BIOSPHERE RESERVE NOMINATION FORM

[January 2013]

INTRODUCTION

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere (MAB) They are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Coordinating Council of the MAB Programme at the request of the State concerned. Individual biosphere reserves remain under the sovereign jurisdiction of the State where they are situated. Collectively, all biosphere reserves form a World Network in which participation by States is voluntary.

The World Network is governed by the Statutory Framework adopted by the UNESCO General Conference in 1995 which presents the definition, objectives, criteria and the designation procedure for biosphere reserves. The actions recommended for the implementation of biosphere reserves are set out in the "Seville Strategy" and were further developed in the Madrid Action Plan (2008-2013). These documents should be used as basic references for the completion of this nomination form.

The information presented on this nomination form will be used in a number of ways by UNESCO:

(a) for examination of the site by the International Advisory Committee for Biosphere Reserves and by the Bureau of the MAB International Coordinating Council;
(b) for use in a world-wide accessible information system, notably the UNESCO-MABnet and publications, facilitating communications and interaction amongst persons interested in biosphere reserves throughout the world.

The nomination form consists of three parts:
Part one is a summary indicating how the nominated area responds to the functions and criteria for biosphere reserves set out in the Statutory Framework, and presents the signatures of endorsements for the nomination from the authorities concerned. Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects. Part three consists of two annexes: the first annex will be used to update the Directory of Biosphere Reserves on the MABnet, once the site has been approved as a biosphere reserve. The second annex will be used to provide promotional and communication materials of the biosphere reserve. Tables, illustrations and maps as appropriate throughout the nomination form are welcomed.

The form should be completed in English, French or Spanish. Two copies should be sent to the Secretariat, as follows:

1. The original hard copy, with the original signatures, letters of endorsement, zonation map and supporting documents. This should be sent to the Secretariat through the Official UNESCO channels, i.e. via the National Commission for UNESCO and/or the Permanent Delegation to UNESCO;
2. An electronic version (on diskette, CD, etc.) of the nomination forms and of maps (especially the zonation map). This can be sent directly to the MAB Secretariat:

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PART I: SUMMARY

Introduction

The Isle of Wight is an island situated south of England, separated from the mainland by the Solent, with the English Channel forming its southern boundary. Covering an area of 380 square kilometres, with a coastline that runs for 92 kilometres, it is England's largest island. The chalk spine crossing from east to west stretches out at the western tip in a series of three chalk stacks, known since medieval times as the Needles. The Island exhibits, at a small scale, the key characteristics of much of lowland England, from farmed arable coastal plains to pastures and woodland, and from steep chalk downs to diverse estuarine seascapes and dramatic sea cliffs and stacks.

Almost 50 per cent of the Island falls within the Isle of Wight Area of Outstanding Natural Beauty (AONB), divided into five separate parcels, and around half of the coastline is recognised as Tennyson and Hamstead Heritage Coasts. The international significance of the AONB is recognised through its classification as a Category V Protected Landscape by the International Union for the Conservation of Nature (IUCN). In 2013, the IUCN UK Committee reaffirmed the Category V status for AONBs, confirming the significant part they play in conserving the UK's biodiversity.

The Island has a range of internationally, nationally and locally important nature conservation sites, including Special Areas of Conservation, Newtown National Nature Reserve, 41 Sites of Special Scientific Interest and 395 Local Wildlife Sites (Sites of Importance for Nature Conservation) that are recognised for their important habitats and species, including maritime cliff and slope, coastal and flood plain grazing marsh, lowland heathland, saline lagoons, intertidal mudflats, coastal sand dunes, intertidal flats and seagrass beds, and coastal vegetated shingle. The Solent and Southampton Water is designated as a Ramsar site and as a Special Protection Area, as it supports internationally important numbers of wintering waterfowl and various rare invertebrates and plants. Some species are unique to the Island or are thriving due to the protection given to them by the Solent, including the red squirrel, dormouse, various bat species, Glanville fritillary butterfly and early gentian.

The Island's non-tidal river valleys are short and narrow in comparison with those of neighbouring mainland counties. All the major rivers flow northwards and contribute to the estuarine coastline. Minor rivers flow southwards and give rise to characteristic steep coastal valleys or 'chines'. Public water supply comes from surface and groundwater sources, including three major aquifers and the rivers Test and Itchen in Hampshire.

Although most of the Island is rural, there are a wide range of settlements, including small villages, medieval planned and post-medieval towns, 19th-century seaside resorts and 20th-century development. The locally quarried Bembridge limestone is a characteristic building material in many villages. The Isle of Wight possesses some of the best sites in Europe for dinosaur remains, as well as a diverse and often abundant source of other fossils. The Island also contains a wealth of visually prominent prehistoric burial mounds or barrows, usually found on the chalk ridge.

Many recreation activities are possible, including walking, cycling, horse riding, sailing, surfing and windsurfing. Internationally renowned Cowes Week is the longest-running regatta in the world. The long running Ryde Carnival is now in its 130th year. The Island's beaches and seaside resorts, such as Ryde, provide a range of recreational opportunities while Alum Bay and Blackgang Chine offer more traditional seaside family experiences. Poets such as Tennyson and Keats were inspired by the Island's landscapes, which continue to inspire poets and artists. Feelings of tranquillity, escapism and inspiration are particularly associated with the elevated chalk downs, coastal landscapes, and lack of noise and light pollution; most of south-east England's 'Dark Skies' are found in the area.

The Isle of Wight is internationally renowned for its diversity in landscapes within the microcosm of the Island comprising a mix of chalk grasslands, woodlands, coastal landscapes and the surrounding marine environment. The Island is defined by the sea around it, however; the intimate mix of landscape types from coastal cliffs to wide sandy beaches and small hedge-lined fields to wide arable vistas is testament to how the combined forces of nature and man have influenced the Island over time. This insular nature has meant many of the pressures on the south-east of England over the past 50 years have had less influence on the Island's natural and cultural heritage and this has brought challenges as well as opportunities.

The lack of intensive farming, development, road infrastructure projects and invasive mammal species have left our landscape rich in wildlife with important populations of woodland and riparian mammals, farmland birds and agriculturally unimproved grasslands, which thrive on a landscape scale.

The Island population are dependent on our landscape providing the ecosystem services required, such as water from rivers and chalk aquifers, carbon storage in woods and river valley peatbeds and high quality food from farmland and local seas. The landscape also adds to the overall quality of life for residents as well as providing an escape to the millions of visitors the Island welcomes each year.

The natural heritage of the Island is balanced by the cultural heritage, from boat building at Bouldnor 8000 years ago through the building of barrows on the downs, castles on the coast and stately homes in the shadow of the hills. It became the prison of kings and the home to queens as well as collecting a diversity of scientists, poets and artists. Bringing people together is a traditional Isle of Wight pastime in modern times with the Isle of Wight Walking and Cycling Festivals, Cowes Week regatta and the Isle of Wight Festival being internationally recognised.

The Isle of Wight has a strong environmental movement, supported by the Isle of Wight Council, which in recent years has encouraged bus use, walking and cycling for the health of Islanders as well as the environment; has reduced levels of waste to landfill and increased opportunities for local sustainable transport.

The overriding reason for this submission for the Biosphere Reserve designation is to conserve and enhance the unique environment of the whole of the Isle of Wight and its local seas, highlighting and strengthening the links between a healthy natural terrestrial and marine environment and the social and economic well-being of people. This could be achieved by: promoting environmental education and awareness, increased community engagement, healthier lifestyles and diets, eco-tourism activities, local branding schemes, environmental innovation to attract new businesses and investment, and climate change mitigation and adaptation measures.

UNESCO Biosphere will provide the high-profile unifying framework for the Isle of Wight, to guide the ways in which the population view, value, use and manage the natural environment and help to attract new resources to do so.

1. PROPOSED NAME OF THE BIOSPHERE RESERVE:

[It is advisable to use a locally accepted geographic, descriptive or symbolic name which allows people to identify themselves with the site concerned (e.g. Rio Platano Biosphere Reserve, Bookmark Biosphere Reserve). Except in unusual circumstances, biosphere reserves should not be named after existing national parks or similar administrative areas.]

Isle of Wight UNESCO Biosphere Reserve

2. NAME OF THE COUNTRY:

United Kingdom

3. FULFILLMENT OF THE THREE FUNCTIONS OF BIOSPHERE RESERVES:

[Article 3 of the Statutory Framework presents the three functions of conservation, development and logistic support. Explain in general terms how the area fulfills these functions.]

3.1 "Conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation".

(Stress the importance of the site for conservation of biological and cultural diversity at the regional or global scales).

Conservation of Landscapes

The Isle of Wight is a unique place within the British Isles. The Island has outstanding landscapes, which will not only contribute to the objectives of UNESCO's Man and the Biosphere Programme, but showcase how people and the environment can coexist sustainably on one of the most densely populated Islands in Northern Europe.

The Isle of Wight landscapes bring together a distinctive combination of internationally important geology, wildlife, culture and heritage within an archetypal microcosm of southern Britain. The Isle of Wight is internationally renowned for the diversity of its landscapes comprising a mix of 11 discrete Landscape Character Types, two of which occur nowhere else in the world.

The international significance of the Isle of Wight AONB is recognised through its classification as a Category V Protected Landscape by the International Union for the Conservation of Nature (IUCN). In 2013, the IUCN UK Committee reaffirmed the Category V status for AONBs, confirming the significant part they play in conserving the UK's biodiversity.

The Isle of Wight is made up of 11 distinct Landscape Character Types:

- **Chalk Downs** - areas of open hilly landscape with long vistas, distinct skylines, large fields, sparse hedge or field boundaries, few mature hedgerow trees and a sense of space and exposure. Chalk grassland has a very rich ecology and holds a number of important habitats for rare plants and animals.
- **Traditional Enclosed Pasture** - Most is found north of the central and southern chalk downs because of the geology of the Island and is made up of lush green pastures with large hedges, small copses and woodlands that may be characterised as 'ancient' countryside.
- **Intensive Agricultural Land** - The land in the Intensive Arable Lands exists on the Lower Greensand hills and Greensand plains, the most productive arable land on the Island.
- **Southern Coastal Farmland** - It has an open and exposed feel, with a gently undulating landform. The influence of the sea can be seen by the few mature trees, which have been bent over by the salt laden winds, and the dramatic cliff falls along the seaward edge of fields. The

continuing coastal erosion process often exposes fossil remains in the soft geology of the cliffs.

- **Sandstone Hills and Gravel Ridges** - This landscape character type appears primarily in small land parcels south of the central chalk ridge. The high Greensand hills (Sandstone Hills), in general support pasture except on steeper slopes. These slopes are often planted with mixed forestry and occur immediately to the south of the central chalk ridge. The geological resource of this landscape character type has led to pressure for quarrying for sand and gravel extraction.
- **Northern Woodland** - Occurring on the heavier soils in the north of the Island where agricultural use has been unviable, these large areas of plantation and mixed woodland are a dominant feature in the landscape.
- **Landscape Improvement Zone** - This landscape character type describes parts of the Island that has changed as a result of sporadic and urbanising development over time.
- **Harbours and Creeks** - Covering estuarine environments on the Island, all have common features such as mudflats, shingle, salt marsh, reed beds, an open aspect, and fringing oak woodlands. However, each has its own distinct form and features.
- **The Undercliff** - The Undercliff is an area of landscape character that is unique to the Isle of Wight. This is the largest inhabited rotational landslip in Western Europe. It is of major geological, ecological and archaeological importance.
- **Osborne Coast** - A planned landscape of the nineteenth century, it was largely the concept of Prince Albert, Queen Victoria's beloved Prince Consort. Designed as a very private area screened from the town, the house and terrace afford vistas of the landscaped grounds and Solent beyond.
- **Northern Coastal Cliffs** - A small but important landscape character type occurring along the north-west coast of the Island. Consists of low slumped and sloping broken cliffs of clay and gravel that were formed as a result of the effects of the action of the sea on the underlying geology.

Area of Outstanding Natural Beauty (AONB) Designation

The Isle of Wight plays host to the Isle of Wight Areas of Outstanding Natural Beauty (AONB). AONBs are nationally important protected landscapes designated under the National Parks and Access to Countryside Act 1949. The Isle of Wight AONB is 1 of 46 AONBs in Britain, 33 wholly in England, 4 wholly in Wales, 1 which straddles the English/ Welsh border and 8 in Northern Ireland) covering 18% of the total countryside. Together with the National Parks they are protected in the national interest both for today and for future generations as examples of our finest countryside. In planning terms AONBs are equivalent to National Parks, and are afforded the same level of consideration and protection.

The designation helps to protect not just the natural features - the trees, fields and open spaces - but also settlements and working environments that are unique characteristics of the countryside. The designation allows for the development of communities and economic activity including rural businesses, in ways that further enhance the character of the AONB.

The Countryside and Rights of Way Act 2000 (CRoW Act) strengthened the profile and protection of AONBs. In particular, the Act: Placed a duty on all public bodies and statutory undertakers to 'have regard' to the purposes of AONBs. Established a process for creating AONB conservation boards, where this is supported locally. Created a statutory responsibility for local authorities and conservation boards to produce and regularly review AONB Management Plans.

The Isle of Wight AONB was designated in 1963, the fourteenth of the 46 areas to be confirmed. The total area designated is 191 square kilometres, which is approximately half the land mass of the Island. Unusually, the AONB area is not continuous and is made up of five distinct land parcels across the Island. A detailed record of the original designation process was published in 2003. This sets out the reasons why areas that were put forward during the extensive consultation were either included or excluded. The special qualities that led to designation are set out more fully in later chapters.

Heritage Coasts Definition

There are two defined Heritage Coasts on the Isle of Wight; Tennyson which runs along the South Coast and Hamstead in the North West, including Newtown. These were defined in 1974 and cover roughly half of the Island's coastline. The Heritage Coast areas within the AONB are arguably those areas most readily associated with the scenic beauty of the Isle of Wight. Their natural beauty and their enjoyment by the public give them a special claim for both protection and sensitive management.

The Tennyson Coast includes the famous, spectacular and iconic chalk stacks of 'The Needles', high chalk cliffs, deep wooded 'chines' and landslip areas cut in the clay and sand beds below the chalk. With its changing rock and landforms, it is a coast not only of varied beauty but also one of great scientific interest. Tennyson Heritage Coast runs for 34km, from Steephill Cove in Ventnor to Widdick Chine at Totland. This coastline is breath-taking, with an open aspect; long distance views to the English Channel; a special quality of light; the iconic Needles chalk stacks and other multi-coloured cliffs; a fossil rich coastline including the well-known dinosaur footprints at Brook Bay; miles of undeveloped coastline and unspoilt beaches; important wildlife habitats; memories of past islanders including smugglers; Chines and lighthouses.

The Hamstead is a 'remote' Heritage Coast dominated by the shallow, drowned estuary of Newtown River. It is the haunt of terns and curlews and many birds over-winter on the remote expanses of salt marsh and mudflats. Hamstead Heritage Coast runs for 11km and is situated on the north west of the Isle of Wight running from Bouldnor, near Yarmouth through to Thorness Bay, near Cowes. A tranquil and secretive coastline with inlets, estuaries and creeks; wooded hinterland and gently sloping soft cliffs this beautiful area offers a haven for wildlife including red squirrels and migratory birds. The ancient town of Newtown and its National Nature Reserve also fall within the area.

Although sharing many of the aims of AONB designation, Heritage Coasts are also defined for public enjoyment and appreciation, 'improving and extending appropriate recreational, educational, tourism and sporting opportunities where they do not conflict with the conservation of the resource'.
Since 1973, 45 stretches have been defined, covering more than one third of the coastline of England and Wales (1,525 km in total, with 1,027 km in England). The Countryside Commission set the following framework for these areas in Heritage Coasts in England: Policies and Priorities (1992):

The finest stretches of coast justify national recognition as Heritage Coast. They should be given effective protection and management: stronger measures should apply there than elsewhere.
The main objectives for Heritage Coasts are:

- To conserve, protect and enhance the natural beauty of the coasts, including their terrestrial, littoral and marine flora and fauna, and their heritage features of architectural, historical and archaeological interest;
- To facilitate and enhance their enjoyment, understanding and appreciation by the public by improving and extending opportunities for recreational, educational, sporting and tourist activities that draw on, and are consistent with, the conservation of their natural beauty and the protection of their heritage features;

- To maintain, and improve (where necessary) the environmental health of inshore waters affecting Heritage Coasts and their beaches through appropriate works and management measures;
- To take account of the needs of agriculture, forestry and fishing, and of the economic and social needs of the small communities on these coasts, by promoting sustainable forms of social and economic development, which in themselves conserve and enhance natural beauty and heritage features.

Both Heritage Coasts include large areas inland of the coastline and extend approximately 2km out to sea, so extending the interests of the Isle of Wight AONB Management Plan to the coastal environment.

The sea and land have separate and very different legal and institutional arrangements, different challenges and additional stakeholders. In previous plans we have focused only on the terrestrial elements of the coast there is a need for us to ensure that the special qualities of the inshore waters of the Heritage Coast areas are adequately conserved and enhanced.

Conservation of Ecosystems including species and genetic variation

The Island has a rich biodiversity largely due to the varied geology, landform and ongoing natural processes. The areas of chalk grassland; maritime slopes and cliffs; estuarine habitats; ancient woodlands and species are of particular importance regionally, nationally and internationally.

The Isle of Wight has many international designations, including a Special Protection Area, five Special Areas of Conservation and a Ramsar site, while the 41 Sites of Special Scientific Interest (largely in favourable or unfavourable recovering condition) cover nearly 3,000ha of the Island. The north coast of the Island forms part of the Solent European Marine Sites, a collective designation covering the internationally important areas of the Solent. The Solent and Southampton Water, (the Ramsar site and the SPA,) support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants. There is also one National Nature Reserve at Newtown managed by the National Trust.

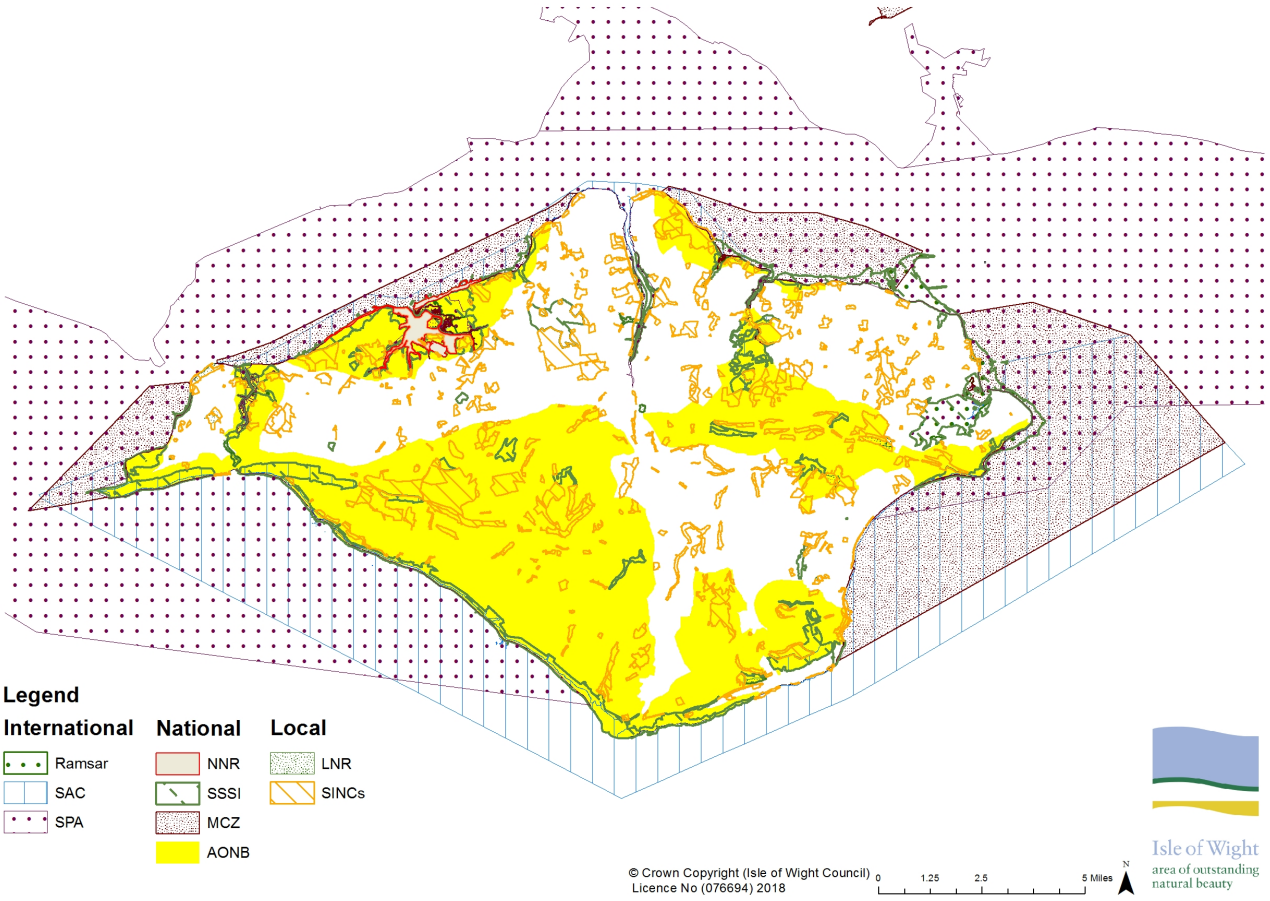


Figure 1. Environmental Designations Map

Some 5,000 ha of the Isle of Wight is covered by semi-natural habitats that include wet woodland, lowland mixed deciduous woodland, maritime cliff and slope, lowland calcareous grassland, coastal and flood plain grazing marsh, and lowland heathland and reedbeds. These habitats support a range of species, some of which are unique to the Island or are thriving due to the protection given to them by the Solent, including two of England's most endangered species, the red squirrel and dormouse, other important species are Glanville fritillary butterfly, bat species, field cow-wheat, early gentian and wood calamint.

Wildlife and the countryside have evolved with the influence of people throughout history. Since the mid-nineteenth century the pace of change has increased, which has had an impact on habitats and species. Intensification of food production in the agricultural sector driven by Government policy over the last 50 years, pressure from increased built development for transport and housing; commerce and industry have all led to change in the countryside and a decrease in biodiversity as a result of habitat change or loss. For example, Chalk grassland on the Isle of Wight has declined by two-thirds since 1850, however, a mosaic of important habitats remain. Areas of land that have poor soil, saline conditions or steep slopes have avoided the intensification associated with more productive land. The result is small areas of semi-natural habitat of high wildlife value being surrounded by a more hostile, less bio-diverse, intensively farmed landscape. These may act as important sources of diversity, with the potential to re-colonise the wider countryside if farming practice becomes less intensive.

Island status has prevented the introduction of some species such as mink and grey squirrel, and allowed populations of rare species such as dormouse, red squirrel and water vole to flourish. A mild climate and coastal conditions also allow species such as the Glanville Fritillary butterfly to live at the northern edge of their European range. The impact of sea level rise and the potential effect of erosion on coastal habitats is a

particular area of concern, due to the limited opportunities for the migration of habitats. However, climate change presents exciting biodiversity opportunities with new species colonising from the Continent.

Section 41 of the Natural Environment and Rural Communities Act 2006 lists species in the UK of nature conservation concern which supersedes the UK BAP lists, two of these species occur nowhere else in the British Isles – reddish buff moth and wood calamint. There are a 274 recorded Section 41 species found on the Island.

3.2 "Development - foster economic and human development which is socio-culturally and ecologically sustainable".

(Indicate current activities and the potential of the proposed biosphere reserve in fulfilling the objective of fostering sustainable economic and socio-cultural development, including by securing flows of ecosystem services from the biosphere reserve).

The Isle of Wight is located off the south coast of England and is the second most populous island in northern Europe with circa 140,000 inhabitants. It is considered part of the south coast conurbation including Portsmouth and Southampton, and as such forms part of the Solent Local Enterprise Partnership (LEP). The Island has over 92 km of uninterrupted coastline and half of the island is an Area of Outstanding Natural Beauty (AONB). The Island has a maritime and industrial tradition including boat building, sail making, the manufacture of flying boats, the world's first hovercraft, and the testing and development of Britain's space rockets.

Separated by the Solent from the mainland, the public transport links to the mainland are to and from Southsea (Portsmouth) by hovercraft, and via five ferry shuttle services across the Solent from Southampton, Lymington and Portsmouth.

Ryde, the Island's largest town with a population of approximately 30,000, is in the northeast of the Isle of Wight. It is a Victorian town with the oldest seaside pier in England.

Newport, in the centre of the Isle of Wight, is the county town and the Island's main shopping area. Located next to the River Medina, Newport Quay was a busy port until the mid-19th century.

The Bay area includes Sandown and Shanklin; popular seaside resorts with high summer sunshine levels and sandy beaches.

Cowes is located on the estuary of the River Medina.

East Cowes is famous for Osborne House and as the home of Saunders-Roe; the historic aircraft, flying boat, rocket and hovercraft company. The company has left a legacy of innovation in the marine and aeronautical industries.

Through the 2012 Island Plan it is acknowledged the Isle of Wight needs growth and investment to address the long-term sustainability of public services and the future economic prosperity of the Island. Whilst the Island has long been one of the UK’s most popular holiday destinations, this comes with a series of issues including over-reliance on seasonal, low paid jobs and a brain-drain of young educated people. Due in part to its popularity as a retirement location, the population of the Island shows an ageing demographic profile with significant levels of chronic disease. This places additional demand and therefore costs on local public services.

Whilst being an Island makes for a unique geography and beautiful environment, the cost of transport is higher than reaching other parts of the UK and therefore the Island is often overlooked when it comes to inward investment.

The main County Town of Newport was originally founded in the medieval period on the western bank of the River Medina at the tidal limit and lowest bridging point of the estuary. Newport remains the central administrative hub of the Island. Many of the towns and villages have a coastal position or were accessible through an estuary allowing access to the sea to enable trade with mainland Britain and France. While Brading, Yarmouth and Newtown are much smaller than the main urban centres of Newport, Cowes and Ryde, there is huge time depth, painting a story from Neolithic, through Iron Age and Roman occupation to mediaeval and Victorian heritage, with everything in between.

The development of Ryde, Ventnor, Sandown and Shanklin in the late eighteenth and early nineteenth century also depended on their coastal locations. However, it was not for their trading advantage, but their attraction for seasonal residents and holiday-makers. Tourism sparked during the Picturesque Movement during the Victorian period and reached a peak when Queen Victoria made a home at Osborne House in East Cowes. Visitors were particularly captivated by the rugged, wild landscape of the Undercliff and by the Island's distinctive and unusual chines. However, as more tourists were drawn to the Isle of Wight by its promise of 'otherness', the Island's distinctive identity was gradually subsumed into the Victorian culture. Much of the Island is now well known for the Victorian infrastructure which makes up much of the urban Isle of Wight and gives it a very distinct vernacular. The rural settlement pattern is mixed and includes nucleated villages, hamlets and dispersed farmsteads but historic village cores are generally small.

Prior to 1850 plentiful trading and cultural contacts with the rest of Britain and with the Continent existed in prehistoric, Roman, Anglo-Saxon, medieval and post-medieval times. Despite these contacts, insularity may have been an economic disadvantage in the later Middle Ages and at the end of this period the Island's towns were not prospering.

The Isle of Wight's geological separation from the mainland, yet close physical association with it, provides an analogy for the Island's cultural relationship with mainland England. Thus the Isle of Wight's character must be considered in relation both to its insularity and to its position very close to the English south coast.

Isle of Wight Modern Economy

The Isle of Wight economy is based on tourism, manufacturing and farming, however; today farming employs only a tiny percentage of the population, although it is still a major land use and heavily influences the natural beauty of the landscape.

Tourism is one of the Island's most important sectors, and growing the visitor economy has been identified as a priority. However, there has been a structural shift in how people take their holidays over the last 30 years, which has resulted in a gradual decline in the total number of visitors and a change in the demographics of visitors, their length of stay and the time of year they visit. In addition, the average spend per visitor is low and there remains significant seasonal variation in the number of visitors.

In 2015 Isle of Wight Destination Management Plan produced by Visit Isle of Wight in 2015 aimed to increase the value of tourism, by increasing the numbers of visitors (particularly those staying overnight) and by increasing the spend per visitor. Encourage innovation and industry investments, through offering accommodation 'products' and services which reflect changing demands. This includes both attracting new providers and preparing existing businesses for change (which may be challenging for long-established businesses). Develop a year-round tourist economy, which means providing a year-round offer with a wider

demographic appeal than those who would traditionally visit in the summer / school holiday peak times. Sustain and enhance the Island's landscape, through the protection and enhancement of its natural assets, plus 'placemaking' investment to improve the quality of place in towns and villages, the public realms and transport, movement and connectivity.

In 2017 Visit Isle of Wight established a Business Improvement District (BID) funded by a levy and agreed a five-year plan for spending the levy in order to deliver this plan. This is the first such levy system to be county wide anywhere in Britain.

In terms of industry, the Isle of Wight has a strong, modern manufacturing base with particular strengths in a number of sectors, including aerospace, renewable energy, composite materials, marine and defence electronics. The Island benefits from the presence of a number of companies of international recognition (e.g. BAE Systems, GKN Aerospace) which have strong local supply networks, made up mainly of Small and Medium Sized Enterprises (SME).

The main sources of demand are for industrial commercial property from advanced manufacturing (especially in Newport), plus more 'local' industries such as mechanics, storage and distribution. There is stronger demand for space with direct waterfront access (a typology of employment space not available in competing areas) and smaller, low cost office space.

Future Developments

On the Isle of Wight there is support to focus on economic regeneration in key regeneration areas, but there is a strong community feeling that it is important to ensure that we enable villages and hamlets to continue to thrive and meet the commercial and community needs of rural areas, particularly those villages which act as service centres to outlying areas. A key objective of the IW Council's Core Strategy (also known as the Island Plan) is to determine the most appropriate pattern of development and provision of services to create sustainable communities.

With this in mind, in August 2016 Isle of Wight Council (IWC), with support from the Local Government Association (LGA), commissioned Inner Circle Consulting (ICC) to help establish an ambitious Regeneration Programme for the Island, focusing on the three key opportunity areas of Newport, Ryde and The Bay.

The Island has a number of barriers to achieving growth. These are related in part to the 'Island factors' of separation from the mainland and high cost of delivering services, but also a sustained lack of investment in its tourist offer, issues with the transport infrastructure and reduced economic activity resulting from the ageing demographic and a working-age population reliant on low-skilled, seasonal employment.

The IW Council is leading the regeneration activity with public and private sector stakeholders, with a focus on intelligent use of land and asset offering an opportunity to drive growth to ensure the long-term sustainability of both Council services and the economic prosperity of the Island.

Regeneration Programme

Eleven priority projects have been identified in the three opportunity areas, which focus on growth aligned to Council and community aspirations for the places and build on the opportunity areas' existing identities and strengths. In Newport there should be a focus on growth of employment space for high-tech industry and housing growth linked to new employment, as well as enhancements to the harbour to link in with the

established industrial uses. From Cowes to Newport, the Medina Valley should be seen as a prime location to set up advanced manufacturing or high-tech marine business and attract further inward investment.

In Ryde and The Bay, the focus should be primarily on improving the tourist and leisure offer to enhance the experience for residents and visitors and diversify the nature of the visitor market. Encouraging a shift in the tourist offer towards higher-quality, 'boutique' accommodation and facilities will lead to longer-term value generation in these areas. In addition, the interchange and seafront facilities at Ryde must be transformed to create a fitting gateway to the Island. Better tourist experience should go hand in hand with a shift in the perception of those making fresh life choices as to what the Isle of Wight offers as a place to start a business or bring up a family.

Socio Cultural Activity

The Isle of Wight is a special place and is valued by those who live and visit here. The quality and attractiveness of its natural and built environment, and the historic nature of these, is a major factor when considering why people choose to live here.

Sustaining an attractive environment is important for the Island. The Island includes countryside and coastline with significant nature conservation interest. Our chalk grasslands, maritime cliff slopes and estuaries are particularly important, not only in a local context, but also on a regional, national and international scale.

There is a very strong local identity and associated community feeling, which can be seen through the work undertaken on Parish and Town Plans and Village Design Statements. Communities have previously been concerned that some development in the past has been poorly designed and has failed to contribute positively to the quality of the built environment on the Island. This has had a negative impact and design has too often failed to reflect local distinctiveness.

This distinctiveness has been shaped by historic development patterns, the needs of an increasing population and the Island's ever evolving economy which can be seen not only throughout the Island's many Conservation Areas, but across the Island as a whole.

A key objective of the Island Plan is to ensure that developments are constructed in line with the principles of sustainable development. At the same time, we should not stifle innovation and creative design that achieves these goals.

The physical setting of the Island, with its constantly evolving coastline and changes being experienced as a result of climate change, present a combination of risks to be taken into account in the Island Plan.

3.3 "Logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development".

(Please indicate current or planned activities).

The Isle of Wight Biosphere Reserve offers a wonderful opportunity to showcase the innovation found on the Isle of Wight. There are a number of work programmes either ongoing or under development highlighting the improvements being made towards sustainability along with the celebration of the culture of the Isle of Wight.

Support for Demonstration Projects

Down to the Coast (the East Wight Landscape Partnership) is an ambitious 5 year, £2.5m landscape conservation scheme focussed on the eastern side of the Isle of Wight. Led by the Isle of Wight AONB Partnership and funded principally by the Heritage Lottery Fund, Down to the Coast takes an holistic approach to the needs of the local area and its communities through the delivery of 16 cross-cutting projects. These support people to gain new skills and participate in activity to conserve and enhance the overall quality of the local landscape and improve the health and well-being of the communities for who it is a place to live, work and play.

The Down to the Coast scheme consists of 16 projects grouped into four themed programmes of work, each deliver sustainable development improvements, improves environmental education, conserves and enhances the landscape or provides opportunities for community engagement:

Programme A – Source to Sea (Conserve and Restore) including:

- Improving fish passage, enhancing river channels and increasing in-channel morphological diversity by reinstating channel planform and reconnecting floodplain.
- Improving connections between the ancient woodland sites and woodland management.
- Wetland Restoration.

Programme B – Caulkhead Heroes (Community Participation)

- Control major concentrations of invasive non-native plant species.
- Inspire a new generation of wildlife recorders, helping people to explore, record and conserve our local wildlife heritage and connect with their surroundings.
- This project will enable local communities to identify, research and celebrate notable past residents, events, landmarks or other aspects of the Down to the Coast landscape that contribute to its distinct character and sense of place.
- Working with local art societies, heritage groups and school students to explore the area's aesthetic.
- Delivering a series of outdoor performances inspired by local heritage and realised by local people.

Programme C – Pretty as a Picture (Access and Learning)

- Environmental Education with local school students in their local beach habitats delivering a sustainable and bespoke programme of marine and coastal education, enabling schools to visit their local coast as well as visit other sites where aspects of local coastal diversity can be exhibited.
- Produce and disseminate new materials that will help increase knowledge and understanding of these landscapes, promote access to our designed landscapes and celebrate and raise awareness of the work of 'Capability' Brown.

- There are three complementary components to this volunteer led project which will record and celebrate the farming heritage of the Down to the Coast landscape leaving a documentary legacy for future generation to enjoy.

- This project will increase public access to and understanding of the Eastern Yar and its tributaries.

Programme D - Growing with the Landscape (Training and Skills)

- Woodland Apprentices - This project will invite local young people (16-24) to undertake a programme of supervised environmental education and practical conservation activity at different countryside locations with the opportunity to gain recognised qualifications.

- deliver a unique package of activities and events designed to raise awareness of landscape issues amongst some of the area's hardest to reach communities,

- Time Taxi school and community groups will be encouraged to explore and record the historic and contemporary landscape.

Education

While the Island has a significant skills deficit with a less qualified population in terms of higher-level qualifications when compared to the mainland, this gap is closing. The proportion of the Island's population achieving a Level 4 qualification each year increasing at a faster rate than the regional and national averages. Although General Certificate of Secondary Education (GCSE - a qualification in a specific subject typically taken by school students aged 14–16) attainment has increased, the proportion of students achieving five GCSEs or above is lower than that of the south east region and the UK. Furthermore, fewer students go on to enter higher education when compared to those in the south east region or nationally.

Enhancing skills levels and improving educational attainment is necessary to provide an appropriately skilled workforce to both attract higher-value inward investment and ensure existing businesses remain competitive. Many industries and occupations face the combined effects of higher skill needs and an ageing workforce.

A key objective of relevant stakeholders is therefore to develop a workforce with the qualifications and skills which meet the demand from strategically important sectors, such as advanced manufacturing and engineering, marine industries and renewables. In addition, organisations such as the Visit Isle of Wight will be working with existing businesses in the visitor sector to develop appropriate skills for the development and growth of the visitor sector into new markets.

An important part of the business support strategy is to establish stronger university links with the Island, including research and development facilities and possibly a higher education presence. The aim is to stimulate local businesses and help provide a higher-level skills base for potential incoming firms. The Local Economic Partnership is to work with nearby universities and research centres to create a world-class research facility that can enhance development and expertise in key sectors, such as renewable energies.

A key project which demonstrates a number of these themes is the Isle of Wight College's Centre for Excellence for Composites and Advanced Manufacturing, which is located on the Island Technology Park in East Cowes. This is being led by GKN Aerospace and is now accepting students.

Other schemes in place include: the Isle of Wight Creative Apprentice Scheme, which is a programme to train students to deliver a programme of events to celebrate the Island's unique environment through arts, music, and cultural experiences; and the Woodland Apprentice scheme, which as part of the Heritage Lottery Fund supported Down to the Coast partnership, helps young people gain practical experience and qualifications, training the next generation of conservationists to care for our woodlands.

Research

A wide variety of existing research activity is taking place which is relevant to the management of the proposed Biosphere, principally through the higher education bodies of the universities, as well as various monitoring programmes which are spread across public and voluntary organisations. Working with the university partners and others a research projects can support Biosphere management work with applied information.

The Biosphere Partnership plans to identify the specific research questions and the needs to effectively understand and carry out key management activities in the area.

It is planned to foster higher education partners to develop a Research Plan that enables a better understanding and ability to monitor the proposed Biosphere area.

Current research work includes Climate Change: Solutions a project with Exeter University. Work is underway to create wildlife spaces and integrating biologically favourable surfaces, designs, materials and structures into the Island's built environments and into the fabric of urban places. The project aims to make opportunities for biodiversity to colonise towns with a view to create conditions more likely to promote adaptation to climate change, helping species utilise the green, grey and blue infrastructures of human settlements.

4. CRITERIA FOR DESIGNATION AS A BIOSPHERE RESERVE:

[Article 4 of the Statutory Framework presents 7 general criteria for an area to be qualified for designation as a biosphere reserve which are given in order below.]

4.1 "Encompass a mosaic of ecological systems representative of major biogeographic region(s), including a gradation of human interventions".

(The term "major biogeographic region" is not strictly defined but it would be useful to refer to the Udvardy classification system (http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975_745.html)).

The proposed Isle of Wight Biosphere Reserve biogeographically located in the Temperate Broad-Leaf Forests biome of the British Islands province of the Western Palearctic realm (based on the Udvardy 1975 classification system).

The Island has a similar bioclimatic to the other British Isles Biosphere Reserves most specifically Brighton and Lewes Downs Biosphere. The Island can be described as Temperate Coastal/ Marine Zone with mild wet winters and cool summers, due to the influence of the sea.

In Palaeolithic times the predominant vegetation cover would have been temperate broadleaf woodland. The diversity of the Island's geology has influenced the diversity of ecosystems and is reflected in the settlement patterns of people and their interaction and manipulation of the landscape; including the development of large areas of open Chalk Grassland following deforestation.

The Core areas of the Isle of Wight Biosphere Reserve cover a wide variety of full existing ecosystems. Parts of the Island and seabed most notably the Undercliff and reefs surrounding the Island have less human intervention and are designated core areas and buffer zone, while others are more intensively used for human settlements (transition zone) or for marine development and fishing.

4.2 "Be of significance for biological diversity conservation".

(This should refer not only to the numbers of endemic or rare species, but may also refer to species on the IUCN Red List or CITES appendices, at the local, regional or global levels, and also to species of global importance, rare habitat types or habitats with unique land use practices (for example traditional grazing or artisanal fishing) favouring the conservation of biological diversity).

The Isle of Wight represents a unique assemblage of species. It is a nexus between the northern most point for some species and the southernmost for others, for example; the Glanville Fritillary is found in abundance on the southern cliffs of the Island, yet is exceptionally rare elsewhere in Britain.

There are sites of internationally important geology, and the Island is home to a rich variety of important habitats and species, with 70 per cent of the Island protected by UK or European environmental designations.

The Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006 outlines the wildlife species of principal importance in England. There are 943 species of principal importance included on the S41 list; many have come from the original UK Biodiversity Action Plan lists, which continued to be priorities after the 2010 review. The Isle of Wight plays host to 274 S41 species, with another potential 53 priority species are priorities and would likely be added to the list upon a review.

The Isle of Wight is considered a 'Big Win' geographic area by the Natural England, because the species density on the Island is so high. There are currently 26 species, which are considered the highest priority due to their threat of extinction.

The Isle of Wight has no endemic species, as the Island's isolation is relatively recent (7,000 years ago), although endemic sub-species or varieties may yet be found among the lower animals and plants. The Island is home to species that occur nowhere else in Britain, most notably the early gentian.

Internationally Important

Ramsar Solent and Southampton Water and European Special Protection Area (SPA) Solent and Southampton Water SPA.

The area covered extends from Hurst Spit to Gilkicker Point along the south coast of Hampshire and along the north coast of the Isle of Wight. The site comprises of estuaries and adjacent coastal habitats including intertidal flats, saline lagoons, shingle beaches, saltmarsh, reedbeds, damp woodland, and grazing marsh. The diversity of habitats support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.

The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.

The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least 8 British Red Data Book plants are represented on site.

Special Area of Conservation (SAC)

Isle of Wight Downs SAC
Described as Vegetated sea cliffs of the Atlantic and Baltic Coasts, the Isle of Wight Downs represents one of the best examples of chalk grassland in the south of England under maritime influence. The exposed and weathered cliff tops provide a range of sheltered and exposed conditions. The most exposed chalk cliff tops support important assemblages of nationally rare lichens, including Fulgensia fulgens and an important site for a variety of orchids.

In addition, the area is particularly species rich in maritime species such as yellow horned-poppy Glaucium flavum, rock samphire Crithmum maritimum, wild cabbage Brassica oleracea, and buck's-horn plantain Plantago coronopus, together with calcareous grassland species such as common restharrow Ononis repens, wild carrot Daucus carota, carline thistle Carlina vulgaris and lesser hawkbit Leontodon saxatilis.

The Downs also has a number of uncommon transitions for example from chalk grassland species to sea cliff vegetation, which includes the Annex II species early gentian Gentianella anglica.

The site also plays host to breeding populations of Dartford warbler Sylvia undata and a wide range of invertebrates and plants. There are also some stands of the rare chalk heath, heathland on deep gravel overlying chalk is an unusual biological feature in the UK.

South Wight Maritime SAC
The southern shore of the Isle of Wight includes a number of subtidal reefs that extend into the intertidal zone. This site is selected on account of its variety of reef types and associated communities, including chalk, limestone and sandstone reefs. To the west and south-west some of the most important subtidal British chalk reefs occur, representing over 5% of Europe's coastal chalk exposures, including the extensive tide-swept

reef off the Needles and examples at Culver Cliff and Freshwater Bay. These support a diverse range of species in both the subtidal and intertidal. Other reef habitats within the site include areas of large boulders off the coast around Ventnor. There is a large reef of harder limestone off Bembridge and Whitecliff Bay, where the horizontal and vertical faces and crevices provide a range of habitats. The bedrock is extensively bored by bivalves. Their presence, together with the holes they create, give shelter to other species, which adds further to habitat diversity. Intertidal pools support a diverse marine life, including a number of rare or unusual seaweeds, such as the shepherd's purse seaweed Gracilaria bursa-pastoris. A number of other species reach their eastern limit of distribution along the English Channel at the Isle of Wight.

The South Wight Maritime SAC also represents a continuation of the important Isle of Wight Downs SAC into the coast across the Cretaceous hard cliffs, semi-stable soft cliffs and mobile soft cliffs. The high chalk cliffs with species-rich calcareous grassland vegetation, the former exposed to maritime influence and the latter comparatively sheltered. At the western end, the site adjoins the Isle of Wight Downs, providing an unusual combination of maritime and chalk grassland. The vegetation along this coast is a mixture of acidic and mesotrophic grasslands and include maritime species such as thrift Armeria maritima, which in turn support the UKs largest population of Glanville fritillary butterfly Melitaea cinxia.

The southern shore of the Isle of Wight, includes a number of either submerged or partially submerged sea caves. The large littoral caves in the chalk cliffs are of ecological importance, with many hosting rare algal species, which are restricted to this type of habitat. The fauna of these sea caves includes a range of mollusc species such as limpets Patella spp. and the horseshoe worm Phoronis hippocrepia.

Solent Maritime SAC
The Solent Maritime SAC encompasses a major estuarine system on the south coast of England with four coastal plain estuaries (Yar, Medina, King's Quay Shore, Hamble) and four bar-built estuaries (Newtown Harbour, Beaulieu, Langstone Harbour, Chichester Harbour). The Solent and its inlets are unique in Britain and Europe for their hydrographic regime of four tides each day and for the complexity of the marine and estuarine habitats present within the area.

Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting eelgrass Zostera spp. and green algae, sand and shingle spits, and natural shoreline transitions.

Unusual features include the presence of very rare sponges in the Yar estuary. Solent Maritime is the only site for smooth cord-grass Spartina alterniflora in the UK and is one of only two sites where significant amounts of small cord-grass S. maritima are found. It is also one of the few remaining sites for Townsend's cord-grass S. x townsendii and holds extensive areas of common cord-grass Spartina anglica, all four taxa thus occurring here in close proximity. The area also plays host to the Annex II species Desmoulin`s whorl snail Vertigo moulinsiana.

The Solent SAC also contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. Solent Maritime is a composite site composed of a large number of separate areas of ungrazed saltmarsh and support a different range of communities dominated by sea-purslane Atriplex portulacoides, common sea-lavender Limonium vulgare and thrift Armeria maritima.

Briddlesford Copses SAC
Briddlesford Copses SAC is a complex of woodlands that is the most structurally-diverse and species-rich area of ancient broadleaved woodland on the Isle of Wight. Ash – hazel (Fraxinus excelsior – Corylus avellana) and pedunculate oak – birch (Quercus robur – Betula sp.) woodlands cover large areas whilst there is a small area of sessile oak – birch (Quercus petraea – Betula sp.) woodland on the most strongly acid soils. Patches of hornbeam Carpinus betulus, beech Fagus sylvatica, alder Alnus glutinosa and wych elm Ulmus

glabra dominated woodland also occur. Woodland rides and railway verges support species rich neutral to acidic grassland. The site supports a breeding population of the Annex II species Bechstein's bat Myotis bechsteinii. The bats use holes and crevices in mature trees for roosting and the interconnecting woodlands for feeding.

