of the National Park are relatively free of light pollution and this is an expectation of many people coming to enjoy such places. Based on data from 2000, light pollution, as glare or skyglow, cuts many people off from seeing the majesty of Wales' night skies. An up-to-date assessment of light pollution is required; however survey of Pembrokeshire residents in 2012 found that 75% of respondents have an excellent or good view of the stars, and that 72% consider it to be important or very important.</p> <p>Outcome: Tranquillity Tranquillity has been defined as "a state of calm and quietude associated with peace, considered to be a significant asset of a landscape"⁹. It includes both a relative absence of man-made detractors and is enhanced by the presence of natural features and processes.</p> <p>Although a significant area of the National Park is tranquil by most definitions, traffic noise and insensitive use of (for example) some powered watercraft can erode peace and quiet. Military activity at the ranges at Penally, Manorbier and Castlemartin can create a significant noise issue. Wind turbines, electrical and telecommunications infrastructure is often sited in prominent/remote areas and can detract from the semi-natural aspect or perceived wildness of an area.</p>

⁹ Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for landscape and Visual Impact Assessment (3rd Edition), p158.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS



4.2 EVIDENCE

4.2.1 SPECIAL QUALITIES

4.2.1.1 National Park purposes refer to 'promoting opportunities for understanding and enjoying the special qualities of the area by the public'. The special qualities are the attributes of the National Park which, individually or in combination, give the Park its particular character and which can evoke out of the ordinary experiences and emotions in those who live here or visit.

4.2.1.2 Residents and visitors identified what they consider to be the special qualities of the National Park, as the first stage in the preparation of the previous Management Plan and the current Local Development Plan for the National Park¹⁰. The special qualities highlighted were: accessibility; coastal splendour; cultural heritage; distinctive settlement character; diverse geology; diversity of landscape; islands; remoteness, tranquillity and wildness; rich historic environment; richness of habitats and biodiversity; space to breathe, and the diversity of experiences and combination of individual qualities.

4.2.1.3 Respondents referred to the different types of countryside, the spectacular appearance and diversity of coastal scenery, and the bonding of the landscape with angry or glittering seas. The National Park's relative freedom from noise and light pollution is considered to be a scarce and at-risk commodity in a cluttered world.

4.2.1.4 It's not only individual qualities that make the National Park special. There is also their variety and the endless combinations in which they occur - at different times of year, in different weather, and within a relatively small area - to give rise to an ever-changing range of landscapes and experiences. The special qualities are often easily and freely accessible, and vary with people's moods or the weather. As one person put it:

"The blend of sea, beautiful landscapes, rivers, cliffs and stunning views make this a unique environment in Britain. Add to these factors the friendliness of the locals, the astonishingly good quality of food based on wonderful local produce, provides an experience rarely found elsewhere. Coast, countryside, culture!"

¹⁰ Residents and Visitors survey for the Management Plan and Local Development Plan, Pembrokeshire Coast National Park Authority, 2007. Special qualities were also identified through Landscape Character Assessment and Seascape Character Assessment.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

4.2.1.5 People often expressed the National Park's special qualities as emotions and feelings. Visitors referred to wildness, remoteness, spaciousness, timelessness, the slow pace of life and 'the relaxability factor'. The National Park was found to be welcoming, unpretentious - and even edible, since local produce was highly praised. People commented in particular on solitude and the impression of limitless space. A sense of tradition, community, peace and the past were also prominent in residents' responses. Reference was made to the 'spirituality of a beautiful landscape steeped in a rich cultural past', to inner peace, and to being at one with nature.

4.2.1.6 People appreciate the quality of natural light and the unmanicured appearance of the National Park. They love the fresh air and clean, clear water and appreciate freedom from too many rules. They like the opportunities for getting close to wildlife and seeing the natural world change throughout the year. The National Park is seen as a place where children can learn through experience and exploration.

4.2.1.7 People appreciate the small, vibrant, living and working settlements in the National Park. Particular mention was made of small farms and the feeling of cultural heritage which they evoke. The importance of keeping development within villages and reasonably faithful to the vernacular style was recognised, as was its wider role in retaining the National Park's unique landscape and heritage, and that the range of architectural styles gives a distinctive feel to the Park in its own right. People value gardens, monuments, churches and spiritual places, and make strong links between contemporary buildings and the historic environment. There is an ever-present feeling of the Park's long history of settlement, the continuation of culture and traditions.

4.2.1.8 Visitors appreciate the small scale, the relative peacefulness and the friendliness of settlements, the variety of attractions and the range of independent outlets for local produce. Some visitors noted that tourism and commercialisation have not managed to spoil the character and attractiveness of the National Park, and one person specifically recorded their pleasure at the National Park not being directly accessible by motorway. Visitors appreciate the warmth with which they are received, and



4 A LANDSCAPE FOR LIFE AND LIVELIHOODS



also commented on the ease with which solitude can be found. Some prefer to visit in the shoulder season or in winter because there are fewer people around.

4.2.1.9 All of the special qualities people listed are sources of enjoyment, so people also value access to them, particularly the beaches and coastal access afforded by the Pembrokeshire Coast Path National Trail, access to the open countryside and quiet roads. Specific sites and recreational opportunities were mentioned: for example Caerfai, Pengelli, Poppit Sands and Monkstone; the surf, the wind and the islands; sailing, boat trips and horse-riding.

4.2.1.10 A number of people listed as a special quality the feeling that the physical special qualities they had listed were, in principle, safeguarded into the future by protected landscape designation. In other words, peace of mind in regard to the National Park's future can be a special quality in its own right.

4.2.2 LANDSCAPE CHARACTER

4.2.2.1 LANDMAP is the national information system, devised by the former Countryside Council for Wales, for taking landscape into account in decision-making, based on five aspects: geology, habitat cover, visual and sensory attributes, historic character, and cultural associations.

4.2.2.2 Planning Policy Wales recognises LANDMAP as an important resource for local planning authorities in making the landscape assessments needed to inform local policy, guidance and decision-making, as the basis of a Wales-wide approach to landscape assessment.

4.2.2.3 The NPA commissioned a Landscape Character Assessment in 2006, based on LANDMAP information and covering a combination of the five LANDMAP aspects. The Assessment identified 28 distinct Landscape Character Areas lying within or partly within the National Park. A profile of each Landscape Character Area identifies the attributes of these areas and the challenges they face, and sets out management guidance for them. The Assessment was adopted as supplementary planning guidance on Landscape Character Areas to the Local Development Plan in June 2011.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

4.2.3 SEASCAPE CHARACTER

4.2.3.1 Although the seaward boundary of the National Park (and the NPA's statutory planning remit) is the mean low water mark around the Pembrokeshire coast and islands, offshore developments may have implications for the planning regime above mean low water, as well as for sea views. The NPA determines most planning applications above mean low water and is a statutory consultee on proposals below mean low water. The NPA can therefore influence development beyond National Park boundaries.

4.2.3.2 In 2009, the former Countryside Council for Wales published a report on the character, special qualities and sensitivity of Welsh seascapes, the Seascape Assessment of Wales. This was produced specifically to inform the Welsh Government's Marine Renewable Energy Strategic Framework and the UK's Offshore Energy Strategic Environmental Assessment.

4.2.3.3 In 2012, the NPA and the then Countryside Council for Wales commissioned a detailed seascape character assessment for the Pembrokeshire Coast, building on the all-Wales regional seascape assessment, to identify Seascape Character Areas and their sensitivities. The Seascape Character Assessment was adopted in 2013 as supplementary planning guidance in terms of the visual sensitivity of the coast, and is intended to provide defensible evidence when infrastructure projects and developments falling under the consenting regime below mean low water are considered by the NPA. The seascape guidance complements the guidance on terrestrial landscapes identified by the Landscape Character Assessment.

4.2.4 TRANQUIL AREAS

4.2.4.1 People value remoteness and tranquillity very highly. Everyone has their own idea of what 'tranquillity' means, but it usually implies a sense of distance from roads, from built-up areas and/or from people. Limitless sea, semi-natural habitats and perceived "wildness" can add to the impression of tranquillity, and so remoteness and tranquillity are often, but by no means always, found together.

4.2.4.2 Factors particularly likely to affect people's impressions of remoteness and tranquillity in the National Park include visible 'modern'



4 A LANDSCAPE FOR LIFE AND LIVELIHOODS



development (including larger wind turbines or turbine groups), intensive agricultural use, traffic noise and other intrusive noise, including noise from military range activity, light pollution, aircraft and waste and litter. These issues are addressed in this Management Plan, and/or by the Local Development Plan for the National Park.

4.2.4.3 As tranquillity can be defined by the presence of certain elements combined with the absence of spoiling forces, such as sources of intrusive light, noise or objects in the landscape, it can be mapped approximately by plotting the presence or absence of these elements and forces. For example, the NPA has mapped the distribution of wind turbines (available on the NPA's website¹¹), and in 2013 commissioned work to develop a methodology for assessing the cumulative impacts of turbines in the landscape. This was adopted as supplementary planning guidance in 2013.

4.2.4.4 In 2009 the former Countryside Council for Wales published a Wales Tranquil Areas Report. This followed the same methodology as an earlier (1997) Wales Tranquil Areas Map so the two mapping exercises are comparable. In 2009, the total amount of Tranquil Area in Wales was around 11,600km² (55% of Wales' land area). This was a reduction from 1997 of nearly 1,500km² (more than 6% of Wales' land area). Tranquil area loss in Pembrokeshire (almost 5.5%) is comparable to the all-Wales figure.

4.2.4.5 Changes in tranquillity in Regional Landscape Character Areas in Pembrokeshire are also given in the Wales Tranquil Areas Report. While the coastal and Preseli National Landscape Character Areas approximately reflect the National Park boundary, the 'Milford Haven' landscape unit encompasses a large non-Park area around the Waterway and Cleddau Rivers, including Haverfordwest and large industry on the Haven. The Milford Haven unit shows a 26% loss of tranquil area in the period 1997-2009.

4.2.4.6 The Wales Tranquil Areas Report is confined to land, but includes a map showing areas which have been identified as being of high or outstanding visual quality, which are also generally tranquil, and from which the sea is visible. Much of the western and northern coastline of the National Park, including the islands, a considerable area in the Preseli Hills, and some of the Castlemartin Coast is classified in this way.

¹¹ <http://www.pembrokeshirecoast.org.uk/default.asp?PID=528>

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

4.2.4.7 The Wales Tranquil Areas Report report also includes information on dark night skies, although this is based on satellite data from 2000. National trends in light pollution, mapped by the Campaign to Protect Rural England over the period 1993-2000, show a general increase in light pollution of night skies.

4.2.5 PUBLIC SURVEY

4.2.5.1 The 2012 Pembrokeshire Citizens' Panel survey included questions relating to people's view of the stars on a clear night and the importance that they attach to such a view. 39% of respondents indicated that they had an excellent view and 33% a good view, with 7% of people reporting a poor view and 2% a very poor view. 75% of respondents considered a good view of the stars to be important or very important.

4.3 POLICIES

4.3.1 LANDSCAPE QUALITY AND ECOLOGICAL FUNCTION

4.3.1.1 The European Landscape Convention, which became binding on the UK in 2007, commits the UK and devolved governments to recognise landscape in relevant law and policy, and to involve people in landscape planning and management. The Convention applies to all landscapes, even degraded ones, as well as to protected landscapes; at its heart are the cultural associations between people and place.

4.3.1.2 The UK's national parks are classed as 'Category 5' Protected Areas by the International Union for Conservation of Nature (IUCN). Category 5 areas are places where the main object is "to protect and sustain important landscapes/seascapes and the associated nature conservation and other values created by interactions with humans through traditional management practices."¹² IUCN guidelines exist for the various landscape categories.

4.3.1.3 The ways in which people perceive and experience landscape are very personal, and depend on their personal associations and expectations amongst other factors. Since landscape and people's perceptions of it change, the emphasis of management policy should be on achieving high landscape quality and value, rather than necessarily protecting particular visual attributes of the landscape - although this is also often a goal and/or a consequence of management. The phrase 'high landscape quality and value'

¹² http://www.iucn.org/about/work/programmes/pa/pa_products/wcpa_categories/pa_category/



4 A LANDSCAPE FOR LIFE AND LIVELIHOODS



is intended to mean, in particular, a healthy ecosystem, properly functioning natural processes, and the myriad social and economic benefits which these generate. Given that change is inherent in landscapes, management of them must be adaptive and a learning process.

Policy L1: Maintain and enhance landscape quality and ecological function

Policy L1 is a governing principle in National Park management. Since any change in any component of the landscape has the potential to affect the character and quality of the landscape overall, Policy L1 can only be achieved by also pursuing all other policies in the Management Plan.

4.3.2 SEASCAPE QUALITY AND FUNCTION

4.3.2.1 The islands, coastal scenery and marine wildlife were key reasons for the National Park's designation. The seaward boundary of the National Park on the mainland and on the islands is Mean Low Water Mark, but the state of the wider marine environment directly and indirectly affects the special qualities and people's enjoyment of what is essentially a maritime National Park. The condition of the marine environment and trends in the factors affecting it are therefore of great significance for National Park purposes.

4.3.2.2 Although the NPA's development management remit ceases at mean low water, many marine developments require landward infrastructure, and the NPA is a statutory consultee for many offshore proposals. The NPA and partners also have statutory responsibilities in relation to protecting the features of European marine sites adjacent to the National Park.

4.3.2.3 The Marine and Coastal Access Act 2009 contains provision for marine planning, up to high water. This will help integrate management across the artificial boundary that the coastline sometimes represents. Welsh Government consulted on initial proposals for marine planning in 2011 ("Sustainable Development for Welsh Seas: Our Approach to Marine Planning in Wales")¹³ and has indicated that there will be a single Welsh National Marine Plan with evidence-based, multi-sectoral policies that apply to inshore and offshore areas. The National Marine Plan will take seascape into account, amongst other considerations, and will be the regional plan which puts into place the aspirations of the UK's Marine Policy Statement (adopted by UK and regional governments in 2011).

¹³ England is moving closer to adopting marine plans for the East Inshore and East Offshore areas (March 2014). Scotland intends to produce a national marine plan and a number of regional marine plans, and intends to define these by order in 2014. Northern Ireland intends to develop a Northern Ireland Marine Plan.

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

Policy L2: Maintain and enhance seascape quality and ecological function

Policy L2 is a governing principle in National Park management, to be achieved through other policies in this Plan and through cross-boundary planning, advocacy and partnership working.

4.3.3 DEVELOPMENT AND THE SPECIAL QUALITIES

4.3.3.1 Development policy should ensure that the special qualities of the Pembrokeshire Coast National Park landscape are not lost to future generations. The Local Development Plan for the National Park (to 2021) states that development will not be permitted where this would adversely affect the qualities and special character of the Pembrokeshire Coast National Park. This might be due to a development causing significant visual intrusion, being insensitively and unsympathetically sited within the landscape, introducing or intensifying a use which is incompatible with its location, failing to harmonise with or enhance the landform and landscape character of the National Park, or losing or failing to incorporate important traditional features. Pembrokeshire County Council's Local Development Plan Planning Pembrokeshire's Future (up to 2021) Policy GN 1 includes reference to development impacts on landscape character and quality, including the special qualities of the National Park, and to Section 62(2) of the Environment Act.

4.3.3.2 Because development which takes place outside the National Park can nevertheless affect the National Park, strict application of the boundary in making decisions is not always appropriate. The Local Development Plan for the National Park (to 2021) contains detailed land use planning policies; headline management plan policy in respect of development is given below.

Policy L3: Ensure that development respects the special qualities of the National Park

Example measures:

- *Provide development to meet people's needs, including energy and housing needs, subject to National Park purposes*
- *Work with natural processes rather than against them, and respect the traditional character and local distinctiveness of development while encouraging innovative design*
- *Prioritise use of scarce land supply or reuse of buildings so as to make the most contribution to sustaining local communities, and use higher densities where appropriate*



4 A LANDSCAPE FOR LIFE AND LIVELIHOODS



- Exclude major development proposals, that is proposals of UK significance, unless exceptional circumstances can be demonstrated (i.e. where, after rigorous examination, there is shown to be overriding public need and there is no potential for locating the development elsewhere or meeting the need in some other way)¹⁴
- Reduce the visibility of existing infrastructure

4.3.4 LIGHT POLLUTION

4.3.4.1 The night sky can offer a very direct way for people to connect with nature and the much wider environment. However, light pollution excludes many people in the UK from discovering and enjoying the profundity of the night sky and its practical, historical and cultural associations. Reducing unnecessary lighting can also help reduce costs and carbon emissions. National parks offer some potential dark sky reserve areas; for example Exmoor National Park became Europe's first International Dark-Sky Reserve in 2011, and the National Trust was awarded Dark Sky Discovery Site status for its rural car park at Broad Haven (south) in 2014.

4.3.4.2 Planning authorities can restrict light pollution from new developments which include a lighting system. The lighting impacts of a new dwelling, one in an isolated area, for example, can also be taken into account in determining the principle of that dwelling. Lighting is also a planning consideration if it impacts on European protected species, such as bats. The Local Development Plan for the National Park reflects these considerations.

4.3.4.3 Obtrusive light from business and residential premises can be classed as a nuisance. Pembrokeshire County Council investigates complaints of light nuisance and makes an assessment using statutory guidance. If light nuisance exists then an abatement notice can be served; complainants can also take proceedings themselves.

4.3.4.4 Highways and road sign lighting are the responsibility of Pembrokeshire County Council, which is the highways authority in the National Park. Pembrokeshire County Council began a phased switch off of street-lighting across Pembrokeshire in March 2011. Lighting is switched off between midnight and 0530, while LED lights are being introduced for new street-lighting. LED lights generally reduce glare and are deemed to be less attractive to nocturnal insects. However, adjustments to LED lights may be necessary to ensure that light intensity is appropriate to the location.

¹⁴ See Paragraph 5.5.6, Planning Policy Wales Edition 6 (2014)
<http://wales.gov.uk/docs/desh/publications/140303planning-policy-wales-edition-6-en.pdf>

4 A LANDSCAPE FOR LIFE AND LIVELIHOODS

4.3.4.5 Large projects and associated lighting schemes such as power stations and refineries are generally located outside the Park and are determined by Pembrokeshire County Council, Welsh Government or UK Government, although the NPA would be consulted. Such installations may need to fulfil various safety requirements, such as visibility criteria.

Policy L4: Protect and promote dark night skies

Example measures:

- *Require development proposals that are likely to result in a significant level of lighting to include a full lighting scheme, to be considered as part of the application*
- *Evaluate the potential for and benefits of designation of dark sky area/s or reserves in the National Park*
- *Survey light pollution data for the National Park, including the islands, and surroundings, and/or promote its regular collection at a regional or national level*
- *Promote and celebrate the night sky*
- *Promote good lighting practice amongst householders and businesses*
- *Control nuisance lighting*

4.3.5 NOISE POLLUTION

4.3.5.1 Unwanted noise detracts from people's enjoyment of the National Park and can affect their health and wellbeing. It can also be disruptive for wildlife, particularly perhaps in the marine environment. General sources of noise include traffic, machinery and aircraft noise; noise sources drawing particular complaint are the use of personal watercraft and military use (including firing after dark).

4.3.5.2 Welsh Government's Noise Action Plan is limited to urban centres. Welsh Government has decided to interpret the Directive more widely than purely noise and have extended its scope to include tranquillity, so while its geographical scope is limited to urban centres, the principles of the work may have some relevance to areas outside urban agglomerations.

Policy L5: Limit noise pollution

Example measures:

- *Restrict noise pollution from new developments*
- *Restrict significant intensification of use or extension of Ministry of Defence sites unless exceptional circumstances are demonstrated.*



5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

'Biodiversity' means all life – the rich variety of plants and animals and the diverse ecosystems on which all life depends. People are part of biodiversity and biodiversity is essential to people's physical, economic and spiritual wellbeing.

5.1 AIMS AND OUTCOMES

Aim	Assessment
<p>Conserve and enhance ecosystems and biodiversity.</p>	<p>Outcome: Ecosystem functioning and biodiversity The Convention on Biological Diversity defines an ecosystem as 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit'.</p> <p>Ecosystem functioning is adversely affected by habitat loss and degradation, and loss of ecological connectivity in the wider countryside is often attributable to agricultural intensification.</p> <p>In the marine environment, ecosystems are vulnerable to some commercial fishing methods and pollution. Other factors affecting the marine and terrestrial ecosystems that support biodiversity (and biodiversity itself) include short term weather events and long-term climate, and invasive non-native species.</p> <p>As a result, the state of biodiversity is a major cause for concern. Even within protected sites, the conservation status of habitats and species is often unfavourable, and the ecosystems of which they are an integral part are fragmented and hence dysfunctional.</p>

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

5.2 EVIDENCE

5.2.1 THE STATE OF UK ECOSYSTEMS

5.2.1.1 A UK National Ecosystem Assessment was published in 2011 and follow-on research phases are underway. This assesses the state and functioning of the natural processes that underpin human welfare in the UK and found one of the main drivers of ecosystem change in the UK over the previous 60 years to be conversion of habitats to intensive farmland. The report also concluded that both non-monetary and monetary values of biodiversity and ecosystems tend to be discounted or ignored by conventional economics, potentially leading to poor policy decisions and misallocation of resources.

5.2.1.2 The report sets up six different policy scenarios for the UK, against a backdrop of growing demand for natural resources worldwide and the UK population's age profile. Only one of these scenarios is found to be effective in terms of maximising human well-being and capacity for adaptation in the face of climate change, and minimising the UK's ecological footprint. This scenario is founded on the idea of multifunctional landscapes and high regard for the environment. It implies one of the strongest intervention roles in managing public goods, suggesting that ecosystems services payment schemes need to be backed up by regulation.

5.2.2 UK AND REGIONAL HABITAT AND SPECIES ASSESSMENTS

5.2.2.1 The State of Nature reports (2013) for the UK and Wales describe trends in habitats and species. Across the UK, farmland birds and butterflies have declined substantially since the 1970s and 1990s respectively. 14% of all farmland flowering species, and 11% of woodland flowering species are on the UK Red List of threatened species. Of almost 700 coastal species for which trend data exists, 60% have declined and 29% declined strongly, with similar percentages for freshwater and wetland species. 75% of European fish stocks are overfished and climate change appears to be affecting breeding success of UK seabirds, particularly in Scotland. In Wales, 57% of flowering plants, and half the species of butterflies assessed, are declining. Breeding birds in farmed habitats in Wales have been lost at an alarming rate, although woodland birds appear to have stabilised.

5.2.2.2 Species populations, and the factors affecting them, are inherently dynamic. For this reason the NPA and partners are involved with long-term



5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



monitoring of a number of species, including attributes such as breeding success, and some of the factors likely to be affecting those species. This enables partners to gauge the impact of various external influences, such as weather, and assess the effectiveness of conservation policy and action in the round.