Solent and Isle of Wight Lagoons SAC
The Solent encompasses a series of coastal lagoons. The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna including large populations of three notable species: the nationally rare foxtail stonewort Lamprothamnium papulosum, the nationally scarce lagoon sand shrimp Gammarus insensibilis, and the nationally scarce starlet sea anemone Nematostella vectensis. The lagoons at Bembridge Harbour have formed in a depression behind the sea-wall and sea water enters by percolation. Species diversity in these lagoons is high and the fauna includes very high densities of N. vectensis.

4.3 "Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale".

(Describe in general terms the potential of the area to serve as a site of excellence for promoting the sustainable development of its region (or "eco-region")).

The Isle of Wight is a unique place on the south coast of England. An area of 380 square kilometres sitting just under five kilometres from the south coast of England by the Solent and is reliant on sea travel connections with Portsmouth, Southampton and Lymington.

The Isle of Wight has a distinct local identity, with a wide variety of natural, rural and urban landscapes. The Island also has a strong sense of community and sense of place often referred to as 'Islandness'. This is possibly best represented by a passage from Jane Austen's Mansfield Park 'She thinks of nothing but the Isle of Wight, and she calls it the *Island*, as if there were not another island in the world'.

Sustainable Agriculture

The importance of agriculture, both in the past and as a current influence on landscape character, historic and natural environments should not be understated. 13,500 ha (70%) of the land area of the Terrestrial Buffer Zone is farmed and the future of its landscapes is linked to the sustainability of farming.

The underlying geology and diversity of landform dictates the suitability for farming practices and has led to a mixed patchwork landscape, traditionally of small scale farmsteads. This small scale nature contributes greatly to the character of the Terrestrial Buffer Zone, but this makes it more of a challenge to achieve economies of scale. In the 20th Century this led to increased leasing of land to larger scale operators, particularly in relation to arable cultivation. Many smaller farms continue to rely on mixed activities; however this mix now encompasses diversification activities such as tourism (holiday lets), retail (farm shops) and more recently renewable energy production (solar, bio-fuels).

Farmers and land managers have a major role to play in continuing to conserve and enhance the landscape. There is a need to support and encourage sympathetic land management practices for their landscape benefits.

This has been partly delivered through agri-environment schemes designed to add landscape, ecological and cultural value predominately through EU funding, with Brexit this funding stream is set to change. Local partners work closely with landowners and farmers to facilitate the maximum benefits for the landscape through advice, guidance, practical help and through the gathering and sharing of information.

The pressure for sub-division of land for non-agricultural activities is of on-going concern. Multiple ownerships and the shift away from traditional farming can bring with it additional structures and incongruous features contrary to the character of the landscape. Piecemeal disposal of land results in even smaller land holdings and may also raise questions of long term economic viability and reduce the capacity for diversification.

Island status and the cost of transport to access processing and markets on the mainland have a major economic impact on the viability of farming on the Island. Island farmers face additional disadvantages through the lack of local supportive infrastructure. Livestock farmers are increasingly under pressure as rising prices and changing legislation make the logistics and expense created through the lack of an abattoir or slaughterhouse and incinerator. Work is ongoing to find solutions to these issues to delivery sustainable farming Practices for the Isle of Wight. One of these methods is the diversification of land to deliver opportunities for the 2.5 million visitors per year.

Another current project is the development of farm clusters. This groups together and consolidates management of a number of farms over a larger area for the benefit of both farmers and wildlife. Farmers form a cooperative within a discrete area to farm crops or rear livestock in partnership with other farmers. The land is managed in a way that is sympathetic to local wildlife on a landscape scale larger than the individual farms.

Local Strategic Plans

2008 Sustainable Community Strategy
The 2008 Sustainable Community Strategy - Eco Island 2008 to 2020 set out to push towards the Island becoming a world renowned Eco Island, with a thriving economy and a real sense of pride, where residents and visitors enjoy healthy lives, feel safe and are treated with respect. Since 2008 there has been a push to protect and enhance our Island's natural beauty, with two large scale Heritage Lottery Funded Landscape Partnerships. The first was the West Wight Landscape Partnership, which worked closely with local communities to develop a wide range of projects to strengthen the rich natural, built and cultural heritage of the West Wight. The second is currently ongoing called Down to the Coast an East Wight Landscape Partnership that is all about conserving and celebrating what makes the East Wight a fantastic place to work, live and play.

In the last 10 years this programme of landscape improvement has led to projects which conserve and restore the landscape, increase community participation, provide opportunities for increased access to the landscape and research about the landscape and finally provide training to create new job opportunities using traditional skills within the countryside.

The 2012 Island Plan examined the ongoing sustainability of the Island and its economy. The Plan established the Island needs growth and investment to address the long-term sustainability of its public services and its future economic prosperity.

Dislocation from the mainland means the Island has the opportunity to showcase a discrete case example of sustainable living within an area of finite land space and resources.

Isle of Wight Economic Development Plan
The Isle of Wight Council published an Economic Development Plan for 2016/17 to 2018/19. It builds upon the Isle of Wight Economic Strategy (2008- 2020) recognising that the economic context has changed

significantly since the strategy was first published, although the priorities for the Island remain unchanged. The Strategy also builds on the evidence presented in the Local Economic Assessment (2010).

The Plan identifies the four priority action areas in which the IW Council will focus its attention and resources to improve the overall economic well-being of the Island as defined by the six key indicators in the Plan's performance framework.

The Plan also looks at the development of an Isle of Wight Economic Development Board with representatives from Isle of Wight Council, Chamber of Commerce, Isle of Wight College, Visit Isle of Wight and Isle of Wight Federation of Small Businesses.

The Island Plan - Local Development Frame Work and Core Strategy
The Planning and Compulsory Purchase Act 2004 (as amended), introduced a system of plan-making – the Local Development Framework (LDF). It is not a single plan, but an overall term for a number of separate documents known as Local Development Documents (LDD), which may be prepared at different times. The Island Plan (the Isle of Wight's LDF) provides the basis on which planning decisions are made. The Isle of Wight Council Core Strategy (including Minerals & Waste) and Development Management Policies (DPD), set out how, in spatial planning terms, the Island will develop up to 2027. The Island Plan Core Strategy was adopted by the Isle of Wight Council on 21 March 2012. A revision of the Plan, now being undertaken, is planned for consultation in 2018 and for adoption in 2019. The purpose of the plan is to contribute to the achievement of sustainable development. The policies when taken as a whole constitute the Local Authorities view of what sustainable development for the Isle of Wight means in practice how it will be delivered for the planning system.

Isle of Wight AONB Management Plan
The AONB Management Plan forms one of the supporting documents within the Island Plan. The IW AONB Management Plan seeks to add value to that process, not only through its policies, but additionally through its commitment to ensure that the IW AONB Partnership inputs, as appropriate, in to future Island Plan Local Development Documents. The overall aim of AONB Management Plans is to ensure continuity and consistency of sustainable management over time. It places a focus on the primary purpose of the conservation and enhancement of natural beauty with social and economic issues covered in terms of how they relate to the primary purpose. In pursuing the primary purpose of the AONB designation, account is be taken of the needs of agriculture, forestry, other rural industries and the social and economic needs of local communities. The designation helps to protect not just the natural features - the trees, fields and open spaces - but also settlements and working environments that are unique characteristics of the countryside. The designation allows for the development of communities and economic activity including rural businesses, in ways that further enhance the character of the AONB.

Education
The Island's workforce is mostly self-contained with very few people commuting from the mainland to work on the Island and commuting from the Island to work on the mainland. So investment has been made into apprenticeship schemes and Colleges to deliver a sustainable and well trained work force for example the Isle of Wight College in 2017 opened a £12 million specialist centre for engineering, offering specialised education and training relating to the composites industry.

Centre of excellence for composites, advanced manufacturing and marine (CECAMM) was created to satisfy the Island's need for a highly skilled workforce. Local composites businesses identified the skills they need to satisfy global demands and the CECAMM centre is set to deliver a world-class workforce to ensure sustainable long term economic success for local people and the Island as a whole.

The ongoing Regeneration Programme has been developed in response to a detailed analysis drawing on the Joint Strategic Needs Assessment and programme and consultations undertaken with business and residents at a whole island and area level. At the core of the Regeneration programme is the ongoing sustainability of economy, environment and social need.

Environmental Sustainability
Half the Isle of Wight is an Area of Outstanding Natural Beauty, an international significant landscape recognised through its classification as a Category V Protected Landscape by the International Union for the Conservation of Nature (IUCN). In 2013, the IUCN UK Committee reaffirmed the Category V status for AONBs, confirming the significant part they play in conserving the UK's biodiversity.

Many businesses on the Island also have a strong sustainability agenda with local water supplier Southern Water stating that caring for the environment means working to prevent pollution and continually improving their performance to meet the rising standards set by stringent environmental legislation. It also means managing their operational sites properly to minimise their environmental impact and look for new ways to generate power sustainably. Southern Water also recycles by-products of the wastewater treatment process to the land to provide an economical, sustainable alternative to chemical fertilisers. As well as working with customers to improve their water efficiency. They also actively seek to minimise their impact on wildlife and our natural surroundings when they plan and build their new developments. With nearly 25% of all water used on the Island coming from the River Test on the mainland there is an ongoing task to create a self-sufficient Island water resource.

Energy
The power of the sun or solar energy is a fundamental driver for many natural processes on earth. Due to its geographical location and Island status, the Island benefits from long sunshine hours, extended growing seasons and a comparably warm climate to the rest of the UK. The good sunshine hours, a mix of farmland and woodland for growing bio-fuels, coastal locations offering tidal flows, sea breezes and the underlying geology of the landscapes offer an array of resources that can be used for the production of energy.

Many of the communities within the rural parts of the Island are 'off the grid' for mains gas and are reliant on electricity, solid fuel, LPG or oil for their heating needs, which can be considerably more expensive. In fact many households are considered to be suffering from 'Fuel Poverty' as over 10% of their income is spent on fuel. Additionally, a specific problem in rural areas is that many of the properties are what are classed as 'hard to treat' meaning that they do not lend themselves to simple insulation measures.

Whilst large scale energy development is inappropriate, this does not rule out individual householder, business or community approaches, undertaken at an appropriate scale. Positive examples of this include The Chale Community Project, Shorwell, St Lawrence village hall, Brading Roman Villa, National Trust Needles Old Battery and a general increase in individual householders utilising a range of renewable technologies from wood boilers through to solar PV.

Biomass, anaerobic digestion and solar PV technologies may also be able to play a part in the capture of renewable energy. It is important to ensure that the growing of biomass crops is appropriate within the landscape. This will be dependent upon the crop type chosen, the extent of the planting and whether it is undertaken as part of crop rotation with more traditional farming practice. Anaerobic digesters need to be of a size and design and in a location which is appropriate within a protected landscape. Solar PV can be used as a renewable energy production technology at a range of scales, however, careful consideration is required to mitigate landscape impact.

The Solent LEP's Draft Heat & Power Strategy

The Isle of Wight – also suffering from grid constraints, which are only partially relieved by the new subsea interconnector cable – has already been earmarked as a potential testing ground for rolling out smart technology, such as energy storage, active network management, demand side response and smart meters. With the Isle of Wight a contained space, this could then be used to give an indication of smart technology's impact on a mini-system-wide basis. These could then be transferred to the wider Solent region and used to justify investment for turning the Solent into a smart grid. This demonstrates the Island's active involvement in developing a fit-for-purpose future energy system.

Health and wellbeing

'My Life, a full life'

The Health and Wellbeing Board includes the Emergency Services, Isle of Wight NHS, Isle of Wight Clinical Commissioning Group, voluntary sector and the Isle of Wight Council. The Board promotes the 'My Life a Full Life' care model to provide safe, sustainable and quality care and health improvements for all. In November 2016 the NHS produced the Hampshire and Isle of Wight Sustainability and Transformation Plan which sets out the strategic direction for health care, including My Life a Full Life, until 2021.

Isle of Wight National Health Service

The vision for the Isle of Wight NHS aims to provide high quality health care services in an environmentally sustainable manner. They are taking steps to improve energy efficiency, lower water consumption, and reduce the impacts of the waste generated. The organisation has a Sustainable Development Management Plan titled Greener Care. The plan sets out ambitions for reducing our environmental impacts and embedding sustainability principles in the organisation.

Sustainable Transport Initiatives

The Isle of Wight is part of an ongoing sustainable transport programme funded by the Department For Transport. Led by the Isle of Wight Council in partnership with Visit Isle of Wight, IW AONB and Cycle Wight an ambitious programme of events, activities and improvements to access have been undertaken since 2016. The overall ambition of the programme is to find methods to improve sustainable transport networks, reduce personal vehicle usage and reduce the Isle of Wight's carbon footprint and improve visitors experience.

The final programme of work is the 2018 Isle of Wight Environment Conference, which demonstrates the political ambition to develop an Action Plan across the broad environmental agenda, natural environment, sustainability and resource efficiency, to better manage the Island's resources and create ongoing sustainable growth for the economy.

4.4 "Have an appropriate size to serve the three functions of biosphere reserves"

(This refers more particularly to (a) the surface area required to meet the long term conservation objectives of the core area(s) and the buffer zone(s) and (b) the availability of areas suitable for working with local communities in testing and demonstrating sustainable uses of natural resources).

Total Biosphere area: 91496 ha or 914.96 km2

Core Area:

Marine	7935 ha
Terrestrial	4893 ha

Comprising	27 SSSIs, 1 SAC, 1 MCZ and 2 candidate MCZs

The Core Areas

The Isle of Wight's special features, which comprise the Core are peculiar in the fact the majority marks the periphery of the Island's landmass. This is largely because much of the most highly designated areas including Special Area of Conservation (SAC), Special Protection Area (SPA) and Marine Conservation Zones (MCZ) have been used to form the buffer to the Core Area. Moreover, there are many more high quality biodiverse site found on the Island, however, there are no buffers to these areas and therefore they fall into the Transition Area.

The Terrestrial Core Area is made up from 27 SSSI's and one SAC covering 4893 ha, which contributed to 5% of the total proposed Biosphere reserve. These are designated at national level and at international level (for the SAC). They are part of a statutory network of nature conservation protected areas under the Wildlife and Countryside Act 1981.

The Marine Core comprises parts of the South Wight Maritime SAC, Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, and the proposed Solent and Dorset Coast SPA, the candidate Bembridge MCZ and Yarmouth to Cowes MCZ, which contributed to 8% of the total proposed Biosphere reserve.

Buffer Area

Total Buffer area	64702 ha
Marine	40426 ha
Terrestrial	24276 ha

The terrestrial Buffer Area comprises of the Isle of Wight Area of Outstanding Natural Beauty a national landscape designation and IUCN Category 5 Landscape, Parkhurst Forest a SSSI and Brading Marshes part of the Solent SPA and which includes an international Ramsar site.

The Marine buffer comprises South Wight Maritime SAC, Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, and the proposed Solent and Dorset Coast SPA, the Bembridge MCZ and Yarmouth to Cowes MCZ.

Transition Area	13966 ha

4.5 Through appropriate zonation:
"(a) a legally constituted core area or areas devoted to long term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives".
(Describe the core area(s) briefly, indicating their legal status, their size, the main conservation objectives).

Designated as Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) affords the highest available protection for nature conservation, moreover these areas are sited within the Isle of Wight Area of Outstanding Natural Beauty (IW AONB) providing a further tranche of legal protection for their conservation value. The principal conservation objective of all designated SSSIs is to maintain or restore the habitats, species and other biological/geological features for which they were originally notified to meet the nationally agreed ('Public Service Agreement' and 'Biodiversity 2020' strategy) target standards of "favourable conservation status" of 95% of SSSIs by 2020, or at least "unfavourable recovering" status before then.

In May 2014 46.6% of all the SSSI land in the area was classified by Natural England's statutory condition monitoring system as being favourable, and nearly all the remainder 37.2% as unfavourable recovering, with 13.6% as "unfavourable no change" or 2.2 "declining" and the remainder as have been destroyed. Based on this assessment of status and trends, it is clear that sites' conservation objectives are being met and hence the prospects for their long-term conservation are good and that their size is adequate in general.

"(b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place".
(Describe briefly the buffer zones(s), their legal status, their size, and the activities which are ongoing and planned there).

The Buffer Zones are split between the terrestrial environment of the Isle of Wight Area of Outstanding Natural Beauty and the marine environment of the various SPAs, SACs and proposed Marine Conservation Zones (MCZ).

All of the SSSI Core Areas are located within the designated Isle of Wight AONB.

The terrestrial buffer zone boundary of the proposed Biosphere Reserve exactly follows the designated Isle of Wight AONB boundary, with the exceptions of Parkhurst Forest and Brading Marshes.

"(c) an outer transition area where sustainable resource management practices are promoted and developed".
(The Seville Strategy gave increased emphasis to the transition area since this is the area where the key issues on environment and development of a given region are to be addressed. Describe briefly the transition area(s), the types of questions to be addressed there in the near and the longer terms. The Madrid Action Plan states that the outer boundary should be defined through stakeholder consultation).

In the short term, no new organisation is planned to be established or deemed necessary or desirable at present to implement the proposed Biosphere Reserve. Instead it is proposed to work through the existing bodies within the Isle of Wight with the Isle of Wight AONB Partnership as the lead partner.

Implementation of the Biosphere work programme will be delivered in partnership and co-ordinated by the Isle of Wight AONB Partnership.

The action plan will be developed after the formal submission to UNESCO (in September 2018), to create a detailed framework to progress practical project activities for which external grant funding bids will be made.

It is envisaged that key partners will develop their own organisational action plans for implementation, derived from the overall Biosphere action plan.

Implementation will principally be carried out through existing mechanisms – including the Local Development Frameworks – the Island Plan, organisational/departmental work plans, and landscape/key site management plans – to effect practical changes on the ground. In addition, planned projects (by partner organisations and others) that are aligned to the Biosphere objectives and can be integrated in to the work programme when identified.

Examples of some of the key existing mechanisms to use for Biosphere implementation include:

- Local Authority – Local Development Frameworks, Sustainable Community Strategies, departmental work plans/strategies (e.g. Environment, Sustainability), Local Transport Plans, Local Biodiversity Action Plans.
- Isle of Wight AONB– Management Plan & Delivery Plan.
- Nature Improvement Area programme.
- Marine environment (Marine Management Organisation) – South Marine Plan, Strategy, Annual Plans, Strategic Research Plans (annual).
- Protected Areas (NE, NGOs) – site management plans, SSSI objectives, corporate initiatives.
- Others – organisational work plans/strategies, sectoral/partnership plans e.g. Neighbourhood Plans.
- Catchment Management Plan (led by the Environment Agency).

(d) Please provide some additional information about the interaction between the three areas.

The proposed Biosphere zones are intimately connected in the local area in part because of the Isle of Wight's island status giving a finite amount of space for the population to live, work and recreate within.

The high levels of biodiversity found within the Core Areas are mostly, but not exclusively, confined to these sites and interacts with the surrounding Buffer Zones through ecological processes in both the terrestrial and marine environments are important for the ongoing sustainability of local populations of species.

The Transition Zone is physically connected to the Terrestrial Buffer Zone and many of the arterial infrastructure routes traverse through the Transitional and Buffer Zones between urban settlements.

The Isle of Wight has 827 kilometres of public rights of way on the definitive map, which is the most concentrated network of any county in England. This network supports multiple uses including cycling, walking and horse riding.

Indeed a major objective of the Biosphere proposal is to better connect urban-dwellers with the natural environment on their doorsteps and beyond, in tandem with increased ecological connectivity by bringing the natural world into the heart of settlements.

Many of the natural resources necessary for a sustainable population are found spread across the entire island, whether these are the minerals and aggregates needed for urban development, food through farming or water from the chalk aquifers the landscape plays a vital role.

Similarly the land and sea are closely linked through "diffuse pollution" from the runoff/discharge of nutrients from land and disposal of sewage to sea, and through flooding and erosion of the coastline.

One of the key issues for the marine environment resulting from this is nutrient enrichment (mainly nitrogen and phosphorus from wastewater effluents and agriculture), causing locally poor bathing water quality, environmental impacts and presenting a threat to the important tourist trade.

A focus for the proposed Biosphere Reserve is to work with agencies and land owners to address nutrient enrichment from both rural and urban sources by influencing land use (e.g. through agri-environment schemes) and householders' behaviour by working with partners to support outreach programmes.

4.6 "Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and the carrying out of the functions of a biosphere reserve".

4.6.1 Describe arrangements in place or foreseen.
(Describe involvement of public and/or private stakeholders in support of the activities of the biosphere reserve in core, buffer and transition areas (such as agreements, protocols, letters of intent, protected area(s) plans)).

It is proposed, the Isle of Wight Area of Outstanding Natural Beauty Partnership will oversee and deliver project development and be accountable for the day to day delivery of the partnership, project governance, implementation and finances.

The Isle of Wight AONB Partnership was formed in April 2002, and is a broad-based independent organisation with representatives from many local, regional and national organisations and individuals with a

direct interest in the AONB. The AONB Partnership is financially supported by the Isle of Wight Council and Defra.

The purpose of the Partnership is to ensure a coordinated approach to the conservation and enhancement of the AONB, in light of the AONB Management Plan and its policies.

Core functions of the AONB are:

- Produce and review an AONB Management Plan.
- Raise awareness and appreciation of the AONB.
- Encourage people to take account of the AONB when carrying out any actions that might impact upon it.
- Monitor and report on the management of the AONB.
- Promote sustainable forms of social and economic development that conserves and enhances the AONB. This includes commenting on development control and planning policy issues.

AONB has a diverse and active community of organisations with responsibilities or interests in the local landscape, environment and promoting sustainable development along with a history of working co-operatively.

The Partnership is made up of a mixture of up to 80 organisations representing national statutory bodies, such as: Natural England and local decision makers such as the Isle of Wight Council, along with many businesses, third sector organisations and voluntary bodies represented by officers of key organisations on the IW AONB Partnership's Steering Committee.

The Steering Committee meet 4 times per year and will steer project development and delivery and to share and co-operate on their different organisational agendas, and is composed of organisations which, are elected from the Advisor Group.

Following designation an official Biosphere Steering Committee will be agreed, with the IW AONB remaining the lead delivery organisation with oversight and accountability for the Biosphere.

The Partnership includes the area's local authority, including the Isle of Wight AONB.

The Isle of Wight Biosphere Reserve is included in the emerging Isle of Wight AONB Management Plan 2019 – 2024.

Biosphere Timeline of Engagement

12 July 2016 the Isle of Wight AONB Partnership decided to lead a bid for IW Biosphere Status. The Isle of Wight AONB Partnership is an umbrella conservation organisation, with up to 80 Partner organisations, with a statutory duty to oversee the conservation and enhancement of nearly 50% of the Isle of Wight.

3rd October 2016 the IOW Council Sustainability Forum approved the development of a public engagement programme and a bid for Biosphere Status.

Since October 2016 IW AONB has been working in partnership to develop public support and the necessary information to allow for nomination.

Public Engagement events include Bioblitz 2017, Wolverton Garden Fair 2017, IW AONB Annual Forum 2018, Visit Isle of Wight Conference 2018, All Along the River Bank 2018, Hullabaloo 2018 and the Mardi Gras Carnival 2018. In addition an internet 'Survey Monkey' consultation has been undertaken.

4.6.2 Have any cultural and social impact assessments been conducted, or similar tools and guidelines been used?
(e.g. Convention on Biological Diversity (CBD)'s Akwé: Kon guidelines; Free, Prior, and Informed Consent guidelines, Biocultural Community Protocols, etc.). *(UNESCO's Programme on Man and the Biosphere (MAB) encourages biosphere reserves to consider and respect indigenous and customary rights through programmes or tools, in accordance with the United Nations Declaration on the Rights of Indigenous Peoples* (*http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf when relevant and appropriate)).*

No specific assessment has been undertaken. However, all members of the Partnership are subject to the UK Government's Equalities Act 2010, which outlines a requirement when making strategic decisions about the exercise of their functions to have regard to the desirability of reducing socio-economic inequalities; to reform and harmonise equality law and restate the greater part of the enactments relating to discrimination and harassment related to certain personal characteristics; to enable certain employers to be required to publish information about the differences in pay between male and female employees; to prohibit victimisation in certain circumstances; to require the exercise of certain functions to be with regard to the need to eliminate discrimination and other prohibited conduct; to enable duties to be imposed in relation to the exercise of public procurement functions; to increase equality of opportunity; to amend the law relating to rights and responsibilities in family relationships; and for connected purposes.

4.7 Mechanisms for implementation:

Does the proposed biosphere reserve have:
"(a) mechanisms to manage human use and activities in the buffer zone or zones"?
If yes, describe. If not, describe what is planned.

Management of the proposed Core Areas will continue to be according to the controls and objectives of the statutory nature conservation designations (SSSI and SAC) which are overseen by Natural England on behalf of the UK Government department of DEFRA.

The terrestrial Buffer Zone is presently covered by the Isle of Wight AONB management plan 2014 - 2019, which will soon be replaced by the Isle of Wight AONB Management Plan 2019 - 2024. This has been the subject of formal consultation during 2012 and 2013 prior to being adopted in March 2014 for a rolling 5-year period.

The Isle of Wight AONB Management Plan seeks long-term outcomes according to the 6 key objectives:

- Ensure the conservation and enhancement of the Isle of Wight AONB according to its statutory purpose in line with the aims, objectives and policies, as detailed in this Plan.
- Encourage and support opportunities to enhance the landscape and seascape of Isle of Wight AONB.
- Promote and raise awareness of the Isle of Wight AONB, its coastline, facets of its character, the services provided by the landscape and the benefits that these give to people.
- Promote the understanding of the key considerations in relation to Isle of Wight AONB, through the development of guidance documents and other publications.
- Monitor forces for change likely to have impact on Isle of Wight AONB and its management.
- Encourage and support appropriate rural economic development that conserves and enhances the Isle of Wight AONB.

Management of the proposed Marine Buffer Zone will continue to be according to the controls and objectives of the statutory nature conservation designations (SSSI, SAC and MCZ), which are overseen by Natural England or the Marine Management Organisation on behalf of the UK Government department of DEFRA. In addition, the Southern Inshore Fisheries and Conservation Authority IFCA is one of 10 IFCAs, which manage the marine inshore environment around the coast of England. The Southern IFCA District stretches from the Devon/Dorset border in the West to the Hampshire/Sussex border in the East and covers the combined areas of the relevant councils as well as the entire Dorset, Hampshire and Isle of Wight coastline out to 6 nautical miles from baselines. The Southern IFCA borders the Sussex IFCA to the east and the Devon and Severn IFCA to the west. IFCA is a local statutory body that has primary responsibility for inshore fisheries management, regulating commercial fisheries within open coastal waters under its duty to sustainably manage sea fisheries resources and to protect marine ecosystems from the impact of fishing.

"(b) a management policy or plan for the area as a biosphere reserve"?

If yes, describe. If not, state how such a plan or policy will be developed, and the timeframe. (If the proposed area coincides with one or more existing protected natural area(s), describe how the management plan of the proposed biosphere reserve will be complementary to the management plan of the protected area(s)).

The proposed Biosphere Reserve will be administered by the Isle of Wight AONB Partnership and delivered in partnership. It is proposed a strategy be developed to compliment the incumbent Isle of Wight AONB Management Plan for areas outside the Isle of Wight AONB. The work will be undertaken in partnership with key decision maker and stakeholders across the whole Isle of Wight and set out practical implementation priorities according to the distinct objectives, geographical environments and Biosphere zones.

The management strategy will describe the elements of the Biosphere and work in terms of their characteristics, information resources, and current policy and practice.

The proposed partnership will work in a similar way to the current IW AONB Partnership focussed on adding value to the wide and extensive spectrum of existing work delivered by many organisations. The Biosphere initiative has the potential to act as an umbrella as the IW AONB does to link partners working on common themes. to increase public awareness and deliver education opportunities.

In addition IW AONB has ongoing work with the Local Authority to integrate policy into the Local Development Framework (Island Plan).

"(c) a designated authority or mechanism to implement this policy or plan"?

No new organisation is planned to be established or deemed necessary or desirable at present to implement the proposed Biosphere Reserve. Instead it is proposed to work through the Biosphere Partnership of existing bodies within the Isle of Wight with the Isle of Wight AONB Partnership as the lead partner.

Implementation of the Biosphere work programme will be delivered in partnership and will be co-ordinated by the Isle of Wight AONB

The action plan will be developed from the Management Plan after the formal submission to UNESCO (in September 2018), to create a detailed framework to progress practical project activities for which external grant funding bids will be made.

It is envisaged that key partners will develop their own organisational action plans for implementation, derived from the overall Biosphere action plan.

Implementation will principally be carried out through existing mechanisms – including Local Development Frameworks – the Island Plan, organisational/departmental work plans, and landscape/key site management plans – to effect practical changes on the ground. In addition, planned projects (by partner organisations and others) that are aligned to the Biosphere objectives and can be integrated in to the work programme when identified.

Lastly, subject to securing additional external funding, there will be new activities implemented directly by Biosphere project staff/partners, and/or by disbursing and managing grant funding to partners.

Examples of some of the key existing mechanisms to use for Biosphere implementation include:

- Local Authorities – Local Development Frameworks, Sustainable Community Strategies, departmental work plans/strategies (e.g. Environment, Sustainability), Local Transport Plans, Local Biodiversity Action Plans
- Isle of Wight AONB– Management Plan & Delivery Plan,
- Marine environment (Marine Management Organisation) – South Marine Plan, Strategy, Annual Plans, Strategic Research Plans (annual)
- Protected Areas (NE, NGOs) – site management plans, SSSI objectives, corporate initiatives e.g.
- Others – organisational work plans/strategies, sectoral/partnership plans e.g. Neighbourhood Plans
- Catchment Management Plan (led by the Environment Agency)

“(d) programmes for research, monitoring, education and training"?
If yes, describe. If not, describe what is planned.

Monitoring of Nature Conservation Designations

Article 11 of the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) requires European Union Member States to undertake surveillance of the conservation status of habitats and species listed in its annexes, with a particular regard to priority habitat types and priority species. Natural England, the Government agency for wildlife conservation, undertake a 6 year rolling monitoring progamme of Sites of Importance for Nature Conservation (SSSI).

The Habitats Directive, through Article 12.4, also requires Member States to establish monitoring of incidental (accidental) capture and killing of the animal species listed on Annex IV of the Directive, and to undertake research or conservation measures to ensure that capture and killing does not have a significant negative impact on species concerned. The UK uses surveillance and monitoring of habitat types and species of community interest as a fundamental tool for ensuring the effectiveness of the conservation mechanisms used to achieve and maintain favourable conservation status. The conservation status of the habitat types and species within the UK was reported under Article 17 of the Directive in early 2008. For many years the UK government, devolved administrations, their respective nature conservation agencies, Non-Government Organisations (NGOs) and volunteers have undertaken relevant surveillance and monitoring to assess conservation status, trends and threats. For the Isle of Wight these organisatoins include the National Trust, the Hampshire and Isle of Wight Wildlife Trust, the Isle of Wight AONB and the Biodiversity Action Plan Partnership.

The Solent European Marine Sites (SEMS) is one of a number of European marine sites in the UK which are designated as internationally important sites for their habitats and species. SEMS covers the harbours, estuaries, areas of open coast and inshore water around the Solent. The site stretches from Hurst Spit in the west to Chichester Harbour in the east and includes areas along the north coast of the Isle of Wight from Yarmouth to Bembridge Harbour, as well as the mainland shores. The SEMS Management Group was established in November 2000 as a partnership, with the aim of developing a strategy for managing the Solent's designated sites in a more integrated and sustainable way.

The Solent Forum currently provides the secretariat for the SEMS Management and Stakeholder Groups. SEMS Management Scheme oversee monitoring surveys which are undertaken by the relevant authorities and findings.

Research Projects

Current research work includes Climate Change Solutions a project with Exeter University, Glasgow University and Bournemouth University. Work is underway to create wildlife spaces and integrating biologically favourable surfaces, designs, materials and structures into the Island’s built environments and into the fabric of urban places. The project aims to make opportunities for biodiversity to colonise towns with a view to create conditions more likely to promote adaptation to climate change, helping species utilise the green, grey and blue infrastructures of human settlements.

There are also a number of other ongoing projects which are looking at specific aspects of the Isle of Wight geology, entomology and vegetation characteristics.

5. ENDORSEMENTS:

(If a large number of Authorities are involved, please enclose the additional endorsement letters as a separate Annex).

5.1 Signed by the authority/authorities in charge of the management of the core area(s):

Full name and title: Fran Davies, Area Manager, Dorset, Hampshire and Isle of Wight Team

Date: 13 June 2018

The Isle of Wight is a priority place for Natural England given its unique geography, its wealth of rare and special terrestrial and marine species and habitats and its rich historical heritage all in close proximity to people and communities. Natural England strongly supports this proposed Biosphere which will demonstrate conservation and sustainable development in practice. We note significant local support, partnership and evidence of the potential ecological and socio-economic impact of the designation locally, particularly on the tourist economy. Much of our work compliments the vision of the biosphere i.e. securing the England Coast Path and our Marine Protected Area designation programme and we look forward to working in close partnership to share knowledge and secure economic and social development which is culturally and ecologically sustainable. An Isle of Wight biosphere would be a great addition to UNESCO's 'Man and the Biosphere' Programme.

Address, email, phone number:

NATURAL ENGLAND

2nd Floor, Cromwell House

15 Andover Road

Winchester

Hampshire

SO23 7BT

Tel : 0300 060 3900

Signature:

5.2 Signed by the authority/authorities in charge of the management of the buffer zone(s):

Full name and title: Cllr David Stewart, Leader, Isle of Wight Council

Date: 8. 6. 2018

Address, email, phone number:

Isle of Wight Council

County Hall

Newport

Isle of Wight

PO30 1UD

David.stewart@iow.gov.uk

Tel : 01983 821000

Signature:

Full name and title: Robert Clark, Chief Executive

Date: 22. 6. 2018

Address, email, phone number:

SOUTHERN INSHORE FISHERIES AND CONSERVATION AUTHORITY

64 Ashley Road

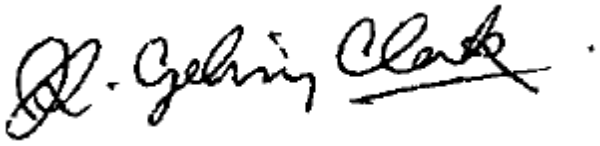
Poole

Dorset

Email : enquiries@southern-ifca.gov.uk

Tel : 01202 721373

Signature:



Isle of Wight
area of outstanding
natural beauty

Full name and title: Mr Jonathan Bacon, Chair, Isle of Wight AONB Partnership

Date: 26. 6. 2018

Address, email, phone number:

ISLE OF WIGHT AREA OF OUTSTANDING NATURAL BEAUTY

c/o Seaclose Offices

Fairlee Road

Newport

Isle of Wight

PO30 2QS

Tel : 01983 823855

Jonathan@bagwich.co.uk

Tel : 01983 823855

Signature

5.3 Signed as appropriate by the National (or State or Provincial) administration responsible for the management of the core area(s) and the buffer zone(s):

Full name and title:

DR THERESE COFFEY MP Parliamentary Under Secretary of State for the Environment

Date: September 2018

Address, email, phone number:

Department of Environment, Food and Rural Affairs

Seacole Building

2 Marsham Street

London

SW1P 4DF

UNITED KINGDOM

Email: defra.helpline@defra.gsi.gov.uk

Phone: 0044 (0)3459 335577

Signature:

5.4 Signed by the authority/authorities, elected local government recognized authority or spokesperson representative of the communities located in the transition area(s).

Full name and title : Mr Robert Seely MBE MP, Member of Parliament, Isle of Wight

Date: 8. 6. 2018

Address, email, phone number:

Member of Parliament, Isle of Wight

Houses of Parliament

Westminster

London

SW1 0AA

Tel : 01983 220220

Bob.seely.mp@parliament.uk

Signature:

5.5 Signed on behalf of the MAB National Committee or focal point:

Full name and title: Prof. Matthew Cragoe, Chair, UK MAB Committee

Date: 26. 6. 2018

Address, email, phone number:

UK Man and Biosphere Committee

c/o College of Arts

University of Lincoln.

Brayford Pool,

Lincoln,

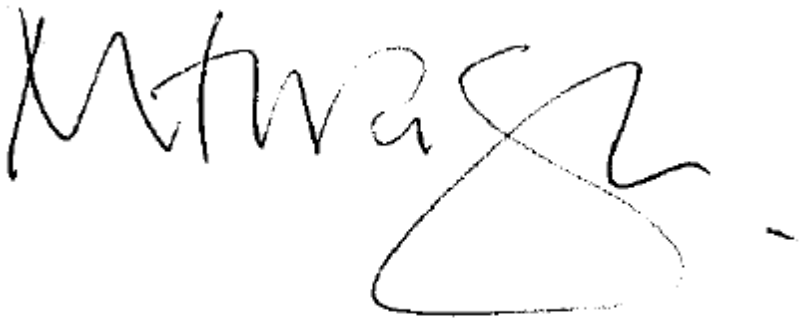
Lincolnshire.

LN6 7TS

Tel : 01522 837170

mcragoe@lincoln.ac .uk

Signature:



PART II: DESCRIPTION

6. LOCATION (COORDINATES AND MAP(S)):

6.1 Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84):

Cardinal points:	Latitude	Longitude
Most central point:	50.683801	-1.3068867
Northernmost point:	50.788076	-1.1858368
Southernmost point:	50.553605	-1.2982377
Westernmost point:	50.688794	-1.6922702
Easternmost point:	50.734301	-0.93463194

6.2 Provide a map(s) on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must be attached to the electronic copy of the form.
If possible, also provide a link to access this map on the internet (e.g. Google map, website…).

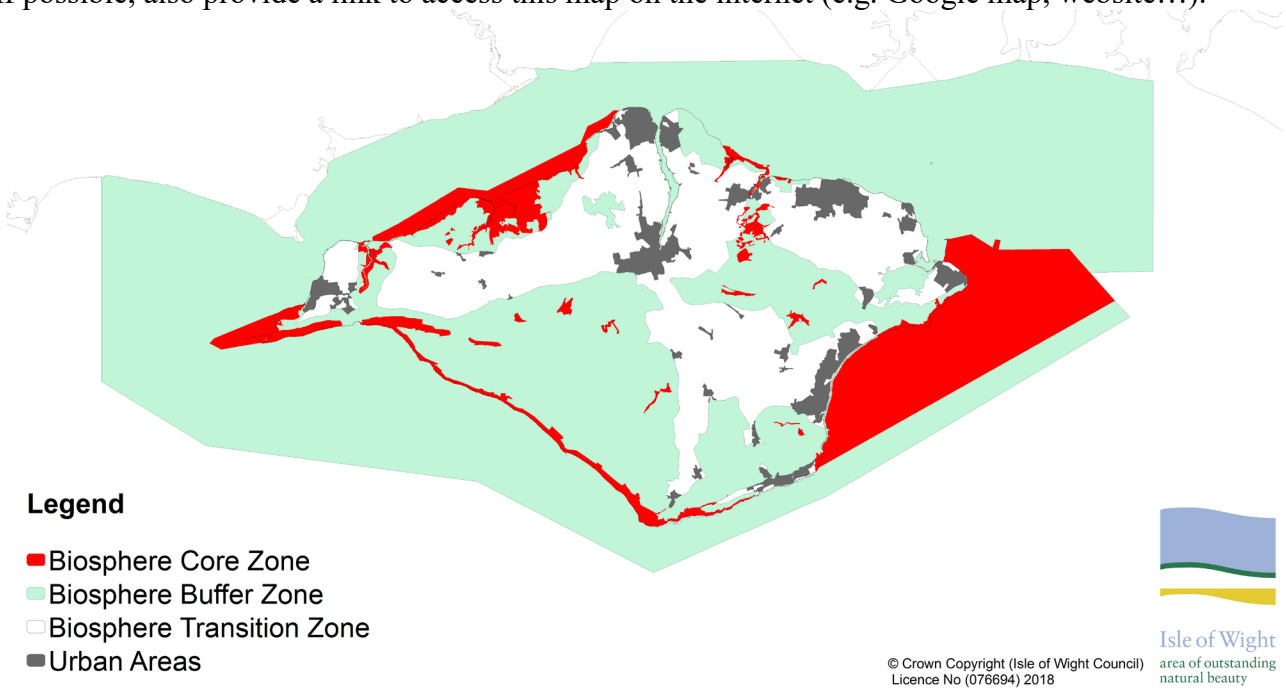


Figure 2. Proposed Biosphere Reserve Map

https://www.wightaonb.org.uk/about-us/what-we-do/projects/iow-candidate-biosphere/

7. AREA (see map):

Total: (ha)

	Terrestrial	Marine (if applicable)	Total
7.1 Area of Core Area(s):	4893 ha	7935 ha	12828 ha
7.2 Area of Buffer Zone(s):	24276 ha	40426 ha	64702 ha
7.3 Area of Transition Area(s):	13966 ha	0 ha	13966 ha
TOTAL:	43135 ha	48361 ha	91496 ha

7.4 Brief rationale of this zonation in terms of the respective functions of the biosphere reserve. If a different type of zonation also exists indicate how it can coexist with the requirements of the biosphere reserve zonation.
(e.g., if national criteria exist for the definition of the area or zones, please provide brief information about these).

Terrestrial Core Area
The Terrestrial Core Areas are made up by the nationally designated SSSI's and one internationally designated Special Protection Area surrounded by the nationally designated Area of Outstanding Natural Beauty. These areas are strictly protected by Natural England for their wildlife conservation value.

Marine Core Areas

The Marine Core Areas are made from areas where a there is a confluence of marine designations meeting. The waters surrounding the Isle of Wight are highly designated including Special Area of Conservation (SAC), Special Protection Area (SPA) and Marine Conservation Zones (MCZ). These designations have been used to form the buffer to the Core Area and where there is an overlap for the Core Area itself.

The Marine Core comprises parts of the South Wight Maritime SAC, Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, and the proposed Solent and Dorset Coast SPA, the proposed Bembridge MCZ, the proposed Yarmouth to Cowes MCZ and part of the Needles MCZ.

Buffer Terrestrial

The terrestrial Buffer Zone consists of the nationally designated Area of Outstanding Natural Beauty, the internationally designated Solent and Lagoons Special Protection Area and Ramsar of Brading Marshes and the nationally designated Parkhurst Forest SSSI. These areas are strictly protected by the Department of Environment Food and Rural Affairs, for their landscape and wildlife conservation value.

Buffer Marine

The marine Buffer Zone consists of the internationally designated Special Protection Areas and the Marine Conservation Zones. These areas are strictly protected by the Department of Environment Food and Rural Affairs, for their wildlife conservation value.

Transition Zone

The Transition Zone is comprised of the hinterland between urban settlements and the areas not covered by the Area of Outstanding Natural Beauty.

8. BIOGEOGRAPHICAL REGION:

[Indicate the generally accepted name of the biogeographical region in which the proposed biosphere reserve is located.] (The term "major biogeographic region" is not strictly defined but you may wish to refer to the Udvardy classification system (http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975_745.html)).

The proposed Isle of Wight Biosphere Reserve is biogeographically located in the Temperate Broad-Leaf Forests biome of the British Islands province of the Western Palearctic realm (based on the Udvardy 1975 classification system).

The Island has a similar bioclimatic to the other British Isles Biosphere Reserves most specifically Brighton and Lewes Downs Biosphere. The Island can be described as Temperate Coastal/ Marine Zone with mild wet winters and cool summers, due to the influence of the sea.

In Palaeolithic times the predominant vegetation cover would have been temperate broadleaf woodland. The diversity of the Island's geology has influenced the diversity of ecosystems and is reflected in the settlement patterns of people and their interaction and manipulation of the landscape including the development of large areas of open Chalk Grassland following deforestation.

The Core areas of the Isle of Wight Biosphere Reserve cover a wide variety of full existing ecosystems. Parts of the Island and seabed most notably the Undercliff and reefs surrounding the Island have less human intervention and are designated core areas and buffer zone while others are more intensively used for human settlements (transition zone) or for marine development and fishing.

9. LAND USE:

9.1 Historical:

(If known, give a brief summary of past/historical land use(s), resource uses and landscape dynamics of each zone of the proposed biosphere reserve).

The main land uses in order of greatest extent:

- Agriculture (grazing and Cultivation).
- Semi-natural habitat (often grazed).
- Towns and villages.
- Woodland.
- Amenity grassland (Sports facilities, parks and gardens).
- Sand and gravel extraction.

History of grazed habitats in Southern Britain

Some 7 – 8,000 years ago, woodland developed to cover much of Britain, as the climate ameliorated in the wake of the last glaciation. Along with the re- establishment of woodland over the land surface was the re-colonisation of the country with a varied wild mammal fauna, including many species that are now extinct. This fauna included carnivores such as the wild bear and wolf, together with many large herbivores including wild cattle – the now extinct aurochs, red deer and wild boar. The Island's special mammal species such as the red squirrel, dormouse and woodland bats would have colonised the Island at this time.

The wild mammal fauna would have had a significant influence on the distribution and character of this primeval woodland. It now seems probable that considerable areas of Britain were in fact maintained as open grassland and heathland by wild grazing animals, with particularly large areas of open habitat being maintained along river valleys, on the steeper slopes and thinner soils. This pattern of open grassland and heathland dispersed within grazed woodlands can still be found in parts of the New Forest and was clearly the pattern of habitats found in Parkhurst Forest before its enclosure in the 19th century.

Early Humans and Domestic Animals

The colonisation of Britain by mesolithic farmers consolidated this pattern of natural clearings and glades within the primeval forest. Temporary areas of cultivation were established but the fertility of these would soon have been exhausted requiring new areas to be bought under cultivation. It is likely that these shifting areas of cultivation would have followed the clearings and glades originally created by wild herbivore grazing. Early farmers would have domesticated livestock to graze these natural clearings and would have enlarged them through de-forestation to create larger areas for livestock to graze. They would also have hunted the wild herbivore herds, which soon declined in number with wild cattle probably becoming extinct in Britain by the Bronze Age.

The first farmers would have managed their stock by herding animals across unenclosed landscapes, perhaps bringing them into folds for protection at night. This system is still perpetuated in many parts of the world including parts of Europe, and continued in Britain well into the first half of the 20th century. The movement of stock across the landscape under the control of the herder would have replicated many of the impacts of the wild herbivores that had by now become largely extinct.