5.2.2.3 The West Wales Biodiversity Information Centre works with county recorders and others to manage and provide high quality species and habitat data across Pembrokeshire, Ceredigion and most of Carmarthenshire, as part of the National Biodiversity Network. The Centre is part-funded by public bodies that require access to the data for their statutory purposes (for example in relation to development management).

5.2.3 THE STATE OF LOCAL BIODIVERSITY ACTION PLAN HABITATS AND SPECIES

5.2.3.1 Pembrokeshire and its adjacent waters are covered by the Biodiversity Action Plan for Pembrokeshire. This identifies locally, nationally and internationally important habitats and species and sets out action needed to help conserve them. Their condition is assessed on the basis of attributes, such as habitat area, habitat integrity, the distribution of species and population dynamics. Monitoring of and reporting on habitat and species action plan outcomes is coordinated by the Biodiversity Officer on behalf of the Pembrokeshire Biodiversity Partnership, while Partnership members report on action via the Biodiversity Action Reporting System database.

5.2.3.2 A review by the Pembrokeshire Biodiversity Partnership in 2011, the State of Wildlife in Pembrokeshire, described a continued overall decline in the quality and conservation status of some of the National Park's signature habitats and species, such as semi-natural grassland and farmland birds, and also of once-common species, such as the starling. The report also celebrates a number of successes, although these tend to be site-specific (e.g. particular heathland and coastal slopes sites) rather than county-wide. Sites on which public and private sector partners have been able to secure biodiversity gains - in the face of national declines in farmland birds for example - are testament to the necessity and effectiveness of conservation management on those sites e.g. particular heathland and coastal slopes sites, including farmed land.

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

5.2.4 THE STATE OF DESIGNATED CONSERVATION SITES

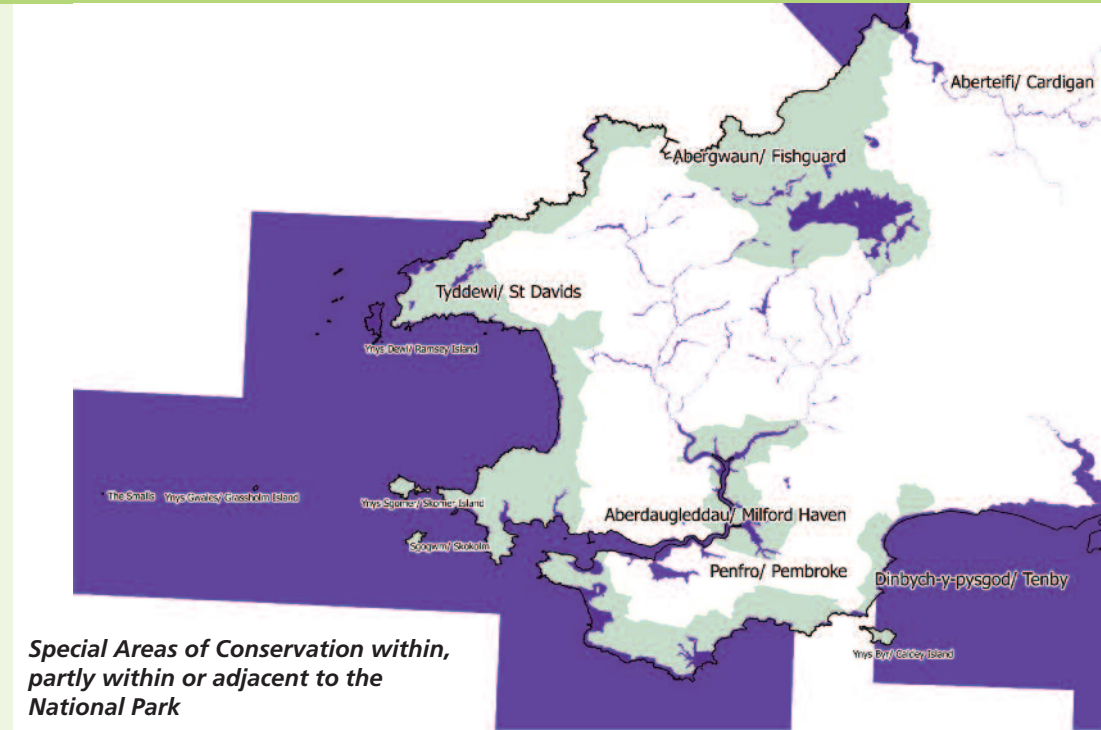
5.2.4.1 The biodiversity importance of the National Park is reflected in the high number of designated conservation sites. The following lie wholly or partly within the National Park:

- 13 Special Areas of Conservation (Cardigan Bay, Carmarthen Bay and Estuaries, Cleddau Rivers, Gweunydd Blaencleddau, Limestone Coast of South West Wales, North Pembrokeshire Woodlands, North West Pembrokeshire Commons, Pembrokeshire Bat Sites and Bosherton Lakes, Pembrokeshire Marine, Preseli, River Teifi, St Davids, Yerboston Tops)
- 5 Special Protection Areas (Ramsey and St Davids Peninsula Coast, Skokholm and Skomer, Grassholm, Castlemartin Coast, and Carmarthen Bay)
- 60 Sites of Special Scientific Interest
- 7 National Nature Reserves (Pengelli Forest, Ramsey, Skokholm, Skomer, Stackpole, Ty Canol, Grassholm)
- 1 Marine Conservation Zone (Skomer)
- 1 Local Nature Reserve (Freshwater East)

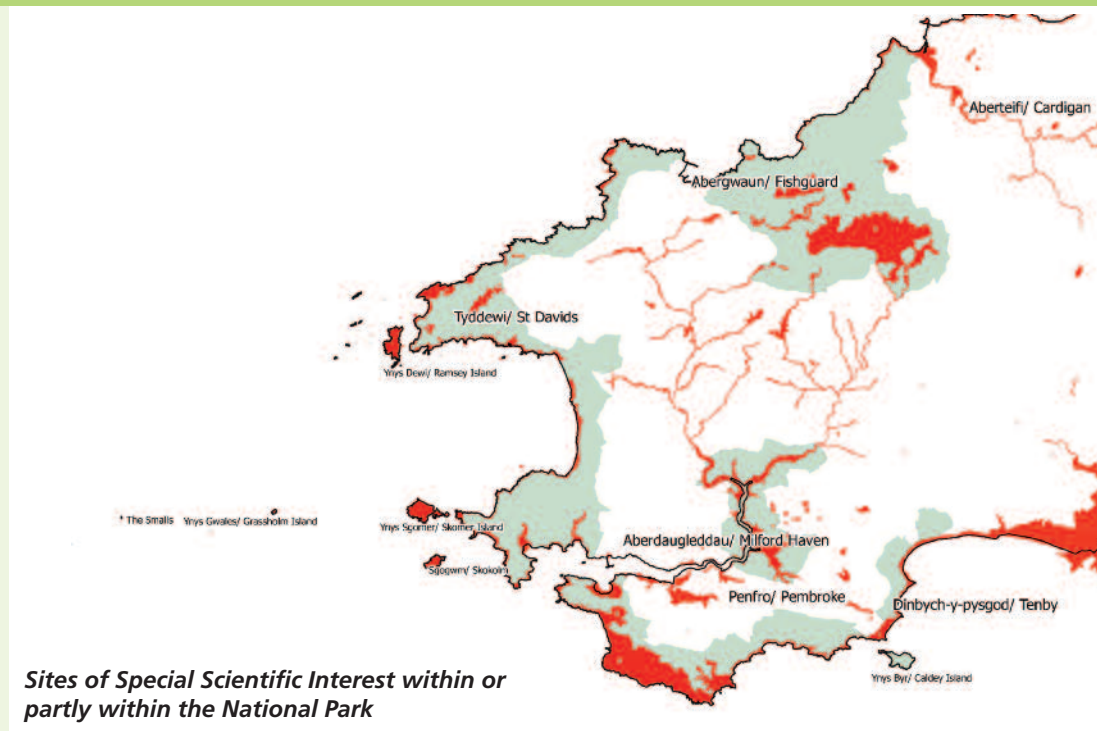
5.2.4.2 About 80% of the length of the National Park coastline is designated Site of Special Scientific Interest and the boundaries of the three marine Special Areas of Conservation overlap 75% of the National Park's coastline, and account for about 60% of the inshore area.

5.2.4.3 Based on data collated by Natural Resources Wales, the status of Special Areas of Conservation lying wholly or partly within the National Park is estimated as follows (data range 2007-2013).

Special Area of Conservation feature status (National Park area)	Number of features	Percentage of features
Favourable	28	31%
Unfavourable	54	60%
Not assessed	8	9%



5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



5.2.4.4 Based on data collated by Natural Resources Wales, the status of Special Protection Areas lying wholly or partly within the National Park is estimated as follows (data range 2007-2013).

Special Protection Area feature ¹⁵ status (National Park area)	Number of features	Percentage of features
Favourable	4	57%
Unfavourable	0	0%
Not assessed	3	43%

¹⁵ A 'feature' refers here to a habitat, species or natural process.

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

5.2.5 CONNECTIVITY AND THE STATE OF THE WIDER COUNTRYSIDE

5.2.5.1 Designated nature conservation sites are essential components for restoring connectivity and ecosystem functioning. Unless designated sites are in favourable condition there is little prospect of achieving landscape-scale successes. Equally, designated sites cannot exist in isolation and the wider countryside and the wider marine environment must be able to provide the ecosystem functions necessary to the integrity of protected sites.

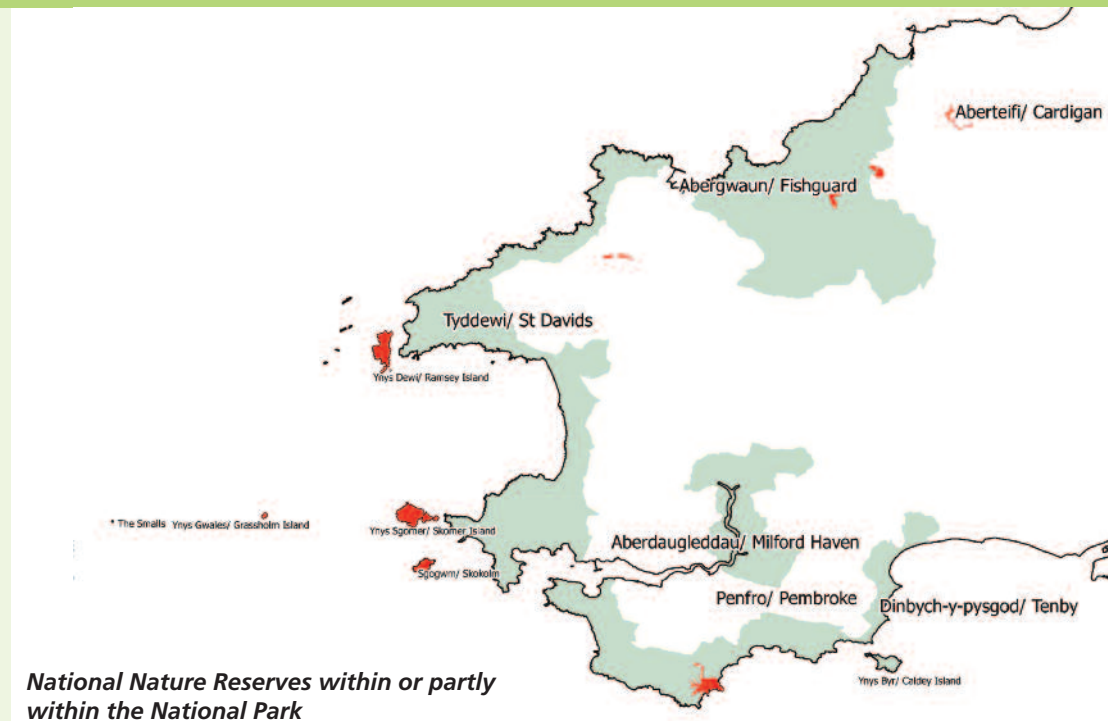
5.2.5.2 All-Wales habitat connectivity mapping has been undertaken by the former Countryside Council for Wales¹⁶. This gives an overview of the nature conservation value and connectivity of the countryside, and can help identify potential areas where strategic improvements could be made. A nature value mapping exercise was carried out for Pembrokeshire in 2012.

5.2.5.3 The work helps to add trend data to the Phase 1 and Phase 2 habitat surveys of Wales which took place between 1979 and 1997. These showed the amount of land within Pembrokeshire classified as species-poor, indicating the difficulty species populations face in moving around the Pembrokeshire countryside, and showed how designated sites have become isolated. Fragmentation is a particular issue away from the coastal slopes, estuary areas, Preseli Hills and associated valleys (such as the Gwaun and Nevern Valleys); these provide connectivity between the interior parts of the National Park and the coast.

5.3 POLICIES

5.3.1 ECOLOGICAL FUNCTIONING AND HABITAT CONNECTIVITY GETTING THE SCALE RIGHT

5.3.1.1 The Convention on Biological Diversity defines an ecosystem as 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit'. An ecosystem approach is a policy and management ethos which is applied at an appropriate scale. It should be an adaptive approach, to reflect the complex and dynamic nature of ecosystems.



¹⁶ E.g. Ecological Connectivity and Biodiversity Prioritisation in the Terrestrial Environment of Wales, 2013, CCW Staff Science Report No 13/3/3 <http://biodiversitywales.org.uk/>

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



5.3.1.2 The Pembrokeshire Biodiversity Partnership enables organisations to work efficiently towards Wales-, UK- and European-level goals for wildlife¹⁷, using the ecosystem management principles adopted by the Convention on Biological Diversity, advice issued by Natural Resources Wales in 2014 on incorporating an ecosystem approach to management of protected landscapes, and the Welsh Government's Living Wales programme and proposed Nature Recovery Plan. Land management outside the National Park has a profound influence on biodiversity within the National Park, and features which span the Park boundary, such as stream and river corridors, are essential for individual species' mobility.

5.3.1.3 Nature conservation goals for the National Park area are therefore influenced by conservation trends and effort outside the Park, and a wider landscape-scale programme of conservation action is indicated. This takes place within the framework of the Biodiversity Action Plan for Pembrokeshire.

CONNECTING HABITATS

5.3.1.4 Species on land and at sea need to be able to move in response to environmental conditions, feeding and breeding requirements, and other opportunities and pressures. Human land-uses can fragment habitat, creating barriers to movement and isolating species populations, reducing breeding success and genetic diversity. Connectivity requirements can be very different for different species; research published by the former Countryside Council for Wales and others has shown how habitat connections could be strategically restored across Wales for a range of habitats and species. Improving habitat connectivity in the National Park is not about 're-wilding' the landscape but about enhancing the conservation value of the wider countryside by improving the quality and extent of semi-natural habitat, which is a by-product of pastoral land management.

5.3.1.5 Geographical information systems can help show where conservation effort might help to join up nearby areas of habitat by enlarging them, or by creating stepping stones or linear routes between them, for example using hedges, edge habitats or wood pasture. Mapping enables conservation partners to capitalise on habitat potential and landowner interest, thereby making the most of local circumstances to add

¹⁷ Including protection of designated sites and in support of the e.g. Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020; the European Union's 2020 Biodiversity Strategy, and the Natural Environment and Rural Communities Act 2006 (in particular Section 40 – a duty to conserve biodiversity).

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

value to the Welsh Government's agri-environment programme Glastir, and targeting effort where it will offer the best return in terms of wildlife outcomes.

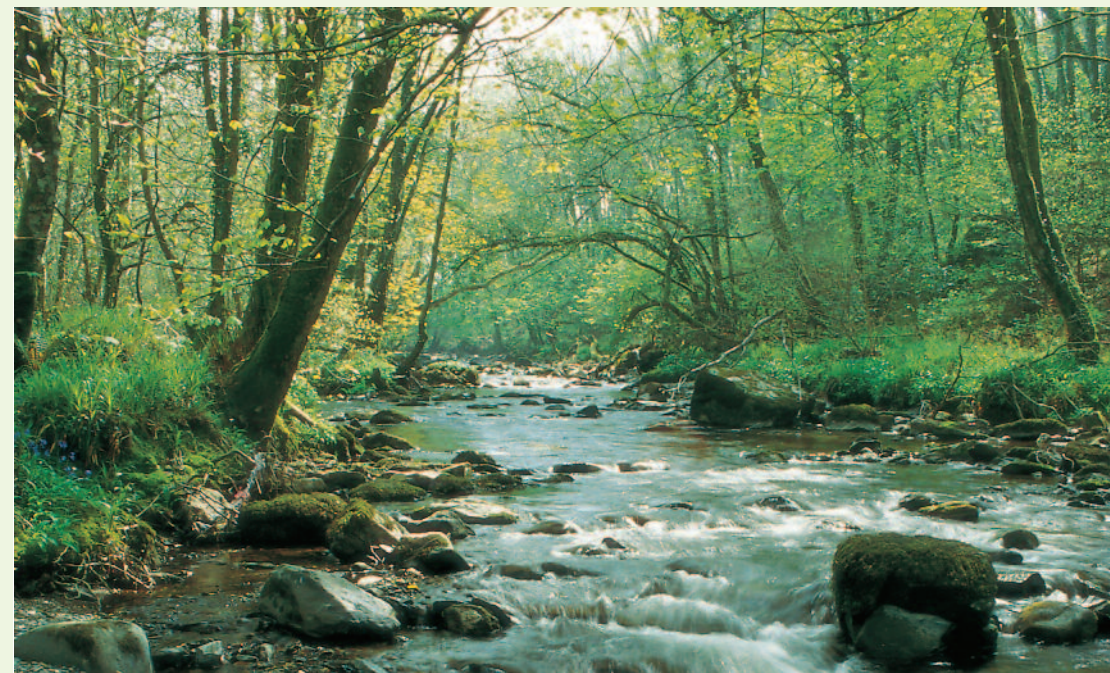
CLIMATE CHANGE AND BIODIVERSITY

5.3.1.6 Habitat connectivity is even more important in the context of climate change, particularly as many of the specific impacts of climate change on the distribution of habitats and species, and their effects in combination with other factors affecting wildlife, cannot be accurately known. Climate change is not new; the difference this time is the human contribution to it and the fact that it comes accompanied by many other human pressures on the environment and its inhabitants which are as a consequence less resilient to the effects of climate change. Collectively these pressures, especially where they result in habitat fragmentation, reduce the options for natural adaptation precisely when those options are most needed. Climate change therefore makes the need to reduce non climate-related pressures even greater. All conservation action could therefore be seen as a response to climate change, especially where it enhances habitat area and connectivity, and conserves genetic diversity. The focus should be on increasing the overall resilience of habitats and species to climate change.

5.3.1.7 Development on land, in watercourses and at sea can destroy or fragment habitats and disturb species or create barriers to their movement. Legislation and national planning guidance emphasise the protection of statutory sites and species; local development planning policy and guidance should also continue to recognise and take into account the needs of all habitats and species in the National Park and the need for functioning, healthy and connected ecosystems in the wider countryside.

WORKING WITH LAND MANAGERS

5.3.1.8 Policy and market forces have profoundly altered people's relationship with the countryside since the Second World War, and agricultural efficiency has tended to reduce the time and space available for wildlife to co-exist with food production. With approximately half (29,500 ha) of the National Park area down to improved grassland and 10% (6,500 ha) arable¹⁸, agriculture is probably the biggest single human factor affecting wildlife in the Park, with impacts arising from grazing intensity, conversion of



¹⁸ Based on data from the former Countryside Council for Wales.

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



semi-natural habitat, the switch from hay to silage, and the loss of winter stubbles.

5.3.1.9 Yet all land management has consequences for wildlife, and much of the UK's familiar and well-loved wildlife is a cultural imprint of historic ways of life, including food and timber production. Species-rich hay-meadows, marshy grassland and lowland and coastal heath communities for example have developed alongside traditional pastoral land management and restoring low-intensity land management is often the key to conservation of this rich natural and cultural heritage. Grassland management can be as simple as applying the right grazing pressure (i.e. using the right stock, at the right time) and taking a haycrop after seed has set, when invertebrates have been able to complete their life cycles and ground-nesting birds have fledged. Since these practices are generally no longer rewarded by the market, financial incentives are often needed.

5.3.1.10 Against the backdrop of agricultural intensification, economically-marginal land - for example, inaccessible, steep, rocky or marshy land - has often retained a greater wildlife interest. In addition, the opportunity cost to a landowner of carrying out conservation management in these areas is usually lower than on more agriculturally-productive land, as there may be few paying alternatives. Accordingly, conservation partners' limited funds and resources have often had more influence in these marginal areas, and the practical and financial assistance offered to farmers in return for management of otherwise non-productive land can be a welcome enhancement to the farm portfolio. These initiatives are carefully tailored to be entirely complementary to Glastir, Welsh Government's agri-environment scheme. The NPA for example supports conservation management on around 2,000 hectares¹⁹.

5.3.1.11 Conservation partners play wider roles in helping the rural economy. Promoting locally produced, environmentally sound and socially responsible food (e.g. organic standard, community-grown or conservation-grade produce) can contribute to security of food supply in the face of climate change, building community skills and resources while giving consumers the ability to influence local land management through their purchasing decisions, and giving producers commercial benefits in the form of lower input costs, lower transport costs and marketing.

¹⁹ This area includes management agreement sites (where land managers are compensated for carrying out lower intensity land use), woodlands (including NPA-owned woodlands and woods brought into management through the NPA's partnership with Coed Cymru, which aims to bring Welsh broadleaf woodlands into sustainable management), other NPA-owned sites, and sites in the Pembrokeshire Grazing Network (a matching service whereby suitable stock are matched to sites in need of grazing).

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

Policy B1: Pursue an ecosystem approach to conservation on land

Example measures:

- *Influence management of public, private and common land for biodiversity, including the management of semi-natural habitats, arable land, linear features, and watercourses and water bodies*
- *Offer practical land management assistance in support of Glastir, for example help to fund or install capital works, enter into management agreements with landowners, provide advice, lease or purchase land, facilitate appropriate grazing*
- *Support management of designated nature conservation sites*
- *Promote regional and local conservation-grade food production and consumption*
- *Support Welsh Government's currently restrictive policy stance on genetically-modified organisms*
- *Restore features such as hay meadows, woodland and wood pasture, marshy grassland, and hedgerows in the wider countryside*
- *Work across administrative boundaries as necessary to achieve National Park, county and regional conservation goals*
- *Protect designated sites, protected species, and habitats and species of national or local nature conservation importance from development and disturbance*
- *Implement statutory duties and powers regarding trees, hedgerows and development, and ensure the appropriate management of trees in built-up areas*

Policy B3 also applies.

5.3.2 CONSERVATION OF MARINE ECOSYSTEMS

5.3.2.1 The outstanding coastal scenery was a key reason for the designation of the National Park. While the seaward boundary of the National Park on the mainland and on the islands (including The Smalls, approximately 20 miles offshore) is mean low water, the waters surrounding the National Park are of European conservation importance and the state of the wider marine environment directly and indirectly affects the character and people's enjoyment of the National Park. Management of the marine environment is therefore of major relevance to the National Park. The National Marine Plan for Wales will be key achieving good environmental status for Welsh waters by 2020, as required by the Marine Strategy Framework Directive.



5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



5.3.2.2 While European Marine Sites currently cover almost 6,000km² (around 37%) of Wales' territorial waters, more than half of the features for which they are designated are failing to reach favourable conservation status, and in some cases features have deteriorated. Management schemes for European Marine Sites, and the statutory Relevant Authority Groups which help deliver the schemes, are a key delivery mechanism for nature conservation in the marine environment. The approach helps ensure compliance with European Directives on habitats and on the protection of birds, and for achieving the UK's vision of clean, healthy, safe, productive and biologically diverse oceans and seas. It is essential that the progress made through the Relevant Authority Group/support officer model is continued.

5.3.2.3 Major issues to emerge from the management schemes are: fisheries management (including issues of by-catch and damage to marine habitats – around three-quarters of assessed European fish stocks are over-fished); offshore and coastal development; management of recreational craft and use of the foreshore; water quality (particularly nutrient enrichment) and litter (including commercial and recreational fishing litter). Some of the key issues affecting the marine environment (commercial fishing pressure in particular) cannot be fully solved at a local level and need to be addressed by Welsh and UK governments and/or at a European level. In 2013, the European Parliament voted for reform of the Common Fisheries Policy, which will come into effect from 2014. This includes measures to protect endangered stocks, with the principle of maximum sustainable yield applying from 2015, and end discards. Welsh Government's Marine and Fisheries Strategy and components of the associated action plan (2013) will help implement the Marine Strategy Framework Directive, and Common Fisheries Policy, in Welsh waters.

Policy B2: Pursue an ecosystem approach to marine management

Example measures:

- *Deliver the Management Schemes for European Marine Sites adjacent the Pembrokeshire Coast*
- *Support the continued protection, management and research value of Skomer Marine Conservation Zone*

5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK

- *Support better resourcing and management control in the marine environment*
 - *Manage the foreshore in accordance with regulating leases (NPA and Pembrokeshire County Council)*
 - *Contribute to management of species collection in the intertidal zone*
 - *Contribute to marine pollution contingency planning and response*
- Policy B3 also applies.*

5.3.3 MANAGING INVASIVE NON-NATIVE SPECIES

5.3.3.1 Non-native species are species which are outside their natural range in Pembrokeshire but which are present and capable of surviving and reproducing in Pembrokeshire. Invasive non-native species are any species falling under the former definition which cause damage to natural ecosystems or human economic, social or health interests by threatening native biodiversity.

5.3.3.2 The NPA and partner organisations currently manage some non-native species, including invasive non-native species, on land they own or manage. This is a major challenge, and marine invasive species are even more problematic. In 2014, Pembrokeshire Biodiversity Partnership published an Invasive Non-Native Species Action Plan. This includes terrestrial, freshwater and marine Invasive Non-Native Species known to be present in Pembrokeshire or deemed likely to colonise Pembrokeshire or its coastal waters. The Invasive Non-Native Species Action Plan adopts the hierarchical approach adopted by the Convention on Biological Diversity: prevention; detection/surveillance and control/eradication as the three main ways of dealing with invasive species, with prevention given the highest priority.

Policy B3: Manage invasive species

Example measures:

- *Pursue an integrated approach to management of invasive and/or noxious species through the Pembrokeshire Biodiversity Partnership's Invasive Non-Native Species action plan.*



5 LANDSCAPE-SCALE CONSERVATION IN THE NATIONAL PARK



5.3.4 LINKING BIODIVERSITY, LANDSCAPE AND CULTURE

5.3.4.1 Land management has a profound effect on the sights and sounds of the countryside. There are key links then between policies in this section and other policies in the Management Plan - in particular those to do with management of soil and water, carbon management for climate change mitigation and adaptation, cultural heritage, the wider character and quality of the landscape, people's enjoyment of it and the issue of 'shifting baselines' (section 10).

Policy B4 Promote and celebrate the connections between biodiversity, landscape and culture

Example measures:

- *Help people explore the links between arts and language and the National Park, making links between past, present and possible future landscapes, and people's cultural and other relationships with them*
- *Provide volunteering opportunities and community projects in support of National Park purposes*
- *Promote good practice and codes of conduct in relation to use of the coastal zone and inshore waters.*



6 THE HISTORIC ENVIRONMENT

Pembrokeshire's rich heritage ranges from evidence of hunter-gatherers, through Roman settlement to recent military installations and contemporary urban form. Heritage shapes the character of an area, contributing to people's sense of place and quality of life.

The historic environment is more than a collection of monuments; it includes their settings and the landscape which binds them together.

6.1 AIMS AND OUTCOMES

Aim	Current position
<p>Conserve and enhance the historic environment.</p>	<p>Outcome: Archaeological resources Inland monuments which have legal protection are on the whole in reasonable condition.</p> <p>Sites and features (including as yet undiscovered remains) without legal protection, and the areas surrounding upstanding archaeological remains, are at risk from a range of (mainly human) activities such as agriculture and development.</p> <p>Coastal sites, whether or not they enjoy legal protection, are vulnerable to erosion.</p> <p>Outcome: Historic buildings and their settings Most of the legally-protected historic buildings in the National Park are in good condition, though a number require repair and reuse.</p> <p>Fourteen Conservation Areas exist, with supplementary planning guidance for each.</p> <p>There is currently no agreed way of measuring the rate of change in local building character. However, local built character is in some cases being eroded by neglect and misrepair.</p>

6 THE HISTORIC ENVIRONMENT

6.2 EVIDENCE

6.2.1 THE NUMBER AND CONDITION OF SCHEDULED MONUMENTS

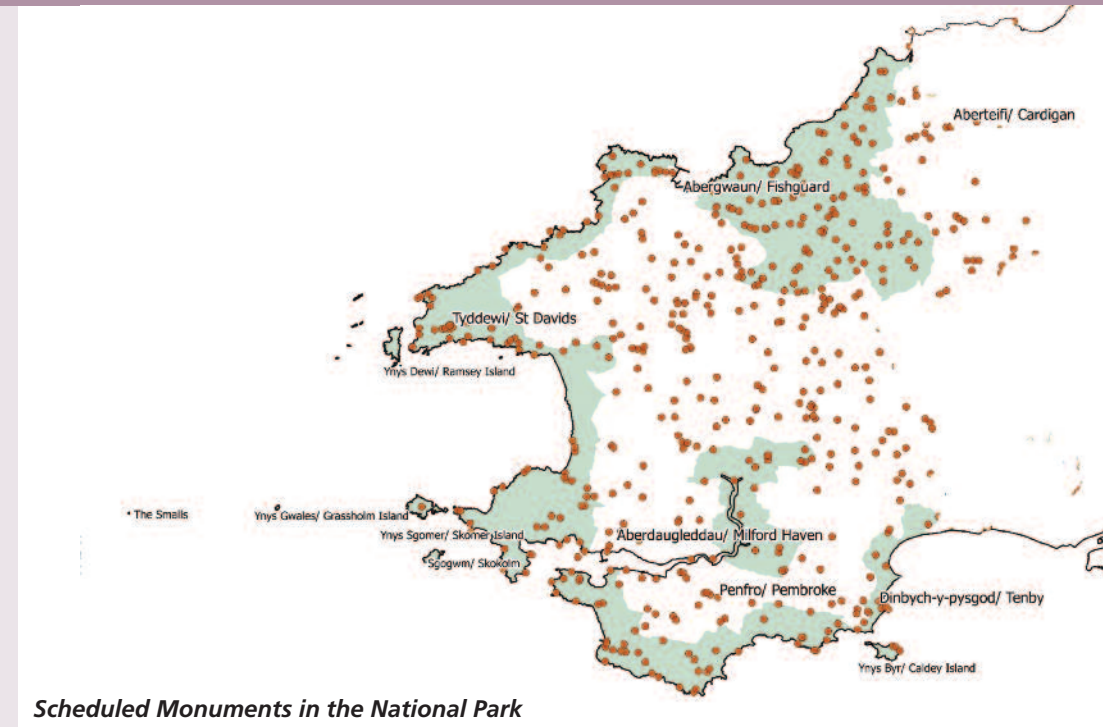
6.2.1.1 The Ancient Monuments and Archaeological Areas Act 1979 (As Amended) is at the moment the primary legislation safeguarding archaeological features. Nationally-important sites and monuments are listed on a schedule by Cadw, the historic environment service of Welsh Government on behalf of Welsh Ministers, and the schedule is used to manage operations on and around the sites.

6.2.1.2 Scheduled Monuments represent an important cross-section of the known archaeological resource. The Historic Environment Record for the National Park area contains 284 Scheduled Monuments. Over time, more categories of monuments will be considered, and more sites will be scheduled.

6.2.1.3 Until 2010, Cadw operated a monitoring system which aimed to assess sites on a five-yearly basis, and to establish whether their condition is

Scheduled Monument condition	Percentage (and number) National Park	Percentage (and number) All-Wales
Greatly improved	2.4% (6)	1.1% (39)
Improved	15.3% (38)	8% (284)
Stable	46.2% (115)	77.6% (2751)
Worsened (superficial)	3.6% (9)	3% (107)
Worsened (moderate)	26.5% (66)	8.1% (289)
Worsened (severe)	6% (15) (Some of these have subsequently been addressed.)	2.1% (75)
Destroyed	0% (0)	0.1% (2)
Total surveyed	249	3547

Condition of surveyed Scheduled Monuments in the National Park (2003-2010)



stable, improving or declining. A third round of Cadw monitoring of scheduled monuments took place between 2003 and 2010 (so the figures below may be up to 10 years old). During this round, 249 of the 284 Scheduled Monuments in the National Park were visited (88%) and their condition was found to be as follows.

6.2.1.4 There appears to be a relatively high percentage of Scheduled Monuments in moderately and severely worsened condition in the National Park, as compared to Wales as a whole. This is due in part to coastal erosion, which makes degradation and eventual loss of some Scheduled Monuments inevitable, and which may make interim management unsafe. Coastal erosion also leads to more frequent discovery of sites and monuments, which further inflates the figure. It may also be a function of how different monument recorders operate across Wales, including some variation in how condition (e.g. encroachment by vegetation) is assessed.

6 THE HISTORIC ENVIRONMENT

Cadw is working to fully standardise Scheduled Monument recording procedures and will be able to provide snapshot data at six-monthly intervals to allow for better monitoring and trend assessment.

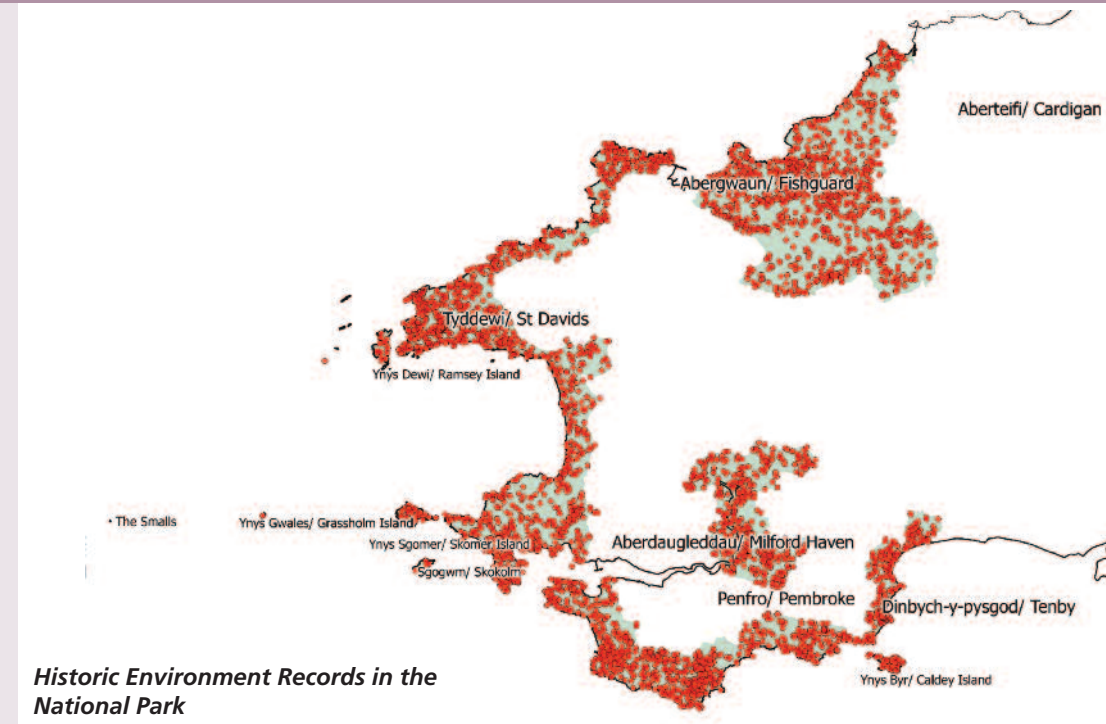
6.2.1.5 The Royal Commission on the Ancient and Historical Monuments of Wales undertakes active aerial reconnaissance of Pembrokeshire's Scheduled Monuments on a regular (3-5 yearly) basis for Cadw, to monitor their condition as well as building an image archive for the National Monuments Record of Wales. These images of scheduled monuments are available to consult from the National Monuments Record of Wales and online.

6.2.1.6 While Scheduled Monuments are on the whole in reasonable condition, scheduling only provides legal protection for the defined monument itself, so monuments' settings and immediate surroundings may nevertheless be at risk. Nevertheless, the numbers of Scheduled Monuments in 'improved' and 'greatly improved' condition is encouraging.

6.2.2 THE NUMBER AND CONDITION OF NON-SCHEDULED HISTORIC ASSETS

6.2.2.1 Information about known archaeological sites and features is contained within the Historic Environment Record. This includes Listed Buildings and Scheduled Monuments. The Historic Environment Record, which includes all of the area of the National Park, is held and maintained by Dyfed Archaeological Trust, and has been formally recognised and adopted by the NPA.

6.2.2.2 An additional source for historic environment information regarding known sites in the National Park is the National Monuments Record of Wales, part of the Royal Commission. This includes a database of records, some of which will not be held by the Historic Environment Record, together with a wider linked archive. A range of survey activities undertaken by the Royal Commission in the National Park, including regular aerial reconnaissance, limited remote sensing (Lidar) mapping and detailed ground survey continue to add to the National Monuments Record of Wales information archive. The Royal Commission also manages and regularly updates the Maritime Database for Wales which includes numerous offshore assets around the Pembrokeshire coast.

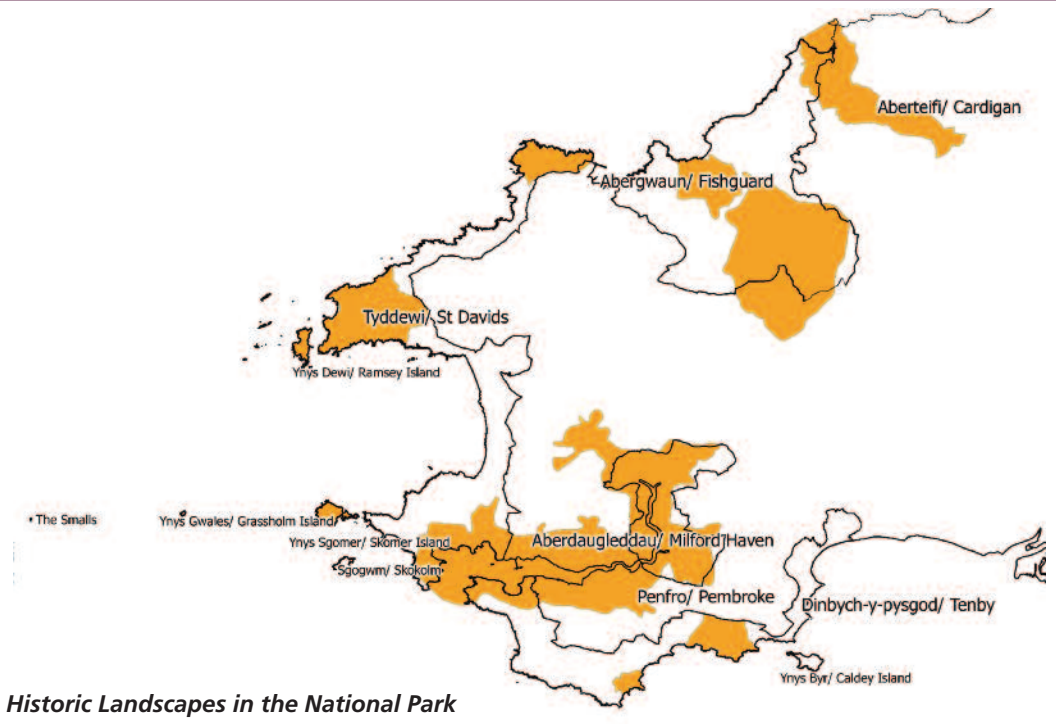


6.2.2.3 While Scheduled Monuments are protected by law, there are approximately 7,500 recorded sites in the National Park, and the vast majority of these are not. These records range from individual find sites to Iron Age forts and the numbers are increasing with the discovery of new sites. Their condition is in many cases unknown, and may be difficult to assess; some of the entries are only known from documentary sources or aerial photos, for example. This, coupled with the diversity of the features themselves, means that it is difficult to make a meaningful overall assessment of many of the records.

6.2.3 HISTORIC LANDSCAPE CHARACTER

6.2.3.1 Significant historic landscapes, the elements that give them their historic character, and the landscape's risk status, are identified in two Registers.

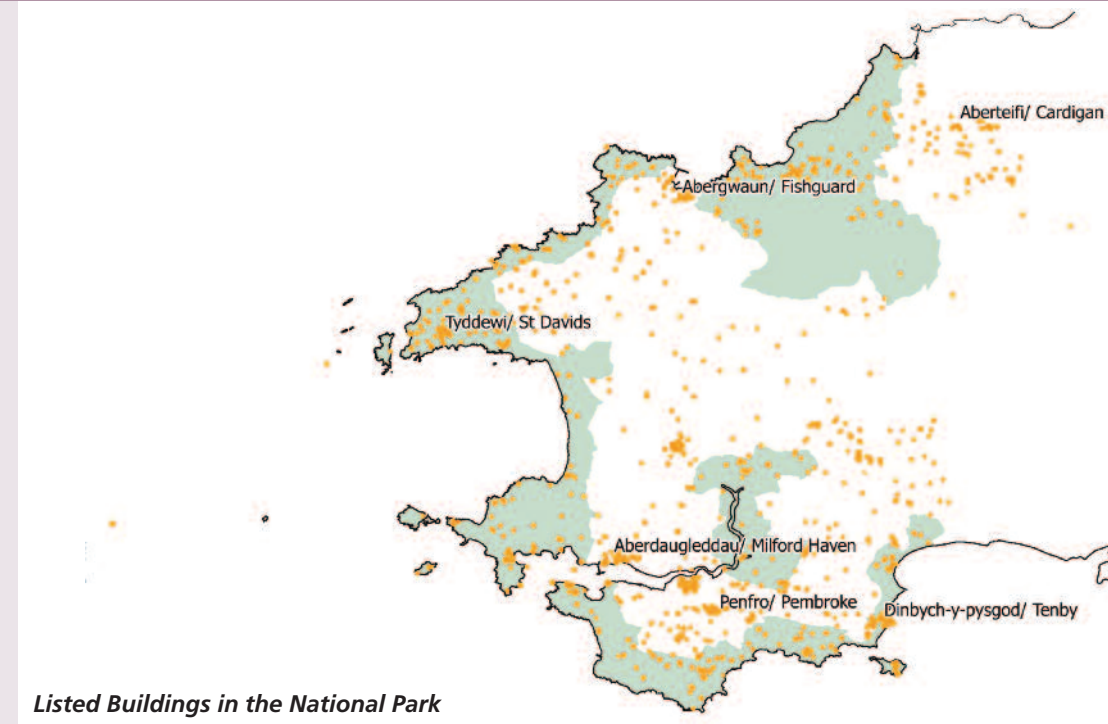
6 THE HISTORIC ENVIRONMENT



6.2.3.2 The Register of Landscapes of Outstanding Historic Interest in Wales is maintained by Cadw, the International Council on Monuments and Sites and Natural Resources Wales. It lists four areas in the National Park: Preseli; St David's Peninsula and Ramsey Island; Skomer Island, and the Milford Haven Waterway. The Register of Landscapes of Special Historic Interest in Wales lists five further National Park historic landscapes: Newport and Carningli; Pen Caer; Stackpole Warren; part of the Lower Teifi Valley, and Manorbier.

6.2.3.3 Registration does not afford any statutory protection, although it is taken into account in planning decisions and guidance. Cadw has however funded a programme of characterisation to improve understanding of the elements that make up registered landscapes²⁰, so that organisations can better protect them through existing statutory instruments. For example, the

²⁰ <http://www.cambria.org.uk/projects/HistoricLandscapeCharacterisation.htm>



pattern and nature of field boundaries and vernacular buildings are key features of the National Park, and these have been taken into account in the NPA's Landscape Character Assessment and Sustainable Design guide. The Welsh landscape information system LANDMAP also includes a layer of historic landscape data, used in decision-making.

6.2.4 THE NUMBER AND CONDITION OF LISTED BUILDINGS

6.2.4.1 Listed Buildings are buildings of special architectural and historic interest, group value, technical importance or association with important people/events. The number of Listed Buildings therefore reflects the significance and diversity of the historic built environment. Listed Buildings represent the best examples of the National Park's historic built resource and range from medieval churches and castles to milestones and telephone kiosks.

6 THE HISTORIC ENVIRONMENT

6.2.4.2 Cadw is responsible for designating Listed Buildings, and completed an all-Wales survey in 2005. Buildings can also be individually spot-listed. Listing covers not only the building itself, and its interior, but also its curtilage and buildings which pre-date 1948 within the curtilage. Listed Buildings are graded as I, II* and II according to their importance. There are 1,243 Listed Buildings in the National Park: 28 of Grade I; 74 of Grade II*, and 1140 of Grade II.