Although wild cattle and horses were probably hunted to extinction, wild deer seem to have survived through the prehistoric age. Later they were maintained within parks and hunting forests to provide sport for the nobility. These were often areas of near natural landscape in which the mix of woodland and open grazed habitats of the primeval forest had been retained and often on the poorer soils. The New Forest and Forest of Bere in Hampshire and Parkhurst Forest on the Isle of Wight (which once extended from the Medina to Calbourne) were established in this way. Within these forests the woodland and intervening open areas were grazed by the local residents of the area (the commoners) who were given rights to release their stock into

the forest. Again, the commoners' cattle, ponies and other livestock would have perpetuated the effects of grazing animals on the landscape of the primeval wild herbivores they replaced.

Enclosure and development of compartmentalised grazing systems
Hedged fields formed from clearings in woodland occur over much of the west and south west of Britain. These so called assart fields have hedges composed of a diversity of woodland trees and shrubs that represent relicts of the former woodland cover from which they were formed. Elsewhere in lowland Britain, the medieval system of open strip field cultivation and herded livestock on common land was not replaced by hedged fields until the late 18th and early 19th century, as a result of the Enclosure Acts. The movement to enclosure of fields and the loss of open common grazing resulted in the development of what is often referred to as traditional mixed farming systems. Fields were generally cultivated on rotation, with farmyard manure and other organic fertilisers used to maintain fertility. Some variation in this pattern of cultivation was likely to have been evident with wetter fields on heavier soils remaining longer under permanent pasture, and lighter better-draining fields being returned more readily to arable. Despite enclosure, extensive areas of open grazing remained, on both the chalk downs and the heathlands and moors (a term used on the Isle of Wight to describe the wet flood plain pastures of the river valleys).

The proportion of land under cultivation also varied considerably, depending on the economic circumstances of the time, with periods of war being responsible for increased cultivation of more marginal land. The return of arable to pasture to restore fertility was, however, nearly always required. The reversion to pasture would probably have allowed rapid re-colonisation of wild grassland species from both the soil seed bank and adjacent fields and a diverse flora would soon have re-established itself. Many parts of the Island's countryside were managed with this form of mixed agricultural system throughout the 19th and first half of the 20th century. Although more intensive than the open grazing systems of hunting forest and common land this mixed farming system created a enormously diverse landscape which was rich in biodiversity. It also retained ecological niches for much of the wildlife of the open forest clearings, maintained by the wild herbivores grazing the prehistoric forest from which it had evolved.

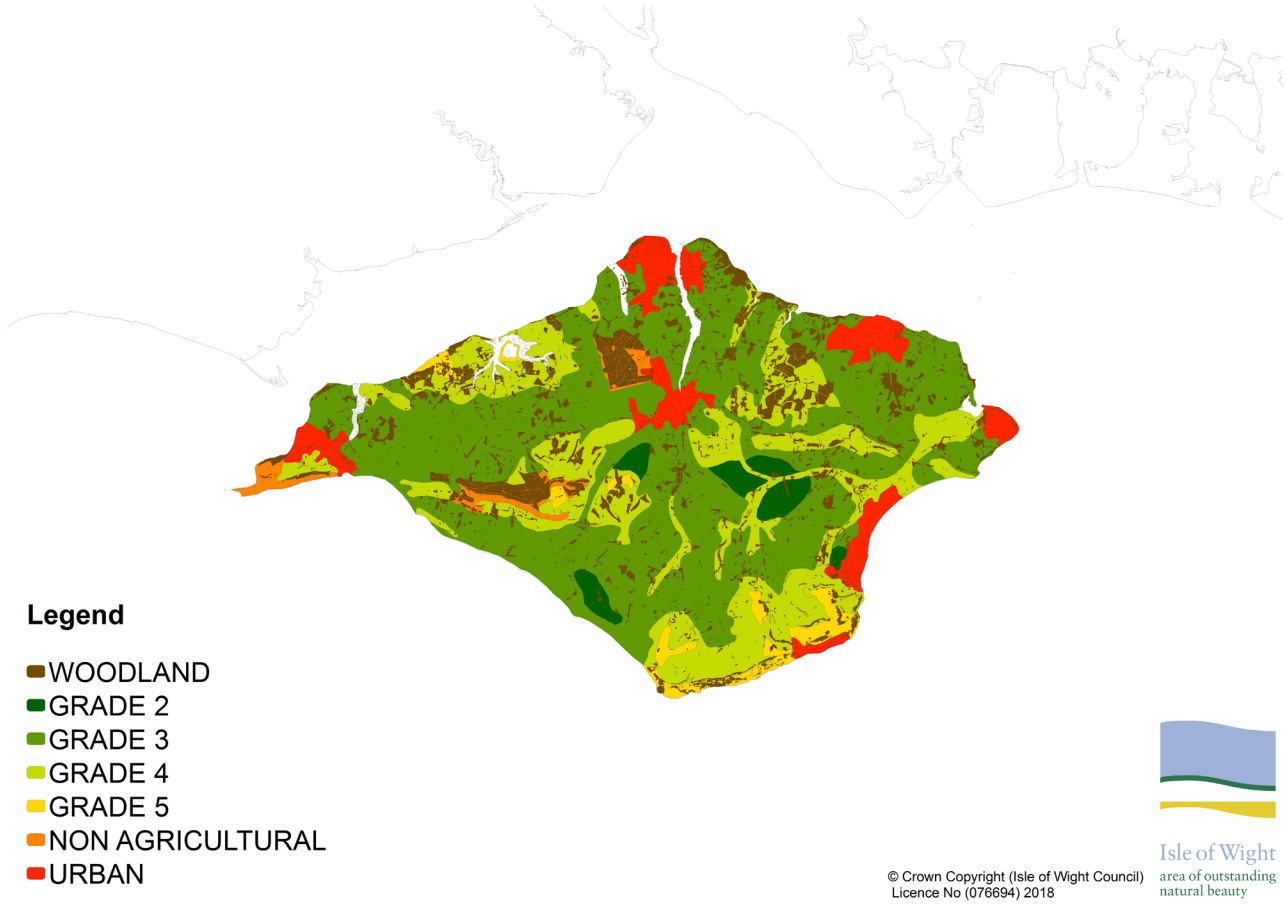


Figure 3. Main Land Use Types

Description of Agricultural Grades

The Isle of Wight has no Grade 1 Agricultural Land

Grade 2 - very good quality agricultural land. Offers a wide range of agricultural and horticultural crops which can usually be grown as winter harvested vegetables and arable root crops.

Grade 3 - good to moderate quality agricultural land. Land with moderate limitations affecting the choice of crops, timing and type of cultivation, harvesting or the level of yield.

Grade 4 - poor quality agricultural land. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable.

Grade 5 - very poor quality agricultural land. Restricted use to permanent pasture or rough grazing.

Non-Agricultural use - 'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. On the Isle of Wight the main areas of Non-Agricultural Use comprise Parkhurst Forest, Brighstone Forest and West High Down.

The importance of agriculture, both in the past and as a current influence on landscape character, historic and natural environments should not be understated. 70% of the land area of Isle of Wight is farmed and the futures of its landscapes are linked to the sustainability of farming.

The underlying geology and diversity of landform dictates the suitability for farming practices and has led to a mixed patchwork landscape, traditionally of small scale farmsteads. This small scale nature contributes greatly to the character of the Isle of Wight but this makes it more of a challenge to achieve economies of scale. In the 20th Century this led to increased leasing of land to larger scale operators, particularly in relation to arable cultivation. Many smaller farms continue to rely on mixed activities; however this mix now encompasses diversification activities such as tourism (holiday lets), retail (farm shops) and more recently renewable energy production (solar, bio-fuels).

9.2 Who are the main users of the biosphere reserve? (for each zone, and main resources used). If applicable, describe the level of involvement of indigenous people taking into account the "United Nations Declaration on the Rights of Indigenous Peoples". (http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf).

The terrestrial Core Zones are mainly subject to traditional agricultural use through extensive grazing of chalk downland and floodplain grassland for conservation management, by nature conservation organisations and private farmers – with the two often working together in partnership.

Many of the areas are "open access" to the public for recreation and some sites receive thousands of visitors each year.

The large area of the terrestrial Buffer Zone of the Isle of Wight Area of Outstanding Natural Beauty is mostly farmed with a mixture of intensive arable and livestock farming on mostly agriculturally-improved and fertilised grassland by both private and tenant farmers.

There is also some limited forestry and woodland management (including for the growing local firewood and biomass fuel market) takes place, as do recreational shooting, hunting and fishing. Outdoor recreation by the local neighbouring urban populations, as well as tourists/visitors to the area, is the other significant use of the rural environment here, based around the extensive network of public rights of way together with the and areas of open access land. The main forms of recreation are walking, running and off-road mountain-biking, as well as equestrian use and other activities such as paragliding, for example.

The Urban areas of the terrestrial Transition Zone of the near-continuous coastal urban settlements are the focus of most human activity, covering a whole spectrum of domestic, business and leisure uses. The main users of this area are the approximately 130,000 residents (the remaining 10,000 residents live in the Buffer Zone) and a large proportion of the 2.5 million annual visitors. They principally use the resource of space – for housing, transport, retail and recreation – in addition to the daily human needs of food, water (mainly from the chalk aquifer and rivers), waste and other resources.

The main natural resource of the marine environment Buffer Zone and wider is for local commercial fisheries (with restrictions on Bottom Towed Fishing Gear), in addition to recreational sea-fishing, sailing, boating and water sports.

9.3 What are the rules (including customary or traditional) of land use in and access to each zone of the biosphere reserve?

The Terrestrial Core Areas are all nationally designated statutory SSSIs including an SAC and thus their land use is primarily regulated by Natural England through approved management agreements and consents with private landowners that restrict any "potentially damaging operations". SSSI management mostly comprises extensive livestock grazing to maintain or restore the structure and diversity of notified features. Public access and non-damaging activities are permitted in those SSSIs that are designated as "open access" and/or managed by organisations in the public interest.

The terrestrial Buffer Zone of the Isle of Wight Area of Outstanding Natural Beauty is mainly farmed land (70%) and as such is subject to a range of statutory controls on agricultural practice, including compliance with Good Agricultural and Environmental Condition (GAEC) criteria by farmers to receive "single farm support" subsidy.

Beyond this general minimum standard, additional statutory regulations guide agricultural practice in specific areas of the proposed Biosphere, including for example Nitrate Vulnerable Zones (NVZs) and Source Protection Zones (SPZs) to limit nitrogen fertiliser applications and protect groundwater aquifers respectively. Voluntary agri-environment scheme options under Environmental Stewardship entail further adherence to specific environmentally-friendly measures.

Other land and resource use in the terrestrial Buffer Zone is similarly subject to varied regulatory regimes, including:

- Woodland management (regulated by Forestry Commission felling licenses and the UK
- Woodland Assurance Scheme standards)
- Water resources (abstraction and other practices being regulated by the Environment Agency)
- Public access and recreation (subject to statutory and voluntary access provision, including local byelaws on public use of sites)
- Built development (controlled through the land use planning system and development control processes of the Local Development Frameworks or Island Plan and Local Planning Authority and national statutory processes (e.g. industrial and waste practices by the Environment Agency).
- Beyond the built environment itself, use of urban green spaces is not just protected through the planning system but activities are also governed by varying local byelaws on permitted uses. Green features, such as significant urban trees, for example, receive protection through a statutory system of Tree Protection Orders (TPOs).

The marine environment of the Core Zone and Buffer Zone is regulated under the Marine and Coastal Access Act (2009) which provides a framework for the sustainable use of marine resources. An integrated system of Marine Plans to manage development and use of the coastal (including estuaries) and marine environment is being progressed. In addition, under Article 6 of the EU Habitats Directive, fisheries regulators (such as the Southern Inshore Fisheries and Conservation Authority, SIFCA) are required to ensure that fisheries do not damage or disturb or have an adverse effect on the wildlife or habitats for which the marine sites are legally protected.

The nationally agreed vision of the IFCAs is that they will "lead, champion and manage a sustainable marine environment and inshore fisheries within their Districts by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry".

Section 153 of the Marine and Coastal Access Act, 20098 (MaCAA) requires that for the management of inshore fisheries:

- (1) The authority for an IFC district must manage the exploitation of sea fisheries resources in that district.
- (2) In performing its duty under subsection (1), the authority for an IFC district must:
  - Seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way,
  - Seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation,
  - Take any other steps which in the authority's opinion are necessary or expedient for the purpose of making a contribution to the achievement of sustainable development, and
  - Seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district.

The Conservation of Habitats and Species Regulations 2010 requires that the IFCA exercise its functions, which are relevant to marine conservation so as to secure compliance with the requirements of the Habitats Directive.

Under article 6(2) of the EU Habitats Directive and Birds Directive “Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive”.

The Authority for the Southern Inshore Fisheries and Conservation District, in exercise of the powers conferred by sections 155 and 156 of the Marine and Coastal Access Act 2009 makes the following byelaw for that District, which outlines a person must not, subject to exceptions, use bottom towed fishing gear within a prohibited areas surrounding the Isle of Wight or while transiting through a prohibited area unless all parts of that gear are inboard and above the sea.

9.4 Describe women's and men's different levels of access to and control over resources.
(Do men and women use the same resources differently (e.g., for subsistence, market, religious/ritual purposes), or use different resources?).

Only a small proportion of the local population are directly employed in primary natural resource use, principally through farming, quarrying and fishing.

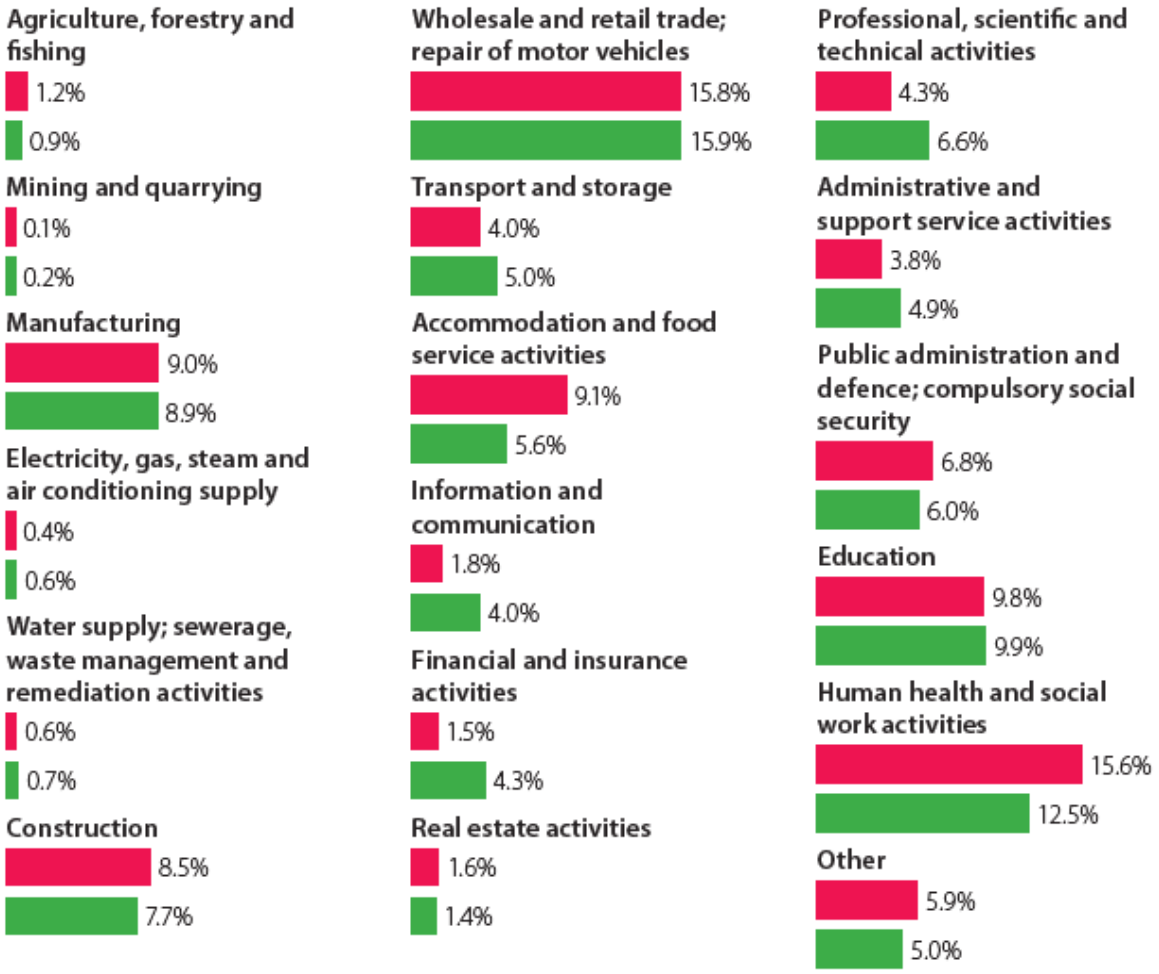


Figure 4. Shows the employment sectors as a percentage. Pink represents the Isle of Wight, Green represents the rest of England and Wales.

Such industries, however, remain male-dominated including at the higher end of exercising managerial control over natural resources. Women in the UK are traditionally employed more in the service sector, which on the Isle of Wight includes retail and tourism sectors. Women on the Isle of Wight are also less economically active than men.

	Males 16-74			Females 16-74		
	Isle of Wight		England &	Isle of Wight		England &
Workforce category 2011	Numbers	%	Wales %	Numbers	%	Wales %
Economically active[1]	33,606	68.1	74.9	30,612	60.7	64.5
Economically inactive[2]	15,738	31.9	25.1	19,791	39.3	35.5
Total	**49,344**	**100**	**100**	**50,403**	**100**	**100**

Figure 5. Shows economic activitiy of men and women compared to England and Wales.

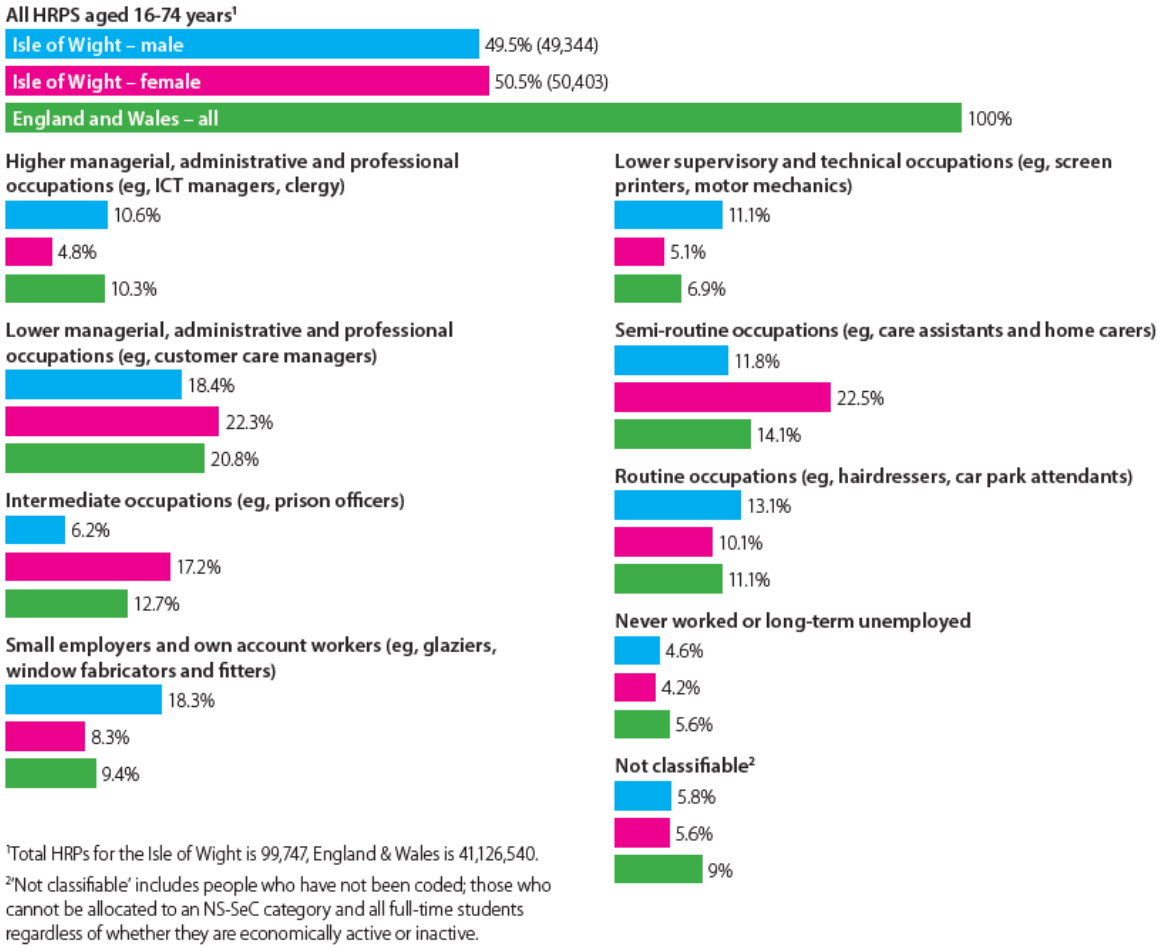


Figure 6. Shows the employment sectors and the percentage of male and female workers. Pink represents women on the Isle of Wight, Blue represents men on the Isle of Wight and Green represents the rest of England and Wales.

Many more people are engaged in accessing local natural resources in a non-commercial or exploitative manner, principally for informal recreation in green spaces. Some gender differences and issues may occur, however; there is limited evidence to outline how the different genders access and enjoy the natural environment.

10. HUMAN POPULATION OF PROPOSED BIOSPHERE RESERVE:

[Approximate number of people living within the proposed biosphere reserve]

	Permanently	Seasonally
10.1 Core Area(s)	0	0
10.2 Buffer Zone(s)	10,000	0
10.3 Transition Area(s)	130,000	2500000
Total:	**140,000**	**2500000**

10.4 Brief description of local communities living within or near the proposed biosphere reserve.
(Indicate ethnic origin and composition, minorities etc., main economic activities (e.g. pastoralism, tourism) and the location of their main areas of concentration, with reference to the map (section 6.2)).

The majority of residents live in the towns of Newport, Ryde, Cowes and East Cowes and also in the eastern coastal towns of Shanklin, Lake and Sandown.

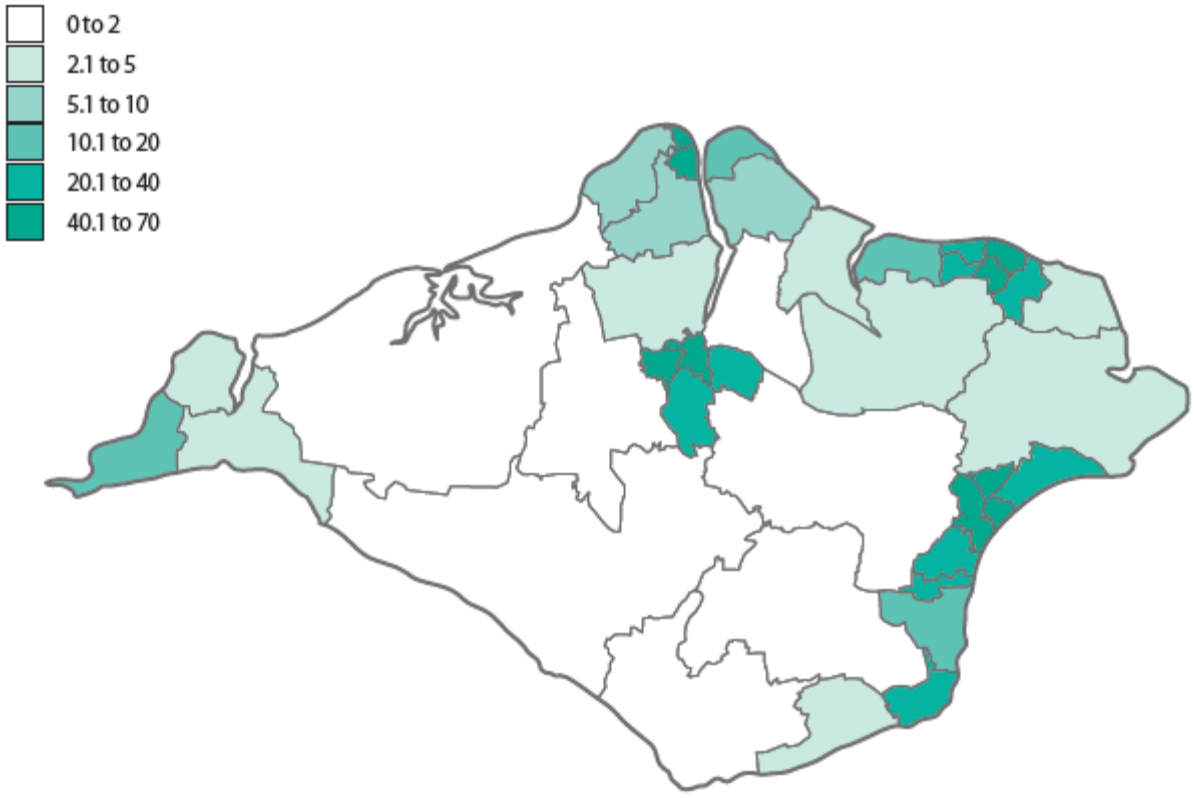


Figure 7. Shows Population density in number of residents per hectare.

The most populous five-year age group is 60-64 where there are 10,994 persons. This continues the pattern from the 1991 and 2001 Censuses where the most populous age ranges were 40-44 and 50-54 respectively (These are the post- Second World War 'baby boomers').

In addition men outnumber women in every age group under 35, women outnumber men in every age group over 35. The average age of an Isle of Wight resident is 44.4 years with 31.8% of the Island's population aged 60 years or over, compared with 22.5% in England and Wales and this is almost double the 16.4% who are aged under 16 years (18.9% in England and Wales).

The increase of the Isle of Wight population of just over 4% between 2001 and 2011 was due entirely to net in-migration to the Island, as the number of Island deaths exceeded the number of Island births by an average of 525 per year. The rate of population growth was most marked in the over-85 age group.

The composition of Isle of Wight households is significantly different to that of the rest of Britain. In particular, there is a higher percentage of one-person households, and proportionately fewer 'traditional' families comprising two adults and children.

On the Isle of Wight:

- 'Traditional' families, made up of couples with children, make up just over one fifth of all households.
- There are almost twice as many childless couples as couples with children, reflecting the large number of pensioner households.
- The large majority of single-person households are pensioners.

One-person households
One-person households occur mainly within the urban areas of the Island. They account for almost a third of all households on the Island.

Same sex couples
Although there are relatively few on the Island (70 in total), the wards with the highest proportions of same-sex civil partnership couples are Cowes Medina, East Cowes, Freshwater South, Godshill and Wroxall and Shanklin South.

Married couple households
The highest percentage of married couple households occur in small villages out of the town centres, although there are also high numbers in the main towns too.

The 2011 Census shows the non-white ethnic population for the Isle of Wight is 3,720 persons or 2.7% of the total. In England and Wales the non-white ethnic population is 14.1% of the total. The Island's non-white groups tend to live in the urban areas of Cowes, Newport, Ryde and Ventnor. However, the highest percentage is in Parkhurst ward, which is influenced by the local prison population.

The top non-UK countries of births were: Germany (664), Ireland (651), Poland (499), India (397), South Africa (393), Philippines (380), United States (262), Australia (196), France (186), Italy (119), Romania (117), Spain (110), Zimbabwe (110).

10.5 Name(s) of the major settlement(s) within and near the proposed biosphere reserve with reference to the map (section 6.2):

The majority of residents live in the towns of Newport, Ryde, Cowes, East Cowes, Shanklin, Lake and Sandown.

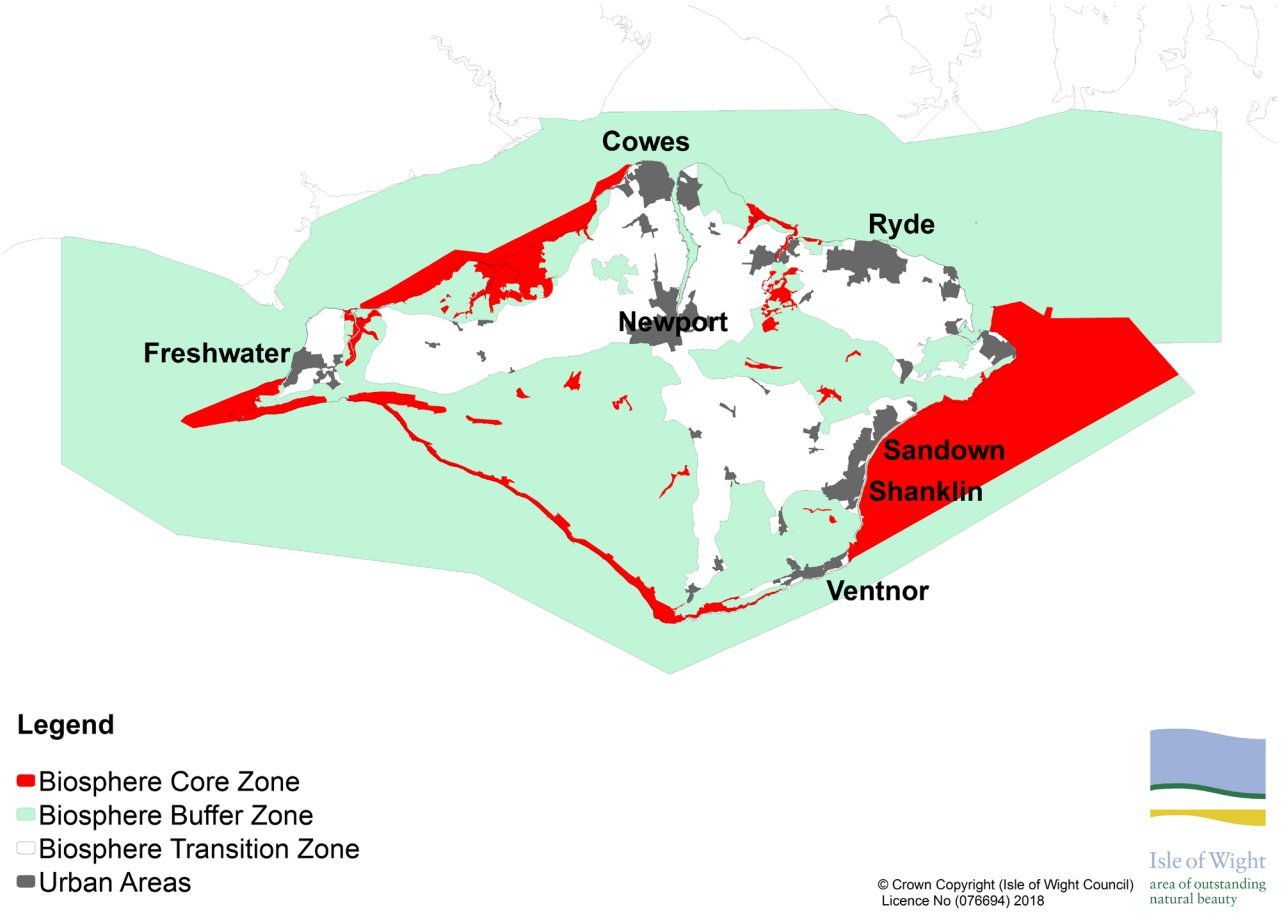


Figure 8. Shows the main urban settlement in the Biosphere.

10.6 Cultural significance:

(Briefly describe the proposed biosphere reserve's importance in terms of past and current cultural values (religious, historical, political, social, ethnological) and others, if possible with distinction between material and intangible heritage (c.f. UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage 1972 and UNESCO Convention for the Safeguard of the Intangible Cultural Heritage 2003 (http://portal.unesco.org/en/ev.php-URL_ID=13055&URL_DO=DO_TOPIC&URL_SECTION=201.html and http://portal.unesco.org/en/ev.php-URL_ID=17716&URL_DO=DO_TOPIC&URL_SECTION=201.html)).

The Isle of Wight includes a wealth of history contained within the landscape. These are physical reminders of our past; linked to this are the varied components that gives us our sense of history and define the distinctiveness of both the Island in its entirety and also the different areas within it.

Isle of Wight culture comprises the important role of dialect, customs, folklore and fable, people, writers, artists and landmarks. It is also about the communal and individual importance of landscape to people. This is a more ephemeral appreciation of the sense of belonging to the area.

Until recent times literacy was for the elite. The general population relied on song, story, dance, traditions and customs to reinforce their sense of identity and community at a highly localised scale. All these activities are still enjoyed but the scale has changed, and there is no longer the reliance on a localised reference, but where they remain, they give colour, continuity and contribute to a sense of cultural identity and belonging to the area.

The Isle of Wight has been and continues to be a source of inspiration to people who have expressed this through writing, art, sculpture and more latterly photography and film. This has led to particular associations of notable individuals with the landscape and Isle of Wight such as Lord Alfred Tennyson, Julia Margaret Cameron, John Keats, Joseph Turner, Algernon Swinburne and J.B. Priestley. Other residents and visitors from Robert Hooke, Guglielmo Marconi, John Nash and in particular Queen Victoria and her entourage have contributed to the story of Isle of Wight, often also leaving their mark on their landscape (Tennyson monument, Dimbola House, Hooke Hill, Osborne House, Marconi memorial, John Nash designed buildings). These associations were celebrated through the West Wight Landscape Partnership with walks and trails highlighting the life and work of Robert Hooke and the 'Freshwater Circle' including Tennyson, Charles Dodgeson, William and Helen Allingham, Edward Lear, G F Watts, Charles Darwin and Julia Margaret Cameron.

The Down to the Coast Landscape Partnership has also highlighted the work of artists from the late eighteenth century to the modern-day such as Turner, Brannon, Daniell, Barth, King, Vickers, Gray, Kirkpatrick, Gregory, Cooper, Tomkins, Carrick, Cooke, Knowler, Richens and Samuelson who have all produced landscape paintings inspired by the Isle of Wight landscape and coast. A number of artists in the mid-19th century developed a distinctive style of landscape painting collectively referred to as the Bonchurch School, and this effort made sure that the Island's coast was one of the most painted places in Britain.

The Isle of Wight was also home to a number of local literary characters including Sir John Oglander, a noted Isle of Wight diarist, local historian Sir John Worsley, and local poet Alfred Noyes. The 'Back of the Wight' smuggling yarns of longshoremen, lifeboatmen, mackerel fishing and smugglers, brought vividly to life by Fred Mew are all well known and loved .

As recorded by William Henry Long in his Dictionary of Isle of Wight Dialect (1886), the Island had a strong local vocabulary. Whilst some words remain in colloquial use (e.g. nammet, nipper, caulkhead, gallybagger, chine, mallishag) increased education and a standardised approach to language alongside greater mobility of the population has seen a decrease in the prevalence of local accent and the use of local dialect.

This topic is of course intrinsically linked with the Historic Environment and heritage. However we have separated the two to reflect the statutory basis for the management and protection of the historic environment as against the less formal context for cultural association issues.

Nine hundred works of art featuring the Isle of Wight were exhibited at the Royal Academy or other significant London exhibitions in the nineteenth century.

The recent Heritage Lottery funded Landscape Partnership Schemes on both West and East Wight have sought to capture oral history, experiences and stories and complement the previous 'All Our Stories' project which captured stories from people during the celebration of fifty years of designation of the AONB from 1963 through to more recent times. The enthusiasm and interest in stories from the farming community was particularly fruitful.

The Isle of Wight landscape, natural and built heritage and the cultural associations connected to these add to people's quality of life by reducing stress, and adding to physical well-being. It is important that children and adults from the Island become exposed to cultural and natural experiences so that they are aware of the benefits and therefore appreciate and champion their continued conservation.

An important factor is educating and interpreting the natural and historic environment to local audiences and visitors through experiential learning such as Woodland Therapy, Forest Schools and Wildbeach run by the Hampshire and Isle of Wight Wildlife Trust, archaeological activities, such as the Discovery Pack run by TimeTaxi CIC, and arts and culture activities run by New Carnival Company, Ventnor Exchange and Quay Arts.

The Isle of Wight is often associated with seaside holidays and yachting or with the Victorian Period.

The Isle of Wight was a major resource in the development of knowledge of geology and palaeontology in the C17th, C19th and C20th.

The Undercliff was a significant part of the appeal of the Isle of Wight during the Picturesque Movement in art and architecture from the late 18th century.

Isle of Wight AONB is perceived as quiet, traditional and safe, with a slower pace of life and high levels of tranquillity.

Residents often feel a heightened sense of identity as part of the wider Island community.

10.7 Specify the number of spoken and written languages (including ethnic, minority and endangered languages) in the biosphere reserve.

(Refer, for instance, to the UNESCO Atlas of Endangered languages (http://www.unesco.org/culture/languages-atlas/index.php)).

98.2% of people living in Isle of Wight speak English. The other top languages spoken are 0.3% Polish, 0.2% Tagalog/Filipino, 0.1% German, 0.1% French, 0.1% Spanish, 0.1% Romanian, 0.1% All other Chinese, 0.1% Hungarian, 0.1% Portuguese.

11. BIOPHYSICAL CHARACTERISTICS:

11.1 General description of site characteristics and topography of area:

(Briefly describe the major topographic features (wetlands, marshes, mountain ranges, dunes etc.) which most typically characterize the landscape of the area).

The Isle of Wight landscapes bring together a distinctive combination of internationally important geology, wildlife, culture and heritage within an archetypal microcosm of southern Britain. The Isle of Wight is internationally renowned for the diversity of its landscapes comprising a mix of 11 discrete Landscape Character Types two of which occur nowhere else in the world.

The Isle of Wight is made up of 11 distinct Landscape Character Types:

- Chalk Downs - areas of open hilly landscape with long vistas, distinct skylines, large fields, sparse hedge or field boundaries, few mature hedgerow trees and a sense of space and exposure. Chalk grassland has a very rich ecology and holds a number of important habitats for rare plants and animals.
- Traditional Enclosed Pasture - Most is found north of the central and southern chalk downs because of the geology of the Island and is made up of lush green pastures with large hedges, small copses and woodlands that may be characterised as 'ancient' countryside.
- Intensive Agricultural Land - The land in the Intensive Arable Lands exists on the Lower Greensand hills and Greensand plains, the most productive arable land on the Island.
- Southern Coastal Farmland - It has an open and exposed feel, with a gently undulating landform. The influence of the sea can be seen by the few mature trees, which have been bent over by the salt laden winds, and the dramatic cliff falls along the seaward edge of fields. The continuing coastal erosion process often exposes fossil remains in the soft geology of the cliffs.
- Sandstone Hills and Gravel Ridges - This landscape character type appears primarily in small land parcels south of the central chalk ridge. The high Greensand hills (Sandstone Hills), in general support pasture except on steeper slopes. These slopes are often planted with mixed forestry and occur immediately to the south of the central chalk ridge. The geological resource of this landscape character type has led to pressure for quarrying for sand and gravel extraction.
- Northern Woodland - Occurring on the heavier soils in the north of the Island where agricultural use has been unviable, these large areas of plantation and mixed woodland are a dominant feature in the landscape.
- Landscape Improvement Zone - This landscape character type describes parts of the Island that has changed as a result of sporadic and urbanising development over time.
- Harbours and Creeks - Covering estuarine environments on the Island, all have common features such as mudflats, shingle, salt marsh, reed beds, an open aspect, and fringing oak woodlands. However, each has its own distinct form and features.
- The Undercliff - The Undercliff is an area of landscape character that is unique to the Isle of Wight. This is the largest inhabited rotational landslip in western Europe. It is of major geological, ecological and archaeological importance.
- Osborne Coast - A planned landscape of the nineteenth century, it was largely the concept of Prince Albert, Queen Victoria's beloved Prince Consort. Designed as a very private area screened from the town, the house and terrace afford vistas of the landscaped grounds and Solent beyond.
- Northern Coastal Cliffs - A small but important landscape character type occurring along the north-west coast of the Island. Consists of low slumped and sloping broken cliffs of clay

and gravel that were formed as a result of the effects of the action of the sea on the underlying geology.

11.2 Altitudinal range:

11.2.1 Highest elevation above sea level: 241 metres

11.2.2 Lowest elevation above sea level: 0 metres

11.2.3 For coastal/marine areas, maximum depth below mean sea level: 67 metres

11.3 Climate:
(Briefly describe the climate of the area, you may wish to use the regional climate classification by Köppen as suggested by WMO (http://www.wmo.int/pages/themes/climate/understanding_climate.php)).

11.3.1 Average temperature of the warmest month: 17.85 °C in August (average high 21.4 °C and average low 14.3 °C)

11.3.2 Average temperature of the coldest month: 5.5 °C in February (average high 8.2 °C and average low 2.8 °C)

11.3.3 Mean annual precipitation: 699.1 mm, recorded at an elevation of 1 metres

11.3.4 Is there a meteorological station in or near the proposed biosphere reserve? If so, what is its name and location and how long has it been operating?

Newport (Isle of Wight) site information:
Location: 50.700, -1.290
Altitude: 1.0 m above mean sea level

11.4 Geology, geomorphology, soils:
(Briefly describe important formations and conditions, including bedrock geology, sedimentary deposits, and important soil types).

Isle of Wight is perhaps uniquely placed, having a very diverse geology within a condensed area. The geology of Isle of Wight is the bedrock upon which all its other special qualities and characteristics are founded. The landform of the Isle of Wight is due mainly to the faulting, folding, erosion and ground movement of the underlying geology. The topography of the landscape has influenced where people have decided to settle to access fresh water, take advantage of shelter from prevailing weather and what sites were chosen for ceremonial purposes, such as burial mounds on ridge lines. Geology has provided hard building materials for local vernacular architecture including Chalk, Limestone and Sandstone and the conditions for growing timber and reed/straw materials for thatching. All these contribute to the local distinctiveness and character of traditional buildings.

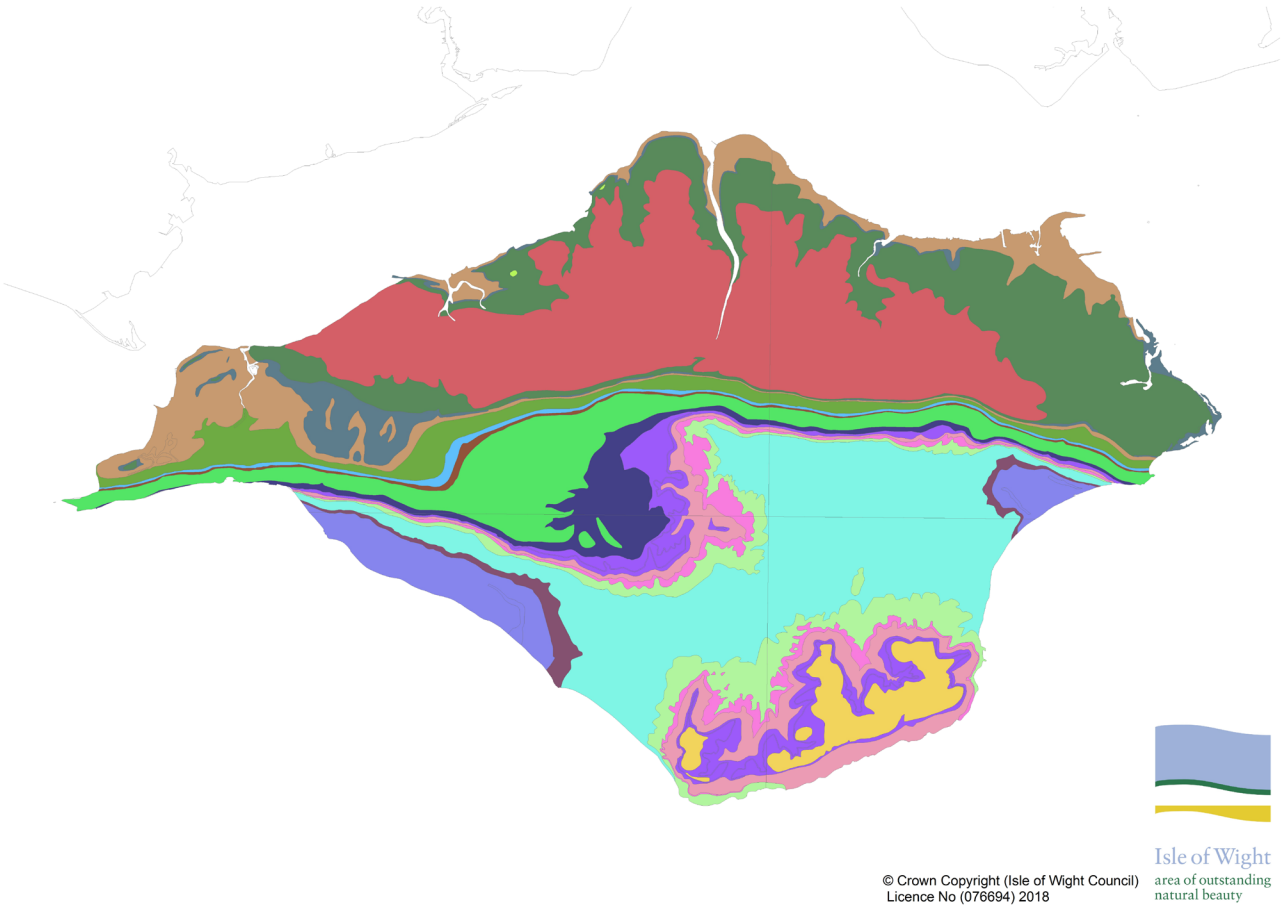


Figure 9. Shows the Solid Geology of the Isle of Wight

This geological complexity, in a relatively small area, has created a diverse and varied landscape much of which is important at a local, regional, national and international scale, evidenced by various designations.

Chalk is arguably the most dominant landform of Isle of Wight with the central chalk ridge running from the eastern point at Culver to the western point at The Needles. A second area of chalk downland is located in the south of the Isle of Wight above the towns of Shanklin and Ventnor and the villages of Niton, Whitwell and Wroxall. Inland areas of the chalk have an undulating form and often include secluded steep sided combes contrasting with dramatic white chalk cliffs at the coast.

Chalk downland is a key feature in most views in and from Isle of Wight. Coastal geology is a major feature of the natural beauty of Isle of Wight including:

- A nearly complete exposure of the Cretaceous Period (formed between 126 million and 65 million years ago) along the coastline of the Tennyson Heritage Coast.
- The clays, sands and silts of the Palaeocene, Eocene and Oligocene periods (formed between 65 million to 30 million years ago), a feature of the Hamstead Heritage Coast and part of the Tennyson Heritage Coast (Alum Bay to Totland).
- The vertical multi-coloured Bracklesham Group sandstone strata at Alum Bay.
- The fossil rich Wealden Group clays at Brook Bay and Yaverland.
- The impressive ravines or 'Chines' formed by streams incising through sandstone rocks to the sea shore.