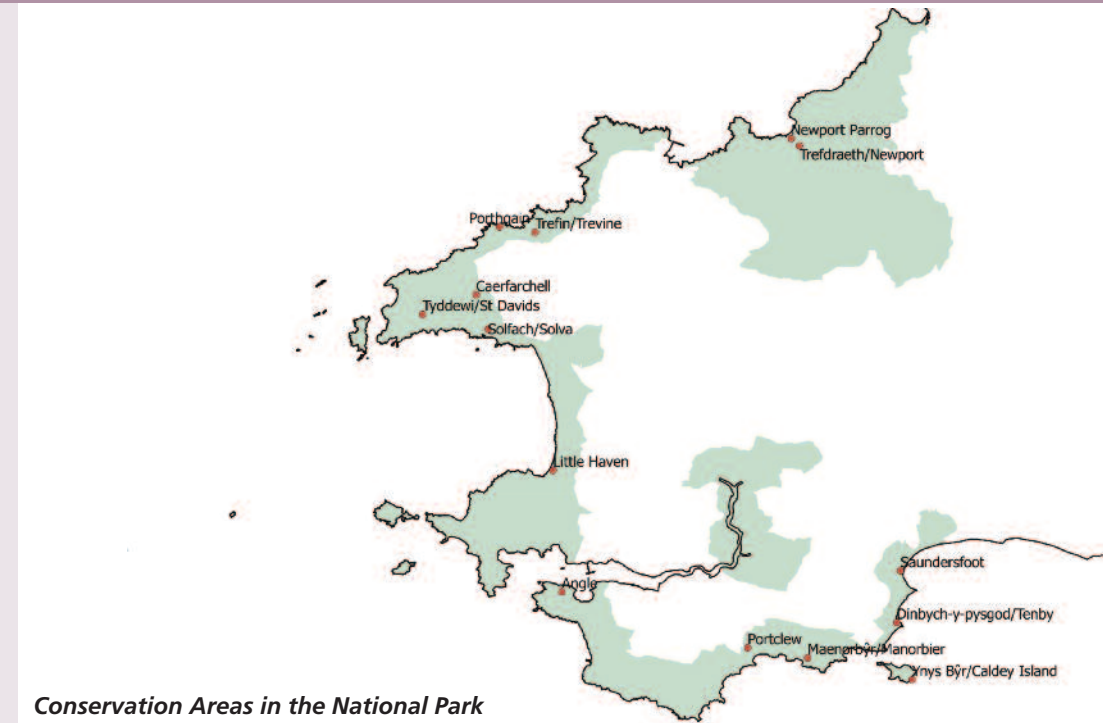
6.2.4.3 The NPA has a responsibility to ensure that historic buildings are conserved. Priorities are based on a Buildings At Risk Register, which was undertaken by the NPA and Cadw, to establish the condition of Listed Buildings within the National Park and prioritise those in need of urgent repairs.

6.2.4.4 The most recent Buildings At Risk survey was carried out in 2009. Of the 1,243 Listed Buildings in the National Park, 51 are on the Buildings at Risk Register (as at 2012). Of these, 6 are 'buildings at extreme risk' (the highest level of concern) or 'buildings at grave risk' and a further 43 are 'buildings at risk'.

6.2.5 THE NUMBER AND CONDITION OF CONSERVATION AREAS

6.2.5.1 Areas of special architectural or historic interest are designated as Conservation Areas by the NPA. There are 14 within the National Park: Angle, Caerfarchell, Caldey Island, Little Haven, Manorbier, Portclew, Porthgain, Saundersfoot, Solva, St Davids, Tenby, Trevine, Newport and Newport Parrog. A Conservation Area in Nevern is currently under consideration, and other areas may be considered in the Management Plan period.

6.2.5.2 After designating Conservation Areas, the NPA has a statutory duty to produce Conservation Area Statements, and Proposals Documents. These have been drawn up in partnership with the Conservation Area Working Groups (elected through the relevant City/Town/Community Councils), with full public consultation. The Character Statements assess the importance of the Conservation Areas, together with their physical condition and risk factors. The Proposals Documents (adopted as supplementary planning guidance in 2011) set out how the character of each Conservation Area can be preserved and enhanced.

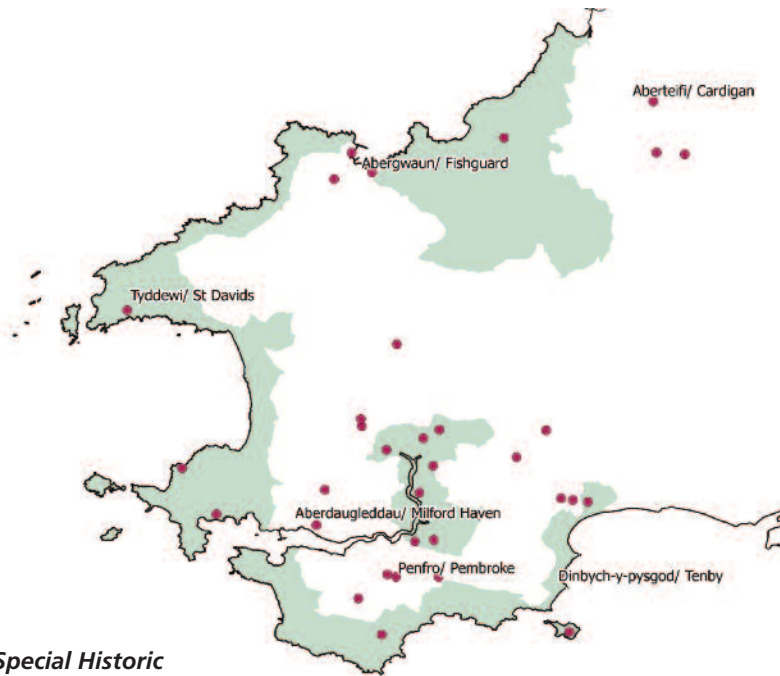


Conservation Areas in the National Park

6.2.6 THE NUMBER OF PARKS AND GARDENS OF SPECIAL HISTORIC INTEREST

6.2.6.1 Cadw, the International Council on Monuments and Sites and the former Countryside Council for Wales have compiled a Register of Parks and Gardens of Special Historic Interest in Wales. The Register identifies the importance of the listed parks and gardens, but currently does not give them statutory protection. Fifteen Historic Parks and Gardens lie wholly or partly within the National Park boundary. They are graded on a criteria basis and consist of 1 Grade I, 2 Grade II* and 12 Grade II sites. There is currently no condition or risk survey for Historic Parks and Gardens.

6 THE HISTORIC ENVIRONMENT



Parks and Gardens of Special Historic Interest in the National Park

6.2.7 LOCAL DISTINCTIVENESS IN THE BUILT ENVIRONMENT

6.2.7.1 The designated built environment accounts for less than 2% of the total historic built heritage of the National Park. However, non-designated buildings and boundaries contribute individually and cumulatively to the local distinctiveness of the built environment. There is currently no established way of assessing the state of features of local distinctiveness in the built environment but there have been examples where local built character has been lost through neglect and misrepair. The Local Development Plan for the National Park (to 2021) contains a policy on protecting buildings of local importance (Policy 14). This criteria-based policy offers owners scope to develop buildings of local importance while ensuring that important features of them are conserved.

6.3 POLICIES

6.3.1 STATUTORY PROTECTION

6.3.1.1 The main statutory protection for the archaeological resource is currently the 1979 Ancient Monuments and Archaeological Areas Act (As Amended), while the built heritage is largely protected under the 1990 Listed Buildings and Conservation Areas Act. Both Acts are supported by secondary legislation. The system selects those archaeological monuments deemed to be the best examples of their type, places them on a register (the Schedule) and controls what may or may not be done to them. However there are few or no incentives in the Act for proactive management to improve the condition of sites and there are no real powers for enforcement. Although the scheduled areas of some Scheduled Monuments are extensive, Part II of the legislation relating to Archaeological Areas has not been implemented in Wales.

6.3.1.2 The current system of Scheduled Monuments, Listed Buildings and Historic Parks and Gardens is under review. Welsh Government's legislative programme includes a commitment to introduce a Heritage (Wales) Bill in 2014-15. A package of measures and revised consent procedures is envisaged, some of which might require primary or subordinate legislation, and some of which can be delivered without regulation (through advice and guidance for example). Local authorities, including the NPA, are contributing to the development of the legislation. The NPA would like to see a situation where good management is better rewarded, and where enforcement is easier in cases of deliberate damage. A partnership approach to heritage crime is also indicated.

Policy HE1: Strengthen the protective framework for the historic environment

Example measures:

- *Support and contribute to review of legislation and policy in respect of the historic environment*
- *Work with partners to prevent and enforce against heritage crime*

6 THE HISTORIC ENVIRONMENT

6.3.2 PROACTIVE MANAGEMENT OF ARCHAEOLOGICAL SITES

6.3.2.1 Many archaeological sites lie on privately owned and managed land, and incompatible land management is one of the most significant influences on the archaeology of the National Park. Deep ploughing and land drainage for example can affect buried features, standing remains and landscape-scale features such as field systems. Many landowners actively conserve the features on their holdings, but information and incentives are often required.

6.3.2.2 Cadw has some Scheduled Monuments in guardianship, administers grant aid, carries out emergency work, and negotiates management agreements and capital payments whereby landowners receive payments to manage monuments according to agreed management prescriptions to improve their condition. Partnership between the NPA and Cadw allows the NPA to broker these management agreements, acting as the advisor and in some cases providing help with labour or materials. Cadw also contributes funding towards the work of the NPA's archaeologist post, which includes working on scheduled sites to improve their condition.

6.3.2.3 Cadw's management agreements and capital payments are highly effective in improving the condition of Scheduled Monuments, but are less commonly available for non-Scheduled sites. The Welsh agri-environment scheme Glastir includes payments for positive management of archaeological features (including non-Scheduled monuments), which helps to integrate conservation of the natural environment and the historic environment at the landscape scale.

6.3.2.4 While there is no statutory requirement to consult the NPA on heritage matters under Glastir, Dyfed Archaeological Trust is statutorily consulted, and the NPA has a service level agreement with the Trust. Accordingly, there is scope for the NPA to contribute to the scheme through this route. The NPA may also be able to help raise farmers' and landowners' awareness of heritage management responsibilities, and help deliver archaeological prescriptions made under Glastir in the National Park. However, Glastir has a finite amount of money available to accomplish a large number of works, the archaeological resource is not the main target of the scheme, and proactive management of historic/archaeological features



6 THE HISTORIC ENVIRONMENT



within Glastir is likely to be restricted to the higher-level scheme. There thus remains a need for more pro-active management of archaeological sites and features.

6.3.2.5 Management agreements offered by the NPA are made under the provisions of the 1981 Wildlife and Countryside Act (As Amended) and operate primarily on sites of nature conservation interest, although they may also contain appropriate prescriptions for heritage conservation. The NPA would like to trial management agreements geared more specifically to conserving the archaeological resource. These would be aimed at non-Scheduled sites (where Cadw will not have an involvement) and, potentially, at areas around Scheduled Monuments where these areas, and/or the management prescriptions for them, are not included in any Cadw or Glastir agreement. Such a scheme would involve a supplementary survey of sites, features and their settings, and prioritisation of them according to their significance and risk.

6.3.2.6 The detailed landscape characterisation work carried out by the Welsh Archaeological Trusts, in support of the Register of Historic Landscapes, is an important resource for local authorities. Planning Policy Wales makes specific reference to historic landscapes, and makes it clear that such landscapes are a material consideration in the planning process.

Policy HE2: Encourage proactive management of archaeological sites

Example measures:

- *Provide information and incentives to encourage positive management of and limit damage to archaeological remains*
- *Offer practical assistance to landowners to manage archaeological remains on their land*
- *Integrate management of natural and cultural assets at the landscape scale*
- *Continue to respect historic landscapes and features as a material consideration in the development planning process (using Landscape Character Assessments for example)*

6 THE HISTORIC ENVIRONMENT

6.3.3 AWARENESS OF THE ARCHAEOLOGICAL RESOURCE

6.3.3.1 Many cases of damage to archaeological features are due to neglect, lack of understanding or as collateral damage from recreation. Raising awareness can help reduce damage while increasing people's enjoyment of their surroundings. A range of historic sites, initiatives and events encourages people to connect with the historic environment around them and to get involved in survey and excavation. Arfordir, for example, funded by Cadw, operates along most the Welsh coast, and aims to engage people with their heritage and to provide volunteers with the skills and confidence to monitor local change.

6.3.3.2 The NPA continues to explore the interactions between physical and cultural heritage, and between the past and the present, with Oriel y Parc, Castell Henllys Iron Age Fort, and Carew Castle and Tidal Mill in particular providing unique windows on landscape and culture to large and diverse audiences. These, alongside sites managed by partner organisations, continue to offer outstanding opportunities for increasing people's enjoyment of the archaeological resource within the context of the nationally-important historic landscape of Pembrokeshire.

Policy HE3: Raise awareness of the historic environment

Example measures:

- *Provide and support awareness initiatives and opportunities for active public involvement in conservation of the historic environment and in research*
- *Manage owned and leased cultural heritage sites and assets to a high standard, including provision of access and interpretation*
- *Manage recreational and collecting activities which may damage the archaeological resource*

6.3.4 DEVELOPMENT

6.3.4.1 Legislation and national planning guidance seek to protect important archaeological sites and landscape of historic interest. The Local Development Plan (to 2021) for the National Park similarly includes policies to protect the historic environment, and development that adversely affects the Park's historic environment will not normally be permitted. Mitigation measures include the alteration of designs in order to preserve archaeological features in situ, and may also include archaeological assessments, trial trenching or excavation.



6 THE HISTORIC ENVIRONMENT



6.3.4.2 It is worth commenting specifically on the remains of twentieth century conflicts as these are important features of the historic environment. The National Park is very rich and diverse in this subject, collectively holding one of the best, if not the best, assemblages of such sites in Wales. However, many former military sites and structures in the National Park have been cleared away as eyesores, and the impact of development on former military sites should be managed more sensitively; these are not just brownfield sites awaiting development.

Policy HE4: Manage the impact of development on the archaeological resource

Example measure:

- *Maintain a proactive approach to protection of the archaeological resource where development is concerned, and continue to respect archaeology as a material consideration in the development planning process*

6.3.5 CLIMATE CHANGE AND NATURAL PROCESSES

6.3.5.1 Natural processes can result in the loss or damage of historic assets. At-risk sites and objects should be documented, but this can be problematic; in the case of coastal erosion, discovery of the assets often occurs shortly before their loss.

6.3.5.2 Climate change is likely to accelerate some natural processes (e.g. coastal erosion) and will bring many additional challenges to conservation of the historic environment. The Wales Historic Environment Group (a forum of organisations with an interest in the historic environment) has identified key threats to the historic environment from climate change and the predicted rise in relative sea level of 1 metre. These include inundation, storm and erosion damage (to historic assets on the foreshore and coast in particular), damage by inundation or by drying out of assets in, for example, floodplains or upland peat soils, structural wear, heat stress and movement affecting historic buildings, and changes in vegetation and agricultural practices affecting historic landscapes, parks and gardens.

6 THE HISTORIC ENVIRONMENT

Policy HE5: Mitigate the impact of climate change and natural processes on the historic environment

Example measure:

- *Research and document at-risk archaeological assets*

6.3.6 PROACTIVE MANAGEMENT OF HISTORIC BUILDINGS

6.3.6.1 Listed building controls exist to manage rather than prevent change. Indeed, many buildings have evolved over the years and these additions and alterations usually add to the historic character of these buildings. Many listed buildings can sustain a degree of sensitive alteration or extension, to accommodate continuing or new uses.

6.3.6.2 Owners of listed buildings have a legal duty to keep them in reasonable repair and to ensure that no alterations are made which affect the character of the buildings. Repairs or like-for-like replacements do not require listed building consent, but listed building consent is required for alterations/extensions which would affect the character of the building.

6.3.6.3 Before any application is made, the NPA is keen to visit the building and provide advice, which generally avoids delays and costs. Historic building advice is vital to prevent misrepair and provision of advice is a core NPA function. To make staff resources more efficient, general technical advice to owners of historic buildings is provided on the NPA's website, with more specific advice tailored to owners of buildings in Conservation Areas and Listed Buildings. Listed Building applications are made to the National Park Authority, which has delegated powers to process the majority of applications relating to Grade II Listed Buildings. The remainder, along with applications relating to Grade I and Grade II* Listed Buildings are processed via consultation with Cadw. In the vast majority of cases, applications are approved.

6.3.6.4 While historic buildings are often living, working places, caring for them can be costly, requiring specialist materials and skills. This can be a burden on owners and the NPA can help, through Conservation Area Grants, administered by the NPA and jointly funded with Cadw, which operate in all 14 Conservation Areas. Longer term management agreements may be necessary in helping conserve larger and more complex sites.



6 THE HISTORIC ENVIRONMENT



Policy HE6: Assist with the management of historic buildings and their settings

Example measures:

- *Provide advice to owners and occupiers of historic buildings*
- *Offer grants and management agreements to owners and occupiers of historic buildings*

6.3.7 PROTECTION THROUGH THE PLANNING SYSTEM

6.3.7.1 Planning policy must ensure that development reflects the National Park's special landscape and townscape qualities (including local distinctiveness). Technical Advice Note 12 (Design) also provides broad support for heritage conservation. The NPA is the planning authority for the National Park and is responsible for integrating building conservation policy with wider planning policy for the area.

6.3.7.2 Conservation Area Proposals Documents contain strategic policies for preservation and enhancement and constitute supplementary planning guidance to the Local Development Plan for the National Park. The NPA has additional powers which can be used to remove permitted development rights in a Conservation Area. All 14 Conservation Areas are being surveyed to ascertain whether Article 4 Directions are required. This is expected to be completed in 2014.

6.3.7.3 The NPA also has powers under the 1990 Listed Buildings and Conservation Areas Act to enforce repairs, remove dereliction and restrict permitted development rights, and to make grants towards the cost of repairing historic buildings (whether or not these are listed). Resources must be in place to carry out enforcement where awareness/grant initiatives fail. The NPA can also issue Building Preservation Notices (although this is a short-term measure pending listing or consideration of it).

Policy HE7: Manage the impact of development on the historic built environment

Example measures:

- *Maintain up to date supplementary planning guidance in respect of Conservation Areas*
- *Protect Listed Buildings, Conservation Areas and the wider historic environment through statutory powers and through proactive management and advice*

6 THE HISTORIC ENVIRONMENT

- *Protect historically/architecturally important buildings or features through Building Preservation Notices (NPA) or spot-listing (Cadw)*
- *Raise design standards through planning policy, guidance and design briefs*

6.3.8 LOCAL DISTINCTIVENESS

6.3.8.1 The National Park's historic environment is more than the sum of listed and scheduled assets; it includes their context, from settlement patterns to entire landscapes, and the 'ordinary', as well as the historically or architecturally noteworthy. The cumulative effect of loss of small detail along with misrepair can have a marked impact on buildings, eroding character and distinctiveness. Cadw's 2011 report Conservation Principles recognises that the entire rural and urban landscape of Wales is an historic asset. Cadw's programme of urban characterisation has helped to identify the general elements of historic character in towns, but its principles would also apply in rural areas, and could fill the need for a consistent method of assessing the state of local distinctiveness.

6.3.8.2 The statutory framework can protect some elements of the historic environment, but local authorities have scope to address other aspects, for example through establishing 'local lists' of historic buildings and through development policy. Local lists do not confer statutory protection, but can be a material consideration in the planning process. Agencies, businesses and individuals can also work together to improve the availability of local, traditional building materials.

Policy HE8: Conserve and enhance local distinctiveness

Example measures:

- *Develop methods of assessing the local distinctiveness of the built environment*
- *Establish local lists of historic buildings to enhance protection of those buildings which are not statutorily protected*
- *Work with producers and end-users to improve the availability of sustainable local building materials*
- *Support local training and advice in regard to traditional building techniques, expanding the range of materials and techniques used, and providing vocational training opportunities*



7 EARTH HERITAGE

Earth heritage (geodiversity) includes all geological and geomorphological features and processes. It covers bedrock, overlying deposits such as soils, and the minerals and fossils within them. It also covers natural landforms and any natural processes that are currently modifying them.

The National Park has a greater variety of geology than any area of the same size in the British Isles.

7.1 AIMS AND OUTCOMES

Aim	Assessment
Protect and promote the National Park's geological and geomorphological resource	<p>Outcome: Geology and geomorphology Nationally and internationally geological and landform features are currently safeguarded and generally in good condition. However, climate change could have significant implications for some features of our coastal scenery (e.g. beaches).</p>
Conserve and enhance soil resources and quality	<p>Outcome: Soil resources and quality The state of the National Park's soil resource is not accurately known, but the NPA believes it to be generally under pressure from land management practices, and at risk from the effects of climate change. In some cases management change is likely to be urgently required to prevent soil loss and degradation and therefore to protect future agricultural revenue, biodiversity and functional roles such as those which soils play in the carbon cycle.</p>

7 EARTH HERITAGE

7.2 EVIDENCE

7.2.1 THE NUMBER, CONDITION AND ACCESSIBILITY OF GEOLOGICAL CONSERVATION REVIEW SITES

7.2.1.1 Geological Conservation Review sites are sites of national or international importance, designated under the legislation for Sites of Special Scientific Interest for the feature or features of geological significance within them.

7.2.1.2 There are 52 Geological Conservation Review sites in the National Park, covering an estimated 40% of the Park's coastline (excluding the Milford Haven Waterway, which includes one site) and a number of inland areas. Many of these Geological Conservation Review sites are of international significance.

7.2.1.3 The table below summarises the condition and trend of Geological Conservation Review site features²¹. Condition assessment for geological sites includes consideration of their accessibility, visibility and usability for research and education.