The dramatic land slipped Gault and Upper Greensand picturesque landscape of the Undercliff (with its own south facing micro climate, scenic beauty and the accolade of being the most populated rotational landslide complex in north western Europe).

North of the central chalk ridge the clays, sands and silts create wetter heavier soils and have led to a more pastoral, gently rolling and wooded landscape in these parts of Isle of Wight AONB. They are also associated with the low lying slumped wet cliffs along the Hamstead Heritage Coast and the tidal estuarial inlets of the Western Yar, Newtown Creek, Kings Quay, Wootton Creek and the wetlands inland at Thorness Bay.

The coastal zone of this area is rich in archaeological evidence of human activity close to the former Solent River now submerged under the sea. The rocks are also associated with fossilised remains of Bison, Shark and Sabre-Toothed Cat (Tiger). Since the early 19th Century rocks and fossils found in Isle of Wight have been celebrated and the area continues to attract amateur and professional enthusiasts.

A series of lower sandstone hills lies immediately to the south of the central chalk downs running across the Island from Compton in the west to Yaverland in the east. These rolling hills are often the location of spring lines which along with the shelter they afford led to the establishment of settlements close by. Sandstone is also the underlying geology of the open, fairly flat plains between Atherfield and Rookley and beyond Arreton to Yaverland. In some parts of this area there are alluvial deposits over the free draining sandstone making them some of the best areas for cultivation. Where the sandstone meets the sea, often tall vertical red cliffs add to the character of the coastline.

Periods of rapid climate change and associated changes to sea levels (including the final inundation of the Solent around 8000 years ago) led to the creation of many of the landform features of Isle of Wight that we value today.

The Isle of Wight hosts 40 Sites of Geological Conservation Review, 30 of which are in Isle of Wight AONB. (Source: http://jncc.defra.gov.uk/default.aspx?page=4177&authority=UKJ34)
There are 4 Site of Special Scientific Interest (SSSI) designated specifically for Geological Interest in Isle of Wight AONB. (Source: Natural England)

There are 2 Regionally Important Geological / Geomorphological Sites (RIGS).

The UKGAP (http://www.ukgap.org.uk/media/8544/ukgap.pdf) sets out a framework for geo- diversity action across the UK. It provides a shared context and direction for geo-diversity action through a common aim, themes, objectives and targets which link national, regional and local activities. The UKGAP is a

mechanism for encouraging partnership, influencing decision makers, policy makers and funding bodies, and promoting good practice. It also establishes a shared understanding of what is happening and what needs to happen to promote and conserve geo- diversity, a process for measuring and reporting on progress and, importantly, celebrating success.

Isle of Wight Local Geodiversity Action Plan (LGAP)
The primary function of the Isle of Wight LGAP is to formulate a strategy to promote the Isle of Wight through the conservation and sustainable development of its Earth Heritage.

The plan (http://www.dinosaurisle.com/documents/IWLGAP2010.pdf) sets objectives, targets and determines indicators that will focus resources to conserve and enhance the heritage. The secondary function is to produce for the first time an electronic database audit of the Island's geodiversity.

11.5 Bioclimatic zone:

(Indicate the bioclimatic region in which the proposed biosphere reserve is located, refer to the table below and tick the appropriate box for each area of the biosphere reserve).

Areas	Average annual rainfall/mm	Aridity index		Core area(s)	Buffer zone(s)	Transition area(s)
		Penman	(UNEP index)			
Hyper-arid	P<100	<0.05	<0.05			
Arid	100-400	0.05-0.28	0.05-0.20			
Semi-arid	400-600	0.28-0.43	0.21-0.50			
Dry Sub-humid	600-800	0.43-0.60	0.51-0.65	X	X	X
Moist Sub-humid	800-1200	0.60-0.90	>0.65			
Per-humid	P>1200	>0.90				

Table 1: Aridity index resulting from the use of P/ETP
*Mean annual precipitation (**P**)/mean annual potential evapotranspiration (**ETP**)*

11.6 Biological characteristics:

List main habitat types (e.g. tropical evergreen forest, savanna woodland, alpine tundra, coral reef, kelp beds) and land cover types (e.g. residential areas, agricultural land, pastoral land, cultivated areas, rangeland).

For each type, indicate:
- REGIONAL if the habitat or land cover type is widely distributed within the biogeographical region within which the proposed biosphere reserve is located, to assess the habitat's or land cover type's representativeness;

- LOCAL if the habitat or land cover type is of limited distribution within the proposed biosphere reserve, to assess the habitat's or land cover type's uniqueness.

For each habitat or land cover type, list characteristic species and describe important natural processes (e.g. tides, sedimentation, glacial retreat, natural fire) or human impacts (e.g. grazing, selective cutting, agricultural practices) affecting the system. As appropriate, refer to the vegetation or land cover map provided as supporting documentation.

Maritime Cliffs and Slopes - Local
Maritime cliffs and slopes have been identified as a priority habitat in the UK Biodiversity Action Plan. They comprise sloping to vertical surfaces on the coastline where a break of slope is formed by slippage and/or coastal erosion. There appears to be no generally accepted definition of the minimum height or angle of slope which constitutes a cliff, but the zone defined as cliff top should extend landward to at least the limit of maritime influence (i.e. limit of salt spray deposition). On the seaward side, the plan extends to the limit of the supralittoral zone and so includes the splash zone lichens and other species of this habitat.

They can broadly be classified as hard cliffs or soft cliffs, though there are intermediate types. Hard cliffs are vertical or steeply sloping, with crevices or ledges where plants can establish themselves and birds can find nest sites. They are formed of rocks which are relatively resistant to weathering, such as chalk. Soft cliffs are formed in less resistant rocks such as shales or in unconsolidated materials such as boulder clay. They are characterised by less steep slopes that gradually become vegetated. They are subject to frequent slumping and landslips, particularly where water percolates into the rock and reduces its effective shear strength.

Most cliffs form at the junction of land and sea, where groundwater-driven land slippage and/or erosion by the sea have created a break in slope, but on the Isle of Wight there is also an extensive landslip zone between St Catherine’s Point and Bonchurch which has an inner cliff 500m inland rising to 140m above sea level.

The flowering plants of the Island’s cliffs abound in rare species including the Early Gentian, Oxtongue Broomrape, Field Cow-wheat, Hoary Stock, Nottingham Catchfly and Curved Hard-grass.

Although often less conspicuous, the mosses, liverworts and lichens of the cliffs also include many rare and uncommon species of high biodiversity importance including the Triangular Pygmy Moss Acaulon triquetum, the Hemisphaeric Liverwort Reboulia hemisphaerica and the Scrambled Egg Lichen Fulgensia fulgens.

One of the most important groups of insects on the Island’s coast is the bees and wasps. Included in this group are nationally rare species such as the Large Mason Bee Osmia xanthomelana (although this species is

now thought to be extinct on the Island), the mining bee Lasioglossum angusticeps, the Potter Flower Bee Anthophora retusa, the digger wasp Mimumesa atratina, the Black-headed Mason Wasp Odynerus melanocephalus and the Nomad Bee Nomada conjugens.

The beetle fauna of the cliffs is nationally important and includes such species as the Cliff Tiger Beetle Cylindera germanica, the ground beetle Drypta dentata, the rove beetle Bledius crassicollis, Chestnut Click Beetle Anostirus castaneus, and the weevils Baris analis, Mononychus punctumalbum and Cathormiocerus cocius.

The butterfly and moth fauna is also very rich and includes the Island's own Glanville Fritillary Melitaea cinxia, a species found not naturally elsewhere in Britain. In addition the Island's cliffs are home to several important moths including the Isle of Wight Wave Idaea humiliata, Six-belted Clearwing Bembecia scopigera, Dew Moth Setina irrorella, Square- spot Dart Euxoa obelisca grisea, Crescent Dart Agrotis trux lunigera and Beautiful Gothic Leucochlaena oditis.

Important populations of cliff nesting birds including Peregrine Falcon, Herring Gull, Cormorant, Shelduck, Guillemot, Raven and Shag are found on the chalk cliffs at the eastern and western extremities of the Island. Ponds, which can be transient in nature, are important for breeding amphibians such as the Great Crested Newt.

Lowland Calcareous Grassland - Regional

Chalk hills are a characteristic feature of the Isle of Wight landscape. Chalk forms the backbone of the Island extending from the famous chalk stacks of the Needles in the west to the chalk cliffs at Culver in the east. This ridge is by no means uniform along its length but widens out in the centre of the Island to form a plateau with associated combes and dry valleys around its edges. The highest range of chalk hills occurs at the southern tip of the Island - the eroded stump of a great mono-clinal chalk ridge that once spanned the Island from east to west. The strata in these southern chalk hills are almost horizontal and have eroded to form dramatic steep slopes, particularly on their southern side with more sheltered flowery chalk grassland meadows to the north.

Most of the Island's chalk downs are capped with deposits of clay with flints or angular flint gravels and have acid soils that are in sharp contrast to the nearby calcareous chalk soils. These naturally support gorse scrub, acid grassland and heathland vegetation.

Chalk grasslands occur in a variety of situations ranging from steep south facing slopes exposed to extremes of heat and maritime winds in the west of the Island, sheltered combes and dry valleys in the centre of the Island and humid north facing slopes such as those around Ashey and next to Bloodstone Copse in the east. The character and associated fauna of the grasslands varies in many subtle ways depending upon this range of exposure, slope, depth of soil and management history.

The majority of calcareous grassland on the Island occurs over the outcrops of chalk and is more commonly termed chalk grassland. In addition, there are smaller areas associated with outcrops of Bembridge limestone. Calcareous grassland on Bembridge Limestone is best developed around the former limestone quarries such as those at Prospect Quarry near Wellow. On the coast there are also many exposures of Bembridge marls on the maritime cliffs, which support calcareous grassland. Inland of the coast there are also some calcareous grasslands associated with the Bembridge marls, such as those at Brickfields and Elmsworth Farm bordering Newtown Harbour.

On the steepest and most exposed slopes are also scattered examples of sheep's fescue – carline thistle grassland. Nationally this is an uncommon calcareous grassland type limited to scattered sites on parched

chalk and harder limestones around the southern and western coasts of England and Wales. It forms an extremely short and open turf, with patches of exposed rock and bare soil. Characteristic species include mouse-eared hawkweed, kidney vetch and the moss Weissia species.

By contrast in a few places on the deeper and more moisture retentive soils, examples of upright brome grassland occur. This is a relatively tall grassland type, which develops in generally less heavily grazed grasslands. It tends to be less species-rich than the other grassland types mentioned, although it still supports a wide range of chalk grassland species including thyme, rock rose, stemless thistle and field scabious.

Finally, in a few places examples of hairy oat-grass grassland were also recorded by the survey. This grassland is dominated by red fescue with smaller amounts of hairy and meadow oat-grasses. It occurs most frequently on the deeper more moisture retentive soils where grazing pressure is low or has been absent for a period of time. Associated species are similar to the upright brome grassland and include salad burnet, ribwort plantain, thyme and lady's bedstraw. Pyramidal orchids and cowslips can also be locally abundant in this grassland type.

The range of calcareous grassland types on the Island is similar to those found in Hampshire. However, the proportion of species rich grassland is far greater and that of and is correspondingly much reduced. The examples of the nationally uncommon grassland found on the Island are absent from Hampshire.

Heathland and Acid grassland - Regional

Heathland and Acid grassland have both been identified as priority habitats in the UK Biodiversity Action Plan. Because the extent of true lowland heath is restricted on the Island and because these two habitats tend to occur in close association and are subject to similar threats and conservation requirements, they have been combined within the single Habitat Action Plan for the Isle of Wight. The Action Plan seeks to ensure that national objectives for these two habitats are translated into effective action on the Island, taking into account local issues. The identification of heathland and acid grasslands as national and local priority habitats are based on the following factors:

- Semi-natural lowland grassland, including acid grassland has declined by 97% in England and Wales over the last 50 years. It is estimated that there is some 30,000 ha of lowland acid grassland in Britain.
- In England, only one sixth of the heathland present in 1800 now remains. The UK has some 58,000 ha of lowland heathland, of which the largest proportion (58%) is found in England. The UK has an important proportion (about 20%) of the international total of this habitat.
- On the Isle of Wight, the decline in heathland and acid grassland is estimated to be in excess of 79% since 1850.
- There is an estimated 70 ha (67 ha dry heath + 3 ha wet heath) of heathland and 122 ha of dry acid grassland remaining on the Isle of Wight. However, the extent of acid grassland probably needs to be re-assessed following further field survey.
- The enormous loss of this habitat on the Isle of Wight has been accompanied by severe fragmentation, with many of the remaining areas of heathland and acid grassland being small and isolated.
- Many of the remaining areas of heathland and acid grassland on the Isle of Wight are not being managed optimally for nature conservation. A review of the condition of SSSI and SINC containing this habitat in 2001 suggested that 40% are in favourable condition or believed to be in favourable condition, 40% are in unfavourable condition or believed to be in unfavourable condition, and the remaining 20% of sites are of unknown condition.

- Heathland and acid grasslands on the Isle of Wight provide habitat for many species of national or local importance including 5 national priority BAP species, together with 9 national and 46 species of local conservation concern.

The heathland on the Island has not been comprehensively surveyed to assess the range of National Vegetation Classification (NVC) communities that are present. However, most of the examples of dry heathland conform to the Ulex minor – Agrostis curtisii heath community, which is the typical dry heathland community of the Hampshire Basin and the New Forest. The fragments of heathland that occur on the clay soils of Parkhurst Forest may be classified as Ulex minor – Calluna vulgaris heathland, whilst the wet heath that occurs in a few small and isolated patches may be assigned to the Erica tetralix – Sphagnum compactum community.

The flora of dry heathland is typically species-poor but associated species commonly include patches of common gorse or bracken, whilst growing with the heathers and heathland grasses may be species such as the heath milkwort, heath pearlwort and tormentil together with mosses such as Polytrichum juniperinum and Campylopus introflexus. Wet heath, by contrast, can be much more diverse, especially in grazed examples. In addition to the cross-leaved heath and patches of sphagnum moss that are typical of the community, associated species include deer grass and purple moor-grass. A low growing spiny shrub known as petty whin also grows in this heathland type, but it has not been seen in recent years.

An unusual version of species-rich heathland also develops on acid clay soils in Parkhurst Forest and at Bouldnor, where heathers and dwarf gorse grow in a complex mosaic with species-rich neutral grassland. This form of heathland does not conform well to the NVC, but appears to be a southern version of heathland types found in Cornwall.

In other places, areas of heathland occur in a remarkable mosaic with chalk grassland where superficial deposits of clay or gravel cap the downs. In these relatively small areas, heathers and other acid loving plants grow with typical chalk grassland or calcicole species. This heathland type, known as chalk heath, is not described by the NVC but is well described in 'Isle of Wight Chalk Heaths' Acid grassland types on the Island have also been poorly surveyed and little is known of the range of NVC communities present. Examples of both Festuca ovina - Agrostis capillaris – Rumex acetosella and Festuca ovina - Agrostis capillaris – Galium saxatile are known. Within these broad community types, there are also likely to be a number of sub-communities although these have yet to be identified. Elsewhere on the Island there are also interesting examples of bristle bent grassland, which conform to the Agrostis curtisii grassland community. Examples of this can be found in many places on the Island such as Sandown Golf Course, Head Down near Whitwell and on Ventnor Downs.

Acid grassland also occurs in association with dense stands of bracken where it can support a number of woodland plants, most notably stands of bluebells. In terms of the NVC, this vegetation conforms to the bluebell sub-community of Pteridium aquilinum – Rubus fruticosus under scrub. However, the examples of this habitat on exposures of ferruginous sandstone that occur on the Island appear to have more in common with similar examples found on the cliffs of the south west of England and may not have been derived from woodland clearance as is commonly believed.

A number of priority species are associated with the heathland and acid grasslands of the Island. These include the Dartford warbler, stonechat, adders, mottled grasshopper, a number of uncommon bees and wasps and the moss Hylocomium splendens.

Lowland Meadows - Regional
The national Lowland Meadows Habitat Action Plan is wide-ranging in its definition of the habitat, and includes most forms of agriculturally unimproved grassland on neutral soils across the enclosed lowland landscapes of the UK. Even on the Isle of Wight, there is considerable variation within this broad group of grasslands, relating to soil type and other environmental conditions. The main concentrations of lowland meadows are found in the north of the Island, associated with the poorly-draining clay and marl soils of the Hamstead Beds, Bembridge Marls, Osborne and Headon Beds and Bagshot Beds. In the south of the Island much smaller fragmented examples of lowland meadows occur, associated with the upper and lower greensand exposures of much older Cretaceous rocks. These meadows occasionally form small complexes of fields, separated by species-rich hedges and patches of ancient woodland. It is this mosaic of habitats that are of particular biodiversity importance.

In terms of the National Vegetation Classification (NVC), only one community of grassland type conforms to this habitat on the Island, termed the Cynosurus cristatus – Centaurea nigra grassland in which crested dog's tail grass and black knapweed are constant species. Meadow grasses typically dominate the sward, often fine leaved fescues and bents, with Yorkshire fog, meadow foxtail and sweet vernal grass also commonly occurring. In addition to the black knapweed, other herbaceous plants commonly include bird's foot trefoil, ox-eye daisy, ribwort plantain, meadow vetchling and red clover. Sedges are also common, with the bluey leaves of glaucous sedge being the most frequent. The low shrubby dyer's greenweed is also a typical plant of this grassland type on the Island where it has been given the local name of wood wax. Two members of the orchid family, the green winged orchid and autumn lady's tresses are also characteristic of these meadows. On the more calcareous marl soils, plants more typical of chalk grassland can also occur including fairy flax, hairy violet, yellow wort and quaking grass. On more acid soils, devil's bit scabious, saw wort and sneezewort can often be found.

On water-logged, heavy clay soils, gleying of surface horizons over a long period of time leads to changes in the vegetation, with acid tolerant grasses and heathers replacing the neutral grassland species. This process can be seen on the heavily gleyed clay soils between Cranmore and Bouldnor and within Parkhurst Forest where heathers, purple moor-grass, lousewort and heath dog-violet occur in a mixture with the neutral grassland species. These 'clay heaths' are difficult to classify in terms of the NVC, but in some respects they are similar to the species-rich heaths of Cornwall in which grassland species and heathers occur in close association. This habitat is also difficult to classify in terms of the biodiversity action plan, and will be referred to in both the lowland meadows and acid grassland and heathland habitat action plans in recognition of this.

Some neutral grasslands have been managed as permanent pasture or hay meadow for many decades, but may have been treated with limited amounts of artificial fertiliser or farmyard manure. These grasslands are often termed semi-improved. They are composed of a diversity of wild unsown grassland species but tend to have a reduced species diversity when compared to the truly unimproved grassland. These most unimproved of semi-improved grasslands are also included in this habitat action plan.

Hay meadows and pastures - Regional
Most of the lowland meadows on the Isle of Wight have been managed not only to provide pasture on which livestock can graze, but also to provide a crop of grass to be mown for hay. Mown grasslands provide a very different habitat to pasture. Hay crops are usually cut in mid summer; the meadows are then left to re-grow and are normally grazed in late summer and early autumn. As the hay grows, the tall grassland provides a very different habitat for insects, small mammals and nesting birds to that found in pastures grazed at this time of year. The removal of the hay crop marks a dramatic change in the habitat, leaving the open short sward of the mown field. Despite this, the meadow plants and animals are well adapted to cope with this rapid change in the habitat. Moreover, the hay produced is important to maintain the grazing livestock

system through the winter months. The removal of hay depletes the soil of plant nutrients and over time the grassland productivity declines. This may increase plant species diversity but in the long term may make the hay meadow un-economic to cut. It is likely that most hay meadows were treated with farmyard manure to restore fertility following hay cutting.

Wetlands - Regional
The wetland habitats considered in this action plan tend to be associated with rivers and their flood plains, or with springs and seepage lines. They are varied in character, but all depend on adequate water supplies of appropriate quality to maintain the specialist groups of plants and animals they have associated with them.

Coastal and flood plain grazing marsh - Regional
The most extensive wetland habitat on the Island is coastal and flood plain grazing marsh. The Isle of Wight biodiversity audit and assessment estimated that this habitat covered some 561 hectares. The dataset was revised in 2010 for the national inventory and the most recent estimate is 558 ha It is defined as periodically flooded pasture or meadow with ditches, containing brackish or fresh water that maintain the water levels. The ditches can be especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Not all of the grassland in flood plains and coastal grazing marshes is semi-natural, and much has been agriculturally improved. The improved areas that are influenced by saline intrusion are characteristically much more botanically diverse than freshwater examples further inland along the river valleys.

Fens - Regional
Fens, as defined by the UK BAP are peatlands that receive water and nutrients from the soil, rock and ground water as well as from rainfall. They can be described as ‘poor fens’ or ‘rich fens’. Poor fens receive their water from acid, base poor rocks such as sandstone, whilst rich fens are associated with water derived from base enriched calcareous rocks such as chalk. Fen vegetation is characteristically short, with a high proportion of sedges and mosses. In poor fens, bog mosses Sphagnum spp. predominate, whilst rich fens have carpets of ‘brown mosses’. Fens are now rare on the Isle of Wight, with only small isolated examples surviving. Poor fens on the Island are fed with nutrient poor acid water arising from springs and seepages either on hill sides such as Bohemia Bog, or at the edge of flood plains, such as Munsley Bog. Rich fen habitats were once widespread within Freshwater Marshes although much of this has now been transformed into reed bed. Other small examples of rich fen occur along spring lines flushes associated with the chalk, such as Compton Marsh or as cliff face flushes, such as those on Headon Warren and at Luccombe Chine.

For the purposes of constructing a national inventory of wetland habitats, Natural England has produced guidelines for mapping lowland fen habitat following JNCC guidance 2. Natural England’s habitat definition statement v1.3 states that ‘Reedbeds are a component/subset of Fens and may be mapped in both inventories. Small areas of reed may be included in parcels of fen, but larger areas of reedbeds should be mapped in the Fen inventory as reedbed ’to allow the reedbed constituent of the fen inventory to be separated out’.

NVC communities mapped under the broad lowland fen represent a wider definition of wetland habitats that fall within this category include areas of tall eutrophic fen and single species swamps such as greater pond-sedge Carex riparia, reed canary grass Phalaris arundinacea or in brackish situations sea club-rush Bolboschoenus maritimus. Using this definition the Island has approximately 89 ha of habitat mapped which is either ‘definitely the habitat’ or ‘habitat is present within the area’. Some forms of soft rush dominated pasture may also be included within this category of habitat type where it is generally referred to as marsh. Fen, marsh and swamp habitats are often derived from the degradation of other wetland habitats due to a lack of appropriate management or a reduction in water table or water quality. Despite this they can still provide good habitat for a number of wetland birds and animals and can be restored through reintroduction of grazing and cutting and changes in water level management to produce more varied and bio-diverse habitats.

Reed bed - Regional
Nationally, extensive reed beds can provide important habitat for a number of specialist breeding birds, such as the marsh harrier or bittern and a number of uncommon invertebrate species. The total area mapped is 151 ha but only about 25% is in blocks greater in area than 2 ha. However, the Island's reed beds have mostly evolved due to a lack of management of other wetland habitats within the flood plains and tributaries of the Eastern and Western Yar valleys. In the Western Yar, the reed beds between Freshwater Causeway and Freshwater Gate occur over former fen habitats. The reed is generally of good quality and supports populations of a number of typical reed nesting birds such as reed and sedge warblers. In the east of the Island, reed beds are best developed within Brading Marshes where they are often fed with brackish water. Where associated with willow scrub these reed beds support populations of the nationally rare Cetti's warbler. In the Yar Estuary and at King's Quay reed beds occur as part of a natural transition to saltmarsh habitat with the reed beds being tidally inundated. Further reed beds occur on the spring fed slopes of the Islands soft rock cliffs..

Ponds - Regional
Ponds are an important freshwater habitat and play a key role in maintaining biodiversity at the landscape level. However, they are vulnerable to environmental degradation and there is evidence that, at a national level, pond quality is declining. The pond resource on the Island is inadequately known but includes farm ponds, transitory ponds developed on actively slumping ground and garden ponds. Garden ponds can be important in sustaining populations of some key species, such as amphibians, but their management and survival are not linked to countryside land management.

Rivers and streams - Regional
The Island has numerous small rivers and streams. The largest are the Eastern Yar and Medina. Although rising from the chalk in the south of the Island, these rivers run for most of their length through the heavily cultivated sandy soils of the lower greensand. The Island's main rivers are biologically impoverished, due to a combination of factors including damaged structure, caused by drainage engineering; poor water quality resulting from suspended sediment and possibly including high levels of phosphate; and low flows, resulting from abstraction, Smaller rivers that drain from gravel aquifers over the Tertiary clays in the north of the Island are less heavily modified by drainage engineering, but they suffer from water quality problems associated with natural seasonal low flows and locally due to waste water discharges and agricultural run-off. Despite this, some sections of these streams are quite natural, especially where they flow through ancient woodlands such as the Palmer's Brook through Fattingpark Copse and Brocks Copse. Other Island streams are short and drain rapidly to the south coast forming deep ravines or chines as they cut down through the steep coastal cliffs on this side of the Island. Again, many of these streams drain heavily cultivated agricultural landscapes and have poor water quality and impoverished in stream and bankside habitats.

Wetland Species
The Island's wetlands are home to a rich diversity of plant and animal species including ten species that have been identified as priority species within the UK BAP. Water vole Arvicola terrestris, Brent goose Branta bernicla, Reed bunting Emberiza schoeniclus, great crested newt Triturus cristatus, European eel Anguilla Anguilla, hornet robber fly Asilus crabroniformis, Desmoulin's whorl snail Vertigo moulinsiana, pillwort Pilularia globulifera, divided sedge Carex divisa, tubular water dropwort Oenanthe fistulosa, Water voles (Arvicola terrestris) are one of the most important wetland species on the Island. They remain widespread across the Island despite dramatic national declines. The apparent absence of feral American mink on the Island may be a very significant factor in the maintenance of water vole populations. Daubenton's bats (Myotis daubentonii) are also associated with wetland corridors.

Two priority invertebrate species are associated with the Island's wetlands. The Desmoulin's whorl snail, Vertigo moulinsiana, occurs in tall fen vegetation and has been recorded at Freshwater Marshes. This species

is also listed on Annex II of the EU Habitats Directive in recognition of its threatened status throughout Europe. The other priority invertebrate found in the Island's wetlands is the hornet robber-fly Asilus crabroniformis. This species is not an exclusive wetland species, but is associated with extensively grazed grasslands where the adult flies lay their eggs on the dung of cattle and other grazing livestock. Use of ivermectin and related pesticides to control livestock parasites and loss of extensively grazed semi-natural grasslands is believed to present the main threat to this species.

The only wetland priority bird species to occur on the Island is the reed bunting (Emberiza schoeniculus). This species is still breeding in suitable scrub and wetland habitats across the Island with particular concentrations in the Eastern Yar valley, Freshwater Marshes, Newtown Harbour and Thorness Bay.

Limited numbers of Brown/Sea trout (Salmo trutta) and eel (Anguilla anguilla) have been recorded in the Island's rivers following electric fishing surveys undertaken by the Environment Agency.

Great Crested Newt (Triturus cristatus) is believed to be an uncommon and highly localised species on the Island with a small number of metapopulations.

Woodlands

Ancient Woodland

Ancient woodlands are those that have been continuously wooded for at least the last 400 years. Some of these woods are of great antiquity and may have remained as woodland since the end of the last Ice Age – these are often termed primary woods. More recent ancient woods have developed at various times through history, with phases of woodland expansion associated with agricultural decline, for example at the end of the Roman occupation.

Semi-natural woodlands are those composed of a mix of native tree and shrub species that have been perpetuated through natural regeneration. However, the proportions of individual species, the size and age of the trees and the resultant structure of these woods have been greatly influenced by a long history of human intervention and management. Some woods have been managed to produce a continual supply of small diameter wood from coppicing whilst others have been managed to produce larger diameter timber. Wood pastures are woodlands in which timber production is managed along with livestock grazing. These different woodland management systems create different habitats and support a different range of biodiversity.

The varied geology of the Isle of Wight supports a wide range of ancient woodland types and further diversifies the wildlife of the Island's woodlands. The heavy clay soils, such as those in the north of the Island, support the most extensive and varied ancient woodlands. These are fundamentally oak woods, but within this general description is a great variety. On the more acid soils, such as those within Parkhurst Forest and Briddlesford Copse, sessile oak woodland predominates although frequently with an abundance of beech. In these woods the ground flora and even the shrub layer is naturally impoverished and includes an abundance of bracken, together with more specialist species including sedges, heathers and mosses. On more neutral soils, the woodland canopy is dominated by pedunculate oak, often with birches and an understorey of hazel. The ground flora can be dominated by carpets of bluebell together with wood anemone, pignut and sometimes wild daffodils. As the soils become more calcareous in nature, then ash and field maple occur together with other shrubs such as spindle. The ground flora also changes and includes an abundance of primroses, barren strawberry and forget-me-not. Along streams and in valley bottoms are the most calcareous clay woods. Wych elm is a feature of these wet woodlands, although many have suffered from Dutch elm disease. The ground flora can be very rich and includes species such as dog's mercury, wild garlic or ramsons and in some places, the green hellebore can be found.

On the chalk downs the woods tend to be dominated by ash, sometimes with a scatter of pedunculate oak over a dense understorey of hazel coppice - once cut to make hurdles in which to fold the sheep grazing the adjacent downland. These chalk woods have much in common with the calcareous clay woods in the north of the Island, but the better draining soils support a range of other plants such as nettle-leaved bellflower, columbine and the parasitic toothwort.

The Lower Greensand soils in the centre and south of the Island have relatively few ancient woodlands. Those that occur tend to be on relatively well draining sandy soils and support a slightly acidic flora dominated by pedunculate oak and birch with an understorey of hazel. The ground flora is typically dominated by bluebell, bracken and bramble sometimes with species such as great wood-rush.
A small number of very interesting ancient woods occur on the steep Upper Greensand exposures that outcrop at the foot of the chalk downs. Cliff Copse near Wroxall is a good example where a mix of woodland types occurs, ranging from wet woodland flushed with highly calcareous spring water to beech and whitebeam woodland on the better draining greensand exposures.

In many ancient woodlands, these natural mixes of native trees, shrubs and ground flora plants, and the other wildlife that depends upon them, have been displaced through the planting of non-native or inappropriate species including conifers or non-indigenous broadleaves such as sycamore, red oak and sweet chestnut or the creation of dense beech plantations.

As has been mentioned the best preserved and most extensive wood pasture on the Island is within Parkhurst Forest. However, other good examples of this priority UK BAP habitat occur at America Wood and Apse Castle Wood near Shanklin, Borthwood Copse near Alverstone, North Park Copse at Calbourne and Rowridge Copse.

Wet woodland is also a native woodland type listed as a priority habitat in the UK BAP. This includes both ancient and more recent woodlands. Wet woodlands are mostly dominated by alder and willows and occur on wet peaty soils in river valleys. Extensive areas of ancient and more recent alder woodland occur in the valley of the Medina at Gatcombe, with smaller areas at Alverstone, Freshwater Marshes and along the valley of the Scotchells Brook. These are often characterised by large clumps of tussock sedge and, in spring, carpets of marsh marigold. There are also some good examples of wet oak woodland such as the Wilderness Wood near Rookley.

The other native woodland type listed as a priority habitat in the UK BAP is beech woodland. Ancient semi-natural beech woods are not that common on the Island and tend to occur in complex mosaics with other woodland types. Beech woodland occurs in two distinctive types. On more acid soils it grows with oaks and the distinction between ‘oak woodland’ and ‘beech woodland’ can be difficult to make. The best examples of these mixed beech woods on acid soils occur in the former wood pasture of Parkhurst Forest, where they display characteristics very similar to the beech woods in the New Forest. Beech also grows on calcareous soils such as the chalk and Upper Greensand. Small areas of probably ancient calcareous beech wood occur in Cliff Copse near Shanklin.

Recent semi-natural woodlands - Regional
These are woods less than 400 years old that have developed largely through natural regeneration. They occur over a range of soil types on the Island, and often have features in common with nearby ancient semi-natural woodlands, especially where the recent woodland is connected to the ancient woodland. However, in most of these woods, the ground flora is noticeably more impoverished than in the adjacent ancient woodland and normally lacks the specialist ancient woodland species such as bluebell, wood anemone or wild service tree. Glades and clearings in these woods often contain relicts of the former grassland or heathland habitats from which they have derived.

A remarkable and extensive area of recent secondary woodland has developed on the steep chalk slopes above Ventnor. Although composed of non-native holm oak this wood is semi-natural in that it has developed through natural regeneration over the last century. It is also becoming gradually more diverse as other plant species native to the Mediterranean have colonised it, either from introductions or naturally.
The Undercliff between Ventnor and St Lawrence supports extensive areas of secondary woodland that has become established on the jumble of chalk and Upper Greensand that has fallen from the inner cliff. These woods are formed from a diverse mix of native species such as ash, wych elm and field maple and non-native introduced species such as beech, horse chestnut, sycamore and holm oak. These were introduced into the Undercliff by the Victorians but have subsequently become naturalised. The resultant woodlands have a unique atmosphere with a luxuriant ground flora dominated by ivy and an abundance of ferns.

Some good examples of the priority wet woodland habitat on the Isle of Wight occur as more recent secondary woodlands. These have often developed from former withy beds where willow was traditionally grown for basket weaving. In addition to the extensive area of recent secondary woodland within Gatcombe Withybed are those at Ninham (Apse Heath) and Horringford Withybed at Newchurch. The Wilderness at Cridmore is an unusual example of wet oak and alder woodland that has developed over peaty soils in the Medina valley.

Plantations - Regional
Plantation woodland has been established on ancient woodland sites where it displaces the native woodland flora and fauna. Extensive plantations have also been created over the past century on former open habitats such as heathland and chalk grassland. These plantations are composed of a mix of conifer and broadleaved species. The conifer plantations include a wide range of species including Corsican pine, Scots pine, Monterey pine, western red cedar, larch, grand fir and Norway spruce. Some of these conifers, particularly the Scots pine, are important food trees for red squirrels but others are of little or no value for squirrels. Other plantations are composed of broadleaved species. These include native species such as beech and ash, as well as a wide range of non-native species such as sycamore. Apart from their value for red squirrels, the conifer plantations created on former open habitats on the Island have little intrinsic biodiversity value although they are used by some birds such as the common crossbill that are not found in other woodland types. However, where clearings and glades have been created and where rides are wide something of the original open ground habitat is able to re-establish itself. These relatively small and often temporary patches of grassland and heathland within the plantations can be of considerable biodiversity value.

Whereas beech woodland is a priority UK BAP habitat, the plantations of beech created over the last century on the chalk downs, such as Westover Plantation near Calbourne, currently lack the structure and species diversity associated with native beech woodlands. However, in time these plantations are likely to assume a more natural structure and species composition, although this could take many centuries.

12. ECOSYSTEM SERVICES:

12.1 If possible, identify the ecosystem services provided by each ecosystem of the biosphere reserve and the beneficiaries of these services.

(Please refer to the Millennium Ecosystem Assessment Framework and The Economics of Ecosystems and Biodiversity (TEEB) Framework (http://millenniumassessment.org/en/Framework.html and http://www.teebweb.org/publications/teeb-study-reports/foundations/)).

The types of ecosystem services and their beneficiaries for each of the principal ecosystems present are described below – detailing the three standard categories of provisioning, regulating and cultural services – as used in international, national and regional studies including: the Millennium Ecosystem Assessment (MA) Framework (2005), The Economics of Ecosystems and Biodiversity (TEEB) Framework (2008 interim report), UK National Ecosystem Assessment (2011) and the Isle of Wight National Character Area (NCA) profile (2013) by Natural England.

The Isle of Wight has a complex and diverse landscape. The underlying geology; habitats and species of plants and animals; historic and current land use and settlement; boundary features such as hedgerows, stone walls, hedge banks, streams and ditches; traditions, customs and cultures; peace, tranquillity and 'dark skies' all add to its special qualities and 'sense of place'.

Landscape elements and features of all lowland England can be found in one small geographical area on the Isle of Wight. Being an island, the sea and its influence are a major part of the special character of the Island.

Changing seasons and weather patterns contribute to this variety, as do differences between the aspects of the south west coastline, which is subject to storms and waves, and the northern low, slumped coasts and estuaries, which experience the more gentle influence of the Solent.

Quiet enjoyment of the Island's landscapes has provided, and continues to provide, a source of inspiration and relaxation to people who visit or live in the area.

However, increasing pressure for new activities within the countryside, built development and traffic can all have an impact on the peace, tranquillity and character of the Isle of Wight. Development can also often bring associated lighting, which through light pollution can have a detrimental impact on the 'dark skies' at night, an important part of the Island's overall character.

Supporting services – including primary production, nutrient and water cycling, and soil formation – underpin and are common to all of the ecosystems below (in the case of soil formation, terrestrial ones only) hence are not individually detailed.

Agriculture

The cultivation of food and biofuels through the management of the land. The Isle of Wight provides the setting for agriculture, an economic contributor to the area as well as the dominant land use contributor.

Agriculture is important for food production, as well as the production of crops for the emerging biofuel industry. It also provides rural employment. The diverse agricultural industry, managed on small scale farmsteads (when compared to the mainland) results in many being heavily reliant on subsidies in the form of stewardship or the Basic Payment Scheme.

To a lesser degree agriculture helps maintain livestock genetic diversity, through the production of rare breeds or local varieties. It is also instrumental in a high proportion of the wildlife habitat conservation. Multiple ownerships and the shift away from traditional farming can bring with it additional structures and incongruous features contrary to the character of the landscape, specifically there is pressure for the sub-division of land for non-agricultural activities such as horsey culture.

Ecosystem services

Provisioning Resources:

- Food production.
- Fuel production.
- Fibre production.
- Livestock diversity.
- Wildlife habitat creation.

Regulating Services:

- Regulating soil quality
- Regulating soil erosion
- Regulating Climate through organic matter in soil
- Regulating Water Flooding

Cultural Services

- Provides sense of place.
- Recreational Opportunity
- Inspiration & Tranquillity

Quality Indicators

- Number of Farms
- Farm Size
- Crop Types
- Grazing livestock
- Productivity

Beneficiaries of service

- Local People.
- Local Businesses/Attractions.
- National Businesses.

Woodland

Areas of predominantly trees either managed or unmanaged. Woodlands provide a range of Landscape Services these include; timber, wood for fuel, wildlife habitats (including those for rare woodland species such as Red Squirrels, Bechstein's Bat), regulation of soil erosion and carbon sequestration (climate change regulation).

Woodlands also provide an important multifunctional recreational resource and have great cultural resonance with people.

Most of the management of woodland is focussed on biodiversity as the value of the timber on the Isle of Wight is low and transport is expensive. Moreover, Forestry Commission Grants have been focused on improving and connecting habitats for key BAP species such as dormice and red squirrels.

Ecosystem services

Provisioning Resources

- Timber provision
- Fuel production
- Wildlife habitat creation

Regulating Services

- Regulating soil quality
- Erosion regulation
- Climate change regulation
- Regulating water

Cultural Services

- Provides sense of place
- Recreational Opportunity
- Inspiration & Tranquillity

Quality Indicators

- Ancient Woodland cover
- Amount Semi Natural Woodland cover % in active management
- Woodland Owned and Managed by the Forestry Commission.
- Granted aid available for Woodland Grant Scheme
- % Over stood coppice in need of management
- % of woodland cover

Beneficiaries of service

- Wildlife Habitat provision
- Local Business
- Residents and visitors

Water

Water is essential to life. The chalk geology of the Isle of Wight is an aquifer collecting and storing rainwater. This aquifer is one of the main resources for the Island's water supply. Abstraction rates and land use can have a major impact on the quality and quantity of water available as a physical resource.

Some species and habitats are particularly sensitive to water levels and pollutants, with small changes having a marked impact on populations and quality of the ecosystems. Rivers and streams on the Isle of Wight are relatively small in comparison to those on the mainland; however, they are of huge landscape importance to the Island. Many of the rivers and streams suffer from low flows, which can be exacerbated by unsustainable levels of abstraction.

Sustainable management of this important resource is essential to the health of the Island's environment. Currently the Island imports 20 million litres per day from the River Test, Hampshire (this is about ¼ of the Island's total usage).

Water quality within Wight AONB in rivers and inshore waters, including waste water disposal and purification are of key importance. Abstraction rates and land use can have a major impact on the quality and quantity of water available as a physical resource. Some species and habitats are particularly sensitive to

water levels and pollutants, with small changes having a marked impact on populations and quality of the ecosystems. Pollution and low flow are considered to be the major threats to the ecological quality of the freshwater habitats on the Island.

The Heritage Coasts extends 2 km from the shore of the Island. These coastal waters are heavily used for recreation and navigation. The inshore waters are a useful resource for the disposal of sewage, pollution and for navigation,

Ecosystem services

Provisioning Resources:

- Potable Water
- Farm Irrigation
- Industrial Water
- Wildlife Habitat

Regulation Services:

- Water Quality Regulation
- Water Availability Regulation
- Flood Water Storage
- Regulating Climate

Cultural Services:

- Infrastructure
- Course Fishing

Quality Indicators

- Number of Water Courses
- River abstraction rate
- Water Stress Classifications
- Nitrate Vulnerable Zones
- Invertebrate populations status
- Ground water abstraction
- The NVZs cover areas of Chalk and Lower Greensand
- Water Framework Directive - nitrate pollution
- Coastal Monitoring: monitored sites of water quality

Beneficiaries of service

- Local People
- Local Businesses including Farming
- National Businesses

Geo-diversity and Geomorphology

Geo-diversity and Geomorphology is a term given to the physical resources of the environment and natural processes, including: rocks, soils and minerals, erosion, weathering, fossils, water and air. The Isle of Wight geology underpins the Island's water supply, mineral resources and leads to information about understanding the development of life on Earth. Understanding the geology helps determine settlement placement, and identifying where resources such as gravel, sand or mineral and hydro-carbon (oil, shale gas) deposits could be found on land or immediately offshore. It also highlights landslide areas and areas susceptible to erosion.

Ecosystem services

Provisioning Resources

- Mineral resources.
- Soil provision.
- Education resources.

Regulating Services

- Water regulation.
- Erosion control.
- Water purification/detoxification.
- Natural hazard protection.
- Bioremediation of waste (landfill)

Cultural Services

- Educational resources.

Quality Indicators

- Geological Conservation Review Sites on the Isle of Wight
- Geological features in SSSI
- RIGS

Beneficiaries of service

- Local People
- Local Businesses/Attractions
- National Businesses
- Scientific Discovery

Tranquillity

Tranquil places allow people to relax and to escape from the stresses and strains of everyday life. They contribute to people's health and well-being. Tranquil areas are defined as places which are sufficiently far away from the visual or noise intrusion of development or traffic, and are considered unspoilt by urban influences.

The Isle of Wight has areas of low population and low levels of development, giving opportunities to experience tranquillity. This is confirmed through the Campaign to Protect Rural England (CPRE) Tranquillity Mapping showing the Isle of Wight AONB as significantly more tranquil than other parts of the Isle of Wight and South East England. Within IW AONB it is easy to find somewhere tranquil, in secretive woodlands, on top of open down land, in hidden coves or at sea.

The Isle of Wight is lucky to have a vast majority of the south eastern England's Dark Skies. Dark Skies are where there is little ambient light pollution and on a clear night many stars can be seen.

Ecosystem services
Cultural Services

- Respite for population
- Improved wildlife habitats
- Healthy living opportunities – including: recreation, inspiration, spiritual enlightenment

Quality Indicators

- CPRE Tranquillity mapping
- Dark Skies mapping and readings
- Level of tranquillity
- SQM Monitoring of sky darkness
- Analysis of the number and type of planning application determined per financial year

Beneficiaries of service

- Local People.
- Local Businesses.

Air
Air is a global resource that is impacted locally through air pollution. The impact the Isle of Wight can have on air is limited, as this global resource is dynamic. There are a number of statutes protecting human health from air pollution; including the Clean Air Act 1993 along with international agreements limiting use of Chlorofluorocarbons and other pollutants. However, for the Island, localised pollution episodes could have a local effect on air quality. The results of this may influence human health as well as change the species found within close proximity.

The prevailing South West Winds ensure high quality air is predominant. This feature of the landscape has attracted people to the Island for centuries, most notably the Royal National Hospital for Diseases of the Chest, Ventnor. This specialist hospital was founded in 1868 and remained open for 80 years. It also allows a vast array of lichen and other species, that are particularly sensitive to air quality, to thrive on the Island, especially in areas that are sheltered from the often-tempestuous prevailing weather.

While the Isle of Wight does not suffer from poor air quality it is near three major urban settlements; Bournemouth, Southampton and Portsmouth, which are part of the Automatic Urban and Rural Network (AURN) for air quality monitoring and do periodically suffer poor air quality. It is possible, given the right environmental conditions, for pollution from these settlements to impact upon the Isle of Wight air quality; however, there is currently no available data to support this assertion.

Ecosystem services
Support Services

- Air as a support service is of huge importance. Without it, terrestrial life would not exist. However, is would be impossible to quantify this role.

Regulation Services

- Air Quality Regulation - Air provides a medium to disperse airborne pollution derived from the burning fuels or waste products of manufacturing.

Quality Indicators

- Species diversity found could be used as a proxy indicator for Air Quality e.g. the prevalence of golden eyes Teloschistes chrysophthalmus.
- Air Quality Management Zones
- Respiratory disease data

Beneficiaries of service

- Local Businesses.
- Local Population
- Biodiversity

Wildlife

Wildlife consists of undomesticated animals and plants. The Isle of Wight has a rich biodiversity largely due to the varied geology, landform and on-going natural processes. The areas of chalk grassland; maritime slopes and cliffs; estuarine habitats; ancient woodlands and species are of particular importance regionally, nationally and internationally.

Island status has reduced the introduction of alien and disease species, allowing native populations of rare species to thrive; including, dormice, red squirrels and water voles along with Glanville Fritillary and many other species.

Without a healthy and diverse wildlife resource the landscape would look very different and many of the Landscape Services we receive would not be possible.

The Isle of Wight has many areas designated for their wildlife importance, habitats are spread across the Island. To avoid fragmentation and isolation of key habitats and species, Wight AONB needs to consider sites in this wider Island context.

Ecosystem services

Support Services

- Wildlife provides the mechanism of photosynthesis, which provides the oxygen necessary for terrestrial life.