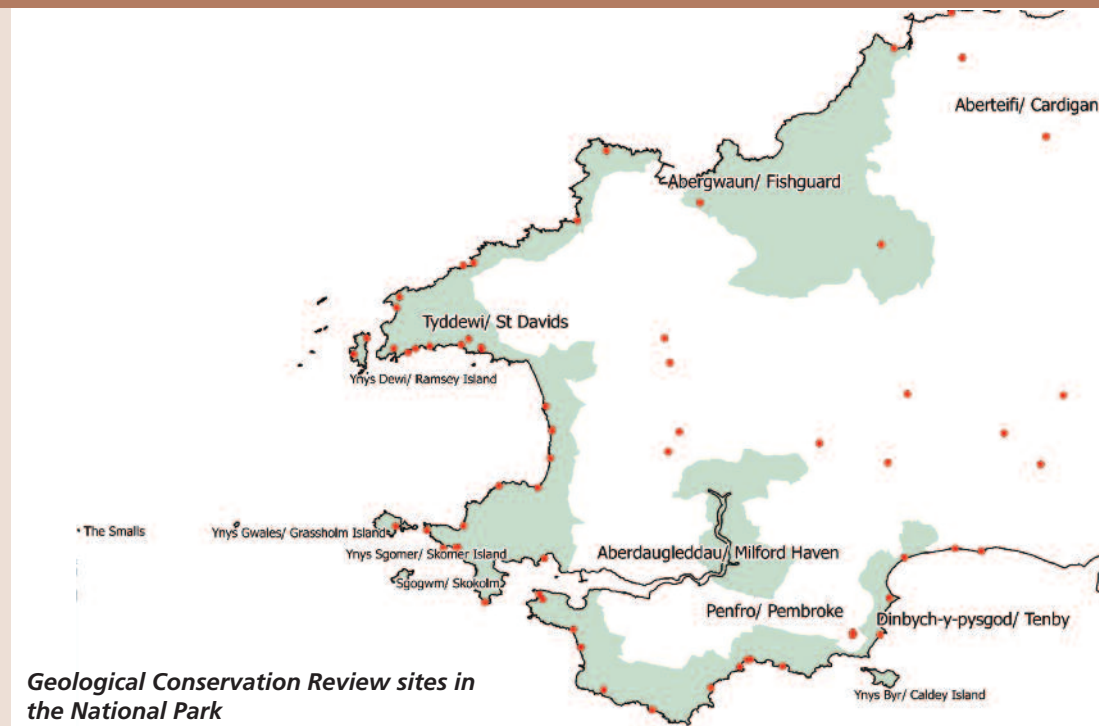
Condition of Geological Conservation Review sites in the National Park

Condition and trend	Number of features	Percentage of features
Favourable no change*	44	84.6%
Favourable declining	5	9.6%
Unfavourable	3	5.8%

* This category includes sites classed as 'Favourable no significant change', 'Favourable unknown' and 'Favourable improved'. Many of these Geological Conservation Review sites cover long stretches of coastline, so in some cases there are small pockets where the feature condition is not favourable.

7.2.1.4 Although the table above suggests good management, most of the work in maintaining geological exposure is done by natural processes (e.g. marine erosion). Some erosion is generally necessary to maintain coastal rock exposures, and erosion is a process of interest in itself. However

²¹ A 'feature' refers here to an earth heritage object or natural process.



Geological Conservation Review sites in the National Park

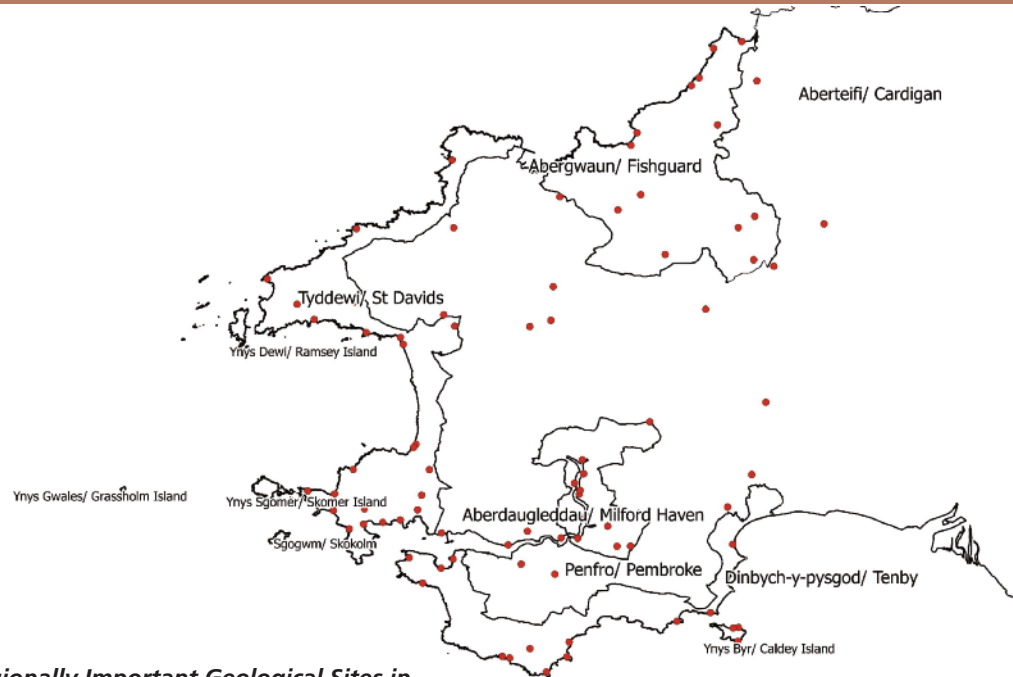
geological features should be recorded before they are lost and natural processes documented as they happen. This record would also help inform civil engineering schemes, such as coastal protection projects.

7.2.1.5 In many inland areas there have been losses of key geological exposures since the last detailed mapping phase in the early 1900s due to, for example, development, dumping of waste materials and encroachment by vegetation.

7.2.2 THE NUMBER AND CONDITION OF REGIONALLY IMPORTANT GEOLOGICAL SITES

7.2.2.1 In 2009 Welsh Government commissioned a study to identify Regionally Important Geodiversity Sites. This is an advisory (i.e. non-statutory) designation intended to complement Geological Conservation Review sites. The study identified around 80 Regionally Important

7 EARTH HERITAGE



Regionally Important Geological Sites in the National Park

Geodiversity Sites in Pembrokeshire, of which 65 lie in the National Park. Most of these are in coastal locations and are in favourable condition. Since all Geological Conservation Review sites are of at least UK-wide significance to geological science, and since a minimalist approach was taken to designating them, it follows that many of the Regionally Important Geodiversity Sites are also of major importance within the context of Welsh geology and geomorphology.

7.2.2.2 The Regionally Important Geodiversity Sites evaluation was a time-limited exercise subject to the available funding. This means that there are likely to be a significant number of potential Regionally Important Geodiversity Sites that have not yet been identified, and which may be at risk. The same applies to potential Geological Conservation Review sites.

7.2.3 PROGRESS ON THE STRATEGIC OUTCOME FOR SOILS

7.2.3.1 Soils have functional and intrinsic value. As the basis of ecology and agriculture, they underpin the economy and people's health and wellbeing. Soils are ecosystems in their own right and support all other terrestrial ecosystems through their roles in the carbon, water and atmospheric cycles. Soils are also of interest in and of themselves, and can relate the prehistory and history of the National Park. Because they take a very long time to form, soils are effectively a non-renewable resource²².

7.2.3.2 Welsh Government's Environment Strategy 2006 and Environment Strategy Action Plan (2008-11) contain a strategic outcome for soils. This relates to the ability of soil to support biodiversity, store carbon and provide other important ecosystem services. The 2011 National Ecosystem Assessment describes Wales as a net carbon sink, with large amounts of carbon locked up in soils (nine times the amount held in all Wales' vegetation) and stored in particular in upland and grassland soils and peat.

7.2.3.3 Welsh Government is currently using Countryside Survey data on the carbon content and acidity in topsoil to assess progress on the strategic outcome for soils. Measurements are taken at ten-year intervals (with a Welsh baseline published in 2009); because of this, trends in the key factors affecting soils - such as land management and climate change (below) - provide a more timely, if less direct, gauge of progress.

7.3 POLICIES

7.3.1 DEVELOPMENT AND GEODIVERSITY

7.3.1.1 Geological Conservation Review sites are designated under the legislation for Sites of Special Scientific Interest, which affords them protection from operations which might damage them. Development can damage or destroy geological sites/features and damage or significantly alter soils.

²² The National Soil resources Institute provides an interactive viewer of UK soil types at www.landis.org.uk/soilscapes/

7 EARTH HERITAGE

Policy G1: Manage the impacts of development on geodiversity

Example measures:

- Presume against new mineral workings and extensions unless exceptional circumstances are demonstrated; promote recycling of aggregate materials, minerals efficiency and use of alternatives (in accordance with Minerals Planning Policy Wales)
- Maintain Supplementary Planning Guidance in respect of Regionally Important Geodiversity Sites
- Protect soils and agricultural land in accordance with Planning Policy Wales

7.3.2 SOIL CONSERVATION AND LAND MANAGEMENT

7.3.2.1 A number of land management practices are potentially damaging to soils:

- Drainage and ploughing can lead to increased runoff and erosion with downstream pollution effects, and damage to the buffer areas around watercourses
- Use of machinery can lead to compaction and 'capping' (creation of a fine impermeable layer of soil), which can lead to more runoff and flooding
- Pesticide and herbicide application and the use of antibiotics in stock can lead to changes in vegetation coverage and soil biota
- Other impacts may arise from artificial fertiliser use, ground disturbance from livestock, overgrazing (especially in upland areas), overgrazing and harvesting/management of some crops

7.3.2.2 Sympathetic land management is therefore essential to protecting the ecological condition and the long-term agricultural productivity of soil. Permanent ground cover, allowed to develop into semi-natural vegetation, could benefit soil conservation and biodiversity.

7.3.2.3 Climate change may result in increased coastal erosion (through increased storminess and extreme weather) and soil erosion (e.g. through higher rainfall and run-off). Temperature changes, predicted by climate change scenarios, also affect soils' ability to store carbon. Responses to climate change are described in the relevant section of the Management Plan and are not repeated here. However, climate change highlights the



7 EARTH HERITAGE



need to reduce the exposure of geodiversity and soils to other sources of risk, in particular those arising from land management which may be exacerbated by climate change.

Policy G2: Promote soil conservation in land management

Example measure:

- *Promote low intensity land management and good land management practice (for example in relation to soil erosion)*

Policy B1 and Policy B2 also apply.

7.3.3 AWARENESS OF GEODIVERSITY

7.3.3.1 Safeguarding the geological resource depends in part on people's awareness and understanding of it and how their activities may affect it. Some of the spectacular landforms of the National Park were formed by processes that are no longer active, and these features require particular care in conservation.

Policy G3: Raise awareness of the geological resource

Example measures:

- *Provide appropriate public access to earth science sites, and interpretation of them*
- *Work in partnership to integrate enjoyment and promotion of the National Park's geological heritage with that of its other natural and cultural assets*

8 PROTECTING AIR AND WATER

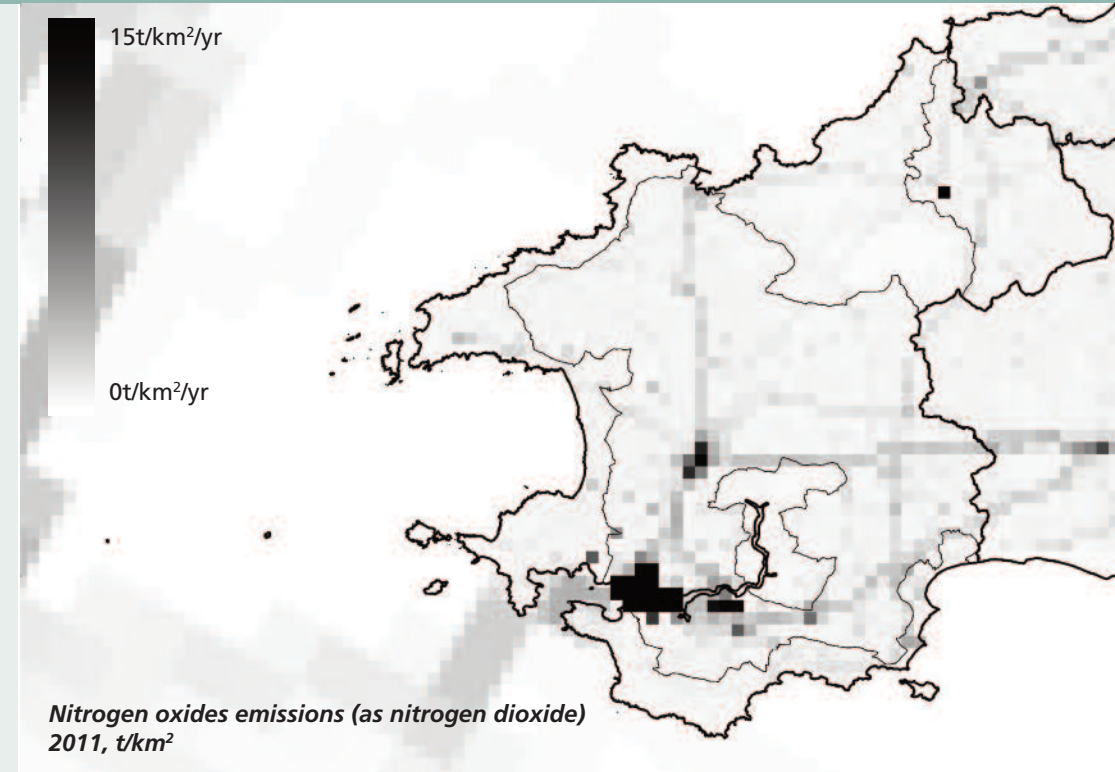
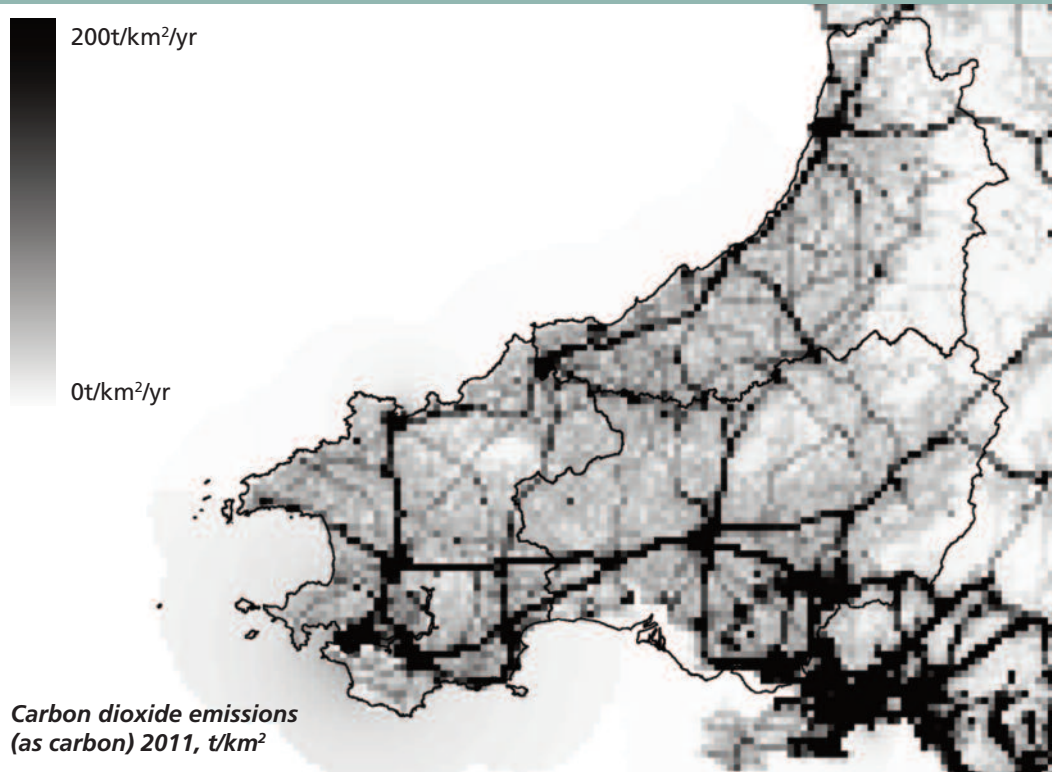
Air quality directly affects people's health and wellbeing and that of other species and habitats. Air quality also affects water quality (through acidification for example) and the condition of the built environment.

The quality and quantity of water in catchments is a major factor affecting the state of biodiversity, including sites of European importance, while clean bathing waters are a key attraction for residents of and visitors to the National Park.

8.1 AIMS AND OUTCOMES

Aims	Assessment
<p>Safeguard National Park air quality.</p>	<p>Outcome: Air quality Air quality objectives are being achieved in the National Park area and no Air Quality Management Areas (i.e. special measures) are required within the National Park. However it is not generally possible to comment on ambient air quality away from point (industrial) sources or roadside sources, and sensitive receptors, such as lichens, may be at risk.</p> <p>Across Pembrokeshire as a whole there is a general upward trend of nitrogen dioxide concentrations associated with vehicle emissions. Ammonia from agricultural sources can also be an issue.</p> <p>Air quality baseline critical loads are currently in exceedance at some of the most sensitive nature conservation sites. This will have a negative impact on particularly sensitive receptors such as lichens.</p>
<p>Conserve and enhance water quality and water resources.</p>	<p>Outcome: Freshwater resources Seven of the nine resource management units in Pembrokeshire have water available at high and/or low flows.</p> <p>The Eastern Cleddau surface water unit and Milton groundwater unit are over-licensed, meaning that if existing abstraction licences were used to their full allocation they could cause unacceptable environmental damage at periods of low flow. The Pembrokeshire Water Resource Zone is forecast to fall into a supply-demand deficit by 2015. A Review of Consents process to determine a suitable level of abstraction for the Eastern Cleddau is being undertaken (2014).</p> <p>The drier summers anticipated under climate change scenarios are expected to put additional pressure on water resources, although demand is projected to remain constant.</p> <p>Outcome: Freshwater quality About 20% of surface waters in the south-west Wales catchment are classified as of good overall (i.e. ecological and chemical) status.</p> <p>Outcome: Bathing water quality Most European Commission-designated bathing water beaches meet the higher guideline standard, although wet weather in recent years has adversely impacted on bathing water quality by increasing run-off and pollution from land.</p> <p>Water quality on non-designated bathing beaches and recreational water is generally good, with some exceptions.</p>

8 PROTECTING AIR AND WATER

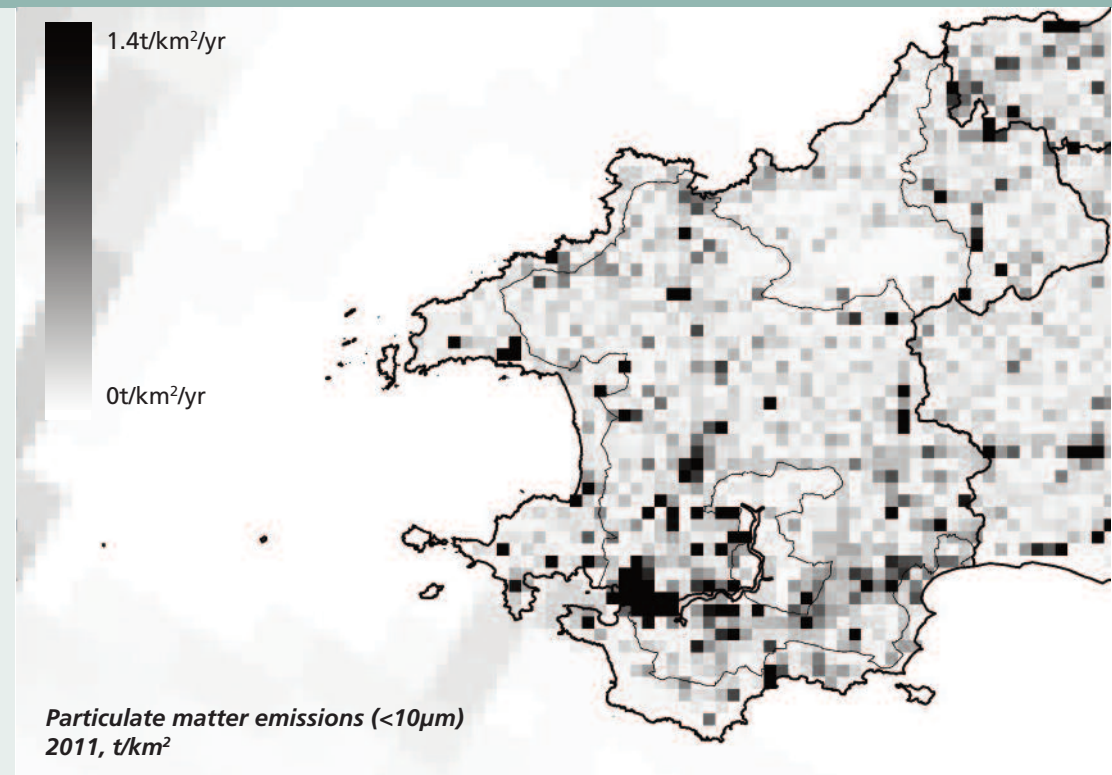
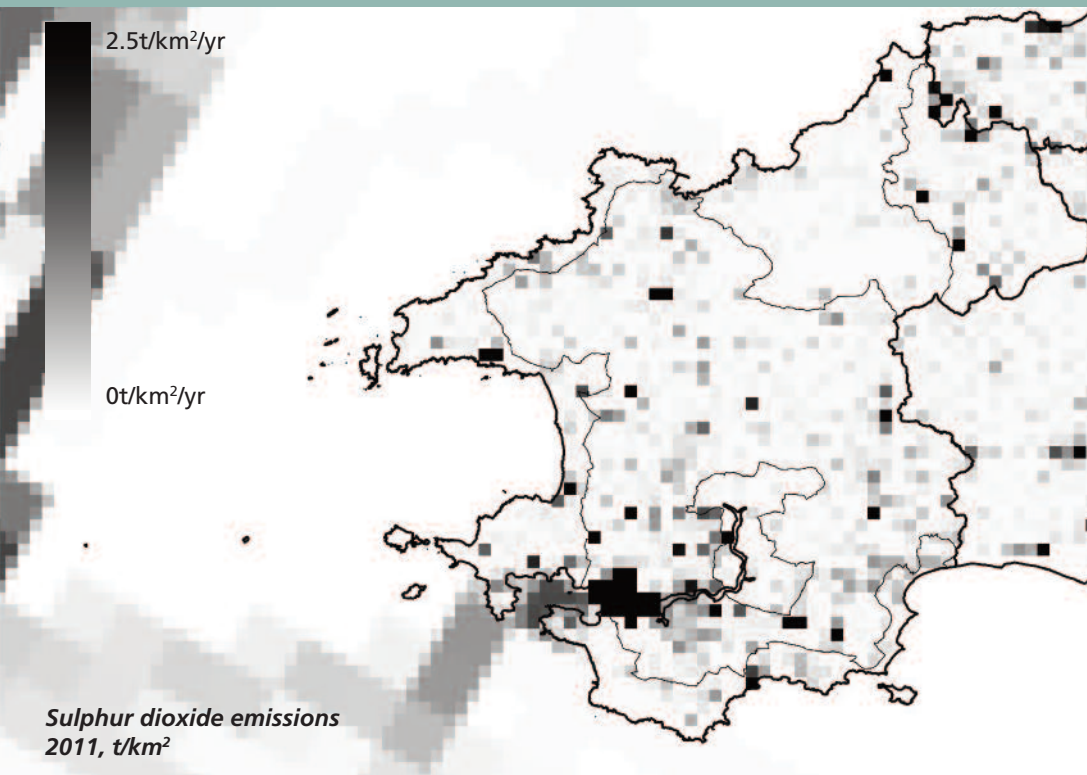


8.2 EVIDENCE

8.2.1 PERFORMANCE AGAINST LOCAL AIR QUALITY OBJECTIVES

8.2.1.1 The air quality objectives applicable to local air quality management in Wales are set out in the Air Quality (Wales) Regulations 2000 (as amended), and local authorities are statutorily required to produce air quality assessments on a three-yearly basis, with annual progress reports. The National Park area is included within Pembrokeshire County Council's Air Quality Updating and Screening Assessments.

8 PROTECTING AIR AND WATER



Sources: National Atmospheric Emissions Inventory

8.2.2 ECOLOGICAL STATUS OF THE WESTERN WALES RIVER BASIN DISTRICT

8.2.2.1 The former Environment Agency Wales (now part of Natural Resources Wales) prepares river basin management plans for Wales in order to deliver Water Framework Directive objectives. The National Park area is included within the 2009 Western Wales River Basin District Management Plan.

8.2.2.2 The 2012 Water Framework Directive classification update²³ identified about 20% of Pembrokeshire surface waters as in Good overall status, with 78.5% Moderate and 1.5% Poor. The target is for 50% of waters to achieve Good ecological status by 2015 and all waters to achieve Good ecological status by 2027. In 2012 an investigation programme into the reasons for failure of Directive objectives within Welsh catchments was completed; this will inform the second cycle of river basin management plans.

²³ <http://www.data.gov.uk/dataset/wfd-surface-water-classification-status-and-objectives/resource/506f0661-d067-4b82-b2d8-e3b0877d1ddd>

8 PROTECTING AIR AND WATER



8.2.3 WATERCOURSE FLOW RATES AND GROUNDWATER LEVELS

8.2.3.1 Water abstraction status and policy for local water resources is set out in the former Environment Agency Wales' Cleddau and Pembrokeshire Coast Catchment Abstraction Management Strategy 2006 (updated 2009). Water for domestic and industrial supply across Pembrokeshire accounts for the biggest consumptive (i.e. non-returned) use; and most of this is sourced from the Cleddau rivers. Water availability in each of the management units is given below.

Table: Water availability - Cleddau and Pembrokeshire Coast catchment

Water Resource Management Unit	Status²⁴
Cartlett Brook, Westfield Pill, Gann Flats, Creswell River, Ritec	Water available
Nevern, Gwaun	Water available
Western Cleddau	No water available
Alun, Solva, Castlemartin	No water available
Eastern Cleddau	Over licensed

Groundwater Resource Management Unit	Status
Pendine	Water available
Park Springs	No water available
Bosherston groundwater	No water available
Milton	Over licensed

²⁴ The following definitions are used in the Cleddau and Pembrokeshire Coast Catchment Abstraction Management Strategy 2006:

Water available - Water is likely to be available at all flows including low flows. Restrictions may apply. No water available - No water is available for further licensing at low flows. Water may be available at higher flows with appropriate restrictions. Over licensed - Current actual abstraction is such that no water is available at low flows. If existing licences were used to their full allocation they could cause unacceptable environmental damage at low flows. Water may be available at high flows, with appropriate restrictions. Over abstracted - Existing abstraction is causing unacceptable damage to the environment at low flows. Water may still be available at high flows, with appropriate restrictions.

8 PROTECTING AIR AND WATER

8.2.3.2 In Wales 3% of rainfall is abstracted for public water supply. Under the 1991 Water Industry Act, Dŵr Cymru Welsh Water has to ensure that it is able to meet the reasonable needs of its customers now and into the future. Periodically it produces a Water Resources Management Plan which demonstrates how this will be achieved for the next 25 years. A plan was published for consultation in 2009; this was overtaken by the need to consider the impact of the EC Habitats Directive, and the initial draft has therefore been revised and updated.

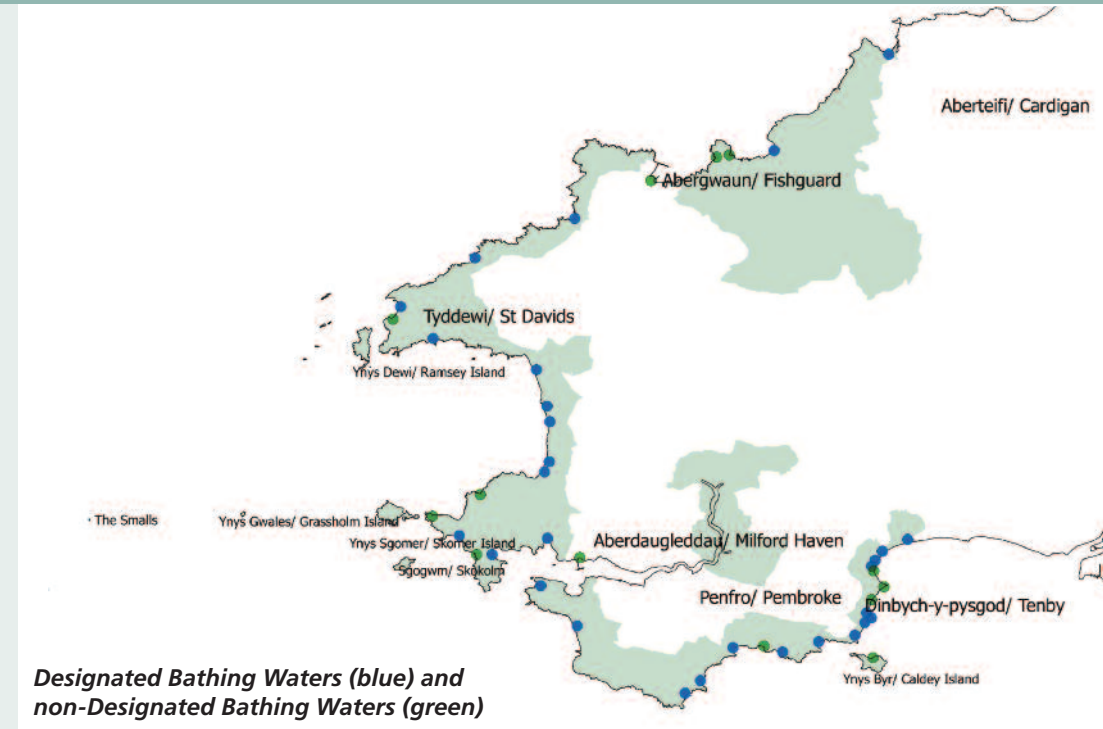
8.2.3.3. Dŵr Cymru Welsh Water's area is divided into 24 water resource zones, all of which currently have a surplus of supply over demand even in dry years. Demand for water and the amount of water abstracted by Dŵr Cymru Welsh Water has fallen by a quarter over the last 15 years (as a result of halving of leakage and falling industrial demand for water) and based on government and local authority projections of population and property it is forecast that there will be more or less flat demand for water over the next 25 years.

8.2.3.4 The Pembrokeshire Water Resource Zone covers the majority of Pembrokeshire and parts of Carmarthenshire and Ceredigion, while the area to the north and east of Newport is within the Mid and South Ceredigion Water Resource Zone. The water supply in the Pembrokeshire Water Resource Zone is forecast to fall into a supply-demand deficit by 2015, largely as a result of abstraction licence reductions resulting from the Habitats Directive.

8.2.3.5 Dŵr Cymru Welsh Water has used the UK climate change projections 2009 to forecast the likely impact of climate change on supply and demand of water. There is considerable uncertainty about the potential effects which increases with the length of forecast, however over Wales as a whole it is expected that there will be a reduction in deployable output of 16%. The greatest effect will be felt in west Wales, and particularly in Pembrokeshire where there is reliance on river abstractions and where license conditions will limit abstraction at times of low river flows.

8.2.4 DESIGNATED BATHING WATER STANDARDS

8.2.4.1 Natural Resources Wales monitors 20 beaches in the National Park to assess whether they comply with the current standards of the Bathing Water Directive. Monitoring takes place between May and September and bathing



water quality is measured by European Union mandatory (minimum) and guideline (higher) standards. Eighteen of the 20 beaches achieved the higher guideline standard in 2013, with the remaining 2 achieving the minimum, mandatory standard (details below).

8.2.4.2 Wet weather can lead to pollution from run-off from farmland and from over-burdened sewerage systems. It is therefore useful to look at water quality over a longer period. For the 20 monitored beaches over the seven-year period 2007-2013, there were 129 instances of the higher guideline standards being achieved (out of 140 results during the period). The remaining 9 results during the period were as follows:

- 10 occurrences of the minimum (mandatory) standard at Amroth (2008), Broadhaven (2008), Newport North (2008, 2011 and 2012), Poppit West (2012), Sandy Haven (2013), West Angle (2010 and 2012) and Wiseman's Bridge (2013)
- 1 fail at Amroth (2007)

8 PROTECTING AIR AND WATER



8.2.5 NON-DESIGNATED BATHING WATER STANDARDS

8.2.5.1 Pembrokeshire County Council samples non-designated bathing beaches and recreational water to assess water quality and suitability for bathing. Seven of the twelve non-designated bathing waters sampled in the National Park in 2013 achieved the higher guideline standard with the remainder attaining the mandatory standard.

8.2.5.2 As with designated waters, it is useful to look at longer term trends. For non-designated bathing waters sampled over the eight-year period 2006-2013, there were 109 instances of the higher guideline standards being achieved, with 33 achieving the mandatory standard only, and 11 fails (out of 152 results during the period). In particular, samples at Pwllgwaelod failed to reach the mandatory standard in 6 out of the 8 years sampled.

8.3 POLICIES

8.3.1 EMISSIONS TO AIR

8.3.1.1 Air quality is a devolved matter, although the UK government leads on international and European legislation. Natural Resources Wales is the regulatory authority in Wales for a wide range of environmental legislation covering more than 40 different types of regulatory regime, including regulation of refineries and power stations.

8.3.1.2 The Environment Act 1995 sets provisions for protecting air quality in the UK and for local air quality management. Traffic is a major source of pollutants targeted by local air quality management. Pollutants of particular concern are nitrogen dioxide and particulates from road transport, and measures to reduce these are likely to reduce other pollutants. Pembrokeshire County Council's monitoring of air quality is on-going and establishes whether air quality objectives are being exceeded. Potential issues usually relate to nitrogen dioxide emissions from vehicles where traffic passes through narrow streets. No Air Quality Management Areas (i.e. areas needing special measures) are currently required in the National Park.

8.3.1.3 One of the main objectives of development planning in Wales is to reduce the need to travel. This is done by ensuring, as far as possible, that new housing is built where it is supported by sufficient facilities and services to meet the needs of communities, including public transport provision to ensure that people do not have to be reliant on cars. Thus new development is directed to towns and villages.

8 PROTECTING AIR AND WATER

8.3.1.4 Agriculture in the UK is a major source of ammonia emissions to the atmosphere. Ammonia can be deposited at a distance, where it may contribute to nutrient enrichment and acidification of soils and water.

8.3.1.5 Emissions from shipping are governed by the International Maritime Organisation, EU directives and UK legislation. The Maritime and Coastguard Agency is responsible for checking that ships visiting UK ports and anchorages meet UK and international safety rules.

Policy AW1: Reduce emissions to air

Example measures:

- Support achievement of air quality objectives, for example through development planning policy in relation to major development, and by supporting and promoting alternatives to private car use (Pembrokeshire Greenways partnership)
- Locate new development so as to minimise the need to travel, especially by private car
- Work with land managers to reduce ammonia emissions from agriculture and to implement local mitigation

8.3.2 WATER RESOURCES

8.3.2.1 The former Environment Agency Wales' Cleddau and Pembrokeshire Coastal Rivers Catchment Abstraction Management Strategy is a six-year plan which provides an assessment of water resources, and a framework for licensing larger abstractions (those of more than 20m³ per day). It covers most of Pembrokeshire and a small part of Carmarthenshire.

8.3.2.2 Abstraction licensing takes account of the river flows required to protect ecological objectives within the area; if a particular conservation interest is affected then higher flows may be protected. Licensing also takes effluent dilution requirements, navigation and other in-river needs into account. The Water Act 2003 makes provision for groundwater abstraction licensing, regulated by Natural Resources Wales.

8.3.2.3 Impacts of climate change on water may include changes in flow rates and groundwater levels, flooding, altered patterns of demand for water, salt contamination of freshwater as a result of sea-level rise, changes in pollutant flushing rates, increased runoff and erosion. The risk of flooding from river, tidally-induced, surface water and sewer flooding within relevant catchments is outlined in the



8 PROTECTING AIR AND WATER

Pembrokeshire and Ceredigion Rivers Catchment Flood Management Plan (within the context of the National Strategy for Flood and Coastal Erosion Risk Management in Wales). Generic responses to climate change are described in the relevant section of this Management Plan. Climate change also highlights the need to reduce the exposure of water resources to other pressures identified in this section, particularly where there are in-combination effects (e.g. high abstraction demand during periods of low rainfall).

Policy AW2: Manage watercourse flow rates and groundwater levels

Example measures:

- *Ensure that development planning policies take into account the objectives of the Western Wales River Basin Management Plan*
- *Ensure that development planning policies take into account the features and objectives of the Pembrokeshire and Ceredigion Rivers Catchment Flood Management Plan, for example through planning to reduce risk and restore floodplains, contributing to water level management plans, land management and habitat creation*

8.3.3 WATER POLLUTION

8.3.3.1 Pollution from individual outfalls and drains into rivers, estuaries and coastal waters has decreased significantly in the last 35 years and biological quality has improved as a result. However, outstanding issues remain; for example there is an urgent need for a sewerage scheme in the Wiseman's Bridge area. Issues with infrastructure at Dinas Cross are a contributory factor to the water quality failures at Pwllgwaelod. Dŵr Cymru Welsh Water and its partners are aware of the problems and are carrying out ongoing investigations and maintenance work to ensure that the treatment facility can cope with the varying capacities received at the treatment facility. However, a substantial investment would be required to improve the facility on a more permanent basis.

8.3.3.2 Diffuse pollution (i.e. pollution aggregating from a number of individual sources) remains a problem. Diffuse pollution issues include acidification of freshwater, and nutrient enrichment and pollution related to farming and forestry practices. Land management can result in soil erosion. In addition to damage to the soil resource itself, the impacts of erosion on water include increased runoff, siltation, sediment suspension, and other pollution (e.g. by pesticides in runoff). With more intense precipitation events likely to arise from climate change, soil erosion is likely to become an issue of

increasing importance. Water quality issues at Poppit and Newport, for example, are believed to be partly related to diffuse pollution load from the rivers. Agri-environment schemes, cross-compliance measures, catchment initiatives, nitrate management and good practice codes can help reduce soil loss and polluting inputs from agriculture.

8.3.3.3 The Milford Haven Waterway is at risk of failing to meet its conservation objectives due to elevated nutrient levels. The main significant source of these nutrients has been identified as the catchments of the Eastern and Western Cleddau and as such these catchments are on 'amber alert' as a potential Nitrate Vulnerable Zone.

8.3.3.4 Marine pollution (including runoff from land) has direct and indirect ecosystem effects. Individual pollutants can have short, medium and/or long term effects (highly persistent toxic substances and heavy metals can remain a problem for decades or centuries), while marine litter (including netting and plastic particles or 'nurdles') can lead to physical injury, poisoning and entanglement of marine wildlife.

8.3.3.5 A Pembrokeshire Beach Strategy has been produced to ensure that the high quality of Pembrokeshire beaches are both maintained and improved through a partnership approach. This aim will be a challenge with the implementation of the new Bathing Water Directive in 2015, with its new, stringent standards and the increasing trend for wetter summers.

Policy AW3: Reduce water pollution

Example measures:

- *Support Natural Resources Wales, Pembrokeshire County Council and land managers in their pursuit of water quality objectives, catchment management objectives and good practice, including delivery of the Western Wales River Basin Management Plan and the Pembrokeshire Beach Strategy 2014-16*
- *Ensure that development planning policies take water-related issues into account from an early stage in the process of identifying land for development and redevelopment*
- *Require sustainable drainage systems for the disposal of surface water on site; ensure that disposal facilities and surface water draining capacity are adequate for new development*
- *Contribute to marine pollution prevention, contingency planning and response*
- *Promote low intensity land management and good land management practice (e.g. through targeting semi-natural habitats adjacent to water-courses in vulnerable zones)*

Policy B1, Policy B2 and Policy G2 also apply.

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY

Economic and population growth through the 20th century has been enabled in part by the world's rich geological legacy of coal, oil and natural gas. However, these reserves are finite, so production rates of these versatile and energy-rich commodities cannot increase indefinitely.

The emission of greenhouse gases from use of fossil fuels is expected to result in an increase in the average global

temperature, and this is anticipated to have major consequences for climate and therefore for food production, water supplies, human health, and ecosystem functioning and stability. For environmental protection, and for economic and social continuity, a sustainable approach to development and energy is needed.

9.1 AIMS AND OUTCOMES

Aims	Assessment
<p>Reduce greenhouse gas emissions, reduce reliance on fossil fuels and adapt to climate change.</p>	<p><i>Emissions projections and climate change</i> Despite greenhouse gas reductions at the UK level, the UK is still a major emitter and global greenhouse gas emissions are increasing. Emissions trends put the world on course for global temperature change in excess of 2°C, the level considered to constitute dangerous climate change.</p> <p>Due to past emissions, it is argued that climate change in coming decades cannot be avoided. The UK and Pembrokeshire are expected to experience higher average summer temperatures, lower average precipitation in summer and higher average precipitation in winter.</p> <p><i>Energy resources</i> The UK's economy is heavily reliant on oil and natural gas – a significant amount of which is imported and or processed in Pembrokeshire. The UK became a net importer of fuel in 2014.</p> <p>Because of its sensitivity, the National Park can make only a relatively small contribution to Welsh targets for renewable electricity and heat on land. However, the tidal and marine current energy resource in Pembrokeshire's waters is considerable.</p>

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY



9.2 EVIDENCE

9.2.1 UK CLIMATE PROJECTIONS

9.2.1.1 The UK is one of the top 12 emitters of greenhouse gases (World Resources Institute calculation using 2005 data). Despite domestic reductions at the UK level (some of which result from import manufactured goods), global greenhouse gas emissions are increasing. For a high emissions path, the UK Climate Projections website gives the following estimates

- An increase in winter mean temperature is 3.3°C
- An increase in summer mean temperature of 4.5°C
- An increase in summer mean daily maximum temperature of 6.1°C
- An increase in summer mean daily minimum temperature of 4.8°C
- A change in winter mean precipitation of 26%
- A change in summer mean precipitation of -26%

9.2.2 RENEWABLE ENERGY POTENTIAL AND CAPACITY

9.2.2.1 The NPA commissioned a Renewable Energy Assessment (published 2008) in order to review the suitability of and potential for development of renewable electricity and heat technologies within the National Park. It concluded that appropriately-located renewable energy technologies within the National Park would make a relatively small contribution (5GWh of renewable electricity and 35-40 GWh of renewable heat) to Welsh targets. These correspond to contributions of 0.01% and 1.25% respectively.

9.2.2.2 While the National Park's special landscape and seascape qualities constrain the development of large-scale wind turbines or clusters, a substantial proportion of the renewable energy generated in Wales is expected to come from marine sources (tidal, wave and wind).

9.2.2.3 The Pembrokeshire coastline has a significant wave and tidal stream climate. The Marine Renewable Energy Strategic Framework for Wales found potential for over 6GW of installed marine energy capacity in Wales (high energy yield scenario). In Pembrokeshire, the offshore energy resource - the highest in Wales - is complemented by onshore infrastructure (including grid connection) and skills.

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY

9.2.2.4 Welsh Government has stated an aim of capturing 10% of Wales' potential tidal stream and wave energy by 2025 and is determining how it can help overcome common barriers to marine renewable developers. These include availability of energy resource data, bathymetric and seafloor information, information on the environmental impacts of commercial scale arrays, and the lack of adequate grid connections adjacent to areas of high energy potential.

9.3 POLICIES

9.3.1 REDUCING GREENHOUSE GAS EMISSIONS

9.3.1.1 The European Union has set a target to limit global mean surface temperature rise to 2°C above pre-industrial levels, based on the knowledge that temperature increases of more than 2°C will result in very costly adaptation measures, huge impacts on water availability, food security and ecosystems and unacceptably high risks of irreversible events, such as the melting of the Greenland ice sheet and associated rise in relative sea level (a 1 metre rise is already predicted over the next century).

9.3.1.2 Under the Climate Change Act 2008, the UK Government is legally required to reduce greenhouse gases by 80% of 1990 levels by 2050. The Welsh Government's Climate Change Strategy for Wales (2011) states its intention to reduce greenhouse gas emissions in areas of devolved competence by 3% per year from 2011, against a baseline of the average emissions between 2006 and 2010. The 3% target includes all 'direct' greenhouse gas emissions in Wales except those from heavy industry and power generation, but including emissions from electricity use in Wales by end-user. Welsh Government has set target ranges for sectoral emissions reduction.

9.3.1.3 Welsh Government has also committed to reduce greenhouse gas emissions in Wales by 34% by 2020 (on a 1990 baseline), and reported in 2011 that Wales' total greenhouse gas emissions had reduced by around a quarter compared to that 1990 baseline, although greenhouse gas reductions since 2008 are partly attributable to recession.

9.3.1.4 Welsh Government is also committed to meeting 15% of domestic energy needs from renewable sources by 2020. The key contributing

technologies, identified in the 2011 UK Renewable Energy Roadmap, are likely to include wind and biomass. Welsh Government also wants Wales to harness first mover and early adopter advantages in the field of marine renewables; its ambition is for a sustainable, low carbon Welsh economy, where fuel poverty is reduced and security of supply increased. In 2014, Welsh Government published Energy Wales: A Low-Carbon Transition Plan.

9.3.1.5 Local authorities and/or Welsh Government determine onshore energy developments up to 50MW capacity, with current policy and guidance set out in Planning Policy for Wales and Planning for Renewable Energy (Technical Advice Note 8). The UK Government has responsibility for larger energy developments and the grid, with policy set out in a series of National Policy Statements on energy and infrastructure. One of the recommendations of the Commission on Devolution in Wales ("the Silk Commission") in Part II of its review of the wider powers of the National Assembly for Wales is that all energy planning consents (non-renewable and renewable) below 350MW should be devolved.