Provisioning Services

- Wildlife provides the genetic diversity, from which, agricultural products are derived
- Wildlife provides some of the mechanisms for the pollination of many plants and crops

Regulation Services

- Wildlife provides the mechanism for the sequestration of Carbon Dioxide (removal of one of the most influential greenhouse gases from the atmosphere)
- Wildlife provides the mechanism for removal of a diverse range of pollutants from soil, water and air.
- Wildlife regulates the virility and spread of pests and diseases,
- Wildlife reduces soil and geology erosion.

Cultural Services

- Wildlife is rightly valued for its aesthetic qualities and the enjoyment people gain from visiting wildlife sites.

Quality Indicators

- Number of Biodiversity Action Plan (BAP) Priority Species
- NERC / BAP Species.
- Number of Locally Distinctive Species
- SSSI – Condition
- Local Nature Reserves- Condition
- Special Protection Areas- Condition
- RAMSAR- Condition
- Sites of importance for nature conservation – Condition
- National Nature Reserve- Condition
- Special Areas of Conservation – Condition

Beneficiaries of service

- Wildlife
- Local People
- Cultural Heritage

Historic Environment

The Historic Environment provides a finite evidence resource of peoples past. Through this we can better understand the origins of the landscape and the relationship between people and places. Additionally through investigation of Palaeo-environments e.g. pollen record, we get a better understanding of how climate and land use has changed over time. This can be used to better inform current choices of land management.
The Historic environment identifies a common physical heritage between the landscape and the intricate relationship between people and place throughout time. Gives people a link to their past. It engenders a sense of belonging and is heavily linked with peace and tranquillity as well as health and well-being and as a practical educational resource.

The complexity of the landscape is a legacy of the intricate relationship between people and place throughout time. Closely linked with geology, the historic environment comprises: archaeology, the built environment and the historic landscape; in effect the whole landscape, since this has been created by human interaction with the natural environment over time. The historic environment is a major contributor to the landscape character.

The Isle of Wight includes a wealth of history contained within the landscape. These are physical reminders of our past. Linked to this are the varied components that give a sense of history and define the distinctiveness of both the Island in its entirety and also the different areas within it. In this context we consider the elements that reinforce the local distinctiveness and character of the landscape.
In addition to the physical Historical Environment, it is important to consider the importance of local lexicon, dialect, customs, folklore and fable, people, writers, artists and landmarks. This incorporates the communal and individual importance of landscape to people as well as living as part of an island community.

Ecosystem services

Provisioning Resources

- Ornamental and collectable resources (valued for rarity and age)
- Educational resources

Cultural Services

- Spiritual and religious
- Inspiration
- Social relations
- Aesthetic values
- Cultural heritage values
- Recreation and tourism

Quality Indicators

- English Heritage Building Grades:
- Grade 1 listed Buildings
- Grade II* listed Buildings
- Grade II listed Buildings
- English Heritage Designations
- Scheduled Ancient Monuments
- Historic Parks and Gardens
- Conservation areas
- locally Listed buildings
- Portable Antiquities Scheme records

Beneficiaries of service

- Local People
- Schools
- Academia
- Local Businesses/Attractions
- National Businesses

Minerals and Soils

Mineral use on the Isle of Wight can be traced back to the use of flint deposits by Palaeolithic people through to recent industrial extraction, disused quarries, lime kilns, vernacular architecture, standing stones are all testament to the significance of minerals. The Isle of Wight continues to provide an important finite resource for minerals such as chalk, gravel, clay and sand. The Isle of Wight Council as Mineral Planning Authority details current and expected extraction, and sets out policies that seek to safeguard sites of importance for geology, geomorphology, nature conservation, archaeology, historic environment and landscape value.
The Isle of Wight provides an important finite resource for minerals such as chalk, gravel, clay and sand.

The Isle of Wight Council as Mineral Planning Authority details current and expected extraction, and sets out policies that seek to safeguard sites of importance for geology, geomorphology, nature conservation, archaeology, historic environment and landscape value.

The Isle of Wight has a duty to provide a proportion of land won mineral and as a result the Landscape plays an important role in helping to deliver against the Core Strategy Targets. In looking to the future, mineral extraction sites can be a force for good, providing rich biodiverse sites.

Soil is a basic, limited resource that is essential for many human activities. It includes topsoil and subsoil to the depth of at least one metre. The biological, physical and chemical characteristics of soil need to be protected for it to perform its important functions, including the essential minerals required for the production of food, raw materials and energy. Soils provide a filtering and buffering action to protect water

and the food chain from potential pollutants; they help to maintain gene pools and wildlife populations; and often cover historic and archaeological sites containing artefacts and historical indicators such as pollen. All soils need to be sustainably managed for the long term.

Wealden clay produces heavy soils and where it occurs inland, it mostly supports pasture. The light sand soils over the Lower Greensand provide some of the best arable land on the Island. The Chalk gives rise to thin lime-rich soils, which supports distinctive vegetation.

Ecosystem services

Provisioning Resources

- Mineral resources
- Soil provision

Regulating Services

- Water regulation
- Erosion control
- Water purification/detoxification
- Natural hazard protection
- Bioremediation of waste (landfill)

Cultural Services

- Educational resources

Quality Indicators

- Mineral Sites across the Island
- Tonnes of sand and gravel per year
- Quality of Agricultural soil
- Mineral Safeguarding Areas for future mineral extraction
- Catchment Sensitive Farming
- Water Framework Directive
- Nitrate Vulnerable Zones

Beneficiaries of service

- Local People
- Local Businesses
- National Businesses

Urban Areas

Provisioning Services

- Food Provision: small-scale vegetable and fruit production on allotments, in gardens and other urban greenspaces to encourage more people to grow their own food.

Regulating Services

- Regulating Climate
- Water Flooding

Cultural Services

- Recreational Opportunity
- Sense of Place & History and Inspiration

Beneficiaries of service

- Local People
- Local Businesses
- National Businesses
- Biodiversity

Coastal & Marine areas (coastal, intertidal, and subtidal zones)
The coast of the Isle of Wight and marine areas offshore offer opportunities for fishing, recreation water use and navigation. While there is a small fishing fleet on the Island, potting for crustaceans (edible crab and European lobster) and whelks occurs all year round.

Ecosystem services
Provisioning Services

- Food Provision: Fish and shellfish - the Isle of Wight has a small-scale inshore commercial, fisheries targeting a range of fish and shellfish species according to the season, as well as recreational sea-angling and some seashore foraging.
- Fossil fuels
- Medicine and blue technology
- Raw materials
- Renewable energy
- Seaweed and Algae
- Shipping
- Water use

Regulating Services

- Regulating Climate
- Regulating Water Flooding: tidal flooding presents a potential risk in the estuarine waters of the Eastern Yar, the Western Yar and the Medina.
- Regulation of Coastal Flooding and Erosion: a combination of hard engineered infrastructure (sea defences that include the elevated sea wall and the many groynes) protects the coastal urban areas, with the long-term policy here being to “Hold the Line” through coastal protection measures.
- Defence against natural hazards
- Lifecycle maintenance
- Natural waste treatment and disposal
- Nutrient and sediment cycling

Cultural Services

- Recreational Opportunity: the beaches, are popular with many of the 2.5 million annual visitors (and residents alike), with a minority of people participating in more active water sports such as kitesurfing, windsurfing, surfing and diving, as well as sailing being enjoyed by the thousands of leisure craft. Recreational sea angling is also popular, taking place from both the shore and small vessels, and is a significant economic activity within the area.
- Sense of Place & History and Inspiration & Tranquillity

Beneficiaries of service

- Local people and visitors

12.2 Specify whether indicators of ecosystem services are used to evaluate the three functions (conservation, development and logistic) of biosphere reserves. If yes, which ones and give details.

Geo-diversity and Geomorphology Quality Indicators

- Geological Conservation Review Sites on the Isle of Wight
- Geological features in SSSI
- RIGS Regionally Important Geological and Geomorphological Sites

Agriculture Quality Indicators

- Number of farms.
- Farm Types
- Crop Types
- Livestock Numbers.
- Productivity.

Woodland Quality Indicators

- Local Amount Ancient Woodland cover
- Amount Semi Natural Woodland cover % in active management
- Woodland Owned and managed by the Forestry Commission
- Woodland Grant Scheme
- % Over stood coppice in need of management.

Tranquillity Quality Indicators

- CPRE Tranquillity mapping.
- Dark Skies mapping and readings.
- Level of tranquillity
- SQM Monitoring of sky darkness.
- Analysis of the number and type of planning application determined per financial year

Air Quality Indicators

- Species diversity
- Air Quality Management Zones
- Respiratory disease data

Wildlife Quality Indicators

- Number of Biodiversity Action Plan (BAP) Priority Species
- NERC / BAP Species.
- Number of Locally Distinctive Species
- SSSI - Condition
- Local Nature Reserves- Condition
- Special Protection Areas- Condition
- RAMSAR- Condition
- Sites of importance for nature conservation - Condition
- National Nature Reserve- Condition
- Special Areas of Conservation – Condition

Cultural Heritage Quality Indicators

English Heritage Building Grades:

- Grade 1 listed Buildings
- Grade II* listed Buildings
- Grade II listed Buildings

English Heritage Designations:

- Scheduled Ancient Monuments
- Historic Parks and Gardens
- Conservation areas
- Locally Listed buildings
- Portable Antiquities Scheme records

Minerals and Soils Quality Indicators

- Mineral Sites
- Tonnes of sand and gravel per year.
- Quality of Agricultural soil
- Mineral Safeguarding Areas for future mineral extraction.
- Catchment Sensitive Farming
- Water Framework Directive
- Nitrate Vulnerable Zones

Water Quality Indicators

- Number of Water Courses
- Abstraction Rate
- Water Stress Classifications
- Nitrate Vulnerable Zones
- Invertebrate Populations
- Water bodies ecological status
- Ground water abstraction
- Nitrate Vulnerable Zones
- Water Framework Directive Nitrate pollution
- Coastal Monitoring Sites

12.3 Describe biodiversity involved in the provision of ecosystems services in the biosphere reserve (e.g. species or groups of species involved).

Varied biodiversity is directly involved in the provision of ecosystem services in the local area, including the following key species groups in approximate order of their local significance:

- Bees and wild pollinating insects – these play a crucial role in agricultural crop pollination (e.g. oilseed rape) and local small-scale orchards fruit production, as well as in urban areas also for allotments and other food-growing schemes and for flowering plants in urban green spaces including public parks and private gardens.
- Fish, crustaceans and shellfish (marine and freshwater) – a broad range of species are targeted by local inshore commercial marine fisheries, including sole *Solea solea*, plaice *Pleuronectes platessa*, cod *Gadus morhua*, lobsters *Homarus vulgaris*, crab *Cancer pagarus* and shellfish, whereas recreational fisheries include, for example, mackerel *Scomber scombrus* in the sea and sea trout *Salmo trutta* in the river estuaries.
- Trees (in woodlands and urban environments) – a range of native broadleaved species occur both as wild plants and planted individuals, including ash *Fraxinus excelsior* and oak *Quercus* spp. Trees especially help to ameliorate local air quality, provide shade from extreme heat, absorb some human carbon emissions, and some are also harvested for timber and firewood.
- Aquatic vegetation (freshwater) – wetland plants such as common reed *Phragmites australis* can help to absorb excess nutrients and contaminants, as well as trap sediment, in order to purify water quality and serve as biological agents for potential water supply.
- Predator species (varied groups) – various predators and parasites of insect pests (e.g. parasitic wasps and aphids) are important to prevent major outbreaks which can have damaging effects on food and horticultural crops, whereas mammalian predators such as foxes *Vulpes vulpes* in urban areas can play an important role in controlling numbers of rats *Rattus norvegicus* and hence naturally aiding public health and sanitation.
- Wild game, seashore animals and fruit – public foraging of a wide range of local wild food takes place on a relatively small scale, for example to control rabbit *Oryctolagus cuniculus* populations (which can severely damage crops and chalk grassland in excess numbers), collect shellfish such as cockles *Cardium edule* for the pot, or harvest blackberries *Rubus fruticosus* and other hedgerow fruits in season for conserves, puddings and drinks.

12.4 Specify whether any ecosystem services assessment has been done for the proposed biosphere reserve. If yes, is this assessment used to develop the management plan?

The Isle of Wight AONB has undertaken a review of Ecosystem Services within the AONB, however; this is not a full ecosystem Services Assessment, which is yet to be undertaken.

13. MAIN OBJECTIVES FOR THE BIOSPHERE RESERVE'S DESIGNATION:

13.1 Describe the main objectives of the proposed biosphere reserve, integrating the three functions (conservation, development and logistic), presented below (sections 14 to 16), including components of biological and cultural diversity. Please specify the indirect pressures and/or organizational issues.

The opportunity for Biosphere status to influence and benefit the Island's social and political landscape has never been greater than now. The great pressures on public services, charities and non-profit organisations is necessitating new ways of thinking and collaborating. Changes to healthcare commissioning, educational provision, waste, energy and highways management are all underway and evolving at the same time and stimulating the same need for a partnership of local action and common purpose. Biosphere, with its positive advocacy of positive interaction between people and the natural world and its emphasis on solutions for sustainability, offers an important and timely intervention.

The overriding reason for the Isle of Wight's submission for the Biosphere Reserve designation is to conserve and enhance our unique environment, our most valuable asset and resource, by finding new and better ways to integrate social and economic imperatives into the management of geodiversity and biodiversity

The Island has a strong tradition of environmental action and there are more groups and societies working for wildlife and sustainability than ever today. Projects and initiatives are promoting environmental education and awareness, increasing community engagement, helping people into healthier lifestyles and diets; developing eco-tourism activities, piloting local branding schemes, working with universities and institutions to foster environmental innovation and attract new investment, and testing new measures for climate change mitigation and adaptation.

We seek to use Biosphere status to establish a high-profile and unifying framework for our terrestrial, marine and coastal areas, to guide the ways in which we view, value, celebrate, use and manage the natural environment and help to attract new resources to do so.

Overall Aim
Sustainable development of the natural, farmed, built and coastal environments of the Isle of Wight, through the active involvement of all stakeholders.

Project Objective
To use international Biosphere status as a unified approach to town, country and sea which adds value, improves policy and practice, delivers quality ecosystem services, and better connects people to their environment.

Pressures
The Isle of Wight by its very nature is separated from mainland England. This affords the Island both advantages and disadvantages. The core disadvantages for sustainable development are the increased costs in in delivery to and from the Island of products or services. This makes certain industries unprofitable, timber productions as an example.

In June 2016 the UK voted to leave the European Union. It is not yet known how the ramifications of this decision will change a number of rural practices, including the Basic Payment Scheme, the Water Framework Directive and Natura 2000 Wildlife sites (including SAC and SPA).

With over 70 miles of coastline the Isle of Wight is vulnerable to the influences of climate change. With expected sealevel rise of over 70 cm in the next 50 years and an increase in storminess, there are likely to be significant changes to the coast of the Island. In addition with a change in climate to warmer wetter winters and hotter drier summers there will be increasing pressure on water resources with potential to change land use or farming practices. The Isle of Wight is a nexus between the northern most distribution of some species and the southernmost for others. Climate change will also modify the unique assemblage of species found on the Isle of Wight.

The Isle of Wight has a population of 140,000 there is the potential for large scale development to delivery jobs, homes and infrastructure necessary for such a large population.

13.2 Describe the sustainable development objectives of the biosphere reserve.

(If appropriate, please refer to Agenda 21, Rio+20 and SDG post 2015).

Sustainable Spatial Planning

The overarching aim of the Biosphere Reserve is to deliver Sustainable Spatial Planning and sustainable development of the natural, farmed, built and coastal environments of the Isle of Wight, through the active involvement of all stakeholders with a direct focus on aspects of this including:

Conservation

Condition and management of habitats and priority species populations, plus archaeology and geology, in:

- Wider countryside and farmed landscape including rivers
- Coastal/Marine (incl. fisheries)
- Green space
- Ecological connectivity/green networks
- Groundwater quality/quantity and flood risk
- Climate change adaptation

Socio-Economic Development

- Outdoor access & recreation
- Sustainable/Eco-tourism
- Other Economic stimuli such as branding
- Local sustainable food from farming
- Employment & economic regeneration
- Planning & built development particularly green infrastructure
- Urban & rural transport and air quality
- Consumption, waste, energy, etc.
- Housing
- Health

Education and Knowledge

- Broad public understanding, enjoyment, support & engagement
- Environmental education (schools & colleges, museums & visitor centres) & Interpretation to promote 'bio-empathy' and positive behavioural change
- Monitoring and research led by universities leading to greater technical and lay understanding and to validate approach
- Engagement of Arts & Creative media

Governance

- Integration of environmental conservation & sustainable development in to all relevant organisational policies, plans and decision-making
- National & International profile as model area
- Attractive and compelling identity publicised
- Effective & broad partnership working and wider and inclusive stakeholder participation/ownership
- Securing consensus and support of local people, esp. politicians/decision-makers
- Winning adequate resources and buy-in for Biosphere operation and management actions
- Indicators of tangible benefits/improvements set out (incl. existing successes) & visible projects established

13.3 Indicate the main stakeholders involved in the management of the biosphere reserve.

The Area of Outstanding Natural Beauty Partnership, Isle of Wight Council, Natural England, Environment Agency, Southern Inshore Fisheries Conservation Authority, English Heritage, Forestry Commission, Marine Management Organisation, Island Roads, Island Waste, Parish and Town Councils, IW Biodiversity Action Plan Partnership, Vectis Astronomy, Visit IW, National Trust, Hampshire and Isle of Wight Wildlife Trust, and Royal Society for the Protection of Birds, Campaign to Protect Rural England, Country, Land and Business Association, IW Gardens Trust, IW Gardens Trust, Isle of Wight Natural History and Archaeological Society, Local Access Forum, National Farmers Union, Natural Enterprise, Ramblers Association and many more.

13.4 What consultation procedure was used for designing the biosphere reserve?

The proposal to become a Biosphere Reserve had been mooted by Isle of Wight conservation organisations and the Isle of Wight BAP Steering Committee on a number of occasions.

The AONB Lead Officer presented a paper to the IOW AONB partnership about pursuing IW Biosphere Status, in July 2016.

Following approval from the IW AONB Partnership, on 3rd October 2016 IW AONB Officers presented an aspiration to pursue IOW Biosphere Reserve Status to the IOW Council Sustainability Forum. With the approval of this forum IW AONB set about developing a public engagement programme and engaging with partner organisations including: the IW Council, Visit Isle of Wight, Hants and IW Wildlife Trust, the National Trust, Natural England, schools and many more.

IW AONB Officers attended the UK and Islands Biosphere Reserves Conference and presented the Isle of Wight's expression of interest, 12 -14th October 2016.

The IW AONB Partnership attended a series of public engagement events as part of a series of high profile local events including IW Bioblitz 2017 and Wolverton Garden Fair, IW Biodiversity Partnership, All Along the River Bank and Sandown Bay's Hullabaloo and the IWHAS Recorders Conference.

In February 2018 IW AONB announced the sponsorship from the Isle of Wight Mardi Gras Carnival. This is a flagship community carnival taking place in Ryde, one of the most highly populated towns on the Island.

The Mardi Gras Carnival has engaged 31 schools and community organisations who have signed up to the Biosphere themed Mardi Gras which was held on 30 June 2018. The schools have worked with key Biosphere Partners including the New Carnival Company and IW AONB through workshops and events.

In June 2018 the IW Biosphere will be a key outcome for the Isle of Wight Environmental Conference 2018, where the Biosphere nomination was signed by Leader of the Council, the Island MP and the chair of the UK Man and Biosphere Committee.

An online Survey Monkey questionnaire has been in place since February 2018 with over 180 responses.

Isle of Wight AONB Partnership has also engaged the wider tourism industry through a key note speech at the Visit Isle of Wight annual conference in March 2018.

13.5 How will stakeholder involvement in implementing and managing the biosphere reserve be fostered?

Currently the Biosphere Partnership is governed under the IW AONB Steering Committee.

Following the submission of this nomination to UNESCO, the Steering Group will work in partnership to agree the most appropriate method of management and an action plan, linked to the IW AONB Management Plan and the Local Development Framework or Island Plan. It is expected that individual Partners will then develop specific action plans as appropriate to direct their particular implementation elements.

The IW AONB Partnership has a broad scope of organisations already engaged in Biosphere activities. However, additional partners, most specifically from the urban settlements will be sought to further enhance the Biosphere Partnership over and above that achieved by the IW AONB.

Partner engagement and expanding the Biosphere Partnership will be an ongoing process to encourage involvement in far reaching sectors hitherto absent and to develop specific work programmes and projects with in the action plan as the influence of the Biosphere Partnership progresses.

It is also important to continue to engage individual members of the Island's population at local community events and activities making the Biosphere Reserve and its aspirations increasingly tangible by helping to form and implement the management plan and action plan. This will take place through general dissemination and publicity methods, and especially through the social media on Twitter and Facebook.

Those involved in developing the biosphere reserve will also continue to attend and present at relevant local events and meetings, as has been done to date, to promote the initiative and peoples' engagement in it.

13.6 What are the expected main sources of resources (financial, material and human) to implement the objectives of the biosphere reserve and projects within it?

(Please provide formal commitments and engagements.)

For the two-year period up to the submission of the application to UNESCO in September 2018, the lead partner IW AONB has funded the core costs of the Biosphere Project by hosting a part time Project Officer and associated expenses and provision of facilities. Some key partners have contributed funding to particular project delivery elements and project expenditure, notably for the Mardi Gras Carnival 2018, public consultation and other public events.

From the financial year 2018/19 onwards there is a plan for the IW AONB to continue to host the Biosphere Project as an integral part of the IW AONB Partnership. The lead partner (IW AONB) is committed to providing core costs, while other key partners make financial and in kind contributions to projects delivered on behalf of the Partnership.

14. CONSERVATION FUNCTION:

14.1. At the level of landscapes and ecosystems (including soils, water and climate):

14.1.1 Describe and give the location of ecosystems and/or land cover types of the biosphere reserve.

Woodlands

Woodlands comprise ancient semi-natural broadleaved woodland, secondary woodland and wet woods. Woodland is composed of broad-leaved, principally native, woody species. Such woodlands are the product of both human management and natural processes, rather than being wholly artificial. They can be classed as ancient (i.e. woodland cover has been continuous on the site for at least 400 years) or secondary (i.e. have become established by natural processes more recently). Wet woodlands, included within this definition, are generally secondary in origin. Other lowland broad-leaved woodland types can contribute substantially to overall biodiversity.

The Resource
The Isle of Wight is not regarded as a particularly well-wooded county by regional standards and yet the total area of woodland cover is around the national average, occupying just under 13% of the Island's land surface. The total area of woodland occupying known ancient sites is 1,614 hectares covering just over 4% of the Island's land surface.

Farmland

Arable land is land under cultivation, set-aside or temporary grassland, tilled at least once every five years. The most significant crops are cereals but gardens, allotments and nurseries also contribute significantly to the resource. Permanent grassland is grass which has not been cultivated for five years or more and has an established sward. It is normally used for rearing cattle or sheep though some is used for turf.

The Resource
An estimated 24,900 hectares of farmland on the Island. This constitutes nearly 64% of the Island's land surface. Approximately 8,500 ha is in arable and 11,700 ha in permanent grassland with other uses including horticulture, horses and poultry

Lowland Unimproved Grasslands and Heathlands

Unimproved Grasslands

These are meadows and pastures which occur on soils which are neither markedly acid nor basic, and which have not been subject to any significant degree of agricultural intensification. They are frequently colourful with flowers and alive with insects.

The Resource
Neutral grassland has succumbed very substantially to the modernisation of agriculture since the last War and today occurs very infrequently. Between 1930 and 1984, unimproved lowland grassland has decreased by an estimated 97% in England and Wales (UK Steering Group 1995) and in recent decades, the rate of loss in some areas has increased. Neutral grassland has proved particularly difficult to map. There has not been a comprehensive habitat survey of the Island and moreover, the dividing line between unimproved and semi-improved grassland is vague. An estimated 151 hectares of MG5 (National Vegetation Classification) grassland remains on the Island. Scattered fragments have survived particularly on the clay soils on the north

of the Island and there is a concentration around the Newtown Estuary. However, this figure should be viewed with caution as it includes an element of semi-improved grassland and it excludes road verges, some of which contribute significantly to the resource, and some areas of seasonally-inundated grassland. Some of the richest sites survive today as hay meadows but many are unmanaged and consequently declining in value. Additionally, the Island still has significant areas of semi-improved grasslands which could be recoverable and these have not been adequately mapped to date.

Acid Grasslands

These are unimproved grasslands established over acidic rocks, generally sandstones. The complex geology of the Island has led to a base-rich influence on at least a part of many of these grasslands, rendering the distinction between acidic and neutral grasslands problematical. This has made an assessment of the resource difficult. Many smaller areas of acidic grassland will be contained as mosaics within neutral grassland, maritime grassland and heathland categories. Acid grassland, as considered here, is established on low pH substrates, on dry, frequently parched soils.

The Resource
Unimproved acid grassland is a comparatively scarce resource in lowland Britain. There is an estimated 91.5 hectares of unimproved acid grassland surviving on the Island. This is considered to be a low estimate.

Calcareous Grasslands

These are species-rich grasslands, sometimes co-existing with variable amounts of scrub, which have developed over base-rich soils. The overwhelming bulk of this grassland is found on chalk, with a tiny amount surviving over a narrow outcrop of Bembridge limestone and some occurring on highly fossiliferous lime-rich clays exposures on coastal cliffs.

The Resource
The extent of calcareous grassland has fluctuated with the fortunes of the agricultural sector, with a major decline through and since the Second World War. Unimproved chalk grassland has survived best on the steep scarp slopes where either grazing or coastal exposure has inhibited succession to scrub and woodland and the most extensive areas survive in the west of the Island. The Island has a nationally significant concentration of chalk grassland sites. A recent calculation has shown that 653 hectares are present, excluding significant areas of scrub. The few small areas of limestone grassland are important locally.

Lowland Heath

These are lowland open, uncultivated areas dominated by small ericaceous shrubs on nutrient poor soils. Associated acidic grassland, scrub and scattered trees may be present amongst the predominant dwarf shrub vegetation. Lowland heath may be wet or dry although wet heath is very poorly represented today. As defined, the resource excludes acid and neutral grassland which may contain low percentages of ericaceous shrubs, and extensive stands of bracken and gorse scrub.

The Resource
In 1984, the entire resource was calculated at 133 hectares but more recent critical evaluation within the definition given above, has given a figure of 63 hectares of dry heath together with 3 hectares of wet heath. Sites which may once have carried dry heathland but where ericaceous shrubs are rather poorly represented today have been excluded from these calculations. Such sites include clay heaths on the north side of the Island (included within neutral grasslands) and chalk heaths surviving on top of the downland ridge. Bracken stands have not been included; there is currently insufficient survey data to map these accurately. However,

stands of bluebells under bracken have been mapped as these are considered to have particular nature conservation value having been originally derived from woodland.

Grazing Marsh

This is an open landscape type in which the predominant vegetation is wet grassland (which may have been agriculturally improved) and fen meadows, divided by a network of ditches. They may be periodically inundated. Grazing marshes may lie on coastal plains, usually behind seawalls, or in river floodplains. The grasslands on coastal plains may have a brackish element and can grade into saltmarsh.

The Resource
This is a difficult category to define and it has not been fully quantified. Current estimates, which may need to be revised, are that there are around 560 ha of grazing marsh. Parts of the resource are covered within habitat types considered elsewhere, including rivers and streams, unimproved neutral grasslands, wetlands and open standing water.

Wetlands: Fens, Swamps (including Reedbeds) and Marshes

These are wetland sites, where the water table lies above, at or slightly below the ground surface for most of the year. There are several habitats which are considered here. They vary in the soils on which they occur, the movement of water through them, and the dominant vegetation and they are frequently associated with open water.

Fens are peatlands receiving water and nutrients from the soil, rock and groundwater as well as from rainfall. They include floodplain fens and mires associated with springs and flushes.
Swamps are characterised by water table levels at or above the soil surface for most of the year. They tend to have species-poor vegetation in comparison with fens and may be dominated by a single species, very often by Common Reed, or by Sea Club-rush where the water is brackish.

Marsh is a rather ill-defined term but has been taken to refer to vegetation occurring on mineral soil that has a water table close to the surface for most of the year but not usually above ground level.
Reedbeds are habitats which have become dominated by common reed. The habitat may be wet or dry, and may be fresh or saline. Reedbeds can become established on fens and marshes, usually as a result of lack of management.

The Resource
As the wetland habitats covered here are diverse and can be sorted by a number of vegetation classifications, it has been difficult to quantify their full extent. Marshland is extensively developed within the river flood-plains, particularly in the Eastern Yar, but much of this is unsuitably managed to benefit nature conservation, or unmanaged. However, there are calculated to be 80.7 hectares of biologically-rich marsh and just 6.3 hectares of biologically-rich fens, flushes and mires. In addition, there are some 77.8 hectares of reedbed and this constitutes 1.5% of the national resource. However, few of these are good quality reedbeds, most having arisen from reed colonising other habitats of value.

Rivers and Streams

These comprise all flowing and semi-flowing freshwater rivers (down to the point where a saline influence becomes dominant) and streams, together with tufa springs and spring-fed mires in headwater systems, and artificial channels such as ditches.

The Resource
On the Island, the length of all watercourses is estimated to be some 270km. The main rivers comprise the east Yar and the Medina and their tributaries. A few spring-fed mires survive in head waters. Tufa-depositing springs are present in the Undercliff between Ventnor and St Catherine's Point.

Eutrophic Standing Water

This habitat group refers to open water bodies such as lakes, reservoirs, gravel pits and ponds, which may be artificial or not, and which hold water for at least four months of the year. They are naturally rich in nutrients and typical of lowland Britain. Their waters can support large amounts of vegetation and a wide variety of animals.

The Resource
The number of ponds and other bodies of water is not accurately known but at least 330 ponds are recorded on maps, two-thirds of which occur to the north of the chalk ridge. The condition of these ponds is not known although anecdotal information suggests that many are heavily shaded, overgrown or polluted. The number of reservoirs is considerable but unquantified. Most open water bodies are small (less than 2 hectares). The largest are the Bembridge lagoons, although these are brackish water and considered under Coastal Saline Lagoons.

Coastal Habitats

Maritime Cliffs

Maritime cliffs are formed at the junction between the land and the sea where a break in slope is formed by slippage and/or erosion by the sea. The slopes formed range from shallow to vertical and vary in height and geology. Soft rock cliffs are characterised by slips, seepages and areas of slumped cliff face that gradually become vegetated. Chalk cliffs are characterised by sheer faces with small, but important, plant communities and ledges that can provide important nesting sites for seabirds. Exposure to wind and salt spray, together with geology, is one of the key determinants of the vegetation type which develops along maritime cliffs.

The Resource
The Isle of Wight cliffs are a significant biological resource in a regional context. There are some 53km of maritime cliff around the Island's coastline. The range of habitats present on the cliffs includes maritime grassland and coastal scrub.

Vegetated Shingle

These are coastal stony banks above high tide mark. They can occur as fringing beaches or as spits at estuary mouths.

The Resource
Vegetated shingle is a nationally rare habitat. Although there are very few shingle areas on the Island's coast and they are of limited extent, several sites are considered to be of regional importance for their representation of southern vegetation communities. There is an estimated 3.3 hectare. Sites are restricted to the north coast and are invariably contained within SSSIs and within the SPA and Solent and Southampton Waters candidate Maritime SAC. The best examples are the spits at the entrance to Newtown Harbour. Others spits occur at Wootton Creek and King's Quay and the foreshores at Thorness Bay and Quarr are examples of shingle barriers.

Salt Marshes

These are intertidal or tidally-influenced vegetated habitats that develop along soft, sheltered coasts with shallow shores, generally within estuaries. They are a transition habitat between the intertidal mudflats and sand, and the coastal hinterland which may be grazing marshes, dunes or shingle or woodland. Rather rarely on the Island's coastline, saltmarsh may be truncated by the presence of sea walls. The habitat as described excludes sea couch dominated, species-poor high saltmarsh.

The Resource
There are calculated to be some 159.3 hectares of vegetated saltmarsh habitat located on the north coast of the Island in both estuaries and on the open coast.

Sand Dunes

These are windblown sand formations that may be stable or shifting, together with their associated slacks, grassland and scrub.

The Resource
Sand dunes are a scarce resource on the Island's coast and indeed all along the English Channel coast. There is an estimated 15.36 hectares, However, St Helen's Duver is considered to be of regional importance, because of the scarcity of this habitat on the South Coast. There are examples of spit dunes on the sandy promontories at the entrance to Bembridge Harbour and the Western Yar together with a sand dune community on the banks of Ryde Canoe Lake. The seaward edges of these dunes are artificially constrained and as a result, much of the habitat is stabilised. However, there is a small but important example of a dynamic dune system in its early, mobile phase at the mouth of Bembridge Harbour. A small, but remarkable perched sand dune occurs on a clifftop at Ladder Chine on the south-west coast.

Coastal Saline Lagoons

These are bodies of brackish or saline water, usually open and shallow, and always separated from the adjacent sea by a barrier which may be permeable.

The Resource
8.5 hectares of saline lagoons have been identified along the Island's northern coastline Although this is a small extent and a tiny proportion of the South-east resource, it includes some nationally important examples. The total figure does not include the 15 hectares of Wootton Millpond which has differently been interpreted as a lagoon, or a fully tidal estuarine inlet.

Seagrass Beds/intertidal Flats

Intertidal flats are sedimentary habitats created by deposition in low energy coastal environments, particularly estuaries and sheltered bays. They are not vegetated by flowering plants, apart from the seagrass beds occurring along very sheltered stretches of coast.

The Resource
There are some 275 hectares of mudflats within estuaries. Additionally, 103 hectares of intertidal mudflats and 450 hectares of intertidal sandflats have been identified along the north coast of the Island, outside of the estuaries. The largest extent of intertidal sediments in the Solent is found along the sheltered north-eastern shore of the Island, between Fishbourne and Horsestone Point. This is the only major zone of sediment accumulation within the coastal cell stretching from Selsey Bill to Portland. Sediment accretion is believed

to be derived from erosional processes on the south coast of the Island, although Ryde Sands may also be supplied from the Solent. At low tide, a particularly wide range of sediments are exposed over this stretch of coastline, grading from the fine estuary muds of Wootton Creek, through cobbles and boulders at Pelhamfield to the extensive sandflats at Ryde, which reach a maximum width of almost 2 km.

Rocky Seabeds/Extensive Shallow Sublittoral Rock/ Coastal Waters

Exposed areas of littoral and sub-littoral hard substrates, typically consisting of bedrock reefs and boulder plains, out to 6 nautical miles from baselines.

The Resource
Intertidal and sub-tidal reefs in the Solent and Poole Bay area occur mainly around the Isle of Wight. The extent of this habitat is unknown, in part due to the difficulties and expense of surveying the seabed. However, it does include an estimated 133 hectares of intertidal reef habitat, these being rocky shores which extend into the sublittoral, and an additional 8.6 hectares of rocky shore which does not extend into the sublittoral. Littoral rock is limited to the limestone outcrops at the eastern end of the Island, the boulder shore along the Undercliff between Ventnor and St Catherine's Point, and the ironstone reefs at Hanover Point. Sublittoral rock consists largely of rocky reefs which fringe the coastline, particularly adjacent to hard cliffs and shore, in particular limestone outcrops at Bembridge and chalk outcrops at Culver Cliff and the Needles. The range of chalk intertidal, cliff and cave habitats off the Island's coast create a diverse range of habitats and communities, which are of international nature conservation importance. The chalk is vertically bedded, in contrast to the more general horizontal bedding elsewhere. There are also diverse sandstone, clay bedrock, flints and deep boulder fields.

14.1.2 Describe the state and trends of the ecosystems and/or land cover types described above and the natural and human drivers of the trends.

The state of the nationally designated sites (SSSI) is catalogued on the MAGIC database and background information maintained by DEFRA and its agencies (Natural England, Forestry Commission and Environment Agency). The current condition of these sites is undertaken by Natural England on a six year rolling programme 'Common Standards Monitoring'.

The state of locally designated sites (SINC) is catalogued by the Isle of Wight Local Records Centre, managed by the Isle of Wight Council. These sites were identified in 1998 and their condition reviewed in 2008. A subsequent review is being conducted in 2018.

Woodlands

State:
The majority of woodlands currently monitored are described as being in favourable condition (SSSI) or appropriately managed (SINC). However many of these sites do not receive active management due to a combination of their inaccessibility or size.

Trends:
Woodland cover was greatly increased in the early 20th century by the incentivised planting (central government grants) of some 210 ha farmland with native broadleaved trees. Whilst woodland creation has increased, broad-leaved woodland management has declined as local markets for wood products has declined in the light of cheaper imports to the UK. Some tree species, notably ash, are being compromised by introduced tree diseases and reducing canopy cover in some woodlands.

Drivers:
Human – a reduction in demand for low grade produce from woodlands has led to a decline in active management though there has been a small increase in firewood markets. Grant aid and incentives have helped this sector to prevent complete cessation of activities such as coppicing.

Natural – the presence of a number of tree diseases such as ash-die back, sudden oak death, Dutch elm disease, red needle blight and Phytophthora on alder and larch as well as invertebrate pests are all liable to threaten the health of our woodlands, particularly in the light of climate change.

Farmland

State:
There are 349 farm holdings on the Isle of Wight covering 25,000 ha and employing 1600 people. Arable is predominately wheat and spring barley whilst permanent grassland is used to raise sheep and beef cattle
.
Trends:
On arable, wheat production is decreasing with an increase in spring barley and maize. Cattle have decreased with a significant decrease in dairy but an increase in beef. Co-operation amongst arable farmers is good and needs to be encouraged in the livestock sector.

Drivers:
The Isle of Wight is heavily influenced by changes in cereal prices as this has an effect on both sales of grain (and other produce) and feed for livestock. The Island has a high take up of agri-environment schemes for its area and diversification into tourism-related industries to supplement income is common.

Lowland Unimproved Grasslands and Heathlands

State:
The major expanses of lowland grassland and heathlands are considered in favourable condition (SSSI) or in appropriate management (SINC). Most of the habitat is in a stable state with no significant losses or increase (see below)

Trends:
Modest increases due to the restoration of heathland (35ha) and wet grassland (25ha) have been achieved through Heritage Lottery funded Landscape Partnership schemes since 2006.

Drivers:
Human -The stable nature of the extent of lowland unimproved grasslands and heaths is due to the enthusiastic take up of agri-environment schemes and the large area of habitat owned and managed by nature conservation organisations (National Trust, RSPB, Hampshire and Isle of Wight Wildlife Trust). Increases are due to externally funded Landscape Partnership initiatives.
Natural – Climate change will lead to changes in character of these habitats as rainfall declines in the summer months. However these changes have yet to be perceived at a habitat scale.

Wetlands: Fens, Swamps (including Reedbeds) and Marshes

State:
The majority of the Island's wetlands are considered to be in favourable condition (SSSI) or appropriately managed (SINC), however a number of sites are declining in condition due to lack of concerted management.

Trends:
Transitional habitats such as fens, are declining due to difficulty of access for management leading to incursion by reed and subsequently by willow scrub.

Drivers:
Human – the declines are due to access difficulties for machinery, to undertake management tasks such as ditch clearance and scrub management, and a decline in conditions for livestock.
Natural – an increase in winter rainfall, as a result of climate change, is leading to prolonged flooding, and subsequent water-logged soils, which leads to poor conditions in summer for livestock and access issues for management.

Coastal Habitats

State: Coastal habitats are relatively stable although the proportion of any particular habitat fluctuates with conditions subject to coastal erosion and sea-level rise. Coastal habitats in the south of the Island are considered to be in favourable condition (SSSI), but recent research has shown that mudflats and sandflats to the north of the Island, in the Solent, are deteriorating due to nutrient inputs. Other habitats are deemed to be appropriately managed (SINC) but much of this habitat is subject to non-intervention.

Trends: Coastal erosion and relative sea level rise are causing fluctuations in the extent of habitat with stable unimproved cliff-top vegetation declining and giving way to unstable maritime cliff. Sea level rise is also giving rise to coastal squeeze and a reduction in species-rich saltmarsh.

Drivers:
Human – Development and maintenance of sea defences are exacerbating coastal squeeze but these solutions are becoming increasingly expensive and are not now as common as they were 15 years ago. Increased demand for recreational facilities on the coast (marinas, jetties etc) can lead to a local reduction in extent of intertidal habitats.

Natural – Increased storminess at sea, higher tides and more prolonged flooding by sea water is reducing the extent and quality of stable cliff-top vegetation, saltmarsh, eelgrass beds and reduce the functioning of subtidal reefs

14.1.3 What kind of protection regimes (including customary and traditional) exist for the core area(s) and the buffer zone(s)?

Core area : the core area is protected under international and national conservation designations. Unacceptable damage to their integrity is therefore punishable under legislation governing both the terrestrial and marine environments. Furthermore the management of the terrestrial environment is encouraged through the targeting of agri-environment schemes through national and local agencies. This allows contact with land managers and access to the sites outside the scheduled formal review processes.

Buffer zones : Terrestrial : the terrestrial buffer area is designated as Area of Outstanding Natural Beauty under national legislation and therefore unacceptable damage is punishable through the local planning process. The policies protecting this buffer are laid out in the statutory AONB management plan that is revised every five years (current plan 2014 – 2019) and is adopted by the local planning authority.

Buffer zones : Maritime : the Marine Conservation Zone (The Needles), an SPA (Solent and Southampton Water) and Maritime SACs (Solent Maritime and South Wight Maritime) that form the maritime buffer.

These are designations which carry with them a suite of conservation objectives which seek to reduce harm to their features as well as encourage sustainable management such as fishing, dredging and recreation.

14.1.4 Which indicators or data are used to assess the efficiency of the actions/strategy used?

The core area consists of SSSIs which contain special features for which the site was designated and their management is assessed through a series of conservation objectives. The efficiency of the achievement of these objectives is regularly monitored by Natural England on a six year rolling programme of 'Common Standards Monitoring'. This data is then used to decide the condition of the site (Favourable, unfavourable recovering, unfavourable no change and unfavourable declining). The status of these sites is then displayed on the MAGIC website managed by DEFRA.

The terrestrial buffer consists of AONB which contains special qualities for which the site was designated and the management is controlled through a series of policies published in the statutory management plan which is adopted by both local and central government. The plan is revised every five years and an assessment of the success of the plan is carried out as part of the revision process. Changes to policies are therefore recommended at this time.

The maritime buffer consists of two SACs, an SPA and an MCZ which are designated for their special features and have conservation objectives through which their management is assessed. The terrestrial and intertidal components of the SPA have SSSI status and they are treated as described as the core area above. The SAC and MCZ are monitored through the Marine Management Organisation which acts as regulator for licensing operation in the marine environment.

14.2 At the level of species and ecosystem diversity:

14.2.1 Identify main groups of species or species of particular interest for the conservation objectives, especially those that are endemic to this biosphere reserve, and provide a brief description of the communities in which they occur.

There are no species endemic to the candidate Isle of Wight Biosphere area.

Species of conservation interest:

Early gentian (Gentianella anglica) : considered to be endemic to the UK. The Isle of Wight holds the majority (80%) of the UK, and therefore world, population of this species which occupies unimproved calcareous grassland. It numbers fluctuate from year to year.

Hazel dormouse (Muscardinus avellanarius) : Important UK populations of this internationally protected species are found in the Islands woodlands and related habitats (hedgerows, species-rich scrub). The hazel dormouse is found in 69% of the Island's woodland.

Great crested newt (Triturus cristatus) : this internationally protected species is found locally in ponds across the Island's landscape, concentrated in ponds to the north-west of the Biosphere area.

Important assemblages of species :

Cetacea (Whales and dolphins): the Solent and English channel waters within the Biosphere have a number of internationally important cetacean including bottle-nosed dolphin, common dolphin, harbour porpoise, pilot whale and occasionally striped dolphin, minke whale and fin whale.

Bats (Horseshoe and typical) : Twelve species of this group of internationally protected group of mammals are regularly recorded on the Isle of Wight including Greater horseshoe bat (Rhinolophus ferrumequinum), Bechstein bat (Myotis bechsteinii), Barbastelle bat (Barbastella barbastellus) and grey long-eared bat (Plecotus austriacus).

Soft cliff invertebrates : the south-facing soft cliffs of the Isle of Wight hold an important assemblage of invertebrates including the highly conspicuous Glanville fritillary butterfly (Melitaea cinxia) at its only native UK site. 64 aculeate hymenoptera species are found on these habitats, ten of them dependent on the unstable soft cliff matrices found here. Of all species found on the soft cliff habitat 23 are nationally rare or scarce in the UK.

Woodland mammals : The Isle of Wight woodlands are unique in the UK for the co-existence of stable populations of red squirrel (Scuirus vulgaris), hazel dormouse (Muscardinus avellanarius), Bechstein bat (Myotis bechstenii) and barbastelle bat (Barbastella barbastellus) in woodland which is not influenced by deer or grey squirrel (Sciurus carolinensis).

14.2.2 What are the pressures on key species? In other words: what are the threats (example unsustainable management of forest), their immediate causes (drivers of change like forest change or habitat change), their underlying causes (example overgrazing, fire, pollution), and the main driving forces (example: economic, political, social, external, etc.) and the area(s) concerned?

Early gentian : being an annual, the population of early gentian naturally fluctuates from year to year so it is important that its habitat, unimproved chalk grassland, is maintained. Pressures are predominately cessation of grazing, with commensurate scrub growth, leading to a reduction in suitable short-turf habitat. The grazing economy of the Isle of Wight is considered healthy and the sites where the majority of the population grows are protected by legislation and targeted for agri-environment schemes

Hazel dormouse : this small nocturnal mammal is threatened by inappropriate woodland management and the abandonment of traditional coppice management to high forest. This reduction in the understorey structure of woodland can be exacerbated by the presence of deer species. As deer do not influence woodland management on the Island, as their numbers are insignificant, the main threat is the cessation of coppicing as an uneconomic activity. A combination of targeted grant aid and initiatives such as the Isle of Wight coppice group seek to encourage an economic resurgence in product from low grade woodland such as hedging stakes, hurdles, charcoal and wood as a fuel. On a local scale the hazel dormouse may be adversely affected through fragmentation of the habitat by development. However the pressure on the Isle of Wight for large scale development is low and this effect is mitigated through the planning process.

Great crested newt : this endangered species has it stronghold in protected areas in the north-west area of the Biosphere. The main threats are inappropriate management or neglect and fragmentation of habitat due to development. Whilst development is managed through the planning system and mitigation applied, inappropriate management or neglect of outlying ponds is an outstanding issue. Protected areas that support great crested newt are targeted with agri-environment schemes designed to improve the aquatic and non-aquatic aspects of the habitat.

Cetacea : all cetacean are vagrant within the Biosphere and there are no breeding populations of cetacean known. There are no direct threats to cetacean in British waters but indirectly they can be adversely affected by pollution and over-fishing. Inshore pollution through sewage works has been addressed by the completion

of the treatment works at Sandown where the majority of Island sewage is processed. From here treated water is expelled into the English Channel. The Isle of Wight Catchment Sensitive Farming initiative has been established to combat diffuse pollution arising from agriculture.

Bats : this is a diverse group of mammals occupying a number of habitats both natural and man-made. Their roosts in housing and other buildings are protected by law and managed through the planning system where mitigation is demanded in adverse situations. In the wider countryside their roosts are generally protected and pressure on these is low. Foraging areas and sources of food are impacted by changes in agricultural practice and the use of fertilisers and pesticides. These factors reduce the availability of preferred habitats such as hedgerows and grassland. Agri-environment schemes are used on the Island to target the retention and suitable management of grasslands and hedges for foraging bats as well as incentivising reductions in fertiliser and pesticide use.

Soft cliff invertebrates : this assemblage of a range of species is dependent on the unstable nature of maritime cliff habitats. Much of the species-rich habitats are in protected areas on the south-west coast of the Island and pressures are natural arising from increased rates of cliff erosion due to climate change and an increase of tide heights and storminess at sea. Human intervention by the construction of sea defences has caused some of this habitat to be lost and research is being carried out on the Island to determine the effects of cliff stabilisation on soft cliff invertebrates. The Isle of Wight Shoreline Management Plan is a strategic document that determines the necessity of sea defences along the Island's coast and is used to guide the future planning of these developments.

Woodland mammals : the assemblage of woodland mammals is at risk from habitat fragmentation and tree disease with a lesser risk of non-indigenous species. Habitat fragmentation is dealt with through mitigation through the planning system and agri-environment schemes directed at key corridors between important blocks of semi-natural ancient woodland. In the recent past 200 ha of native broadleaved woodland was planted on the Island to help reduce the effects of fragmentation through development and agricultural practice. Ash die-back may have a profound effect on key woodland bat species as woodland roosts will be initially increased and then lost with the deterioration of standing deadwood habitats. Understorey management is being encouraged (see above) but this will be compromised if deer species are allowed to become established on the Island. Good diverse understorey in Island woodlands helps support both red squirrel and hazel dormouse populations significantly above those found on the neighbouring British mainland. Competition from the introduced grey squirrel would also cause detrimental effects to the red squirrel populations if grey squirrel becomes established in the Island's woods.

14.2.3 What kind of measures and indicators are currently used, or planned to be used to assess both species groups and the pressures on them? Who undertakes this work, or will do so in the future?

Early gentian : currently the distribution and abundance of the early gentian on the Island is not being assessed on an Island-wide basis. Local land managers and botanists are taking note of its appearance on their sites on an annual basis but this is not systematic or structured research. Recent research has been undertaken by the Isle of Wight AONB to establish changes in the grazing economy on the Island and this will be continued by the AONB.

Hazel dormouse : the distribution of the hazel dormouse was established in 2003 and repeated in 2010. The survey covered all woodland on the Isle of Wight over 2 ha in size and its concluded that the dormouse was found in 69% of all woodland. Since this time dormouse is currently monitored in a number of sites, with a long-term study being carried out by the Peoples Trust for Endangered Species at the Briddlesford Copses

SAC. Work is being commissioned through the Isle of Wight AONB 'Down to the Coast' initiative to investigate the establishment of a co-operative to manage coppice woodland and market the produce.

Great crested newt : A survey was commissioned by the Hampshire and Isle of Wight Wildlife Trust into the distribution of great crested newt in the late 1990s. This data is used to protect those sites found outside protected sites such as the Newtown Estuary SSSI. Great crested newt is currently protected by the planning system where development is likely to impact on sites outside protected areas. The local planning authority (Isle of Wight Council) records the incidence of great crested newt and any mitigation arising from development in their habitat.

Cetacea: no systematic survey of cetacean is carried out but the Marine Conservation Society and local Wildlife Trust collect and collate sightings of marine mammals including cetacea. Water quality from sewage works and diffuse pollution is measured by the Environment Agency and Southern Water. Currently diffuse pollution is being addressed by a major project above the beach at Shanklin and across the Island but particularly in the eastern Yar river catchment where a Farmer Cluster group has been established with the Isle of Wight AONB Unit. This group of farmers covering nearly 2000 ha of the catchment are working together to improve habitats and reduce dependence on agri-chemical inputs.

Bats : research is being carried out on bat species in the Briddlesford woodland complex by the PTES to discover the use made by bats of hedges as corridors. This is being augmented by research on preferences of tree species for breeding and roosting. The local planning authority insists on mitigation for the loss of hedgerow in development where this will adversely affect bats foraging and feeding.

Soft cliff invertebrates : research is currently being undertaken by the Hampshire and Isle of Wight Wildlife trust and the Isle of Wight AONB Unit on the effect of cliff stabilisation on soft cliff invertebrate communities. Natural England are currently assessing the abundance and distribution of soft cliff invertebrates on the Compton to Steephill Cove SSSI, work that was carried out in 2006 and 2010. The protected nature of many of the soft cliffs and the recommendations of the Shoreline Management Plan (commissioned by the Isle of Wight Council) inform the necessity to maintain existing sea defences and undertake new ones.

Woodland mammals : surveys on the distribution and abundance of red squirrel on the Island has been undertaken in 1997, 2003, 2010 and 2017 (by Hampshire and Isle of Wight Wildlife Trust and IW Red Squirrel Trust). This will continue in at least five year intervals. Research on dormice and woodland bats is carried out by the PTES in their Briddlesford Copses SAC site.

14.2.4 What actions are currently undertaken to reduce these pressures?

Grazing and pastoral economy : The continued economic viability of a grazing tradition is important for the long-term management of important habitats such as agriculturally unimproved rangelands and wet grasslands. Recent research into agricultural trends on the Island has shown that the number of grazing animals is stable but there may be a point at which infrastructure and policy changes around livestock rearing could threaten its viability.

Habitat management : targeting of agri-environment schemes and the establishment of farmer and contractor co-operatives are being looked at with help from the Forestry Commission, Natural England and the Isle of Wight AONB Unit. This combination of reducing costs and grant-aid will increase incentives for the management of traditionally marginal land such as low grade woodland and unimproved grassland with both revenue and capital payments for restoration and maintenance.

Habitat fragmentation : Planning policies from the Isle of Wight Council, backed up with policies in the IWAONB Management Plan look to protect and enhance biodiversity across the Isle of Wight on a site basis as well as the corridors and stepping stones between these sites.

Pollution : Southern Water, Hampshire and Isle of Wight Wildlife Trust, Environment Agency and Natural England are working together through their regulator duties or projects to improve water quality across the Island. Southern Water concentrate on cleaning of waste water through improvements in their treatment of waste water before it is discharged and are looking at catchment management schemes to tackle issues at the sources of potable water. The Environment Agency acts as regulator to visit farms and industrial sites as sources of pollution from farmyard waste and dirty water and partners the Wildlife Trust and Natural England in looking to give advice on guidance on the responsible use of agri-chemicals and improving agricultural practices to reduce pollution incidents.

Competition for resources including space : the increasing demand for housing and the demand for protecting housing leads to a number of adverse impacts on the species and assemblages above. National legislation, local planning policies and the IWAONB Management Plan all embrace the concepts of sustainable development and the need to balance the demands of a growing human population with the requirements for a thriving and biodiverse environment. Many government agencies, local organisations and the local authority engage the public in projects and initiatives that seek to explain the balance required in an area of finite resources such as the Isle of Wight.

Non-indigenous species : the isolated nature of the Isle of Wight means that whilst it could be impoverished in comparison to the nearby British mainland it has not acquired many of the non-indigenous animals that are currently adversely affecting the native fauna. The Isle of Wight has no grey squirrel or American mink and deer are restricted to two farms. This makes our woodlands and watercourses ecologically distinct from the British mainland and as a result the habitats reflect the complement of species found prior to the introduction of these non-native influences. All national agencies and local organisations are alerted to the threat posed by the possible introduction of these species and the local Biodiversity Partnership has adopted action plans to deal with the eventualities.

14.2.5 What actions do you intend to take to reduce these pressures?

Grazing and pastoral economy : The Isle of Wight AONB, National Farmers Union, Country Landowners and Businesses Association and the Isle of Wight Council are looking with DEFRA to maintain the viability of grazing on the Island through marketing, use of modern technologies, diversification and targeting of agri-environment schemes.

Habitat management : Continue a combination of reducing costs and targeting grant-aid will increase incentives for the management of traditionally marginal land such as low grade woodland and unimproved grassland with both revenue and capital payments for restoration and maintenance.

Habitat fragmentation : Work by the Isle of Wight AONB and Isle of Wight Council has helped survey and identify important road verges, semi-natural ancient woodland and Sites of Importance for Nature Conservation (SINCs) which all to link the nationally and internationally designated sites in the Biosphere area. Protection and appropriate management of these corridors and stepping stones is undertaken through positive engagement with landowners and managers by IWAONB Unit and Hampshire and Isle of Wight Wildlife Trust.

Pollution : Southern Water, Hampshire and Isle of Wight Wildlife Trust, Environment Agency and Natural England will continue to work together through their regulator duties or projects to improve water quality across the Island. A partnership between Wildlife Trust and Natural England, IWAONB and the Environment Agency called the IW Catchment Sensitive Partnership and the Farmer Cluster (East Yar Project Group) is looking to give advice on guidance on the responsible use of agri-chemicals and the improving agricultural practices to reduce pollution incidents.

Competition for resources including space : the Isle of Wight Council are undertaking a revision of their Local Development Framework in the light of the revision of the National Planning Policy Framework and the Isle of Wight AONB are revising their AONB Management for the five year period 2019-2024. These policies will provide the framework for sustainable development in the Biosphere area and will inform national agencies and local organisations about the importance of national and local site and species protection.

Non-indigenous species : local plans are in place to combat the threat of the establishment of non-indigenous fauna on the Island. These have been adopted by the Biodversity Partnership which includes all the major national agencies and non-government organisations involved in protection and enhancement of the Island's biodiversity.

14.3. At the level of genetic diversity:

14.3.1 Indicate species or varieties that are of importance (e.g. for conservation, medicine, food production, agrobiodiversity, cultural practices etc).

Being an Island the Isle of Wight cannot readily gain new species, with the exception of birds, bats and other highly mobile or moveable species, and species once lost from the Island are highly unlikely to re-colonise without human intervention. Species unique to the UK, or species whose populations are declining rapidly, which occur only on the Isle of Wight are therefore of vital importance for their future genetic conservation.

Wood calamint (Calamintha menthafolium): the Isle of Wight is the only known locality for this species in the UK and has been restricted to a single woodland since 1843.

Reddish buff moth (Acosmetia caliginosa): the Isle of Wight is the only known locality of this species in the UK since the mid 1960's and has been declining in range to a few sites in the north-west of the Island. Re-introductions to other sites on the Isle of Wight and on the immediate mainland have not been successful

Glanville fritillary (Melitaea cinxia) : the Isle of Wight is the only locality for a persistent native population of this species in the UK since 1864.

Water vole (Arvicola amphibius): populations of water vole have undergone significant declines in the UK since the establishment of populations of American mink in the 1950's. The Island has no American mink populations and so is the last stronghold for this species in the UK, if further declines continue.

14.3.2 What ecological, economic or social pressures or changes may threaten these species or varieties?

Scrub invasion: cessation of grazing or other active management that leads to increased shade and a reduction of habitat area is a threat to all four species listed above.

Introduction of non-indigenous species: introduction of American mink will destroy the water vole population on the Isle of Wight.

Inappropriate management or neglect: all four species would suffer adversely through inappropriate management or neglect. Two species (Wood calamint and reddish buff moth) are highly specialised and have been reduced to small areas of habitat which are managed specifically for these species.

Climate change: the rapid increase in soft cliff erosion may not allow the continued establishment of colonies of Glanville fritillary owing to the inability of its food plants (Ribwort plantain and buckthorn plantain Plantago lanceolata and P. coronopus resp) to respond to rapid catastrophic habitat loss

14.3.3 What indicators, at the level of the species, are used, or will be used, to assess the evolution of population status and associated use?

Wood calamint : the plant is surveyed every year and a note taken of its abundance and distribution across the woodland it is found.

Reddish buff moth: the insect is surveyed every year and a note taken of its abundance and distribution across the site where it is found. Work is also undertaken to monitor the effects of management on the distribution and abundance of its food plant sawwort (Serratula tinctoria)

Water vole : surveys of water vole have been undertaken Island wide in 1996 2003 & 2008 and a further survey was undertaken on four catchments in 2016 to act as a baseline prior to works being carried out between 2016 and 2020. The survey will be repeated in 2020 to determine the success of the intervening works

Glanville fritillary: the population is monitored every year and note taken of its distribution and abundance across its known sites.

14.3.4 What measures will be used to conserve genetic diversity and practices associated with their conservation?

Wood calamint: work will continue to manage the woodland site and the local habitat specifically for this species. As a precaution specimens of this species have been taken into cultivation and seed has been submitted to the national seed bank at Wakehurst Place.

Reddish buff moth: work continues to provide suitable habitat for the moth and its food plant at its current location and historic locations on the Isle of Wight. Previous re-introductions and translocations have failed and the population is thought to fragile to withstand any further attempts at this time. However, when the population rallies it is hoped to use it as a source for re-introduction.

Water vole: work is carried out on the larger watercourses on the Isle of Wight to reduce scrub encroachment onto riverbanks and establish grazing or coppice management.

Glanville fritillary: little intervention work can be carried out on the coastal sites but policies are in place through the Shoreline Management Plan to prevent the stabilisation of the cliffs where colonies are found. Inland colonies on the downs above the coastal sites are established in good years and these sites are managed so that the habitat persists if populations increase to a point that these colonies can become established.

15. DEVELOPMENT FUNCTION:

15.1. Potential for fostering economic and human development which is socio-culturally and ecologically sustainable:

15.1.1 Describe how and why the area has potential to serve as a site of excellence/model region for promoting sustainable development.

The Isle of Wight sits just under five kilometres from the south coast of England and can be considered a microcosm of southern England's Landscapes and land uses. The Island is also one of the more densely populated Islands in northern Europe. Therefore sustainable development is necessary to balance the needs of the Island's population with the needs to maintain a vibrant and health landscape with diverse wildlife.

The Island's discrete landmass provides the perfect location to examine sustainable land management and development policy on a local scale with limited outside influencing factors. As a result the Island proves to be an ideal opportunity to examine sustainability issues in miniature to serve as a model for either exemplar sustainability projects or to test policy.

The Isle of Wight has a number of distinct economic strengths, including a strong, modern manufacturing sector in comparison with south east England, as a result of companies and local supply chains in marine industries, aerospace, and composite material production; plus a healthy level of self-employment and micro-businesses, many of which are attracted by the quality of place offered by the Island. These, allied to the visitor economy and the offer to tourists, provide the opportunity for sustainable growth.

70% of the Isle of Wight is nationally or internationally designated for either its wildlife or its high landscape quality with a remit for the ongoing conservation, enhancement and sustainable management.

The forthcoming Regeneration Programme, Island Plan, Isle of Wight AONB Management Plan, Waste Management Infrastructure improvements and the My Life a Full Life health care model all have a strong focus on the ongoing sustainable development of the Isle of Wight population.

15.1.2 How do you assess changes and successes (which objectives and by which indicator)?

Population
Assessing changes to the population of the Isle of Wight, including the latest population estimates (including age bands and gender splits), population change, and population projections.

Indices of Deprivation
Assessing changes to the Island's scores against the English Indices of Deprivation, which is based on 37 separate indicators organised across seven distinct domains, each of which represent a specific form of deprivation: Income, Crime; Employment; Barriers to Housing; Education, Skills, Services, Training; Living Environment and Health & Disability.

Renewable Energy
Assessing changes against renewable energy generation relating to electricity generation from biomass, photovoltaics (PV), wind and waste to energy.

Fuel poverty
Assessing changes of fuel poverty, where a households fuel costs are considered above the national median level and where the amount a household spends that amount would leave the residual income below the official poverty line. With additional key indicators of household energy efficiency, cost of energy and household income.

Waste Management
Assessing changes appropriate waste facilities, % recycling rates, % domestic waste recycled/composted, and % construction-demolition/commercial waste reused/recycled

Sustainable Transport
Assessing changes to the modes of work/commute travel, and emissions traffic counts, bus/cycle usage, electric vehicle points, emissions, air quality, safety, access to jobs and schools, and surveys for schemes and personal transport plans.

Sustainable Materials
Assessing changes to the % council spend in local economy / SMEs-3rd Sector bodies Waste

Local and Sustainable Food
Assessing changes to farming practices and food miles to market.

Sustainable Water
Assessing changes to Water Abstraction Licences and volumes, water quality, water use reduction, targets water consumption, flood management and water re-use

Land Use and Wildlife
Assessing changes Priority Habitat status, SSSI Condition, SAC Condition, SPA Conditions, public awareness/ understanding, chalk grassland monitoring & other sites, public engagement activities, Local Wildlife Sites condition, NERC Measurements on biodiversity, quantity of land in stewardship or environmental management schemes and the availability of incentives.

Culture and Community
Assessing changes to community events and activities, Museums, volunteers and public satisfaction, condition of heritage assets and number of heritage assets on the 'At Risk' register.

Equity and Local Economy
Assessing changes characteristics of age, gender, ethnicity, religion, disability, transgender status, marriage and civil partnership, sexual orientation and pregnancy and maternity, number of jobs created and supported by local enterprises, number and diversity of business types, and average spend per visitor per day.

Health and Happiness
Visitor satisfaction, Staff satisfaction, wellbeing portal & HR uptake, sickness targets self-reported wellbeing, active living, travel to school, substance misuse, sexual health, access to green space.

15.2. If tourism is a major activity:

15.2.1 Describe the type(s) of tourism and the touristic facilities available. Summarize the main touristic attractions in the proposed biosphere reserve and their location(s).

Tourism is one of the Island's most important sectors and growing the visitor economy has been identified as a priority by both the Isle of Wight Council and Visit Isle of Wight. However, how people take their holidays over the last 30 years has changed, which has resulted in a gradual decline in the total number of visitors and a change in the demographics of visitors, their length of stay and the time of year they visit. In addition, the average spend per visitor is low and there remains significant seasonal variation in the number of visitors.

In 2013 the Island attracted approximately 2.28 million visitors and visitor-spend contributed approximately £286m to the Island's GDP (2012-13 annual monitor report). This has grown from £260m in 2012.

The Office for National Statistics recently completed a major study into the value of tourism and, based on 2011 data, they estimate that if one adds the additional investment made by suppliers into other goods and services, then the Island tourism sector contributes as much as £520m (ONS study 2011).

The Main Tourist Attractions

Area of Outstanding Natural Beauty
The Isle of Wight has a rich variety of distinctive landscapes which is often described as lowland England in miniature. Take time to explore the wild and varied terrain it has to offer. The Island's landscape and coastline offer fantastic experiences of dramatic cliffs, long and hidden beaches, quiet estuaries which are a haven for wildlife, gently rolling patchwork fields with secret woodlands, open chalk downs and stunning views across the Island's countryside and coast.

Towns and Villages
The Isle of Wight is littered with picturesque villages and bustling small towns. In the towns there are local shops including local boutique stores and familiar high street brands along with cafes and restaurants.

Historic Sites
Historic monuments such as St Catherine's Oratory, Tennyson's Monument and the Mottistone Longstone,

Dinosaur Heritage

The Isle of Wight is famed for its Dinosaur heritage and is already regarded as one of the richest areas for discovery in Europe – earning it the title "Dinosaur Island". According to a new Dinosaur Map of Britain compiled by Dr Paul Barrett, Merit Researcher from the British Museum (Natural History), the Isle of Wight is the UK's Dinosaur Capital! Including two of our most popular beaches, Compton Bay and Yaverland, are hotspots for finding fossils.

Dinosaur attractions
Dinosaur Isle is Britain's first purpose built dinosaur attraction just over the sea wall in Sandown where in a spectacularly shaped building reminiscent of a Pterosaur flying across the cretaceous skies you can walk back through fossilised time to the period of the dinosaurs 120 million years ago.

The Dinosaur Farm Museum
Dinosaur Farm Museum is a Community Interest Company, to help the local community and visitors to the island learn more about the Island's unique fossil heritage and locally produced Palaeo art.

Heritage Attractions and Museums

Carisbrooke Castle
The quintessential romantic castle built in 1100AD , and has survived more than 800 years of service, resisting a French siege and seeing off the Spanish Armada. It has served as an Elizabethan artillery fortress, a king's prison and a royal summer residence.

Yarmouth Castle
Yarmouth Castle was the last and most sophisticated addition to Henry VIII's coastal defences; it was completed after his death in 1547, with the first new-style 'arrowhead' artillery bastion built in England.

Osborne House
Osborne House is a former royal residence of Queen Victoria in East Cowes. The house was built between 1845 and 1851 for Queen Victoria and designed by Prince Albert as a rural retreat. The building of this house sparked the influx of tourism to the Isle of Wight and led to a huge change in the design and vernacular of local buildings.

Needles Old and New Battery
Victorian coastal defence and secret rocket testing site perched high above the Needles Rocks.

Mottistone Manor
Mottistone Manor is a National Trust property in the village of Mottistone. It has popular gardens and is a listed building.

Theme Parks

Robin Hill Country park
Robin Hill Country Park is a theme park located in Downend.

Blackgang Chine
Blackgang Chine Amusement Park located in Blackgang.

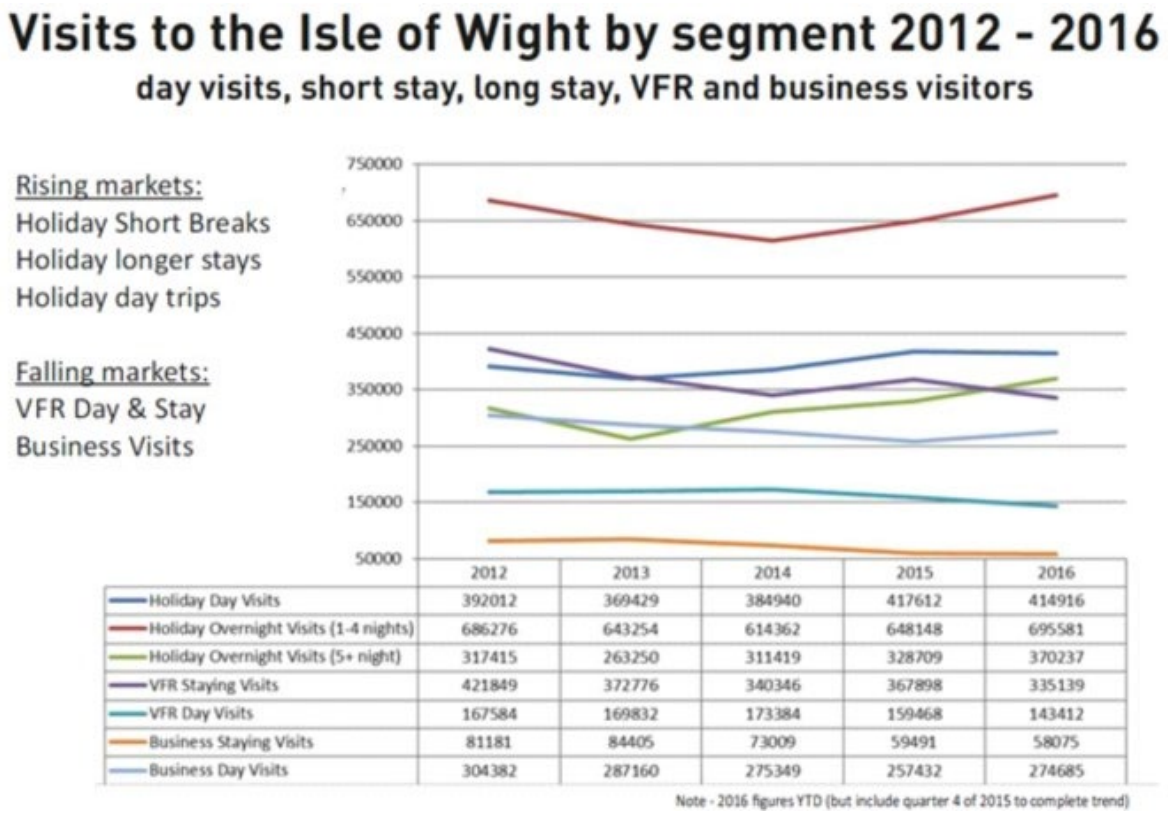
Needles Pleasure Park
A collection of family-friendly rides and attractions by sand cliffs with a chairlift to the beach and a lighthouse overlooking Alum Bay.

Sandown Zoo
A zoological attraction.

Amazon World
A zoological attraction.

Owl and Monkey Haven
A primate rescue centre and attractions

15.2.2 How many visitors come to the proposed biosphere reserve each year? (Distinguish between single-day visitors and overnight guests, visitors only visiting the proposed biosphere reserve or only passing on the way to another place). Is there an upward or downward trend, or a particular target?



	2012	2013	2014	2015	2016
Holiday Day Visits	392012	369429	384940	417612	414916
Holiday Overnight Visits (1-4 nights)	686276	643254	614362	648148	695581
Holiday Overnight Visits (5+ night)	317415	263250	311419	328709	370237
VFR Staying Visits	421849	372776	340346	367898	335139
VFR Day Visits	167584	169832	173384	159468	143412
Business Staying Visits	81181	84405	73009	59491	58075
Business Day Visits	304382	287160	275349	257432	274685

Figure 10. Shows Visits to the Isle of Wight by segment 2012 – 2016.

The Isle of Wight receives 2.3 - 2.5 Million visitors per year.

15.2.3 How are tourism activities currently managed?

Visit Isle of Wight is the destination management organisation which oversees attracting new visitors and retaining their loyalty in years to come. Making sure that the Island's products and experiences exceed visitor expectations, including accessibility and travel to and around the Island. Each tourism business pays a levy to Visit Isle of Wight for increased coordination and marketing opportunities.

Visit Isle of Wight also delivers the Tourism Information Centres and in collaboration with the tourist industry forms strategy for Isle of Wight tourism, principally marketing nationally and internationally, to inspire people to visit, working in partnership with others to act on behalf of visitors to ensure they have a quality experience; and visitor services to deliver a range of information, booking and welcome services.

Isle of Wight Council has a team to deliver Urban Regeneration, which works in partnership with the business and tourism community.

The Isle of Wight AONB is promoted and marketed by the Partnership, the Local Authority and Visit Isle of Wight.

15.2.4 Indicate possible positive and/or negative impacts of tourism at present or foreseen and how they will be assessed (linked to section 14)?

Generally the balance between tourism and other land uses is maintained as people recognise the critical importance of visitors to the local economy, combined with the significance of a high quality visitor offer including the quality of the local environment.

The Isle of Wight Biosphere has an opportunity to contribute significantly to economic growth through the promotion of sustainable tourism. The economic benefits of tourism cannot be overstated to the area, with scope to diversify and grow these more sustainably in the future towards eco-tourism niche activities and greener tourism is supported by the IW AONB.

Tourism creates pressure on the environment, however; from the high numbers of people using visitor and transport infrastructure and consuming resources including food and water, with demand for water increasing greatly in the summer months for example. Visitor movement and activity tend to concentrate on core routes and a limited set of ”honey pot” areas, such as the beaches and downland sites such as West High Down and Tennyson Down. Such locations in the IW AONB can experience conflicts from the high volume of visitor pressure at key access points such as car parks.

There are high levels of car dependency to visit rural attractions especially, with resulting in air quality impacts and localised damage to visitor infrastructure.

Other possible impacts in the IW AONB include conflict between visitors and land managers resulting from potential crop damage and disturbance of grazing livestock, which in extreme cases results in animals being killed through dog attacks. There are also potential conflicts between different types of visitors wishing to use the countryside, for example between walkers, cyclists and horse riders.

Visitor pressure can also create potential conflicts with nature conservation objectives, particularly with regard to ground-nesting birds on the Downs for example.

The impacts of current tourism and recreation (both positive and negative) on the local environment (especially the IW AONB) are the subject of research by the IW AONB and partner organisations. This is a key area for further research and assessment in the future.

15.2.5 How will these impacts be managed, and by whom?

Tourism and recreation impacts on the environment will be managed by Visit Isle of Wight according to their adopted policies and strategies.

15.3. Agricultural (including grazing) and other activities (including traditional and customary):

15.3.1 Describe the type of agricultural (including grazing) and other activities, area concerned and people involved (including men and women).

The following key findings are taken from the analysis of the data provided by the Defra Agricultural Census.

Farmed Area

Farmed area has remained constant at around 25000 hectares for the Isle of Wight with around 13500 hectares being within the Biosphere Buffer Zone (equating to around 70% of the total AONB area).

Farm Types

An increasing trend in land used for growing cereal crops (45% of which is within the Biosphere Buffer Zone). Grazing Livestock land is the largest category but has shown a decrease since 2010. There is an increasing trend in land for Mixed Farming and General Cropping on the Isle of Wight but a decreasing trend in the Biosphere Buffer Zone. There is a decreasing trend in amount of land used for Dairy Herds and Horticulture.

Rented vs Owned Land: Rented land has fluctuated between 25% and 27% of all agricultural land on the Isle of Wight. The proportion of rented land is slightly higher in the Biosphere Buffer Zone being 35% in 2013.

Land use on Commercial Holdings: Permanent grassland is the largest land use category and has been consistently increasing each survey year. In 2013 it was around 47% of agricultural land use on the Isle of Wight and 50% in the Biosphere Buffer Zone. Rough grazing and temporary grassland areas are decreasing. Farm woodland has shown an increasing trend in the Biosphere Buffer Zone being 7% of the agricultural land use in the Biosphere Buffer Zone in 2013.

Crops

Arable Crops: Cereals are the predominant arable crop and wheat is the most widely cultivated cereal crop although the extent of land growing wheat is decreasing. There has been a recent increase in the extent of spring barley cultivation. Maize cultivation has shown a rapid increase in area between 2010 and 2013 (159% increase), this could be due to its use as a feed crop for the biomass plants.

Horticultural Crops: Horticulture is a relatively small part of agricultural activities on the Isle of Wight. The largest sub category being vegetables and salads grown in the open.

Livestock

Cattle (Number): Total cattle numbers are decreasing. Isle of Wight Beef Herd (Female beef cows over two years old and their young) have increased since 2009. Isle of Wight Dairy Herd (female dairy cows over two years old and their young) have fluctuated with 2013 levels been the lowest in the series of years analysed. However, they have dramatically decreased since 2007 with 2013 levels being 44% of those in 2007. In relation to dairy on the Isle of Wight, this would seem to indicate an intensification of dairy with a slightly contracting herd on significantly fewer dairy holdings. In the Biosphere Buffer Zone it would seem to reflect a change away from dairy farming with a rapidly decreasing herd and a very low number of dairy holdings (the actual number is suppressed as it so small) indicating perhaps less intensive dairy grazing in the designated area.

Poultry (number): Poultry farming is an increasing sector on the Isle of Wight and is largely taking place in the Biosphere Buffer Zone (75.5% takes place in the Biosphere Buffer Zone). The largest category being Laying and Breeding Fowls which saw a sizeable increase in numbers between 2010 and 2013.

Specialist Pigs (number): In recent years, the number of specialist pigs has increased but there was a dramatic decrease between 2000 and 2005 (760% down) with 2013 levels being 83% up on 2005.
Sheep (number): Female breeding flock numbers have fluctuated on the Isle of Wight between 1995 and 2013 and numbers in the Biosphere Buffer Zone have been decreasing since 2008 (in 2013, 81% of the Island total sheep numbers being on holdings in the Biosphere Buffer Zone). The number of lambs under one year old has also fluctuated with a decreasing trend for the Isle of Wight and in the Biosphere Buffer Zone (in 2013, 84% of the Island total lambs being on holdings in the Biosphere Buffer Zone).

Goats (number): Goat numbers on the Isle of Wight are low compared to other livestock. There has been an increasing trend in recent years. 66% of all Goats on commercial holdings in the Isle of Wight are on farms within the Biosphere Buffer Zone.

Horses (numbers): Horse numbers are only captured on farms with a holding number (it is not a necessity to have a holding number to keep horses). There has been a decreasing trend since 2009 with 17.5% fewer horses in 2013 than in 2009. This decrease was particularly marked in the Biosphere Buffer Zone with 40% fewer horses in 2013 than in 2008. This matches the national trend set out in the British Equestrian Trade Association National Survey of 2015, but may not reflect the true situation when private ownership is included.

15.3.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14).

Landowners and farmers are key actors in the management and conservation of rural biodiversity, with many carrying out agri-environment schemes to deliver targeted benefits to important natural resources including wildlife.

The continuation or reinstatement of extensive livestock grazing is especially critical to the maintenance of chalk grassland ecological diversity. Mixed farming systems in general are vital to the health of farmland bird populations through their demands for a range of food and nesting opportunities. Thus farming is fundamental not just in local socioeconomic terms, but in the continued management of the natural environment of the countryside.

Countryside Stewardship and Environmental Stewardship

The Environmental and Countryside Stewardship Schemes have provided funding to farmers for environmental management activities on their holdings.

The Countryside Stewardship Scheme was set up by the Countryside Commission in 1991 and taken over by the Ministry of Agriculture Fisheries and Food (MAFF) in 1996. In 2000 the scheme became part of the England Rural Development Programme. This scheme closed to new applications in 2004 just prior to the commencement of the replacement Environmental Stewardship Scheme. Schemes funded through Countryside Stewardship expired in 2014.

Environmental Stewardship commenced in 2005 and was run by the Department for Environment Food and Rural Affairs (Defra). It consisted of two levels: Entry Level Stewardship (ELS) (including Organic Entry Level Stewardship for Organic Farms) and Higher Level Stewardship (HLS). Anyone who owned a farm or manages agricultural land could apply for funding through the Entry Level Stewardship which was not competitive provided the options chosen totalled at least 30 points per hectare of land. ELS schemes last for five years. Higher Level Stewardship was a more targeted scheme and not all land was able to benefit. HLS

was designed to provide support for more active and environmentally beneficial management practices. HLS also includes grants for capital works (not part of ELS). It was run as part of the Rural Development Programme for England under the European Agricultural Fund for Rural Development which is part of the Common Agricultural Policy. The Environmental Stewardship Scheme closed in 2014 (with some schemes running to 2016) to be replaced by the new Countryside Stewardship Scheme which commenced in 2016.

Both schemes have used European funding to promote agri-environmental approaches.

The Isle of Wight is thought to have had one of the higher uptakes of Environmental Stewardship. Comparison between the Defra Farm Survey data which gives a total figure for farmed area and the Environment Farm Environment Record data gives us the following information:

Isle of Wight:

- Total Farmed Area in 2016 24,143 hectares (taken from Defra Farm Survey)
- Total Entry Level Stewardship area 12,341 hectares (taken from total area recorded in Farm Environment Records being 112 holdings) equating to 49.56% of farmed land in Environmental Stewardship
- 65 holdings were also in the Higher Level Stewardship Scheme (taken from the number of Farm Environment Plans)

Biosphere Buffer Zone :

- Total Farmed Area in 2016 13,820 hectares (taken from Defra Farm Survey)
- Total Entry Level Stewardship area 8,634 hectares (taken from area recorded in Farm Environment Records being 81 holdings) equating to 63.6% of farmed land in Environmental Stewardship
- 51 holdings were also in the Higher Level Stewardship Scheme (taken from the number of Farm Environment Plans)

Benefits of Environmental and Countryside Stewardship

Hedgerows and Ditches

Under Countryside Stewardship there were 150 metres of ditch maintained/restored and 109 metres of hedgerow planted (all of which was in the Biosphere Buffer Zone). All this activity took place in pasture land.

In the Environmental Stewardship Scheme, there was much more investment in the hedgerow and ditch management with 169.6 kilometres of hedgerows managed on one side (56% in the Biosphere Buffer Zone) and 102.3 kilometres of hedgerow managed on both sides (64% in the Biosphere Buffer Zone). Ditch management was also much more extensive with 46.3 kilometres of full ditches managed (53% in the Biosphere Buffer Zone). These were mostly located in pasture land, in sandstone and gravel areas, in arable areas and on the valley floor.

Trees and Woodland: There was little investment in trees and woodland under the Countryside Stewardship Scheme.

In the Environmental Stewardship Scheme, there were 364.8 hectares of woodland managed (56% in Biosphere Buffer Zone) and 8.29 hectares of new woodland created (93% in Biosphere Buffer Zone). 24 hectares of woodland pasture and parkland maintained (83% in Biosphere Buffer Zone) and 12.77 hectares of wood pasture created (63% in Biosphere Buffer Zone). All of this was predominantly located in pasture lands and chalk downland areas.

Traditional buildings and archaeology
In the Environmental Stewardship Scheme, 2147 sq. metres of traditional buildings were maintained in Entry Level Stewardship (73.4% in the Biosphere Buffer Zone) and 2897 sq. metres through Higher Level Stewardship (66.7% in the Biosphere Buffer Zone). These buildings were located across the Island in areas of arable farmland, pasture and chalk downland. Large areas of land were either taken out of cultivation or had their ploughing depth decreased to protect buried archaeology much of this was in the Biosphere Buffer Zone and on chalk downland, arable farmland and pasture land.

Buffer strips / Headlands / Field Corners
Countryside Stewardship saw 12.42 kilometres of grass margins (87% in the AONB) the clear majority in coastal farmland and pasture lands (focussed on the Brading and Yaverland area).

Under the Environmental Stewardship the 6 metre buffer strips were the largest category under this heading with 56.24 hectares in the Entry Level Scheme (60.6% in the Biosphere Buffer Zone) and 34.56 hectares in Higher Level (51.7% in the Biosphere Buffer Zone). These were largely located in areas of pasture land and arable farmland with some in chalk downland. Field corner and headland management falls within this category and is largely located in pasture land, arable farmland and chalk downland areas.

Watercourse buffers: Mainly focused in pasture areas, arable farmland and unsurprisingly valley floor areas. Although small in extent with 0.76 hectares of 6 metre buffers on intensive grassland close to watercourses in ELS (26.3% in Biosphere Buffer Zone) and 1.55 hectares of 12 metre buffer strips on cultivated land in HLS (none of this was in the Biosphere Buffer Zone).

Wildbird Seed Mix / Skylark Plots / Fallow areas for birds
Countryside Stewardship saw 6.55 hectares of wildbird seed mix (30.5% in the Biosphere Buffer Zone) Under Environmental Stewardship, most of these options were within Higher Level Stewardship and located in pasture and arable farmland areas. Wild bird seed mixture was used on 24.3 hectares (73% in Biosphere Buffer Zone) and fallow plots for ground nesting birds 48.18 hectares (31.4% in the Biosphere Buffer Zone).

Pollen/Nectar Mixture
Countryside Stewardship saw 4.93 hectares of pollen/nectar mix (40.5% in the Biosphere Buffer Zone). Under Environmental Stewardship, nectar flower mixture was used on 22.72 hectares (46% in Biosphere Buffer Zone) and there was 10.59 hectares (84.8% in Biosphere Buffer Zone) of pollen and nectar flower mix.

Stubble/Set-Aside: Countryside Stewardship had 2 hectares of over wintered stubble followed by spring/summer fallow all of which was in the Biosphere Buffer Zone.

Environmental Stewardship saw 267.74 hectares of overwintered stubble (61.6% in Biosphere Buffer Zone) in the Entry Level Scheme and 176.52 hectares in the Higher Level Scheme (79.3% in Biosphere Buffer Zone). These were located in arable and pasture farmland as well as some on chalk downs.

Pasture and Grasslands
Countryside Stewardship saw funding for lowland pasture, reintroduction of grassland management 30.26 hectares (85% in Biosphere Buffer Zone), 74.85 hectares of pasture on neutral/acid soils (66% in Biosphere Buffer Zone) and 75.79 hectares of regeneration of grassland and semi-natural vegetation (57% in Biosphere Buffer Zone). The focus for this being chalk downs, pasture lands and valley floor areas.

Environmental Stewardship required farms to provide details of permanent grassland (even when this would not benefit from funding through the scheme) and to ensure that this was retained in extent within a 20% buffer. 4556.25 hectares of such grassland was recorded (83.9% in the Biosphere Buffer Zone). 1005.41 hectares of species rich semi-natural grassland have been restored (96.6% in the Biosphere Buffer Zone) and 565.23 hectares of species rich semi-natural grassland were maintained (96.5% in Biosphere Buffer Zone). The focus for this funding was the chalk downland, pasture land, valley floor and greensand hills areas of the Island.

Scrub Management / Successional Areas
Countryside Stewardship included measures to manage scrub areas although only just over 1 hectare of land benefitted from this.

Under Environmental Stewardship much larger areas were managed. 32.86 hectares of successional areas and scrub were managed (77% in Biosphere Buffer Zone) and smaller areas were restored or created. These were focussed in pasture areas and chalk downland.

Arable reversion
In the Environmental Stewardship Scheme, there were options to fund arable reversion either to help to manage soil erosion or run-off or to allow natural regeneration. Much of this was in the Biosphere Buffer Zone and on chalk downland or adjacent greensand arable areas.

Wet Grassland
Environmental Stewardship saw 219.5 hectares of wet grassland maintained for wintering waders and wildfowl (65.2% in Biosphere Buffer Zone) and 224.26 hectares maintained for breeding waders (10.3% in Biosphere Buffer Zone). These were largely located in valley floor, pasture and arable farmland areas.

Heathland: Environmental Stewardship has seen 22.65 hectares of heathland restored on neglected sites (78.4% in Biosphere Buffer Zone) and 3.51 hectares of restoration of forestry areas to heathland (100% in Biosphere Buffer Zone). These areas are predominantly on greensand hills and pasture lands.
Ponds: Countryside Stewardship saw 1000 sq. metres of ponds restored none of which were in the Biosphere Buffer Zone and all were in pasture areas.

Environmental Stewardship has seen 105 ponds received funding, 67 being less than 100 sq. metres in size (68.6% in AONB) and 38 over 100 sq. metres (44.7% in Biosphere Buffer Zone). These were predominantly in areas of pasture particularly those under 100 sq. metres.

Saltmarsh: Environmental Stewardship has seen 14.94 hectares of saltmarsh maintained (89% in Biosphere Buffer Zone). There were also supplements for grazing or exclusion of grazing on salt marsh and for the creation of inter-tidal and saline habitats. Most of these were within the Biosphere Buffer Zone and mostly within pasture land and estuaries.

Reedbeds / fens: 16 hectares of fen restoration on the Isle of Wight under Countryside Stewardship (87.5% in Biosphere Buffer Zone).

Environmental Stewardship saw 70.56 hectares of fen maintained (56.1% in Biosphere Buffer Zone) and 60.61 hectares of wetland benefitting from grazing supplement (73.8% in Biosphere Buffer Zone). Most were in pasture areas and unsurprisingly in valley floor areas.

Access and Education: Countryside Stewardship funded 19 hectares of open access land and 180 metres of footpath all of which were in the Biosphere Buffer Zone.

Environmental Stewardship 39.98 hectares of open access land were funded (100% in Biosphere Buffer Zone) on chalk downs and greensand hills. 9.91 kilometres of permissive footpath (76.5% in Biosphere Buffer Zone) and 9.05km of permissive cycleway/bridleway (48.6% in AONB) largely in chalk downs, greensand hills, arable farmland and pasture lands. There were 684 educational visits (75% in Biosphere Buffer Zone).

Invasive species
Environmental Stewardship has provided funding to manage invasive species. 13.73 hectares of bracken were controlled all of which was in the Biosphere Buffer Zone. 2.34 hectares of land received a supplement for control of invasive species (none of which was in the Biosphere Buffer Zone). Bracken control took place in greensand areas and on pasture lands.

Supplements for small fields and difficult sites
Under Environmental Stewardship 49.4 hectares of land received supplements for working small fields (83.5% in Biosphere Buffer Zone) largely in pasture land and valley floor areas. 207.35 hectares of land receiving supplement for difficult sites (86.7% in Biosphere Buffer Zone) largely on chalk downs and pasture land with some on greensand hills.

Organic management
Under Environmental Stewardship 868.39 hectares of land under organic management (74.7% in Biosphere Buffer Zone) largely in chalk downland, pasture and arable farmland.

Countryside Stewardship and in particular Environmental Stewardship with its non-competitive entry level and competitive higher level schemes has brought widespread benefit to the landscape, natural and historic environments of the Isle of Wight.

Negative impacts can and do arise however, for example through incidents of pollution of watercourses and aquifers by fertilisers and pesticides. Land use conversion and intensification, as formerly promoted by public policies, has been a significant destructive force on the natural environment in the past. Insensitive management of individual locations (generally outside of agri-environment scheme support) can also damage their nature interest.

15.3.3 Which indicators are, or will be used to assess the state and its trends?
Socioeconomic assessment and monitoring of agricultural activity in the Buffer Zone is led by IW AONB.

The indicators include:

- Utilised Agricultural area
- Permanent Out Door Crops
- Outdoor Intensive Production
- Crops under glass or other accessible protective covering
- Number of Bovine animal numbers
- Number of Pigs
- Number of Sheep
- Number of Goats
- Number of Poultry
- Hardy nursery stock
- Mushrooms Quantity
- Total annual value of agri-environment schemes
- Types of agri-environment schemes

15.3.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reduce negative impacts on the biosphere reserve objectives?

The main mechanism for sustainable land management of rural farmland in general is through "cross compliance" with 'Good Agricultural and Environmental Condition' to receive public subsidy support under the Single Payment Scheme.

Positive management options are principally additionally enabled by Natural England's Environmental Stewardship agri-environment scheme (Entry Level Stewardship, and especially the targeted competitive Higher Level Stewardship schemes). The Higher Level Stewardship Schemes closed for entry in 2014, however those started in 2014 will continue until 2024. Sustainable woodland management is mainly supported through the Forestry Commission's England Woodland Grant Scheme.

Countryside Stewardship Facilitation Fund (Farm Cluster Programme)

A Farmer Cluster is designed to start life at a bottom-up, farmer level, under the guidance of a lead farmer. They devise their own conservation plans, helped by their own chosen conservation advisors, whom they already know and trust. The work is often supplemented by existing agri-environment schemes.

On the Isle of Wight there are two projects running concurrently, 10 farmers on the Eastern Yar River Valley have come together for environmental improvement on a landscape scale covering 1863 ha. A second programme is in the feasibility stage in the north west of the Island covering 1900ha.

There are currently two other Countryside Stewardship schemes: Mid Tier - Which is funding for farmers, woodland owners, foresters and land managers to protect and support the environment and Higher Tier - The Higher Tier element of Countryside Stewardship covers the most environmentally significant sites, commons and woodlands.

15.4 Other types of activities positively or negatively contributing to local sustainable development, including impact/influence of the biosphere reserve outside its boundaries.