Policy CC1: Reduce greenhouse gas emissions

Example measures:

- *Contribute to UK and Welsh targets for renewable energy generation and for energy conservation and efficiency in line with Local Development Plan policy and guidance, subject to the special qualities of the National Park, and with regard to cumulative impacts*
- *Encourage carbon-sensitive land management (e.g. soil conservation and protection of wetlands, conservation and expansion of semi-natural habitat, reduction of artificial inputs)*
- *Foster the development of appropriate marine energy development in Wales in line with Welsh Government policy and local circumstances*
- *Reduce car use by directing development to locations which are accessible by walking, cycling and public transport*
- *Encourage use of public transport and active travel*
- *Promote resource efficiency through the waste hierarchy (Planning Policy Wales and Technical Advice Note 21: Waste apply)*

9.3.2 CLIMATE CHANGE ADAPTATION AND A LOW CARBON WORLD

9.3.2.1 The International Energy Outlook 2013 forecasts that world energy consumption will grow by more than 50% between 2010 and 2040. Much of the growth in energy consumption occurs in countries outside the Organization

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY



for Economic Cooperation and Development (non-OECD) countries. Energy use in non-OECD countries is projected to increase by 90%; in OECD countries, the increase is 17%.

9.3.2.2 Even under a medium emissions path, significant and possibly rapid change in the character of the National Park landscape and economy are possible as a result from climate change, and/or from measures taken to offset emissions - there are potential tensions between renewable energy generation and landscape and seascape quality. The specific effects of climate change and low-carbon technology on landscapes, on economies and on society may be hard to predict, but partners can however plan to increase community and personal resilience and ability to adapt to new realities. This Management Plan is intended as part of that process²⁵.

9.3.2.3 Climate change impacts can be seen as a subset of other risks and trends which may occur separately or in combination. Other trends which may interact with each other and with climate change include:

- A growing world population
- Growing overall resource demand (the UK is a net importer of fuel and food)
- Diminishing energy returns on energy invested in exploration and recovery and increasing dependence on energy imports. The immediate issue for an economy predicated on growth is not of running out natural resources but of not having access to the quantities that it needs to continue growing (efficiencies notwithstanding). This limit to business as usual is compounded by the increasing energy cost, and potential environmental cost, of extracting and processing increasingly inaccessible and unconventional fossil fuels. Regardless of price, at a point where the energy cost of extraction is equal to the energy recovered, no extraction will take place. There may also be a potential reduction in fuel available for import if countries reserve dwindling resources for their own use.
- Continued global mobility of people
- Continued global mobility of plant and animal disease; increase in resistant strains
- Trends in poverty and inequality
- An aging population (UK)
- Relative sea-level rise of at least 1m per century

²⁵ Part 4 of the Climate Change Act 2008 provides Welsh Ministers with powers to identify "reporting authorities" and to direct these authorities to prepare climate change adaptation reports. Welsh Government has identified Wales' National Park Authorities as reporting authorities and has provided guidance and other resources on the reporting process.

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY

9.3.2.4 Some of the possible effects of climate change and the trends listed above are given below. These are grouped by both impact and receptor to reduce duplication. Many have landscape implications.

Infrastructure

Viability of coastal and floodplain settlements due to flood risk
 Increased flooding of private property
 Increased flooding of infrastructure, e.g. energy, transmission, sewerage, communications, road/rail, rights of way
 Pressure for flood defences
 Inundation and erosion of historic features
 Heat stress to contemporary and historic built environment
 Subsidence and landslips
 Increased incidence of flash flooding

Ecosystems

Squeeze on semi-natural habitat from food/fuel/fibre production
 Displacement effects of accommodating replacement settlements
 Habitat squeeze from changes in climate space (e.g. northwards/upwards)
 Successional changes and e.g. loss of drought prone or shallow rooting species
 Faster/greater geographical spread of pests, diseases and invasive non-native species
 Changes in soil carbon
 Reduction in freezing (better winter survival of pests and pathogens; reduced germination of seeds which require freezing)
 Drying out of wetlands in summer
 Warming of watercourses/water bodies
 Asynchrony
 Drier soils in summer/wetter/eroded soils in winter
 Breeding failures
 Increased windthrow in woodlands
 Changes to migratory patterns
 Drying out of upper reaches of watercourses in summer, lower flows
 Greater silt pollution of watercourses in winter, change in pollutant concentrations due to low flows, pH changes
 More risk of uncontrolled fire in summer

Human health and disease

Heat stress in summer
 Changes to ultraviolet light exposure (cloud cover)
 New patterns of disease under hotter and drier conditions in summer and milder wetter conditions in winter
 Photochemical air quality risks in urban environments
 Waterborne pathogens and algal blooms
 Increased winter survival rates
 Water utility costs (water poverty)

Food production

Increase in overall food demand (due to population)
 Increased demand for meat and dairy (global trend in consumption habits)
 Crop failures due to temperature extremes, storms, soil erosion, changes in soil carbon and disease
 Drier agricultural soils in summer
 Increased demand for irrigation water
 Loss of pollinators
 Animal welfare issues (e.g. heat stress, water demand)
 Reduced crop/animal productivity
 Reduced accessibility to some agricultural land in winter
 Spread of pests under hotter and drier conditions in summer and milder wetter conditions in winter
 Changes in fish stocks and distribution (ocean warming and acidification)
 Changes to the sea-state and the number of potential fishing/sailing etc. days per year
 Agricultural soil loss to erosion
 Increase in input costs (fertilizer, fuel, steel)
 Increase in food transport costs
 Supply chain disruption
 New cropping options
 Changes to timber growth

9 CLIMATE AND ENERGY: TOWARDS A LOW-CARBON ECONOMY

Storminess and sea-level rise

Increased coastal inundation from more frequent storm events
 Increased rate of coastal erosion/deposition
 Beach squeeze
 Migration/modification/loss of sand dune systems, salt marsh and coastal wetlands
 Increased damage/more frequent overtopping of natural and built coastal defences
 IncurSION of sea water into freshwater lakes and groundwater
 Combination flooding
 Impacts on outfalls (e.g. tide locking)

Demographic

Population in/outmigration and changes to population age profile
 Migration in response to climate change
 Lower percentage of population of working age
 Greater care requirements for older population

Energy resources

Increased energy demand (overall and per capita), with new seasonal demands e.g. air conditioning in summer
 Insecurity of energy supply (oil and natural gas)
 Higher oil and natural gas prices with effects on price of substitutes e.g. biomass and coal (energy poverty)
 Pressure for new kinds/densities of development e.g. large-scale renewables

Financial, political and regulatory

Elevated insurance costs/uninsurable assets
 Greater seasonality of visitor economy
 Pressure for deregulation (including looser planning) in face of the above
 Higher incidence of civil contingencies
 Economic migration
 Different allocations of public funding consequent on the above

9.3.2.5 The three Welsh national parks produced a joint statement on climate change and security of energy supply in 2009, recognising their common ground as national parks, but highlighting their distinct geographical opportunities and challenges. The statement recognised that National Park authorities and partner organisations will need to find ways of retaining protected landscape values even the character of those landscapes changes, perhaps in unpredictable ways. This will require a dynamic interpretation of National Park purposes and a tolerance to new landscapes which may emerge.

Policy CC2: Adapt to climate change and support a low carbon economy

Example measures:

- *Protect and restore ecosystem resilience (see also Policy B1, Policy B2 and Policy B3)*
- *Respond to climate change related risks: to infrastructure and the built environment (including the historic environment) e.g. through shoreline management and flood management plans; to food production; to water resources (see also Policy AW2); and to human health*
- *Investigate long-range planning implications for settlement migration/demand for new settlements/roads*
- *Promote sustainable local management and consumption of natural resources (see also Policy B1)*

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

A National Park should help inspire in people a lifelong interest in the environment and help change attitudes and behaviour towards it. Understanding, enjoyment and conservation of the National Park and of the wider environment are inextricably linked. Recreation usually involves learning and learning should be enjoyable; both can give people new perspectives on their surroundings and on themselves.

Outdoor recreation and learning also contribute significantly to people's health and wellbeing and are a mainstay of the region's economy. By managing the landscape that people come to enjoy and the Pembrokeshire Coast Path, inland rights of way, beaches and car parks that the majority of visitors use, the NPA and its partners manage and protect some of the most important visitor facilities in Pembrokeshire.



10 DISCOVERING AND ENJOYING THE NATIONAL PARK

10.1 AIMS AND OUTCOMES

Aim	Assessment
<p>Promote sustainable public enjoyment of the special qualities of the National Park.</p>	<p>Outcome: Participation and social inclusion Physical activity outdoors helps improve people’s health and wellbeing, and can reduce antisocial behaviour and health inequalities. Welsh Government aims to help more people enjoy outdoor recreation.</p> <p>While Pembrokeshire has the highest participation rate in outdoor recreation in Wales, two thirds of residents are underactive. Across Wales, barriers to participation include time, disability, health complaints and age. Scope exists to increase the number of people enjoying the National Park, particularly in the cases where activities are non-intrusive and take place in off-peak periods.</p> <p>There is also ample scope to welcome a more representative cross-section of society to the National Park; a 2011-12 Pembrokeshire visitor survey found that respondents were almost invariably of white ethnicity and that three-quarters were in the ABC1 socio-economic grouping.</p> <p>Outcome: Recreational opportunities The National Park offers world-class opportunities for coastal walking, climbing and watersports. People appreciate the landscape and beaches in particular and are generally very satisfied with their experience of the National Park and the Pembrokeshire Coast Path, with a high percentage of visitors returning again and again.</p> <p>There is latent demand amongst adults resident in Wales for walking and off-road cycling, and strong interest in paddlesports, coasteering, camping, foraging and bushcraft amongst young people in Pembrokeshire.</p> <p>Negative impacts of recreation on the National Park special qualities, its communities or other users tend to be localised in space and in time. While they can present management challenges, they can also be solved, for example through voluntary agreements with user groups. However prevention is better than cure and awareness and promotion can help to stop issues developing.</p> <p>Research published in 2013 estimated that Wales’ National Parks contributed £1 billion to Wales’ economy, with a large amount coming from visitor spending. A 2006 study estimated that over 4,500 jobs were directly dependent on the quality of the environment of Pembrokeshire Coast National Park.</p>

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

Aim	Assessment
<p>Promote public understanding of the special qualities of the National Park.</p>	<p>Outcome: Public awareness of UK national parks People’s awareness of the purposes of UK national parks is good, and national parks are important to them. However, people find it difficult to name specific national parks and there is confusion about who owns and manages them.</p> <p>While general environmental awareness is increasing, specific knowledge about biodiversity, and possibly other special qualities of national parks, is relatively poor and it is possible that it will get progressively worse in each generation (see below).</p> <p>Historically, ‘National Park audiences’ have not reflected the breadth and diversity of UK society, and, more specifically, have neglected some local audiences. Given that audiences largely self-select, in that people can usually choose whether to visit the National Park, attend a particular event or site or take up information, the NPA and its partners need to keep innovating in terms of communication and engagement, to work to remove any barriers to enjoyment and learning about the National Park, and to reach people living within or close to the National Park boundary, as well as beyond it.</p> <p>While everyone should be able to enjoy and learn about the National Park, particular audiences will continue to exist. These include people that influence National Park management (including land owners and policy-makers), people that live and visit the National Park, and people who can help achieve specific management goals (for example owners of listed buildings).</p> <p>Outcome: health and wellbeing benefits of outdoor learning Young people are a particularly important audience. Evidence suggests that, irrespective of their performance in conventional learning settings, young people derive major benefits from outdoor learning and practical work, in terms of learning outcomes, health and wellbeing, and personal and social responsibility.</p> <p>There appears to be a progressive separation of children from the rest of nature, linked to excessive ‘screen time’, an impoverished environment (less attractive for exploration) and safety concerns. This has contributed to childhood weight issues, an increase in asthma, and a decrease in cardiovascular fitness in children. Lack of contact with nature is also partly implicated in an increase in behavioural and emotional problems. The cost of physical inactivity to Wales has been estimated as £650m per year.</p> <p>Conversely, exposure to the natural environment, especially through active recreation and outdoor learning, can reduce stress and aggressive behaviour, increase attention span and improve mood and self-esteem.</p> <p>The NPA and partner organisations have been successful in working with primary schools, but a limitation on working with secondary schools is the availability of teachers during the day. This makes it more important to involve children through extra-curricular activities, giving scope to include young people who may fall outside the National Curriculum.</p>

10 DISCOVERING AND ENJOYING THE NATIONAL PARK



10.2 EVIDENCE

10.2.1 PHYSICAL ACTIVITY IN PEMBROKESHIRE

10.2.1.1 A low level of physical activity is a key risk factor to health and health inequality. Regular physical activity however can reduce the risk of heart disease, prevent or delay the development of high blood pressure, help people to control their body weight, help people to control diabetes, reduce anxiety and depression, enhance mood and self-esteem, reduce antisocial behaviour, and, especially in the elderly, reduce the risk of falls and accidents.

10.2.1.2 A Needs Assessment for Pembrokeshire's Single Integrated Plan 2013-18 was published in 2013 by Pembrokeshire's Local Service Board. It presents a detailed picture of the health of Pembrokeshire residents, health risk factors, and other demographic and economic data. The Needs Assessment found that only a third of Pembrokeshire's residents achieved the recommended minimum of 30 minutes moderate activity on five or more days of the week.

10.2.2 REPORTED HEALTH IN NATIONAL PARKS

10.2.2.1 The 2011 England and Wales Census asked residents of national parks to assess their general state of health on a five point scale: very good, good, fair, bad or very bad. Of national park residents in England and Wales, 82% described themselves as being in good, or very good health. This percentage is slightly higher than the overall figure for England and Wales (i.e. national park and non-national park areas combined). On the basis that the national parks have an older age structure than nationally, and that generally, health deteriorates with age, this could suggest that people residing in national parks tend to have better health than those living in the rest of the country, although this is likely to be a product of many factors.

10.2.2.2 Of the English and Welsh national parks, Pembrokeshire Coast had the highest percentage (6.4%) of usual residents reporting bad or very bad health. For comparison, the smallest percentage was 3.1% (Northumberland National Park).

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

10.2.3 MOTIVATIONS FOR OUTDOOR RECREATION

10.2.3.1 The Wales Outdoor Recreation Survey measures participation in outdoor recreation amongst adults resident in Wales, including levels of physical activity, motivations, barriers and latent demand. According to the 2011 survey, Pembrokeshire has one of the highest participation levels in outdoor activities in Wales. Across Wales, walking is the most popular recreational activity, with increasing proportions of people road cycling and wildlife watching, and visiting woods and beaches. The main reasons for visiting a National Park are to do with the scenery and landscapes, the peace and quiet and open spaces, and the recreation opportunities available.

10.2.3.2 The 2013 Pembrokeshire Citizens' Panel Survey found that 67% of respondents went for a walk or visited a beach at least once a month in order to relax, feel less stressed, or generally feel better. Health and exercise is a major motivation for outdoor recreation, while barriers to outdoor recreation include physical health barriers including disabilities and old age; lack of time is also cited as a barrier. The Wales Outdoor Recreation Survey findings are similar: lack of time, ill-health and distance prevent people visiting national parks more often.

10.2.3.3 Commissioned by the Destination Pembrokeshire Partnership Group, the 2011-12 Pembrokeshire Visitor Survey confirmed that the natural environment is key to people's experience. Natural attractions, such as beaches and scenery, are the most important elements of visits, and also perform best in terms of visitor's experiences compared to their expectations. Over a quarter of visitors come to Pembrokeshire to walk. Recreation patterns are, as one would expect, sensitive to the weather.

10.2.3.4 Approximately half of visitors come from Wales, with 5% from overseas. Day trips account for a quarter of all visits. Around 25% of visitors visit more than once a month (up from just under 20% in 2007/8); about 85% of respondents were repeat visitors.

10.2.3.5 The survey reported that 74% of respondents were in the ABC1 socio-economic grouping, i.e. in an administrative, managerial or professional occupation (the UK average is 50%). Almost 100% of respondents were of white ethnicity. 18% of visitors reported a disability, including long term illness and/or mobility problems.



10 DISCOVERING AND ENJOYING THE NATIONAL PARK



10.2.4 THE VALUE OF THE VISITOR ECONOMY IN NATIONAL PARKS

10.2.4.1 A 2006 study on the Economic Impacts of National Parks in Wales found that the National Park environment supported over 4,500 jobs and contributed £81 million to Wales' economy. This study was enhanced by further work in 2013, Valuing Wales' National Parks, which noted that Wales' National Parks have over 12 million visitors a year, resulting in an estimated annual injection of spending into the Welsh economy of around £1bn.

10.2.4.2 A pilot study on the economic valuation of coastal activities in the St David's and Dale areas was published in 2013 (Wales Activity Mapping: Economic Valuation of Marine Recreation Activity). Beach activities and walking are the highest volume activities and generate the greatest net spend. The highest spend per visitor is associated with diving, sea angling charter, wildlife boat trips, cruiser sailing and coastering, followed by kite surfing, power boating, canoe/kayaking and snorkelling.

10.2.4.3 Surveys suggest that the qualities that the NPA protects are the ones that visitors most enjoy, in which case few can have a greater financial interest in the National Park than the tourism operator.

10.2.5 RECREATION PATTERNS IN THE NATIONAL PARK

10.2.5.1 Enjoying the Pembrokeshire Coast National Park was produced by the NPA and partners to help plan for sustainable recreation, and key elements are incorporated into this Management Plan. The NPA subsequently used this to develop supplementary planning guidance on recreation and leisure, adopted in 2012. An outline of current and future recreation opportunities, and management issues, based on Wales Activity Mapping data, is given below.

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

AN OVERVIEW OF RECREATION IN THE NATIONAL PARK

Area	Recreational profile
Park-wide	Walking, cycling and horse-riding take place throughout the National Park with increasing proportions of visitors involved in using a greatly improved network of public rights of way which is 88% open and available for use. The Pembrokeshire Coast Path, one of only three National Trails in Wales, is the most heavily-used path. Regularly voted in the top 3 of UK National Trails, it was used as a model for the Wales Coast Path of which it is now a part. A long-running programme of improvements makes it accessible to a wide range of abilities.
South area	The south-east of Pembrokeshire has a major concentration of visitor accommodation around Saundersfoot and Tenby. Visitor activities in the south-east focus on beaches, walking, boat trips and watersports. To the south-west there is less development and fewer facilities; activities focus on walking, beaches, climbing, surfing and fishing. The dominant factors in terms of inshore cruising are the Sea Danger Areas at Castlemartin, Manorbier and (beyond the National Park) Pendine, difficult tidal conditions and exposed waters. Milford Haven and the Daugleddau Estuary are popular with sail craft, motor craft and canoes/kayaks.
West area	The west coast beaches and inshore waters around St Bride's Bay are good for surfing, diving, and windsports. Beach horse-riding is focussed on a few locations, but in large numbers. Climbing and coasteering are popular between St David's peninsula and Strumble Head. The small harbours are excellent launch points for paddlers and the islands are popular for wildlife boat trips.

Area	Recreational profile
North area	The north of the National Park tends to be less crowded and the coastline is characterised by undisturbed and undeveloped beauty. The Preseli Hills and Gwaun Valley are a valued resource used by relatively low numbers of walkers, cyclists and horse-riders, with further demand for off-road cycle routes. Increasing use of the wild north coast for wildlife sightseeing and outdoor activities has begun to introduce new elements into the landscape, e.g. growing numbers of boat trips and new coasteering routes.

RECREATIONAL ISSUES AND SOLUTIONS

10.2.5.2 The location and/or timing of some activities, or the manner in which they are conducted, can potentially cause problems. For example, inconsiderate use of powered watercraft can impact on people's enjoyment of tranquillity and disturb wildlife. Such conflicts are relatively few and in most cases can be addressed by low key management (such as raising awareness) or by voluntary codes of practice.

10.2.5.3 More widely, there is concern over dog control issues and fouling. Littering is another concern; litter on beaches is often seaborne and includes considerable quantities of netting and plastic particles. Other sites are littered above and below the tideline by lost angling gear and discarded bait. The work of Neptune's Army of Rubbish Cleaners is ground-breaking in its voluntary cleaning of Pembrokeshire's underwater environment; on the foreshore, volunteering groups such as Nomads Coastcare (Pembrokeshire) play a vital role in keeping beaches free of seaborne and other litter.

10.2.5.4 There are wider impacts associated with recreation - for example increased traffic volumes (which may have site or area-specific implications e.g. congestion at Whitesands, Abereddy, St Justinian's and Freshwater West), an increased burden on infrastructure (e.g. water use and sewerage) and more pressure for facilities. There is however a distinction to be made between large group events which use hard infrastructure (such as the Wales Ironman competition) and those which place unusual demands on

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

softer infrastructure (e.g. off-road running competitions); planning can minimise potential issues.

10.2.5.5 The current seasonality of tourism means that some opportunities are under-capacity off season, and over-used at other times. Competition for a limited recreational resource can bring different users into conflict. User-user conflicts include the following.

Activity	Potential conflicts	Example locations
Beach horse-riding	Rights of way, beach users	Druidston, plus some other west and south coast locations.
Boat launching and beach parking	Other beach and inshore uses	Freshwater East and St Bride's Haven (launching); Newport (beach parking)
Coasteering	Angling, other users	Abereiddi, Stackpole Quay, Ceibwr
Diving	Angling, boating	Martin's Haven
Kite sports	Other beach and inshore uses	Broad Haven, Whitesands
Mountain biking (on stretches of path registered at footpath)	Pembrokeshire Coast Path users	Pembrokeshire Coast Path National Trail
Off-road vehicles	Other users (plus habitat damage and disturbance)	Common land and dunes
Paragliding	Grazing and horseriding	Preseli Hills
Powered watercraft	Beach and inshore uses	Tenby, Lydstep Haven, Newport, Whitesands, Freshwater East
Unauthorised camping and caravanning	Other users (plus habitat damage and disturbance)	Varies

10.2.5.6 With the exception of relatively few locations, and a restricted range of (mainly motorised) activities, the National Park still has capacity for greater levels of recreational use, especially outside the summer holiday period. Activities which could in particular be accommodated in greater numbers with minimum additional management include walking, cycling, sea rowing, canoeing, kayaking, sea-swimming and windsurfing. Where potential conflicts exist, these can be solved through voluntary and agreed codes of conduct, such as the Pembrokeshire Marine Code and Outdoor Charter initiatives, climbing restrictions at Castlemartin, the coasteering code of good practice, and coasteering and canoeing videos produced by Pembrokeshire Coastal Forum.

EFFECTS OF CLIMATE CHANGE

10.2.5.7 Climatic and economic factors will continue to shape visitor season and demand. For example, wetter winters and increased storminess might make UK holidays less attractive out of the traditional season, but warmer summers might encourage more UK citizens to holiday at home, leading to increased seasonality and recreational pressure. It is difficult to know the likely net effect of climate and other factors on recreation patterns in the National Park, but physical consequences of climate change on people's recreational experience of the National Park could include:

- a changing landscape and wildlife
- movement inland of some beaches and loss of others
- more frequent and/or substantial realignments of coastal routes due to cliff erosion
- losses/gains in tidal access and losses of estuary-side paths at certain states of the tide
- more variability in rights of way quality
- more variability in bathing water quality
- higher management and maintenance costs associated with the above

10.2.6 AWARENESS OF UK NATIONAL PARKS

10.2.6.1 The 2012 UK National Parks Survey built on surveys in 2001 and 2007. It found that the majority of people have heard of national parks and are able to identify (with prompts) the purposes of UK national parks. Most respondents thought that national parks are important in safeguarding

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

areas of the countryside from development and believe that every child should experience first-hand a National Park as part of their education.