15.4.1 Describe the type of activities, area concerned and people involved (including men and women).
A broad range of other local land and sea use activities occur within or impact upon the proposed Biosphere area, the most significant of which are set out below in approximate order of their importance.

Water supply & treatment
Half the Isle of Wight's water comes from the groundwater aquifers of the chalk bedrock and local rivers. The Sandown Level treatment plant treats excess levels of nitrates and phosphates to ensure water is potable.

Waste management
Waste covers both domestic and commercial refuse as well as wastewater sewerage disposal. Amey works in partnership with Isle of Wight Council to deliver waste and environmental services across the Island – including looking after kerbside collections, Household Waste Recycling Centres and waste treatment.

Commercial waste is collected and processed by the private sector. Most materials collected for composting or recycling are currently exported from the Biosphere area for treatment.

There are current developments in the improvement to reduce the amount of landfilling of Isle of Wight domestic residual refuse through the 'Energy from Waste' facility on Forest Road, Newport operated by Amey.

Treated sewage is now discharged to sea by Southern Water Services principally through the new long sea outfall at Sandown.

Transport
Whilst local transport is dominated by private car use and the road network, the public transport network of buses (operated by Southern Vectis Buses and FYT Busses) and railways (operated by Southern Railway) is well-developed.

Built development
New development for housing, commercial and industrial purposes is concentrated in the main urban areas. Available sites for future major development schemes are limited given the lack of space between the sea and IW AONB. Opportunities to maximise the development potential of "brownfield" sites is illustrated by the planned regeneration projects for Ryde, Sandown Bay, Newport and Cowes.

Energy production (including renewables)

Anaerobic Digester
A 5MW Waste to Biomethane for Grid Injection in Arreton, Isle of Wight. This anaerobic digester produces biomethane for grid injection from a combination of agricultural organic wastes and energy crops on the Isle of Wight.

Photovoltaics
There are a number of ground mounted PV farms across the Isle of Wight.

Fishing (sea and freshwater, commercial & recreational):
An small number of inshore sea-fishing vessels operate in the proposed Biosphere area (based on vessels active over the last three years) which fish using a variety of mainly static fishing methods and typically land their catch fresh daily. This is overseen by Southern IFCA.

Outdoor recreation:
Urban greenspaces, the rural downs, beaches and local waters are extensively used by the public for active outdoor recreation, as well as boating and other active water sports taking place on the sea and rivers.
The Island has the most extensive network of public rights of way in any English county, as well as large areas of Open Access Land which is owned by the National Trust along with woodland and forests owned by the Forestry Commission.

Local food-growing:
Whilst subsistence agriculture was historically important, modern food-growing for sustenance, health and recreation is increasingly popular with local people and allotment plots, as well as community orchards are in demand.

15.4.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14). Have some results already been achieved?

Water supply
Excessive abstraction of water for human consumption can threaten local wetland ecosystems, both groundwater and rainfall-fed, in times of drought. Water metering is leading to reduce per capita demand.

Waste management
Collection, treatment and disposal of household waste is well-managed in the area with modern infrastructure in place for the transfer of waste, with a low and relatively localised impact upon the natural environment. Sewage disposal at sea may lead to some local effects, although the new treatment plant and outfall is much cleaner than the previous system. However, it involves very high energy costs to pump wastewater to it, although some energy is recovered from the treatment plant itself.

Transport
Vehicle movements are the main local contributor to poor air quality in some urban areas, which has effects not just on human health but on local ecosystems too.

Built development
Where development takes place on sites with nature conservation interest, there can be local biodiversity impacts directly or indirectly through reduced ecological connectivity for example; green buildings however can potentially enhance local habitats and environmental quality.

Energy production
Fossil fuel burning is the main contributor to human-induced climate change, which is predicted to have great impacts upon ecological systems globally; direct local impacts are more limited, although industrial structures can blight landscapes and views.

Fishing

As long as fish population take for human consumption is within safe biological limits, this represents a sustainable renewable resource with positive socioeconomic effects and manageable ecological impacts; fisheries and the marine ecology generally rely on good water quality free of excessive pollution impacts.

Outdoor Recreation
Large numbers of people and/or particularly damaging forms of recreation can cause major localised disturbance and consequent impacts on an area's biodiversity interest, although such activities and potential impacts can generally be managed and limited.

Local Food-growing
This generally increases small-scale landscape diversity and provides a potential food resource not just for people, but for wildlife too (albeit including potential pest species); however, most food consumed comes from outside the area as part of the global food system, with consequent environmental impacts

15.4.3 What indicators are, or will be used to assess the state and its trends?

Water supply
Water abstraction is subject to a detailed system of reviews and permits by the Environment Agency; drinking water quality, including from groundwater, is subject to strict monitoring regimes by the water companies and Environment Agency to detect and address potential contaminants including nitrates and pesticides.

Waste management
Local authorities in the proposed Biosphere area measure how much waste is collected, how much is recycled or composted and how much is disposed of. All waste streams are closely monitored and all facilities that take waste are regulated by the Environment Agency. Local Authorities assess various indicators for waste annually under the Government's suite of National Indicators, namely residual household waste per household, % of household waste sent for reuse, recycling and composting, and % of municipal waste to landfill (National Indicator 191, 192 and 193 respectively). Wastewater disposal to rivers and the sea is similarly subject to close monitoring by the water companies and Environment Agency.

Transport
Vehicle numbers as well as local air quality are monitored by local authorities with responsibilities for highways, as well as by the national Highways Agency for trunk roads, with annual assessment and reporting under the National Indicators 175 on access to services and facilities by public transport, walking and cycling, and National Indicator 194 on % reduction in NOx and primary PM10 emissions by local authorities' activities. Bus and Rail Companies also maintain statistics in relation to numbers of passengers.

Built development
This is subject to the statutory development control system regulated by local planning authorities who collect and analyse information on its nature and trends, with annual assessment and reporting under various National Indicators including National Indicator 154 on net additional homes provided, National Indicator 159 on the supply of ready to develop housing sites, and National Indicator 170 on previously developed land that has been vacant or derelict for more than 5 years.

Energy production

Local fossil fuel burning emissions are regulated and monitored by the Environment Agency, and new development of energy infrastructure is subject to the local or national development control system; local authorities report on the National Indicators National Indicator 185 on CO2 reduction from their operations and National Indicator 186 on per capita reduction in CO2 emissions.

Outdoor recreation
Some limited monitoring of numbers of people and types of activities is carried out on an occasional basis at key locations both urban and on the Downs, including through automatic counters.

Local food-growing
Local parish councils and food partnerships undertake monitoring of supply and demand for allotments and the numbers of projects active in this area respectively.

15.4.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reducing negative ones on the biosphere reserve objectives?

Water supply
Water abstraction is regulated by the Environment Agency, including reviews to avoid damaging impacts on dependent freshwater ecosystems, with legislation driving increasingly rigorous measures and planned campaigns to reduce public water consumption. The Isle of Wight has had water metering in place since 1988 and was the first County in England for complete water metering. Current action to improve water quality for human consumption when necessary involves end-of-pipe treatment including nitrate stripping at one source (with very high energy costs) or blending with higher quality sources to meet drinking water standards. There is considerable interest in working with water companies in the future to take more catchment-scale approaches to work with rural and urban polluters to reduce contaminants reaching aquifers and watercourses.

Waste management
The Isle of Wight Council have a progressive waste strategy with ambitious recycling targets. Various initiatives are underway to recycle and reuse more materials, for example the new Facility on Forest Road, Newport will be leading edge in recovering recyclables from the waste stream as well as converting energy from waste, and the aim is to divert 90% of waste from landfill. Southern Water has an annual campaign to reduce wastewater quantities.

Transport
The Isle of Wight Council in partnership with Island Roads, Vectis Buses and Southern Rails Island Line work together to improve infrastructure for public transport, cycling and walking.

Built development
The Local Development Framework and related planning policies of the Isle of Wight Council contain various policies to promote environmental sustainability of built development and spatial land use, including measures designed to safeguard local biodiversity interests.

Energy production
The Isle of Wight Council has policies and initiatives exist to promote the increased uptake of renewable energy generation methods, as well as more energy efficient usage by the public and businesses.

Outdoor recreation

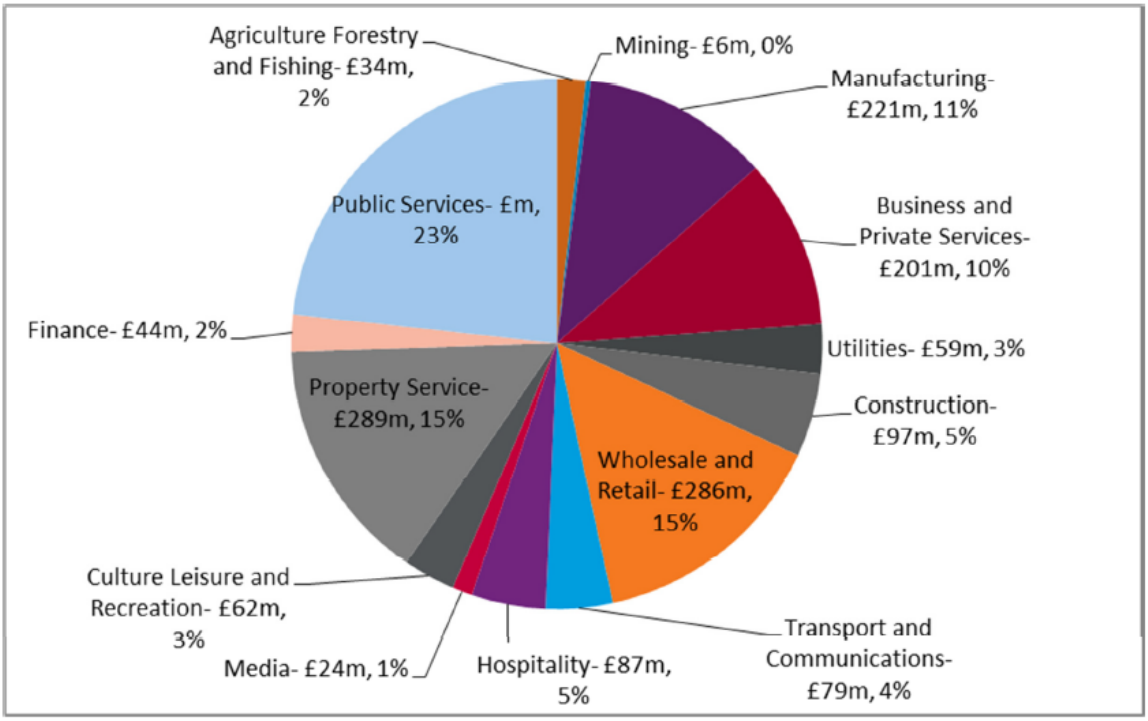
The IW AONB in cooperation with key partners provide information on appropriate use and access of sites, including codes of responsible behaviour. Active management of sites is delivered by the landowners

15.5 Benefits of economic activities to local people:

15.5.1 For the activities described above, what income or benefits do local communities (including men and women) derive directly from the site proposed as a biosphere reserve and how?

The public services (including public admin, education and health) at 23% is significantly larger than any other on the Island. The largest private sectors in terms of output are Wholesale and Retail and Property Services Sectors both of which contributes 15% of the total GVA.

The sectors are thus important to wealth creation locally. Two other sectors, Business and Private Service, and manufacturing both generate more than 10% of the Island's output. The GVA breakdown per sector is shown below.



Source: Oxford Economics (2014)

Figure 11. Shows: GVA by Sector on the Isle of Wight (2013)

In comparison to the wider comparators, the Island has a particular strong GVA output from the agriculture, utilities and hospitality sectors. When looking at sub-sectors we can see that real estate activities are by far the largest on the Island, contributing 14% of the economy. Four other sectors, Retail Trade, Healthcare, Education and the Manufacturing of Transport Equipment all contribute over £100 million to the local economy.

Table Shows: Top Sub-Sectors by GVA (£/Million) on the Isle of Wight (2013)

Real estate activities	£280	14.4%
Retail trade, except of motor vehicles	£190	9.8%
Human health activities	£140	7.2%
Education	£130	6.7%
Manufacture of other transport equip	£130	6.7%
Public administration and defence	£70	3.6%
Wholesale trade, except of motor vehicles	£50	2.6%
Social work activities	£50	2.6%
Residential care activities	£50	2.6%
Specialised construction activities	£50	2.6%

Source: Oxford Economics (2014)

15.5.2 What indicators are used to measure such income or other benefits?

Visitor tourism
Annual Economic Impact Assessment reports are produced for the local authorities based upon modelled estimates of the volume, value and economic impact of tourism on their areas.

Population
Population census figures include information on employment sectors including tourism.

Agriculture
The annual June Agricultural Census undertaken nationally by DEFRA enables monitoring of employment in agriculture and levels of production of different systems.

Water supply
The five-yearly business plans and specific assessments produced by water companies include some local information and valuation. Population census figures include information on employment sectors including utilities.

Waste management
The local authorities track financial expenditure and income for waste services, with a view to reducing waste generated and therefore its economic and environmental costs, as well as employment levels.

Transport
Local bus and rail companies monitor their income from passengers using public transport.
Population census figures include information on employment sectors including transportation.

Built development
The Isle of Wight Council maintain figures on the amount of new house completions and starts, as well as information on employment and retail floorspace, and the amount of vacant floorspace. They also conduct regular checks of implementation of planning policies. Population census figures include information on employment sectors including construction.

Energy production
Population census figures include information on employment sectors including utilities.

Fishing
The national Marine Management Organisation (MMO) collects monthly and annual figures on the amount and value of fish landed at UK ports.

Outdoor recreation
The national body of Sport England maintains records of participation in organised sports, and individual sporting bodies maintain data on numbers participating in their respective sports. Informal outdoor recreation is harder to monitor however, although is assessed less frequently by individual organisations at key sites such as the National Trust, Wildlife Trust and Gift to Nature. Population census figures include information on employment sectors including formal leisure provision.

Local food-growing
Local Parish Councils regularly assess their provision of allotment spaces.

15.6 Spiritual and cultural values and customary practices:
(Provide an overview of values and practices, including cultural diversity).

15.6.1 Describe any cultural and spiritual values and customary practices including languages, rituals, and traditional livelihoods. Are any of these endangered or declining?

The Isle of Wight maintains a culture close to, but distinct from, that of the south of England. A large part of the population are 'overners' people who have come from places other than the Isle of Wight rather than locally born ‘Caulkheads’ (local Isle of Wight people).

The Isle of Wight has a lexicon similar to Southern England; however, there is a distinct local dialect and accent. The Isle of Wight also has a peculiar Folklore which has a strong association with local wildlife and agricultural practices.

Isle of Wight AONB includes a wealth of history contained within the landscape. These are physical reminders of our past; linked to this are the varied components that gives us our sense of history and define the distinctiveness of both the Island in its entirety and also the different areas within it. In this context we consider cultural associations reinforce the local distinctiveness and character of the Biosphere Buffer Zone landscape.

This topic acknowledges the important role of dialect, customs, folklore and fable, people, writers, artists and landmarks. It is also about the communal and individual importance of landscape to people. This is a more ephemeral appreciation of the sense of belonging to the area. Change is part of the story of Isle of Wight Biosphere Buffer Zone and we need to capture past influences and embrace new stories.

Until recent times literacy was for the elite. The general population relied on song, story, dance, traditions and customs to reinforce their sense of identity and community at a highly localised scale. All these activities are still enjoyed but the scale has changed, and there is no longer the reliance on a localised reference, but where they remain, they give colour, continuity and contribute to a sense of cultural identity and belonging to the area.

Isle of Wight Biosphere Buffer Zone has been and continues to be a source of inspiration to people who have expressed this through writing, art, sculpture and more latterly photography and film. This has led to particular associations of notable individuals with the landscape and Isle of Wight Biosphere Buffer Zone such as Lord Alfred Tennyson, Julia Margaret Cameron, John Keats, Joseph Turner, Algernon Swinburne

and J.B. Priestley. Other residents and visitors from Robert Hooke, Guglielmo Marconi, John Nash and in particular Queen Victoria and her entourage have contributed to the story of Isle of Wight AONB, often also leaving their mark on their landscape (Tennyson monument, Dimbola House, Hooke Hill, Osborne House, Marconi memorial, John Nash designed buildings). These associations were celebrated through the West Wight Landscape Partnership with walks and trails highlighting the life and work of Robert Hooke and the 'Freshwater Circle' including Tennyson, Charles Dodgeson, William and Helen Allingham, Edward Lear, G F Watts, Charles Darwin and Julia Cameron.

The Down to the Coast Landscape Partnership has also highlighted the work of artists from the late eighteenth century to the modern-day such as Turner, Brannon, Daniell, Barth, King, Vickers, Gray, Kirkpatrick, Gregory, Cooper, Tomkins, Carrick, Cooke, Knowler, Richens and Samuelson who have all produced landscape paintings inspired by the Isle of Wight Biosphere Buffer Zone and coast. A number of artists in the mid-19th century developed a distinctive style of landscape painting collectively referred to as the Bonchurch School, and this effort made sure that the Island's coast was one of the most painted places in Britain.

The Isle of Wight was also home to a number of local literary characters including Sir John Oglander a noted 17th century Isle of Wight diarist, 18th century historian Sir John Worsley, and poet Alfred Noyes. The 'Back of the Wight' smugglings yarns of longshoremen, lifeboatmen, mackerel fishing and smugglers, brought vividly to life by Fred Mew are all well known and loved .

As recorded by William Henry Long in his Dictionary of Isle of Wight Dialect (1886), the Island had a strong local vocabulary. Whilst some words remain in colloquial use (e.g. nammet, nipper, caulkhead, gallybagger, chine, mallishag) increased education and a standardised approach to language alongside greater mobility of the population has seen a decrease in the prevalence of local accent and the use of local dialect.

The Isle of Wight has many traditional days of celebration, but the most famous is May Day a public holiday usually celebrated on 1 May or the first Monday in the month of May. While it is an ancient northern hemisphere spring festival and a traditional spring bank holiday in England, on the Isle of Wight it is celebrated though Morris Dancing, children dancing around the May Pole, music, singing and enjoying cakes as part of the festivities.

The Isle of Wight has a strong festival character, with many events taking place over the summer months. The largest and most famous is the Isle of Wight Festival, a pop and rock music festival, which entices 60,000 revelers each year. The Isle of Wight Festival has attracted many famous headline acts but the 1970 Festival is often heralded as the zenith with acts such as The Doors, Jimi Hendrix and The Who playing to 500,000 people. The 1970 event was by far the largest and most famous of these early festivals and the unexpectedly high attendance levels led, in 1971, to Parliament adding a section to the Isle of Wight County Council Act 1971 preventing overnight open-air gatherings of more than 5,000 people on the island without a special licence from the council in a bid to control large gatherings in the future.

15.6.2 Indicate activities aimed at identifying, safeguarding, promoting and/or revitalising such values and practices.

Many local organisations, groups and projects are active in publicising and celebrating cultural heritage. Examples range from the Isle of Wight Natural History and Archaeology Socitey, the Isle of Wight Society and the folk culture for example the Bloodstone Border Morris Dancers, the New Carnival Company, and Shademakers all delivering local cultural activities and events. There is an intensive programme of modern

festivals, with events on most weekends throughout the Summer, which include the Isle of Wight Festival, Eklectica, The Garlic Festival, Rhythm Tree, Ventnor Fringe and many more.

15.6.3 How should cultural values be integrated in the development process: elements of identity, traditional knowledge, social organizations, etc.?

The Biosphere Partnership is keen to integrate local cultural values with the environmental identity that the proposed Biosphere represents. For example, the IW AONB through the Down to the Coast Landscape Partnership has been working with Time Taxi (a Community Interest Company delivering archaeological outreach services) to engage with schools and community groups focused on the rich archaeological resources found on the Isle of Wight.

The Isle of Wight Partnership fosters strong relationships with a wide number of cultural and heritage based organisations and community groups throughout the year culminating with the Wolverton Garden Show which takes place in the Elizabethan gardens of Wolverton Manor.

15.6.4 Specify whether any indicators are used to evaluate these activities. If yes, which ones and give details.

(Examples of indicators: presence and number of formal and non-formal education programmes that transmit these values and practices, number of revitalisation programmes in place, number of speakers of an endangered or minority language).

Whilst there are methodologies which include consideration of the contribution of cultural associations to a character of an area (Landscape Character Assessment, Historic Landscape Character Assessment and Ecosystems Services) there would seem to be no definitive national indicator in relation to these cultural activities.

The Partnership will use a series of proxy indicators to evaluate cultural and heritage associations including attendance numbers for events such as festivals, workshops, guided walks, artistic galleries and museums.

16. LOGISTIC SUPPORT FUNCTION:

16.1 Research and monitoring:

16.1.1 Describe existing and planned research programmes and projects as well as monitoring activities and the area(s) in which they are (will be) undertaken in order to address specific questions related to biosphere reserve management and for the implementation of the management plan (please refer to variables in Annex I).

Existing Research Programmes
A wide variety of existing research activity is taking place which is relevant to the management of the proposed Biosphere, principally through the higher education bodies of the Universities, as well as various monitoring programmes which are spread across public and voluntary organisations. Working with the university partners and others the management strategy identifies a suite of active or planned specific research projects which can potentially support Biosphere management work with applied information.

The Biosphere Partnership plans to identify the specific research questions and the needs to effectively understand and carry out key management activities in the area. Higher education partners will develop a Research Plan that enables a better understanding and ability to monitor the proposed Biosphere area. This proposed plan will set out the baseline situation and determine the research that will be required to complement the monitoring activities under broad subject areas to enable evaluation of positive impacts over time.

Current research work includes Climate Change: Solutions a project with Exeter University. Work is currently underway to create wildlife spaces and integrating biologically favourable surfaces, designs, materials and structures into the Island's built environments and into the fabric of urban places. The project aims to make opportunities for biodiversity to colonise towns with a view to create conditions more likely to promote adaptation to climate change, helping species utilise the green, grey and blue infrastructures of human settlements. Phenotypic variation for example, as a mechanism of adaptation, might be optimised in the heterogeneity of urban niches once fine-tuned to the processes of colonisation and succession.

Vertipools
Vertipools are artificial rock pool habitats, made from moulded concrete and textured in a variety of finishes designed to maximise their biological receptivity. The largest so far installed are approximately 1m in length with a 10 L pool. Designed for grouping along seawalls, there are also 3 smaller models to suit differing locations: timber and concrete groynes, stone-filled gabions and metal sheet piling, each an example of coastal defence infrastructure.

Vertipools have a very simple purpose – to replace intertidal refuge habitats for marine species under pressure from the phenomenon of 'coastal squeeze' on defended and urbanised shorelines. As sea levels rise against these hard surfaces, the extent of the intertidal (the land surface exposed between high and low tide) shrinks and eventually disappears. This is a disastrous scenario for the diverse communities of invertebrates, fish, plants and algae that have adapted to these specialised conditions.

Vertipools provide, in the water they retain and in the texture and design of their surfaces, alternatives to the natural rockpools and rocky shores under threat, replacing the gradation of horizontal intertidal habitats with a set of useful refuges on the vertical surface of the seawall (or other structure), where the tidal range still operates.

The project has included Bournemouth University over the past 4 years to monitor and evaluate the performance of a Vertipool array here on the Isle of Wight. The data show significant levels of ecological performance, with species richness and abundance matching natural features. Most interestingly, some features of the Vertipools outperformed natural habitats, especially where there was a high degree of designed and sculpted surface complexity in the construction. This result has been especially important to the work as Artecology is not really biomimicry; rather it tries to combine a design aesthetic with an ecological purpose, creating 'biological ornament' often using arts techniques, such as folded paper templates for casting complex and geometric textures. The end result is to create more interesting, stimulating and enjoyable public spaces (such as beaches, esplanades and piers) by connecting a new and existing architecture with ecology.

Biotiles
Research with Glasgow University has involved testing different surface textures and designs in marine environments, to see which are preferred by certain species. This work of course informs the design and casting of Vertipools, as well as providing options for patching and repairing existing sea defences. Arrays of different 250 x 250 mm concrete tiles are set out along sea defence structures, from upper to lower shore, and carefully monitored for colonization, physico-chemical change and durability. The research data shows that the best performing tile designs score up to 8 times higher in species abundance when compared with the seawall that they are attached to.

By experimenting with the composition of the tiles, as well as their surface textures, there are opportunities to support the adaptation of marine life to climate change through sacrificial calcareous linings and other methods of mitigating against ocean acidification.

River Channel Enhancement
In partnership with the Environment Agency and others, research and development has been undertaken to create a modular system for improving the ecological functionality of urban and engineered freshwater habitats.

As climate change alters weather patterns, increasing the frequency of storm events and the risks of flooding, existing river defences are being strengthened and new ones constructed. These necessary works can have significantly negative impacts on freshwater biodiversity, through the loss of natural river channel features, the simplification of bed surfaces and the obstruction of wildlife migration. The 'Eelevator' project tackles all of these issues in one location, the Holbrookes Stream on the Isle of Wight. Here the strengthening of a road culvert and its flood defences has resulted in a loss of bed substrate and the addition of new steps in the channel profile. In fact this location was already badly compromised for wildlife by previous engineering works which had created a 0.5m drop from the culvert spillway down to the stream's summer level, an impassable blockage to aquatic species moving upstream, most importantly the European eel, a globally threatened species.

The textured tiles create a new surface between the road culvert and the stream, designed to retain even low flows and provide traction for eels and other aquatic life to move across the concrete stream bed and on through the road culvert.

The tile system allows retrofit improvements and adaptations to existing structures without the need for major re-engineering and to continue to refine and adapt as environmental conditions change and as monitoring data better informs our work.

Modelling the effects of climate change and sea level rise on the evolution of incised coastal gullies

A three year study assessing the impacts of climate change (in terms of temperature, rainfall, and coastal wave regimes) and sea level rise on the evolution of a series of incised coastal gullies ('Chines') found in the soft cliff environment of the SW Isle of Wight, UK

Modelling the response of soft cliffs to climate change: A statistical, process-response model using accumulated excess energy
The environmental significance of soft cliff environments, coupled with the societal impacts of cliff retreat, means that it is important to understand the processes and timings of soft cliff erosion. Here, a new statistical, process-response model of soft cliff erosion is proposed, based on the premise that wave energy delivered to the cliff toe is the key parameter forcing erosion.

Entomological survey and monitoring at Castle Cove, Isle of Wight.
Following coastal protection works in 1996, which included the clearing of vegetation from the coastal slope to the North of Castle Cove, Isle of Wight, this soft rock slope was allowed to regenerate naturally. The resultant habitat is rough coastal grassland with a bare ground element. Baseline survey was carried out in 2003, and further survey and monitoring was undertaken in 2004, 2005, 2006, 2007 and 2010. The Castle Cove site was again surveyed during 2011 and 2012, and changes in vegetation composition and the amounts of available bare ground were monitored. As in previous surveys, counts were made of certain target insect species in order to assess changes in population densities, and the number of nesting holes for certain species of ground nesting Hymenoptera were counted in order to monitor any changes.

Survey of Breeding Birds along the Military Road 2002 – 2010
A survey of the breeding birds along the A3055 (Military Road) between Compton and Chale had been undertaken by Mr Dave Hunnybun each year since 2002. This work has been generously sponsored by the Island 2000 Trust and the Hampshire and Isle of Wight Wildlife Trust to inform management decisions and land advice being given to landowners a part of their prescriptions under agri-environment schemes.

Survey of Wintering Birds along the Military Road 2010
A survey of the breeding birds along the A3055 (Military Road) between Compton and Chale had been undertaken by Mr Luke Gaskin. This work has been coordinated by the Hampshire and Isle of Wight Wildlife Trust, with funding from the IW AONB Partnership, to inform management decisions and land advice being given to landowners a part of their prescriptions under agri-environment schemes.

Isle of Wight Soft Cliff Project: Management and Classification of Soft Cliff Vegetation of the Isle of Wight
This project was commissioned with the following aims and objectives:

- To establish a baseline against which future changes to the ecological condition of cliff top buffer zones and cliff face habitats of the IW can be monitored (with particular focus on the South Wight Maritime SAC)
- To provide advice on the management and extent of cliff top buffer zones with particular reference to the effects of cliff top management on invertebrate communities, vegetation communities and ground nesting birds
- To further develop a soft cliff vegetation classification for use in monitoring soft cliff habitats on the IW. The potential to link this with national vegetation classifications of this habitat will be fully explored.
- To produce information that can feed into a strategy for improved access and interpretation of coastal soft cliffs on the IW

The Invertebrates of cliff-top habitats on the Isle of Wight

The Invertebrates of cliff-top habitats on the Isle of Wight with particular reference to Aculeate Hymenoptera

As part of an ongoing project studying the soft cliffs and chines of the Isle of Wight, in 2009 twenty-three cliff top sites were selected, covering a wide range of habitat types and management regimes. For each site a botanical survey was undertaken along a fixed 2m wide transect running from the cliff edge directly inland. Transect length varied from 10m to 46m according to the nature of the individual site. In 2010, fourteen of these transects, selected to reflect the variety of habitats and management practices, were chosen for entomological survey. The primary target group was aculeate Hymenoptera, a group recognised as having many soft cliff dependent species. During survey the author also recorded any Nationally Scarce or Threatened species, BAP species or soft cliff dependent species encountered in other insect groups. Whilst the invertebrate fauna of the chines, soft cliffs and associated ledges has been subject to considerable study, little was known about how invertebrates utilised the cliff top habitats above these features.

Modelling flow, erosion and long term evolution of incising channels
A conceptual model of Chine evolution is being formulated in conjunction with ecological and invertebrate surveys, in an attempt to predict the various morphological and ecological stages of Chine development. In a Habitats Directive review of abstraction consents by the UK Environment Agency, the effects of varying abstraction rates were assessed. Licensed abstractions were predicted to reduce natural erosion by up to 90%. The details of this assessment and the long term evolution model of the Chines are presented within the framework of managing the Chines for the sustainability of ecology.

An empirical–conceptual gully evolution model for channelled sea cliffs
This paper develops a conceptual model of Chine evolution by applying space for time substitution methods using empirical data gathered from Chine channel surveys and remotely sensed data. The model identifies a sequence of evolutionary stages, which are classified based on a suite of morphometric indices and associated processes. The extent to which individual Chines are in a state of growth or decay is estimated by determining the relative rates of shoreline retreat and knickpoint recession, the former via analysis of historical aerial images and the latter through the use of a stream power erosion model.

Effects of Holocene climate and sea-level changes on coastal gully evolution: Insights from numerical modelling
In this paper we explore the Holocene erosional history of these gullies using a numerical landscape evolution model modified to include a cliff recession function. Knickpoint recession rates are simulated using a detachment-limited erosion law wherein erosion rate is a power function of drainage area and stream gradient with model parameters defined using empirically-derived data. Hindcast simulations, from 12 000 cal. years BP to present, are undertaken for a range of scenarios of Holocene climate change and sea-level rise. Plausible erosional histories are extracted from scenarios in which simulated and observed gully forms match. The results suggest that rate of sea-level rise is the key control on gully formation and that it is only in the late Holocene period, and specifically in the last 2000 years, that sea-level rise has slowed sufficiently for knickpoint recession rates to exceed cliff recession rates and create sustainable gully networks. The simulations also indicate that the contemporary gully systems are close to a critical threshold, suggesting that future gully evolution is likely to be sensitive to small changes in rates of effective precipitation and/or sea-level rise.

16.1.2 Summarize past research and monitoring activities related to biosphere reserve management (please refer to variables in Annex I).

There are a number of ongoing monitoring activities, including:

- Ongoing annual research in to species and habitats on behalf of the Isle of Wight Natural History and Archaeology Society, the Local Record Centre and the Biodiversity Action Plan Partnership.
- Assessments of SSSI and Sites of Importance for Nature Conservation.
- Southern Water and the Environment Agency monitor water quality.
- Ongoing investigation of the impact of landfill site leachates.

16.1.3 Indicate what research infrastructure is available in the proposed biosphere reserve, and what role the biosphere reserve will play in supporting such infrastructure.

The principal research infrastructure in the area exists in partnership with the Universities of Portsmouth, Southampton, Glasgow, Bournemouth and Exeter. However we also have the Isle of Wight College, which includes libraries, computer labs, and research laboratories with advanced scientific equipment, design and media studios and other buildings at the Universities.

16.2 Education for sustainable development and public awareness:

16.2.1 Describe existing and planned activities, indicating the target group(s) and numbers of people involved (as “teachers” and “students”) and the area concerned.

The proposed Biosphere area for both environmental education and public awareness/engagement activities, with around a 50 local schools and further education colleges (as well as an environmental education centre and special projects) combined with a high degree of public interest in their local environment.

Environmental education
The education infrastructure of the area comprises:

- There are currently 41 state-maintained primary schools on the Isle of Wight, 7 secondary schools, and 1 special school - there are two independent (private) schools
- The Medina Valley Centre is also an environmental education survey centre.

Public Awareness and Engagement
A range of different audiences exist to potentially target environmental information and activities, including: Bioblitz an annual wildlife exploration event. Wildlife Tots and Forest Schools are a weekly outdoor activity experience for pre-school children and school children delivered by the Hampshire and Isle of Wight Wildlife Trust.

Future activities
The future focus on activities in this area includes the potential elements below:

- Increase the number/proportion of visitors engaging in 'eco-tourism' activities, including through new smart phone apps / green hotels / campsites etc.
- Share knowledge of ecosystem services with the public, community groups and businesses
- Increase IW Biosphere awareness among visitors and surrounding communities
- Disseminate local environment information through sustainable transport infrastructure (e.g. train companies/stations, buses/stops, cycling & walking, and taxis/car clubs, boats)

Work with local environmental NGOs to reach out and involve their memberships in the Biosphere Project's overall approach to the local environment:

- Support and encourage volunteering
- Reconnect young people with nature, to stimulate and educate them to be advocates for the natural environment in the future

16.2.2 What facilities and financial resources are (or will be) available for these activities?

Existing bodies and mechanisms will continue to deliver the environmental education and public awareness/engagement activities illustrated above, through local schools, colleges, universities and environmental education centres as well as a combination of public and voluntary bodies focussed upon local engagement.

The Biosphere Project seeks to add value to the activities of individual bodies by acting as a framework, umbrella and potential hub to connect up diverse projects, and where possible attract new resources centrally to potentially support priority activities by partners and other bodies.

16.3 Contribution to the World Network of Biosphere Reserves:

16.3.1 How will the proposed biosphere reserve contribute to the World Network of Biosphere Reserves, its Regional and Thematic Networks?

The proposed IW Biosphere Reserve has the potential to offer something very special to the WNBR and its networks. The Isle of Wight is one of the most densely populated islands in northern Europe. The Isle of Wight Biosphere reserve hosts most of the landscape character types of southern Britain and can be considered a microcosm of southern England.

The Island also has limited resources within its finite landmass, and therefore highlights how a small area can sustain a large population while also conserving and enhancing the natural environment and its biodiversity. Moreover, it shows that high quality natural landscapes can coexist even when heavily managed for farming and other land uses.

There is already a strong community of environmentally aware organisations showing innovative and best practice approaches to landscape scale environmental management, which the Partnership is keen to share with other interested areas of the WNBR.

In addition the Isle of Wight has a large mature sustainable tourism industry, which would be of benefit to showcase on a global stage with scope to exchange expertise and develop collaborative programmes of research into best practice.

The Isle of Wight AONB Partnership already a well-established delivery partnership and is part of a wider network of AONBs throughout Britain and Northern Ireland. Learning about the delivery of Biospheres for the wider communities surrounding AONBs will be of benefit to new potential Biospheres using a similar Governance style and delivery mechanism to that of the IW Biosphere Partnership.

16.3.2 What are the expected benefits of international cooperation for the biosphere reserve?

The Isle of Wight is unique within the British Isles; it is both very rural and yet has a large population and is in close proximity to large cities. We see this as an opportunity to learn about best practice approaches of managing the rural countryside on landscape scale. We are also keen to meet and collaborate with Biospheres across the globe to learn their experiences and how they might be applied to the Isle of Wight.

We see opportunities in learning about alternative sustainable approaches to tourism, farm diversification and developing a localised Biosphere brand and how this can help promote the Isle of Wight to a wider audience. We also see this as an opportunity to learn how to bring sustainability and environmental issues to the top of the local and political agenda in a bid to link sustainability better into all lines of policy development, commerce, tourism and development.

We feel the increased profile the Isle of Wight would receive by gaining Biosphere status would increase opportunities for international collaboration with the area especially with other islands across the world.

16.4 Internal and external communication channels and media used by the biosphere reserve:

16.4.1 Is (will) there (be) a biosphere reserve website? If yes, what is its URL?

There is currently no website. However, if the designation is achieved we will endeavour to deliver a website bespoke to the Biosphere Reserve.

16.4.2 Is (will) there (be) an electronic newsletter? If yes, how often will it be published?

There is currently no Newsletter. To date it has been part of the IW AONB Newsletter. However, if the designation is achieved we will endeavour to deliver a web based Biosphere Reserve Newsletter.

16.4.3 Does (will) the biosphere reserve belong to a social network (Facebook, Twitter, etc.)?

There is currently no Facebook or Twitter account. However, if the designation is achieved we will endeavour to deliver social media as part of the profile raising of the Biosphere Reserve.

17. GOVERNANCE, BIOSPHERE RESERVE MANAGEMENT AND COORDINATION:

[Describe the following characteristics in the prospective that the site is being designated.]

17.1 Management and coordination structure:

17.1.1 What is the legal status of the biosphere reserve?

The Biosphere Reserve itself has no statutory or legal status under UK law, although contains within it various legal geographic entities including the different statutory protected areas and landscape of the AONB as well as local authority administrative boundaries etc. However, it is anticipated that various statutory instruments will reference the future Biosphere Reserve once inscribed by UNESCO, for example Local Development Frameworks with particular relevant planning policies and guidance.

17.1.2 What is the legal status of the core area(s) and the buffer zone(s)?

The SSSI core areas are designated under the Wildlife & Countryside Act 1981 (as amended). The Special Areas of Conservation are designated under the EC Habitats Directive (Council Directive 92/43/EEC of 21st May 1992). In the UK the Directive has been transposed into national laws in England, Scotland and Wales by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), known as "the Habitats Regulations".

The terrestrial buffer zone of the Isle of Wight Area of Outstanding Natural Beauty is designated under the National Parks and Access to the Countryside Act (1949) and given future powers under the Countryside and Rights of Way Act 2000. The marine buffer zone of the Needles Marine Conservation Zone was designated in 2016 under the Marine and Coastal Access Act (2009).

The Southern Inshore Fisheries and Conservation Authority (IFCA) is one of 10 IFCAs, which manage the marine inshore environment around the coast of England.

The Southern IFCA District stretches from the Devon/Dorset border in the West to the Hampshire/Sussex border in the East and covers the combined areas of the relevant councils as well as the entire Dorset, Hampshire and Isle of Wight coastline out to 6 nautical miles from baselines. The Southern IFCA borders the Sussex IFCA to the east and the Devon and Severn IFCA to the west. IFCA is a local statutory body that has primary responsibility for inshore fisheries management, regulating commercial fisheries within open coastal waters under its duty to sustainably manage sea fisheries resources and to protect marine ecosystems from the impact of fishing.

17.1.3 Which administrative authorities have competence for each zone of the biosphere reserve (core area(s), buffer zone(s), transition area(s))?

Core Areas
Natural England – the Government's statutory nature conservation advisory body in England.

Buffer Zones

Terrestrial – the Isle of Wight Area of Outstanding Natural Beauty, Isle of Wight Council, which functions as the Local Planning Authority for this protected landscape.

Marine – The Marine Management Organisation (MMO) – a national statutory body responsible for preparing marine plans for English inshore waters (out to 6 nautical miles), a process which has commenced in 2013 for the 'South Inshore' area, and taking decisions on proposed developments. The MMO is now also responsible for most marine licensing in English inshore waters. The MMO further licenses fishing activity and manages UK fishing fleet capacity and fisheries quotas.

The Southern Inshore Fisheries and Conservation Authority IFCA is one of 10 IFCAs, which manage the marine inshore environment around the coast of England.

The Southern IFCA District stretches from the Devon/Dorset border in the West to the Hampshire/Sussex border in the East and covers the combined areas of the relevant councils as well as the entire Dorset, Hampshire and Isle of Wight coastline out to 6 nautical miles from baselines. The Southern IFCA borders the Sussex IFCA to the east and the Devon and Severn IFCA to the west. IFCA is a local statutory body that has primary responsibility for inshore fisheries management, regulating commercial fisheries within open coastal waters under its duty to sustainably manage sea fisheries resources and to protect marine ecosystems from the impact of fishing.

The Environment Agency (EA) has the responsibility to protect migratory fish in England.

Transition Areas

Terrestrial – Isle of Wight Council - a unitary authority whose entire administrative area is being included within the proposed Biosphere. In these areas the IW Council is responsible for some local government functions including transport, education, waste and minerals.

17.1.4. Clarify the respective competence of each of these authorities. Make a distinction between each zone if necessary and mention any decentralized authority.

Natural England is the government Agency for wildlife and landscape protection.

Environment Agency is the government Agency for environmental pollution.

Isle of Wight Council is a devolved local government body.

Marine Management Organisation is the government agency for marine management and the at sea administrative framework.

The Southern Inshore Fisheries and Conservation Authority (IFCA) is a local statutory body that has primary responsibility for inshore fisheries management, regulating commercial fisheries within open coastal waters under its duty to sustainably manage sea fisheries resources and to protect marine ecosystems from the impact of fishing around the coast of England.

17.1.5 Indicate the main land tenure (ownership) for each zone.

Terrestrial Core Areas
Core areas are mainly owned by private landowners. Some areas are part of the Isle of Wight Council estate, and others are owned by NGOs including the National Trust, Hampshire and Isle of Wight Wildlife Trust and the People's Trust for Endangered Species.

Marine Core Areas
The seabed to 12 nautical miles is largely owned by the Crown and managed on its behalf by the Crown Estate Commissioners as is much of the foreshore. The remainder is in a mixture of public and private ownership. Under s 40 of the Natural Environment and Rural Communities Act 2006 public bodies such as the Crown Estate have a duty to have regard for the conservation of biodiversity in exercising their functions, which would include exercising their ownership function.

The ownership of the UK's marine fishing rights has not been confirmed by statute but under the common law is regarded as owned by the Crown on behalf of the public.

Terrestrial Buffer Zones
Terrestrial areas of the buffer zone are mainly owned by private landowners. The main NGO landowner is the National Trust.

Marine Buffer Zone
The seabed to 12 nautical miles is largely owned by the Crown and managed on its behalf by the Crown Estate Commissioners as is much of the foreshore. The remainder is in a mixture of public and private ownership. Under s 40 of the Natural Environment and Rural Communities Act 2006 public bodies such as the Crown Estate have a duty to have regard for the conservation of biodiversity in exercising their functions, which would include exercising their ownership function.

The ownership of the UK's marine fishing rights has not been confirmed by statute but under the common law is regarded as owned by the Crown on behalf of the public.

Transition Areas
The terrestrial transition areas consist of a mixture of public (local authority) land and private (business and individuals) ownership.

17.1.6 Is there a single manager/coordinator of the biosphere reserve or are several people in charge of managing it? If one manager/coordinator, who designates and employs him/her (national authorities, environmental administrative agency, local authorities)?

The Partnership employs a part-time Biosphere Officer, who for administrative purposes is hosted by the Isle of Wight Area of Outstanding Natural Beauty as the lead partner, on their behalf. The Biosphere Officer manages the practical work of the project and acts as a central point for awareness-raising, information, networking and co-ordination.

The Biosphere Partnership is led by an elected Steering Committee. It is the Partnership that will lead on the future direction of the Biosphere, even if the actual management is led by its individual members, with the Local Authority and the IW AONB, playing an important role in this.

17.1.7 Are there consultative advisory or decision-making bodies (e.g., scientific council, general assembly of inhabitants of the reserve) for each zone or for the whole biosphere reserve?

- If yes, describe their composition, role and competence, and the frequency of their meetings.

The SSSI Core Areas management are overseen by Natural England, in liaison with SSSI owners/occupiers and other interested parties.

The Isle of Wight Area of Outstanding Natural Beauty terrestrial Buffer Zone management is overseen by the IW AONB Partnership, according to its expertise and relationships with numerous landowners, farmers, conservation and community groups.

Natural England and Environment Agency are statutory consultees on various environmental matters here and elsewhere, for example protected species and water abstraction, whilst a range of local NGOs also provide advisory inputs on such issues. A number of high-level partnerships also operate, the Isle of Wight Biodiversity Action Plan Partnership.

The terrestrial Transition Areas are overseen by the IW Council, and as such have advisory/decision-making structures in place.

The bodies referred to above are focussed upon parts of the proposed Biosphere area only; hence the Biosphere Partnership forms the de facto group to take a holistic approach to the environment of the whole area.

17.1.8 Has a coordination structure been established specifically for the biosphere reserve?

- If yes, describe in detail its functioning, composition and the relative proportion of each group in this structure, its role and competence.
- Is this coordination structure autonomous or is it under the authority of local or central government, or of the manager/coordinator of the biosphere reserve?

Currently the Isle of Wight AONB will oversee the Biosphere Partnership during the application to UNESCO for Biosphere Reserve status and then oversee implementation of this, once inscribed. Terms of Reference for the governance structure of the Biosphere will be formalised if the Isle of Wight is successful.

The IW AONB 'whole partnership' is made up of a mixture of almost eighty public (both national statutory and local authorities), private, educational and voluntary bodies, from which a smaller Steering Committee is derived, made up from key personnel from 12 key organisations meeting 4 to 5 times per year.

This Steering Committee is elected from the partnership on an annual basis, with the relative proportions of different sectors proposed as public bodies, business and the third sector. Its role is to help to steer project development and delivery and to share and co-operate on their different organisational agendas.

17.1.9 How is the management/coordination adapted to the local situation?

The proposed Biosphere has both a diversity of different environments and stakeholder organisations, hence a partnership structure and project approach has been developed to suit these particular circumstances. With regard to the Partnership, the Steering Committee contains representatives from all parts of the Isle of Wight who are involved across all three Biosphere objectives. The partnership has endeavoured to avoid duplication by working with many of the existing local environmental partnerships and initiatives, rather than seek to create an entirely new approach to environmental action in the area.

17.1.10 Is there a procedure for evaluating and monitoring the effectiveness of the management?

Projects and actions will be developed in line with the Isle of Wight AONB Management Plan or through collaboration with partners. Activities together with indicators of outputs and outcomes that can be monitored and evaluated over a 5 year period by the Steering Committee in line with the review of the Isle of Wight AONB Management Plan.

There will also be annual reviews of projects and work programmes.

17.2 Conflicts within the biosphere reserve:

17.2.1 Describe any important conflicts regarding the access or the use of natural resources in the area considered (and precise period if accurate). If the biosphere reserve has contributed to preventing or resolving some of these conflicts, explain what has been resolved or prevented, and how this was achieved for each zone.

Conflicts occurring are essentially over limited resources, these include development pressure on a finite amount of land available to deliver growth for an already highly populated Island, water resource management, food production and wildlife conservation and enhancement.

Agriculture and Wildlife
In landscape terms agriculture is the largest land user and water user outside of urban areas. There is an ongoing conflict between agricultural productivity and wildlife. Agriculture also has impacts on other ecosystem services especially water quality and access to the countryside for local people. Agri-environment management schemes, along with developing landscape scale management programmes such as Farm Clusters help to bridge towards integrated approach to agricultural land management.

Urban spread
Conflict occurs as urban areas spread into rural countryside as needs are met for a growing population. This demand for land for new housing to meet national allocation targets, is especially pertinent to the Isle of Wight, which has a year on year growing population. Such development not only has immediate physical effects on the development site itself, but also has wider environmental impacts from construction to population demand for resources and facilities as well as potential impacts on green infrastructure provision. Development pressure is high in the Urban areas such as Ryde, Newport, Cowes and Sundown Bay. With the pressure to develop sites comes concerns about over abstraction of water to meet the needs of people living in these new sites, along with the infrastructure to service this increased population

17.2.2 If there are any conflicts in competence among the different administrative authorities in the management of the biosphere reserve, describe these.

The competence of different administrative bodies in our area has been described in detail in Section 17.1.3/4 above. There are no overt or intractable conflicts between the bodies described. Each organisation, Government Agency, Local Authority, or NGO has a discrete set of powers under law. UK Legislation underpins all decision making on the Isle of Wight and therefore there is strong precedent about site management and decision making.

17.2.3 Explain the means used to resolve these conflicts, and their effectiveness.

As indicated in 17.2.2 all decision making is underpinned by UK Law with each decision making body having discrete powers. Should conflict between different parties arise, there is clear precedent, in law, to resolve these issues. However, compromise and dialogue respectively should be used to promote effective working relationships.

17.3 Representation, participation and consultation of local communities:

17.3.1 At what stages in the existence of a biosphere reserve have local people been involved: design of the biosphere reserve, drawing up of the management/cooperation plan, implementation of the plan, day to day management of the biosphere reserve? Give some specific examples.

Local people have been involved from inception of the Biosphere Bid - the original idea was proposed by a working group made up of the Hampshire and Isle of Wight Wildlife Trust, Arc Environmental Consultancy and the Isle of Wight AONB Partnership.

The idea was proposed to an open forum of businesses, third sector organisations and agencies called the Sustainability Forum, which is overseen by the Isle of Wight Council.

Ongoing communication and engagement with Island residents has taken place through an engagement programme for over two years culminating in the 2018 Mardi Gras Carnival celebrating Biospheres.

The IW AONB Steering Committee is made up of organisations, agencies and the Local Councils including the Isle of Wight Association of Local Councils with a stake in the Isle of Wight landscape, this has been the main vehicle for progressing this application.

17.3.2 Describe how the local people (including women and indigenous communities) have been, and/or are represented in the planning and management of the biosphere reserve (e.g., assembly of representatives, consultative groups).

Local people are represented on the Partnership Steering Committee through the membership of the IW AONB Advisory Group.

All organisations involved with the Partnership are required to conform to the Equality Act 2010, which requires decision makers to have regard to the desirability of reducing socio-economic inequalities; to reform and harmonise equality law and restate the greater part of the enactments relating to discrimination and

harassment related to certain personal characteristics; to enable certain employers to be required to publish information about the differences in pay between male and female employees; to prohibit victimisation in certain circumstances; to require the exercise of certain functions to be with regard to the need to eliminate discrimination and other prohibited conduct; to enable duties to be imposed in relation to the exercise of public procurement functions; to increase equality of opportunity.

17.3.3 Describe the specific situation of young people in the proposed biosphere reserve (e.g., potential impacts of the biosphere reserve on youth, consideration of their interests and needs, incentives to encourage them to participate actively in the governance system of the biosphere reserve).

The principal interaction with young people is through the educational sector Biosphere partners to reach out to their student communities. The principal event run is the 2018 Mardi Gras carnival involving over 1000 young people across the Island. The Partnership has also actively collaborated with the New Carnival Company, Platform One along with youth community groups such as; 1st Brading Scouts.

The majority of the Project's public events have been especially focussed on families too, including hands-on activities to engage children, such as Forest Schools and Nature Tots delivered by the Hampshire and Isle of Wight Wildlife Trust.

17.3.4 What form does this representation take (e.g., companies, associations, environmental associations, trade unions)?

As described under section 17.3.2 above, there are a number of different NGO, voluntary and community bodies represented on the Partnership Board.

17.3.5 Are there procedures for integrating the representative body of local communities (e.g., financial, election of representatives, traditional authorities)?

The Biosphere Partnership reports information and progress to the IW AONB Steering Committee.

17.3.6 How long-lived are consultation mechanisms (permanent assembly, consultation on specific projects)? Make a complete description of this consultation. What are the roles of involved stakeholders compared to the role of the biosphere reserve?

The proposal to become a Biosphere Reserve had been mooted by Isle of Wight conservation organisations and the Isle of Wight BAP Steering Committee on a number of occasions.

The AONB Lead Officer presented a paper to the IOW AONB partnership about pursuing IW Biosphere Status, in July 2016.

Following approval from the IW AONB Partnership, on 3rd October 2016 IW AONB Officers presented an aspiration to pursue IOW Biosphere Reserve Status to the IOW Council Sustainability Forum. With the approval of this forum IW AONB set about developing a public engagement programme and engaging with partner organisations including: the IW Council, Visit Isle of Wight, IW Wildlife Trust, the National Trust, Natural England, schools and many more.

IW AONB Officers attended the UK and Islands Biosphere Reserves Conference and presented the Isle of Wight's expression of interest, 12 -14th October 2016.

The IW AONB Partnership attended a series of public engagement events as part of a series of high profile local events including IW Bioblitz 2017 and Wolverton Garden Fair, IW Biodiversity Partnership, All Along the River Bank and Sandown Bay's Hullabaloo and the IWHAS Recorders Conference.

In February 2018 IW AONB announced the sponsorship from the Isle of Wight Mardi Gras Carnival. This is a flagship community carnival taking place in Ryde the one of the most highly populated towns on the Island. The Mardi Gras Carnival has engaged 31 schools and community organisations who have signed up to the Biosphere themed Mardi Gras which will be held on 30 June 2018. The schools have worked with key Biosphere Partners including the New Carnival Company and IW AONB through workshops and events.

In June 2018 the IW Biosphere will be a key outcome for the Isle of Wight Environmental Conference 2018, where it was agreed that the Biosphere nomination would be signed by Leader of the Council, the Island MP and the chair of the UK Man and Biosphere Committee.

An online Survey Monkey questionnaire has been in place since February 2018 with over 180 respondents.

Isle of Wight AONB Partnership has also engaged the wider tourism industry through a key note speech at the Visit Isle of Wight annual conference in March 2018.
A more permanent mechanism would be through the Annual General Meeting (AGM) of the whole Partnership, which would be widely publicised in the local area and enable public inputs as part of this. It is likely that such an event would go beyond a typical AGM and instead be designed to draw partners and the public in to discuss and explore various issues affecting the area.

17.3.7 What consultation mechanisms have been used, and who has been involved? Are they for specific purposes or long-term? What impacts have they had on decision-making processes (decisional, consultative or merely to inform the population)?

The mechanisms employed for the public consultation in are described in detail under section 13.4 and 17.3.6

This information will be used to inform the detail of the future Action Plan and programme of work, in terms of where public interest and demand is greatest for local environmental improvements.

17.3.8 Do women participate in community organizations and decision-making processes? Are their interests and needs given equal consideration? What incentives or programmes are in place to encourage their representation and participation (e.g.: was(were) a "gender impact assessment(s)" carried out)?

As outlined in 17.3.2, the Partnership cannot discriminate against any person in the decision making process. Women are equally eligible for involvement in all aspects of Biosphere Reserve decision making, projects and programmes of work.

17.4. The management/cooperation plan/policy:

17.4.1 Is there a management/cooperation plan/policy for the biosphere reserve as a whole?

The Isle of Wight Local Development Framework or Island Plan (covering the Terrestrial Core, Buffer and Transition Zone)
The purpose of the UK planning system is to contribute to the achievement of sustainable development. The Isle of Wight's planning decisions are underpinned by the Isle of Wight Council Core Strategy (including Minerals & Waste) and Development Management Policies otherwise known as the Island Plan. These documents set out how, in spatial planning terms, the Island will develop up to 2027. In principle, the Island Plan Core Strategy is about "place shaping" and delivery. The strategy and policies set out what will be delivered. When it is appropriate, they will also set out where, when and how it will be delivered. In developing the Island Plan Core Strategy all the other strategies of the Council have been drawn together and other organisations that have implications for the use of land. Equally, the Island Plan is underpinned by the National Planning Policy Framework, which at its heart is a presumption in favour of sustainable development and should be seen as a golden thread running through both plan-making and decision-taking.

The Isle of Wight Area of Outstanding Natural Beauty Management Plan (covering the Biosphere Buffer Zone)
Local authorities with an AONB in their administrative area must produce and subsequently review an AONB Management Plan. The plan should "formulate their policy for the management of their Area of Outstanding Natural Beauty, and for the carrying out of their functions in relation to it". For the Isle of Wight AONB, this is undertaken by the AONB Partnership with a formal adoption of the plan by the Isle of Wight Council. The AONB Partnership also oversees the delivery of the Plan over its five year cycle.
As well as being a legal requirement, the initial preparation and subsequent reviews of the AONB Management Plans represent an opportunity to draw together all interested parties to generate long-term visions for the area, set an agenda for change and manage such change effectively. It is also a useful educational tool, helping to change attitudes and behaviours.

The purpose of the AONB Management Plan

The overall aim of AONB Management Plans is to ensure continuity and consistency of management over time. It places a focus on the primary purpose of the conservation and enhancement of natural beauty with social and economic issues covered in terms of how they relate to the primary purpose.

The Isle of Wight AONB Management Plan:

- Highlights the distinctive qualities of the AONB.
- Identifies the changes and issues affecting the AONB.
- Presents a vision for the future of the AONB as a whole, in light of other national, regional and local priorities.
- Sets priorities incorporating specific objectives that will help to secure that vision.
- Clarifies the role of partners and other stakeholders, identifying what needs to be done, by whom, and when, in order to achieve the Plan's objectives.
- Identifies how the objectives and actions will be measured and reviewed.
- Raises the profile of the AONB and its purpose.

Marine Core Area and Buffer Zones
Areas Designated as Special Area of Conservation (SAC), Special Protection Area (SPA) or Marine Conservation Zones affords the highest available protection for nature conservation.

A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.

A Special Protection Area (SPA) is a designation under the European Union Directive on the Conservation of Wild Birds. Under the Directive, Member States of the European Union (EU) have a duty to safeguard the habitats of migratory birds and certain particularly threatened birds.

Marine Conservation Zones are designated under the Marine and Coastal Access Act 2009, which allows for the creation of Marine Conservation Zones (MCZs). MCZs protect a range of nationally important marine wildlife, habitats, geology and geomorphology, and can be designated anywhere in English and Welsh territorial and UK offshore waters.

Management of the proposed Marine Buffer Zone will continue to be according to the controls and objectives of the statutory nature conservation designations (SPA, SAC and MCZ), which are overseen by Natural England or the Marine Management Organisation on behalf of the UK Government department of DEFRA. The Marine Management Organisation released the South Marine Plan in July 2018. The South Marine Plan has been prepared for the purposes of Section 51 of the Marine and Coastal Access Act and has been adopted with the agreement of the Secretary of State for Environment, Food and Rural Affairs. The South Marine Plan conforms with the Marine and Coastal Access Act (2009) and Marine Policy Statement requirements. Where relevant it also takes account of informal guidance in the Department for Environment, Food and Rural Affairs' marine planning description document relating to matters including setting out a vision, plan objectives and plan policies. The plan also takes account of the duty to co-operate with public authorities Planning and Compulsory Purchase Act 2004 S33A, as amended by the Localism Act 2011) in the English inshore region, the English offshore region or any part of either of those regions. The South Marine Plan has been prepared in accordance with, and gives consideration to, the EU Maritime Spatial Planning Directive (2014/89/EU) which supports the Integrated Maritime Policy for the European Union.

In addition, the Southern Inshore Fisheries and Conservation Authority IFCA is one of 10 IFCAs, which manage the marine inshore environment around the coast of England. The Southern IFCA District stretches from the Devon/Dorset border in the West to the Hampshire/Sussex border in the East and covers the combined areas of the relevant councils as well as the entire Dorset, Hampshire and Isle of Wight coastline out to 6 nautical miles from baselines. The Southern IFCA borders the Sussex IFCA to the east and the Devon and Severn IFCA to the west. IFCA is a local statutory body that has primary responsibility for inshore fisheries management, regulating commercial fisheries within open coastal waters under its duty to sustainably manage sea fisheries resources and to protect marine ecosystems from the impact of fishing.

17.4.2 Which actors are involved in preparing the management/cooperation plan? How are they involved?

The Island Plan is overseen and managed by the Isle of Wight Council.

The Isle of Wight AONB Management Plan is overseen by the IW AONB Partnership.

Both documents have undergone consultation with key stakeholders and the wider public

The Southern Inshore Fisheries and Conservation Authority IFCA, which manage the marine inshore environment around the coast of England, work in partnership with the IW AONB, IOW Council and other agencies.

17.4.3 Do local authorities formally adopt the management/cooperation plan? Are local authorities making reference to it in other policies and/or plans? If so, please provide details.

The documents outlines in 17.4.2 are formally adopted by the Isle of Wight Council and inform all decision making relating to sustainable development that takes place within the terrestrial areas of the Biosphere

17.4.4 What is the duration of the management/cooperation plan? How often is it revised or renegotiated?

The duration of the Island plan is until 2027, however; it is currently under review and is reviewed every 15 years.

The Isle of Wight AONB Management Plan will conclude in 2019, however; the next iteration of the plan is currently under review and will last until 2024. The AONB Management Plan is reviewed every 5 years.

17.4.5 Describe the contents of the management/cooperation plan. Does it consist of detailed measures or detailed guidelines? Give some examples of measures or guidelines advocated by the plan? (Enclose a copy).

The Island Plan
The Island Plan outlines the wide range of issues that we will need to address to ensure that the Island continues to be a place where we can all live, work and play in the way we want. The plan forms clear summary of policies relating proposals that involve the use of land. The characteristics and issues facing the Island can be grouped under seven broad headings: Housing, Economy, Environment, Travel, Waste, Minerals and Infrastructure.

The Isle of Wight AONB Management Plan
The overall aim of AONB Management Plans is to ensure continuity and consistency of management over time. It places a focus on the primary purpose of the conservation and enhancement of natural beauty with social and economic issues covered in terms of how they relate to the primary purpose of the AONB.

The plan offers information, policies and broad guidance on the ecosystem Services offered by the IW AONB Landscapes including; Landscape and Coastal Areas; Geodiversity including geology, geomorphology, minerals and soils; Air; Water; Wildlife; Farming; Forestry and Woodland Management; Historic Environment; Cultural Associations; Tranquillity and Dark Skies; Energy and Access and Recreation.

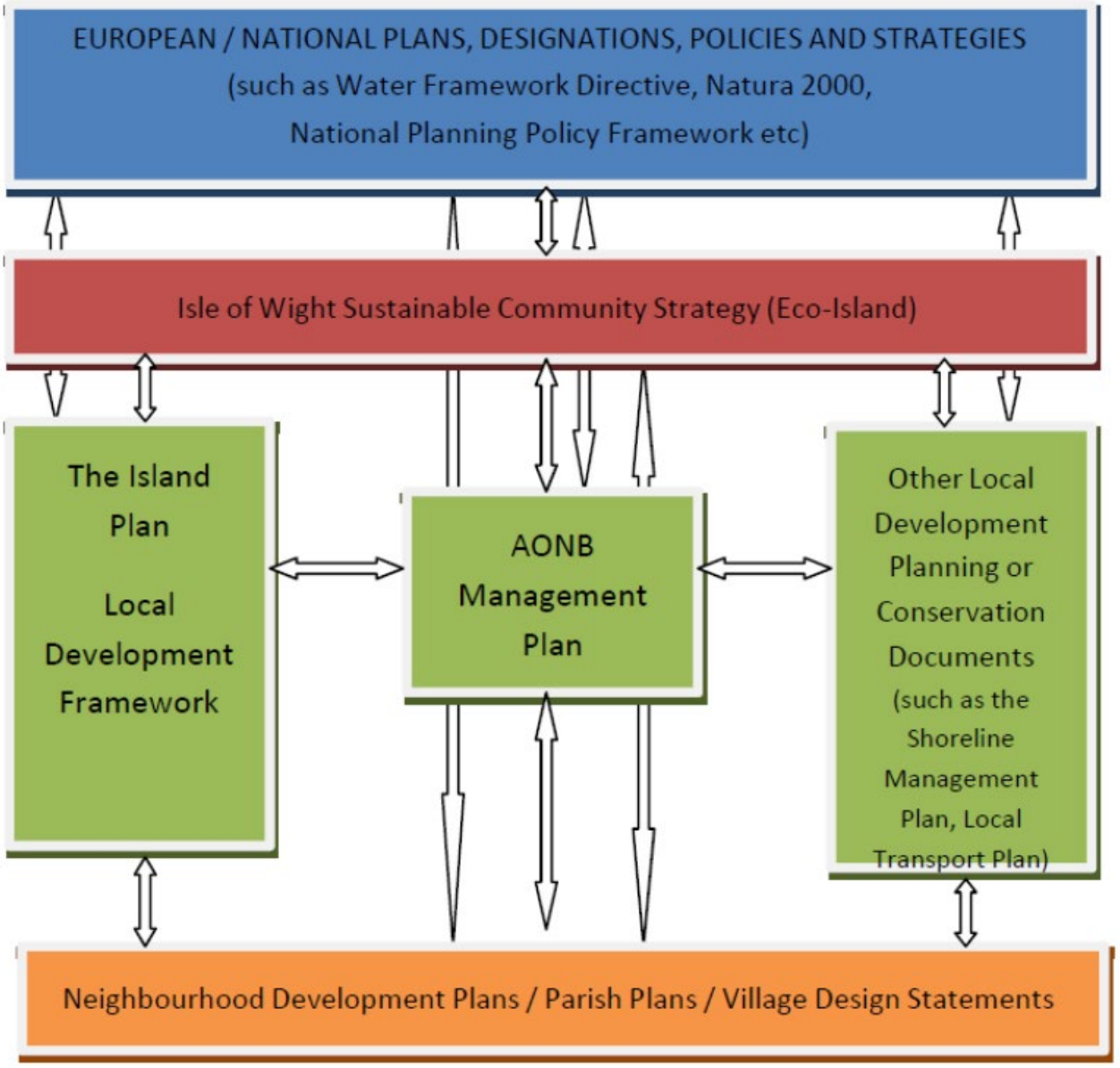


Figure12. Shows how the different plans relate to each other in the decision making process.

17.4.6 Indicate how this management/cooperation addresses the objectives of the proposed biosphere reserve (as described in section 13.1).

These documents outline the core sustainable development and wildlife conservation objectives and provide the policy framework with which to deliver the objectives.

The logistical support is outlined in through the Terms of Reference for the Isle of Wight AONB Partnership.

17.4.7 Is the plan binding? Is it based on a consensus?

The Island Plan is a binding plan as it is the core strategy with which formal planning decision-making procedures are based upon through the Isle of Wight Council, which in itself is the locally elected democratic decision making organisation.

The Isle of Wight AONB Management Plan informs the Island Plan and is enforceable through the Duty of regard placed on AONBs in the Countryside and Rights of Way Act 2000.

The South Marine Plan has been prepared for the purposes of Section 51 of the Marine and Coastal Access Act and has been adopted with the agreement of the Secretary of State for Environment, Food and Rural Affairs.

The South Marine Plan conforms with the Marine and Coastal Access Act (2009) and Marine Policy Statement requirements. Where relevant it also takes account of informal guidance in the Department for Environment, Food and Rural Affairs' marine planning description document relating to matters including setting out a vision, plan objectives and plan policies.

The plan also takes account of the duty to co-operate with public authorities Planning and Compulsory Purchase Act 2004 S33A, as amended by the Localism Act 2011) in the English inshore region, the English offshore region or any part of either of those regions.

The South Marine Plan has been prepared in accordance with, and gives consideration to, the EU Maritime Spatial Planning Directive (2014/89/EU) which supports the Integrated Maritime Policy for the European Union.

17.4.8 Which authorities are in charge of the implementation of the plan, especially in the buffer zone(s) and the transition area(s)? Please provide evidence of the role of these authorities.

Core Areas
The Core Area will be led by Natural England (NE), as the Government's statutory nature conservation advisory body for these designated sites in England. NE has worked closely to seek to integrate its strategic work, for example on measures to enhance the South Downs Landscape Character Area, with the Biosphere Project as a desired local delivery mechanism.

Marine Core and Buffer areas will be led by Natural England, The Marine Management Organisation and the Southern Inshore Fisheries and Conservation Authority (IFCA).

Implementation in the Terrestrial Buffer Areas will be led by the Isle of Wight AONB Partnership, as the strategic body which oversees this whole protected landscape.

Implementation in the terrestrial urban Transition Areas will generally be led by the Isle of Wight Council and involve other organisations (from the public, private or voluntary/community sectors) based upon the nature of the particular project.

17.4.9 Which factors impede or help its implementation (e.g.: reluctance of local people, conflicts between different levels of decision-making).

The key consideration is the extent to which the Biosphere initiative, including any future action plan, is known about and actively taken on by other local organisations, projects and individuals to further their specific agendas as well as contributing to the common aims.

The key challenge is for the Biosphere Reserve is to show sustainable development does not preclude development or economic activity within a protected landscape, but is part and parcel of an ongoing aspiration for success of the Island's people, businesses and environment for generations to come. Moreover, there is a need to present the Biosphere reserve and a positive force for change that adds value through a holistic vision, effective partnership working and integrated approach to improving the local environment including through new ways of working and external resources.

There is both local interest and support for the Biosphere Reserve, as shown through the public consultation, but this is counterbalanced by a need to see this designation bring meaningful improvements to both the local environment and deliver the aspiration of local people to achieve sustainable development at the same time as conserving and enhancing the landscape of the Isle of Wight.

17.4.10 Is the biosphere reserve integrated in regional/national strategies? Vice versa, how are the local/municipal plans integrated in the planning of the biosphere reserve?

The proposed Biosphere Reserve interacts with the national level principally through its partner organisations and the UK MAB Committee, as well as through the local Member of Parliament (MP), to potentially influence relevant future strategies e.g. of DEFRA in the UK Government. At a sub- regional level, the Partnership will seek to influence the Island Plan and the Isle of Wight AONB Management Plan.

17.4.11 Indicate the main source of the funding and the estimated yearly budget.

The Isle of Wight AONB for the foreseeable future will cover the costs of a part time Project Officer

The approximate annual costs/budget are:

Core Costs	
Salary	9986
National Insurance	913
Pension	2347
Hosting Costs	1950
Administration Costs	6386
Project Costs	17062
Total Budget	**38644**

Plus in-kind contributions from Partner organisations.

17.5 Conclusions:

17.5.1 In your opinion, what will ensure that both the functioning of the biosphere reserve and the structures in place will be satisfactory? Explain why and how, especially regarding the fulfillment of the three functions of biosphere reserves (conservation, development, logistic) and the participation of local communities.

We consider the Isle of Wight with its internationally renowned cultural landscapes, earth heritage, terrestrial, marine and coastal ecology, to be an excellent candidate to create the UK's first island UNESCO Biosphere Reserve.

The Isle of Wight is simply and clearly defined by its surrounding sea. Its intimate mix of landscape, from coastal cliffs to busy harbours, from patchwork hedge-lined fields to wide arable vistas, and from remote downland ridges to summer resorts, is the story of Islanders and their Island, man and nature.

The Island's separation from mainland England has meant that some national and regional pressures have had less influence on the Island's natural and cultural heritage (e.g. agricultural intensification), whilst others have become magnified here (e.g. aging population).

The reduced impacts of intensive farming, development, road infrastructure projects and invasive species have left our landscape rich in wildlife with important populations of woodland and riparian mammals, farmland birds and agriculturally unimproved grasslands.

As an island, Isle of Wight communities are dependent to a greater degree on our local landscape providing the ecosystem services we require, such as drinking water from rivers and chalk aquifers, aggregate from island quarries, flood storage and attenuation, and a tourism economy based on 'natural beauty'.

The Isle of Wight's globally significant palaeoecology, its cultural and scientific landscape associations from Tennyson to Darwin; its iconic natural landmarks and distinctive biogeography; its unique assemblages of protected species and its dense network of designated conservation areas together provide a rich resource for the application of the Biosphere concept, and the collaboration and partnership it fosters.

The opportunity for Biosphere status to influence and benefit the Island's social and political landscape has never been greater than now. The great pressures on public services, charities and non-profit organisations is necessitating new ways of thinking and collaborating. Changes to healthcare commissioning, educational provision, waste, energy and highways management are all underway and evolving at the same time and stimulating the same need for a partnership of local action and common purpose. Biosphere, with its positive advocacy of positive interaction between people and the natural world and its emphasis on solutions for sustainability, offers an important and timely intervention.

The overriding reason for the Isle of Wight's submission for the Biosphere Reserve designation is to conserve and enhance our unique environment, our most valuable asset and resource, by finding new and better ways to integrate social and economic imperatives into the management of geodiversity and biodiversity

The Island has a strong tradition of environmental action and there are more groups and societies working for wildlife and sustainability than ever today. Projects and initiatives promoting environmental education and awareness, increasing community engagement, helping people into healthier lifestyles and diets, developing eco-tourism activities, piloting local branding schemes, working with universities and institutions to foster

environmental innovation and attract new investment, and testing new measures for climate change mitigation and adaptation.

We seek to use Biosphere status to establish a high-profile and unifying framework for our terrestrial, marine and coastal areas, to guide the ways in which we view, value, celebrate, use and manage the natural environment and help to attract new resources to do so.

The Biosphere Partnership for the proposed Isle of Wight UNESCO Biosphere can demonstrated its flexibility and site-specific approach to zonation and stakeholder engagement.

The strong overarching Partnership formed of Local Authority Members, Non- Governmental Organisations, Agencies, Businesses and the Third Sector outline the depth and range of sectors involved with all three objectives of biosphere reserves. Moreover, it highlights the strong focus of these sectors to deliver conservation and sustainable development.

The UNESCO accolade represents a wonderful opportunity to emphasise the achievements to date of the community of the Isle of Wight in delivering high landscape quality, high levels of biodiversity and at the same time manage the needs of the second largest population on an Island in northern Europe.

18. SPECIAL DESIGNATIONS:

[Special designations recognize the importance of particular sites in carrying out the functions important in a biosphere reserve, such as conservation, monitoring, experimental research, and environmental education. These designations can help strengthen these functions where they exist or provide opportunities for developing them. Special designations may apply to an entire proposed biosphere reserve or to a site included within. They are therefore complementary and reinforcing of the designation as a biosphere reserve. Check each designation that applies to the proposed biosphere reserve and indicate its name]

Name:

( ) UNESCO World Heritage Site

(Y) RAMSAR Wetland Convention Site

- Solent and Southampton Water Ramsar

(Y) Other international/regional conservation conventions/directives (specify)

- 3 Special Areas of Conservation (SACs), EC Habitats Directive – Isle of Wight Downs, South Wight Maritime Solent and Isle of Wight Lagoons
- 1 Special Protection Area - Solent and Southampton water
- 1 Draft Special Protection Area - Solent Maritime

( ) Long term monitoring site (specify)

() Long Term Ecological Research (LTER site)

(Y) Other (specify)

- Area of Outstanding Natural Beauty
- Marine Conservation Zones – The Needles MCZ, Yarmouth to Cowes Candidate MCZ Bembridge Candidate MCZ

19. SUPPORTING DOCUMENTS (to be submitted with nomination form):

(1) Location and zonation map with coordinates
[Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84).

Cardinal points:	Latitude	Longitude
Most central point:	50.683801	-1.3068867
Northernmost point:	50.788076	-1.1858368
Southernmost point:	50.553605	-1.2982377
Westernmost point:	50.688794	-1.6922702
Easternmost point:	50.734301	-0.93463194

Provide a map on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must also be attached to the electronic copy of the form. If applicable, also provide a link to access this map on the internet (e.g. Google map, website).]

Attached

(2) Vegetation map or land cover map
[A vegetation map or land cover map showing the principal habitats and land cover types of the proposed biosphere reserve should be provided, if available].

Attached

(3) List of legal documents (if possible with English, French or Spanish synthesis of its contents and a translation of its most relevant provisions)
[List the principal legal documents authorizing the establishment and governing use and management of the proposed biosphere reserve and any administrative area(s) they contain. Provide a copy of these documents.

These are listed below, including brief syntheses of contents and web links to PDF document copies (rather than printed document copies being attached due to their size).

Countryside and Rights of Way Act (2000), Chapter 37, UK Public General Act (170 pages)
www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf
Synthesis: a national Act that covers topics including nature conservation and the protection of wildlife (including through national Sites of Special Scientific Interest - SSSIs); Areas of Outstanding Natural Beauty; provision for public access to the countryside; and public rights of way.

The Conservation (Natural Habitats, &c.) Regulations 1994, UK Statutory Instrument No. 2716 (61 pages)
www.legislation.gov.uk/uksi/1994/2716/made/data.pdf
Synthesis: the national legislation that brings into law the EC Habitats Regulations (1992) – Council Directive 92/43/EEC of 21 May 1992 – on the conservation of natural habitats and of wild fauna and flora (including through Special Areas of Conservation – SACs).

National Parks and Access to the Countryside Act (1949), Chapter 97, UK Public General Act (111 pages)
www.legislation.gov.uk/ukpga/1949/97/pdfs/ukpga_19490097_en.pdf
Synthesis: National Parks in England are designated under this Act, and are managed by National Park authorities as established under the Environment Act 1995 – the South Downs National Park (Authority), was established through The South Downs National Park Authority (Establishment) Order (2010) No. 497.

Marine and Coastal Access Act (2009), Chapter 23, UK Public General Act (347 pages)
www.legislation.gov.uk/ukpga/2009/23/pdfs/ukpga_20090023_en.pdf
Synthesis: an Act bringing together many marine functions and activities under a consolidated approach, including provision for marine protected areas (including Marine Conservation Zones); migratory and freshwater fish; and establishment of an English coastal walking route and rights of access to coastal land.

Natural Environment and Rural Communities Act (2006) Chapter 16, UK Public General Act (114 pages)
www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf
Synthesis: an Act about bodies concerned with the natural environment and rural communities; to make provision in connection with wildlife, Sites of Special Scientific Interest, National Parks; and rights of way.

Local Government Act (various, most recent significant in 2000), Chapter 22, UK Public General Act (108 pages) www.legislation.gov.uk/ukpga/2000/22/pdfs/ukpga_20000022_en.pdf
Synthesis: an Act about the functions and procedures of local authorities and elections, including giving them powers to promote economic, social and environmental well-being within their boundaries.

(4) List of land use and management/cooperation plans

[List existing land use and management/cooperation plans (with dates and reference numbers) for the administrative area(s) included within the proposed biosphere reserve. Provide a copy of these documents. It is recommended to produce English, French or Spanish synthesis of its contents and a translation of its most relevant provisions]

Core Areas

SSSI have statements called Views About Management (VAMs) and Conservation Objectives Common Standard Monitoring (CSM) overseen by Natural England:

Alverstone Marshes
Arreton Down
Bembridge Down
Bembridge School And Cliffs
Bouldnor And Hamstead Cliffs
Briddlesford Copses
Calbourne Down
Compton Chine to Steephill Cove
Compton Down
Cranmore
Cridmore Bog
Eaglehead and Bloodstone Copses
Garston's Down
Greatwood And Cliff Copses
Headon Warren And West High Down
King's Quay Shore
Mottistone Down
Newtown Harbour[F]

Northpark Copse
Parkhurst Forest
Priory Woods
Prospect Quarry
Rew Down
Rowridge Valley
St Lawrence Bank
The Wilderness
Thorness Bay[G]
Whitecliff Bay And Bembridge Ledges
Yar Estuary

Buffer Zones

Terrestrial – Isle of Wight AONB Management Plan:
'Isle of Wight AONB Partnership Management Plan 2014-2019 by IW AONB Partnership
Synthesis: this management plan summarises the AONB's characteristics and sets out a suite of proposed outcomes and policies for delivery in partnership, according to AONB's statutory purposes and duty, together with frameworks for delivery and monitoring.

SSSI have statements called Views About Management (VAMs) and Conservation Objectives Common Standard Monitoring (CSM) overseen by Natural England:

Bonchurch Landslips
Brading Marshes to St. Helen's Ledges
Colwell Bay
Freshwater Marshes
Medina Estuary
Parkhurst Forest
Priory Woods
Ryde Sands and Wootton Creek
Ventnor Downs

Marine – Marine Conservation Zone:
Needles Marine Conservation Zone: https://www.gov.uk/government/publications/marine-conservation-zones-the-needles

Synthesis: this technical document sets out the features proposed for designation in this recommended Marine Conservation Zone, together with their proposed conservation objectives ("maintain" or "recover") and management measures as appropriate.

Marine – MMO South Coast Plan:
MMO South Coast Plan (Inshore & Offshore areas)
https://www.gov.uk/guidance/south-inshore-and-south-offshore-marine-plan-areas

Synthesis: Details of the process and documents about making the South Inshore and South Offshore Marine Plans. The South Marine Plan has been prepared for the purposes of Section 51 of the Marine and Coastal Access Act and has been adopted with the agreement of the Secretary of State for Environment, Food and Rural Affairs. The South Marine Plan conforms with the Marine and Coastal Access Act (2009) and Marine Policy Statement requirements. Where relevant it also takes account of informal

guidance in the Department for Environment, Food and Rural Affairs' marine planning description document relating to matters including setting out a vision, plan objectives and plan policies.
The plan also takes account of the duty to co-operate with public authorities Planning and Compulsory Purchase Act 2004 S33A, as amended by the Localism Act 2011) in the English inshore region, the English offshore region or any part of either of those regions. The South Marine Plan has been prepared in accordance with, and gives consideration to, the EU Maritime Spatial Planning Directive (2014/89/EU) which supports the Integrated Maritime Policy for the European Union.

Transition Zone

Terrestrial – Local Authority 'Local Development Framework':
Island Plan - Isle of Wight Core Strategy (including Waste and Minerals) and Development Management Development Plan Document March 2012 - 'https://www.iwight.com/Residents/environment-planning-and-waste/Planning-Policy-new/Core-Strategy/About4

Synthesis: The Island Plan Core Strategy was adopted by the Isle of Wight Council on 21 March 2012. To view the Island Plan Core Strategy please click here (PDF). The Core Strategy and the accompanying Proposals Maps replace the saved policies of the Unitary Development Plan (UDP) and the UDP Proposals Maps.

(5) Species list (to be annexed)
[Provide a list of important species occurring within the proposed biosphere reserve, including common names, wherever possible.]

(6) List of main bibliographic references (to be annexed)
[Provide a list of the main publications and articles of relevance to the proposed biosphere reserve over the past 5-10 years].

(7) Original Endorsement letters according to paragraph 5

(8) Further supporting documents.

20. ADDRESSES:

20.1 Contact address of the proposed biosphere reserve:
[Government agency, organization, or other entity (entities) to serve as the main contact and to whom all correspondence within the World Network of Biosphere Reserves should be addressed.]

Name: ISLE OF WIGHT AREA OF OUTSTANDING NATURAL BEAUTY
Street or P.O. Box: Seaclose Offices, Fairlee Road, Newport, Isle of Wight
City with postal code: Isle of Wight PO30 2QS
Country: United Kingdom
Telephone: 01983 823855
E-mail: AONB@iow.gov.uk
Web site: www.wightaonb.org.uk

20.2. Administering entity of the core area(s):
Name: NATURAL ENGLAND
Street or P.O. Box: 2nd Floor, Cromwell House, 15 Andover Road, Winchester
City with postal code: Hampshire, SO23 7BT
Country: United Kingdom
Telephone: 0300 060 3900
E-mail: enquiries@naturalengland.org.uk
Web site: https://www.gov.uk/government/organisations/natural-england

Name: SOUTHERN INSHORE FISHERIES AND CONSERVATION AUTHORITY
Street or P.O. Box: 64 Ashley Road, Poole
City with postal code: Dorset, BH14 9BN
Country: United Kingdom
Telephone: 01202 721373
Email : enquiries@southern-ifca.gov.uk
Web site: www.southern-ifca.gov.uk/

20.3. Administering entity of the buffer zone(s):

Name: NATURAL ENGLAND
Street or P.O. Box: 2nd Floor, Cromwell House, 15 Andover Road, Winchester
City with postal code: Hampshire, SO23 7BT
Country: United Kingdom
Telephone: 0300 060 3900
E-mail: enquiries@naturalengland.org.uk
Web site: https://www.gov.uk/government/organisations/natural-england

Name: SOUTHERN INSHORE FISHERIES AND CONSERVATION AUTHORITY
Street or P.O. Box: 64 Ashley Road, Poole
City with postal code: Dorset, BH14 9BN
Country: United Kingdom
Telephone: 01202 721373
Email : enquiries@southern-ifca.gov.uk
Web site: www.southern-ifca.gov.uk/

Name: ISLE OF WIGHT AREA OF OUTSTANDING NATURAL BEAUTY
Street or P.O. Box: Seaclose Offices, Fairlee Road, Newport, Isle of Wight
City with postal code: Isle of Wight PO30 2QS
Country: United Kingdom
Telephone: 01983 823855
E-mail: AONB@iow.gov.uk
Web site: www.wightaonb.org.uk

20.4. Administering entity of the transition area(s):

Name: Isle of Wight Council
Street or P.O. Box: County Hall, Newport, Newport
City with postal code: Isle of Wight, PO30 1UD
Country: United Kingdom
Telephone: 01983 821000
E-mail:
Web site: https://www.iow.gov.uk/

Annex 1. MABnet Directory of Biosphere Reserves

Annex I to the Biosphere Reserve Nomination Form, January 2013

MABnet Directory of Biosphere Reserves

Biosphere Reserve Description[1]

Administrative details
Country:
Name of BR:
Year designated: (*to be completed by MAB Secretariat)*
Administrative authorities: (17.1.3)
Name Contact: (20.1)
Contact address: *(Including phone number, postal and email adresses)* (20.1)
Related links: *(web sites)*
Social networks: (16.4.3)

Description
General description: *(Site characteristics in 11.1; human population in 10)*

Approximately 25 lines

[1] To be posted on the MABnet once the nomination has been approved. The numbers refer to the relevant sections of the nomination form.

Major ecosystem type: (14.1)
Major habitats & land cover types: (11.6)
Bioclimatic zone (11.5)
Location (latitude & longitude): (6.1)
Total Area (ha): (7)
Core area*(s):* (7)
Buffer zone*(s):* (7)
Transition area*(s) :* (7)

Different existing zonation: (7.4)
Altitudinal range *(*metres above sea level): (11.2)
Zonation map(s): (6.2)

Main objectives of the biosphere reserve

Brief description (13.1)

Approximately 5 lines

Research

Brief description (16.1.1)

Approximately 5 lines

Monitoring

Brief description (16.1.1)

Approximately 5 lines

Specific variables (fill in the table below and tick the relevant parameters)

Abiotic		Biodiversity	
Abiotic factors		Afforestation/Reforestation	
Acidic deposition/Atmospheric factors		Algae	
Air quality		Alien and/or invasive species	
Air temperature		Amphibians	
Climate, climatology		Arid and semi-arid systems	
Contaminants		Autoecology	
Drought		Beach/soft bottom systems	
Erosion		Benthos	
Geology		Biodiversity aspects	
Geomorphology		Biogeography	
Geophysics		Biology	
Glaciology		Biotechnology	
Global change		Birds	
Groundwater		Boreal forest systems	
Habitat issues		Breeding	
Heavy metals		Coastal/marine systems	
Hydrology		Community studies	
Indicators		Conservation	
Meteorology		Coral reefs	
Modeling		Degraded areas	
Monitoring/methodologies		Desertification	
Nutrients		Dune systems	
Physical oceanography		Ecology	
Pollution, pollutants		Ecosystem assessment	
Siltation/sedimentation		Ecosystem functioning/structure	
Soil		Ecosystem services	
Speleology		Ecotones	
Topography		Endemic species	
Toxicology		Ethology	
UV radiation		Evapotranspiration	
		Evolutionary studies/Palaeoecology	
		Fauna	
		Fires/fire ecology	

		Fishes	
		Flora	
		Forest systems	
		Freshwater systems	
		Fungi	
		Genetic resources	
		Genetically modified organisms	
		Home gardens	
		Indicators	
		Invertebrates	
		Island systems/studies	
		Lagoon systems	
		Lichens	
		Mammals	
		Mangrove systems	
		Mediterranean type systems	
		Microorganisms	
		Migrating populations	
		Modeling	
		Monitoring/methodologies	
		Mountain and highland systems	
		Natural and other resources	
		Natural medicinal products	
		Perturbations and resilience	
		Pests/Diseases	
		Phenology	
		Phytosociology/Succession	
		Plankton	
		Plants	
		Polar systems	
		Pollination	
		Population genetics/dynamics	
		Productivity	
		Rare/Endangered species	
		Reptiles	
		Restoration/Rehabilitation	
		Species (re) introduction	
		Species inventorying	
		Sub-tropical and temperate rainforest	
		Taxonomy	
		Temperate forest systems	
		Temperate grassland systems	
		Tropical dry forest systems	
		Tropical grassland and savannah systems	
		Tropical humid forest systems	
		Tundra systems	
		Vegetation studies	
		Volcanic/Geothermal systems	

		Wetland systems	
		Wildlife	

Socio-economic		Integrated monitoring	
Agriculture/Other production systems		Biogeochemical studies	
Agroforestry		Carrying capacity	
Anthropological studies		Climate change	
Aquaculture		Conflict analysis/resolution	
Archaeology		Ecosystem approach	
Bioprospecting		Education and public awareness	
Capacity building		Environmental changes	
Cottage (home-based) industry		Geographic Information System (GIS)	
Cultural aspects		Impact and risk studies	
Demography		Indicators	
Economic studies		Indicators of environmental quality	
Economically important species		Infrastructure development	
Energy production systems		Institutional and legal aspects	
Ethnology/traditional practices/knowledge		Integrated studies	
Firewood cutting		Interdisciplinary studies	
Fishery		Land tenure	
Forestry		Land use/Land cover	
Human health		Landscape inventorying/monitoring	
Human migration		Management issues	
Hunting		Mapping	
Indicators		Modelling	
Indicators of sustainability		Monitoring/methodologies	
Indigenous people's issues		Planning and zoning measures	
Industry		Policy issues	
Livelihood measures		Remote sensing	
Livestock and related impacts		Rural systems	
Local participation		Sustainable development/use	
Micro-credits		Transboundary issues/measures	
Mining		Urban systems	
Modelling		Watershed studies/monitoring	
Monitoring/methodologies			
Natural hazards			
Non-timber forest products			
Pastoralism			

People-Nature relations			
Poverty			
Quality economies/marketing			
Recreation			
Resource use			
Role of women			
Sacred sites			
Small business initiatives			
Social/Socio-economic aspects			
Stakeholders' interests			
Tourism			
Transports			

Annex II. Promotion and Communication Materials

Annex II to the Biosphere Reserve Nomination Form, January 2013
Promotion and Communication Materials
For the Proposed Biosphere Reserve

Provide some promotional material regarding the proposed site, notably high quality photos, and/or short videos on the site so as to allow the Secretariat to prepare appropriate files for press events. To this end, a selection of photographs in high resolution (300 dpi), with photo credits and captions and video footage (rushes), without any comments or sub-titles, of professional quality – DV CAM or BETA only, will be needed.

In addition, return a signed copy of the following Agreement on Non-Exclusive Rights. A maximum of ten (10) minutes on each biosphere reserve will then be assembled in the audiovisual section of UNESCO and the final product, called a B-roll, will be sent to the press.

United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Organización
de las Naciones Unidas
para la Educación,
la Ciencia y la Cultura

Организация
Объединенных Наций по
вопросам образования,
науки и культуры

منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

UNESCO Photo Library
Bureau of Public Information

Photothèque de l'UNESCO
Bureau de l'Information du Public

AGREEMENT GRANTING NON-EXCLUSIVE RIGHTS

Reference:

1. a) I the undersigned, copyright-holder of the above mentioned photo(s) hereby grant to UNESCO free of charge the non-exclusive right to exploit, publish, reproduce, diffuse, communicate to the public in any form and on any support, including digital, all or part of the photograph(s) and to licence these rights to third parties on the basis of the rights herein vested in UNESCO

b) These rights are granted to UNESCO for the legal term of copyright throughout the world.

c) The name of the photographer will be cited alongside UNESCO's whenever his/her work is used in any form.

2. I certify that:

a) I am the sole copyright holder of the photo(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.

b) The photo(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

Name and Address :
Date :

Signature :

(sign, return to UNESCO two copies of the Agreement and retain the original for yourself)

Mailing address: 7 Place Fontenoy, 75352 Paris 07 SP, Direct Telephone: 00331 – 45681687
Direct Fax: 00331 – 45685655; e-mail: photobank@unesco.org; m.ravassard@unesco.org

United Nations Educational, Scientific and Cultural Organization

Organisation des Nations Unies pour l'éducation, la science et la culture

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Организация Объединенных Наций по вопросам образования, науки и культуры

منظمة الأمم المتحدة للتربية والعلم والثقافة

联合国教育、科学及文化组织

UNESCO Photo Library
Bureau of Public Information

Photothèque de l'UNESCO
Bureau de l'Information du Public

AGREEMENT GRANTING NON-EXCLUSIVE RIGHTS

Reference:

1. a) I the undersigned, copyright-holder of the above mentioned video(s) hereby grant to UNESCO free of charge the non-exclusive right to exploit, publish, reproduce, diffuse, communicate to the public in any form and on any support, including digital, all or part of the video(s) and to licence these rights to third parties on the basis of the rights herein vested in UNESCO

   b) These rights are granted to UNESCO for the legal term of copyright throughout the world.

   c) The name of the author/copyright holder will be cited alongside UNESCO's whenever his/her work is used in any form.

2. I certify that:

   a) I am the sole copyright holder of the video(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.

   b) The video(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

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Direct Fax: 00331 – 45685655; e-mail: photobank@unesco.org; m.ravassard@unesco.org