10.2.6.2 Misconceptions about national parks include the belief that they are wholly owned by government or by the National Trust, and just over half of respondents believe that national parks are free from human habitation. Unprompted awareness of individual National Parks is not very high (more than a third of respondents could not name any National Parks).

10.2.6.3 Younger respondents had slightly different views to older participants. For example, 90% of people aged 25-44 and 92% of those over 45 stated that national parks were important to them, compared to 80% of those aged 16-24.

10.2.7 HEALTH AND WELLBEING BENEFITS OF OUTDOOR LEARNING

10.2.7.1 The National Trust's 2012 report *Natural Childhood* draws on a wide range of evidence to present what appears to be a progressive separation of children from the rest of nature. According to *Last Child in the Woods* (Louv, 2005) the roaming radius for children has declined by 90% in thirty years, and UK children aged 5-16 spend on average 2.5 hours per day watching TV, 1.6 hours on a computer, 1.3 hours gaming and 1.1 hours on a mobile phone, leading to what has become known as nature deficit disorder and 'the extinction of experience'.

10.2.7.2 Excessive screen time also contributes to weight issues (30% of children between 2 and 15 are overweight or obese), to an increase in other health problems including asthma, and to a decrease in children's cardiovascular fitness (a reduction of about 8% in England in the decade to 2008). The 2009 Welsh Government publication *Creating an Active Wales* estimated that the cost of physical inactivity to Wales is about £650m per year.

10.2.7.3 Lack of contact with nature is also partly implicated in an increase in behavioural and emotional problems - 10% of UK children between 5 and 16 have a clinically diagnosed mental health disorder - including a decline in emotional resilience and the ability to judge risk. Conversely, exposure to the natural environment, especially through active recreation

and outdoor learning, can reduce stress and aggressive behaviour, increase attention span and improve mood and self-esteem.

10.2.7.4 *Natural Childhood* also notes that the rise in general awareness of environmental issues has coincided with a decrease in people's specific knowledge about wildlife. This illustrates the challenge presented by 'shifting baselines': people are generally less likely to be able to understand and protect things they have not experienced, so environmental degradation, biodiversity loss and increasingly indoor lifestyles make it progressively harder to maintain or increase levels of environmental awareness. Outdoor experiences can therefore help people, especially children, to reconnect with the rest of nature and become more invested in the state of their environment.

10.3 POLICIES

10.3.1 PROMOTING RECREATION BASED ON THE NATIONAL PARK'S SPECIAL QUALITIES AND ON HEALTH BENEFITS

10.3.1.1 The National Park is a key attraction for visitors to Pembrokeshire and south-west Wales. Helping people to enjoy and understand the special qualities of the National Park is a core NPA responsibility, and should be compatible with, and preferably help achieve, the conservation purpose of the National Park. Accordingly, recreation in the National Park should in general be based on active enjoyment of the special qualities of the National Park, confer health benefits, and be non-intrusive and non-polluting. Tourism promotion can be tailored to achieve maximum benefit for residents and visitors and minimum adverse impact.

10.3.1.2 Promotion of the area is the remit of Pembrokeshire County Council, of the Regional Tourism Partnership and of tourism/recreation operators. The NPA works in partnership with other organisations through the Destination Pembrokeshire group to promote recreation appropriate to National Park purposes, to help a more representative cross-section of society to enjoy the National Park, and to achieve local, regional and national goals for health and wellbeing.

10.3.1.3 Much of the attraction of the National Park, and as a consequence the pressure for recreation, is focussed in a narrow coastal strip where there

10 DISCOVERING AND ENJOYING THE NATIONAL PARK



is often a right or perceived right of public access. In Pembrokeshire this description applies to much of the undeveloped coast, with the 300km Pembrokeshire Coast Path National Trail giving access to long stretches of cliff land and climbing routes, and almost all the foreshore having public access through local authority leases. The Trail is complemented by a network of inland rights of way of around 850km, including more than 180km of bridleways, almost all across privately-owned land. These are managed by the NPA under a delegation agreement with Pembrokeshire County Council and are 88% open and available for use.

10.3.1.4 The coastal scenery and beach and inshore recreation are the basis of the tourism product of Pembrokeshire. There are more than 50 clearly identifiable beaches in the National Park; on most of them the foreshore is leased by the NPA from The Crown Estate, with beaches east of Giltar Point leased by Pembrokeshire County Council. Many of the beachheads are in public ownership and most beach management functions are provided by Pembrokeshire County Council, working closely with Natural Resources Wales, The National Trust, the Royal National Lifeboat Institution, the NPA and others.

10.3.1.5 The coastal strip, Daugleddau and Eastern and Western Cleddau rivers form a key recreational interface in the National Park and the NPA and partner organisations work to promote and manage water-related activities, subject to the achievement of management policies for wildlife, landscape and heritage conservation, through the Milford Haven Waterway Recreation Plan.

10.3.1.6 There are excellent opportunities for open-water swimming, surfing, kayaking/canoeing, windsports and for otherwise enjoying the water, exploring the coast and discovering wildlife, with benefits to people's health, wellbeing and personal development, as well as providing income to the region.

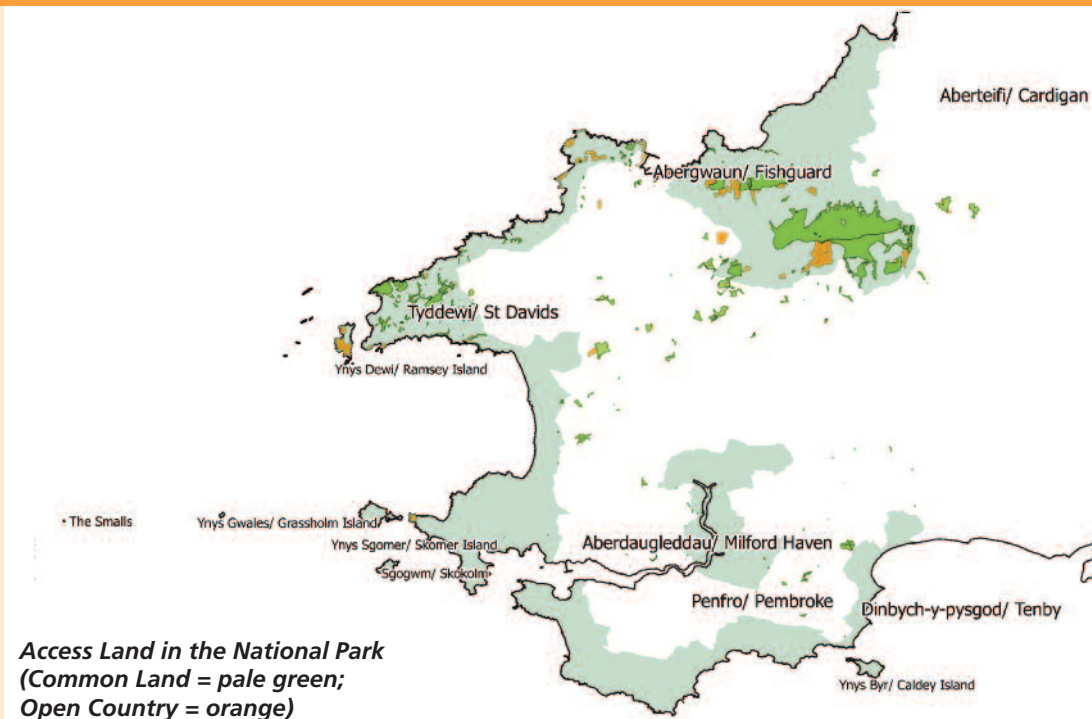
10.3.1.7 Tides and topography limit navigation in inshore waters for some craft, and military ranges constrain access to sea danger areas off the south coast. Harbour access outside the Haven is heavily tide-dependent and this, added to the exposed nature of much of the coast, tidal rips, and sea

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

danger areas, limits the potential for expansion of coastal cruising. There has however been a recent major increase in paddling and rowing use which have the advantages of sustainability, affordability and, particularly in the case of rowing, a strong community element.

10.3.1.8 A large number of slipways exist around the coast and on the Milford Haven Waterway, in numerous ownerships; most slipways are unsupervised and free. While this makes them popular it can also make it more difficult to fund their maintenance and to manage inappropriate activities if necessary. Many launch sites are in village or remote locations with narrow road access unsuitable for larger vehicle/trailer combinations, while launching across small beaches can cause disruption and pose risks to other users.

10.3.1.9 Subject to tide and draught there is good upriver boat access on the Milford Haven Waterway to Haverfordwest and Canaston Bridge. While there are no rivers with navigation rights above the tidal limits in Pembrokeshire, opportunities for negotiated access may exist outside the National Park on the Eastern and Western Cleddau rivers. The only significant non-tidal rivers in the National Park are the Nevern and the Gwaun. Both are open for fishing use and offer riverside footpaths but on-water recreation potential (subject to agreement) is limited to in-spate canoe use. Given the paddling opportunities on tidal stretches of the Waterway, non-tidal rivers are not a priority for negotiated access.



10 DISCOVERING AND ENJOYING THE NATIONAL PARK

Policy DE1: Provide, manage and promote appropriate types of recreation

Example measures:

- Provide and promote active recreation opportunities based on the special qualities of the National Park
- Ensure that recreational activities fit well into the landscape and are non-intrusive
- Provide opportunities to learn about the special qualities of the National Park
- Ensure that recreational opportunities are accessible to a wide variety of people with different abilities and from different backgrounds
- Use promotion and tailor the recreational offer to spread visitor impacts/benefits
- Reflect people's different expectations in providing recreational opportunities (for example, some areas should be easy to use and enjoy while others remain more challenging and wild)
- Promote best practice in the National Park and further afield
- Develop recreational opportunities based on research and priorities and with the support of local communities, users and businesses
- Manage beaches, bathing water quality and water safety
- Manage and promote the Pembrokeshire Coast Path National Trail, within the context of the Wales Coast Path
- Manage a strategic network of access points to the coast and countryside, including public transport links, active travel opportunities and car parking
- Manage the inland rights of way network, including completing a strategic network of rights of way and providing and promoting local walks for National Park communities
- Maintain the bridleway network and address issues of route fragmentation
- Manage Access Land with landowners and recreational users
- Provide on- and off-road cycle routes in the National Park
- Reduce recreational impacts through the codes of conduct and activity licensing
- Encourage more use of the Waterway by local people, especially through activities which are sustainable, healthy and inclusive
- Promote sea-swimming, kayaking and rowing
- Manage slipways and beach launching
- Manage moorings in partnership with local communities

- Enforce harbour, beach and Waterway byelaws
- Provide and manage berths, moorings and shore facilities for boats
- Promote appropriate access to water for canoes/kayaks and rowing boats
- Agree codes of conduct with coastal and marine users
- Press for national licensing, training and insurance requirements for powered craft users
- Promote and develop the Pembrokeshire Marine Code
- Extend the season through promotion of existing facilities
- Manage activities on the foreshore
- Reduce recreational impacts through codes of conduct and activity licensing

10.3.2 ENABLING ACCESS FOR EVERYONE

10.3.2.1 People's recreational appetite is a function of, amongst other things, their age, ability, past experience, cultural background, expectation and willingness to try something new. Subject to the special qualities, and community and recreational capacity, the National Park should offer outdoor recreation opportunities to everyone, from beginner to expert, and partners should encourage people who might not typically choose outdoor recreation to consider doing so.

10.3.2.2 Although much has been done to improve access for all, there is a range of barriers to participation, including lack of awareness of the opportunities, feelings of vulnerability or of risk, lack of disposable income or transport, and time constraints, for example due to caring responsibilities. There is no single characterisation of an 'excluded person', since any of these excluding factors may affect anyone, but the factors may often occur in combination, making them even harder for a person to address.

Policy DE2: Remove barriers to people's enjoyment of the National Park

Example measures:

- Promote a wide range of recreational opportunities for different abilities/levels of interest
- Promote the health and well-being benefits of outdoor recreation to new audiences

10 DISCOVERING AND ENJOYING THE NATIONAL PARK

- Provide gateway and progressive experiences for new and under-represented audiences, including young people and people from minority ethnic communities, for example by offering guided/logistically supported/low-cost activities as appropriate
- Enable people to participate in management of the National Park, for example through volunteering
- Work with public, private and third sector organisations to involve new audiences
- Ensure that recreational opportunities are serviced by public transport or active travel opportunities where possible

10.3.3 PROMOTING THE NATIONAL PARK AS A RESOURCE FOR HEALTH AND PERSONAL DEVELOPMENT

10.3.3.1 Relatives, carers and friends, conservation organisations, and learning and recreation providers help people to discover, enjoy and protect the National Park. This essential work helps to improve people's health and wellbeing, increase young people's educational attainment and build personal responsibility and community spirit.

10.3.3.2 Children are tomorrow's land managers and decision-makers and the foundation of communities today; a core challenge for the NPA and others is to encourage young people in particular, and Pembrokeshire communities in general, to enjoy and learn about the coast and countryside.

Policy DE3: Promote the National Park as an inspirational place for enjoyable, outdoor learning and personal development

Example measures:

- Encourage and enable everyone to enjoy and learn about the special qualities of the National Park, removing or reducing any barriers that may exist
- Provide tailored information and activities for schools, including extra-curricular activities, with a strong emphasis on active outdoor learning and play and on cultural and emotional connections with the landscape
- Work with young people and youth groups, for example through the John Muir and Duke of Edinburgh Award schemes
- Provide information and activities for young people in deprived urban areas (working through for example Plant Dewi, the Youth Offending

Team, and Communities First)

- Provide or support activities and events for the elderly and for those with health issues, particularly for those living in areas of multiple deprivation or in rural-isolated areas
- Influence educational policy and support delivery by promoting awareness of national parks as unique learning resources

10.3.4 CONNECTING PEOPLE AND LANDSCAPES

10.3.4.1 People's natural and cultural heritage can be better conserved if we understand the values and motives of the generations which shaped them. Clues to these lie in language, literature, food and drink, music and the visual arts, but also in the distribution of habitats and species, in the pattern of monuments, and in the lie of the land itself. A better understanding of these can enrich people's experience of the National Park and bring new dimensions to its management. Pembrokeshire is also rich in contemporary cultural trademarks and institutions, ranging from Transition Community initiatives to a thriving surfing scene.

Policy DE4: Celebrate the cultural connections between people and landscapes

Example measures:

- Explore and celebrate the interactions between physical and cultural heritage, and between the past and the present, by offering unique windows on landscape and culture e.g. through natural and heritage sites, art, language and dialect, and music

10.3.5 INVOLVING PEOPLE IN DECISION-MAKING AND DELIVERY

10.3.5.1 People's enjoyment of the National Park is closely linked to understanding of it, and success in much of the NPA's conservation and access work, and that of its partners, depends on people's awareness and goodwill. Whether the NPA is seeking to influence land management for conservation, open a permissive path or improve the condition of a historic building, it works with partner organisations, residents and visitors, as agents of change, building capacity as needed, with the ultimate goal of true collaboration with geographical communities and communities of interest.

10 DISCOVERING AND ENJOYING THE NATIONAL PARK



10.3.5.2 Publicly-funded partners must project a clear image and identity in terms of their ethos and functions, and be open, consistent and innovative while providing value for money. Trust and reputation are prerequisites to any organisation's ability to change attitudes and behaviour. These can only arise from meaningful two-way engagement, transparency and organisational learning.

Policy DE5: Empower people to deliver National Park purposes

Example measures:

- *Involve people in decision-making and delivery, and explain partner organisations' purposes and values*
- *Create new opportunities so as to involve new audiences in National Park decision-making and delivery*
- *Provide map-based information so people can see what is happening in a particular area of interest, why, and what the benefits/impacts are*
- *Enable groups and individuals to become involved in joint projects*
- *Provide volunteering opportunities and support informal learners*
- *Encourage groups to take on management of sites or activities as appropriate*



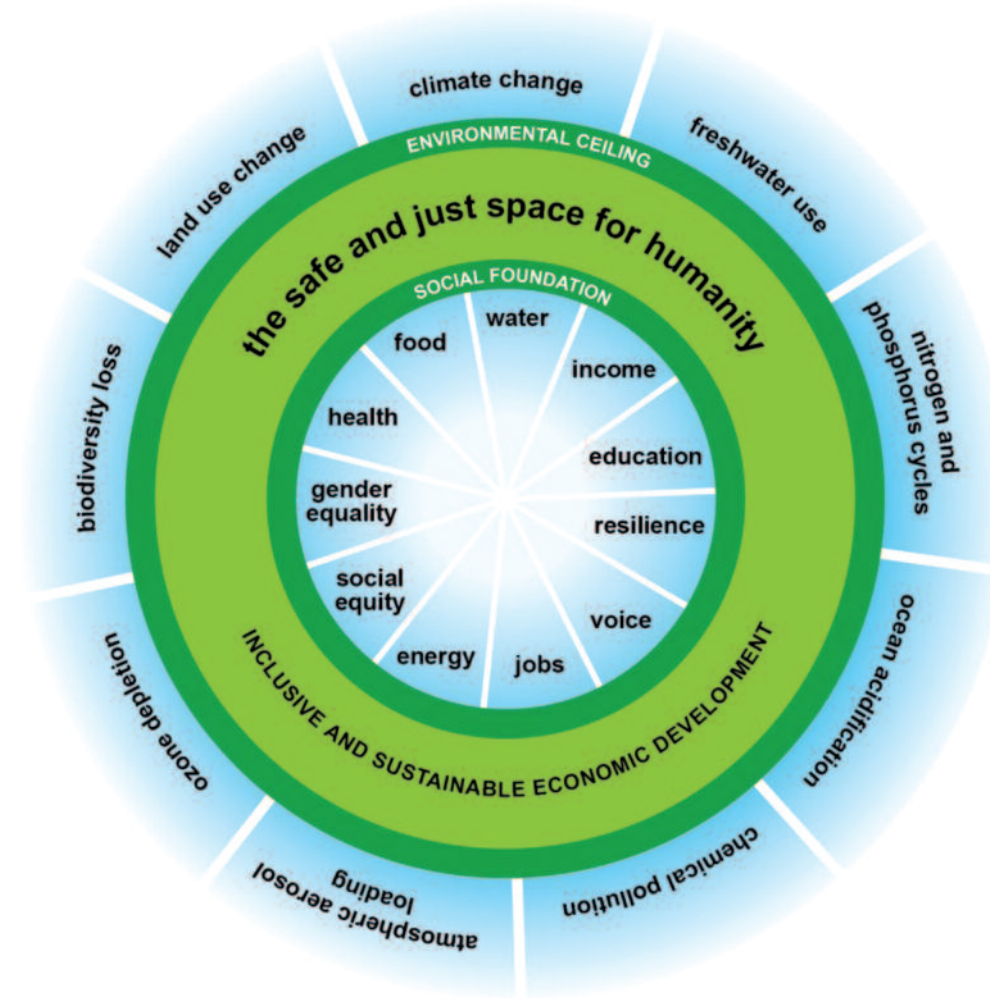
ANNEX 1 – OXFAM: A SAFE AND JUST SPACE FOR HUMANITY

The graphic below unites global development goals and poverty eradication together into a single framework.

“The social foundation forms an inner boundary, below which are many dimensions of human deprivation. The environmental ceiling forms an outer boundary, beyond which are many dimensions of environmental

degradation. Between the two boundaries lies an area – shaped like a doughnut – which represents an environmentally safe and socially just space for humanity to thrive in. It is also the space in which inclusive and sustainable economic development takes place.”

From the Oxfam Discussion paper “A Safe and Just Space for Humanity”, 2012



ANNEX 2 – PRINCIPLES OF THE ECOSYSTEM APPROACH AND HOW THEY ARE ADDRESSED BY THE MANAGEMENT PLAN

Ecosystem approach principle (from the Convention on Biological Diversity)	How the Management Plan takes the principle into account
<p>Principle 1: The objectives of management of land, water and living resources are a matter of societal choices.</p>	<p>National Parks and their purposes are a response to society's wish to conserve and enjoy the UK's finest landscapes.</p> <p>The special qualities and the vision for the National Park offered in the Management Plan are based on people's opinions and views.</p> <p>Management aims and policies are geared to achieving the vision and were developed through a consultative process.</p>
<p>Principle 2: Management should be decentralized to the lowest appropriate level.</p>	<p>The National Park Authority is a small organisation. Policy decisions are made by Members, two-thirds of whom are selected from elected County Councillors and one-third of whom are appointed by Welsh Government.</p> <p>Partners involved in conservation of the natural environment (and of the historic environment and recreational opportunities) work with and through landowners and property owner/occupiers to achieve public benefits from private assets.</p> <p>Much is achieved through volunteer effort, voluntary codes of practice and goodwill by groups and individuals.</p>
<p>Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.</p> <p>Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.</p> <p>Principle 6: Ecosystems must be managed within the limits of their functioning.</p> <p>Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.</p>	<p>Nature conservation effort takes place within the context of the Local Biodiversity Action Plan for Pembrokeshire. This operates within Welsh and UK conservation frameworks and the strategic goals set out within them.</p> <p>Improving habitat and species connectivity is a key policy goal, as are conservation of landscape function and protection of water, soil and air quality.</p> <p>Conservation work takes place at the most appropriate or practical scale and partners take a pragmatic, with-nature approach to managing the landscape and restoring features and areas of it. Learning and adaptive management are key to ensuring that conservation work remains relevant.</p>

ANNEX 2 – PRINCIPLES OF THE ECOSYSTEM APPROACH AND HOW THEY ARE ADDRESSED BY THE MANAGEMENT PLAN

Ecosystem approach principle (from the Convention on Biological Diversity)	How the Management Plan takes the principle into account
<p>Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.</p> <p>Principle 9: Management must recognize the change is inevitable.</p>	
<p>Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.</p> <p>Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.</p>	<p>The Management Plan recognises the strong links between people and the landscape in the National Park and makes the connection between management of natural resources and the appearance and conservation of the landscape.</p> <p>Visitors and residents value the National Park's natural, historic and cultural environment, and its recreational opportunities, highly. Conservation and enhancement of the National Park's special qualities therefore helps to maintain residents' quality of life and the visitor economy, which is a major part of the National Park's economy and that of the region.</p>
<p>Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.</p> <p>Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.</p>	<p>The Management Plan takes an evidence-based, adaptive and consultative approach to managing the special qualities of the National Park landscape, based on National Park purposes and a shared vision.</p>



Approved by the Pembrokeshire Coast National Park Authority on 17th December 2014